



## DATASHEET CATALOG

HYDRONIC BALANCING | AREA HEATING SYSTEMS | SYSTEM TECHNOLOGY |  
VALVES AND ACCESSORIES | PUMP TECHNOLOGY



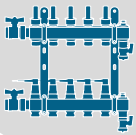
ONLINE VERSION

# OVERVIEW OF THE AREAS OF EXPERTISE



## HYDRONIC BALANCING

Energy in buildings must be distributed in such a way that all building sections, rooms and consumers are supplied according to their needs. A well-balanced system avoids excess and deficient supply of consumer circuits and prevents irritating flow noises in the pipes and valves. The gain in comfort due to pleasant room temperatures and significantly increased energy efficiency are the perceptible and measurable results of hydronically balanced flow systems. Hydronic balancing – the core area of expertise of Taconova – is part of the modern standard and is indispensable in the building service solutions of today.



## AREA HEATING SYSTEMS

Targeted heating of individual rooms increases the comfort level, reduces energy consumption and enables economic operation of the heating system. Optimum energy distribution is required in this regard: for main distribution in basements or pump rooms, the main flows are distributed to the various parts of the building as part of the hydronic balancing. To ensure the preferred room and heating circuit temperatures, fine distribution is additionally required on each floor, in the form of intelligent and reliable area heating distributors. Taconova's comprehensive range is characterised by products that are optimally matched to each other and can be combined in a variety of ways.



## SYSTEM TECHNOLOGY

The demand for universal solutions in building services is greater than ever. Taconova's connection-ready heating circuit pump assemblies, solar loading and storage loading stations and heat interface units are smart, state of the art systems.

Taconova quality products are assembled from carefully selected, tried-and-tested products to create perfectly functioning standard units. The ready-to-use complete solutions simplify and accelerate planning and assembly stages. In everyday use they guarantee reliable operation, reduce maintenance to a minimum and optimize energy costs.



## VALVES AND ACCESSORIES

A smoothly running heating or cooling system requires a large number of compact supporters. Valves and accessories from Taconova automatically vent heating systems since only continuously vented heating systems work with the greatest efficiency. Thermal mixer valves reduce the high domestic hot water temperatures to a constant, non-scalding temperature at the outlet. Multifunctional valves and accessories for monitoring the pressure in heating systems provide additional safety. Sophisticated sensors and measuring equipment – for example, for individual heat metering – complete the comprehensive range of Taconova fittings



## PUMP TECHNOLOGY

Heat can only be transported within buildings with the aid of pump technology. As devices that carry, transport and transfer heating water to heated rooms, pumps play an important role in ensuring a pleasant building climate. In conjunction with hydronic balancing, the most suitable pump can be selected and adjusted, which reduces operating costs and increases energy efficiency.

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# OVERVIEW OF PRODUCTS AND APPLICATION AREAS

	Heating & cooling generation				Heating & cooling distribution					Sani- tation	Other	
	Geothermal energy	Solar thermal energy	Oil, gas, biomass, electricity	District heating	Radiators	Underfloor heating	Concrete core	Chilled and heated ceilings	Fan Coils, Chill Beams	Fresh water	Watering (garden, air/water)	Industrial applications
<b>HYDRONIC BALANCING</b>												
TacoSetter Bypass 100												
TacoSetter Bypass Solar 130												
TacoSetter Bypass Solar 185												
TacoSetter Bypass Flange												
TacoSetter Inline 100												
TacoSetter Inline 130												
TacoSetter Rondo												
TacoSetter Hyline												
TacoSetter Tronic												
TacoControl FlowMeter												
<b>AREA HEATING SYSTEMS</b>												
TacoSys Pro												
TacoSys HighEnd												
TacoSys Connect												
TopMeter Plus												
TopMeter Supply												
TopMeter Return												
TacoDrive												
NovaDrive NC / NO												
TopDrive NC												
NovaStat EL   NovaMaster EL												
<b>SYSTEM TECHNOLOGY</b>												
TacoTherm Dual Piko												
TacoTherm Fresh/Dual Nano												
TacoTherm Fresh Mega3 (X)												
TacoTherm Fresh Peta2 (X)												
TacoSol Load Mega (L)												
TacoSol Circ ER HE												
TacoSol Circ ZR HE												
TacoHeat Mix												



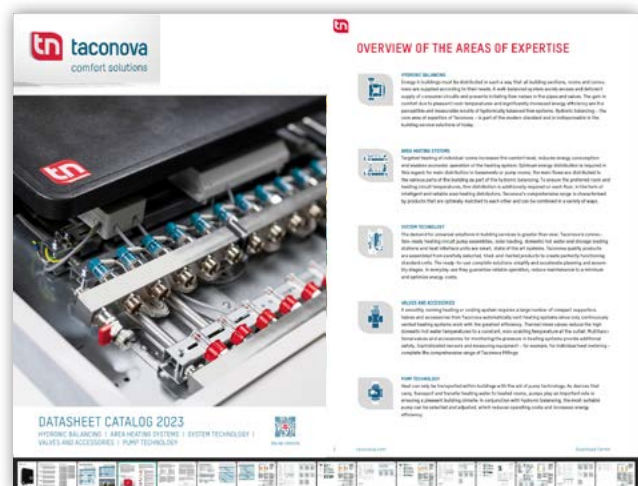
	Heating & cooling generation				Heating & cooling distribution					Sani- tation	Other	
	Geothermal energy	Solar thermal energy	Oil, gas, biomass, electricity	District heating	Radiators	Underfloor heating	Concrete core	Chilled and heated ceilings	Fan Coils, Chill Beams	Fresh water	Watering (garden, air/water)	Industrial applications
<b>VALVES AND ACCESSORIES</b>												
NovaMix Value 50 FS												
NovaMix Value 65 FS												
NovaMix Value 70 FS												
NovaMix Standard												
NovaMix High Capacity												
NovaMix Compact 50 / 70												
NovaZone Ball												
NovaZone Valve												
TacoVent Vent												
TacoVent HyVent												
TacoVent AirScoop												
<b>PUMP TECHNOLOGY</b>												
TacoFlow2 (C A)												
TacoFlow2 ADAPT												
TacoFlow2 eLink												
TacoFlow3 MAX												
TacoFlow3 MAX PRO												
TacoFlow2 SOLAR												
TacoFlow2 PURE (C)												

## VIRTUAL DATASHEET CATALOG

In the interactive online version you will find valuable additional information such as videos and animations as well as numerous practical links to further documents and brochures.



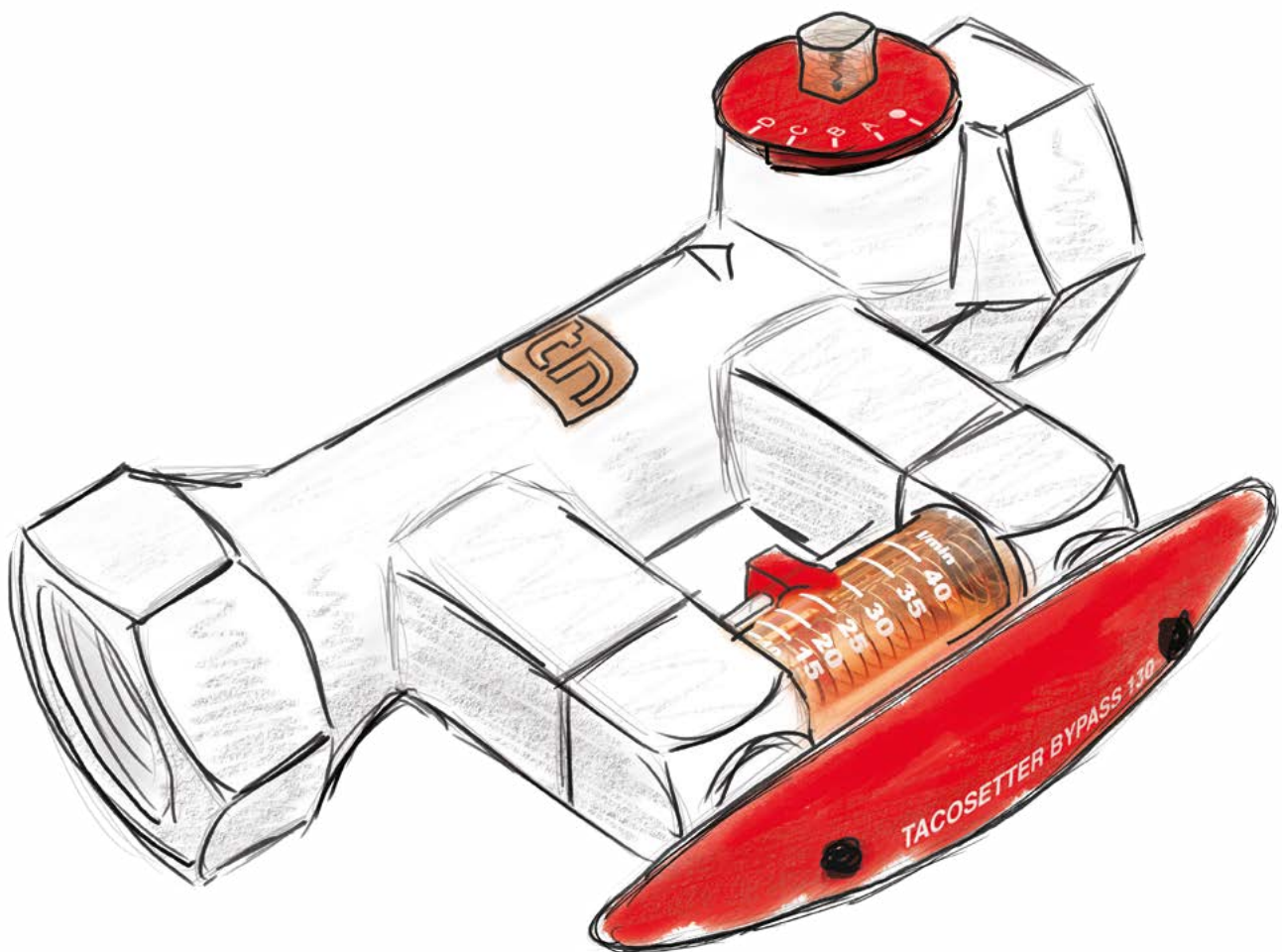
You can find the digital version in the download centre at [taconova.com](https://taconova.com)



# HYDRONIC BALANCING

In hydraulic heating and cooling systems, the energy carrier is transported over piping sections of different lengths. On the path from the energy generator to the consumer, pipe lengths and turns, branches, valves and heat exchangers present their own resistance that inhibits flow through their cross-sections and surface roughness.

Energy in buildings must be distributed in such a way that all building sections, rooms and consumers are optimally supplied according to their needs. A balanced system avoids excess and wasteful supply of consumer circuits and prevents irritating flow noises in the pipes and valves. The gain in comfort due to pleasant room temperatures and significantly increased energy efficiency are the perceptible and measurable results of hydronically balanced flow systems.



# ESSENTIAL FOR MODERN BUILDING SERVICES

Hydronic balancing – the core area of expertise of Taconova – is part of the modern standard and is indispensable in the building service solutions of today. Hydronic balancing is promoted in different countries with subsidies. It is often legally prescribed for new buildings and refurbishment.

## OVERVIEW OF PRODUCT GROUPS



### THE ORIGINAL

The TacoSetter Bypass, referred to in the branch as just «TacoSetter», is the classic model of balancing valves. The popular and reliable original for static hydronic balancing indicates the flow volume by means of a scale directly in a bypass test object or in the valve/accessories. Along with the standard version, there are also solar versions with greater temperature resistance (up to 185 °C).



### THE MULTITALENTED MODEL

TacoSetter Inline is the multitasking model of the balancing valves. It can be used to directly adjust, indicate and shut off the flow. The valve is used for underfloor heating, heating circuit distributors, sanitary systems, cooling circuits, heat pumps and solar systems.



### THE COMPACT MODEL

TacoSetter Rondo saves on space and impresses with its functional design. It is suitable for direct installation in the flow or return directions of radiators or manifold bars, and enables uncomplicated adjustment of the volume flow without valve tables. With a measuring and control range of 0.6 – 8 l/min it has been designed for systems with small pipe dimensions.



### THE PLASTIC SETTER

The new TacoSetter Hyline was developed in Switzerland and consists of high-quality, glass fiber-reinforced plastic. Thanks to its standard inch threads, the new plastic setter also enables installation without the need for additional adapters or tools.



### THE HYBRID MODEL

TacoSetter Tronic is a balancing valve with a shut-off function. The valve also enables digital volume flow and temperature measurements. It monitors drinking water, solar and heating systems and supplies accurate data to the electronic system controller. It is suitable for volume flows of 1 – 40 l/min.



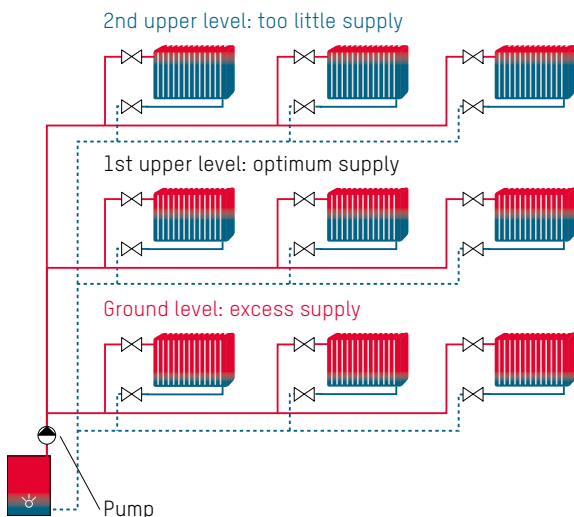
### PRECISE MODEL

The TacoControl flow meter indicates the volume of water flowing in heating, ventilation, air-conditioning and sanitary systems easily and comfortably. The compact design of the TacoControl flow meter makes installation of a volume flow display, even in tight spaces.

# OPTIMUM SUPPLY IS THE TARGET

In order to achieve equally distributed heat appropriate to the surrounding conditions, the calculated volume flows are limited to the flow values that correspond to the relevant rated heat requirement. As a result, radiators, surface heating systems and other consumers in the building can be supplied as required.

## NON-BALANCED SYSTEM



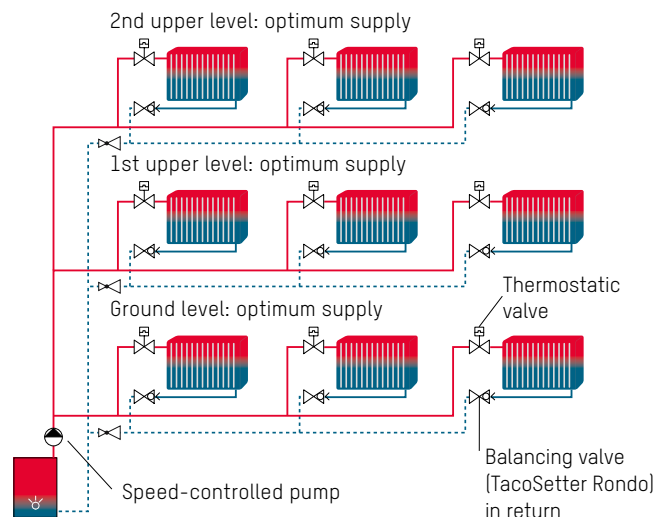
## NON-BALANCED SYSTEM

The example of a water heating system with radiators shows that a non-balanced heating system can be directly felt due to the indoor temperatures: while radiators closer to the central heating system are overly supplied, the radiators located further away receive inadequate flow volumes.

This means that the radiators on higher floor levels are not supplied enough hot water: they are too cool or respond only slowly.

This deficiency is often compensated in practise with greater pump power, but this leads to flow noises in the system and inefficiently operated energy generators. The result is increased energy consumption for pumps and energy generation.

## HYDRONICALLY BALANCED SYSTEM



## HYDRONICALLY-BALANCED SYSTEM

Balanced hydraulics are necessary to optimally use energy to obtain the specified flow and return temperatures. As a consequence of the static hydronic balancing, the required flow volumes are adjusted in such a way that all consumers in the building are supplied as desired.

In this way, the heat is equally distributed and the lower activity of the burner saves energy. The interaction between a hydronically balanced system and the requirement-based configuration of the consumers enables economic operation of the heat generator, particularly in regard to condensing heating technology and heat pumps.

# BALANCING OF EXISTING HEATING SYSTEMS

The optimised distribution of heat in existing heating systems can save a large amount of energy. And that is an ecological and economic demand of our time. National specifications apply to the hydronic balancing of existing heating systems. In some cases there are also financial incentives.

## STRAND BALANCING OF HEATING SYSTEMS WITH RADIATORS OR UNDERFLOOR HEATING

To perform hydronic balancing, the corresponding rated volume flows of the system and the individual piping sections must be known. While the calculation results of pipe dimensioning for new systems provide this data for adjustment, this information is usually unavailable for existing systems. For this reason, the rated volume flows must first be calculated on the basis of the rated heat requirement or thermal output of the available heating surfaces and on the temperature difference (between the flow and return water) of the heating system.

The required rated volume flows can be determined by means of a heating requirement calculation (DIN EN 12831).

## DETERMINING VOLUME FLOWS ON THE BASIS OF THE CALCULATION OF HEATING REQUIREMENTS (DIN EN 12831)

The rated heating requirements of the individual rooms is obtained from the precise calculation of heat requirement. If this data is not available, the available heating surfaces (radiators or underfloor heating) can be included with the formulae from Taconova (download from [taconova.com](https://taconova.com)). The exact thermal output of the heating surfaces included in this way can be determined using manufacturers' documentation. The required volume flows are calculated on the basis of the temperature difference, the calculated specific heating requirement and the specific heating capacity of the carrier medium (typically water).

# OPTIMIZING THE ENTIRE SYSTEM THROUGH HYDRONIC BALANCING

A perfectly adjusted heating system ensures an even level of heat at all locations. This increases comfort, reduces CO<sub>2</sub> emissions and cuts energy consumption.

## BENEFITS AT THE PLANNING STAGE

- Simplest system design and installation control
- Planning certainty and compliance with the relevant regulations and standards in heating and sanitary planning
- Product safety thanks to durable European valves and accessories

## BENEFITS AT THE INSTALLATION STAGE

- Time-saving regulation of flow rates without any need for conversion
- Simple control of flow rates during maintenance and testing without requiring measurement devices
- Simple implementation of static hydronic balancing for existing systems
- Compact regulation in pipe installations

## QUALITY VALVES

Taconova offers all the valves that are needed for optimal implementation of a hydraulic balance system. Allowing complete line balancing of high-pressure circuits which provides quick and easy planning, and thus the economic operation of the plant.

Balancing Valves	
The classic models in the TacoSetter and TopMeter family guarantee the desired flow rates in heating systems, as well as in cooling, solar energy and saline water distribution systems. The flow volume can be directly checked at a glance at any time with these balancing valves – with one exception: the TacoSetter Tronic, which measures the flow rate electronically	<ul style="list-style-type: none"> <li>▪ TacoSetter Bypass 100</li> <li>▪ TacoSetter Bypass Solar 130/185</li> <li>▪ TacoSetter Bypass Flange</li> <li>▪ TacoSetter Inline 100/130</li> <li>▪ TacoSetter Rondo</li> <li>▪ TacoSetter Tronic</li> <li>▪ TacoSetter Hyline</li> </ul>

## APPLICATIONS

Taconova offers a seamless portfolio of high-quality balancing and measurement valves for a wide range of diverse applications.

Heating and cooling energy generation	Heating and cooling energy distribution (indoor temperature control)	Sanitary systems
<ul style="list-style-type: none"> <li>▪ Solar thermal energy</li> <li>▪ Geothermal energy</li> <li>▪ Oil, gas, electricity, biomass</li> <li>▪ District heating</li> </ul>	<ul style="list-style-type: none"> <li>▪ Underfloor heating</li> <li>▪ Radiators</li> <li>▪ Chilled and heated ceilings</li> <li>▪ Fan coils and chill beams</li> <li>▪ Concrete cores</li> </ul>	<ul style="list-style-type: none"> <li>▪ Fresh water</li> </ul>

# THE RIGHT PRODUCT FOR EVERY VOLUME FLOW

Setter	Order number	0,3	0,6	1	1,5	2	4	6	8	10	15	20	30	40	50	60	70	80	90	100	200	300	400	500	600	700
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## TacoSetter Bypass 100



223.22X2.XXX						2 – 8 l/min																				
223.23X1.000																										
223.23X0.XXX							4 – 15 l/min																			
223.23X2.XXX									8 – 30 l/min																	
223.24X0.XXX									6 – 20 l/min																	
223.24X1.XXX										10 – 40 l/min																
223.25X1.XXX											20 – 70 l/min															
223.26X1.XXX												30 – 120 l/min														
223.28X1.XXX													50 – 200 l/min													

## TacoSetter Bypass Solar 130/185



223.238X.XXX						2 – 12 l/min																				
223.238X.XXX								8 – 20 l/min																		
223.248X.XXX									10 – 40 l/min																	
223.2580.000										20 – 70 l/min																

## TacoSetter Bypass Flange



223.2151.000															60 – 325 l/min											
223.2251.000																75 – 450 l/min										
223.2351.000																	100 – 650 l/min									

## TacoSetter Inline 100



223.1202.000	0,3 – 1,5 l/min																									
223.12X3.XXX		0,6 – 2,4 l/min																								
223.12X4.XXX			1 – 3,5 l/min																							
223.12X8.XXX				2 – 8 l/min																						
223.12X9.XXX					3 – 12 l/min																					
223.1300.000						4 – 15 l/min																				
223.1302.000							8 – 30 l/min																			
223.1305.000								10 – 40 l/min																		

# THE RIGHT PRODUCT FOR EVERY VOLUME FLOW

Setter	Order number	0,3	0,6	1	1,5	2	4	6	8	10	15	20	30	40	50	60	70	80	90	100	200	300	400	500	600	700
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## TacoSetter Inline 130



223.7556.334					1,5 – 6 l/min																					
223.7566.334						4 – 16 l/min																				
223.7576.334									8 – 28 l/min																	
223.7586.000										10 – 40 l/min																
223.7234.104					1 – 3,5 l/min																					
223.7238.104						2 – 8 l/min																				
223.7318.000						1,5 – 7,5 l/min																				
223.7310.000							4 – 15 l/min																			
223.7312.000									10 – 30 l/min																	
223.7370.000								4 – 15 l/min																		
223.7378.000									10 – 45 l/min																	
223.7427.000										20 – 90 l/min																
223.7457.000										20 – 90 l/min																
223.7467.000										20 – 90 l/min																

## TacoSetter Rondo



223.3206.XXX					0 – 8 l/min																					
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## TacoSetter Hyline



223.8410.000									10 – 25 l/min																	
223.8411.000										15 – 40 l/min																
223.8412.000											20 – 60 l/min															
223.8523.000											20 – 55 l/min															
223.8524.000												30 – 80 l/min														

## TacoSetter Tronic

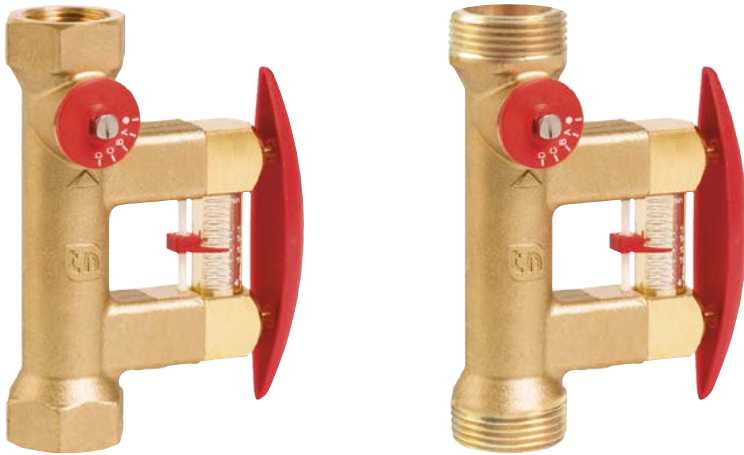


223.7704.000						2 – 40 l/min																				
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# TACOSSETTER BYPASS 100

## BALANCING VALVE



### ADVANTAGES

- Accurate and fast adjustment with scale and without the aid of diagrams, tables or measurement devices
- Direct reading of the set volume flow in l/min
- Variable installation position, maintenance-free
- Flow control with setpoint adjuster
- Regulating valve with isolating facility (rest leakage possible)
- Minimal pressure loss

Direct regulation, indication and isolation of flows in systems.

### DESCRIPTION

Direct hydraulic balancing and control of flows to consumers or in a subsystem. Balancing valves offer an easy and accurate method of adjusting the flow rates for heating-, ventilation-, air conditioning- and cooling systems.

Correct balancing of hydraulic circuits ensures optimum energy distribution, resulting in more efficient and economical operation in accordance with the energy saving regulations provided for by legislation.

With TacoSetter Bypass balancing valves, any qualified fitter can set the appropriate flow rate using the unique flow measurement device, avoiding investments in training and costly measuring devices.

### INSTALLATION POSITION

The TacoSetter Bypass 100 requires a straight section of pipe of the same length and diameter as the system. The valve can be installed in a horizontal, vertical or inclined position. Care should be taken that the arrow is pointing in the direction of the flow.

### OPERATION

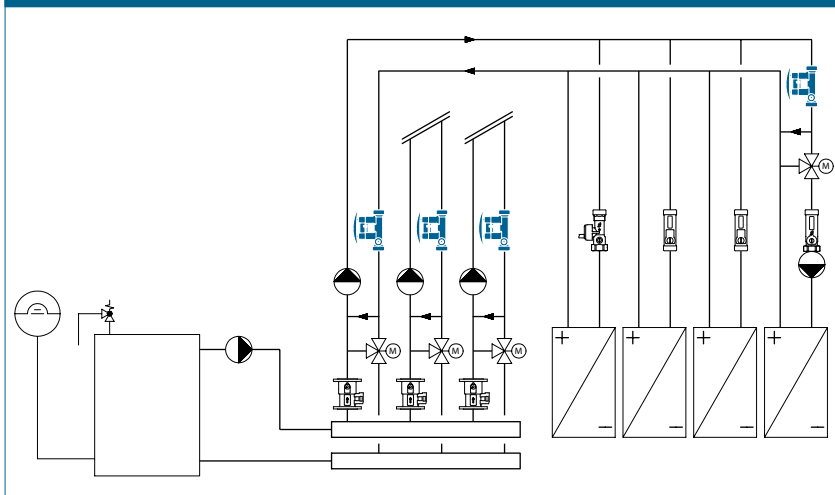
The flow measurement is based on the principle of a baffle float with return spring. The reading position is the bottom line of the baffle float. The measuring device is placed in a bypass to the main flow, isolated from system flow. By demand the bypass, with self locking valves, gets opened / closed by pressing / releasing the clamp. Reading the flow rate has no influence on the main flow rate.

### BUILDING CATEGORIES

For pipe installations in the heating and cooling area:

- Apartment blocks, housing estates, multiple dwelling units
- Residential care facilities, hospitals
- Administration and service buildings
- Hotels and restaurants, industrial kitchens
- School buildings and sports facilities
- Commercial and industrial buildings
- Facilities with partial use, such as barracks, camping sites

### SYSTEM/BASIC DIAGRAM



## SPECIFICATION TEXT

See [www.taconova.com](http://www.taconova.com)

## TECHNICAL DATA

### General

- Operating temperature  $T_{0\max}$ : 100 °C (for applications below 0 °C, contact Taconova)
- Operating pressure  $P_{0\max}$ : 10 bar
- Measuring accuracy: ±10% of the indicated value
- $k_{VS}$  value and measurement range see «Type overview»
- Female thread (cylindrical) to EN 10226-1 or male thread G (cylindrical) to DIN ISO 228

### Material

- Housing: brass
- Inside: stainless steel, brass, plastic
- Sight glass: heat- and impact resistant plastic
- Seals: EPDM

### Fluids

- Heating water (VDI 2035; SWKI BT 102-01; ÖNORM H 5195-1)
- Corrosion and antifreeze additives (glycol) up to 50% designed for heating systems (see document «Glycol correction curves»)

## SERVICE

- Clean only with water, avoid contact with chemicals

## ADDITIONAL MODELS

Setter for solar applications, see data sheets TacoSetter Bypass Solar 130 and TacoSetter Bypass Solar 185. Complete sets with insulation box are available for the TacoSetter Bypass 100 (see our „Range of Products“ catalog and our „Price List“).

## TYPE OVERVIEW

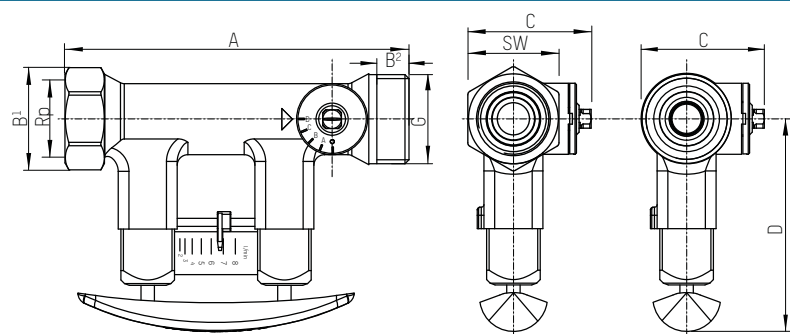
TacoSetter Bypass 100 | Balancing valve with female thread

Order no.	DN	Rp × Rp	Measuring range	$k_{VS}$ (m³/h)
223.2262.000	15	½" × ½"	2 – 8 (l/min)	1,95
223.2361.000	20	¾" × ¾"	2 – 8 (l/min)	1,95
223.2360.000	20	¾" × ¾"	4 – 15 (l/min)	3,3
223.2362.000	20	¾" × ¾"	8 – 30 (l/min)	5,0
223.2460.000	25	1" × 1"	6 – 20 (l/min)	5,1
223.2461.000	25	1" × 1"	10 – 40 (l/min)	8,1
223.2561.000	32	1 ¼" × 1 ¼"	20 – 70 (l/min)	17,0
223.2661.000	40	1 ½" × 1 ½"	30 – 120 (l/min)	30,0
223.2861.000	50	2" × 2"	50 – 200 (l/min)	54,0

TacoSetter Bypass 100 | Balancing valve with male thread

Order no.	DN	G × G	Measuring range	$k_{VS}$ (m³/h)
223.2272.000	20	1" × 1"	2 – 8 (l/min)	2,2
223.2370.000	20	1" × 1"	4 – 15 (l/min)	3,3
223.2372.000	20	1" × 1"	8 – 30 (l/min)	5,0
223.2470.000	25	1 ¼" × 1 ¼"	6 – 20 (l/min)	5,1
223.2471.000	25	1 ¼" × 1 ¼"	10 – 40 (l/min)	8,1
223.2571.000	32	1 ½" × 1 ½"	20 – 70 (l/min)	17,0

## DIMENSIONAL DRAWING



## MEASUREMENT TABLE

TacoSetter Bypass 100 | Balancing valve with female thread

Order no.	DN	A	B¹	C	D	SW	Rp
223.2262.000	15	142	39	46	79	34	½"
223.2361.000	20	129	39	46	79	34	¾"
223.2360.000	20	129	39	46	79	34	¾"
223.2362.000	20	129	39	46	79	34	¾"
223.2460.000	25	152	47	58	82	41	1"
223.2461.000	25	152	47	58	82	41	1"
223.2561.000	32	161	56	65	84	49	1 ¼"
223.2661.000	40	173	64	79	90	59	1 ½"
223.2861.000	50	197	76	91	97	70	2"

TacoSetter Bypass 100 | Balancing valve with male thread

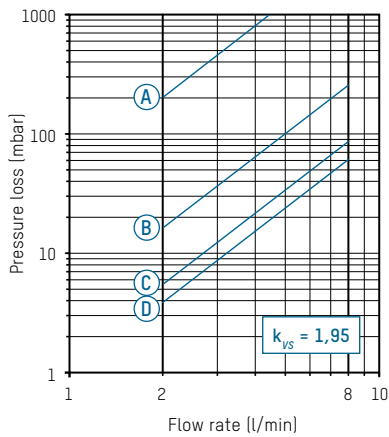
Order no.	DN	A	B²	C	D	G
223.2272.000	20	129	12	46	79	1"
223.2370.000	20	129	12	46	79	1"
223.2372.000	20	129	12	46	79	1"
223.2470.000	25	152	15	58	82	1 ¼"
223.2471.000	25	152	15	58	82	1 ¼"
223.2571.000	32	161	15	65	84	1 ½"

## GLYCOL CORRECTION CURVES

There is a separate diagram for TacoSetter up to DN25 and its flow ranges with nine correction curves for use of anti-frost and anti-corrosion agents. Corrections are not required for larger dimensions as the deviation lies within the measuring tolerance. See [www.taconova.com](http://www.taconova.com)

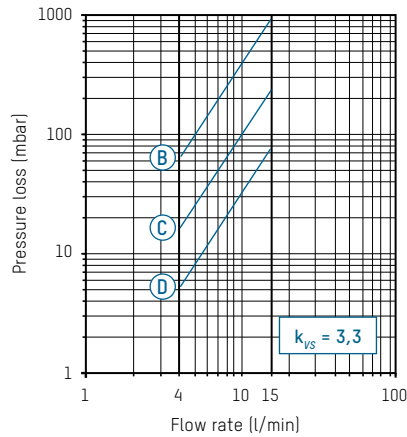
# PRESSURE LOSS DIAGRAMS

223.2262.000 (DN 15 | ½" | 2...8 l/min)  
223.2361.000 (DN 20 | ¾" | 2...8 l/min)  
223.2272.000 (DN 20 | 1" | 2...8 l/min)



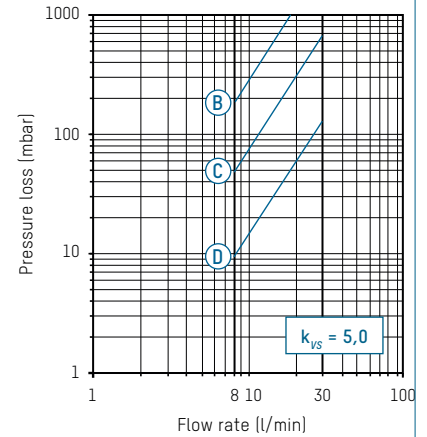
A - D Valve position

223.2360.000 (DN 20 | ¾" | 4...15 l/min)  
223.2370.000 (DN 20 | 1" | 4...15 l/min)



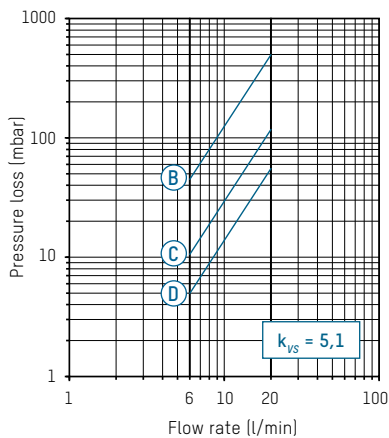
B - D Valve position

223.2362.000 (DN 20 | ¾" | 8...30 l/min)  
223.2372.000 (DN 20 | 1" | 8...30 l/min)



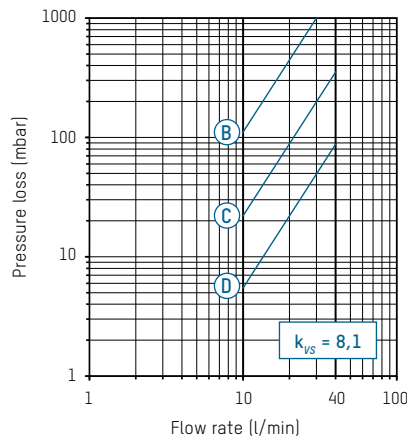
B - D Valve position

223.2460.000 (DN 25 | 1" | 6...20 l/min)  
223.2470.000 (DN 25 | 1¼" | 6...20 l/min)



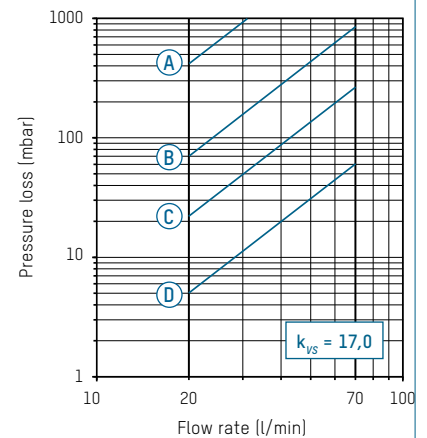
B - D Valve position

223.2461.000 (DN 25 | 1" | 10...40 l/min)  
223.2471.000 (DN 25 | 1¼" | 10...40 l/min)



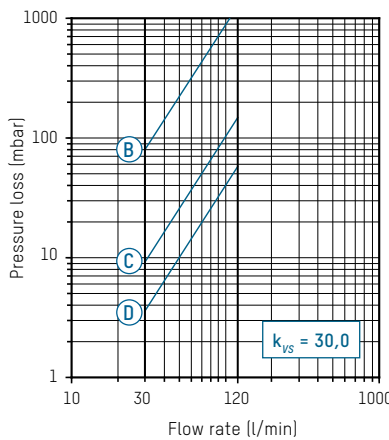
B - D Valve position

223.2561.000 (DN 32 | 1¼" | 20...70 l/min)  
223.2571.000 (DN 32 | 1½" | 20...70 l/min)



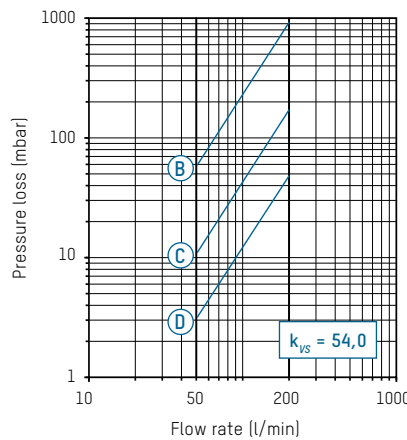
A - D Valve position

223.2661.000 (DN 40 | 1½" | 30...120 l/min)



B - D Valve position

223.2861.000 (DN 50 | 2" | 50...200 l/min)



B - D Valve position

## ACCESSORIES



## INSULATION BOX

EPP, T<sub>0</sub> -30 – 130 °C, in accordance with EnEV guideline

Order no.	Fits to
296.2321.004	DN 15 + DN 20
296.2322.004	DN 25
296.2323.004	DN 32
296.2324.004	DN 40
296.2325.004	DN 50



## SYSTEM SCREW CONNECTION FITS TO TACOSSETTER BYPASS

Screw connection with male thread R (conical) as per DIN 2999

Order no.	G × R	Version for	Fits to
210.6630.000	¾" × ½"	Threaded pipe Rp ¾"	DN 15
210.6631.000	1" × ½"	Threaded pipe Rp ¾"	DN 15
210.6632.000	1" × ¾"	Threaded pipe Rp ¾"	DN 20
210.6633.000	1¼" × 1"	Threaded pipe Rp 1"	DN 25

## SPARE PARTS



## SIGHT GLASS (COMPLETE) AND SEAL

Order no.	Range	Fits to
298.2333.020	2 – 8 (l/min)	223.2262.000 / 223.2272.000
298.2334.020	4 – 15 (l/min)	223.2360.000 / 223.2370.000
298.2335.020	8 – 30 (l/min)	223.2362.000 / 223.2372.000
298.2342.020	6 – 20 (l/min)	223.2460.000 / 223.2470.000
298.2343.020	10 – 40 (l/min)	223.2461.000 / 223.2471.000
298.2352.020	20 – 70 (l/min)	223.2561.000 / 223.2571.000
298.2362.020	30 – 120 (l/min)	223.2661.000
298.2382.020	50 – 200 (l/min)	223.2861.000



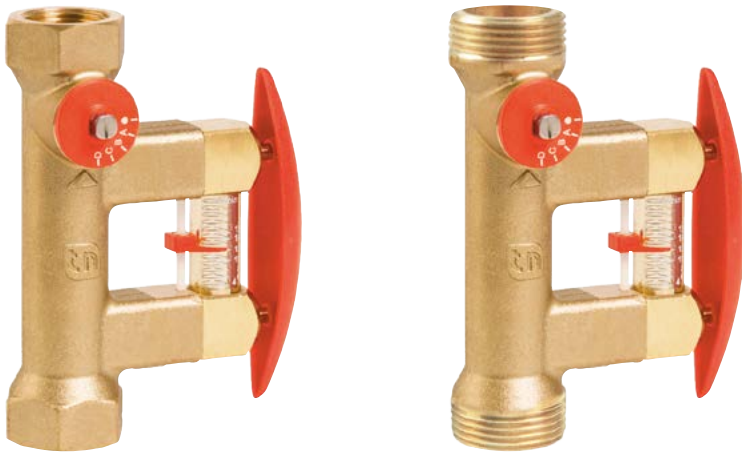
## SEALING CAP SET FOR TACOSSETTER BYPASS 130/185

Order no.	Fits to
296.2340.003	all versions

Included with delivery for Solar 185 model

# TACOSSETTER BYPASS SOLAR 130

## BALANCING VALVE



### ADVANTAGES

- Accurate and fast adjustment with scale and without the aid of diagrams, tables or measurement devices
- Direct reading of the set volume flow in l/min
- Temperature-resistant up to 130 °C
- Variable installation position, maintenance-free
- Flow control with setpoint adjuster
- Regulating valve with isolating facility (rest leakage possible)
- Minimal pressure loss

### Direct regulation, indication and isolation of flows in solar systems

#### DESCRIPTION

Direct hydraulic balancing and control of flows to consumers or in a sub-system. TacoSetter Bypass Solar 130 balancing valves offer an easy and accurate method of adjusting the flow rates for heating-, ventilation-, air conditioning- and cooling systems.

Correct balancing of hydraulic circuits ensures optimum energy distribution, resulting in more efficient and economical operation in accordance with the energy saving regulations provided for by legislation.

With TacoSetter Bypass Solar 130 balancing valves, any qualified fitter can set the appropriate flow rate using the unique flow measurement device, avoiding investments in training and costly measuring devices.

#### INSTALLATION POSITION

The TacoSetter Bypass Solar 130 requires a straight section of pipe of the same length and diameter as the system. The valve can be installed in a horizontal, vertical or inclined position.

Care should be taken that the arrow is pointing in the direction of the flow.

#### OPERATION

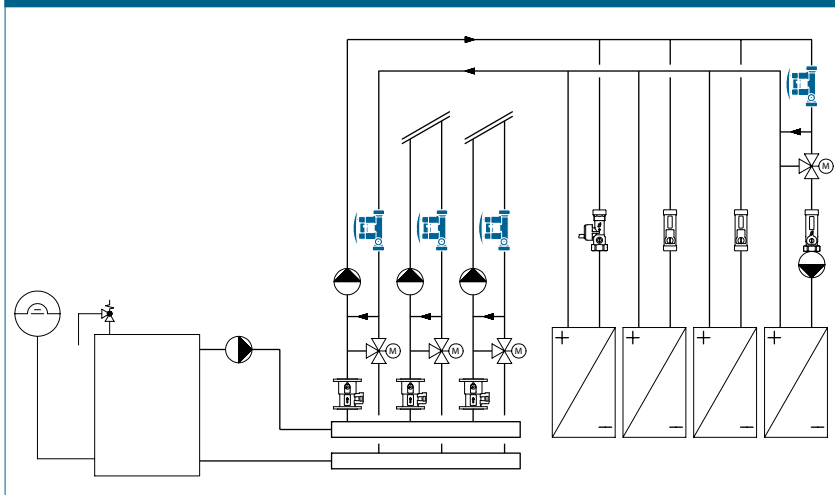
The flow measurement is based on the principle of a baffle float with return spring. The reading position is the bottom line of the baffle float. The measuring device is placed in a bypass to the main flow, isolated from system flow. By demand the bypass, with self locking valves, gets opened / closed by pressing / releasing the clamp. Reading the flow rate has no influence on the main flow rate.

#### BUILDING CATEGORIES

For pipe installations in drinking water, heating and cooling area:

- Apartment blocks, housing estates, multiple dwelling units
- Residential care facilities and hospitals
- Administration and service buildings
- Hotels and restaurants, industrial kitchens
- School buildings and sports facilities
- Commercial and industrial buildings
- Facilities with partial use, such as barracks, camping sites

### SYSTEM/BASIC DIAGRAM



## SPECIFICATION TEXT

See [www.taconova.com](http://www.taconova.com)

## TECHNICAL DATA

### General

- Max. temperature and pressure range:  $T_{0\max}$  and  $P_{0\max}$ : See pressure-temperature curve (for applications below 0 °C, contact Taconova)
- Measuring accuracy:
  - Measuring range <25%:  $\pm 20\%$  of the indicated value
  - Measuring range >25%:  $\pm 10\%$  of the indicated value
- $k_{VS}$  value and measurement range see "Type overview"
- Female thread to EN 10226-1 or male thread G (cylindrical) to DIN ISO 228

### Material

- Housing: brass
- Inside: stainless steel, brass, plastic
- Sight glass: plastic
- Seals: EPDM

### Fluids

- Heating water (VDI 2035; SWKI BT 102-01; ÖNORM H 5195-1)
- Corrosion and antifreeze additives (glycol) up to 50% designed for heating systems (see document «Glycol correction curves»)

## SERVICE

- Clean only with water, avoid contact with chemicals

## ADDITIONAL MODELS

- Balancing valves for other applications, see data sheets TacoSetter Bypass 100 and TacoSetter Bypass Solar 185.

## TYPE OVERVIEW

TacoSetter Bypass Solar 130 | Balancing valve with female thread

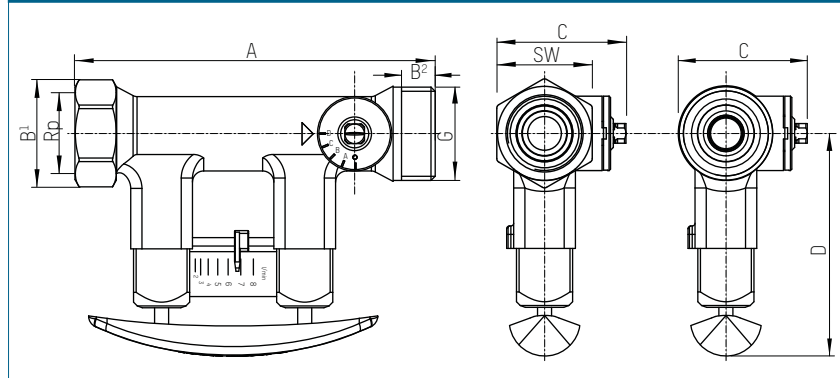
Order no.	DN	Rp × Rp	Measuring range	$k_{VS}$ (m³/h)
223.2380.000	20	$\frac{3}{4}" \times \frac{3}{4}"$	2 – 12 (l/min)	2,2
223.2381.000	20	$\frac{3}{4}" \times \frac{3}{4}"$	8 – 20 (l/min)	5,0
223.2482.000	25	1" × 1"	10 – 40 (l/min)	8,1

TacoSetter Bypass Solar 130 | Balancing valve with male thread

Order no.	DN	G × G	Measuring range	$k_{VS}$ (m³/h)
223.2380.350 *	20	1" × 1"	2 – 12 (l/min)	2,2
223.2381.350 *	20	1" × 1"	8 – 20 (l/min)	5,0
223.2482.350 *	25	1 $\frac{1}{4}" \times 1 \frac{1}{4}"$	10 – 40 (l/min)	8,1

\* Available on request

## DIMENSIONAL DRAWING



## MEASUREMENT TABLE

TacoSetter Bypass Solar 130 | Balancing valve with female thread

Order no.	DN	A	B¹	C	D	SW	Rp
223.2380.000	20	129	39	46	79	34	$\frac{3}{4}"$
223.2381.000	20	129	39	46	79	34	$\frac{3}{4}"$
223.2482.000	25	152	47	58	82	41	1"

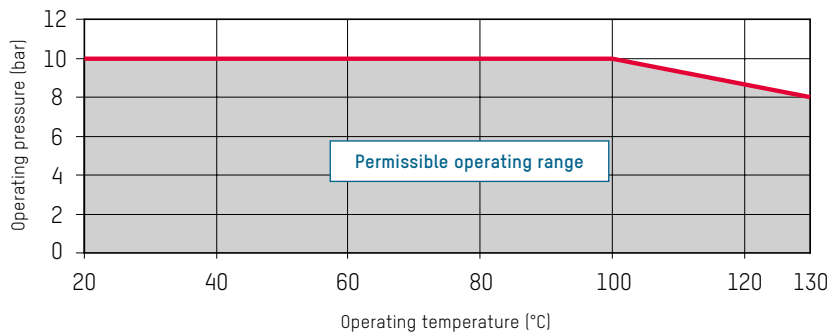
TacoSetter Bypass Solar 130 | Balancing valve with male thread

Order no.	DN	A	B²	C	D	G
223.2380.350	20	129	12	46	79	1"
223.2381.350	20	129	12	46	79	1"
223.2482.350	25	152	15	58	82	1 $\frac{1}{4}"$

## GLYCOL CORRECTION CURVES

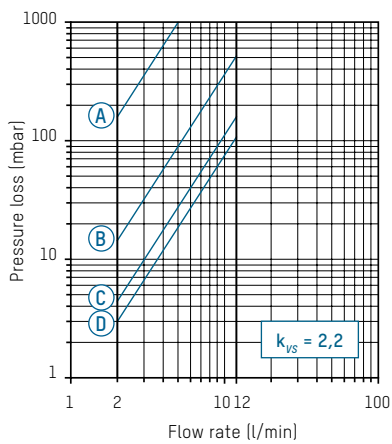
There is a separate diagram for TacoSetter up to DN25 and its flow ranges with nine correction curves for use of anti-frost and anti-corrosion agents. Corrections are not required for larger dimensions as the deviation lies within the measuring tolerance. See [www.taconova.com](http://www.taconova.com)

# PRESSURE – TEMPERATURE CURVE



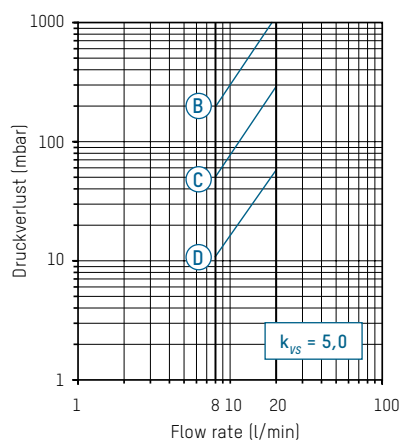
# PRESSURE LOSS DIAGRAMS

223.2380.000 (DN 20 | ¾" | 2...12 l/min)  
223.2380.350 (DN 20 | 1" | 2...12 l/min)



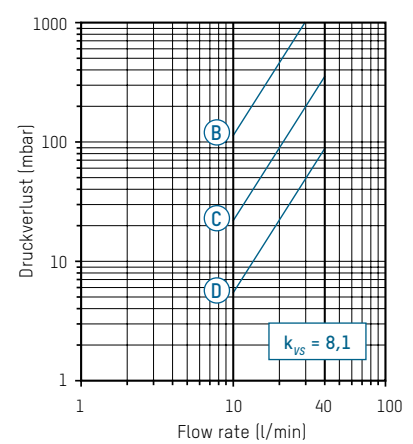
A – D Valve position

223.2381.000 (DN 20 | ¾" | 8...20 l/min)  
223.2381.350 (DN 20 | 1" | 8...20 l/min)



B – D Valve position

223.2482.000 (DN 25 | 1" | 10...40 l/min)  
223.2482.000 (DN 25 | 1¼" | 10...40 l/min)



B – D Valve position

### ACCESSORIES



### INSULATION BOX

EPP, T<sub>0</sub> -30 – 130 °C, in accordance with EnEV guideline

Order no.	Fits
296.2321.004	DN 20
296.2322.004	DN 25



### SYSTEM SCREW CONNECTION FITS TO TACOSSETTER BYPASS SOLAR 130

Screw connection with male thread R (conical) as per DIN 2999

Order no.	G x R	Version for	Fits to
210.6630.000	¾" x ½"	Inner thread Rp ½"	DN 15
210.6631.000	1" x ½"	Inner thread Rp ½"	DN 15
210.6632.000	1" x ¾"	Inner thread Rp ¾"	DN 20
210.6633.000	1¼" x 1"	Inner thread Rp 1"	DN 25

### SPARE PARTS



### SIGHT GLASS (COMPLETE) AND SEALS

Order no.	Range	Fits to
298.2336.020	2 – 12 (l/min)	223.2380.000 / 223.2380.350
298.2337.020	8 – 20 (l/min)	223.2381.000 / 223.2381.350
298.2344.020	10 – 40 (l/min)	223.2482.000 / 223.2482.350



### SEALING CAP SET FOR TACOSSETTER BYPASS 130/185

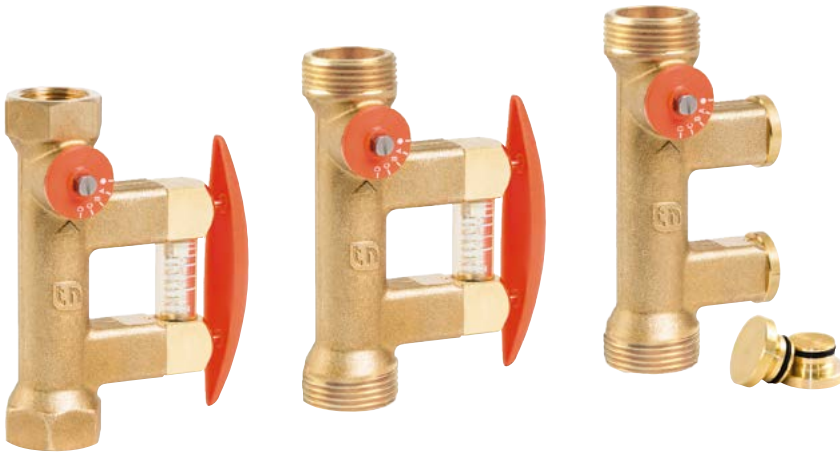
Order no.	Fits to
296.2340.003	all versions

Included with delivery for Solar 185 model



# TACOSSETTER BYPASS SOLAR 185

## BALANCING VALVE



Direct regulation, indication and isolation of flows in solar systems.

### DESCRIPTION

Direct hydraulic balancing and control of flows to consumers or in a subsystem. Balancing valves offer an easy and accurate method of adjusting the flow rates for heating-, ventilation-, air conditioning - and solar systems.

The Version TacoSetter Bypass Solar 185 is designed for higher operating temperatures.

Correct balancing of hydraulic circuits ensures optimum energy distribution, resulting in more efficient and economical operation in accordance with the energy saving regulations provided for by legislation.

With TacoSetter Bypass Solar 185 balancing valves, any qualified fitter can set the appropriate flow rate using the unique flow measurement device, avoiding investments in training and costly measuring devices.

### INSTALLATION POSITION

The TacoSetter Bypass Solar 185 requires a straight section of pipe of the same length and diameter as the system. The valve can be installed in a horizontal, vertical or inclined position. Care should be taken that the arrow is pointing in the direction of the flow.

### ADVANTAGES

- Accurate and fast adjustment with scale and without the aid of diagrams, tables or measurement devices
- Direct reading of the set volume flow in l/min
- Temperature-resistant up to 185 °C
- Variable installation position, maintenance-free
- Flow control with setpoint adjuster
- Regulating valve with isolating facility (rest leakage possible)
- Minimal pressure loss

In the case of the high-temperature type, the bypass unit is replaced by the sealing cap set after adjustment.

### OPERATION

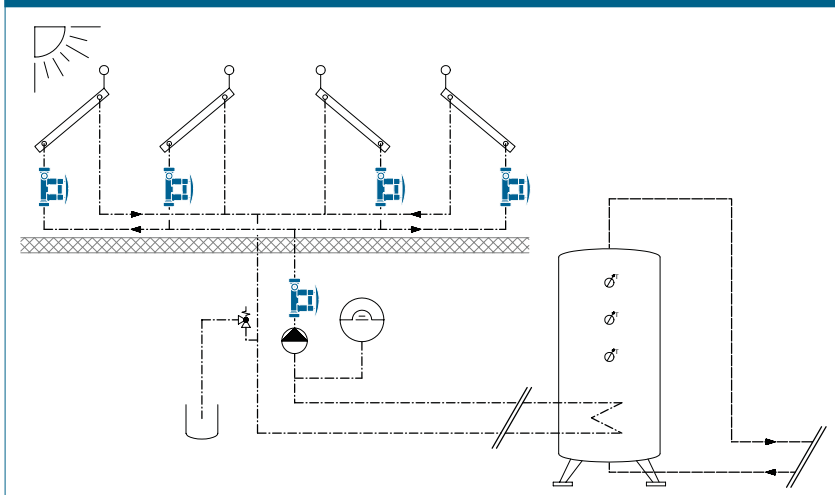
The flow measurement is based on the principle of a baffle float with return spring. The reading position is the bottom line of the baffle float. The measuring device is placed in a bypass to the main flow, isolated from system flow. By demand the bypass, with self locking valves, gets opened / closed by pressing / releasing the clamp. Reading the flow rate has no influence on the main flow rate.

### BUILDING CATEGORIES

For pipe installations in heating and cooling area:

- Apartment blocks, housing estates, multiple dwelling units
- Residential care facilities and hospitals
- Administration and service buildings
- Hotels and restaurants, industrial kitchens
- School buildings and sports facilities
- Commercial and industrial buildings
- Facilities with partial use, such as barracks, camping sites

### SYSTEM/BASIC DIAGRAM



## SPECIFICATION TEXT

See [www.taconova.com](http://www.taconova.com)

## TECHNICAL DATA

### General

- Admissible operating parameters  
 $T_{0\max}$  und  $P_{0\max}$ : see pressure temperature curve (for applications below 0 °C, contact Taconova)
- Measuring accuracy:
  - Measurement range <25%:  
 $\pm 20\%$  of the indicated value
  - Measurement range >25%:  
 $\pm 10\%$  of the indicated value
- $k_{VS}$  value and measurement range: see "Type Program"
- Female thread to EN 10226-1 or male thread G (cylindrical) to DIN ISO 228

### Material

- Housing: brass
- Inside: stainless steel, brass, plastic
- Sight glass: heat- and impact-resistant plastic
- Sealing: EPDM

### Fluids

- Heating water (VDI 2035; SWKI BT 102-01; ÖNORM H 5195-1)
- Corrosion and antifreeze additives (glycol) up to 50% designed for heating systems (see document «Glycol correction curves»)

## SERVICE

- Clean only with water, avoid contact with chemicals

## ADDITIONAL MODELS

Balancing valves for solar applications, see TacoSetter Bypass 100 and TacoSetter Bypass Solar 130 data sheets.

## TYPE OVERVIEW

TacoSetter Bypass Solar 185 | Balancing valve with female thread (incl. sealing cap set)

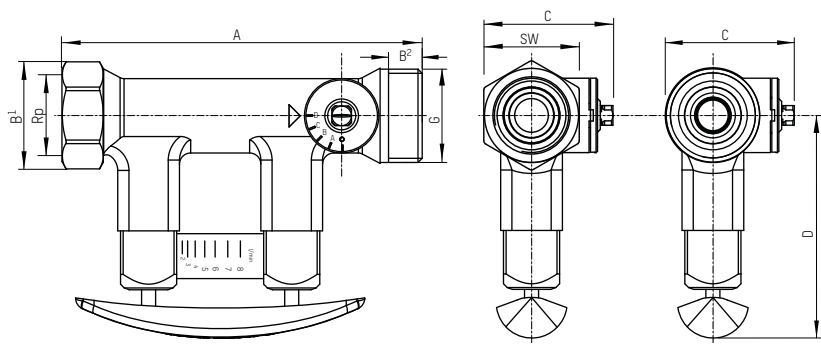
Order no.	DN	Rp × Rp	Measuring range	$k_{VS}$ (m³/h)
223.2382.000	20	¾" × ¾"	2 – 12 (l/min)	2,2
223.2383.000	20	¾" × ¾"	8 – 30 (l/min)	5,0
223.2480.000	25	1" × 1"	10 – 40 (l/min)	8,1
223.2580.000	32	1¼" × 1¼"	20 – 70 (l/min)	17,0

TacoSetter Bypass Solar 185 | Balancing valve with male thread (incl. sealing cap set)

Order no.	DN	G × G	Measuring range	$k_{VS}$ (m³/h)
223.2382.385 *	20	1" × 1"	2 – 12 (l/min)	2,2
223.2383.385 *	20	1" × 1"	8 – 30 (l/min)	5,0

\* Available on request

## DIMENSIONAL DRAWING



## MEASUREMENT TABLE

TacoSetter Bypass Solar 185 | Balancing valve with female thread

Order no.	DN	A	B¹	C	D	SW	Rp
223.2382.000	20	129	39	46	79	34	¾"
223.2383.000	20	129	39	46	79	34	¾"
223.2480.000	25	152	47	58	82	41	1"
223.2580.000	32	161	56	65	84	49	1"

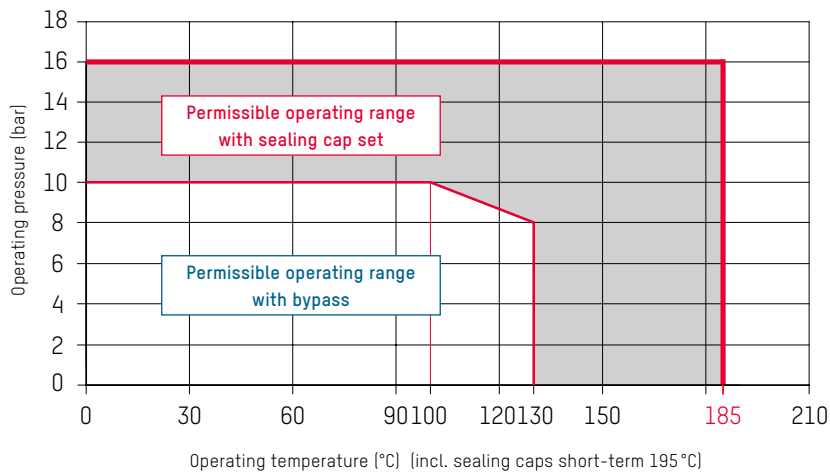
TacoSetter Bypass Solar 185 | Balancing valve with male thread

Order no.	DN	A	B²	C	D	G
223.2382.385 *	20	129	12	46	79	1"
223.2383.385 *	20	129	12	46	79	1"

## GLYCOL CORRECTION CURVES

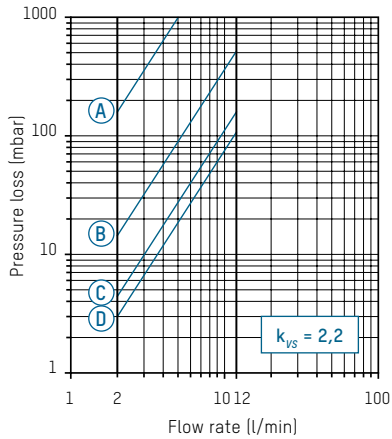
There is a separate diagram for TacoSetter up to DN25 and its flow ranges with nine correction curves for use of anti-frost and anti-corrosion agents. Corrections are not required for larger dimensions as the deviation lies within the measuring tolerance. See [www.taconova.com](http://www.taconova.com)

# PRESSURE - TEMPERATURE-CHARACTERISTIC



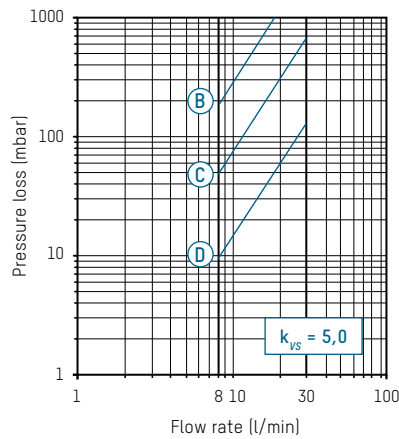
# PRESSURE LOSS DIAGRAMS

223.2382.XXX (DN 20 | 3/4" | 2...12 l/min)



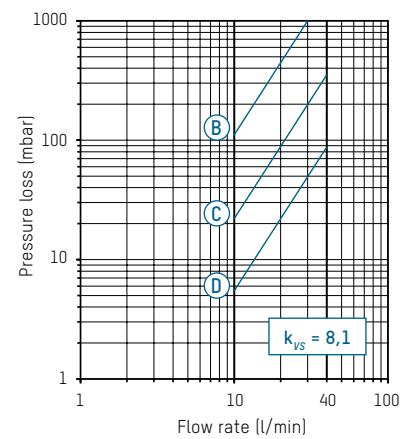
A - D Valve position

223.2383.XXX (DN 20 | 3/4" | 8...30 l/min)



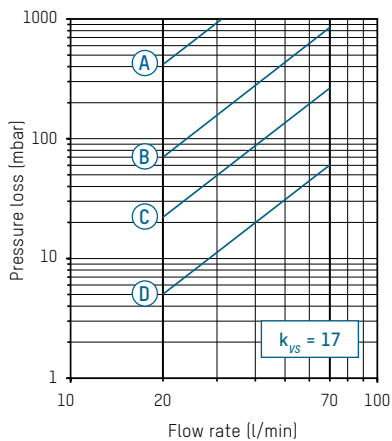
B - D Valve position

223.2480.XXX (DN 25 | 1" | 10...40 l/min)



B - D Valve position

223.2580.000 (DN 32 | 1 1/4" | 20...70 l/min)



A - D Valve position

### ACCESSORIES



### SYSTEM SCREW CONNECTION FITS TO TACOSSETTER BYPASS

Screw connection with male thread R (conical) as per DIN 2999

Order no.	G x R	Version for	Fits to
210.6630.000	3/4" x 1/2"	Threaded pipe Rp 1/2"	DN 15
210.6631.000	1" x 1/2"	Threaded pipe Rp 1/2"	DN 15
210.6632.000	1" x 3/4"	Threaded pipe Rp 3/4"	DN 20
210.6633.000	1 1/4" x 1"	Threaded pipe Rp 1"	DN 25

### SPARE PARTS



### SIGHT GLASS (COMPLETE) AND SEAL

Order no.	Range	Fits to
298.2336.020	2 - 12 [l/min]	223.2380.000 / 223.2380.350
298.2337.020	8 - 20 [l/min]	223.2381.000 / 223.2381.350
298.2338.020	8 - 30 [l/min]	223.2383.000 / 223.2383.385 *
298.2344.020	10 - 40 [l/min]	223.2482.000 / 223.2482.350



### SEALING CAP SET FOR TACOSSETTER BYPASS 130/185

Order no.	Fits to
296.2340.003	all versions

Included with delivery for Solar 185 model

# TACOSSETTER BYPASS FLANGE

## BALANCING VALVE



Direct reading and balancing valve with visual flow indication.

### DESCRIPTION

Direct hydraulic balancing and control of flows to consumers or in a subsystem. TacoSetter Bypass Flange balancing valves offer an easy and accurate method of adjusting the flow rates for heating-, ventilation-, air conditioning- and cooling systems.

Correct balancing of hydraulic circuits ensures optimum energy distribution, resulting in more efficient and economical operation in accordance with the energy saving regulations provided for by legislation.

With TacoSetter Bypass Flange balancing valves, any qualified fitter can set the appropriate flow rate using the unique flow measurement

device, avoiding investments in training and costly measuring devices.

### INSTALLATION

To avoid turbulence and obtain maximum accuracy of the required flow it is necessary to install, on the inlet side of the valve, a section of straight pipe, the same diameter and length as the valve body.

The valve may be installed in any position, care should be taken in order to ensure that both the measuring cylinder and adjustment screw are not obstructed and that the arrow is pointing in the direction of the flow.

### ADVANTAGES

- Accurate and fast adjustment with scale and without the aid of diagrams, tables or measurement devices
- Direct reading of the set volume flow in l/min
- Variable installation position, maintenance-free
- Flow control with setpoint adjuster
- Regulating valve with isolating facility (rest leakage possible)
- Minimal pressure loss

### OPERATION

Measurement of the flow rate through the valve can be set by turning the adjustment screw until the required flow rate is read on the front edge of the float, which is situated within the measuring cylinder.

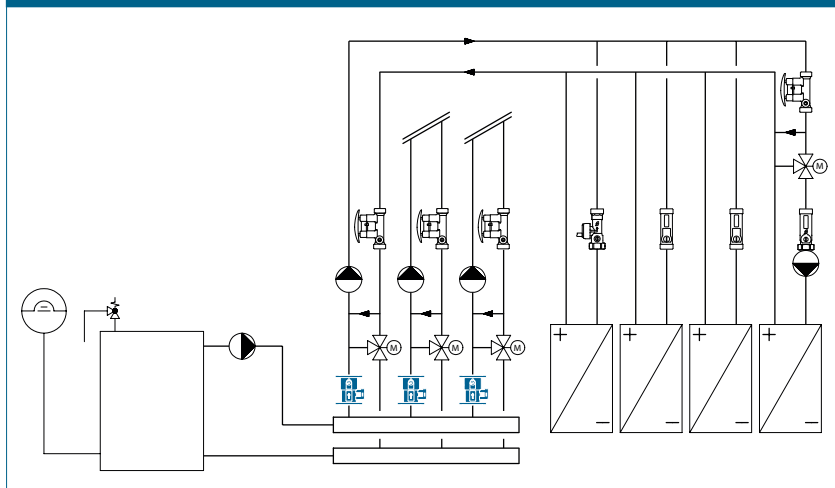
The two check valves must be in the open position but can be closed after commissioning without affecting the set position.

### BUILDING CATEGORIES

For pipe installations in heating water and cooling areas:

- Apartment blocks, housing estates, multiple dwelling units
- Residential care facilities and hospitals
- Administration and service buildings
- School buildings and sports facilities
- Commercial and industrial buildings

### SYSTEM / BASIC DIAGRAM



## SPECIFICATION TEXT

See [www.taconova.com](http://www.taconova.com)

## TECHNICAL DATA

### Generally

- Operating temperature  $T_{0\max}$ : 100 °C (for applications below 0 °C, contact Taconova)
- Operating pressure  $P_{0\max}$ : 10 bar
- Measuring accuracy: ±5% of nominal flow
- $k_{vs}$ -value and measurement range see «Type program»

### Material

- Valve body: grey, cast iron
- Valve housing materials: brass
- Sight glass: heat- and impact resistant plastic
- Seals: EPDM

### Fluids

- Heating water (VDI 2035; SWKI BT 102-01; ÖNORM H 5195-1)
- Corrosion and antifreeze additives (glycol) up to 50% designed for heating systems (see document «Glycol correction curves»)

## SERVICE

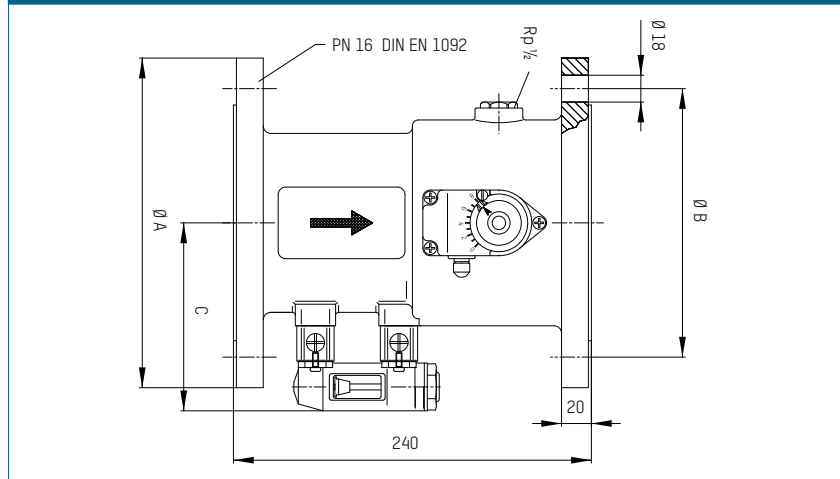
- Clean only with water, avoid contact with chemicals

## TYPE PROGRAM

TacoSetter Bypass Flange | Balancing valve

Order no.	DN	Measuring range	Weight	$k_{vs}$ (m³/h)
223.2151.000	65	60 – 325 (l/min)	13,9 kg	85,0
223.2251.000	80	75 – 450 (l/min)	16,5 kg	166,0
223.2351.000	100	100 – 650 (l/min)	19,7 kg	208,0

## DIMENSIONAL DRAWING



## MEASUREMENT TABLE

TacoSetter Bypass Flange | Balancing valve

Order no.	DN	A	B	C	Ø 18
223.2151.000	65	185	145	110	4 holes
223.2251.000	80	200	160	118	8 holes
223.2351.000	100	220	180	128	8 holes

## SPARE PARTS

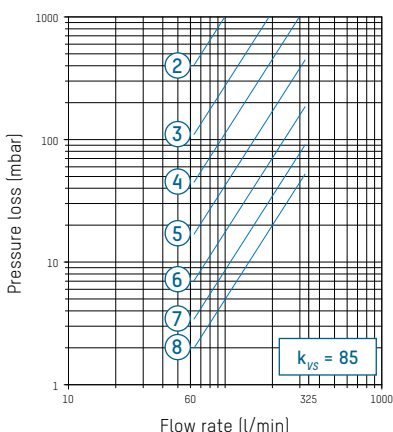


## SIGHT GLASS (COMPLETE) AND SEAL

Order no.	Range	Fits to
298.2321.000	60 – 325 (l/min)	223.2151.000
298.2322.000	75 – 450 (l/min)	223.2251.000
298.2323.000	100 – 650 (l/min)	223.2351.000

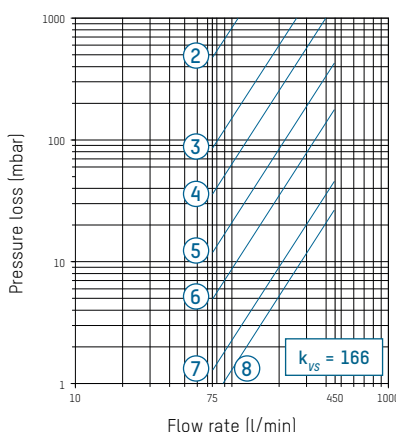
## PRESSURE LOSS DIAGRAM

223.2151.000 (DN 65 | 60...325 l/min)



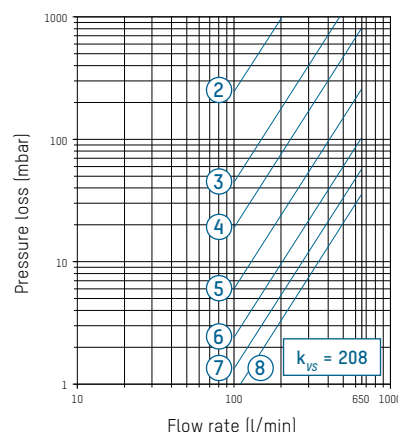
2 – 8 Valve position

223.2251.000 (DN 80 | 75...450 l/min)



2 – 8 Valve position

223.2351.000 (DN 100 | 100...650 l/min)



2 – 8 Valve position

# TACOSSETTER INLINE 100

## BALANCING VALVE



### ADVANTAGES

- Accurate and fast adjustment with scale and without the aid of diagrams, tables or measurement devices
- Direct reading of the set volume flow in l/min
- Variable installation position, maintenance-free
- Regulating valve with isolating facility (rest leakage possible)
- Additional types are also available as make resistant to dezincification

### Direct regulation, reading and shut-off of flows in systems

#### DESCRIPTION

Direct hydraulic balancing and control of flows to consumers or in a sub-system.

Balancing valves offer a quick, easy and accurate method of adjusting the flow rates through heating, ventilation, air conditioning and cooling systems.

Correct balancing of hydraulic circuits ensures optimum energy distribution, resulting in more efficient and economical operation in accordance with the energy saving regulations provided for by legislation.

With TacoSetter Inline 100 balancing valves, any qualified fitter can set the appropriate flow rate using the unique flow measurement device,

avoiding investments in training and costly measuring devices.

#### INSTALLATION POSITION

The valve can be installed in a horizontal, vertical or inclined position. Care should be taken that the arrow is pointing in the direction of the flow.

#### OPERATION

The flow measurement is based on the principle of a baffle float with return spring. The flowmeter is built into the housing.

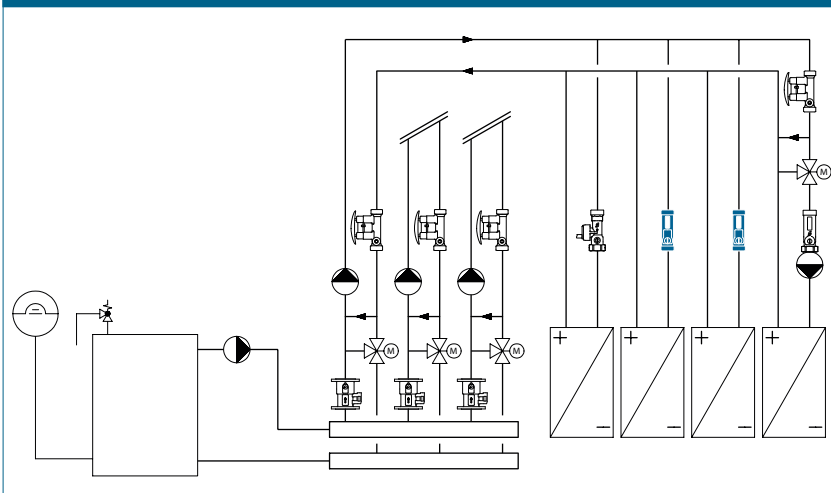
The balancing can be carried out with a screwdriver at the adjusting screw. The reading position is the bottom line of the baffle float.

#### BUILDING CATEGORIES

For pipe installations in drinking water, heating and cooling area:

- Apartment blocks, housing estates, multiple dwelling units
- Residential care facilities and hospitals
- Administration and service buildings
- Hotels and restaurants, industrial kitchens
- School buildings and sports facilities
- Commercial and industrial buildings
- Facilities with partial use, such as barracks, camping sites

### SYSTEM/BASIC DIAGRAM



## SPECIFICATION TEXT

See [www.taconova.com](http://www.taconova.com)

## TECHNICAL DATA

### General

- Operating temperature  $T_{0\max}$ : 100 °C (for applications below 0 °C, contact Taconova)
- Operating pressure  $P_{0\max}$ : 10 bar
- Measuring accuracy: ±10 % of the indicated value
- $k_{VS}$  value and measurement range see «Type overview»
- Connections:
  - $\frac{3}{4}$ " euro cone acc. to EN 16313
  - $\frac{1}{2}$ " female thread acc. to EN 10226-1
  - 1" thread G (flat-sealing) acc. to ISO 228

### Material

- Housing: see «Type overview»
- Sight glass: heat- and impact resistant plastic
- Seals: EPDM

### Fluids

- Heating water (VDI 2035; SWKI BT 102-01; ÖNORM H 5195-1)
- Potable water (DIN 1988-200)
- Corrosion and antifreeze additives (glycol) up to 50% designed for heating systems (see document «Glycol correction curves»)

## SERVICE

- Clean only with water, avoid contact with chemicals

## APPROVALS / CERTIFICATES

- DVGW (Confirmation of hygiene conformity), ACS, PZH

## TYPE OVERVIEW

TacoSetter Inline 100 | Balancing valve made of brass with female thread

Order no.	DN	G × Rp	Measuring range	$k_{VS}$ (m³/h)
223.1202.000	15	$\frac{3}{4}$ " × $\frac{1}{2}$ "	0,3 – 1,5 (l/min)	0,25
223.1203.000	15	$\frac{3}{4}$ " × $\frac{1}{2}$ "	0,6 – 2,4 (l/min)	0,6
223.1204.000	15	$\frac{3}{4}$ " × $\frac{1}{2}$ "	1,0 – 3,5 (l/min)	1,35
223.1208.000	15	$\frac{3}{4}$ " × $\frac{1}{2}$ "	2,0 – 8,0 (l/min)	1,8
223.1209.000	15	$\frac{3}{4}$ " × $\frac{1}{2}$ "	3,0 – 12,0 (l/min)	1,85

TacoSetter Inline 100 | Balancing valve made of brass with male thread

Order no.	DN	G × G	Measuring range	$k_{VS}$ (m³/h)
223.1233.000	15	$\frac{3}{4}$ " × $\frac{3}{4}$ "	0,6 – 2,4 (l/min)	0,6
223.1234.000	15	$\frac{3}{4}$ " × $\frac{3}{4}$ "	1,0 – 3,5 (l/min)	1,35
223.1238.000	15	$\frac{3}{4}$ " × $\frac{3}{4}$ "	2,0 – 8,0 (l/min)	1,8
223.1239.000	15	$\frac{3}{4}$ " × $\frac{3}{4}$ "	3,0 – 12,0 (l/min)	1,85
223.1300.000	20	1" × 1"	4,0 – 15,0 (l/min)	5,0
223.1302.000	20	1" × 1"	8,0 – 30,0 (l/min)	5,0
223.1305.000	20	1" × 1"	10,0 – 40,0 (l/min)	5,0

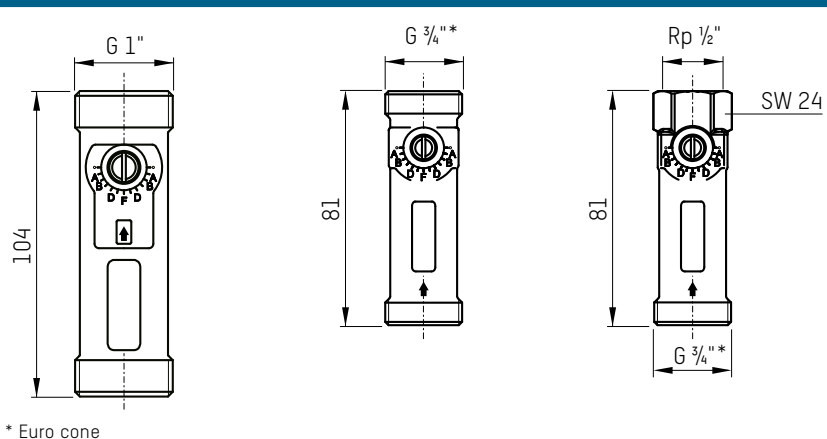
TacoSetter Inline 100 | Balancing valve made of dezincification-resistant (DZR) brass with female thread

Order no.	DN	G × Rp	Measuring range	$k_{VS}$ (m³/h)
223.1204.104	15	$\frac{3}{4}$ " × $\frac{1}{2}$ "	1,0 – 3,5 (l/min)	1,35
223.1208.104	15	$\frac{3}{4}$ " × $\frac{1}{2}$ "	2,0 – 8,0 (l/min)	1,8
223.1209.104	15	$\frac{3}{4}$ " × $\frac{1}{2}$ "	3,0 – 12,0 (l/min)	1,85

TacoSetter Inline 100 | Balancing valve made of dezincification-resistant (DZR) brass with male thread

Order no.	DN	G × G	Measuring range	$k_{VS}$ (m³/h)
223.1232.104	15	$\frac{3}{4}$ " × $\frac{3}{4}$ "	0,3 – 1,5 (l/min)	0,25
223.1233.104	15	$\frac{3}{4}$ " × $\frac{3}{4}$ "	0,6 – 2,4 (l/min)	0,6
223.1234.104	15	$\frac{3}{4}$ " × $\frac{3}{4}$ "	1,0 – 3,5 (l/min)	1,35
223.1238.104	15	$\frac{3}{4}$ " × $\frac{3}{4}$ "	2,0 – 8,0 (l/min)	1,8

## DIMENSIONAL DRAWING



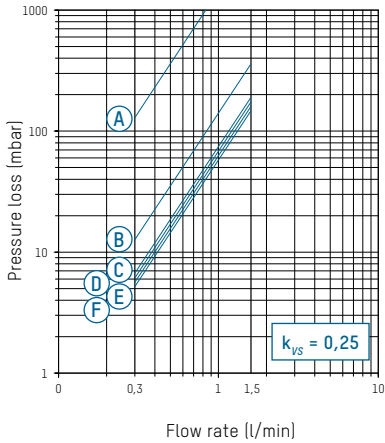
## GLYCOL CORRECTION CURVES

There is a separate diagram for TacoSetter up to DN25 and its flow ranges with nine correction curves for use of anti-frost and anti-corrosion agents. Corrections are not required for larger dimensions as the deviation lies within the measuring tolerance. See [www.taconova.com](http://www.taconova.com)



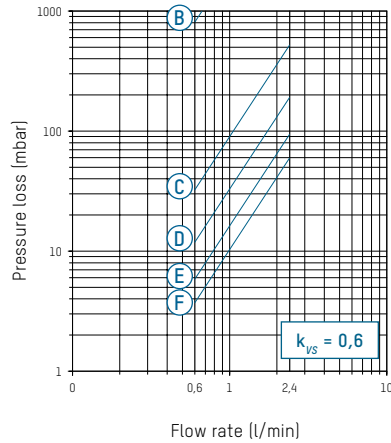
# PRESSURE LOSS DIAGRAMS

223.1202.000 (DN 15 | 0,3...1,5 l/min)  
223.1232.104 (DN 15 | 0,3...1,5 l/min)



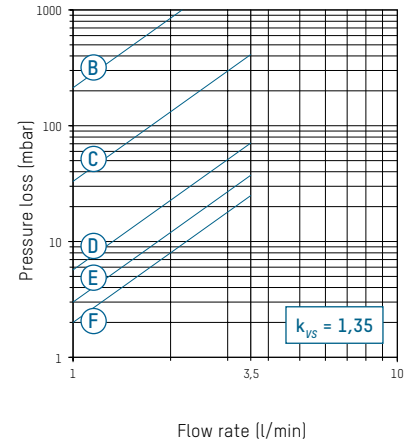
A – F Valve position

223.1203.000 (DN 15 | 0,6...2,4 l/min)  
223.1233.XXX (DN 15 | 0,6...2,4 l/min)



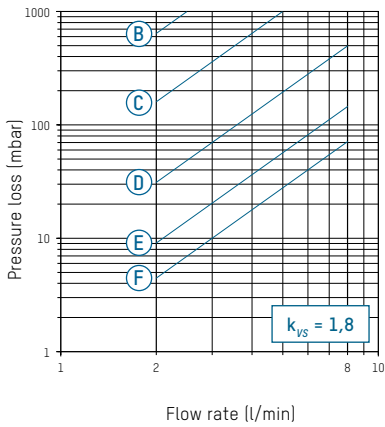
B – F Valve position

223.1204.XXX (DN 15 | 1,0...3,5 l/min)  
223.1234.XXX (DN 15 | 1,0...3,5 l/min)



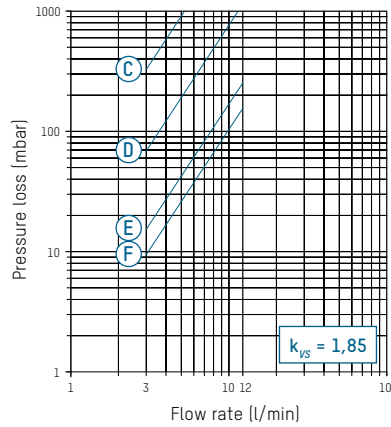
B – D Valve position

223.1208.XXX (DN 15 | 2...8 l/min)  
223.1238.XXX (DN 15 | 2...8 l/min)



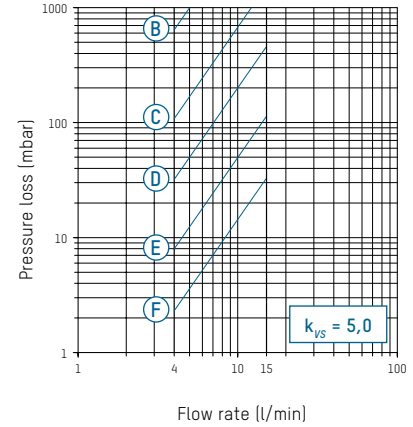
B – F Valve position

223.1209.XXX (DN 15 | 3...12 l/min)  
223.1239.000 (DN 15 | 3...12 l/min)



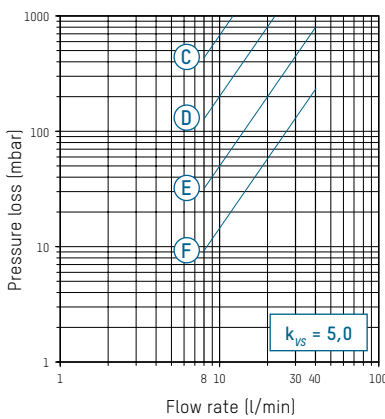
C – F Valve position

223.1300.000 (DN 20 | 4...15 l/min)



C – F Valve position

223.1302.000 (DN 20 | 8...30 l/min)  
223.1305.000 (DN 20 | 10...40 l/min)



C – F Valve position

## ACCESSORIES



## SYSTEM SCREW CONNECTION FITS TO TACOSSETTER INLINE

Comprising a cap nut, clamp ring and support sleeve

Order no.	G × mm	Version for	Fits to
210.3325.000	$\frac{3}{4}" \times 15$	Copper pipe 15/1 Eurocone	DN 15



Screw connections with cap nut and insert

Order no.	G × R	Version for	Fits to
210.6221.000	$\frac{3}{4}" \times \frac{1}{2}"$	$\frac{1}{2}"$ thread, conically sealing, dezincification- resistant	DN 15
210.6631.000	$1" \times \frac{1}{2}"$	$\frac{1}{2}"$ thread, flat-sealing	DN 20
210.6632.000	$1" \times \frac{3}{4}"$	$\frac{3}{4}"$ thread, flat-sealing	DN 20
210.6633.000	$1\frac{1}{4}" \times 1"$	1" thread, flat-sealing	DN 20
210.6222.000	$\frac{3}{4}" \times \frac{1}{2}"$	$\frac{1}{2}"$ thread, self-sealing	DN 15

# TACOSSETTER INLINE 130

## BALANCING VALVE



### ADVANTAGES

- Accurate and fast adjustment with scale and without the aid of diagrams, tables or measurement devices
- Direct reading of the set volume flow in l/min
- Temperature-resistant up to 130 °C
- Variable installation position, maintenance-free
- Regulating valve with isolating facility (rest leakage possible)

Direct regulation, indication and isolation of flows in systems.

### DESCRIPTION

Direct hydraulic balancing and control of flows: TacoSetter Inline 130 balancing valves offer an easy and accurate method of adjusting the flow rates through heating, geothermal, ventilation, air conditioning and cooling systems.

Correct balancing of hydraulic circuits ensures optimum energy distribution, resulting in more efficient and economical operation in accordance with the energy saving regulations provided for by legislation. With TacoSetter Inline 130 balancing valves, any qualified fitter can set the appropriate flow rate on the premises in question, thus avoiding investments in training and costly measuring devices.

### INSTALLATION POSITION

The valve can be installed in a horizontal, vertical or inclined position. Care should be taken to ensure that the arrow is pointing in the direction of the flow.

The 3/4" version with union nut and Euro cone can be connected directly to an underfloor heating circuit. The version with 1" union nut directly to a circulation pump.

### OPERATION

The flow measurement is based on the principle of a baffle float with return spring. The flowmeter is built into the housing.

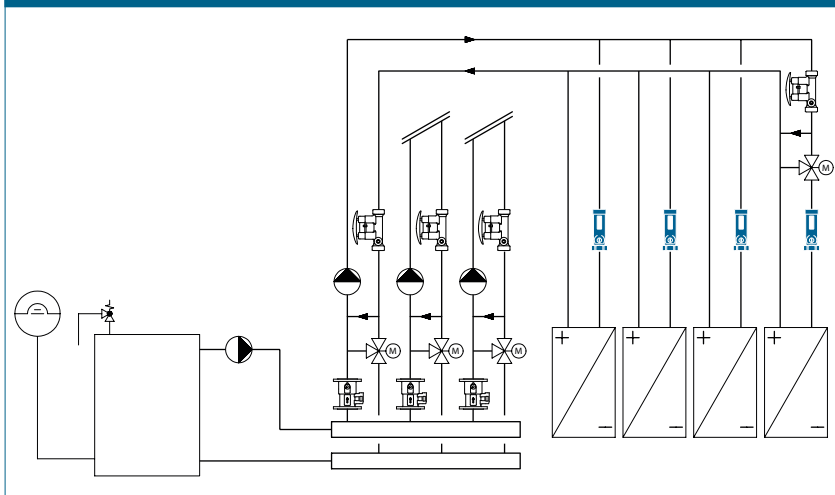
The balancing can be carried out with a screwdriver at the adjusting screw. The reading position is the bottom line of the baffle float.

### BUILDING CATEGORIES

For pipe installations in heating area:

- Apartment blocks, housing estates, multiple dwelling units
- Residential care facilities and hospitals
- Administration and service buildings
- Hotels and restaurants, industrial kitchens
- School buildings and sports facilities
- Commercial and industrial buildings
- Facilities with partial use, such as barracks, camping sites

### SYSTEM/BASIC DIAGRAM



### NOTE

#### Important when using glycol

The system medium must be allowed to flow through the measuring body for at least 2 hours prior to reading the flow rate when performing the initial start-up or refilling the system

## SPECIFICATION TEXT

See [www.taconova.com](http://www.taconova.com)

## TECHNICAL DATA

### General

- Operating temperature  $T_{0\max}$ : 130 °C (for applications below 0 °C, contact Taconova)
- Operating pressure  $P_{0\max}$ : 10 bar
- Measuring accuracy:  $\pm 10\%$  of the indicated value
- $k_{VS}$  value and measurement range see «Type overview»
- Connections:
  - $\frac{3}{4}$ " euro cone acc. to EN 16313
  - 1",  $1\frac{1}{4}$ ",  $1\frac{1}{2}$ " G (flat-sealing) connector acc. to DIN ISO 228

### Material

- Housing: see «Type overview»
- Inside: stainless steel, brass, plastic
- Sight glass: borosilicate
- Seals: EPDM
- Flat-sealing connections

### Fluids

- Heating water (VDI 2035; SWKI BT 102-01; ÖNORM H 5195-1)
- Potable water (DIN 1988-200)
- Corrosion and antifreeze additives (glycol) up to 50% designed for heating systems (see document «Glycol correction curves»)

## SERVICE

- Clean only with water, avoid contact with chemicals

## APPROVALS / CERTIFICATES

- DVGW (Confirmation of hygiene conformity), ACS

## TYPE OVERVIEW

TacoSetter Inline 130 | Balancing valve made of dezincification-resistant (DZR) brass with male thread and euro cone (A)

Order no.	DN	G × G	Measuring range	$k_{VS}$ (m³/h)
223.7234.104	15	$\frac{3}{4}$ " × $\frac{3}{4}$ "	1,0 – 3,5 (l/min)	1,35
223.7238.104	15	$\frac{3}{4}$ " × $\frac{3}{4}$ "	2,0 – 8,0 (l/min)	1,8

TacoSetter Inline 130 | Balancing valve made of brass with lock nut and euro cone (B)

Order no.	DN	G × G	Measuring range	$k_{VS}$ (m³/h)
223.7318.000	20	$\frac{3}{4}$ " × $\frac{3}{4}$ "	1,5 – 7,5 (l/min)	1,6
223.7310.000	20	$\frac{3}{4}$ " × $\frac{3}{4}$ "	4,0 – 15,0 (l/min)	5,95
223.7312.000	20	$\frac{3}{4}$ " × $\frac{3}{4}$ "	10,0 – 30,0 (l/min)	6,6

TacoSetter Inline 130 | Balancing valve made of brass with cutting ring connection Ø 22 (C) (Also suitable for flat-sealing connection)

Order no.	DN	G × G	Measuring range	$k_{VS}$ (m³/h)
223.7370.000	20	1" × 1"	4,0 – 15,0 (l/min)	5,95
223.7378.000	20	1" × 1"	10,0 – 45,0 (l/min)	6,85

TacoSetter Inline 130 | Balancing valve made of brass with male thread (D)

Order no.	DN	G × G	Measuring range	$k_{VS}$ (m³/h)
223.7427.000	25	1" × 1"	20,0 – 90,0 (l/min)	17,0
223.7457.000	25	$1\frac{1}{4}$ " × $1\frac{1}{4}$ "	20,0 – 90,0 (l/min)	17,0
223.7467.000	25	$1\frac{1}{2}$ " × $1\frac{1}{2}$ "	20,0 – 90,0 (l/min)	17,0

TacoSetter Inline 130 | Balancing valve made of brass with lock nut and glycol scale (E)

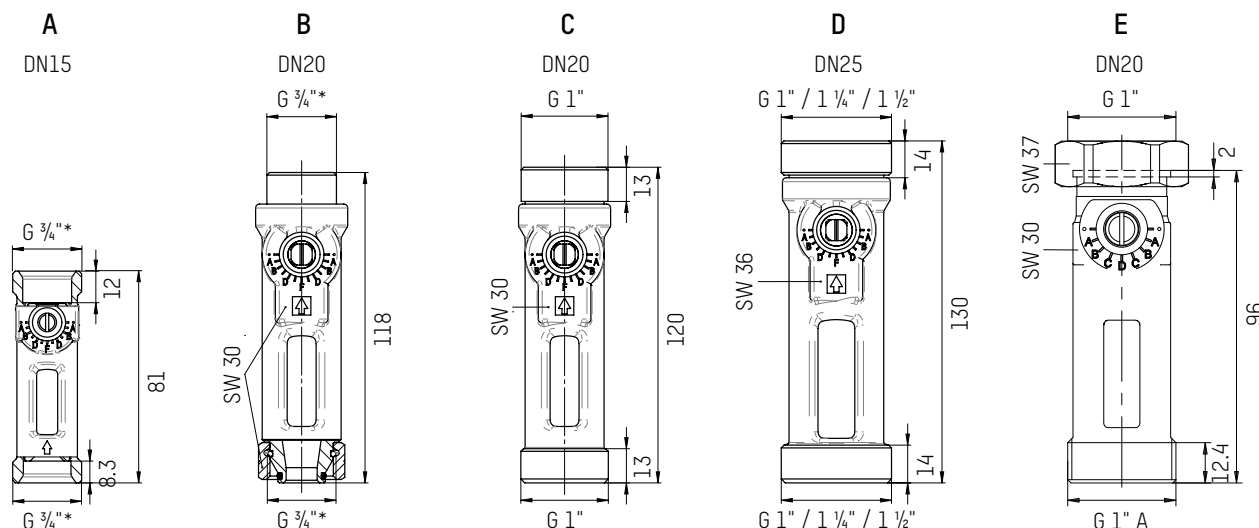
Order no.	DN	G × G	Measuring range *	$k_{VS}$ (m³/h)
223.7556.334	20	1" × 1"	1,5 – 6,0 (l/min)	1,8
223.7566.334	20	1" × 1"	4,0 – 16,0 (l/min)	4,76
223.7576.334	20	1" × 1"	8,0 – 28,0 (l/min)	5,44

\* Reading scale for water-glycol mix with  $v = 2,3 \text{ mm}^2/\text{s}$

TacoSetter Inline 130 | Balancing valve made of brass with lock nut and water scale (E)

Order no.	DN	G × G	Measuring range	$k_{VS}$ (m³/h)
223.7586.000	20	1" × 1"	10,0 – 40,0 (l/min)	5,44

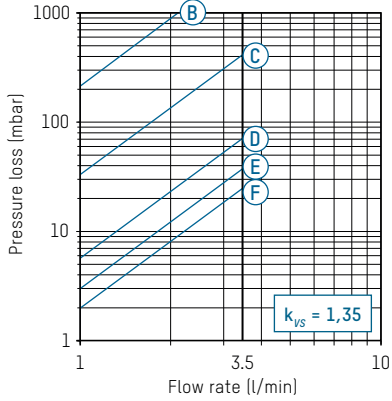
## DIMENSIONAL DRAWING



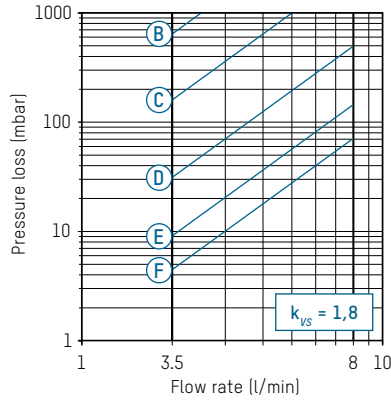
\* Euro cone

# PRESSURE LOSS DIAGRAMS

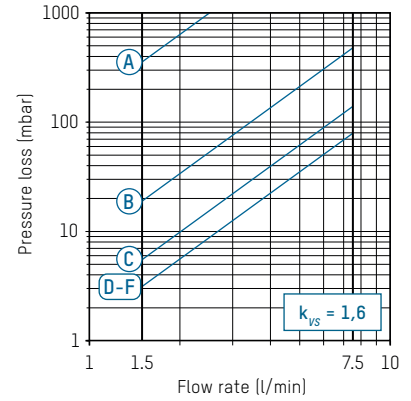
223.7234.104 (DN 15 | 3/4" | 1.0...3.5 l/min)



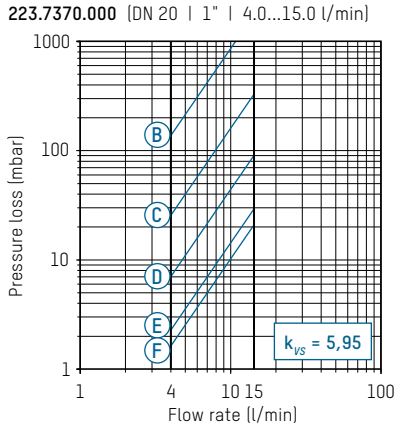
223.7238.104 (DN 15 | 3/4" | 2...8 l/min)



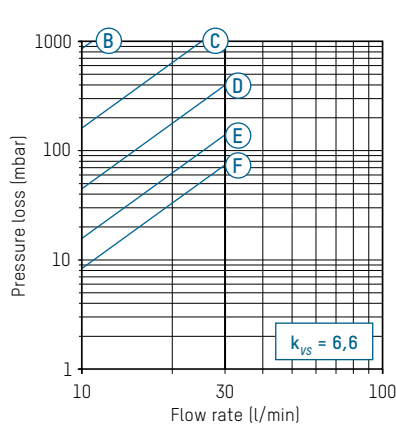
223.7318.000 (DN 20 | 3/4" | 1.5...7.5 l/min)



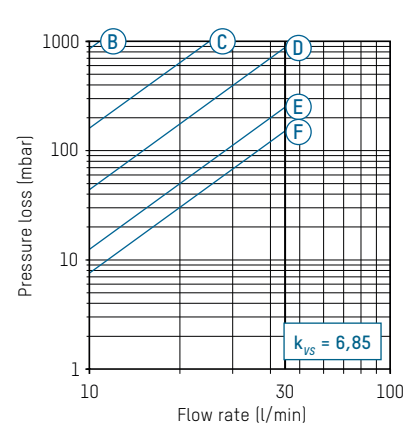
223.7310.000 (DN 20 | 3/4" | 4.0...15.0 l/min)



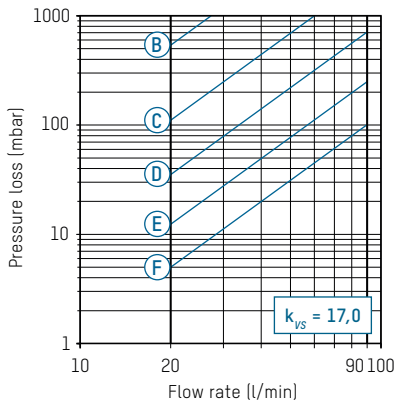
223.7312.000 (DN 20 | 3/4" | 10...30 l/min)



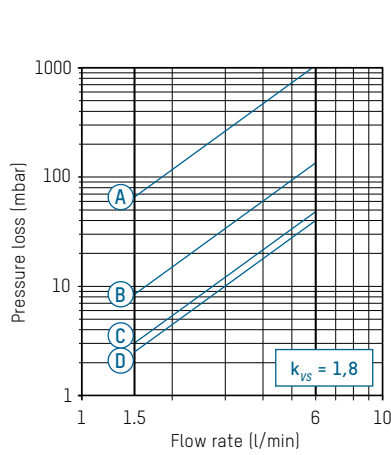
223.7378.000 (DN 20 | 1" | 10...45 l/min)



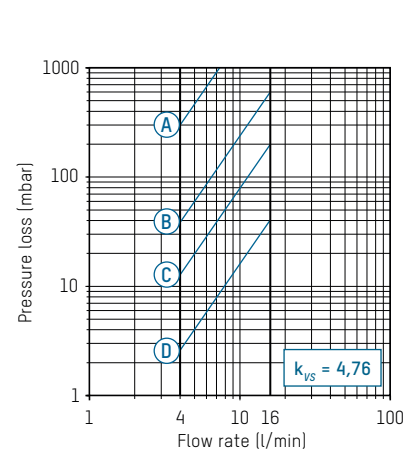
223.7427.000 (DN 25 | 1" | 20.0...90.0 l/min )  
223.7457.000 (DN 25 | 1 1/4" | 20.0...90.0 l/min )  
223.7467.000 (DN 25 | 1 1/2" | 20.0...90.0 l/min )



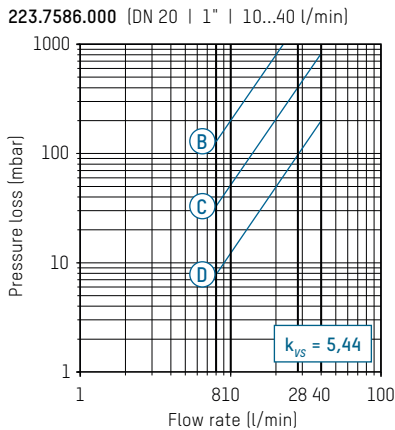
223.7556.334 (DN 20 | 1" | 1.5...6 l/min)



223.7566.334 (DN 20 | 1" | 4...16 l/min)



223.7576.334 (DN 20 | 1" | 8...28 l/min)



(A) - (F) Valve position

## ACCESSORIES



## CONNECTORS / ACCESSORIES

Order no.	Description
296.2334.000	Solar seal suitable 1" (glycol-resistant)

### SYSTEM SCREW CONNECTION FITS TO TACOSSETTER INLINE

Comprising a cap nut, clamp ring and support sleeve

Order no.	G × mm	Version for	Fits to
210.3325.000	¾" × 15	Copper pipe 15/1 Eurocone	DN 15

Screw connections with cap nut and insert

Order no.	G × R	Version for	Fits to
210.6221.000	¾" × ½"	½" thread, conically sealing, dezincification-resistant	DN 15
210.6631.000	1" × ½"	½" thread, flat-sealing	DN 20
210.6632.000	1" × ¾"	¾" thread, flat-sealing	DN 20
210.6632.121	1" × ¾"	¾" thread, flat-sealing (glycol-resistant seal)	DN 20
210.6633.000	1¼" × 1"	1" thread, flat-sealing	DN 20
210.3435.003	1" × d22	Cutting ring d22	DN 20
210.3434.003	1" × d18	Cutting ring d18	DN 20
210.6222.000	¾" × ½"	½" thread, self-sealing	DN 15

# TACOSSETTER RONDO

## BALANCING VALVE



Direct regulation and indication of flows to consumers.

### DESCRIPTION

Direct hydraulic balancing and control of flows to consumers. Balancing valves offer a quick, easy and accurate method of adjusting the flow rates through heating, ventilating and air conditioning systems. Correct balancing of hydraulic circuits allows for lower flow temperatures, resulting in more efficient and economical operation in accordance with the energy saving regulations provided for by legislation. With TacoSetter Rondo balancing valves, any qualified fitter can set the appropriate water distribution, thus avoiding investments in training and costly measuring devices.

### INSTALLATION POSITION

The balancing valve requires a straight section of pipe of the same length and diameter TacoSetter Rondo. The valve can be installed in a horizontal, vertical or inclined position. Care should be taken in order to ensure that the arrow is pointing in the direction of the flow.

### OPERATION

The flow measurement is based on the displacement principle of a baffle disk, which is inserted in a measuring tube. The movement of the baffle disc is transformed to the sight glass by a mechanical device. The scale printed on the sight glass allows the flow rate to be read with ease.

### ADVANTAGES

- Accurate and quick balancing without diagrams, tables or measuring devices
- The flow rate is displayed directly in l/min
- Variable installation position, maintenance-free, compact
- Regulating valve with isolating facility (rest leakage possible)
- Self-sealing screw connector
- Valve adjustment tool integrated in protective cover

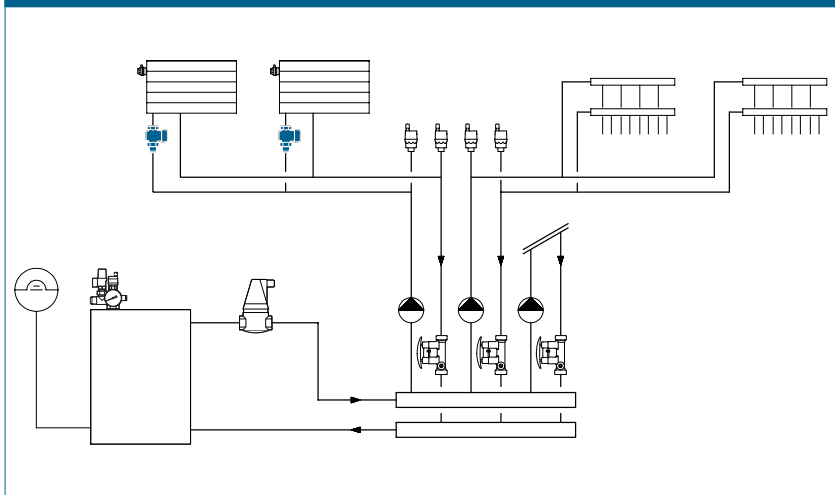
Turning the sight glass changes the opening profile of the valve and allows the desired flow rate to be set.

### BUILDING CATEGORIES

For pipe installations in heating and cooling area:

- Apartment blocks, housing estates, multiple dwelling units
- Residential care facilities and hospitals
- Administration and service buildings
- Hotels and restaurants, industrial kitchens
- School buildings and sports facilities
- Commercial and industrial buildings
- Facilities with partial use, such as barracks, camping sites

### SYSTEM/BASIC DIAGRAM



## SPECIFICATION TEXT

See [www.taconova.com](http://www.taconova.com)

## TECHNICAL DATA

### General

- Admissible operating parameters  
 $T_{0\max}$  und  $P_{0\max}$ : see pressure temperature curve (for applications below 0 °C, contact Taconova)
- Measuring accuracy:
  - <2 l/min: = ±20% of the indicated value
  - >2 l/min: = ±10% of the indicated value
- ¾" euro cone acc. to EN 16313, female thread to EN 10226-1 or male thread G (cylindrical) to DIN ISO 228

### Material

- Housing: brass
- Inside: plastic
- Sight glass: heat- and impact-resistant plastic
- Sealing: EPDM

### Fluids

- Heating water (VDI 2035; SWKI BT 102-01; ÖNORM H 5195-1)
- Corrosion and antifreeze additives (glycol) up to 50% designed for heating systems (see document «Glycol correction curves»)

## SERVICE

- Clean only with water, avoid contact with chemicals

## TYPE OVERVIEW

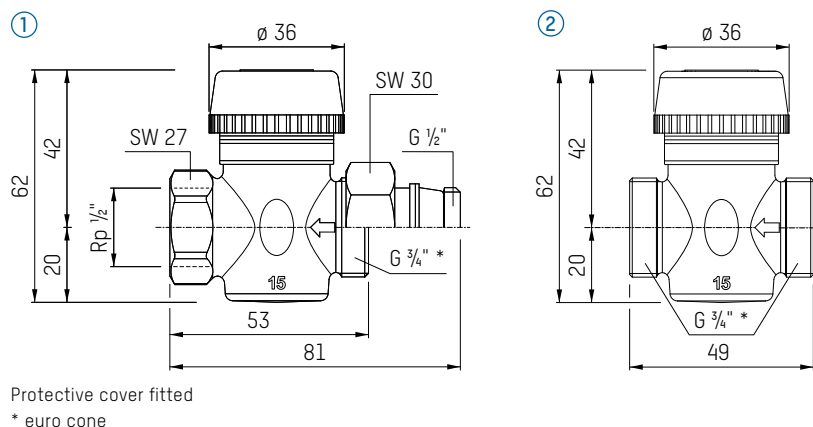
TacoSetter Rondo | Balancing valve with screw connector

Order no.	DN	Thread	Measuring range	$k_{VS}$ (m³/h)
223.3206.000 ①	15	Rp ½" × G ½"	0 – 8 (l/min)	1,0

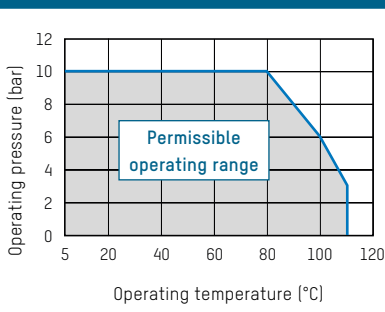
TacoSetter Rondo | Balancing valve without screw connector

Order no.	DN	Thread	Measuring range	$k_{VS}$ (m³/h)
223.3206.325 ①	15	Rp ½" × G ¾"	0 – 8 (l/min)	1,0
223.3206.341 ②	15	G ¾" × G ¾"	0 – 8 (l/min)	1,0

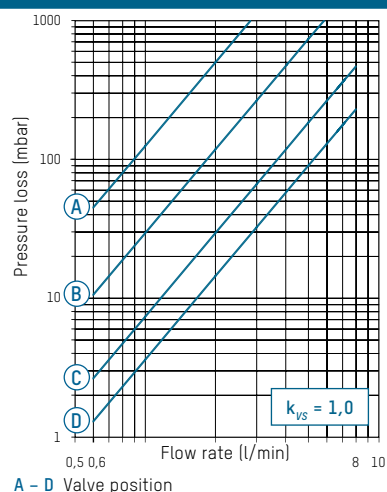
## DIMENSIONAL DRAWING



## PRESSURE - TEMPERATURE CURVE



## PRESSURE LOSS DIAGRAM



## ACCESSORIES



## SCREW CONNECTIONS FEMALE THREAD RP

Comprises a cap nut and insert

Order no.	DN	Thread	Version for
210.6221.000	15	G ¾" × R ½"	½" thread, conically sealing
210.6222.000	15	G ¾" × R ½"	½" thread, self-sealing



# TACOSSETTER HYLINE

## BALANCING VALVE



### ADVANTAGES

- Valve made from high-quality, glass fiber-reinforced plastic, ideal for plastic systems
- Can be used for various media
- Inch standard thread: can be connected directly to plastic gland, no need for metal conversion adapters
- Fast, precise adjustment with twist grip
- High  $k_{VS}$  values
- Fast, simple assembly without tools

Direct adjustment, display and shutoff of flow in systems.

### DESCRIPTION

Hydronic balancing and volume flow measurement: manufactured fully from high-quality plastic, TacoSetter Hyline balancing valves allow the required volume of water in geo-thermal, heating, ventilating and air conditioning systems to be adjusted precisely and conveniently. Correct balancing of hydraulic circuits ensures optimum energy distribution, resulting in more efficient and economical operation in accordance with the energy saving regulations provided for by legislation. The valves are quick and easy to fit and require no additional tools.

With TacoSetter Hyline balancing valves, specialists on site can adjust the required flow rate in l/min quickly and precisely using a scale, without the aid of diagrams, tables or expensive measurement devices.

### INSTALLATION POSITION

The balancing valve requires a straight flow section of the same length and nominal diameter as the valve used. The valve can be installed in a horizontal, tilted or vertical position. Only the arrow indicating the direction of flow of the medium needs to be noted. The valve must be installed free of stress.

### OPERATION

The flow measurement is based on the principle of a baffle float integrated in the housing with return spring.

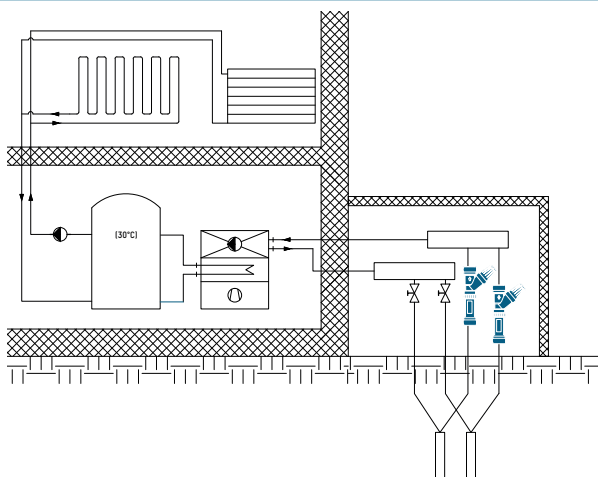
The flow is adjusted manually using the twist grip on the angle seat valve. The reading position is the lower edge of the float element.

### BUILDING CATEGORIES

For pipe installations in geothermal, drinking water and cooling installations:

- Apartment blocks, housing estates, multiple dwelling units
- Residential care facilities and hospitals
- Administration and service buildings
- Hotels and restaurants, industrial kitchens
- School buildings and sports halls / sports facilities
- Commercial and industrial buildings
- Facilities with partial use, such as barracks, camping sites

### SYSTEM/BASIC DIAGRAM



## SPECIFICATION TEXT

See [www.taconova.com](http://www.taconova.com)

## TECHNICAL DATA

### General

- Maximum operating parameters  
 $T_{0\max}$  and  $P_{0\max}$ : See pressure-temperature curve (for applications below 0 °C, contact Taconova)
- Measuring accuracy:  
 $\pm 10\%$  of the indicated value
- $k_{VS}$  value and measurement range according to „Type overview“ table
- External thread G (cylindrical) as per DIN ISO 228
- System test pressure:  
max. 10 bar (20 °C)

### Material

- Housing: plastic, glass fiber-reinforced
- Spring + clamp: stainless steel
- Sight glass: borosilicate
- Seals: EPDM

### Fluids

- Heating water (VDI 2035; SWKI BT 102-01; ÖNORM H 5195-1)
- Corrosion and antifreeze additives (glycol) up to 50% designed for heating systems (see document «Glycol correction curves»)
- Rainwater

## SERVICE

- Clean only with water, avoid contact with chemicals

## NOTE

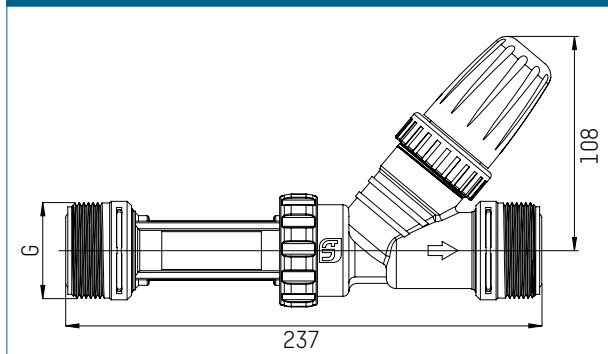
The valve must be installed free of stress.

## TYPE OVERVIEW

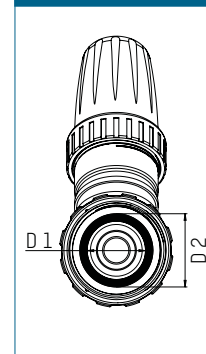
TacoSetter Hyline | Balancing valve with external thread

Order no.	DN	G × G	Measuring range	$k_{VS}$ (m³/h)
223.8410.000	25	1 ½" × 1 ½"	10 – 25 (l/min)	5.9
223.8411.000	25	1 ½" × 1 ½"	15 – 40 (l/min)	9.1
223.8412.000	25	1 ½" × 1 ½"	20 – 60 (l/min)	11.7
223.8521.000	32	2" × 2"	15 – 40 (l/min)	9.1
223.8523.000	32	2" × 2"	20 – 55 (l/min)	11.7
223.8524.000	32	2" × 2"	30 – 80 (l/min)	12.5

## DIMENSIONAL DRAWING



## O-RING

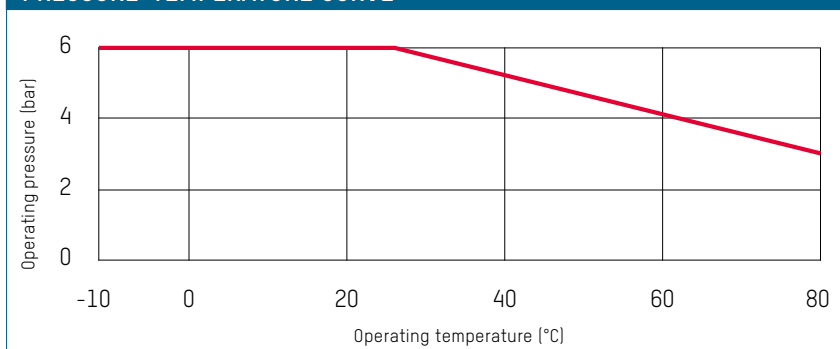


## MEASUREMENT TABLE

TacoSetter Hyline | Balancing valve with external thread

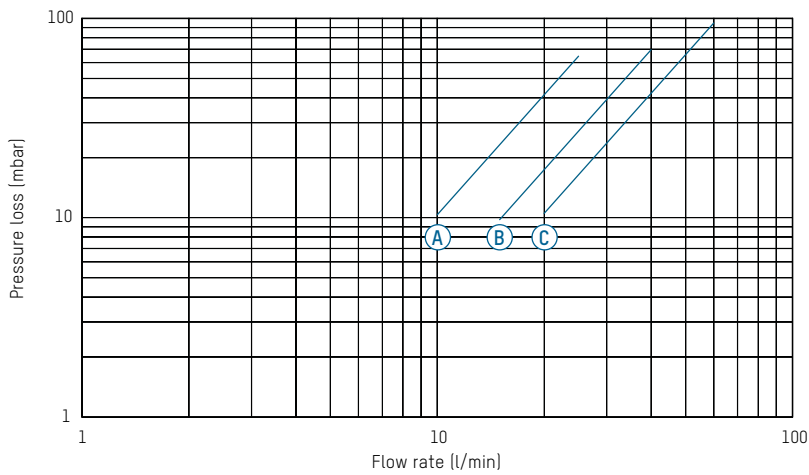
Order no.	DN	G	D1	D2	O-Ring
223.8410.000	25	1 ½"	29.7	36.4	29.82 × 2.62
223.8411.000	25	1 ½"	29.7	36.4	29.82 × 2.62
223.8412.000	25	1 ½"	29.7	36.4	29.82 × 2.62
223.8521.000	32	2"	36.0	42.7	36.10 × 3.53
223.8523.000	32	2"	36.0	42.7	36.10 × 3.53
223.8524.000	32	2"	36.0	42.7	36.10 × 3.53

## PRESSURE-TEMPERATURE CURVE

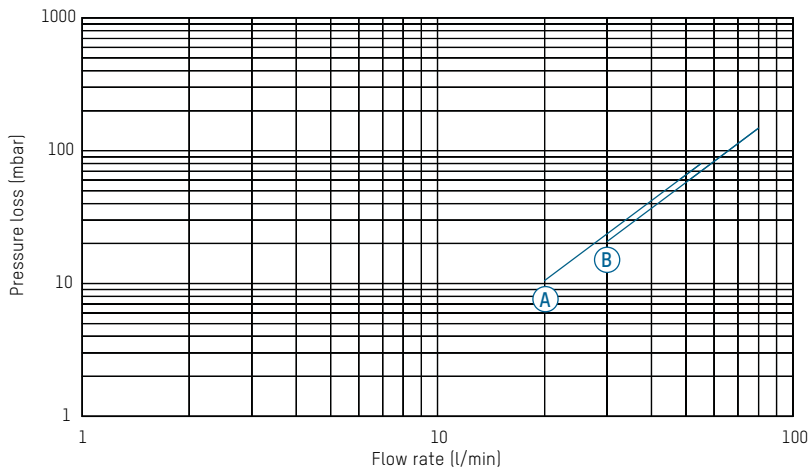


# PRESSURE LOSS DIAGRAMS

DN25



DN32



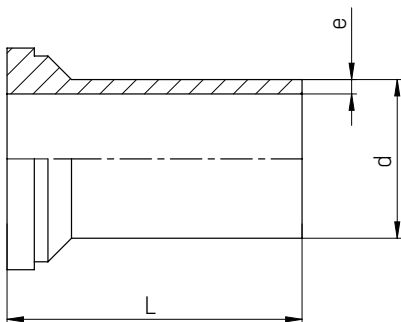
## ACCESSORIES



## SCREW CONNECTOR FOR TACOSSETTER HYLINE

Plastic screw connector with washer (PVC) and weld-on socket (PE100)

Order no.	G (washer)	Fits to
210.2025.003	1½"	DN 25
210.2032.003	2"	DN 32



	d	L	e
DN25	32	60	2.9
DN32	40	63	3.7

# TACOSSETTER TRONIC

## BALANCING VALVE



### ADVANTAGES

- Precise and fast electronic measurement of flow volume and temperature
- High measurement precision
- Measurement range 0...100 °C
- Temperature measurement directly in the medium
- Direct connection to circulating pump, variable installation position
- Glycol resistant
- Regulating valve with isolating facility (rest leakage possible)

### Electronic flow volume and temperature measurement

#### DESCRIPTION

Flow volumes and temperatures can be very easily measured and simultaneously evaluated with the Taco-Setter Tronic.

The features of the TacoSetter Tronic include its different options for use in drinking water, solar and heating systems.

The electrical signals for flow and temperature can be used for the control and monitoring of pumps and valves, or for heat quantity metering. A controller, from Sorel for example, can be used to display the measurement data.

The control valve can limit or interrupt the flow.

Hydraulically correct balanced systems ensure optimum energy distribution and in this way maintain economic operation as required by the Energy Saving Regulations.

#### INSTALLATION POSITION

The valve can be installed in a horizontal, tilted or vertical position. Only the direction of the arrow indicating the flow of the medium needs to be noted.

For horizontal installation, it is recommendable to position the sensor on the upper side in order to prevent deposits occurring.

#### OPERATION

The TacoSetter Tronic was developed for the combined measurement of flow volume and temperature. The flow measurement is based on the vortex principle.

The vortex shredding on the body in the flow is proportional to the flow rate.

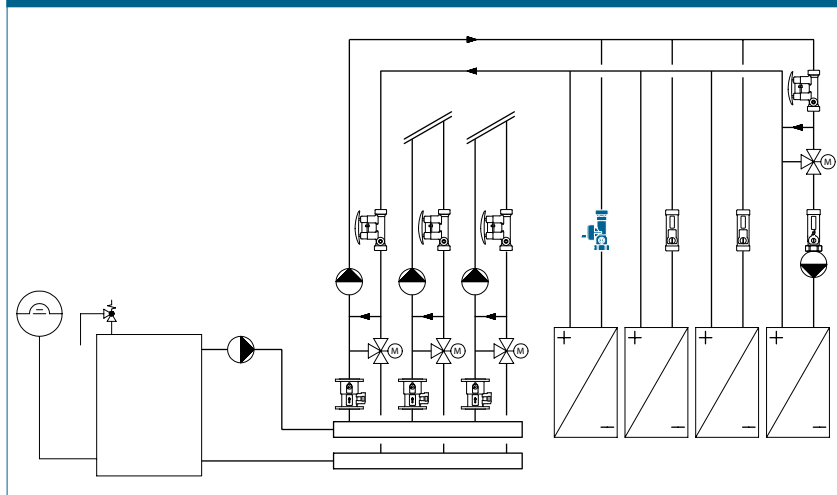
The generated vortices are detected by a piezoelectric sensor and evaluated by the integrated electronics.

#### BUILDING CATEGORIES

For pipe installations in drinking water, heating and cooling area:

- Apartment blocks, housing estates, multiple dwelling units
- Residential care facilities, hospitals
- Administration and service buildings
- Hotels and restaurants, industrial kitchens
- School buildings and sports facilities
- Commercial and industrial buildings
- Facilities with partial use, such as barracks, camping sites

### SYSTEM/BASIC DIAGRAM



## SPECIFICATION TEXT

See [www.taconova.com](http://www.taconova.com)

## TECHNICAL DATA

### General

- Operating temperature  $T_{0\max}$ : 120 °C (for applications below 0 °C, contact Taconova)
- Operating pressure  $P_{0\max}$ : 10 bar
- Measurement temperature range: 0...100 °C
- Measuring accuracy: 1,5 % of final value
- Viscosity of medium see «Type overview»
- Thread G (cylindrical) as per DIN ISO 228
- 1" flat-sealed connections
- Protective class: IP44a

### Material

- Housing: brass
- Internal parts: brass, stainless steel, plastic
- Sensor: PPS, PPA, PA
- Seals: EPDM

### Fluids

- Heating water (VDI 2035; SWKI BT 102-01; ÖNORM H 5195-1)
- Potable water (DIN 1988-200)
- Corrosion and antifreeze additives (glycol) up to 50% designed for heating systems (see document «Glycol correction curves»)

### Electrical signals for sensors

- Temperature: 0.5 to 3.5 V
- Flow: 0.5 to 3.5 V
- Ground: 0 V (PE)
- Supply voltage (+5VDC), PELV

## SERVICE

- Clean only with water, avoid contact with chemicals

## APPROVALS / CERTIFICATES

### Sensor

- KTW, W270, ACS, NSF, WRAS

### Housing parts

- KTW-BWGL, DIN EN 16421 (W270)

## ACCESSORIES

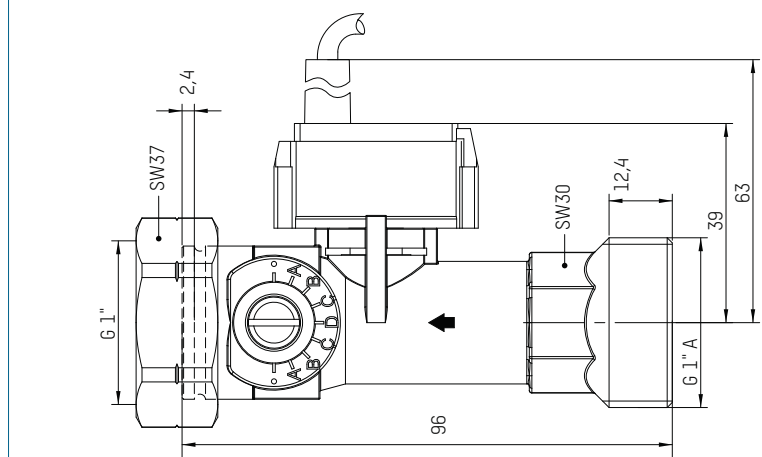


## TYPE OVERVIEW

TacoSetter Tronic 100 | Balancing and shut-off valve with electronic measurement function

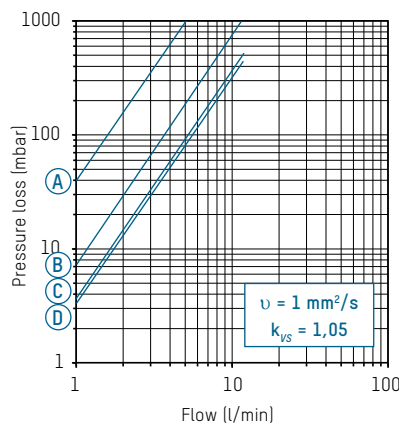
Order no.	DN	G × G	Measuring range	Viscosity
223.7704.000	20	1" × 1" A	2 – 40 (l/min)	≤ 2 mm²/s

## DIMENSIONAL DRAWING



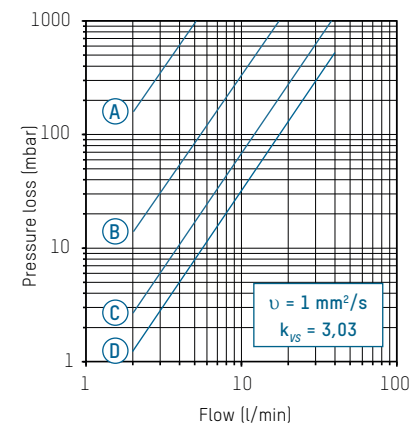
## PRESSURE LOSS DIAGRAMS

223.7702.000 (DN 20 | 1" | 1...12 l/min)



A – D Valve position

223.7704.000 (DN 20 | 1" | 2...40 l/min)



A – D Valve position

## CONNECTIONS

Order no.	Description
210.6632.121	flat-sealed screw joint with R 3/4" Male threads (glycol-resistant seal)
296.2334.000	Solar seal 1" (glycol-resistant)

## REMOTE SENSOR PT1000 (FOR HEAT QUANTITY METERING)

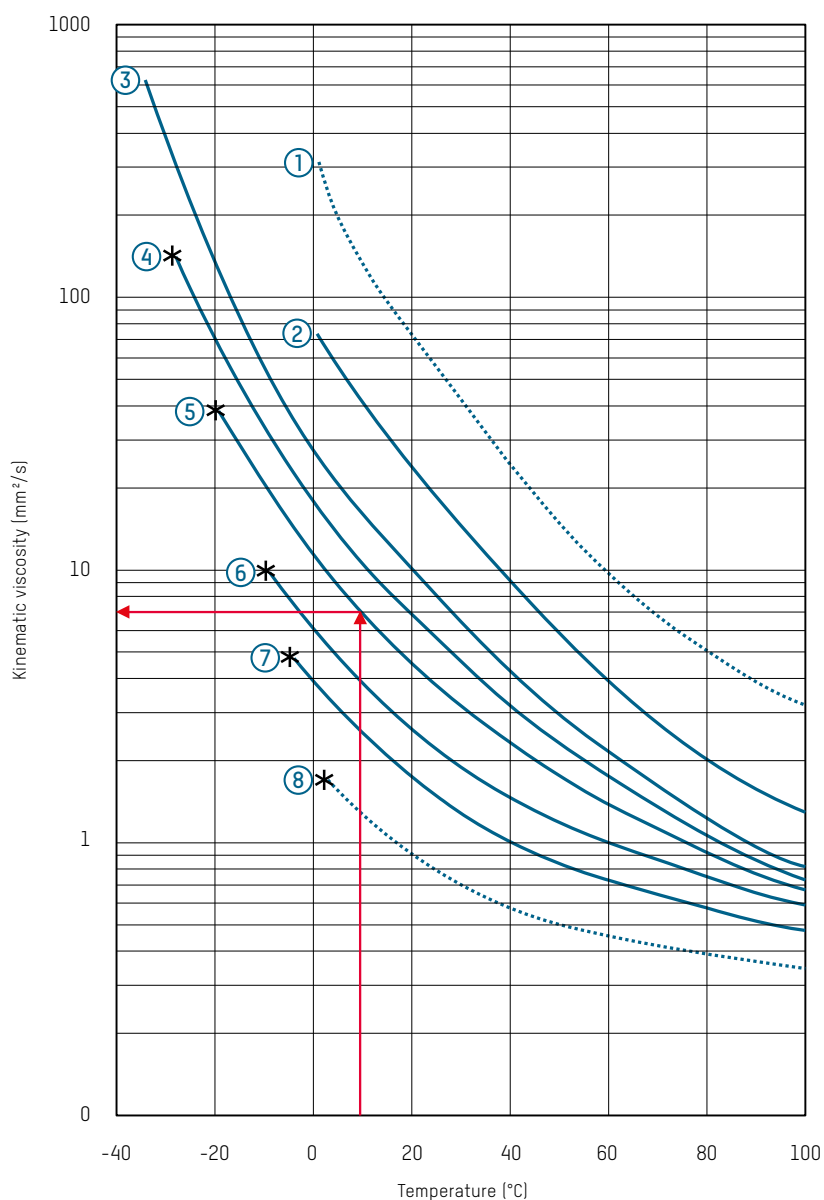
Order no.	Length	Version
296.7015.000	0.5 m	Including pipe clamp

# GLYCOL CORRECTION CURVES

For use of anti-frost and anti-corrosion agents with TacoSetter balancing valves

## KINEMATIC VISCOSITY OF ANTIFROGEN L

Figure 1 - Water mixtures of different concentrations



Curve no.	Concentration
1	100% v/v = Antifrogen L
2	80% v/v
3	57% v/v
4	47% v/v
5	38% v/v
6	25% v/v
7	16% v/v
8	Water

\* = Frostproofness

## INSTRUCTIONS FOR USE OF THE CORRECTION CURVES

Anti-icers and corrosion inhibitors are inhibitors based on propylene glycol which are mixed with water. This prevents undesirable reactions such as corrosion or the freezing of hydraulic systems.

These mixtures give rise to other physical material values than those occurring in the case of pure water. These material values depend on the one hand on the mixture ratio in %, and on the other on the temperature of the mixture.

The mixture ratio depends on the desired properties, for example frostproofness.

## FLOW

As a result of the changed material values, the flow indicated on the TacoSetter varies. The reason for this is the higher viscosity and density of the water mixture compared with pure water.

The **kinematic viscosity** of the water mixture is the critical factor in determining the correction value. This value is derived from diagrams and product documentation published by the manufacturers of inhibitors. The diagram set out in Fig. 1, which was provided by Messrs. Clariant, is the basis for the specimen calculation with Antifrogen L.

Fig. 1 Source: Clariant GmbH, Divisions Chemicals, D-65840 Sulzbach

## GLYCOL CORRECTION CURVES

### CORRECTION CURVES

A separate diagram with nine correction curves exists for TacoSetter up to DN25 and its flow ranges.

These correction curves cover a kinematic viscosity range from 1 mm<sup>2</sup>/s to 53 mm<sup>2</sup>/s.

These curves are assigned to the kinematic viscosity read from Figure 1 in the adjacent table.

### KINEMATIC VISCOSITY OF THE CORRECTION CURVES

Correction curve no.	Kinematic viscosity
1	53,0 mm <sup>2</sup> /s
2	30,0 mm <sup>2</sup> /s
3	17,0 mm <sup>2</sup> /s
4	6,7 mm <sup>2</sup> /s
5	4,7 mm <sup>2</sup> /s
6	3,5 mm <sup>2</sup> /s
7	2,2 mm <sup>2</sup> /s
8	1,7 mm <sup>2</sup> /s
9	1,0 mm <sup>2</sup> /s

### SPECIMEN CALCULATION

#### Given

- Antifrogen L concentration: 38%  
-> Figure 1: Curve 5
- Mix temperature: 10 °C
- Indicated flow: 3,5 l/min

#### Sought

- Effective flow in l/min when using a TacoSetter Inline 100 [Art.: 223.1204.000]

#### Solution

- On the basis of the manufacturer's diagram Fig 1, a kinematic viscosity of **7 mm<sup>2</sup>/s** is arrived at
- According to table Fig. 2, **6.7 mm<sup>2</sup>/s** indicates **correction curve No. 4**
- An **effective flow of 2.6 l/min** can be determined from the indicated 3.5 l/min, using the diagram for this TacoSetter Inline 100 and **curve No. 4**

#### Conclusion

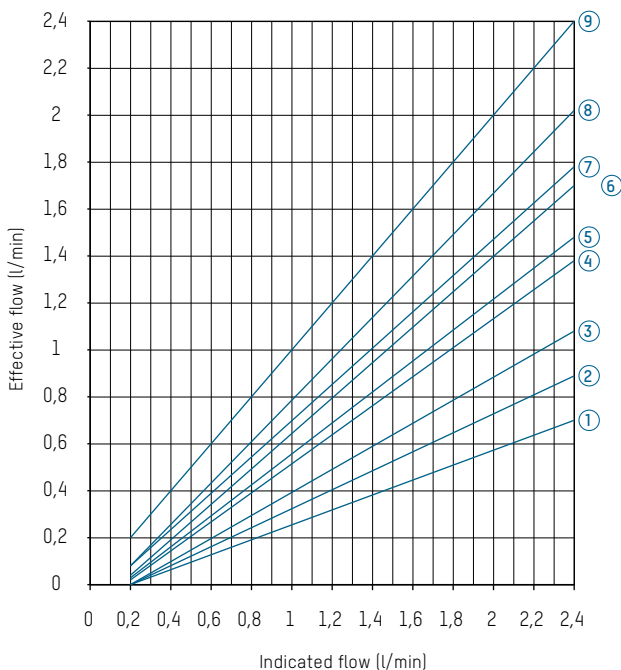
- Given an Antifrogen L concentration of 38% and a mix temperature of 10 °C, the effective flow diverges from the indicated flow by -26%.

### CORRECTION CURVES TACOSSETTER INLINE 100

#### DN15

223.1202.XXX [0,3...1,5 l/min]

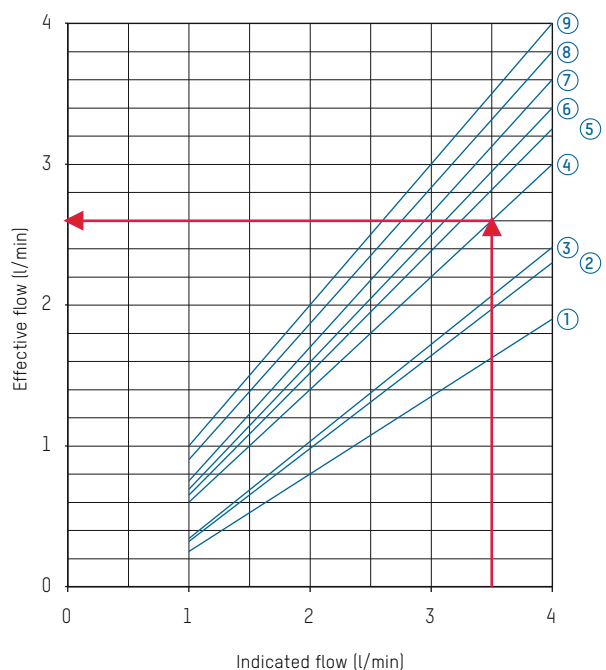
223.1203.XXX | 223.1233.XXX [0,6...2,4 l/min]



#### DN15

223.1204.XXX [1,0...3,5 l/min]

223.1234.XXX [1,0...3,5 l/min]

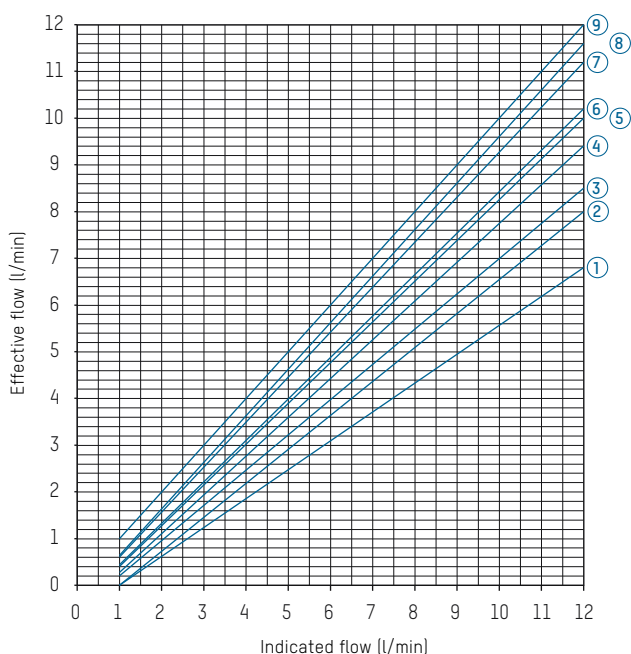


## CORRECTION CURVES TACOSSETTER INLINE 100

### DN15

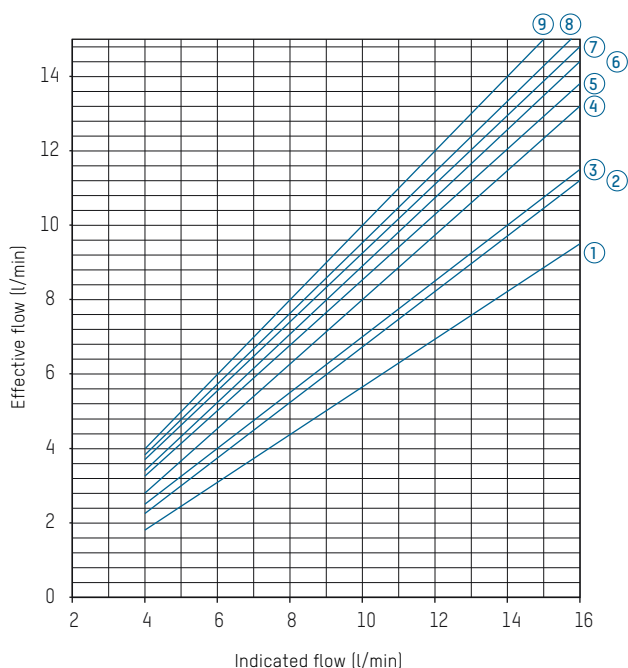
223.1238.XXX | 223.1208.XXX [2...8 l/min]

223.1239.XXX | 223.1209.XXX [3...12 l/min]



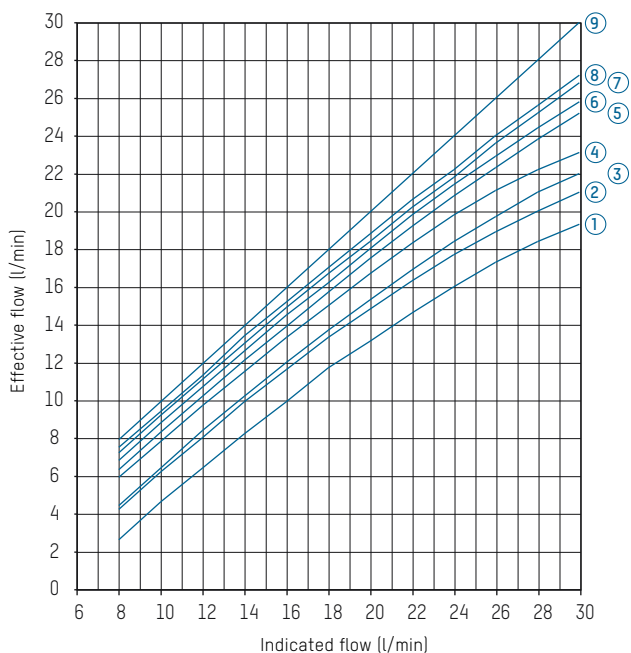
### DN20

223.1300.XXX [4...15 l/min]



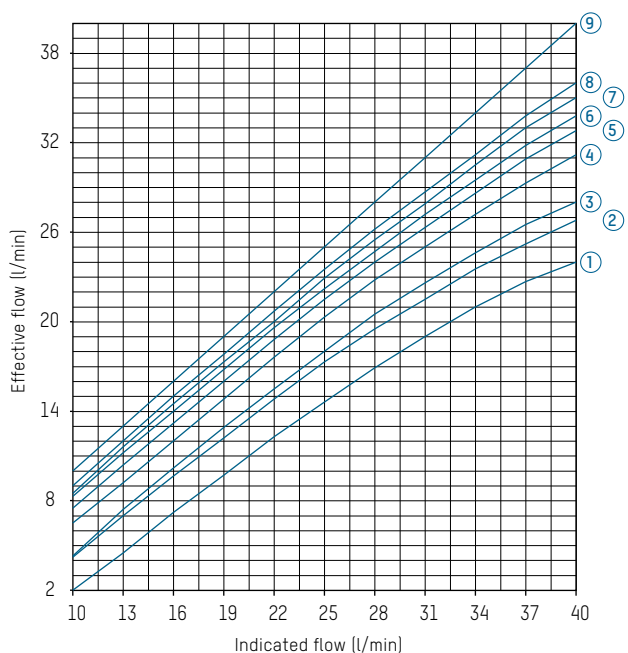
### DN20

223.1302.XXX [8...30 l/min]



### DN20

223.1305.XXX [10...40 l/min]

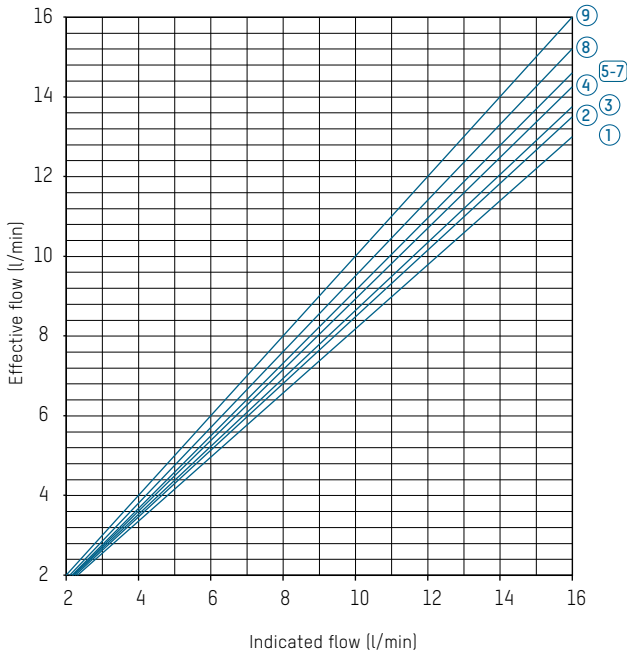




**CORRECTION CURVES TACOSSETTER BYPASS 100 | TACOSSETTER BYPASS SOLAR 130 | TACOSSETTER BYPASS SOLAR 185**

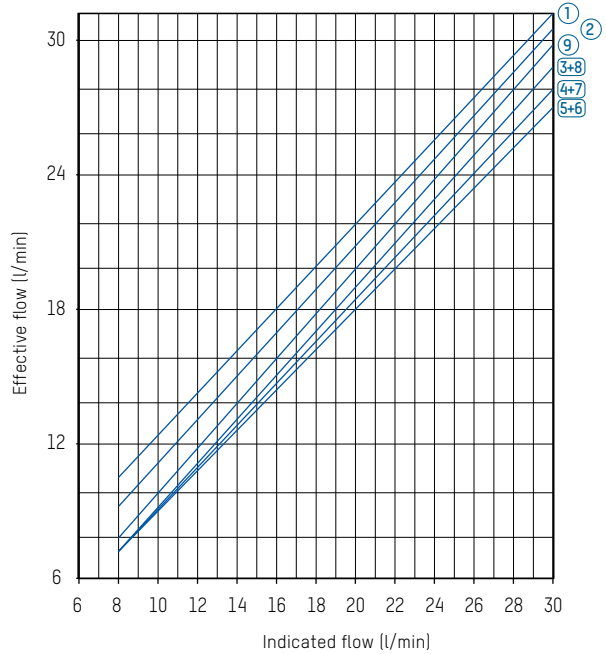
**DN15/DN20**

223.2262.XXX | 223.2361.XXX | 223.2272.XXX (2...8 l/min)  
 223.2360.XXX | 223.2370.XXX (4...15 l/min)  
 223.2380.XXX | 223.2382.XXX (2...12 l/min)



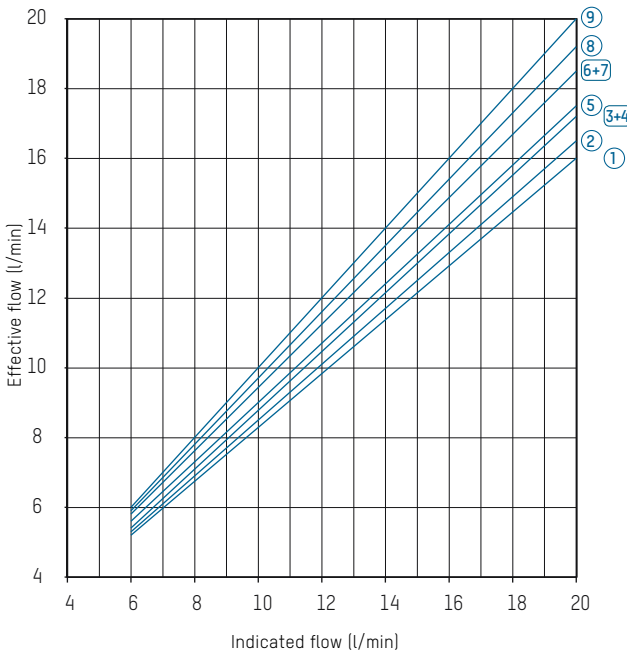
**DN20**

223.2362.XXX | 223.2372.XXX (8...30 l/min)  
 223.2381.XXX | 223.2383.XXX (8...20 l/min)



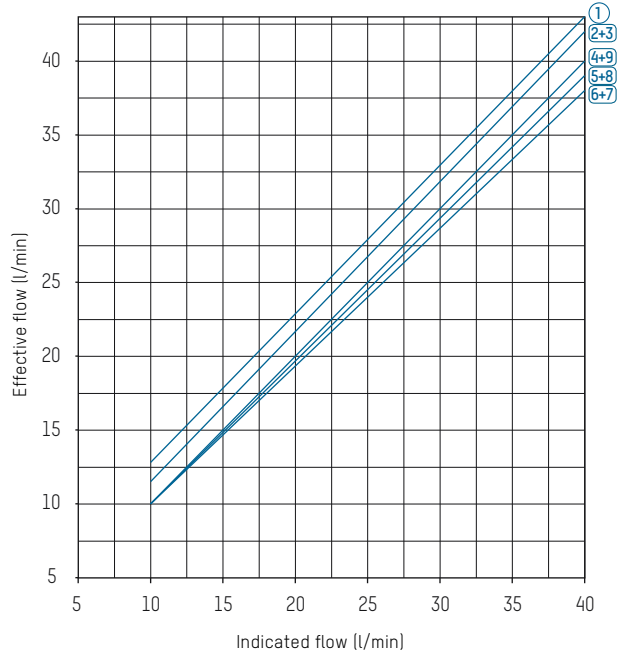
**DN25**

223.2460.XXX | 223.2470.XXX (6...20 l/min)



**DN25**

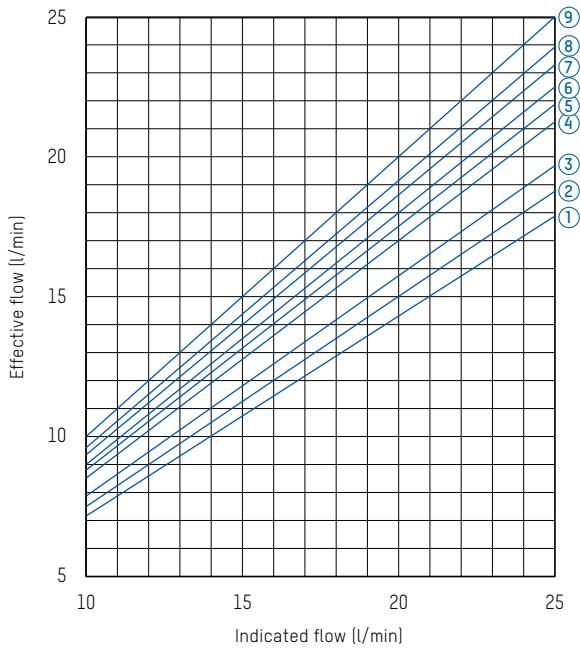
223.2461.XXX | 223.2471.XXX | 223.2480.XXX (10...40 l/min)  
 223.2482.XXX (10...40 l/min)



## CORRECTION CURVES TACOSSETTER HYLINE

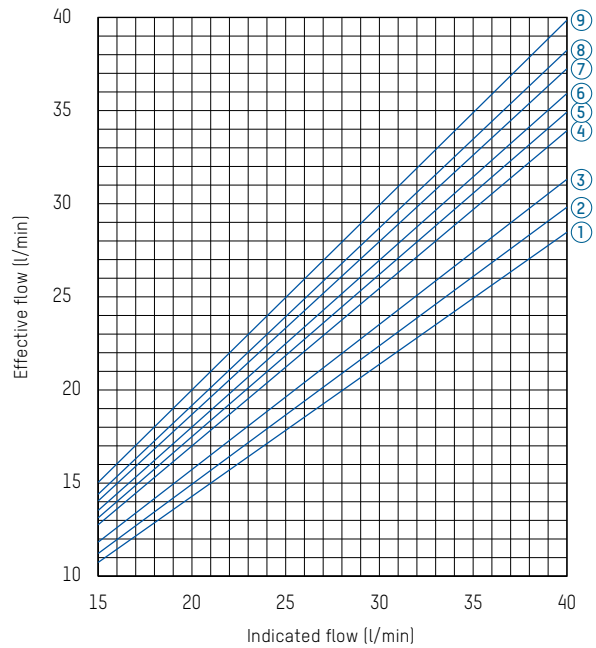
### DN25

223.8410.000 (10...25 l/min)



### DN25

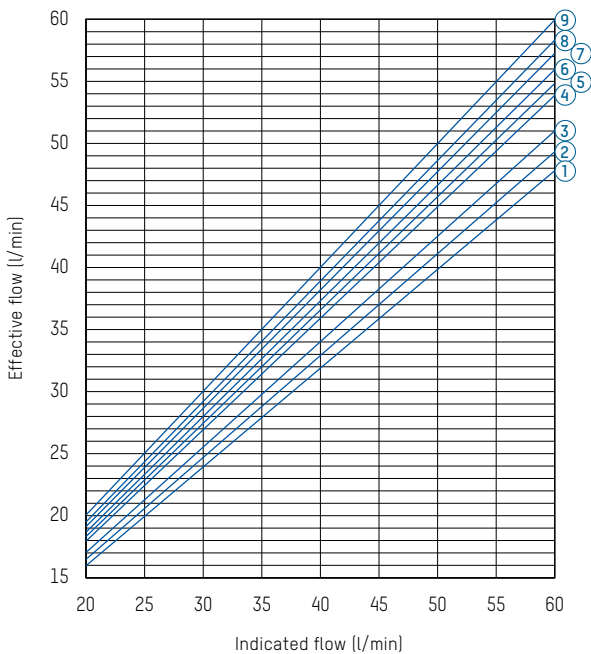
223.8411.000 (15...40 l/min)



### DN25/DN32

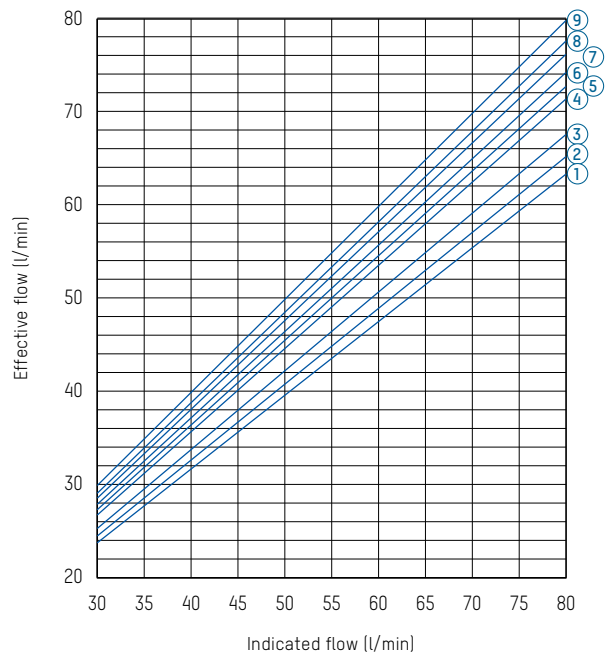
223.8412.000 (20...60 l/min)

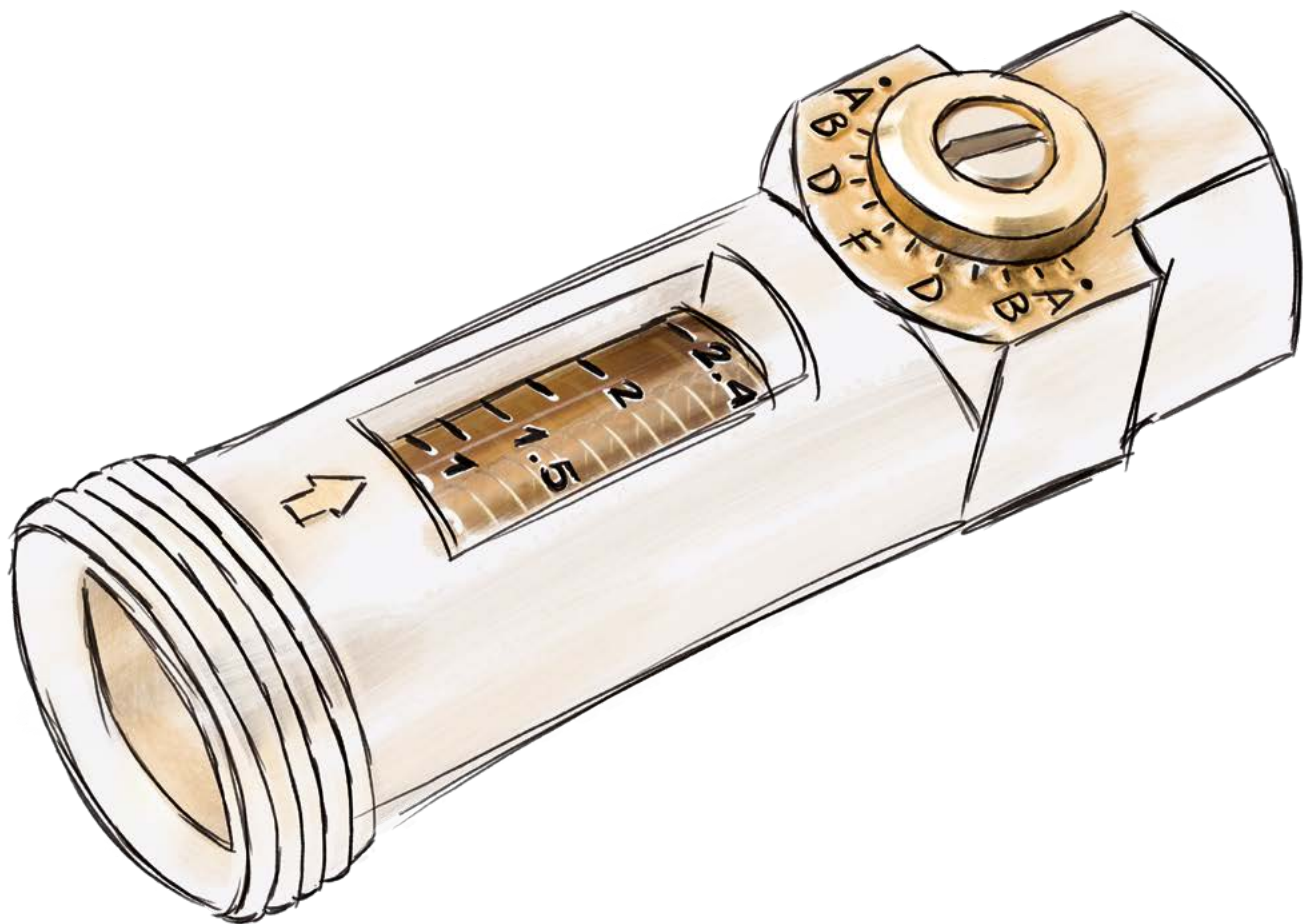
223.8523.000 (20...55 l/min)



### DN32

223.8524.000 (30...80 l/min)





# FLOW CONTROL IN ANY INSTALLATION POSITION

A display is often required to enable flow values to be checked in hydraulic systems, without a regulating option also being necessary at the same time.

## FLOW CONTROL IN ANY INSTALLATION POSITION

The TacoControl FlowMeter flow measuring instrument shows the volume flow of the flowing medium and is used in heating, cooling and plumbing systems to check the flow rate.

The meter's compact design allows it to be installed in even the most constricted spaces. Any installation position is possible – all that really matters is the direction of flow.

## DIRECT DISPLAY

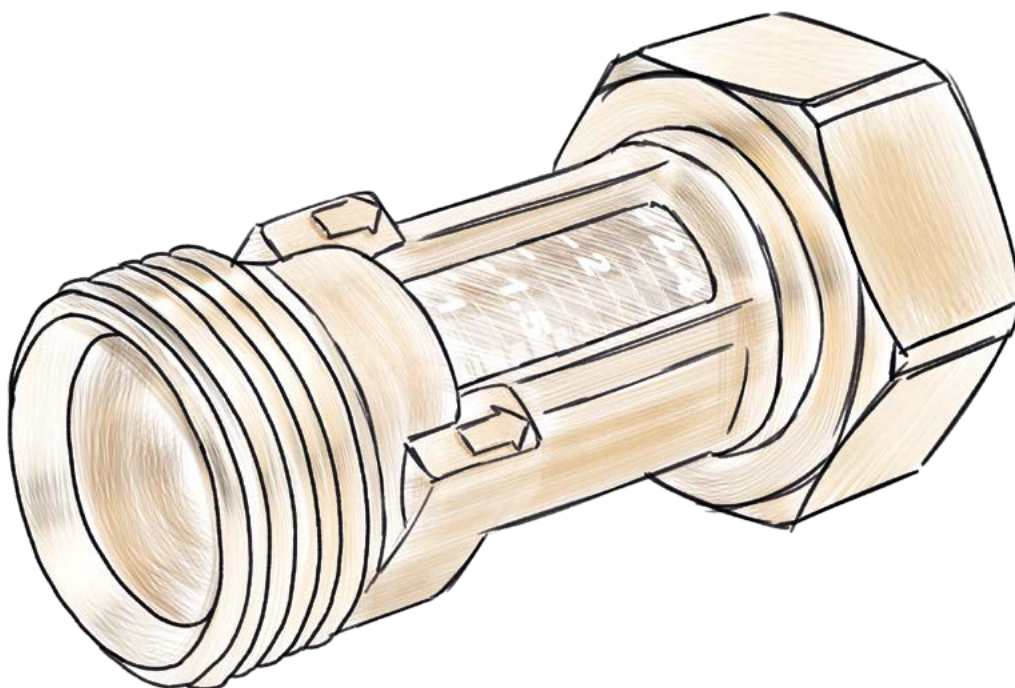
The calibrated scale printed on the inspection window enables the flow rate to be read directly in l/min without requiring complex meters and counters directly on the consumer, on distributors or in sections of systems.

## FUNCTION IRRESPECTIVE OF THE INSTALLATION POSITION

The TacoControl FlowMeter flow measuring instrument is based on the TacoSetter Inline balancing valve. A 1" union nut is used to connect the valve body, nominal size DN 20, directly to a flush sealing screw connector, for example to the intake connectors of a pump housing, in any installation position.

## EXPANDABLE TO FORM A BALANCING VALVE

In combination with the TacoSetter Inline balancing valve, the function of both flow meters can be extended to produce a regulating and shutoff valve



# FUNCTION MONITORING IN HYDRAULIC SYSTEMS

Flow rates can be recorded in hydraulic systems using measuring valves.

## BENEFITS AT THE PLANNING STAGE

- High measurement precision
- Short response time

## BENEFITS AT THE INSTALLATION STAGE

- Can be installed in any position
- Can be combined with TacoSetter Inline balancing valve
- Can be installed in heating, cooling, solar and drinking water systems, including heat measurement

### Flow meter

Volume flows are measured and indicated purely mechanically.

- TacoControl FlowMeter

## APPLICATIONS

Valves and accessories from Taconova can be used in various ways in heating, air conditioning, ventilation and sanitary systems:

Heating and cooling energy generation	Heating and cooling energy distribution (Indoor temperature control)	Sanitary systems
<ul style="list-style-type: none"> <li>▪ Solar thermal energy</li> <li>▪ Oil, gas, electricity, biomass</li> <li>▪ District heating</li> </ul>	<ul style="list-style-type: none"> <li>▪ Underfloor heating</li> <li>▪ Radiators</li> <li>▪ Chilled and heated ceilings</li> </ul>	<ul style="list-style-type: none"> <li>▪ Fresh water</li> </ul>

# TACOCONTROL FLOWMETER

## FLOW INDICATOR



### ADVANTAGES

- The flow rate is displayed directly in l/min
- Accurate and quick indication of flow rates without additional measuring devices
- Low pressure loss
- Eurocone bore hole
- Can be installed in any position
- Compact design

Direct indications of flows in hydraulic systems.

### DESCRIPTION

The FlowMeter offers an accurate and convenient indication of flow rates in heating -, ventilation -, air conditioning- and cooling systems. Due to the compact design of the FlowMeter, the installation of a flow rate indicator is possible, even at most limited space. The particular connection is suitable for a direct and economic fit to components with eurocone adaptors. Installed on heating manifolds or on a valve, the FlowMeter forms an economical extension of the function with big benefits.

For example, each throttle valve in addition with a FlowMeter turns into a multi function valve for the balancing and the indication of flow rates.

With the FlowMeter, any qualified fitter can read the appropriate flow rate easily on site, without any additional measuring device or special training

### INSTALLATION POSITION

The valve can be installed in a horizontal, vertical or inclined position. Care should be taken in order to ensure that the arrow is pointing in the direction of the flow

Noise can be avoided by installing a short calming section in front of the flow meter.

### OPERATION

The flow measurement is based on the principle of a baffle float with countersprings.

The flow rate is displayed on a calibrated scale by an integrated flowmeter.

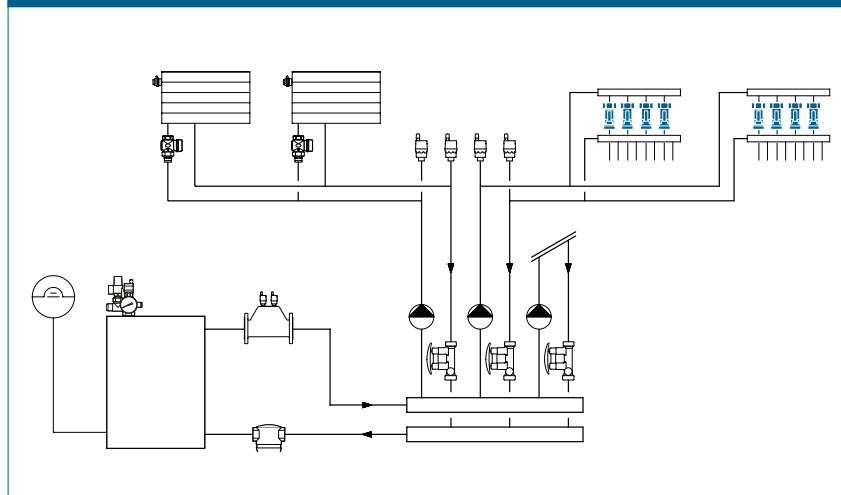
The reading position is the bottom line of the baffle float.

### BUILDING CATEGORIES

For pipe installations in heating and cooling area:

- Apartment blocks, housing estates, multiple dwelling units
- Residential care facilities and hospitals
- Administration and service buildings
- Hotels and restaurants, industrial kitchens
- School buildings and sports facilities
- Commercial and industrial buildings

### SYSTEM/BASIC DIAGRAM



## SPECIFICATION TEXT

See [www.taconova.com](http://www.taconova.com)

## TECHNICAL DATA

### General

- Operating temperature  $T_{0\max}$ : 100 °C (for applications below 0 °C, contact Taconova)
- Operating pressure  $P_{0\max}$ : 10 bar
- Measuring accuracy:  $\pm 10\%$  of the indicated value
- $k_{VS}$  value and measurement range see «Type overview»
- Thread G (cylindrical) to ISO 228
- 18 mm hole
- $\frac{3}{4}$ " euro cone acc. to EN 16313

### Material

- Housing: brass
- Inside: stainless steel, brass, plastic
- Sight glass: heat- and impact resistant plastic
- Seals: EPDM

### Fluids

- Heating water (VDI 2035; SWKI BT 102-01; ÖNORM H 5195-1)
- Potable water (DIN 1988-200)
- Corrosion and antifreeze additives (glycol) up to 50% designed for heating systems (see document «Glycol correction curves»)

## SERVICE

- Clean only with water, avoid contact with chemicals

## APPROVALS / CERTIFICATES

- Housing parts: DVGW (Confirmation of hygiene conformity), ACS

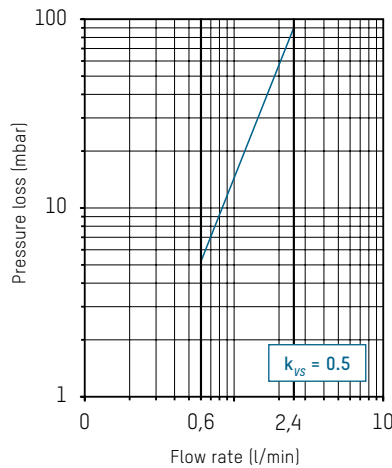
## TYPE OVERVIEW

TacoControl FlowMeter | Flow meter with direct indication

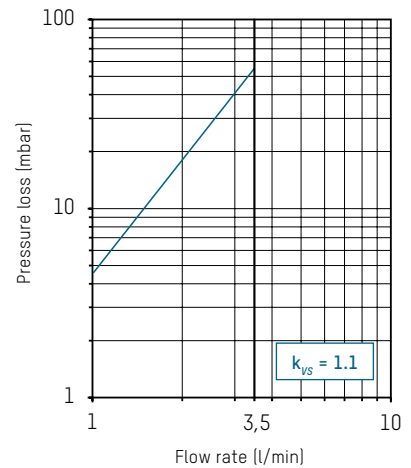
Order no.	DN	G×G	Measuring range	$k_{VS}$ (m³/h)
223.4213.000	15	$\frac{3}{4}$ " × $\frac{3}{4}$ "	0,6 – 2,4 (l/min)	0.5
223.4214.000	15	$\frac{3}{4}$ " × $\frac{3}{4}$ "	1,0 – 3,5 (l/min)	1.1
223.4218.000	15	$\frac{3}{4}$ " × $\frac{3}{4}$ "	2,0 – 8,0 (l/min)	1.6
223.4219.000	15	$\frac{3}{4}$ " × $\frac{3}{4}$ "	3,0 – 12,0 (l/min)	1.65

## PRESSURE LOSS DIAGRAMS

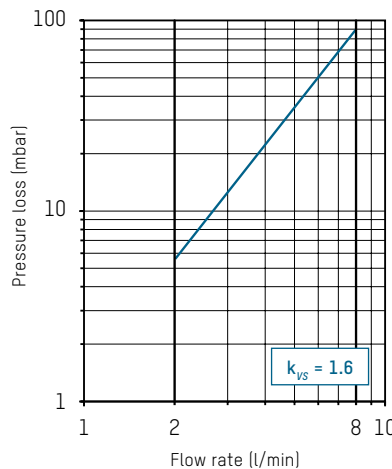
223.4213.000 (DN 15 |  $\frac{3}{4}$ " | 0,6...2,4 l/min)



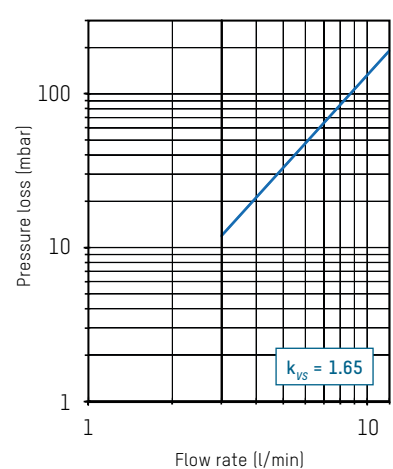
223.4214.000 (DN 15 |  $\frac{3}{4}$ " | 1,0...3,5 l/min)



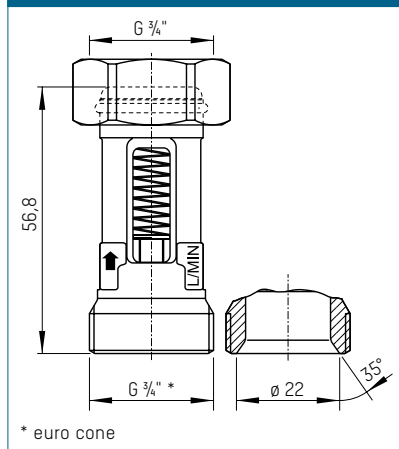
223.4218.000 (DN 15 |  $\frac{3}{4}$ " | 2,0...8,0 l/min)



223.4219.000 (DN 15 |  $\frac{3}{4}$ " | 3,0...12,0 l/min)



## DIMENSIONAL DRAWING





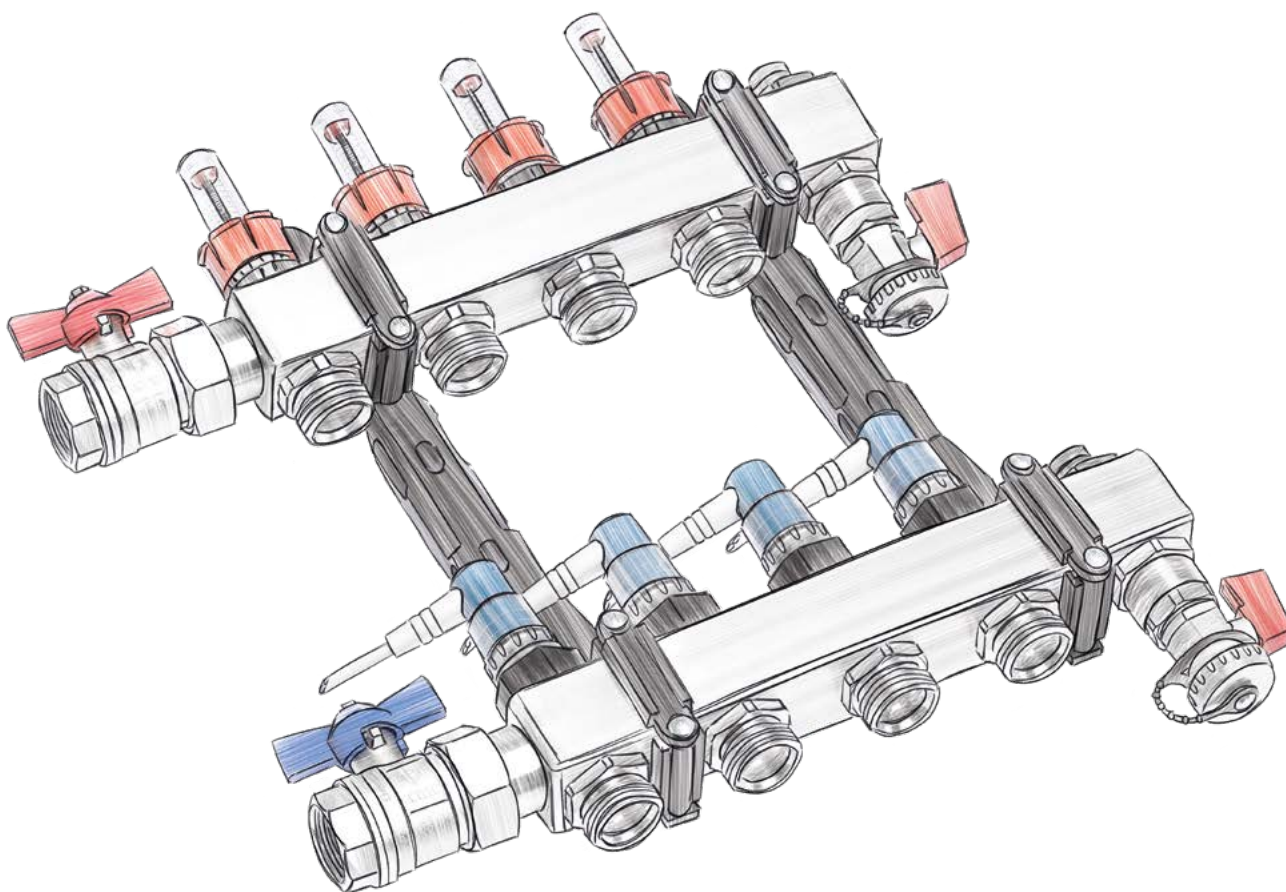
## AREA HEATING SYSTEMS

The targeted heating of individual rooms increases the comfort level, reduces energy consumption and allows economical operation of the heating system. For this purpose, optimum energy distribution is essential: At the main manifold in the cellar or service room, the main volume flows are hydraulically balanced and distributed to the different parts of the building.

To ensure the preferred room and heating circuit temperatures, fine distribution is additionally required on each floor, in the form of intelligent and reliable area heating distributors.

This takes place, in part, by further hydraulic balancing directly on the manifold bar and, in part, through accurate electronic valve control according to the OPEN/CLOSE principle using room thermostats. The controlled opening and closing of these valves varies according to the heat requirements.

Taconova's comprehensive range is characterised by products that are optimally matched to each other and can be combined in a variety of ways.





# PERFECT INTERACTION

Taconova can demonstrate proven expertise in area heating systems. Innovative technology and first class components ensure a reliable, cost-saving energy supply where it is needed. Matching underfloor heating systems, balance valves, actuators, room thermostats and connecting modules work together to create the optimum room climate for individual requirements.

The selection of high quality products covers all requirements in the field of heating and cooling distribution.

## OVERVIEW OF PRODUCT GROUPS



### THE MANIFOLD

Robust stainless steel manifold bars fitted with innovative technology ensure reliable and economical supply of energy where it is needed. In the TacoSys High End version, the well-known TopMeter ensures perfect hydraulic balancing. The latest TacoDrive actuator is already preinstalled in the TacoSys Pro version and can be combined with ease with the NovaStat room thermostats.



### THE FIRST CHOICE

The TopMeter is the first choice for the regulation of manifold systems. The flow rate through heating and cooling energy circuits can be regulated, indicated and shut off directly on the supply or return bar. The last hydraulic balancing setting can be reproduced with the latest version of the balancing valve, the TopMeter Plus.



### THE GATEKEEPER

Actuators are the reliable gatekeepers which open or close the valves of the individual heating circuits according to the heat requirement. They take care of the fine adjustment, are silent in operation and require no maintenance. Together with NovaStat room thermostats, they create a climate adjusted for each room. TacoDrive actuators have a drive integrated in the valve, are already pre-assembled on the manifolds and are thus extremely economical in terms of time and space when it comes to installation.

NovaDrive and TopDrive fit almost all generally available valves and, thanks to their bayonet or click connector, are quick and easy to fit.



### THE CONTROL CENTRE

The NovaStat room thermostats activate actuators on demand. This allows room temperatures to be adjusted individually and reduces heating costs. Reduction of the room temperature by only 1 °C means a reduction of heating costs by about 6 %. The wide product range, designed with price and performance in mind, offers a solution for every need. Together with the expandable NovaMaster connecting modules, the room thermostats can also master complex requirements. Both NovaStat and NovaMaster are available as cable and radio versions.

# COMFORT AND ENERGY EFFICIENCY WITH UNDERFLOOR HEATING SYSTEMS

Comfort and energy efficiency are key in any modern heating system and provide convincing arguments why a panel heating system is the first choice for home owners and investors alike.

## PANEL HEATING SYSTEMS ARE PART OF MODERN ENERGY SYSTEMS

Whether they are used in private homes or open-plan office buildings, low-temperature heating systems offer cozy comfort as well as excellent conditions for using renewable energies and the energy-efficient use of modern heating systems, such as calorific heating systems or heat pumps. When combined with low temperature heat generation, a panel heating system produces a modern, energy-efficient heating system.

## REGULATION OF PANEL HEATING SYSTEMS

Underfloor heating systems require a precise regulation of the flow rate in the individual heating circuits because low temperature panel heating and high temperature heating systems are slow to respond to adjustments. This response to regulation is largely influenced by the hydronic characteristics of panel heating systems:

- The entire floor or wall surface is used to transmit the heat
- The heat is distributed by means of numerous heating circuits, consisting of long lengths of narrow gauge piping
- The heat is transmitted at a low temperature and with low-level spread

## LINK FOR HEAT DISTRIBUTION

Together with the relevant regulators, such as shutoff valves and actuators, the heating circuit distributor is thus an important link between the heat generator and the panel heating system and ensures an even level of heat throughout the property.

## BALANCING THE SYSTEM HYDRONICS

During commissioning it is important to balance the system hydraulics so that all heat consumers are supplied with hot water in line with their heat requirements. In the main distribution system the hot water volume flow is limited by means of hydronic balancing to the flow rates that correspond to the calculated heat output in the various sections of the building.

## FOCUSED DISTRIBUTION FOR INDIVIDUAL HEATING CIRCUITS

In order to achieve the required room temperatures within one floor of a building, the flow rates for the relevant heating circuits in underfloor heating systems are also regulated.

TopMeter balancing valves make it possible to precisely adjust and immediately check the flow rate: the rate can be adjusted and checked on the flow and return bars of the heating circuit distributor in liters per minute.

This makes it possible to regulate a panel heating system centrally by means of the heating circuit distributor and to achieve this on several heating circuits simultaneously, reducing the expenditure of time. The integrated memory function in the newly developed TopMeter Plus balancing valve allows the last flow rate setting to be reproduced even following shutoff of the flow.

## FIRST CHOICE

The simple and efficient operation with the TopMeter means that installation companies can avoid costly adjustments. This makes the TopMeter from Taconova the first choice for regulating distribution systems.

# YOUR TRUMP CARD IN SATISFYING CUSTOMERS

Taconova's area heating products are ideal for a wide variety of building types. Specialist planners and tradesmen will benefit from the security of these reliable system solutions and the satisfaction of their customers.

## BENEFITS AT THE PLANNING STAGE

- Reliable compliance with the system layout thanks to simple regulation
- Smooth system operation thanks to automatic venting and lockable flow rate adjustment
- The regulating functions can be expanded at a later point by means of retrofittable actuators
- The comprehensive range, including regulating components, makes tendering processes easy

## BENEFITS AT THE INSTALLATION STAGE

- Pre-assembled, ready-to-install underfloor heating systems with a minimum number of screw connections
- Time-saving, reproducible regulation of the flow rates in liters per minute without requiring regulation
- Simple control of flow rates during maintenance and testing without requiring measurement devices
- Precise regulation for constant room temperatures

### Manifolds

The completely pre-assembled TacoSys stainless steel manifolds are designed for two to twelve heating circuits. The equipment also includes, among other things, the TopMeter (TacoSys High End) and the TacoVent Vent. The innovative TacoDrive actuators with first-open function and the TopMeter Plus balancing valves with reproducible balancing function are preinstalled in the latest distribution system, the TacoSys Pro.

- TacoSys Pro
- TacoSys High End
- TacoSys Connect

### Balancing Valves

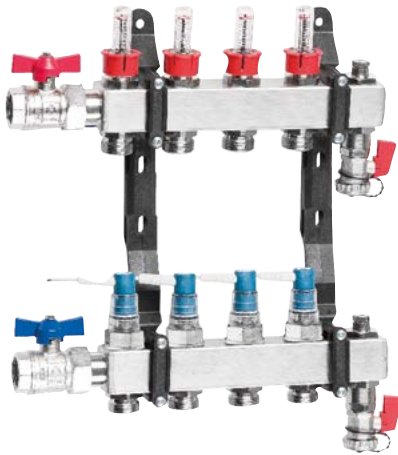
With the well-known and proven balance valve Top Meter, the flow in heating circuits can be directly regulated, indicated and turned off. With the new balancing valve TopMeter Plus, the last flow rate set can be reproduced using an additional stop ring. It contains the double function according to DIN EN 1264-4

- TopMeter Plus
- TopMeter Supply
- TopMeter Return

Heating and cooling energy generation	Heating and cooling energy distribution (room climate)	Sanitary systems
–	<ul style="list-style-type: none"> <li>▪ Underfloor heating</li> <li>▪ Radiators</li> <li>▪ Chilled and heated ceilings</li> <li>▪ Fan coils and chill beams</li> <li>▪ Concrete cores</li> </ul>	–

# TACOSYS PRO

## UNDERFLOOR HEATING CIRCUIT MANIFOLD



The TacoSys Pro heating circuit manifolds from Taconova ensure the perfect distribution of heat throughout the entire house.

### DESCRIPTION

The TacoSys Pro is a next-generation heating circuit manifold, which now comes with two new components. Firstly, the TopMeter Plus balancing valve, which is positioned in the supply and allows reproducible adjustment of the flow control at the stop limit. The last setting can thus be restored any time in compliance with DIN-EN 1264-4. Secondly, the TacoDrive valve drive unit, in which case the actuator has been integrated directly in the valve. The actuator is extremely compact and has a reversible first-open function, with the force of the expansion element acting directly on the valve.

Different valve positions result in different flow volumes. They thus guarantee individual regulation of the room temperature, precisely tailored to the requirements of your customers.

The TacoVent Vent air vent ensures fully automatic ventilation of supply and return, thus enhancing operating safety and user convenience.

The underfloor heating circuit manifolds are supplied fully pre-assembled and ready-for-connection. The high-quality stainless steel TacoSys Pro manifold can be supplied with between two and twelve heating circuits.

### ADVANTAGES

- Balancing with TopMeter Plus in the supply circuit
- Directly integrated TacoDrive valve drive unit
- TacoDrive offers high protection class (IP54)
- Integrated valve position indicator
- Compliance with DIN-EN 1264-4 standard
- Light, modern and robust stainless steel manifold bars
- Ventilation with the fully automatic TacoVent Vent air vent
- Glass-fiber reinforced plastic stay for sound-damping assembly

It fulfills all requirements with respect to performance, energy efficiency, reliability, durability and comfort.

### INSTALLATION POSITION

For riser pipe assembly left and right, and overhead.

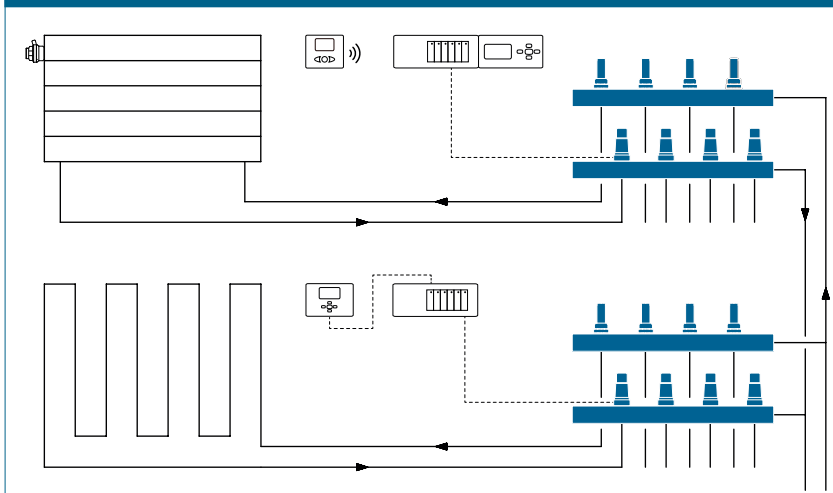
### OPERATION

Manifold supply and return bars are connected to the heating system. The heating and cooling circuits can be connected effortlessly to the Eurocone outlets using the likewise optionally available fittings. The designed flow volume is set for each circuit at the TopMeter Plus. The room thermostats together with the actuators ensure comfortable conditions in individual rooms.

### BUILDING CATEGORIES

- Apartment blocks, housing estates, multiple dwelling units
- Residential care facilities and hospitals
- Administration and service buildings
- Hotels and restaurants
- School buildings and sports halls, sports facilities
- Commercial and industrial buildings

### SYSTEM/BASIC DIAGRAM



## SPECIFICATION TEXT

See [www.taconova.com](http://www.taconova.com)

## TECHNICAL DATA

## General

- Medium temperature:  $-10^{\circ}\text{C}$  –  $+60^{\circ}\text{C}$
- Operating pressure  $P_{0\text{max}}$ : 8 bar
- Display accuracy:  $\pm 10\%$  of final value
- $k_{vs}$  value and measurement range according to „pressure loss diagram“
- Heating circuit connections:  $\frac{3}{4}$ " eurocone

## Material

- Bars: stainless steel
- Internal parts: Nickel-plated brass, heat-resistant and impact-proof plastics
- Seals: EPDM O-rings
- Securing brackets: Plastic, glass fiber-reinforced

## Actuator

- Type: Normally closed (NC)
- Ambient temperature:  $0 - 50^{\circ}\text{C}$
- Opening/closing time: approx. 3 minutes
- Visual inspection of expansion element
- Reversible first-open
- Nominal stroke: 4 mm
- Protection class of actuator: IP54
- Protection class II

## Electrical connection data

- Rated voltage: 230 V, 50/60 Hz
- Permissible voltage deviation:  $\pm 10\%$
- Operating efficiency: 1.3 W
- Inrush current:  
230 V: 0.6 A for max. 100 ms
- Recommended fuse: 0.35 A slow-acting, as per DIN 41662
- Connection cable length: 1 m
- Connection cable:  $2 \times 0.75 \text{ mm}^2$ , PVC with connector

## Flow media

- Heating water (VDI 2035; SWKI BT 102-01; ÖNORM H 5195-1)
- Water free of chemical additives

## SERVICE

- Clean only with water, avoid contact with chemicals

## SYSTEM COMPONENTS

Room thermostats as well as distribution cabinets; see separate data sheets

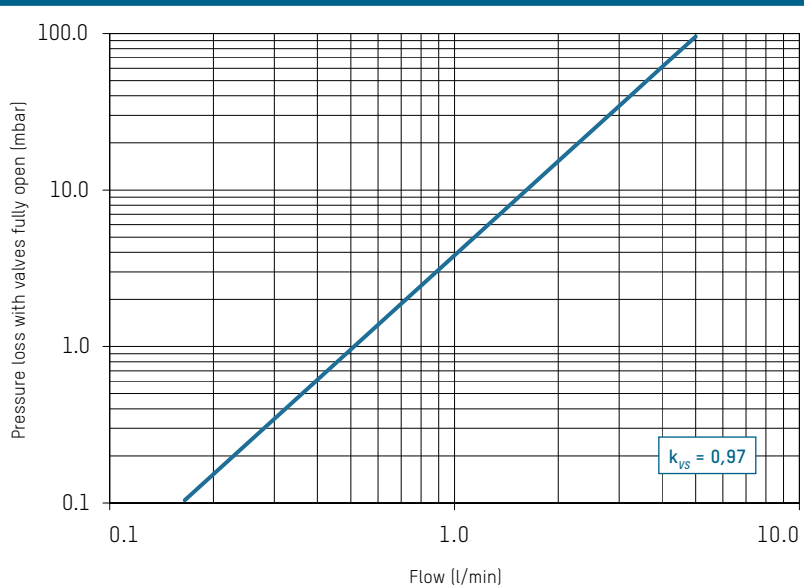
## TYPE OVERVIEW

TacoSys Pro | Heating manifold with TopMeter Plus, TacoDrive and  $\frac{3}{4}$ " ball valve

Heating circuits	Flow range 0 – 2,5 l/min	Flow range 0 – 5 l/min
	Order No.	Order No.
2	288.5002.000	288.6002.000
3	288.5003.000	288.6003.000
4	288.5004.000	288.6004.000
5	288.5005.000	288.6005.000
6	288.5006.000	288.6006.000
7	288.5007.000	288.6007.000
8	288.5008.000	288.6008.000
9	288.5009.000	288.6009.000
10	288.5010.000	288.6010.000
11	288.5011.000	288.6011.000
12	288.5012.000	288.6012.000

Variants with TopMeter Supply and TacoDrive or TopMeter Plus with plastic valve on request.

## PRESSURE LOSS DIAGRAM



## NOTE

We recommend that manifolds with 1" ball valves be used if there are eight or more heating circuits and their valves are fully opened ( $> 2.5 \text{ l/min}$ ), in order to avoid potential flow noise.

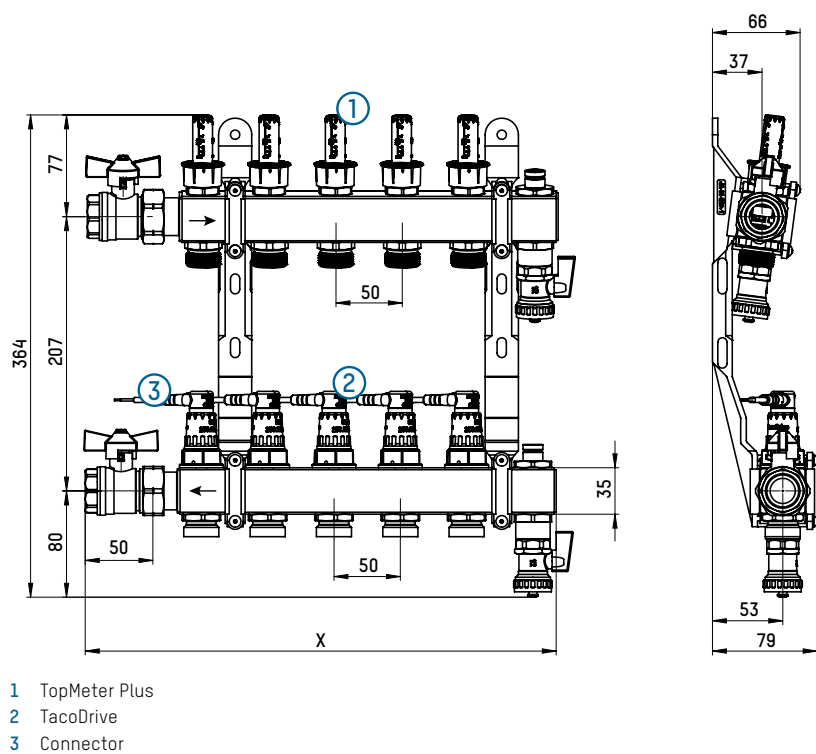
## NOTE

### Adjusting the TacoSys Pro manifold

The floor heating circuits are regulated directly at the manifold using the TopMeter Plus balancing valves. The adjustment process is carried out when the circulating pump is running. All of the valves in the heating circuit must be fully open for adjustment. The first-open function may have to be activated.

- 1 Start at the TopMeter Plus of the heating circuit with the smallest flow volume
- 2 Set the calculated volume flow by rotating the red regulation knob
- 3 Read off the settings from the red indicator collar in the porthole
- 4 Repeat the adjustment process for all of the heating circuits
- 5 Next, check the first values and re-adjust if necessary
- 6 Once adjustment is complete, note the corresponding flow values on the manifold or in the planning documents

## DIMENSIONAL DRAWING



## LENGTH DIMENSIONS

Heating circuits	Length X (mm)	Heating circuits	Length X (mm)
2	204	8	504
3	254	9	554
4	304	10	604
5	354	11	654
6	404	12	704
7	454		

## ACCESSORIES



## SCREW CONNECTIONS

Two nickel-plated compression fittings, complete, for plastic and multilayer pipes, with molded seal, slotted compression ring and barrier seal.

Order No.	Dimensions	G x mm
210.8614.003	Ø 14 x 2	¾" x 14
210.8616.003	Ø 16 x 2	¾" x 16
210.8617.003	Ø 17 x 2	¾" x 17
210.8618.003	Ø 18 x 2	¾" x 18
210.8620.003	Ø 20 x 2	¾" x 20

Additional accessories: see datasheets for manifold cabinets and mixing stations (TacoSys ou Universal)

## SPARE PARTS



## BALL VALVE

Order No.	Dimensions	Length	Handle color
298.8630.001	¾"	50 mm	red
298.8631.001	¾"	50 mm	blue
298.8628.001	1"	65 mm	red
298.8629.001	1"	65 mm	blue



## BOILER FILLING AND DRAIN VALVE

The boiler filling and drain valve is only available with red handle

Order No.	Handle color
296.8653.001	red

## TOPMETER PLUS BALANCING GROUP

Order No.	Range
298.8610.001	0 – 2.5 l/min
298.8611.001	0 – 5 l/min



## TACODRIVE VALVES AND MANUAL ADJUSTMENT FOR TACOSYS PRO

Order No.	Type
298.8622.001 (1)	Drive with valve for TacoDrive
298.8624.001 (2)	TacoDrive complete (drive upper with valve, base part with fine thread)
298.2270.100 (3)	Drive upper part for TacoDrive (for nickel-plated nipple)
298.8635.001 (4)	TacoDrive valve with manual adjustment
298.8636.001 (5)	Manual adjustment for TacoDrive

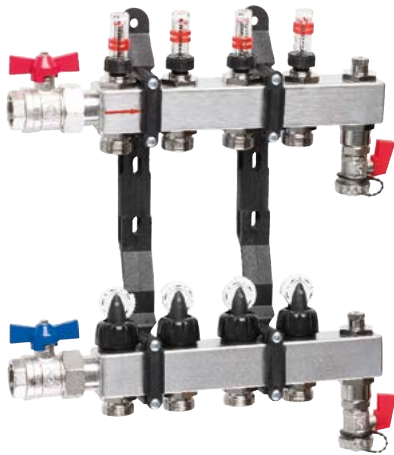
## AIR VENT GROUP WITHOUT FILLING AND DRAINING VALVE

Order No.
298.8604.001

The pipe sections shown are for illustrative purposes only and are not included in the replacement part packs.

# TACOSYS

## UNDERFLOOR HEATING MANIFOLD



The TacoSys heating circuit manifolds from Taconova ensure the perfect distribution of heat throughout the entire house.

### DESCRIPTION

Thanks to their innovative technology, TacoSys heating circuit manifolds work reliably and according to requirements, and are particularly cost-saving. The manifold valves are ready to accept Taconova actuators. The manual control valves enable reproducible, manual flow regulation. Different valve settings result in different flow volumes. They thus guarantee individual regulation of the room temperature, precisely tailored to the requirements of your customers. The vent valves TacoVent Vent caters for fully automatic ventilation

of supply and return, thus enhancing operating safety and user convenience. Whether for use with underfloor heating or radiators, TacoSys offers you high-quality manifold systems that satisfy every customer need. The underfloor heating manifolds are supplied fully pre-assembled and ready-for-connection, in a robust, non-slip cardboard packing case. The high-quality stainless steel manifold is available in different versions, making it the ideal solution for heating systems of any type. Designed for between two and twelve heating circuits, it meets every requirement in terms of efficiency and durability.

### ADVANTAGES

- Lightweight, modern and robust stainless steel manifold bars
- Balancing with the proven TopMeter in supply circuit
- Cone-shaped valve form for fine flow adjustment
- Handwheel positioning with ratchet function for reproducible flow control
- Ventilation with the fully automatic TacoVent Vent air vent
- Glass-fiber reinforced plastic stay for sound-damping assembly
- 100% leakage test

### INSTALLATION POSITION

For riser pipe assembly left, right and overhead.

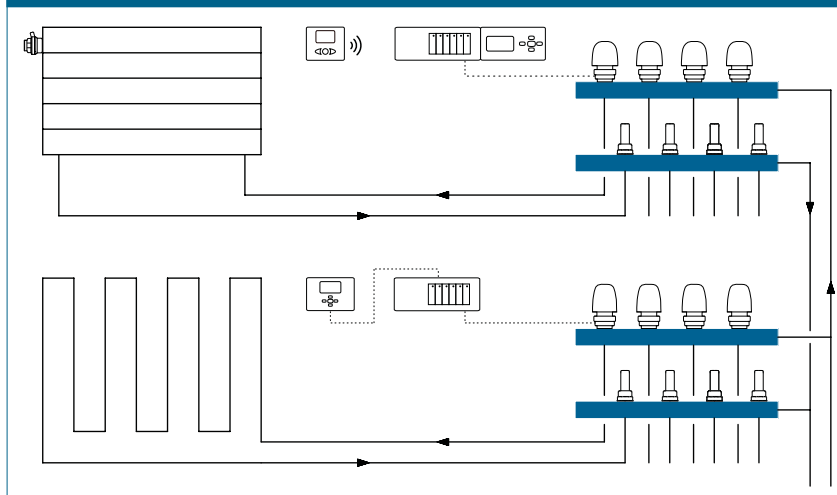
### OPERATION

Manifold supply and return bars are connected to the heating system. The heating/cooling circuits can be connected to the two to twelve Eurocone outlets easily using the optional fittings. The designed flow volume is set for each circuit at the TopMeter. Handwheel or room thermostats with actuators ensure comfortable conditions in individual rooms.

### BUILDING CATEGORIES

- Apartment blocks, housing estates, multiple dwelling units
- Residential care facilities and hospitals
- Administration and service buildings
- Hotels and restaurants, industrial kitchens
- School buildings and sports facilities
- Commercial and industrial buildings

### SYSTEM/BASIC DIAGRAM





## SPECIFICATION TEXT

See [www.taconova.com](http://www.taconova.com)

## TECHNICAL DATA

### General

- Medium temperature:  
-10 °C to + 70 °C
- Operating pressure  $P_{0\max}$ : 6 bar
- Display accuracy:  
±10% of final value
- $k_{vs}$  values and measuring range  
see „pressure loss diagram“
- Heating circuit connections:  
 $\frac{3}{4}$ " eurocone

### Material

- Bars: Stainless steel
- Internal parts: Nickel-plated brass,  
heat-resistant and impact-proof  
plastics
- Seals: EPDM O-rings
- Securing brackets: Plastic, glass  
fiber-reinforced

### Fluids

- Heating water  
(VDI 2035; SWKI BT 102-01;  
ÖNORM H 5195-1)
- Water free of chemical additives

## SERVICE

- Clean only with water, avoid contact  
with chemicals

## SYSTEM COMPONENTS

TopDrive and NovaDrive electro-thermal  
actuators, room thermostats and  
distribution cabinets: See separate  
datasheets.

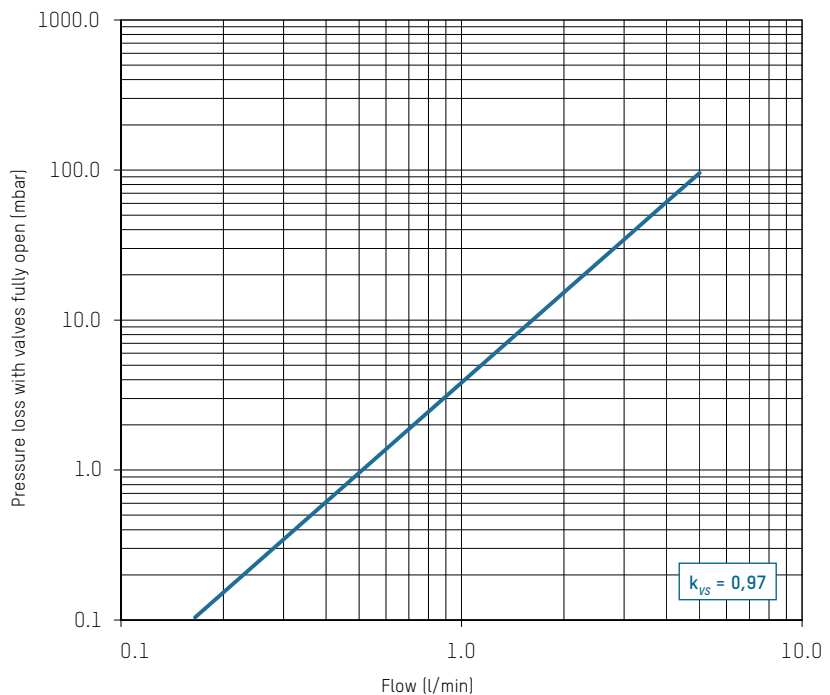
## TYPE OVERVIEW

TacoSys High End | Heating manifold with TopMeter Supply and  
 $\frac{3}{4}$ " IT x 1" OT ball valves.

Heating circuits	Flow range 0 – 2,5 l/min Order No.	Flow range 0 – 5 l/min Order No.
2	286.4002.000	286.1002.000
3	286.4003.000	286.1003.000
4	286.4004.000	286.1004.000
5	286.4005.000	286.1005.000
6	286.4006.000	286.1006.000
7	286.4007.000	286.1007.000
8	286.4008.000	286.1008.000
9	286.4009.000	286.1009.000
10	286.4010.000	286.1010.000
11	286.4011.000	286.1011.000
12	286.4012.000	286.1012.000

TacoSys High End versions without ball valves with manual vent valve on request (see price list:  
286.43XX.000 / 286.13XX.000).

## PRESSURE LOSS DIAGRAM



## NOTE

In order to avoid potential flow noise, we recommend that manifolds with  
1" ball valves be used if there are eight or more heating circuits and their  
valves are fully opened ( $\geq 2.5$  l/min).

## NOTE

### Adjusting the TacoSys manifold

The floor heating circuits are adjusted at the TacoSys stainless steel manifold using the advance or return TopMeter.

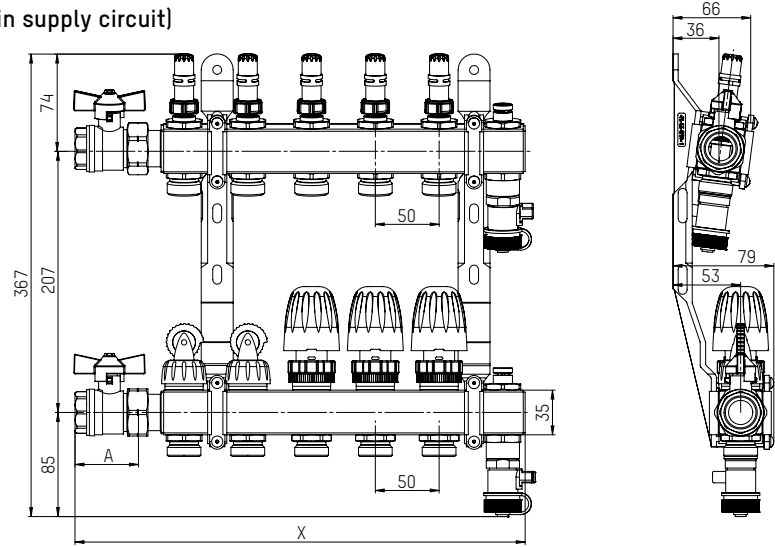
The adjustment process is carried out with the circulating pump running. All of the valves in the heating circuit must be fully open for adjustment.

It may be necessary to remove the electro-thermal actuators.

- 1 Start at the TopMeter of the heating circuit with the smallest flow volume
- 2 Set the calculated volume flow by rotating the black plastic spindle
- 3 Read off the settings from the red indicator collar in the porthole
- 4 Repeat the adjustment process for all of the heating circuits
- 5 Next, check the first values and re-adjust if necessary
- 6 Once adjustment is complete, note the corresponding flow values on the manifold or in the planning documents

## DIMENSIONAL DRAWING

### Underfloor heating manifold with TopMeter Supply (in supply circuit)



## LENGTH DIMENSIONS

Heating circuits	Length X with 3/4" ball valve
2	213 mm
3	263 mm
4	313 mm
5	363 mm
6	413 mm
7	463 mm
8	513 mm
9	563 mm
10	613 mm
11	663 mm
12	713 mm

## ACCESSORIES



## SCREW CONNECTIONS

Two nickel-plated compression fittings, complete, for plastic and multilayer pipes, with molded seal, slotted compression ring and barrier seal.

Order no.	Dimension	G x mm
210.8614.003	Ø 14 x 2	¾" x 14
210.8616.003	Ø 16 x 2	¾" x 16
210.8617.003	Ø 17 x 2	¾" x 17
210.8618.003	Ø 18 x 2	¾" x 18
210.8620.003	Ø 20 x 2	¾" x 20

Additional accessories: see datasheets for manifold cabinets, mixing stations (TacoSys ou Universal), TopDrive or NovaDrive actuators

## SPARE PARTS



## MANUAL REGULATOR

The ratchet feature on the manual control valves enables a reproducible valve setting.

The valves are preinstalled in the TacoSys High End as standard.

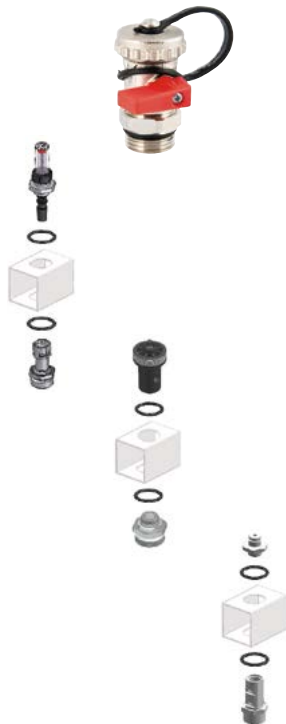
### Order no.

296.8651.001



## BALL VALVE

Order no.	Dimension	Length	Handle colour
298.8630.001	¾"	50 mm	red
298.8631.001	¾"	50 mm	blue
298.8628.001	1"	65 mm	red
298.8629.001	1"	65 mm	blue



## BOILER FILLING AND DRAIN VALVE

The boiler filling and drain valve is only available with red handle

### Order no.

296.8653.001

### Handle colour

red

## VALVE GROUP WITHOUT MANUAL REGULATOR TOPMETER SUPPLY

Order no.	Range
298.8609.001	0 – 2.5 l/min
298.8606.001	0 – 5 l/min

## VALVE ASSEMBLY WITHOUT MANUAL REGULATOR

Order no.	Material
298.8613.001	Plastic

## AIR VENT GROUP WITHOUT FILLING/DRAINING VALVE

### Order no.

298.8604.001

The pipe sections shown are for illustrative purposes only and are not included in the replacement part packs.

# MANIFOLD CABINETS



## ADVANTAGES

- High-quality material
- Flush mounted and surface mounted versions available in RAL 9016
- Scratch-, shock- and corrosion-proof coating surface

Housing of TacoSys heating manifold systems in appropriate manifold cabinets

## DESCRIPTION

Cabinets made from robust sheet steel painted in RAL 9016 with universal pre-punched areas for pipe outlets. Removable and adjustable screed baffle plate. Pipe deflection rail with twist/clip lock. Rounded edges on frame. With height-adjustable cabinet feet. Removable and depth-adjustable front panel.

## INSTALLATION POSITION

Surface- or flush-mounted.

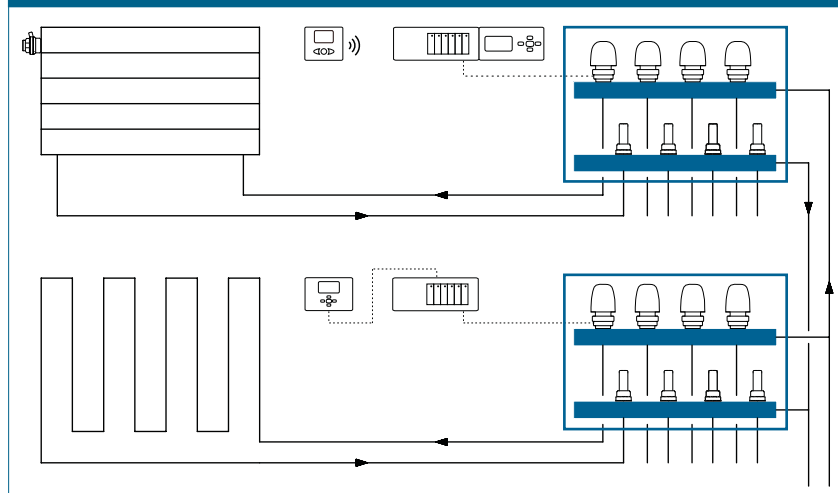
## OPERATION

The choice of correct cabinet size depends on the number of heating circuits and/or the TacoSys manifold used.

## BUILDING CATEGORIES

- Apartment blocks, housing estates, multiple dwelling units
- Residential care facilities and hospitals
- Administration and service buildings
- Hotels and restaurants
- School buildings and sports halls, sports facilities
- Commercial and industrial buildings

## SYSTEM/BASIC DIAGRAM



## MANIFOLD CABINETS

### SPECIFICATION TEXT

See [www.taconova.com](http://www.taconova.com)

### TECHNICAL DATA

#### General

- Dimensions: See overview of types
- Color: RAL 9016

### TYPE OVERVIEW

#### Flush-mounted cabinet

For between two and twelve heating circuits, cabinet sizes 1 to 6

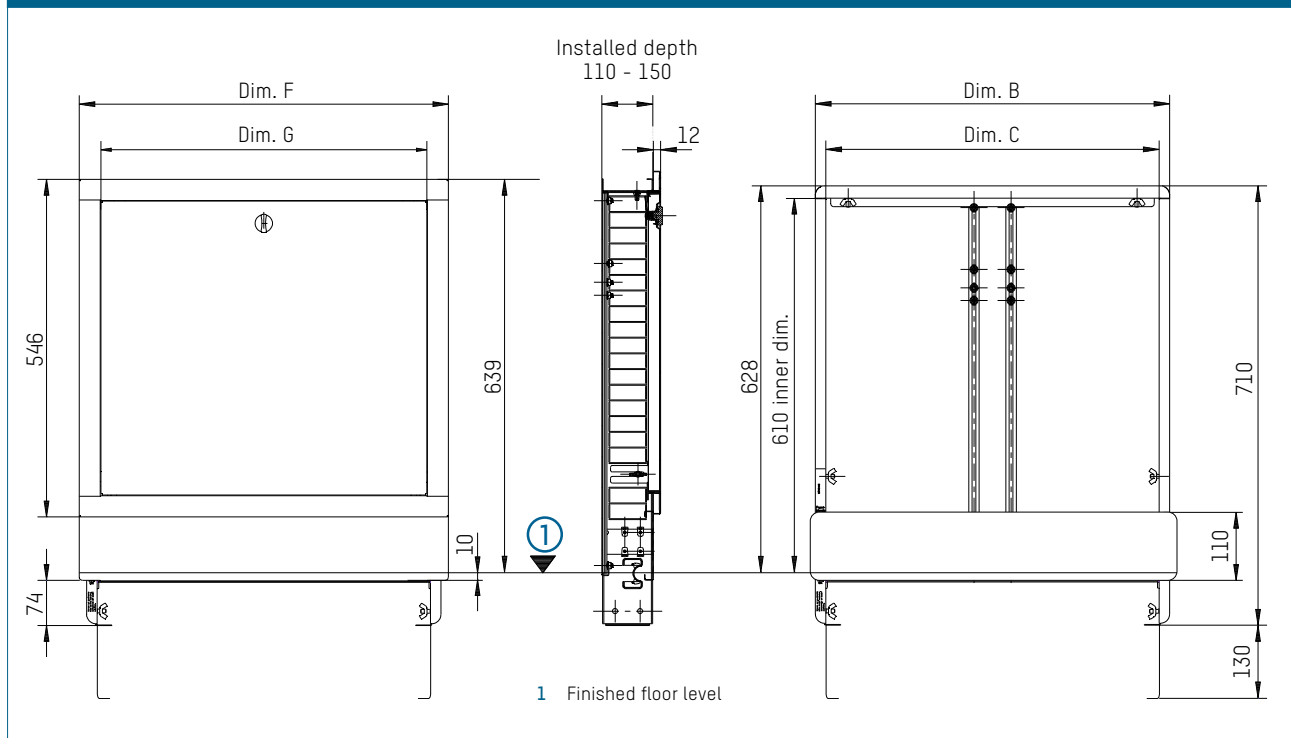
Order no.	Cabinet size	Wall recess H × W × D (mm)
282.4203.000	1	720-790 × 455 × 120-160
282.4204.000	2	720-790 × 510 × 120-160
282.4206.000	3	720-790 × 595 × 120-160
282.4207.000	4	720-790 × 745 × 120-160
282.4209.000	5	720-790 × 865 × 120-160
282.4211.000	6	720-790 × 1045 × 120-160

#### Surface-mounted cabinet

For between two and twelve heating circuits, cabinet sizes A to E

Order no.	Cabinet size	External dimension H × W × D (mm)
282.6204.000	A	622-712 × 442 × 125
282.6206.000	B	622-712 × 581 × 125
282.6207.000	C	622-712 × 731 × 125
282.6209.000	D	622-712 × 881 × 125
282.6212.000	E	622-712 × 1031 × 125

### DIMENSIONAL DRAWING



### MEASUREMENT TABLE

Dim./type	1	2	3	4	5	6
Dim. B	435	490	575	725	875	1025
Dim. C	400	455	540	690	840	990
Dim. F	460	515	600	750	900	1050
Dim. G	390	445	530	680	830	980

# SELECTING THE RIGHT CABINET SIZE

- The size of the manifold is determined by the number of manifold circuits
- Decision as to whether a heat counter set needs to be installed
- Can be derived from table in accordance with the number of heating circuits

## LEGEND

Manifold system with ball valves in supply and return circuit:  
 0 = without heat counter set  
 ◇ = with horizontal heat counter set  
 Δ = with vertical heat counter set

		Flush-mounted cabinets						Surface-mounted cabinets				
Cabinet size		1	2	3	4	5	6	A	B	C	D	E
Internal Edimensions		401	455	540	690	840	990	438	577	727	877	1027
Number of heating circuits	2	0 Δ		◇				0 Δ	◇			
	3	0 Δ		◇				0 Δ	◇			
	4	0	Δ		◇			0	Δ	◇		
	5		0	Δ	◇			0	Δ	◇		
	6			0 Δ	◇				0 Δ	◇		
	7			0	Δ	◇			0	Δ	◇	
	8				0 Δ	◇			0	Δ	◇	
	9				0 Δ	◇				0 Δ	◇	
	10				0	Δ	◇			0	Δ	◇
	11					0 Δ	◇			0	Δ	◇
	12					0 Δ	◇				0 Δ	◇

# MIXING STATION UNIVERSAL

## FOR UNDERFLOOR HEATING MANIFOLDS



The mixing station supplies heating manifolds with the required flow rate and in the process regulates and monitors the flow temperature.

### DESCRIPTION

The mixing station is a flexible and compact pump assembly for direct installation in heating manifolds. The station is used especially for avoiding installation of a second, costly low-temperature pipework between the boiler and underfloor heating manifold.

The boiler manifold and mixing valve for the underfloor heating loop in the central pump room can also be dispensed with.

When the mixing station is installed directly in the apartment at the heating manifold, adjustments can be performed decentrally for every apartment in accordance with the

individual needs of the user and the type of floor covering.

The station therefore guarantees optimal heating comfort for all occupants and ensures safe operation of the system thanks to the external safety temperature limiter. The mixing station can be combined ideally with heating manifolds (TacoSys or others) together with radiator heating systems.

### ADVANTAGES

#### Compact

- Comes equipped with all the necessary valves and components

#### Secure

- Intrinsic safety of station with external safety temperature limiter

#### Simple

- Simple adjustment and reading of the required flow temperature

#### Efficient

- Energy savings thanks to high-efficiency pump

#### Flexible

- The center distance between the flow and return can be adjusted flexibly through the use of eccentric connectors

### INSTALLATION POSITION

Left-, right-, and over-head assembly is possible at the hot water inlet in front of the heating manifold.

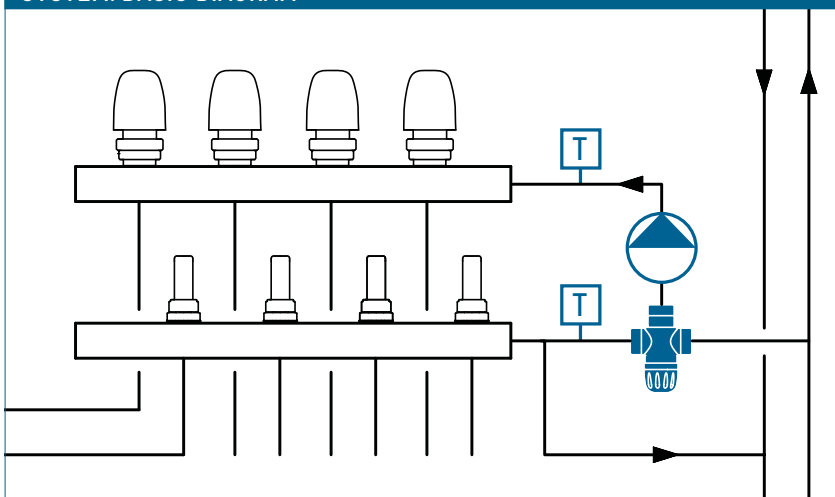
### OPERATION

The required flow temperature can be preset at the heating manifold by means of the integrated thermostatic mixing valve and then regulated subsequently. The pump is switched off by an external safety temperature limiter if the flow temperature of approx. 50°C is exceeded.

### BUILDING CATEGORIES

All building categories with integrated panel heating combined with radiator heating.

### SYSTEM/BASIC DIAGRAM



## SPECIFICATION TEXT

See [www.taconova.com](http://www.taconova.com)

## TECHNICAL DATA

### General

- Operating temperature:  
-10 °C to +90 °C
- Max. operating pressure  $P_{B \max}$ : 6 bar
- Adjustment range mixing valve:  
20 – 50 °C
- Safety temperature limit 50 °C:  $\pm 3\%$
- Residual pump head in accordance  
with flow rate and pressure loss  
diagrams

### Materials

- Pipes: Stainless steel 1.4400
- Terminal nuts und eccentric  
connectors: Brass, nickel-plated
- Seals: EPDM O-rings

### Flow media

- Heating water  
(VDI 2035; SWKI BT 102-01;  
ÖNORM H 5195-1)
- Water free of chemical additives

## SYSTEM COMPONENTS

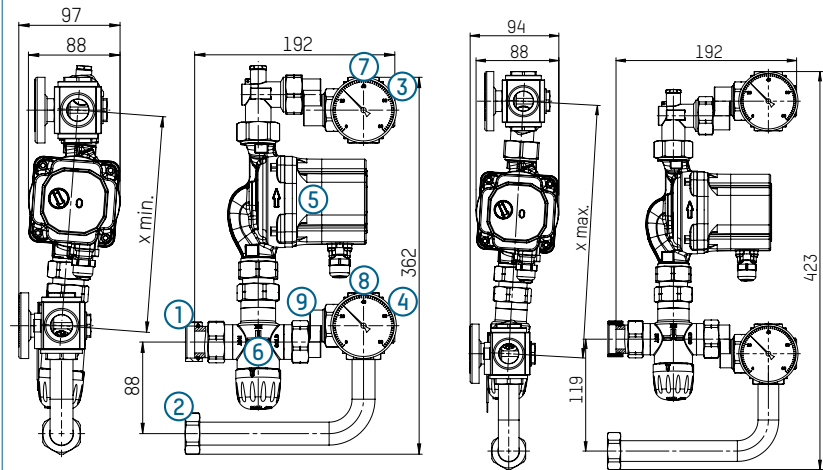
TacoDrive, TopDrive and NovaDrive  
electro-thermal actuators, room  
thermostats as well as distribution  
cabinets and heating manifolds:  
See separate datasheets.

## TYPE OVERVIEW

Mixing station with Taco high-efficiency pump and external safety  
temperature limiter

Order no.	Delivery head
296.8666.001	7 m

## DIMENSIONAL DRAWING



- |   |   |
|---|---|
| 1 Panel heating system flow [1" lock nut]       | 6 NovaMix Value thermostatic mixing valve |
| 2 Panel heating system return [1" lock nut]     | 7 Thermometer flow                        |
| 3 Manifold flow connection [1" outer thread]    | 8 Thermometer return                      |
| 4 Manifold return connection [1" outer thread]  | 9 Eccentric screw connection              |
| 5 High-efficiency pump TacoFlow2 ADAPT<br>15-70 |   |

Delivery condition dimensions X min = 207 mm

Adjustable using an eccentric connector to X max: 269 mm

## NOTE

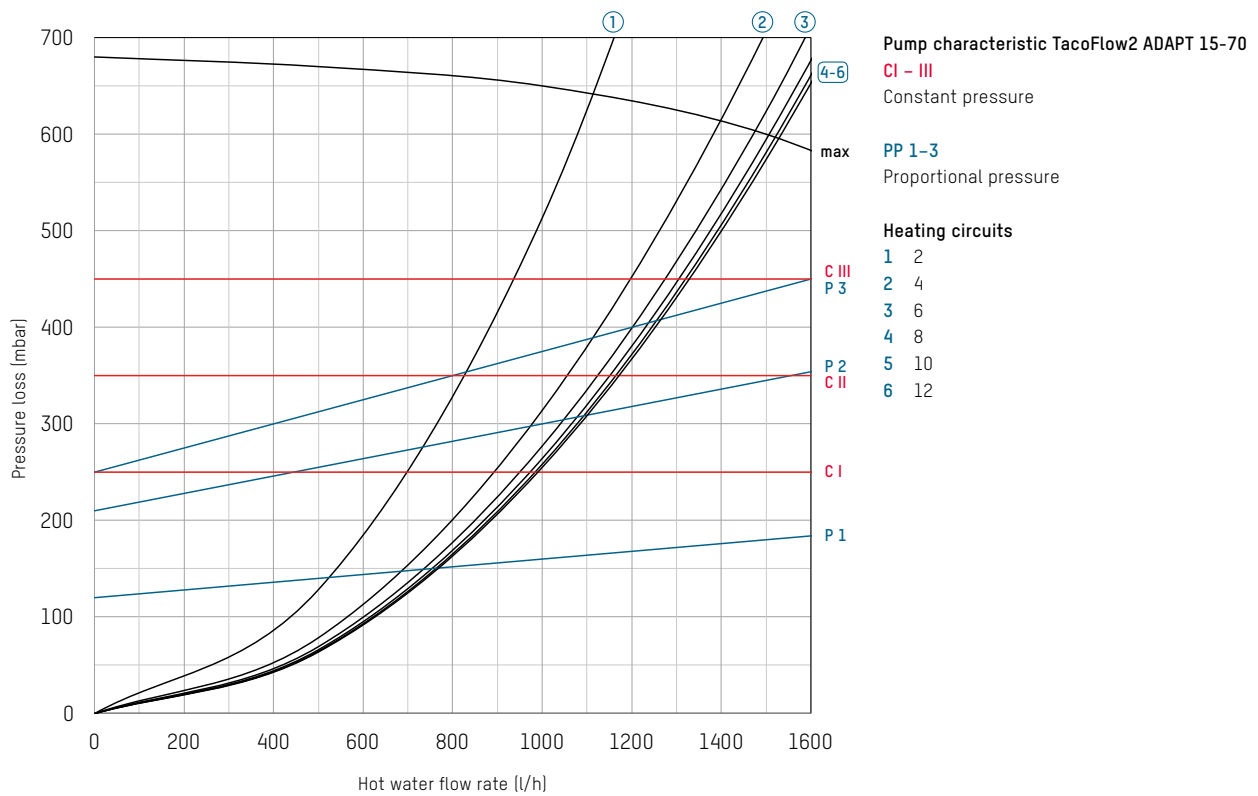
### Adjusting the mixing station

The mixing station is regulated by  
means of the integrated NovaMix  
Value mixing valve. The adjustment  
process is carried out when the  
circulating pump is running.  
All of the valves in the heating circuit  
must be fully open for adjustment.  
It may be necessary to remove the  
actuator drives.

- |   |  |
|---|--|
| 1 Check the flow temperature on the<br>thermometer for the hot<br>water flow.                   | 4 The set flow temperature should not<br>exceed 45 °C.   |
| 2 The flow temperature can be<br>increased or decreased by<br>rotating the blue plastic handle. | 5 A safety temperature limiter is loca-<br>ted upstream from the circula-<br>ting pump, which switches the<br>pump off at approx. 50 °C. |
| 3 The flow temperature at the heating<br>manifold may only be<br>≤ the boiler flow temperature. | 6 Once adjustment is complete, note<br>the corresponding flow tempe-<br>rature at the manifold or in the<br>planning documents.          |



**FLOW AND PRESSURE LOSS DIAGRAMS  
MIXING STATION WITH OPEN VALVES AND TOPMETER**



# MIXING STATION TACOSYS

FOR TACOSYS UNDERFLOOR HEATING MANIFOLDS



The mixing station supplies heating manifolds with the required flow rate and in the process regulates and monitors the flow temperature.

## DESCRIPTION

The mixing station is a compact pump assembly for direct installation in TacoSys underfloor heating manifolds. The station is used especially for avoiding installation of a second, costly low-temperature pipework between the boiler and underfloor heating manifold.

The boiler manifold and mixing valve for the underfloor heating loop in the central pump room can also be dispensed with.

When the mixing station is installed directly in the apartment at the heating manifold, adjustments can be performed decentrally for every apartment in accordance with the

individual needs of the user and the type of floor covering.

The station therefore guarantees optimal heating comfort for all occupants and ensures safe operation of the system thanks to the external safety temperature limiter.

The mixing station can be combined ideally with TacoSys underfloor heating manifolds together with radiator heating systems.

## ADVANTAGES

### Compact

- Comes equipped with all the necessary valves and components

### Secure

- Intrinsic safety of station with external safety temperature limiter

### Simple

- Simple adjustment and reading of the required flow temperature

### Efficient

- Energy savings thanks to high-efficiency pump

### Fitting

- Fits perfectly to TacoSys underfloor heating manifolds
- Variable for horizontal or vertical installation

## INSTALLATION POSITION

Left-, right-, and over-head assembly is possible at the hot water inlet in front of the heating manifold.

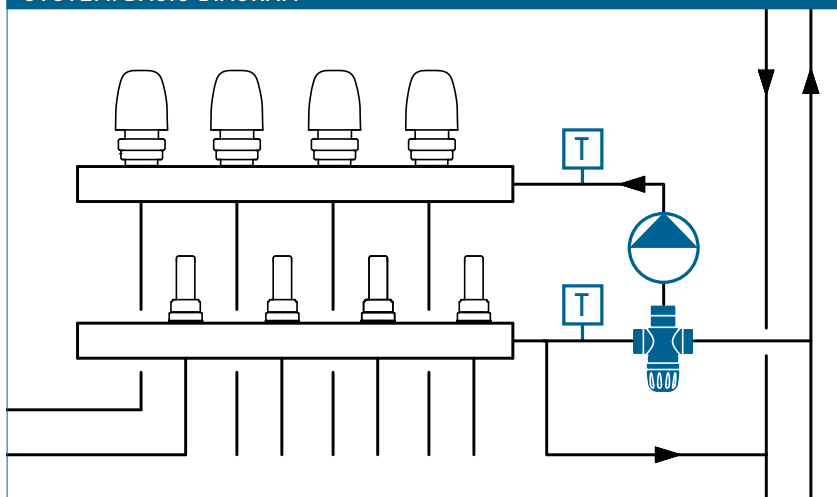
## OPERATION

The required flow temperature can be preset at the heating manifold by means of the integrated thermostatic mixing valve and then regulated subsequently. The pump is switched off by an external safety temperature limiter if the flow temperature of approx. 50°C is exceeded.

## BUILDING CATEGORIES

All building categories with integrated panel heating combined with radiator heating.

## SYSTEM/BASIC DIAGRAM



## SPECIFICATION TEXT

See [www.taconova.com](http://www.taconova.com)

## TECHNICAL DATA

### General

- Operating temperature:  
-10 °C to +90 °C
- Max. operating pressure  $P_{B \max}$ : 6 bar
- Adjustment range mixing valve:  
20 – 50 °C
- Safety temperature limit 50 °C:  $\pm 3\%$
- Residual pump head in accordance  
with flow rate and pressure loss  
diagrams

### Materials

- Pipes: Stainless steel 1.4400
- Terminal nuts und eccentric  
connectors: Brass, nickel-plated
- Seals: EPDM O-rings

### Flow media

- Heating water  
(VDI 2035; SWKI BT 102-01;  
ÖNORM H 5195-1)
- Water free of chemical additives

## SYSTEM COMPONENTS

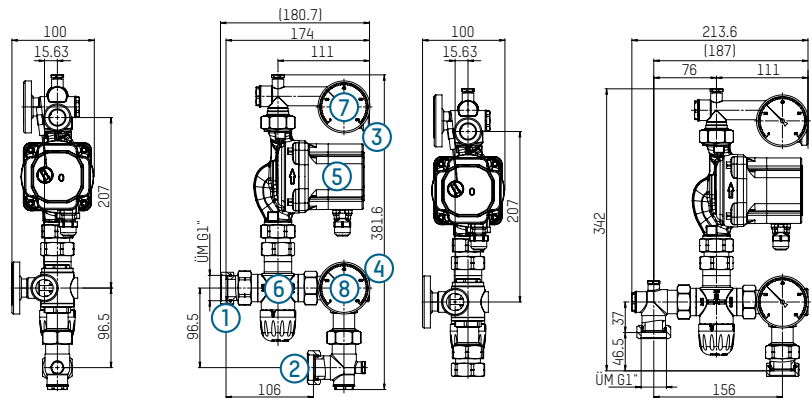
TacoDrive, TopDrive and NovaDrive  
electro-thermal actuators, room  
thermostats as well as distribution  
cabinets and heating manifolds:  
See separate datasheets.

## TYPE OVERVIEW

Mixing station with Taco high-efficiency pump and external safety  
temperature limiter

Order no.	Delivery head
296.8667.001	7 m

## DIMENSIONAL DRAWING



- |  |   |
|--|---|
| 1 Panel heating system flow [1" lock nut]      | 6 NovaMix Value thermostatic mixing valve |
| 2 Panel heating system return [1" lock nut]    | 7 Thermometer flow                        |
| 3 Manifold flow connection [1" outer thread]   | 8 Thermometer return                      |
| 4 Manifold return connection [1" outer thread] |   |
| 5 High-efficiency pump TacoFlow2 ADAPT 15-70   |   |

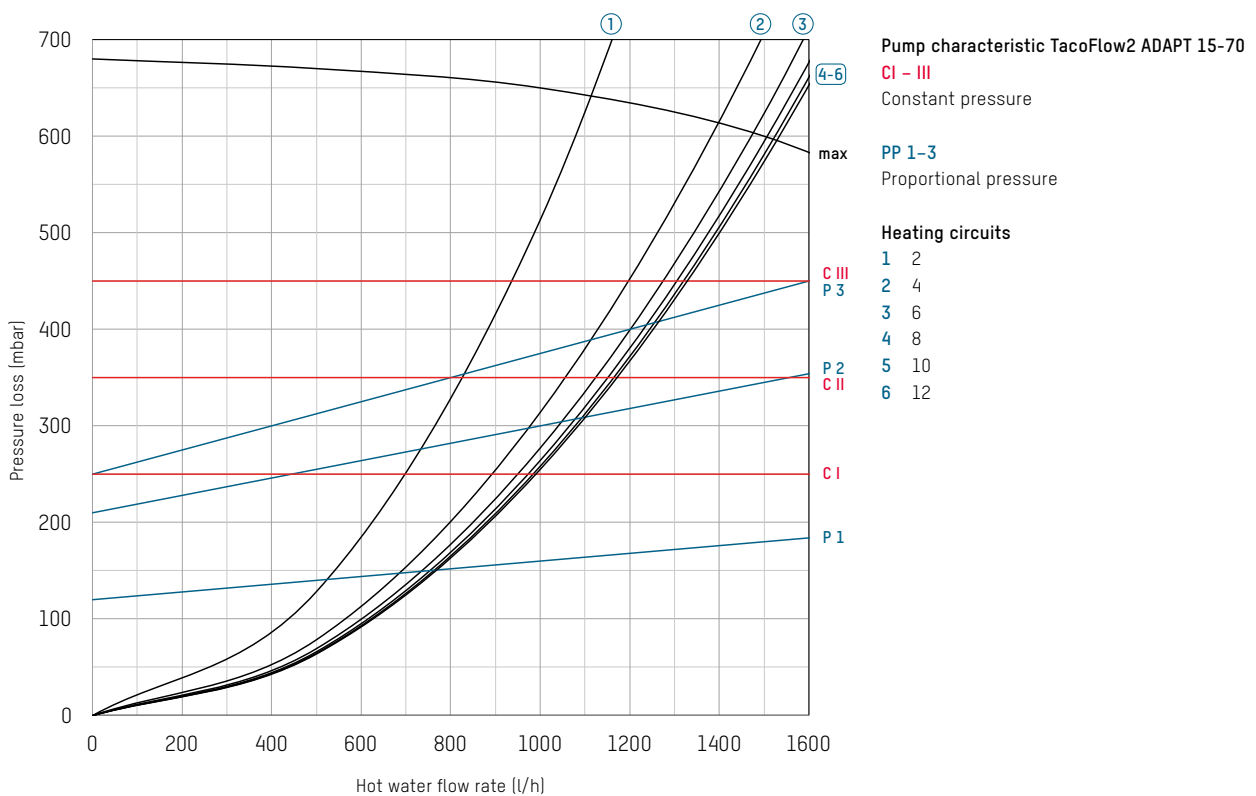
## NOTE

### Adjusting the mixing station

The mixing station is regulated by means of the integrated NovaMix Value mixing valve. The adjustment process is carried out when the circulating pump is running. All of the valves in the heating circuit must be fully open for adjustment. It may be necessary to remove the actuator drives.

- |  |   |
|--|---|
| 1 Check the flow temperature on the thermometer for the hot water flow.                        | 4 The set flow temperature should not exceed 45 °C.   |
| 2 The flow temperature can be increased or decreased by rotating the blue plastic handle.      | 5 A safety temperature limiter is located upstream from the circulating pump, which switches the pump off at approx. 50 °C. |
| 3 The flow temperature at the heating manifold may only be $\leq$ the boiler flow temperature. | 6 Once adjustment is complete, note the corresponding flow temperature at the manifold or in the planning documents.        |

# FLOW AND PRESSURE LOSS DIAGRAMS MIXING STATION WITH OPEN VALVES AND TOPMETER



# TOPMETER PLUS

BALANCING VALVE (FLOW, OEM VERSION)



Direct regulation, indication and isolation of flows from heating and cooling circuits in manifold flow pipe bars.

## DESCRIPTION

The TopMeter Plus offers an easy and accurate method of adjusting the flow rates in heating and cooling circuits.

Thanks to intensive development work, it is possible to reproduce the last flow rate set using a stop ring. The DIN-EN 1264-4 standard is fulfilled.

Correct balancing of hydraulic circuits ensures optimum energy distribution, resulting in more efficient and economical operation in accordance with the energy saving regulations provided for by legislation.

With the TopMeter, any qualified fitter can set the appropriate flow rate on the premises in question, thus avoiding investments in training and expensive measuring devices.

## INSTALLATION POSITION

The TopMeter is installed in the flow pipe bar of the manifold in a horizontal or vertical position.

The adaptation of the manifold must correspond to the manufacturer's specifications in accordance with the mounting dimension drawings.

## ADVANTAGES

- Precise and quick balancing without diagrams, tables or measuring devices
- Flow rate displayed directly in l/min
- The last flow rate set can be reproduced using an additional stop ring
- The regulation knob is sealable
- Regulating valve with isolating facility
- Removable sight glass available as a replacement part
- Can be installed in any position

## OPERATION

The flow measurement is based on the displacement principle of a baffle disc, which is inserted in a measuring tube. The position is conveyed to the sight glass on the indicator unit by means of a sliding bar, which fixes the baffle disc to the indicator unit. The scale printed on the sight glass allows the flow rate to be read with ease.

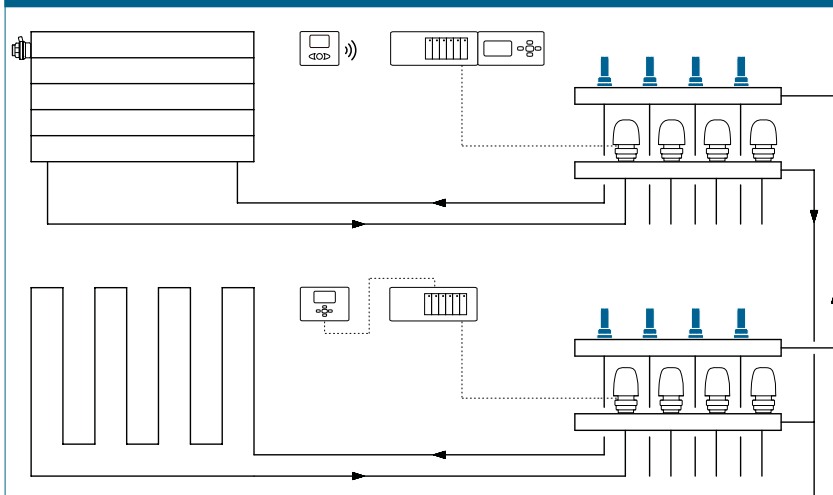
The opening cross-section at the valve is changed by rotating the regulation knob and consequently the required flow rate set or shut off fully. The stop ring is used in combination with the regulation knob to reproduce the flow rate.

## BUILDING CATEGORIES

For installations in the heating and cooling area:

- Apartment blocks, housing estates, multiple dwelling units
- Residential care facilities, hospitals
- Administration and service buildings
- Hotels and restaurants, industrial kitchens
- School buildings and sports facilities
- Commercial and industrial buildings
- Facilities with partial use, such as barracks, camping sites

## SYSTEM/BASIC DIAGRAM



## SPECIFICATION TEXT

See [www.taconova.com](http://www.taconova.com)

## TECHNICAL DATA

### General

- Medium temperature:
  - Brass: -10 °C – +70 °C
  - Plastic: -5 °C – +60 °C
- Operating pressure  $P_{0\max}$ : 6 bar
- System test pressure: max. 10 bar (20 °C)
- Measuring accuracy:  $\pm 10\%$  of the highest nominal value (the change in viscosity must be taken into account with antifreeze additives)
- $k_{vs}$  value and measuring range: see type overview
- External thread G 1/2" (cylindrical) as per ISO 228

### Material

- Brass, heat-resistant plastics and stainless steel
- Seals: EPDM

### Fluids

- Heating water (VDI 2035; SWKI BT 102-01; ÖNORM H 5195-1)
- Corrosion and antifreeze additives (glycol) up to 50% designed for heating systems (see document «Glycol correction curves»)

## ADDITIONAL MODELS

See data sheet for TopMeter Supply and TopMeter Return

## ASSEMBLY

When assembling the TopMeter in the manifold, the tightening torque must not exceed 20 Nm (brass TopMeter) or 10 Nm (plastic TopMeter).

## SERVICE

- Clean only with water, avoid contact with chemicals.
- The sight glass can be disassembled and replaced if necessary for servicing. See installation instructions (EA 1075).

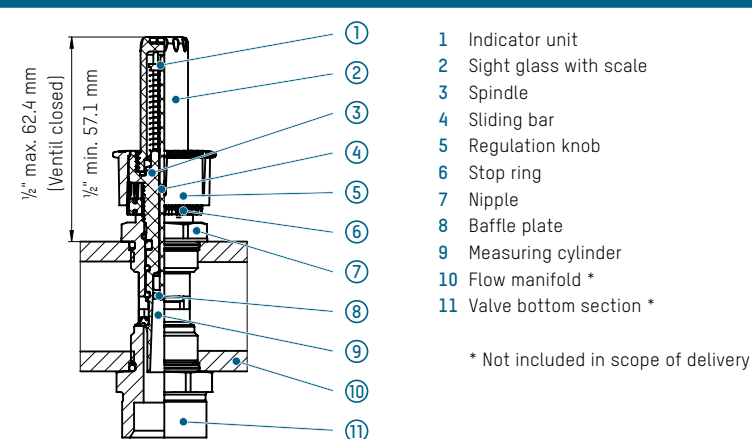
## TYPE OVERVIEW

TopMeter Plus | Balancing valve - Flow pipe

Order no.	DN	Measuring range	Nipple	$k_{vs}$ (m³/h)
223.9502.100	15	0 – 2,5 l/min	Brass, nickel-plated	1,1*
223.9505.100	15	0 – 5,0 l/min	Brass, nickel-plated	1,1*
223.9506.100	15	0 – 6,0 l/min	Brass, nickel-plated	1,1*
223.9508.100	15	0 – 8,0 l/min	Brass, nickel-plated	1,1*
223.9502.116	15	0 – 2,5 l/min	Brass	1,1*
223.9505.116	15	0 – 5,0 l/min	Brass	1,1*
223.9506.116	15	0 – 6,0 l/min	Brass	1,1*
223.9508.116	15	0 – 8,0 l/min	Brass	1,1*
223.9702.116	15	0 – 2,5 l/min	Plastic	1,1*
223.9705.116	15	0 – 5,0 l/min	Plastic	1,1*

\* The effective  $k_{vs}$  value depends on the counterpart used and the manifold geometry. Available on request with gpm and/or regulation knob in a different color. The definitive order number is assigned on the basis of the particular configuration.

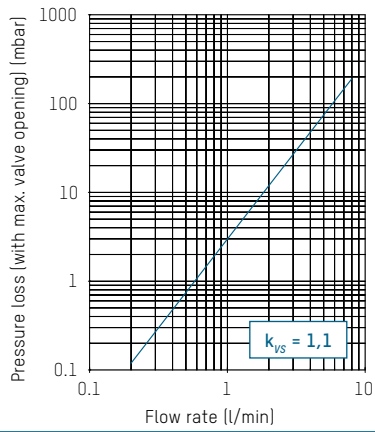
## DIMENSIONAL DRAWING



## NOTE

Depending on the individual design of your application, the manifold (lower part of valve) has to be adapted to the TopMeter. For this purpose you will receive a drawing from us showing the required mounting dimensions. The sealing as well as the counterpart in the manifold remain in the responsibility of the customer in all cases.

# PRESSURE LOSS DIAGRAM



## SPARE PARTS

Order no.	Sight glass
298.2317.000	0 – 2,5 l/min
298.2316.000	0 – 5,0 l/min
298.2318.000	0 – 6,0 l/min
298.2319.000	0 – 8,0 l/min

# TOPMETER SUPPLY

BALANCING VALVE (FLOW, OEM VERSION)



Direct regulation, indication and isolation of flows from heating and cooling circuits in manifold flow pipe bars.

## DESCRIPTION

The TopMeter offers an easy and accurate method of adjusting the flow rates in heating and cooling circuits.

Thanks to intensive development work and new technologies, the TopMeter can be integrated efficiently in the flow pipe bar to ensure reliable indicator values.

Correct balancing of hydraulic circuits ensures optimum energy distribution, resulting in more efficient and economical operation in accordance with the energy saving regulations provided for by legislation.

With the TopMeter, any qualified fitter can set the appropriate flow rate on the premises in question, thus avoiding investments in training and expensive measuring devices.

## INSTALLATION POSITION

The TopMeter is installed in the flow pipe bar of the manifold in a horizontal or vertical position.

The adaptation of the manifold must correspond to the manufacturer's specifications in accordance with the mounting dimension drawings.

## ADVANTAGES

- Precise and quick balancing without diagrams, tables or measuring devices
- Flow rate displayed directly in l/min
- Adjustments can be prevented using a lead seal
- Regulating valve with isolating facility
- Removable sight glass available as a replacement part
- Can be installed in any position

## OPERATION

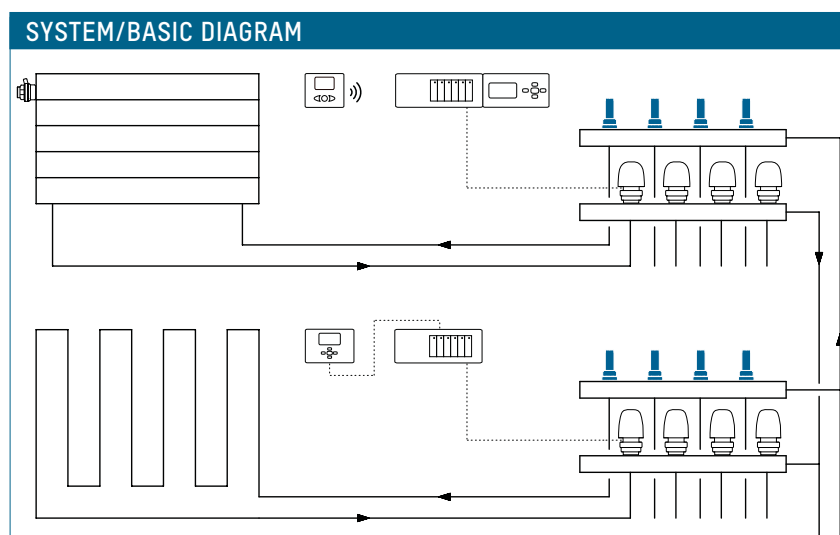
The flow measurement is based on the displacement principle of a baffle disc, which is inserted in a measuring tube. The position is conveyed to the sight glass on the indicator unit by means of a sliding bar, which fixes the baffle disc to the indicator unit. The scale printed on the sight glass allows the flow rate to be read with ease.

Turning the black spindle changes the opening profile of the valve and allows the desired flow rate to be set. The flow is isolated by turning the spindle fully.

## BUILDING CATEGORIES

For installations in the heating and cooling area:

- Apartment blocks, housing estates, multiple dwelling units
- Residential care facilities, hospitals
- Administration and service buildings
- Hotels and restaurants, industrial kitchens
- School buildings and sports facilities
- Commercial and industrial buildings
- Facilities with partial use, such as barracks, camping sites





## SPECIFICATION TEXT

See [www.taconova.com](http://www.taconova.com)

## TECHNICAL DATA

### General

- Medium temperature  $T_{0\max}$  /  
Operating pressure  $P_{0\max}$ :
  - Brass TopMeter:
    - 10 °C ... +70 °C / up to max. 6 bar
    - 10 °C ... +60 °C / up to max. 10 bar
  - Plastic TopMeter:
    - 5 °C ... +60 °C / up to max. 6 bar
- System test pressure:  
max. 10 bar (20 °C)
- Measuring accuracy:  
±10% of the highest nominal value  
(the change in viscosity must be  
taken into account with antifreeze  
additives)
- $k_{VS}$  value and measuring range:  
see type overview
- External thread G (cylindrical)  
as per ISO 228

### Material

- Brass, heat-resistant plastics  
and stainless steel
- Seals: EPDM

### Fluids

- Heating water  
(VDI 2035; SWKI BT 102-01;  
ÖNORM H 5195-1)
- Corrosion and antifreeze addi-  
tives (glycol) up to 50% designed  
for heating systems (see document  
«Glycol correction curves»)

## ADDITIONAL MODELS

See data sheet for TopMeter Return

## ASSEMBLY

When assembling the TopMeter in  
the manifold, the tightening torque  
must not exceed 20 Nm ( $\frac{1}{2}$ " ), 15 Nm  
( $\frac{3}{8}$ " ) or 10 Nm (plastic TopMeter).

## SERVICE

- Clean only with water, avoid contact  
with chemicals.
- The sight glass can be disassem-  
bled and replaced if necessary for  
servicing. See installation instruc-  
tions (EA 1075).

## TYPE OVERVIEW

TopMeter Supply | Balancing valve - Flow pipe

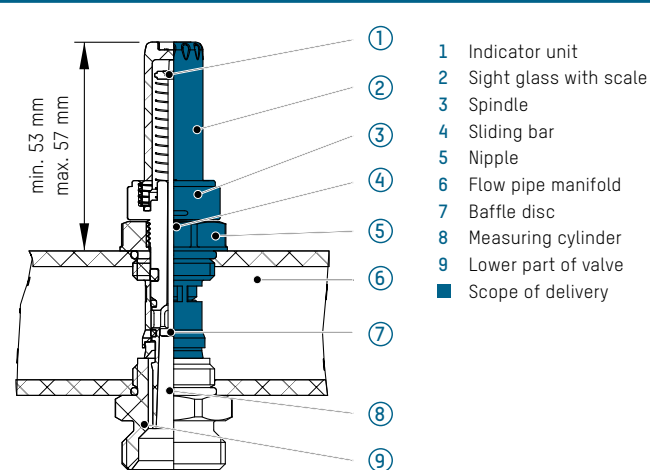
Order no.	DN	G	Measuring range	Nipple	$k_{VS}$ (m³/h)
223.6502.100	15	$\frac{1}{2}$ "	0 – 2,5 l/min	Brass, nickel-plated	1,1*
223.6505.100	15	$\frac{1}{2}$ "	0 – 5,0 l/min	Brass, nickel-plated	1,1*
223.6506.100	15	$\frac{1}{2}$ "	0 – 6,0 l/min	Brass, nickel-plated	1,1*
223.6508.100	15	$\frac{1}{2}$ "	0 – 8,0 l/min	Brass, nickel-plated	1,1*
223.6502.116	15	$\frac{1}{2}$ "	0 – 2,5 l/min	Brass	1,1*
223.6505.116	15	$\frac{1}{2}$ "	0 – 5,0 l/min	Brass	1,1*
223.6506.116	15	$\frac{1}{2}$ "	0 – 6,0 l/min	Brass	1,1*
223.6508.116	15	$\frac{1}{2}$ "	0 – 8,0 l/min	Brass	1,1*
223.6605.100	10	$\frac{3}{8}$ "	0 – 5,0 l/min	Brass, nickel-plated	1,1*
223.6605.116	10	$\frac{3}{8}$ "	0 – 5,0 l/min	Brass	1,1*
223.6702.116	15	$\frac{1}{2}$ "	0 – 2,5 l/min	Plastic	1,1*
223.6705.116	15	$\frac{1}{2}$ "	0 – 5,0 l/min	Plastic	1,1*

\* The effective  $k_{VS}$  value depends on the counterpart used and the manifold geometry.

Available on request with gpm and/or locking cap in different colour.

The definitive order number is assigned on the basis of the particular configuration.

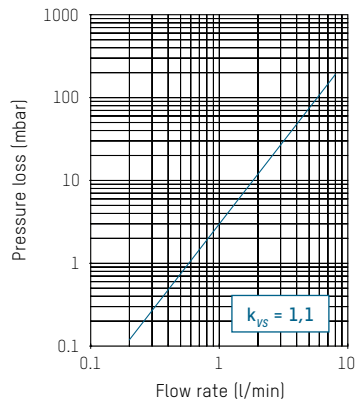
## DIMENSIONAL DRAWING



## NOTE

Depending on the individual design of your application, the manifold (lower  
part of valve) has to be adapted to the TopMeter. For this purpose you  
will receive a drawing from us showing the required mounting dimensions.  
The sealing as well as the counterpart in the manifold remain in the  
responsibility of the customer in all cases.

### PRESSURE LOSS DIAGRAM



### SPARE PARTS

Order no.	Sight glass
298.2317.000	0 – 2,5 l/min
298.2316.000	0 – 5,0 l/min
298.2318.000	0 – 6,0 l/min
298.2319.000	0 – 8,0 l/min

# TOPMETER RETURN

## BALANCING VALVE (RETURN, OEM VERSION)



Direct regulation, indication and isolation of flows from heating and cooling circuits in manifold return pipe bars.

### DESCRIPTION

The TopMeter offers an easy and accurate method of adjusting flow rates. The underlying measuring principle requires that the flow has settled in order to ensure reliable indicator values.

No complicated flow adjustment is required on the return pipe TopMeter to achieve this. Rather, the medium allows ideal inflow from the upstream inlet pipe.

Correct balancing of hydraulic circuits ensures optimum energy distribution, resulting in more efficient and economical operation in accordance with the energy saving regulations provided for by legislation.

With TopMeters, any qualified fitter can set the appropriate flow rate on the premises in question, thus avoiding investments in training and costly measuring devices.

### INSTALLATION POSITION

The TopMeter is installed in the return pipe bar of the manifold in a horizontal or vertical position. The adaptation of the manifold must correspond to the manufacturer's specifications in accordance with the mounting dimension drawings.

### ADVANTAGES

- Precise and quick balancing without diagrams, tables or measuring devices
- Flow rate displayed directly in l/min
- Settings can be blocked with the ½" TopMeter and adjustments prevented using a lead seal
- Regulating valve with isolating facility
- Removable sight glass available as a replacement part
- Can be installed in any position

### OPERATION

The flow measurement is based on the displacement principle of a baffle disc, which is inserted in a measuring tube. The position is conveyed to the sight glass on the indicator unit by means of a sliding bar, which fixes the baffle disc to the indicator unit. The scale printed on the sight glass allows the flow rate to be read with ease.

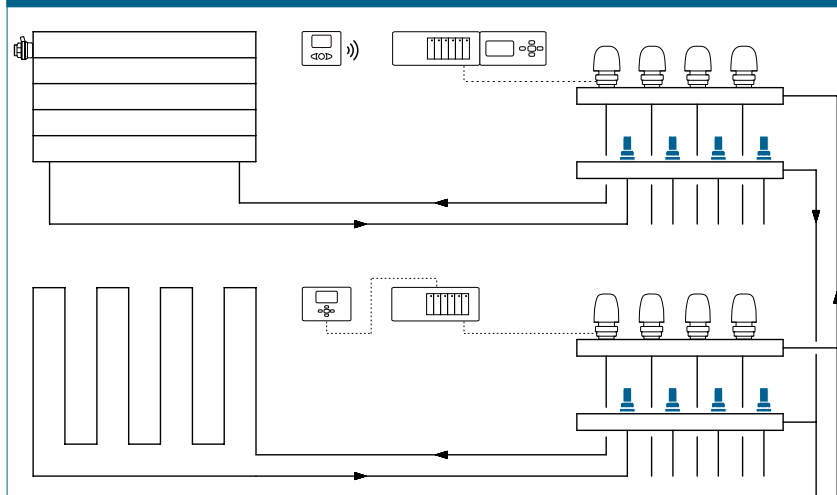
Turning the black spindle changes the opening profile of the valve and allows the desired flow rate to be set. The flow is isolated by turning the spindle fully.

### BUILDING CATEGORIES

For installations in the heating and cooling area:

- Apartment blocks, housing estates, multiple dwelling units
- Residential care facilities, hospitals
- Administration and service buildings
- Hotels and restaurants, industrial kitchens
- School buildings and sports facilities
- Commercial and industrial buildings
- Facilities with partial use, such as barracks, camping sites

### SYSTEM/BASIC DIAGRAM



## SPECIFICATION TEXT

See [www.taconova.com](http://www.taconova.com)

## TECHNICAL DATA

### General

- Medium temperature:  $-10^{\circ}\text{C}$  –  $+70^{\circ}\text{C}$
- Operating pressure  $P_{0\text{max}}$ : 6 bar
- Measuring accuracy:  $\pm 10\%$  of the highest nominal value (the change in viscosity must be taken into account with antifreeze additives)
- $k_{VS}$  value and measuring range: see type overview
- External thread G (cylindrical) as per ISO 228

### Material

- Brass, heat-resistant plastics and stainless steel
- Seals: EPDM

### Fluids

- Heating water (VDI 2035; SWKI BT 102-01; ÖNORM H 5195-1)
- Corrosion and antifreeze additives (glycol) up to 50% designed for heating systems (see document «Glycol correction curves»)

## ADDITIONAL MODELS

See data sheet for TopMeter Supply

## ASSEMBLY

When assembling the TopMeter in the manifold, the tightening torque must not exceed 20 Nm.

## SERVICE

- Clean only with water, avoid contact with chemicals.
- The sight glass can be disassembled and replaced if necessary for servicing. See installation instructions (EA 1008).

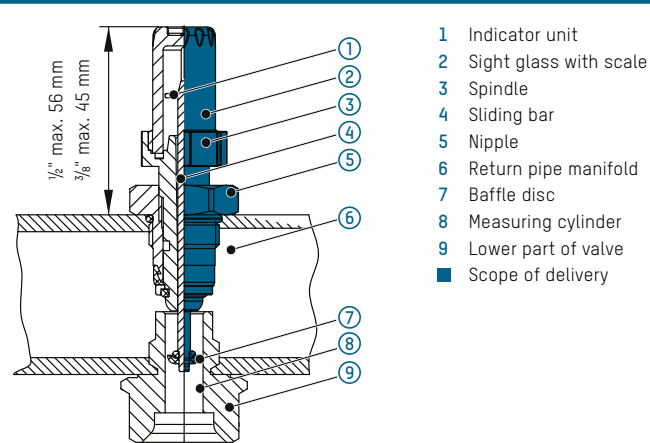
## TYPE OVERVIEW

TopMeter Return | Balancing valve - Return pipe

Order no.	DN	G	Measuring range	$k_{VS}$ (m³/h)
223.5203.XXX	15	½"	0,6 – 2,4 l/min	1,2*
223.5204.XXX	15	½"	1,0 – 4,0 l/min	1,7*
223.5208.XXX	15	½"	2,0 – 8,0 l/min	2,4*
223.5215.XXX	15	½"	1,0 – 15,0 l/min	2,0*
223.5303.XXX	10	⅜"	0,5 – 2,5 l/min	0,8*
223.5304.XXX	10	⅜"	1,0 – 5,0 l/min	1,0*

\* The effective  $k_{VS}$  value depends on the counterpart used and the manifold geometry. The definitive order number is assigned on the basis of the particular configuration.

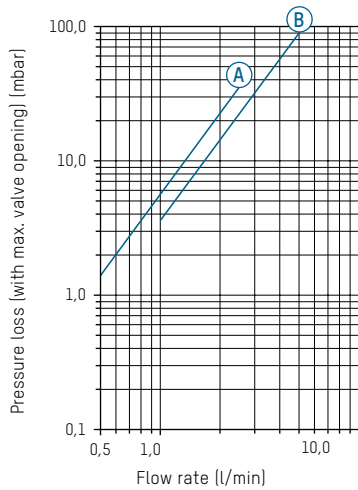
## DIMENSIONAL DRAWING



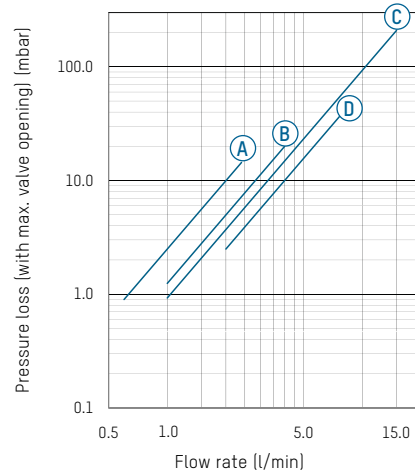
## NOTE

Depending on the individual design of your application, the manifold (lower part of valve) has to be adapted to the TopMeter. We can provide you with a drawing for this purpose (construction data sheet). Please request our construction data sheet if you need it. The retaining O ring as well as the counterpart in the manifold are the responsibility of the customer in all cases.

## PRESSURE LOSS DIAGRAMS



- A** 223.5303.XXX ( $\frac{1}{8}$ " | 0,5...2,5 l/min |  $k_{VS} = 0,8$ )  
**B** 223.5304.XXX ( $\frac{1}{8}$ " | 1,0...5,0 l/min |  $k_{VS} = 1,0$ )



- A** 223.5203.XXX ( $\frac{1}{2}$ " | 0,6...2,4 l/min |  $k_{VS} = 1,2$ )  
**B** 223.5204.XXX ( $\frac{1}{2}$ " | 1,0...4,0 l/min |  $k_{VS} = 1,7$ )  
**C** 223.5215.XXX ( $\frac{1}{2}$ " | 1,0...15,0 l/min |  $k_{VS} = 2,0$ )  
**D** 223.5208.XXX ( $\frac{1}{2}$ " | 2,0...8,0 l/min |  $k_{VS} = 2,4$ )

## SPARE PARTS

Order no.	Sight glass $\frac{1}{2}$ "	Order no.	Sight glass $\frac{3}{8}$ "
298.2303.000	0,6 – 2,4 l/min	298.2313.000	0,5 – 2,5 l/min
298.2304.000	1,0 – 4,0 l/min	298.2314.000	1,0 – 5,0 l/min
298.2308.000	2,0 – 8,0 l/min		

# TACOCHECK

INDICATOR VALVE (SUPPLY, OEM VERSION)



Indicates and shuts off the flow from heating and cooling circuits directly in the flow manifold of the distributor.

## DESCRIPTION

The TacoCheck indicates whether there is a flow in heating and cooling circuits. Intensive development work made it possible to integrate a TacoCheck in the flow manifold in conjunction with a dynamic valve. The TacoCheck is available as an ON/OFF version (full indication from as little as 0.2 l/min) or as a rising indicator (0 – approx. 3 l/min). Systems that are correctly hydronically balanced ensure the ideal distribution of energy and economic operation in accordance with the Energy Saving Ordinance imposed by the legislator.

The TacoCheck allows a visiting heating contractor to immediately identify whether there is a flow, without the need to invest in training or expensive measuring equipment.

## INSTALLATION POSITION

The TacoCheck is installed directly in the flow manifold of the distributor. It can be installed in any position. The distributor adaptor must comply with the manufacturer's specifications to ensure the correct function.

## ADVANTAGES

- Direct flow indicator
- Indicator valve can be shut off
- Extremely compact
- ON/OFF or rising indicator available
- Any installation position

## OPERATION

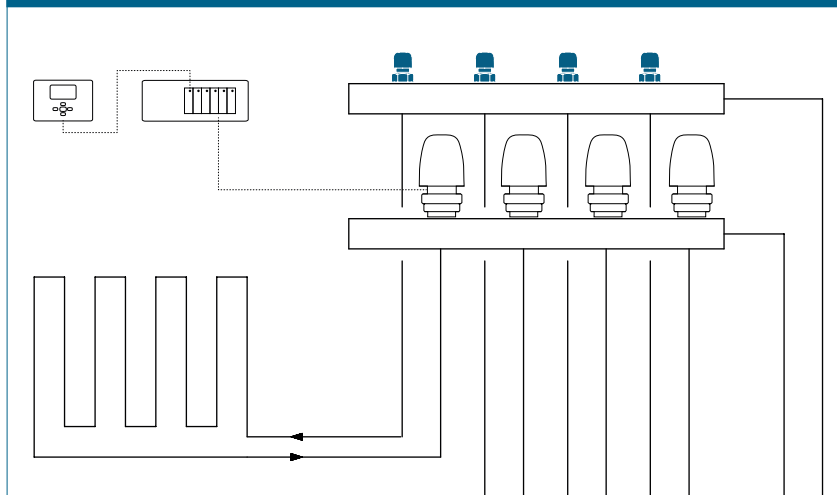
The flow measurement is based on the displacement principle of a baffle plate in the base part of the valve. The flow is visible directly in the sight glass because the baffle plate is connected to the pushrod, which acts against a spring. The scale printed on the sight glass is a visual indication of the flow. The ON/OFF version has to have a cylindrical base part, whereas the rising indicator uses a conical base part. Turning the sight glass opens or shuts off the valve.

## BUILDING CATEGORIES

For installations in the heating and cooling area:

- Apartment blocks, housing estates, multiple dwelling units
- Residential care facilities, hospitals
- Administration and service buildings
- Hotels and restaurants, industrial kitchens
- School buildings and sports facilities
- Commercial and industrial buildings
- Facilities with partial use, such as barracks, camping sites

## SYSTEM/BASIC DIAGRAM



## SPECIFICATION TEXT

See [www.taconova.com](http://www.taconova.com)

## TECHNICAL DATA

### General

- Medium temperature: 3 °C – +60 °C
- Operating pressure  $P_{0\max}$ : 6 bar
- System test pressure:  
max. 10 bar (20 °C)
- Functions: ON/OFF indicator or  
rising indicator (0 – approx. 3 l/min)
- $k_{vs}$  value and measuring range:  
see type overview
- External thread G (cylindrical)  
as per ISO 228

### Material

- Heat-resistant plastics and  
stainless steel
- Seals: EPDM

### Fluids

- Heating water  
(VDI 2035; SWKI BT 102-01;  
ÖNORM H 5195-1)

## ADDITIONAL MODELS

See data sheet for TopMeter Supply

## ASSEMBLY

The torque must not exceed 10 Nm  
when fitting the TacoCheck to the  
distributor.

## SERVICE

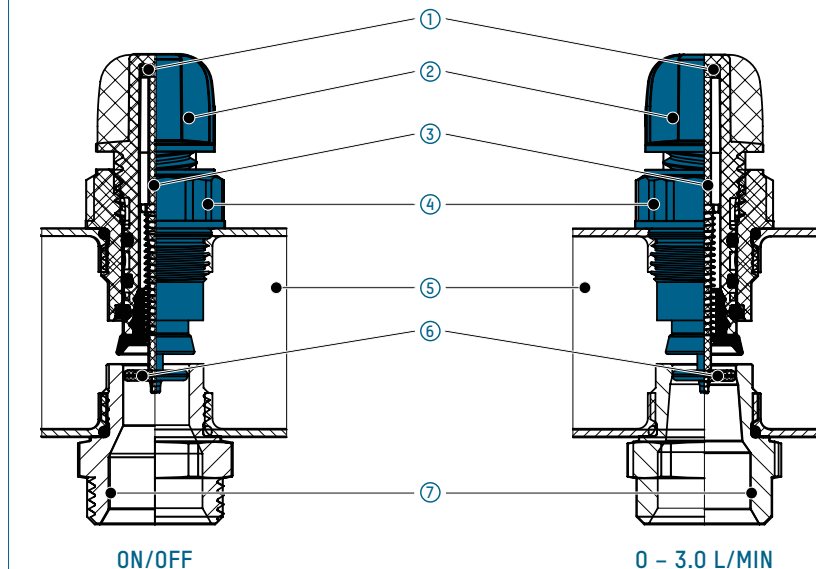
- Clean only with water, avoid contact  
with chemicals
- If necessary, the entire valve must  
be replaced.

## TYPE OVERVIEW

TacoCheck | Indicator valve, flow

Order no.	DN	G	Measuring range	Nipple	$k_{vs}$ (m³/h)
223.2501.000	15	½"	ON/OFF	Plastic	2.9
223.2503.000	15	½"	0 – approx. 3,0 l/min	Plastic	2.5

## DIMENSIONAL DRAWING



- 1 Indicator unit
- 2 Sight glass
- 3 Sliding bar
- 4 Nipple

- 5 Flow pipe manifold
  - 6 Baffle disc
  - 7 Lower part of valve
- Scope of delivery

## NOTE

Depending on the individual design of your application, the manifold (lower part of valve) has to be adapted to the TacoCheck. For this purpose you will receive a drawing from us showing the required mounting dimensions. The sealing as well as the counterpart in the manifold remain in the responsibility of the customer in all cases.

# PRECISE, DEMAND-BASED ENERGY DISTRIBUTION

One of the main functions demanded of heating and cooling systems is to ensure the right room temperature at the right time. Additional regulating components make it possible to achieve constant heating or cooling performance as and when needed.

## INDIVIDUAL USE OF BUILDINGS

Depending on the type of use of the building, room heating or cooling must be tailored to the individual needs of users. These are influenced by:

- Irregular usage or occupancy times
- Higher heating or cooling requirements at specific times of the day, for example during the day in residential buildings or at weekends in commercial premises
- Loss of heat through opening doors or draughts
- Room temperature regulation for different zones

## AUTOMATION BY MEANS OF ADDITIONAL COMPONENTS

In order to provide individual temperatures as and when needed, a heating or cooling system can be automated by adding more components.

This means that the use of the system can be controlled by means of actuators on the valves in combination with room thermostats, depending on programmed times and required temperatures.

In addition, distributors fitted with actuators also allow the system to be integrated in a building automation system. The TopMeter Plus with reproducible balancing function as well as the TacoDrive actuators with first-open function are already preinstalled in the latest product, the TacoSys Pro.

## PERMANENT CONTROL

Room thermostats constantly monitor the room air temperature and compare it with the set target value. If the actual temperature drops below the target room temperature, the room thermostat sends a signal (via a connector module) to the actuator. This performs a silent lifting movement which is transmitted directly to the valve in the distributor bar, opening the heating circuit. This causes hot or cold liquid to flow into the circuit until the target temperature is reached and measured by the room thermostat. The latter sends a signal to the actuator, causing it to close the valve again.

## QUICK AND EASY TO INSTALL. PERFECT TEAMWORK

The TacoDrive, TopDrive and NovaDrive actuators use the room thermostats to open or close the valve settings in the distributor bar on the basis of the required heat. The intermediate NovaMaster connector module allows a fixed line or wireless connection to be established between the actuators and room thermostats.

## THE PERFECT COMPLEMENT FOR SYSTEMS ALREADY AVAILABLE ON THE MARKET

NovaDrive actuators are available for both open when off and closed when off operating modes, while TacoDrive and TopDrive are available only for closed when off mode. The actuators will fit almost all commercial valves and have bayonet or click-in connections for quick and easy installation.

## CAN BE RETROFITTED USING WIRELESS TECHNOLOGY

Available in both wired and wireless versions: The basic version for controlling 230 V NC actuators will cover the most common applications. Other versions allow 230 V and 24 V NO actuators to be controlled, as well as drives with auxiliary switches or proportional lifting. In addition, Taconova also supplies wireless room thermostats. The use of wireless transmission technology means that there is no need for time-consuming cable laying – a major advantage when retrofitting a system and when working in new buildings.

## MAXIMIZING ENERGY SAVINGS

A pump logic module can also be added to the controller; this switches off the pump when heating is no longer needed. This saves energy and protects the pump.



# PERFECT CONTROL FOR SATISFIED CUSTOMERS

The valve actuators and room thermostats from Taconova efficiently automate the distribution of energy for panel heating and cooling systems as needed. The broad product range covers every price and performance bracket and offers the perfect solution for every need.

## BENEFITS AT THE PLANNING STAGE

- Security thanks to customized and proven system solutions
- Reliable compliance with design temperatures
- Flexible installation options even in retrofitting projects because the actuators match all common valve types
- Easy retrofitting with wireless room thermostats
- Combination options and a range of extendable connector modules mean that complex requirements can be met

## BENEFITS AT THE INSTALLATION STAGE

- Quick and easy installation of actuators by means of bayonet fittings
- Easy functional control of the actuators thanks to tactile and visual valve position guides
- Comfort thanks to constant room temperatures
- Long service life means no maintenance required

### Actuators

The new TacoDrive actuator can already be found preinstalled in many panel heating manifolds (for example TacoSys Pro). Only the plug for the power supply has to be connected at startup. No complex assembly work is required. The completely pre-assembled TacoSys stainless steel manifolds are designed for two to twelve heating circuits. The equipment also includes, among other things, the TopMeter (TacoSys High End) and the TacoVent Vent.

- TacoDrive NC
- NovaDrive NC/NO
- TopDrive NC

### Room thermostats

Taconova offers a wide range of room thermostats. These work perfectly with the NovaDrive and TopDrive actuators. For new construction and remediation, the cable (EL) and radio (RF) versions are recommended. The radio versions are also particularly suitable for renovation.

- NovaStat EL (Electronic)
- NovaStat RF (Radio Frequency)

### Connecting modules

For complex room climate requirements in a building, the room thermostats can be combined with open-ended connecting modules.

- NovaMaster EL (Electronic)
- NovaMaster RF (Radio Frequency)

Heating and cooling energy generation	Heating and cooling energy distribution (room climate)	Sanitary systems
–	<ul style="list-style-type: none"> <li>▪ Underfloor heating</li> <li>▪ Radiators</li> <li>▪ Chilled and heated ceilings</li> <li>▪ Fan coils and chill beams</li> <li>▪ Concrete cores</li> </ul>	–

# TACODRIVE

## THERMAL ACTUATOR WITH MANIFOLD VALVE



Electro-thermal actuator in normally closed mode for installation in panel heating manifolds.

### DESCRIPTION

TacoDrive is a valve drive unit consisting of an electro-thermal actuator and a heating valve. The valve drive unit is intended for installation in panel heating manifolds.

The innovative valve technology is compatible with the standardized Taconova TopMeter interface. This patented technology allows the actuator to be designed in a compact manner.

The valve drive unit has been reduced to the essential functional components and is especially suitable for automatic installation in panel heating manifolds. The integrated and reversible first-open function guarantees the subsequent filling and venting of the system. The system operator can use the integrated valve position indicator to check the actual valve position.

### ADVANTAGES

- Extremely compact
- Pre-assembled valve drive unit for automatic installation in panel heating manifolds
- Actuator with connector and maximum protection class (IP54)
- Integrated valve position indicator
- Integrated reversible first-open function for manual operation
- Can be adapted to TopMeter interface
- Very high valve control force owing to direct-acting expansion element

### INSTALLATION POSITION

In the panel heating manifold return bar. The IP54 protection class allows subsequent installation of the heating manifold in any installed position.

### OPERATION

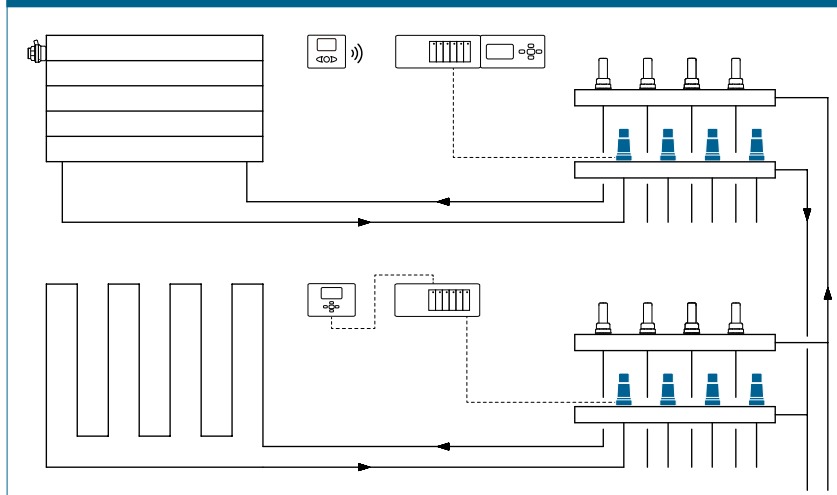
The TacoDrive combines valve and actuator for controlling heating circuits at panel heating manifolds. The valve drive unit operates in normally closed (NC) mode. The TacoDrive is activated by a room temperature control unit (e.g. in the NovaStat series) with a two-step output.

### BUILDING CATEGORIES

For installation in heating and cooling applications in:

- Apartment blocks, housing estates, multiple dwelling units
- Residential care facilities and hospitals
- Administration and service buildings
- Hotels and restaurants
- School buildings and sports halls, sports facilities
- Commercial and industrial buildings
- Facilities with partial use – for example, barracks, camping sites etc.

### SYSTEM/BASIC DIAGRAM



## TECHNICAL DATA

### Actuator

- Type: Normally closed (NC)
- Ambient temperature: 0 – 50 °C
- Opening/closing time: approx. 3 minutes
- Visual inspection of expansion element
- Reversible first-open
- Protection class of actuator: IP54
- Protection class II

### Electrical connection data

- Rated voltage: 230 V, 50/60 Hz
- Permissible voltage deviation:  $\pm 10\%$
- Operating efficiency: 1.3 W
- Inrush current: 230 V: 0.6 A for max. 100 ms
- Recommended fuse: 0.35 A slow-acting, as per DIN 41662
- Connection cable length: 1 m
- Connection cable: 2 \* 0.75 mm<sup>2</sup>, PVC with plug protected against polarity reversal

### Valve

- Medium temperature: -10 °C – +60 °C
- Operating pressure  $P_{0\max}$ : 6 bar
- System test pressure: max. 10 bar (20 °C)
- $k_{vs}$  value: 1.55
- External thread G 1/2" (cylindrical) as per ISO 228
- Double valve stem seal with grease reservoir
- Visual inspection of valve

### Material

- Brass, heat-resistant plastics
- Seals: EPDM, FKM

### Fluids

- Heating water (VDI 2035; SWKI BT 102-01; ÖNORM H 5195-1)
- Cooling water
- Corrosion and antifreeze additives (glycol) up to 50% designed for heating systems (see document «Glycol correction curves»)

## APPROVALS / CERTIFICATES

- VDE

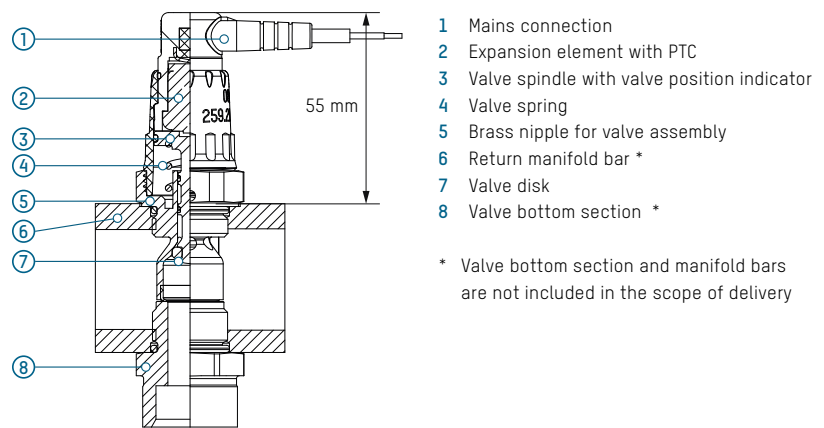
## TYPE OVERVIEW

TacoDrive | Electro-thermal actuator, NC (Normally Closed) mode, suitable for valves of Taconova

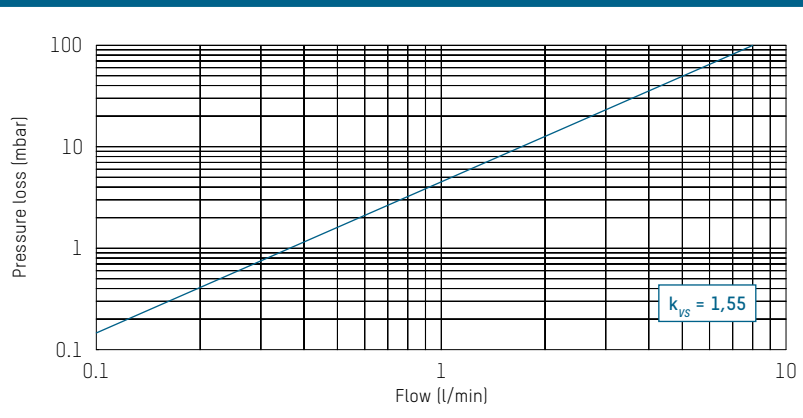
Order no.	Fixing	Nipple
259.2270.000	G 1/2"	Brass
259.2270.100	G 1/2"	Brass, nickel-plated

\* The required valve bottom section depends on the cross-section of the manifold bar used and has to be agreed with Taconova.

## DIMENSIONAL DRAWING



## PRESSURE LOSS DIAGRAM

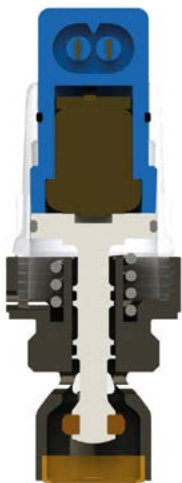


## NOTE

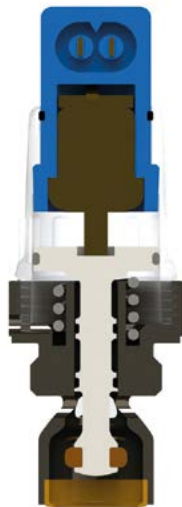
PTC patent application  
 CH2015/000054

## OPERATING MODES

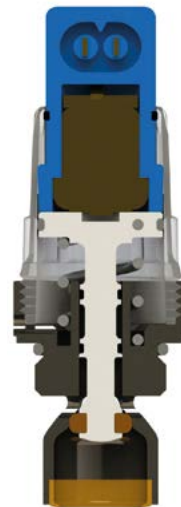
Valve open,  
first open engaged



Valve open,  
operating function



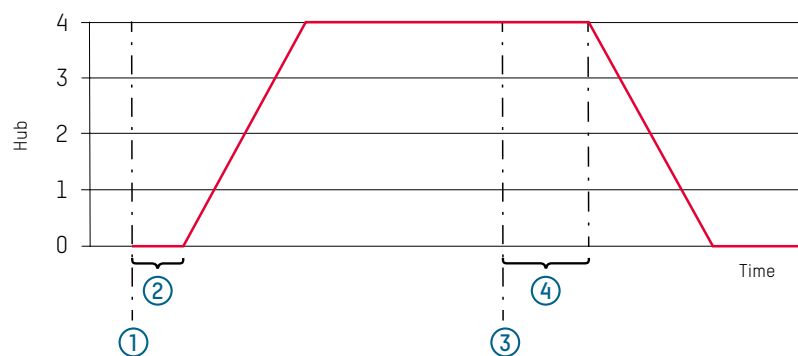
Valve closed,  
standby

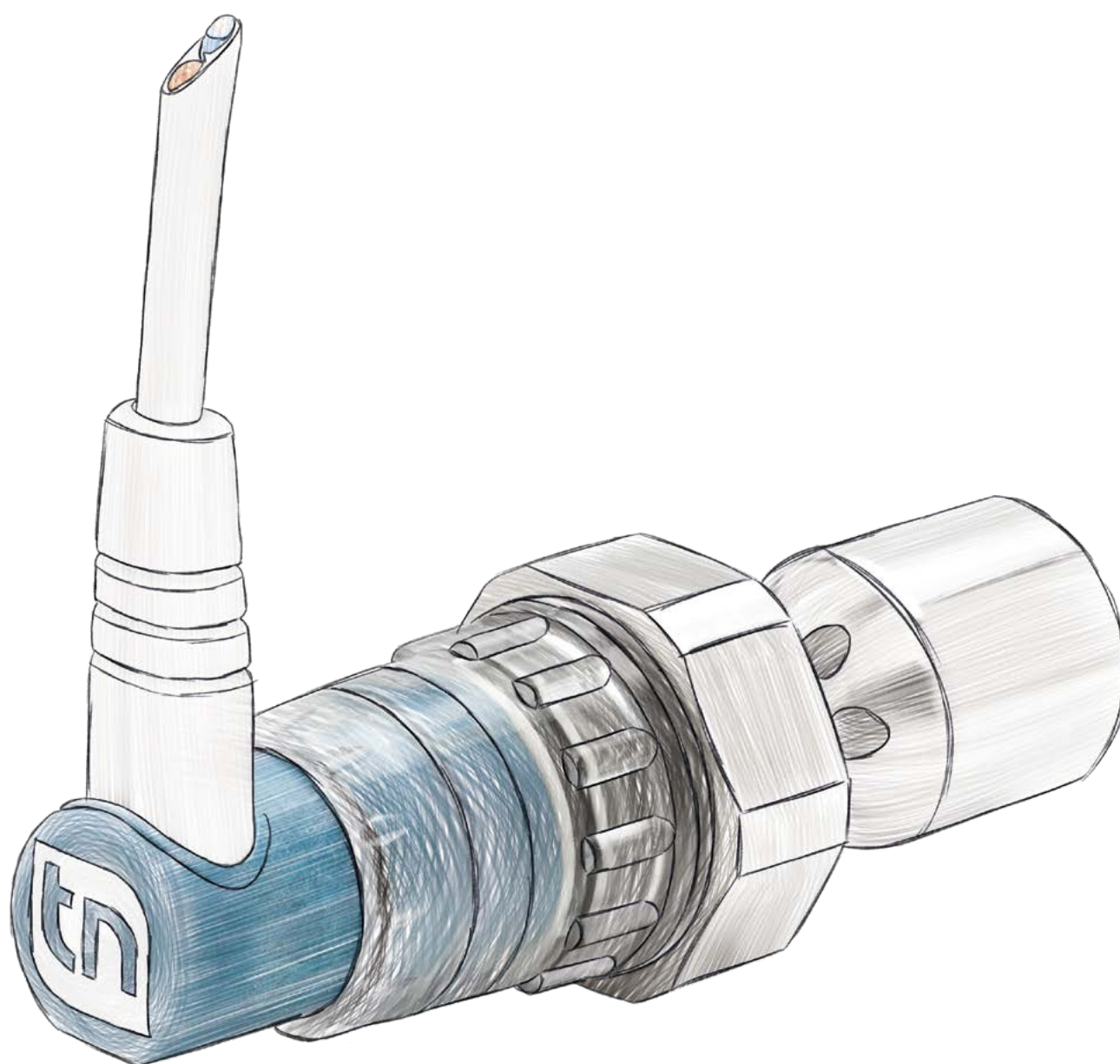


Splash-proof based on O-rings

## CIRCUIT DIAGRAM

- 1 Voltage on
- 2 Dwell time on
- 3 Voltage off
- 4 Dwell time off





# NOVADRIE NC/NO

## ACTUATOR



Electro-thermal actuators in the operating mode normally open and normally closed for heating circuit manifolds and radiator valves.

### DESCRIPTION

NovaDrive NC/NO actuators in the new, attractive appearance used in conjunction with room thermostats, time switches and building automation systems offer an efficient means of controlling temperatures in heating and cooling systems to suit individual requirements.

Thanks to the operating mode NO (normally open) and NC (normally closed) as well as the quick-locking, large surface bayonet connection, the actuators can be used in a wide range of applications in all HVAC systems.

These actuators can help eliminate energy wastage in heating as well as in cooling and offer the ideal solution for energy control in buildings with irregular occupancy levels. Typical installations include apartments, offices, schools, hotels etc. The standard valve position indicators integrated into the actuators control the system functions during the assembly, commissioning and monitoring stages.

### INSTALLATION POSITION

Any.

### ADVANTAGES

- Operating mode NO normally open and NC normally closed
- Valve position visually indicated and tangible
- Bayonet connection audibly engaged with click
- Attractive appearance
- Low power input
- Silent operation
- Available to fit most valve bodies
- Connection cable, pluggable

### OPERATION

An electrical resistance heats an expansion element. Any deviation from the nominal room temperature value causes the actuator to transmit an appropriate stroke movement to the valve.

The thermostat and actuator operate according to the «ON / OFF» principle. The variable, rhythmic opening and closing, depending on the heat demand, also produces an almost continuous control characteristic.

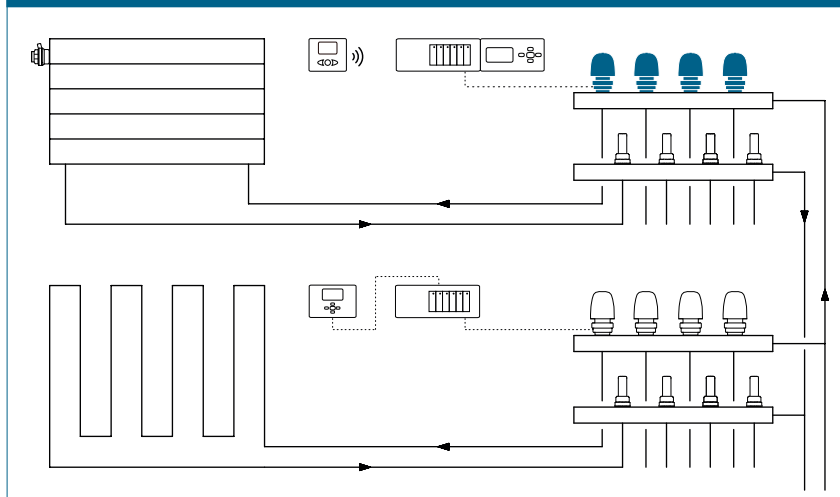
In the without current state, the valve is open with the type NO and closed with the type NC.

### BUILDING CATEGORIES

For installations in the heating and cooling area:

- Apartment blocks, housing estates, multiple dwelling units
- Residential care facilities, hospitals
- Administration and service buildings
- Hotels and restaurants, industrial kitchens
- School buildings and sports facilities
- Commercial and industrial buildings

### SYSTEM/BASIC DIAGRAM



**SPECIFICATION TEXT**See [www.taconova.com](http://www.taconova.com)**TECHNICAL DATA****General**

- Versions:
  - Normally closed NC
  - Normally open NO
- Ambient temperature: 0 ... 50° C
- Opening/closing time: approx. 3 min.
- Nominal stroke: 4 mm
- Nominal closing force 90 N
- Protection mode IP 40
- Protection class II

**Electrical specifications**

- Rated voltage (AC or DC):  
24 V or 230 V
- Permissible voltage deviation: ±10%
- Operating efficiency: 1.6 W
- Inrush current:
  - 24V: 0.2 A for max. 1 min;
  - 230V: 0.6 A for max. 100 ms
- Recommended fuse protection:  
0.35 A time delay, according to  
DIN 41662
- Connecting cable length 1 m

**APPROVALS / CERTIFICATES**

- CE conformity symbol
- The technical data conforms with  
the respective EN standards

**ACCESSORIES**

Various room thermostats and  
junction modules for wired and  
wireless applications  
(see separate data sheets).

**TYPE OVERVIEW**

NovaDrive NC | Electro-Thermal Actuator, Function NC (Normally Closed)

Order no. 230 V	Connection	Suitable for valves of make*
257.2854.000	M30 × 1,0	Beulco [old type, approx. until march 2005]
257.2855.000	M30 × 1,5	TacoSys/Heimeier/Strawa/Empur Messing/Oventrop/Delphistherm/ Emmeti/Schlösser/Beulco/AC-FIX/ Stramax/Roth/IVR
257.2858.000	M28 × 1,5	Herz (RV 57)
257.2862.000	M30 × 1,5	MNG/Cazzaniga/SBK/Empur-Edelstahl/ SKV-Ventil frontal
257.2864.000	Adapter	Giacomini

Order no. 24 V	Connection	Suitable for valves of make*
257.1855.000	M30 × 1,5	TacoSys/Heimeier/Strawa/Empur Messing/Oventrop/Delphistherm/ Emmeti/Schlösser/Beulco/AC-FIX/ Stramax/Roth/IVR

NovaDrive NO | Electro-Thermal Actuator, Function NC (Normally Open)

Order no. 230 V	Connection	Suitable for valves of make*
257.2554.000 **	M30 × 1,0	Beulco [old type, approx. until march 2005]
257.2555.000	M30 × 1,5	TacoSys/Heimeier/Strawa/Empur Messing/Oventrop/Delphistherm/ Emmeti/Schlösser/Beulco/AC-FIX/ Stramax/Roth/IVR
257.2562.000	M30 × 1,5	MNG/Cazzaniga/SBK/Empur-Edelstahl/ SKV-Ventil frontal

\* Further specific customer designs for all types of valve bodies on request.

If you are unsure about valve adjustment, please contact customer service.

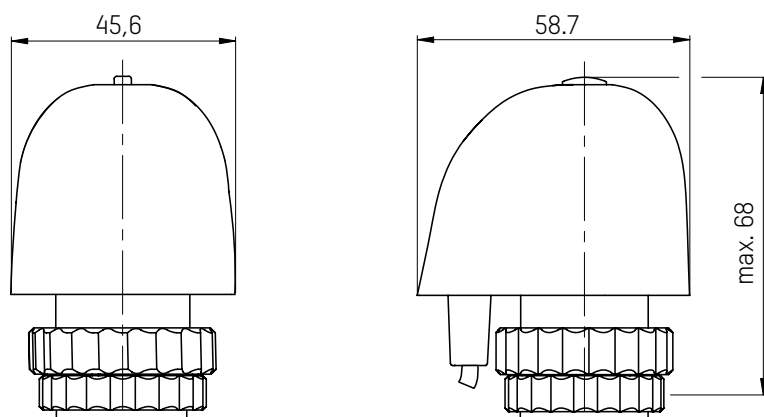
\*\* As long as available

### ECO-TIP

#### SAVE ENERGY AND MONEY!

To avoid unnecessary hours of operation, the actuator should be switched off via the room thermostat out of the heating period.

### DIMENSIONAL DRAWING

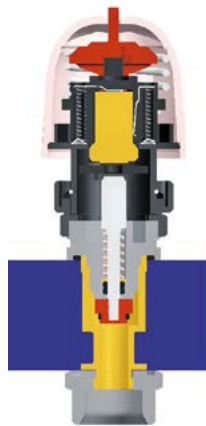


### OPERATING MODES

Assembled state without current:



Type NC: Valve closed



Type NO: Valve open

Operated state under current:



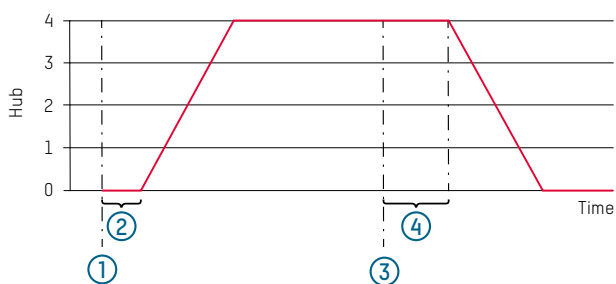
Type NC: Valve open



Type NO: Valve closed

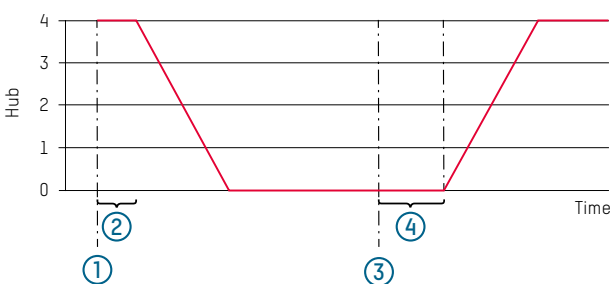
### CIRCUIT DIAGRAMS

Normally Closed (NC)



- 1 Voltage on
- 2 Dwell time on
- 3 Voltage off
- 4 Dwell time off

Normally Open (NO)





# TOPDRIVE

## ACTUATOR



Electro-thermal actuators in the operating mode normally closed for heating circuit manifolds and radiator valves.

### DESCRIPTION

TopDrive actuators in the new, great design used in conjunction with room thermostats, time switches and building automation systems offer an efficient means of controlling temperatures in heating and cooling systems to suit individual requirements.

The normally closed (NC) operating mode, the easily and quickly fitted bayonet connection and the possibility of overhead installation (360° installation) ensure that the TopDrive actuators can be used for versatile applications in heating, ventilation, air conditioning and sanitary systems.

Homes, offices, schools, hotels, etc. are typical examples of properties with high saving potential, since heating and cooling systems are consistently used only as and when required.

Internal visual indication of valve position is standard and serves as a functional control feature during installation, commissioning and monitoring.

### INSTALLATION POSITION

360° installation

### ADVANTAGES

- Protection against leaking valves
- Protection rating actuator IP 44, CE
- 360° installation
- Compatible to most valve bodies
- Valve position visually indicated and tangible
- Easy installation through bayonet connector

### OPERATION

An electric resistance heats an expansion element. Any deviation from the nominal room temperature value triggers the actuator to transmit an appropriate stroke movement to the valve.

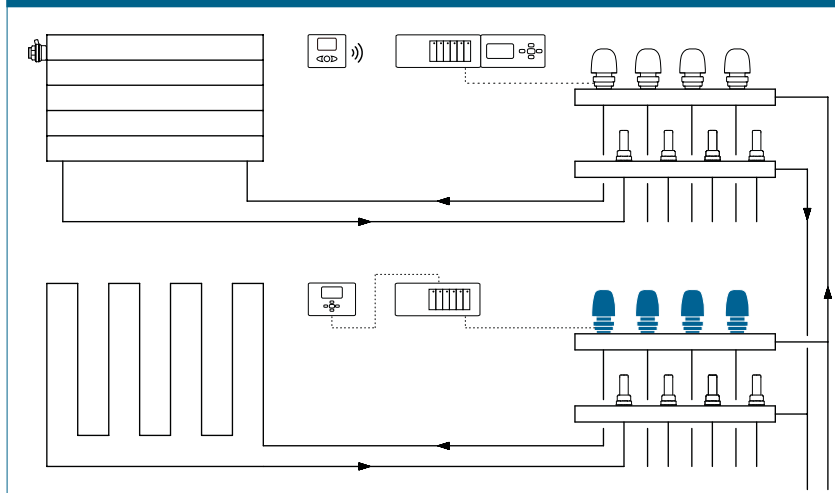
The thermostat and actuator operate according to the «ON / OFF» principle. The variable, rhythmic opening and closing, depending on the heat demand, also produces an almost continuous control characteristic. The valve is normally closed.

### BUILDING CATEGORIES

For installations in the heating and cooling area:

- Apartment blocks, housing estates, multiple dwelling units
- Residential care facilities, hospitals
- Administration and service buildings
- Hotels and restaurants, industrial kitchens
- School buildings and sports facilities
- Commercial and industrial buildings

### SYSTEM/BASIC DIAGRAM



## SPECIFICATION TEXT

See [www.taconova.com](http://www.taconova.com)

## TECHNICAL DATA

### General

- Type: Normally closed (NC)
- Ambient temperature: 0 ... 60°C
- Opening/closing time: Approx. 3 Min.
- Hub: 4 mm
- Nominal closing force: 100 N ± 7%
- Protection type: IP 44
- Electrical protection class II

### Electric connection data

- Operating voltage (AC or DC): 24 V or 230 V
- Permissible voltage deviation: ±10%
- Operating efficiency: 1.6 W
- Inrush current:
  - 24 V: 0.2 A for max. 1 min
  - 230 V: 0.6 A for max. 100 ms
- Recommended fuse protection: 0,35 A time delay, according to DIN 41662
- Connecting cable length: 1 m
- Connection cable: 2 × 0.75 mm², PVC

## APPROVALS / CERTIFICATES

- CE conformity symbol
- VDE

## ACCESSORIES

Various room thermostats and junction modules for wired and wireless applications (see separate data sheets).

## ECO-TIP

### SAVE ENERGY AND MONEY!

To avoid unnecessary hours of operation, the actuator should be switched off via the room thermostat out of the heating period.

## TYPE OVERVIEW

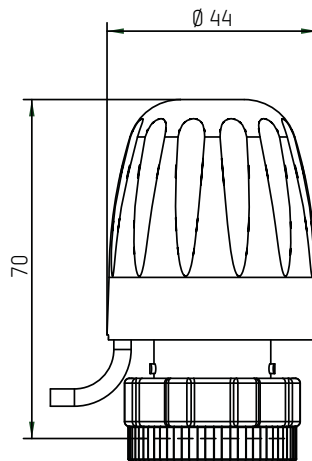
TopDrive | Electro-Thermal Actuator, Function NC (Normally Closed)

Order no. 230 V	Connection	Suitable for valves of make*
257.2055.000	M30 × 1,5	TacoSys/Heimeier/Strawa/Empur Messing/Oventrop/Delphistherm/Emmeti/Schlösser/Beulco/AC-FIX/Stramax/Roth/IVR
257.2058.000	M28 × 1,5	Herz (RV 57)
257.2062.000	M30 × 1,5	MNG/Cazzaniga/SBK/Empur stainless steel/SKV-Ventil frontal
Order no. 24 V	Connection	Suitable for valves of make*
257.1055.000	M30 × 1,5	TacoSys/Heimeier/Strawa/Empur Messing/Oventrop/Delphistherm/Emmeti/Schlösser/Beulco/AC-FIX/Stramax/Roth/IVR
257.1058.000	M28 × 1,5	Herz (RV 57)
257.1062.000 **	M30 × 1,5	MNG/Cazzaniga/SBK/Empur stainless steel/SKV-Ventil frontal

\* Further specific customer designs for all types of valve bodies on request.  
If you are unsure about valve adjustment, please contact customer service.

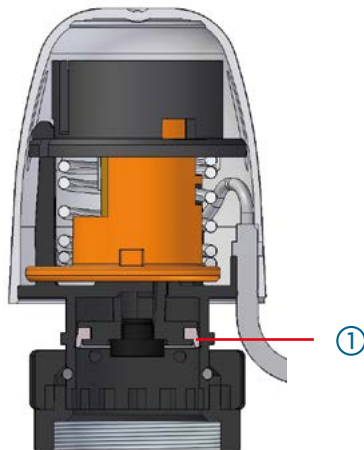
\*\* As long as available

## DIMENSIONAL DRAWING

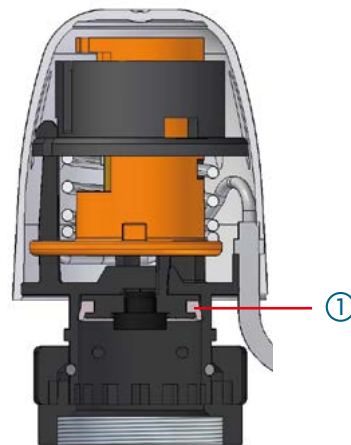


## OPERATING MODES

Valve closed (no electric current)



Valve open (energised)

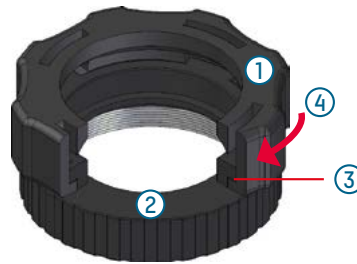


- 1 Water protection by means of form seal

## BAYONET CONNECTION

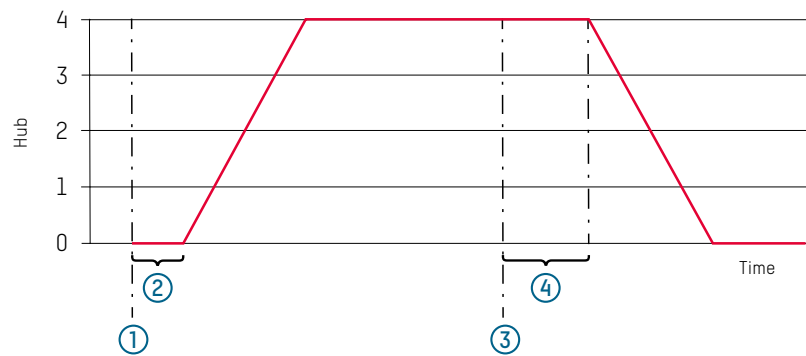
Bayonet connection with four large interlocking faces between bayonet sleeve and nut

- 1 Bayonet sleeve
- 2 Threaded bayonet-nut
- 3 Large contact surface
- 4 Turn until audible click



## CIRCUIT DIAGRAMS

- 1 Voltage on
- 2 Dwell time on
- 3 Voltage off
- 4 Dwell time off



# NOVASTAT / NOVAMASTER EL

## ELECTRONIC ROOM THERMOSTATS AND CONNECTOR MODULES



### ADVANTAGES

- Easy to operate
- Noiseless Triac circuit
- Units for 230 V and 24 V power supply
- Integrated derivative action control or PI control (adjustable)
- Simple wiring through the NovaMaster EL Basic, Logic and SlaveBox terminal modules

### Individual control of room temperature.

#### DESCRIPTION

Room thermostats in combination with Taconova NovaDrive or TopDrive actuators provide a constant room temperature in closed and dry rooms. The Taconova room thermostat range, classified according to price/performance, offers the correct solution for individual needs.

The basic version **NovaStat EL Basic** for the control of 230 V NC actuators covers the most common application range.

The **NovaStat EL Digital 2** version displays the set and actual values on a digital display.

Individual heat regulation as required by the operator is achieved by means of the programmable digital **NovaStat EL Week** clock thermostat. The time duration of the lowering mode can be set in the week program by means of the integral timer.

The connection of the room thermostats to the terminal module **NovaMaster EL Basic and/or Logic** is simple and uncomplicated.

Further convenient settings are possible by means of the optional plug-in **NovaMaster EL Timer**.

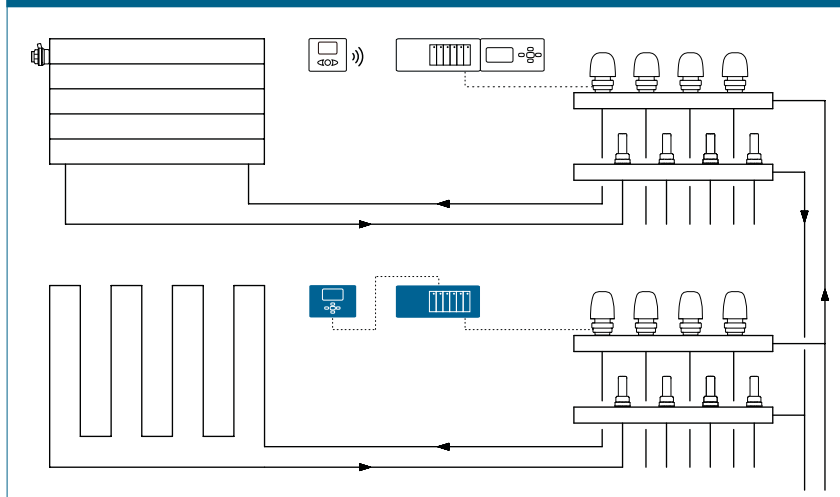
#### INSTALLATION POSITION

The thermostats are mounted in the respective room while the connector modules are mounted close to the manifold.

#### OPERATION

By means of an NTC sensor element, the downstream PI or derivative action controller, the room thermostats provide a constant room temperature in combination with actuators. Switching is via a silent TRIAC element or a floating relay. Control is by means of the actuator acting on the valve according to the OPEN / CLOSED principle. The PI or derivative action controller integrated into the room thermostat prevents the room temperature from exceeding the desired value set on the room thermostat.

#### SYSTEM/BASIC DIAGRAM



#### BUILDING CATEGORIES

For installations in the heating and cooling area:

- Apartment blocks, housing estates, multiple dwelling units
- Residential care facilities, hospitals
- Administration and service buildings
- Hotels and restaurants, industrial kitchens
- School buildings and sports facilities
- Commercial and industrial buildings



### 1 NOVASTAT EL BASIC

#### Room thermostat for normally closed actuators

230V room thermostat for controlling NC actuators for underfloor heating systems. Noiseless switching output (Triac) with direct or indirect connection of actuators. Dial with integral adjustment facility for correction of actual temperature integrated into the dial.

#### TECHNICAL DATA

- Order no.: 206.1650.000
- Operating voltage: 230 VAC 50 Hz  $\pm$  10 %
- Operating temperature: 0–50 °C (32–122 °F)
- Adjustment range: 5–30 °C (41–86 °F)
- Switching output: TRIAC 230 VAC, NC max. 75 W
- Type of protection: IP 30, Protection class II
- Type of controller: Static derivative action controller
- Differential gap:  $\pm$ 0,5K
- Temperature sensor: NTC 100 K
- Dimensions / color: H80  $\times$  W80  $\times$  D31 mm / RAL 9010
- Version without handwheel (NovaStat EL Public, 230 V + 24 V) on request

### 2 NOVASTAT EL DIGITAL 2

#### Room thermostat for normally closed and normally open actuators

Electronic, battery-operated room thermostat for operating NC/NO actuators, for underfloor heating systems with digital display. Floating relay output for direct or indirect connection of 24 V/230 V actuators. With normal, reduced temperature or frost protection settings. Timer function for temperature reduction or increase. Battery charge status indicator on the display. Keypad lock function. Input for external temperature sensor (NTC 10 K).

#### TECHNICAL DATA

- Order no.: 206.1660.000
- Operating voltage: 2  $\times$  LR6 AAA 1,5 V batteries
- Operating temperature: 0–40 °C (32–104 °F)
- Adjustment range: 5–35 °C in 0,5 °C steps (41–95 °F)
- Switching output: 3 A (250 VAC)
- Type of protection: IP 30, Protection class II
- Type of controller : Static differential action or PWM (proportional)
- Differential gap:  $\pm$ 0,5 K
- Temperature sensor: NTC 10 K, optionally external NTC 10 K
- Dimensions / color: H 83  $\times$  W 80  $\times$  D 27 mm / RAL 9010

### 3 NOVASTAT EL WEEK

#### Room thermostat for normally closed and normally open actuators

Electronic battery operated and programmable room thermostat for controlling NC / NO actuators, for underfloor heating systems with digital display, floating relay output for direct or indirect connection of 24V / 230V actuators. Mode switch for normal and lowering mode or automatic timed programs. Can be programmed for weekly and daily programs and for vacations, frost protection and keyboard lock function. Battery supply to avoid data loss in the event of power failure. Battery charge state shown on the display.

#### TECHNICAL DATA

- Order no.: 206.1653.000
- Operating voltage: 2  $\times$  LR6 AA 1,5 V batteries
- Operating temperature: 0–50 °C (32–122 °F)
- Adjustment range: 5–35 °C (41–95 °F) frost protection 0,5–10 °C (33–50 °F)
- Switching output: Relais floating, NC / NO max. 8 A
- Type of protection: IP 30, Protection class II
- Type of controller: PI controller
- Adjustment bandwidth: 2 °K of proportional band
- Adjustment speed: 7,5 cycles / hour (8 min cycle)
- Temperature sensor: NTC 100 K
- Dimensions / color: H86  $\times$  B125  $\times$  T32 mm / RAL 9010



### 1 NOVAMASTER EL BASIC

**Wiring module for connecting electrothermal actuators and room thermostats with terminals marked by symbols**

Modular design enables expansion by SlaveBox to provide for further connections. Direct wall mounting or mounting on DIN rail. Control of 24 V actuators by means of optional transformer. Operating status output shown by LEDs.

#### TECHNICAL DATA

- Order no.: 258.9310.000
- Operating voltage: 230 VAC 50 Hz  $\pm$  10 % / 24 VAC with transformer
- Operating temperature: 0–50 °C (32–122 °F)
- Number of zones: 6 (max. 4 drives / zones)
- Max. number of drives: 24  $\times$  230 VAC or 18  $\times$  24 VAC
- Number of drives / zones: Max. 4 drives / zones
- Time control line: None
- Type of protection: Protection class II IP 30
- Dimensions / color: H88  $\times$  B225  $\times$  T58 mm / RAL 9010

### 2 NOVAMASTER EL LOGIC

**Wiring module for connecting electroterminal actuators and room thermostats with terminals marked by symbols.**

Modular design enables expansion by NovaMaster EL Timer to provide for further control functions. Switching output for time control of room thermostat. Two floating switching outputs as a control contact for pump logic. Direct wall mounting or mounting on DIN rail. Operating status indicated by LEDs.

#### TECHNICAL DATA

- Order no.: 258.9311.000
- Operating voltage: 230 VAC 50 Hz  $\pm$  10 %
- Operating temperature: 0–50 °C (32–122 °F)
- Number of zones: 6 (max. 4 drives / zones)
- Max. number of drives: 24  $\times$  230 VAC
- Time control line: Zones A and B present
- Switching output: 2 x relays, floating, max. 8 A
- Type of protection: Protection class II IP 30
- Dimensions / color: H88  $\times$  B225  $\times$  T58 mm / RAL 9010

### 3 NOVAMASTER EL SLAVEBOX

**An expansion module for wiring electrothermal actuators and room thermostats with terminals marked by symbols**

Plug-in expansion to NovaMaster EL Basic for further connection possibilities. Direct wall mounting or mounting on DIN rail. Control of 24 V actuators by means of optional transformer. Operating status indicated by LEDs.

#### TECHNICAL DATA

- Order no.: 258.9313.000
- Operating voltage: 24 VAC with transformer / 230 VAC 50 Hz  $\pm$  10 %
- Operating temperature: 0–50 °C (32–122 °F)
- Number of zones: 4 (max. 4 drives / zones)
- Max. number of drives:  $\Sigma$  NovaMaster EL Basic + SlaveBox = 24  $\times$  230 VAC oder 18  $\times$  24 VAC
- Time control line: None
- Type of protection: Protection class II IP 30
- Dimensions / color: H88  $\times$  W160  $\times$  D58 mm / RAL 9010

#### 4 NOVAMASTER EL TIMER

##### **NovaMaster EL Timer expansion module for connection to NovaMaster EL Logic**

Programmable timer function for two time group A and B. Integrated application program of which nine are fixed and two are user programmable. Intelligent processor. Digital display for program, time and function display. Direct wall mounting or mounting on DIN rail.

#### TECHNICAL DATA

- Order no.: 258.9315.000
- Operating voltage: 230 VAC 50 Hz  $\pm$  10 %
- Operating temperature: 0–50 °C (32–122 °F)
- Number of zones: 12 Zones, controllable
- Time control line: Zones A and B present
- Operating modes: Automatic; convenience; lowering
- Keyboard lock: Present
- Type of protection: Protection class II IP 30
- Dimensions / color: H88 × W160 × D62 mm / RAL 9010

#### 5 TRANSFORMATOR

##### **Transformer for connection to NovaMaster EL Basic or SB**

Enables 24V actuators to be connected to the respective terminal module.

#### TECHNICAL DATA

- Order no.: 258.9316.500
- Operating voltage: 230 VAC 50 Hz  $\pm$  10%
- Operating temperature: 0–50 °C (32–122 °F)
- Output voltage: 24 VAC max. 60 W
- Type of protection: Protection class II IP 30
- Dimensions / color: H83 × W110 × D61 mm / RAL 9010

## SYSTEM TECHNOLOGY

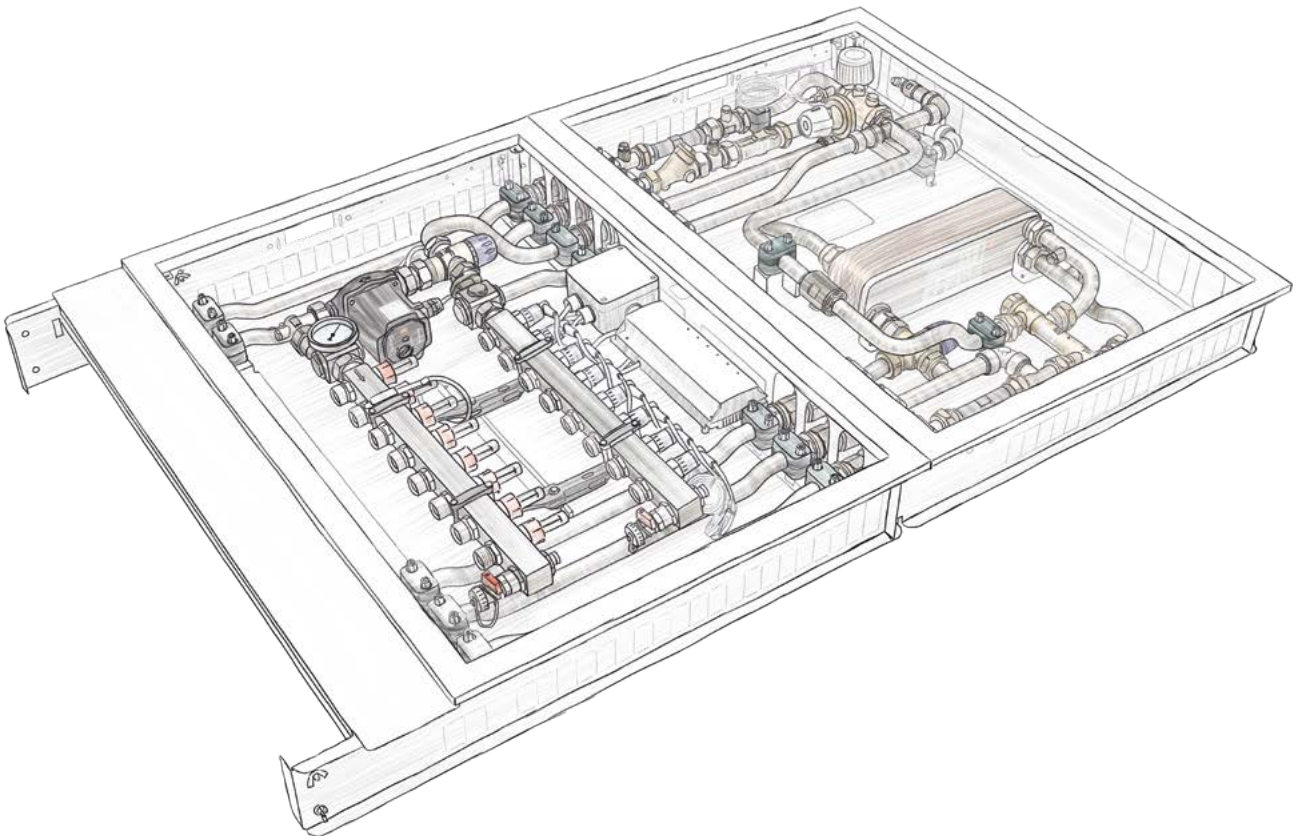
The demand for universal solutions in building services is greater than ever. Connection-ready centralised and decentralised heat interface units, storage loading and solar energy stations from Taconova are highly evolved systems employing state-of-the-art technology.

Taconova quality products are assembled from carefully selected, tried-and-tested products to create perfectly functioning standard units.

The ready-to-use complete solutions simplify and accelerate planning and assembly stages. In everyday use they guarantee reliable operation, reduce maintenance to a minimum and optimize energy costs.

Taconova adheres consistently to the system concept: the centralised heat interface units, solar and storage loading stations can be combined ideally.

The energy storage system for supplying heat and domestic hot water is the centerpiece of the heating system. The solar energy transmitted via the solar and storage loading stations is stored here and can be transferred at floor level either by means of centralized or decentralized heat interface units (domestic hot water and heating energy).





# INTELLIGENT STATIONS

Taconova's sophisticated stations are equipped with all the necessary valves and safety features and meet all the requirements of modern machine engineering.

## OVERVIEW OF PRODUCT GROUPS



### THE ALL-ROUNDER

The TacoTherm Dual Piko and Nano heat interface units: domestic hot water and heating in one station. The modular all-in-one stations supply hot water and regulate the outlet temperature precisely and without auxiliary energy if so required. In addition, they regulate and distribute the heating water to the underfloor heating systems – for radiators and/or panel heating systems depending on requirements.



### THE INSTANT STATION

Taconova connection-ready centralized heat interface units dispense with the need for storing domestic hot water. They therefore avoid hygiene problems and loss of energy as a result of storage and standby losses. The water is only heated on demand directly by means of a stainless steel plate heat exchanger and the hot water temperature is controlled electronically. The Mega3 and Peta2 series are also cascadable and are thus ideal for covering wide performance ranges. The centralized heat interface units can be ideally combined with the TacoSol Load storage loading stations.



### THE POWERFUL STATION

The ready-to-connect TacoSol Load Mega station is a solar station and loading module in one. It was developed to load central buffer cylinders via a solar thermal system. Captured solar energy is transferred to the stratification cylinders via highly efficient stainless steel plate heat exchangers.



### THE INDEPENDENT SOLUTION

All TacoSol Circ solar loading stations come with integrated hydronic balancing, flow measurement and flow control. The dual-phase versions increase their effectiveness through the automatic air separation in the integrated ventilating flask.



### COMPACT

The TacoHeat Mix heating circuit pump assembly is delivered connection-ready, making it quick and easy to install. It features the latest generation of circulation pumps and ensures low power consumption. The integrated 3-way mixer always provides the correct flow rate and temperature at the consumer.

# DRINKING WATER STORAGE IS YESTERDAY'S NEWS

Supplying domestic hot water then and now – forward-looking solutions dispense with hot water storage.

Heated drinking water in multistory residential buildings or in public buildings is often supplied by means of a domestic hot water storage tank. This domestic hot water has to be stored at temperatures of at least 60 °C in order to ensure drinking water hygiene.

**This gives rise to the following disadvantages:**

- High investment in the choice of materials suitable for drinking water, for example stainless steel
- Calciferous deposits as a result of permanent supply, warming and storage of drinking water
- High maintenance costs and poor access to integrated components, such as storage heat exchangers, spray lances, sacrificial anodes
- Risk of corrosion with coated storage units owing to permanent oxygen injection
- High hygiene risk from germ formation, especially in the drinking water storage tank in case of non-compliance with prescribed storage temperatures, for example failure or malfunction of the heat source

Storing energy in water as a medium remains the most efficient solution for handling the costs for space heating and hot water. It is meanwhile already recommended in standards such as DIN 1988-200, for example, that this energy be provided in a storage tank in the form of treated hot water.

**This gives rise to the following advantages:**

- No calciferous deposits in the tank as the process water is in the closed system
- No storage fittings and associated maintenance costs
- Lower investment costs as materials for heating and storing water do not have to be suitable for drinking water
- Simple hydraulic integration of any heat sources, such as heat pumps for example
- Low flow temperatures from low-temperature systems can be realized
- No hygiene risks even at operating temperatures < 60 °C in the storage unit

## ADVANCED PREPARATION OF DOMESTIC HOT WATER

A centralised heat interface unit is the ideal link between the storage tank and hygienic domestic hot water.

With centralized and decentralized preparation of domestic hot water in accordance with the continuous flow principle, drinking water is only heated as needed and only in the quantity required at the time. Country-specific standards, such as DIN or SIA, also allow a reduction in the domestic hot water temperature in this context to < 60 °C, especially for decentralized preparation of domestic hot water. Many European standards furthermore require that the volume of domestic hot water stored be reduced and only the required quantity heated. Examples of such standards include: ÖNORM B 5019:2011 (5.7.3 and 5.8.3), SIA 385/1 2020 and DIN 1988-200 (9.7.2.7).

**THIS OFFERS SYSTEM PLANNERS AND OPERATORS THE FOLLOWING ADVANTAGES:**

- Energy savings through reduced volumes of domestic hot water in case of thermal disinfection
- Fewer calciferous deposits in the heat exchanger owing to the low temperature level and turbulent flows
- Reduced circulation losses owing to the low temperature level
- Lower maintenance costs thanks to simple access to external plate heat exchangers
- Reduced hygiene risk for domestic hot water as heated drinking water is not allowed to stagnate

# CENTRALIZED OR DECENTRALIZED?

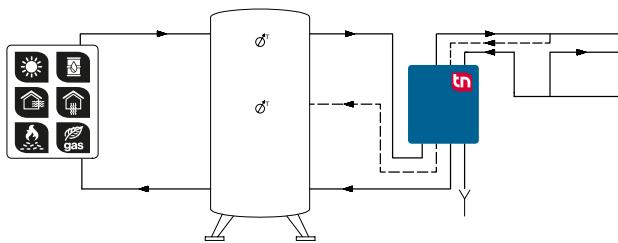
When it comes to planning heat interface units, the choice is yours.

## ENERGY TRANSFER AT FLOOR LEVEL

The energy storage system for supplying heat and domestic hot water is the centerpiece of the heating system. The thermal energy stored here can be transferred at floor level either by means of centralized HIU technology or decentralized heat interface units (domestic hot water and heating energy).

## CENTRALIZED PREPARATION OF DOMESTIC HOT WATER

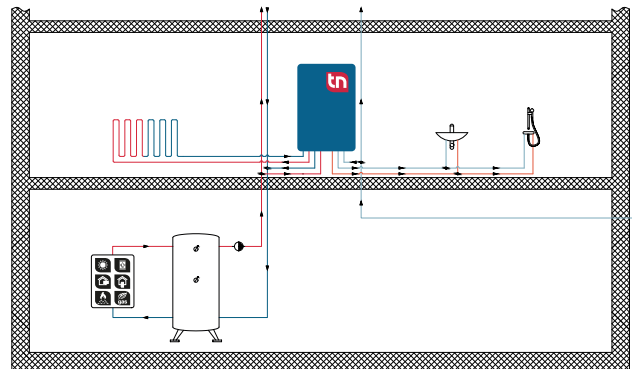
The **station** is planned to be in the **immediate vicinity of the storage tank** in the case of centralized preparation of domestic hot water.



One of these systems can supply heated drinking water for up to 200 apartments taking account of the simultaneous dispensing of the domestic hot water. The stations can be connected individually to the domestic hot water network in this scenario or also cascaded.

## DECENTRALIZED PREPARATION OF DOMESTIC HOT WATER

Decentralized heat interface units operate according to the same technical principle as centralized systems. The energy required to prepare domestic hot water is provided by means of the central storage tank and transported to the apartment via a riser pipe pump. The **decentralised heat interface units are installed directly in the apartments** with this type of installation.



Decentralized heating of drinking water – where only ejector lines are used – allows the risk level of Legionella to be reduced to "low". As the volume of domestic hot water is consequently reduced to <3 l, these heat interface units are classed as small installations in the sense of the German Drinking Water Regulations from November 2015 and are therefore not subject to any special mandatory testing. In combination with connecting piping for radiators or underfloor heating, the heat interface unit becomes the central point of access for supplying energy in an apartment.

This allows energy consumption to be recorded and calculated on an individual apartment basis. The heat meter takes on the role of an apartment energy meter and there is no need for domestic hot water meters.

# MODULAR HEAT INTERFACE UNITS

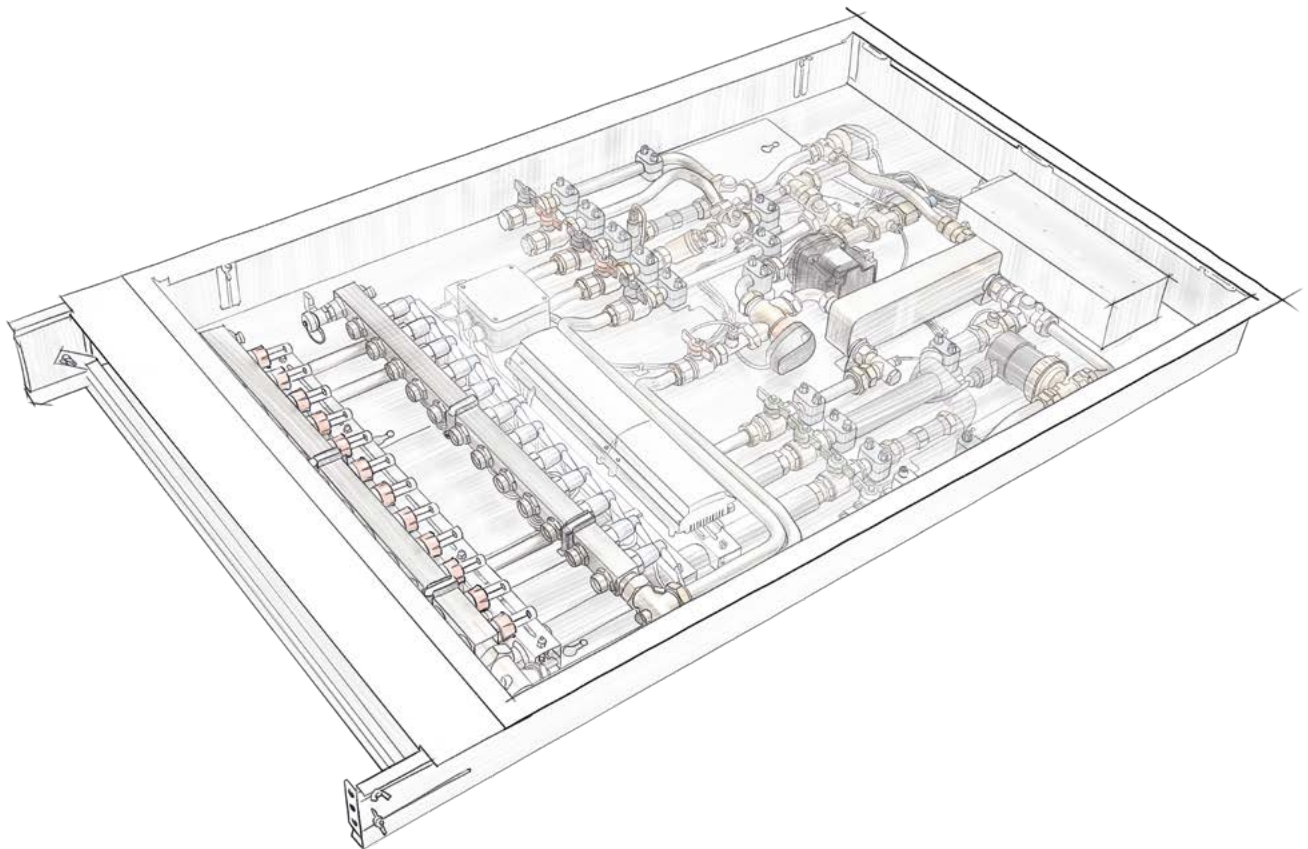
The modular TacoTherm Dual Piko or Nano heat interface units distribute heat energy and handle decentralized preparation of domestic hot water in apartments in accordance with the continuous flow principle.

## BENEFITS AT THE PLANNING STAGE

- The compact design and, if required, small installation depth make space planning easier
- Efficient planning thanks to modular basic concept with large number of variants
- On-demand, hygienic preparation of domestic hot water
- Demand-driven calculation of energy costs
- Fixed value-controlled or weather-controlled versions available

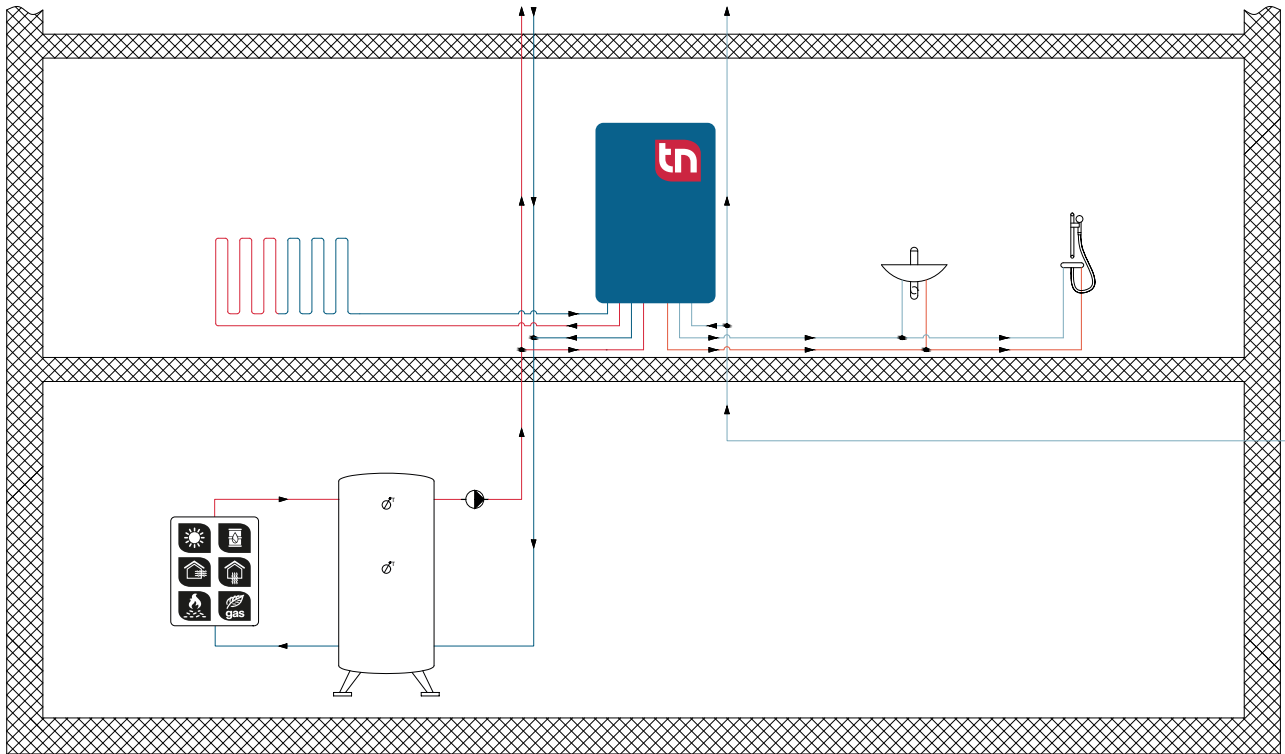
## BENEFITS AT THE INSTALLATION STAGE

- High levels of prefabrication ensure fast and simple installation and startup and therefore time savings
- Service and warranty from a single source
- Reliable operation thanks to high-quality components
- Easier to provide proof of drinking water quality
- Simple, retrospective fitting of heat meters possible



# SYSTEM / BASIC DIAGRAM

The TacoTherm Dual heat interface units adapt ideally to local conditions.









# HEAT INTERFACE UNIT – PROVEN SYSTEM

High levels of prefabrication and low maintenance systems deliver valuable savings in terms of assembly time and make servicing almost redundant. Yet the heat interface units also offer many further advantages.

## TacoTherm Dual Piko heat interface unit

The modular design of the TacoTherm Dual Piko offers optimum functionality and gives you free rein when arranging the modules. The modules impress with their flat construction (110 mm). You can position the station how and where you wish: vertically, horizontally and even in separate rooms.



Product photo	Station / Type	Dispensing rate / heating circuits	Dimensions in mm (W×H×D)	Version
	TacoTherm Dual Piko PM2 Combination Station	17l/min <sup>1</sup> up to 12 heating circuits	600 × 1200 (+90) × 110 (3 – 8 heating circuits) 750 × 1350 (+90) × 110 (6 – 12 heating circuits)	<ul style="list-style-type: none"> <li>▪ Compact, combined and connection-ready decentralised heat interface unit</li> <li>▪ Heating module, preparation of domestic hot water, underfloor heating manifold and separate radiator connection in one</li> </ul>
	TacoTherm Dual Piko Smart Connect Combination Station	25l/min <sup>1</sup> up to 12 heating circuits	874 × 1501 – 1591 × 110	
	TacoTherm Fresh Piko PM2 Decentralised Heat Interface Unit	17l/min <sup>1</sup>	<ul style="list-style-type: none"> <li>▪ 450 × 700 × 110</li> <li>▪ 600 × 700 × 110</li> <li>▪ 750 × 880 × 110</li> <li>▪ 840 × 880 × 110</li> </ul>	<ul style="list-style-type: none"> <li>▪ Compact, connection-ready heat interface unit</li> <li>▪ Proportional flow-controlled or electronically controlled with options such as standby module and anti-scald protection for increased comfort</li> </ul>
	TacoTherm Fresh Piko Smart Connect Decentralised Heat Interface Unit	25l/min <sup>1</sup>	874 × 965 – 1055 × 110	
	TacoSys Piko Heating Module	up to 10 heating circuits	874 × 772 – 892 × 110	<ul style="list-style-type: none"> <li>▪ Compact, connection-ready heating module</li> <li>▪ Fixed value or weather-controlled</li> </ul>
	TacoTherm Dual Piko Smart Hybrid	19l/min <sup>2</sup>	874 × 1621 + 90 × 110	<ul style="list-style-type: none"> <li>▪ Electronically controlled</li> <li>▪ Electric hot water reheating</li> <li>▪ Ready for integration into building automation</li> </ul>

<sup>1</sup> Performance data for primary = flow 55°C / secondary = hot water 45°C; Δp ≥ 300 mbar

<sup>2</sup> Performance data for primary = flow 40°C / secondary = hot water 38°C; Δp ≥ 3 bar up to 12 heating circuits

### TacoTherm Dual Nano heat interface unit


The fresh water module and combination station in the Nano series impress with their slender construction (minimum 450 mm). They offer optimum functionality and give you free rein when planning the assembly of the modules. The domestic hot water module in this series can be used ideally as a gas boiler replacement unit.

Product photo	Station / Type	Dispensing rate / heating circuits	Dimensions in mm (W×H×D)	Version
	TacoTherm Dual Nano Combination Station	20 l/min <sup>1</sup> up to 10 heating circuits	523 × 1233– 1323 × 153 (8 circuits) 750 × 1233– 1323 × 153 (9–10 circuits)	<ul style="list-style-type: none"> <li>▪ Compact, combined and connection-ready decentralised heat interface unit</li> <li>▪ Heating module, preparation of domestic hot water, underfloor heating manifold and separate radiator connection in one</li> </ul>
	TacoTherm Fresh Nano2 Domestic Hot Water Module	16.5 l/min <sup>1</sup>	447 × 800 × 117	<ul style="list-style-type: none"> <li>▪ Connection-ready heat interface unit</li> <li>▪ Suitable for replacement of gas boilers</li> <li>▪ Proportional flow-controlled with options such as standby module and return temperature limitation to increase comfort and system efficiency</li> </ul>

<sup>1</sup> Performance data for primary = flow 60°C / secondary = hot water 45°C;  $\Delta p \geq 300$  mbar (780 kg/h)

### TacoTherm H electronical heat interface units

The compact electronical heat interface unit is designed as an indirect transfer unit for supplying heat and fulfils two purposes at once: decentralised DHW heating based on the instantaneous water heating principle and decentralised indirect heat distribution in residential units

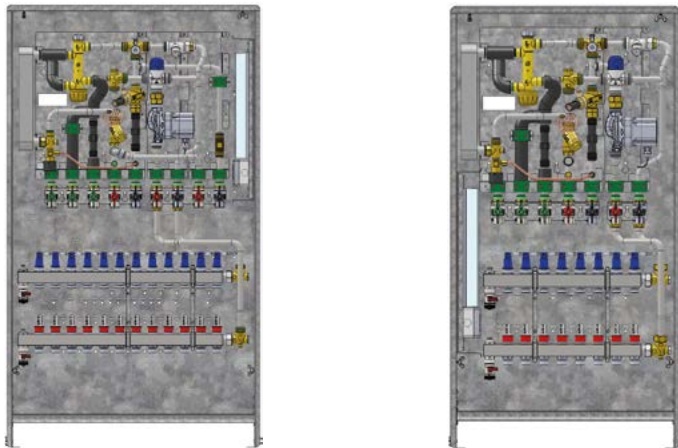
Product photo	Station / Type	Dispensing rate / heating circuits	Dimensions in mm (W×H×D)	Version
	TacoTherm H 3000E	25 l/min <sup>2</sup> 1 indirect heating circuit	455 × 767 (830) × 300	<ul style="list-style-type: none"> <li>▪ Indirect heat supply</li> <li>▪ Ready for integration into building automation</li> <li>▪ Electronically controlled</li> <li>▪ Highest efficiency values (VWART/Besa test)</li> </ul>

<sup>2</sup> Performance data for primary = flow 55°C / secondary = hot water 45°C;  $\Delta p \geq 300$  mbar



# TACOTHERM DUAL/FRESH PIKO PM2

## HEAT INTERFACE UNIT



### ADVANTAGES

- Compact, slimline design for space saving installation
- Large number of variants
- Available as a split pre-delivery or fully pre-assembled delivery
- On-demand, hygienic, decentralised DHW heating
- Reduction of stored DHW volume to a minimum
- Demand-driven calculation of energy costs

Preconfigured heat interface unit with compact installation depth for preparation of potable hot water and apartment heating.

### DESCRIPTION

The heat interface unit in the Piko series suits practically any installation situation thanks to its compact installation depth and versatile constructions.

The stations are available as single DHW modules or as combi units. Various selectable hydraulic components ensure on-demand preparation of potable hot water, distribution of heat energy as well as calculation of energy costs.

### INSTALLATION

The decentralised heat interface units are available as heating modules and DHW modules, enabling pre-assembly during the building phase. The unit should preferably be sited close to the draw-off points of each apartment. This enables decentralised DHW and room heating for the apartment.

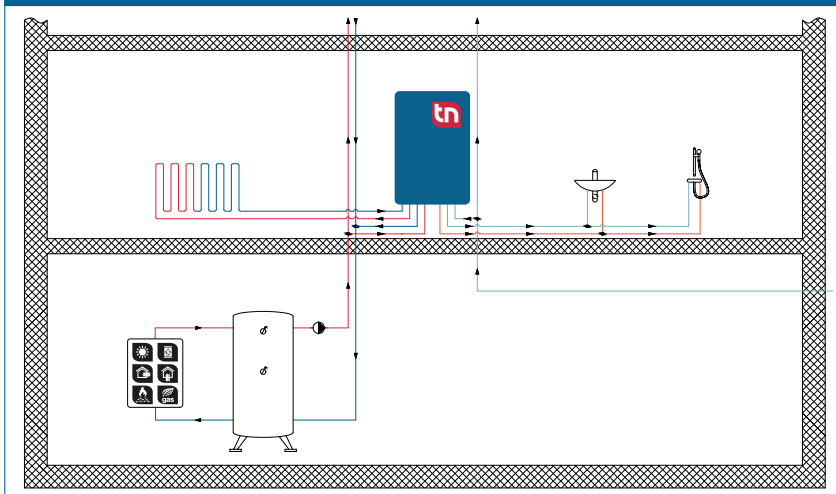
### OPERATION

The heat interface units in the Piko series are designed for preparation of potable hot water and distribution of heat energy in multistorey residential buildings.

Primary energy is supplied via a central buffer cylinder; decentralised DHW heating takes place in the domestic hot water module as required, according to the instantaneous water heating principle.

In the case of combination stations, the heating surfaces in living areas are connected with the Underfloor heating circuit manifolds of the heating module or the radiator connections. The heating flow temperature in the living area is controlled by fixed values in the 2-pipe system and via the central boiler control unit in the 4-pipe system. Adjusting pieces are provided in the modules for on-site installation of heat meters and cold water meters.

### SYSTEM/BASIC DIAGRAM



### BUILDING CATEGORIES

- Apartment blocks
- Hotels and residential homes
- Industrial buildings



## VARIANT OVERVIEW

Primary pipework and type of distribution *		2-pipe system		4-pipe system	
Cupboard width		620 mm	750 mm	620 mm	750 mm
Heating circuit manifold (number of heating circuits)	3	✓		✓	✓
	4	✓		✓	✓
	5	✓		✓	✓
	6	✓	✓	✓	✓
	7	✓	✓		✓
	8	✓	✓		✓
	9		✓		✓
	10		✓		✓
	11		✓		✓
	12		✓		✓
DHW module	Basic module	✓	✓	✓	✓
	Basic module with radiator connection	✓	✓	✓	✓
	Basic module with underfloor heating module	✓	✓	✓	✓
	Basic module with underfloor heating module and radiator connection		✓		✓
Options	Module for cooling		✓		✓

\* See brochure "TacoTherm Dual | Decentralised domestic hot water technology"

✓ = Available for this cupboard size

## SPECIFICATION TEXT

See [www.taconova.com](http://www.taconova.com)

## GENERAL TECHNICAL DATA

### General

- Max. operating pressure  $P_{0\max}$ :
  - Primary: 8 bar
  - Secondary: 8 bar
- Overall dimensions of combination station:
  - 3 – 8 heating circuits: W 620 × H 1200 × D 110 mm
  - 6 – 12 heating circuits: W 750 × H 1350 × D 110 mm
  - Feet adjustable: + 90 mm
- Weight of combination station (empty): 65 kg

### Materials

- Galvanized or varnished sheet steel housing according to model
- Pipes: DN 20 stainless steel 1.4404
- Pumps: cast iron
- Valve housing: brass
- Seals: AFM34 (flat sealing)

### Performance data

See design diagram

### Electrical connection data

- Mains voltage: 230 VAC ± 10 %
- Mains frequency: 50...60 Hz
- Power consumption: max. 60 W
- Protection type: IP 30
- Circulating pump EEI ≤ 0,20 – Part 2

## Flow media

- Heating water (VDI 2035; SWKI BT 102-01; ÖNORM H 5195-1)
- Cold water as per DIN 1988-200 and DIN EN 806-5

## Application limits for drinking water

- Observance of DIN 1988-200, section 12.3.2 / table 6 in connection with the additional use of water softening systems

## APPROVALS / CERTIFICATES

- Components in contact with drinking water according to UBA Evaluation Criteria for metal materials in contact with drinking water

## TECHNICAL DATA

### FRESH HOT WATER MODULE

#### General

- Max. operating temperature  $T_{0\max}$ : 95 °C
- Weight (empty): 35 – 36 kg
- Dimensions of basic module (depending on version): W 391 – 651 mm × H 466 mm × D 105.5 mm

## Material

- Plate heat exchanger (plates and connector pieces):
  - Stainless steel 1.4401
  - Copper-soldered / Stainless steel solder

## TECHNICAL DATA HEATING MODULE

### General

- Max. operating temperature  $T_{0\max}$ : 70 °C
- Weight (empty): 30 kg
- Dimensions:
  - 3 – 8 heating circuits: W 620 × H 1200 × D 110 mm
  - 6 – 12 heating circuits: W 750 × H 1350 × D 110 mm
  - Feet adjustable: + 90 mm
- High-efficiency circulating pump: TacoFlow2 ADAPT
- Thermal mixing valve for fixed value-controlled heating flow temperature (temperature range 35 – 70 °C)

### TYPE OVERVIEW

TacoTherm Dual Piko PM2 | Pre-delivery of heating module assembly with up to 12 heating circuits\*

Order no.	DN	Connections	Underfloor heating circuits	Version	Cupboard width
278.2111.133 ...	15	3/4" OT	3 ...	Heating module in 2-pipe system	620 mm
278.2111.138			8		
278.2101.133 ...	15	3/4" OT	3 ...	Heating module in 4-pipe system	
278.2101.136			6		
278.2111.133L ...	15	3/4" OT	6 ...	Heating module in 2-pipe system	750 mm
278.2111.142L			12		
278.2101.136L ...	15	3/4" OT	6 ...	Heating module in 4-pipe system	
278.2101.140L			10		
278.2101.133C ...	15	3/4" OT	3 ...	Heating module in 4-pipe system for chilled ceiling systems	
278.2101.142C			12		

\* Performance data for primary = flow 55 °C / secondary = hot water 45 °C; Δp ≥ 300 mbar

TacoTherm Fresh Piko PM2 | Subsequent delivery of DHW module assembly

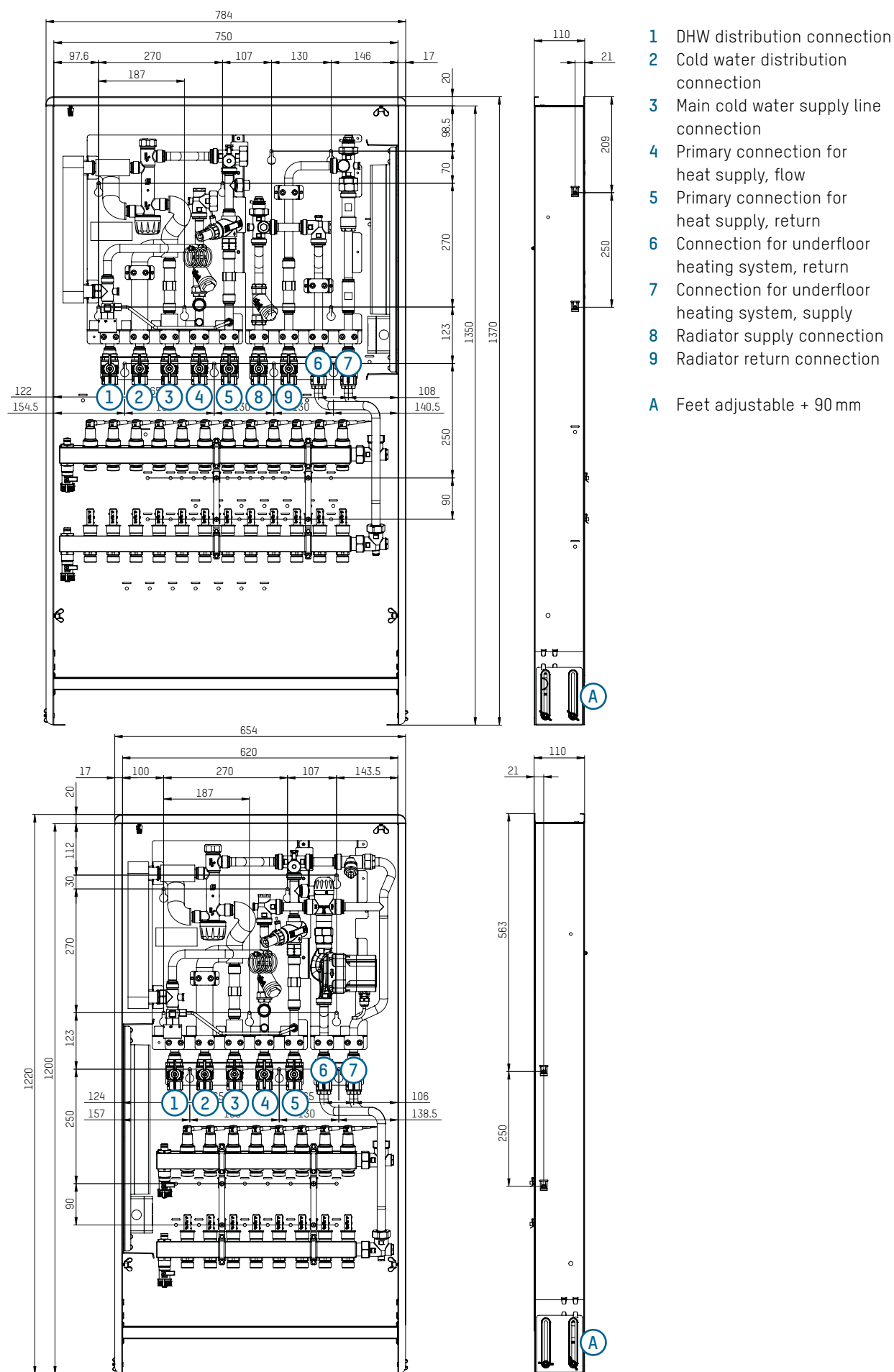
Order no.	DN	Connections	Dispensing range*	Version	Heat exchanger
278.2111.000	15	¾" OT	15 l/min	Centralised heat interface unit, basic module	26 plates Copper-soldered
278.2111.125			17 l/min		26 plates Stainless steel solder
278.3111.000					40 plates Copper-soldered
278.3111.125					40 plates Stainless steel solder
278.2111.000F	15	¾" OT		15 l/min	Centralised heat interface unit, basic module incl. pump assembly for underfloor heating
278.2111.125F			17 l/min	26 plates Stainless steel solder	
278.3111.000F				40 plates Copper-soldered	
278.3111.125F				40 plates Stainless steel solder	
278.2111.000R	15	¾" OT		15 l/min	Centralised heat interface unit, basic module incl. assembly for radiator connection
278.2111.125R			17 l/min	26 plates Stainless steel solder	
278.3111.000R				40 plates Copper-soldered	
278.3111.125R				40 plates Stainless steel solder	
278.2111.000FR	15	¾" OT		15 l/min	Centralised heat interface unit, basic module incl. assembly for radiator connection and pump assembly for underfloor heating
278.2111.125FR			17 l/min	26 plates Stainless steel solder	
278.3111.000FR				40 plates Copper-soldered	
278.3111.125FR				40 plates Stainless steel solder	

\* Performance data for primary = flow 55 °C / secondary = hot water 45 °C; Δp ≥ 300 mbar

### ACCESSORIES

Order no.	Description
296.2111.001	TacoTherm Fresh Piko PM2 CL module
296.2111.002	TacoTherm Fresh PM2 ball valve kit (set with 2 ball valves)
296.3003.000	Return temperature limiter
257.1055.000	TopDrive actuator for zone control 24V
257.2055.000	TopDrive actuator for zone control 230V

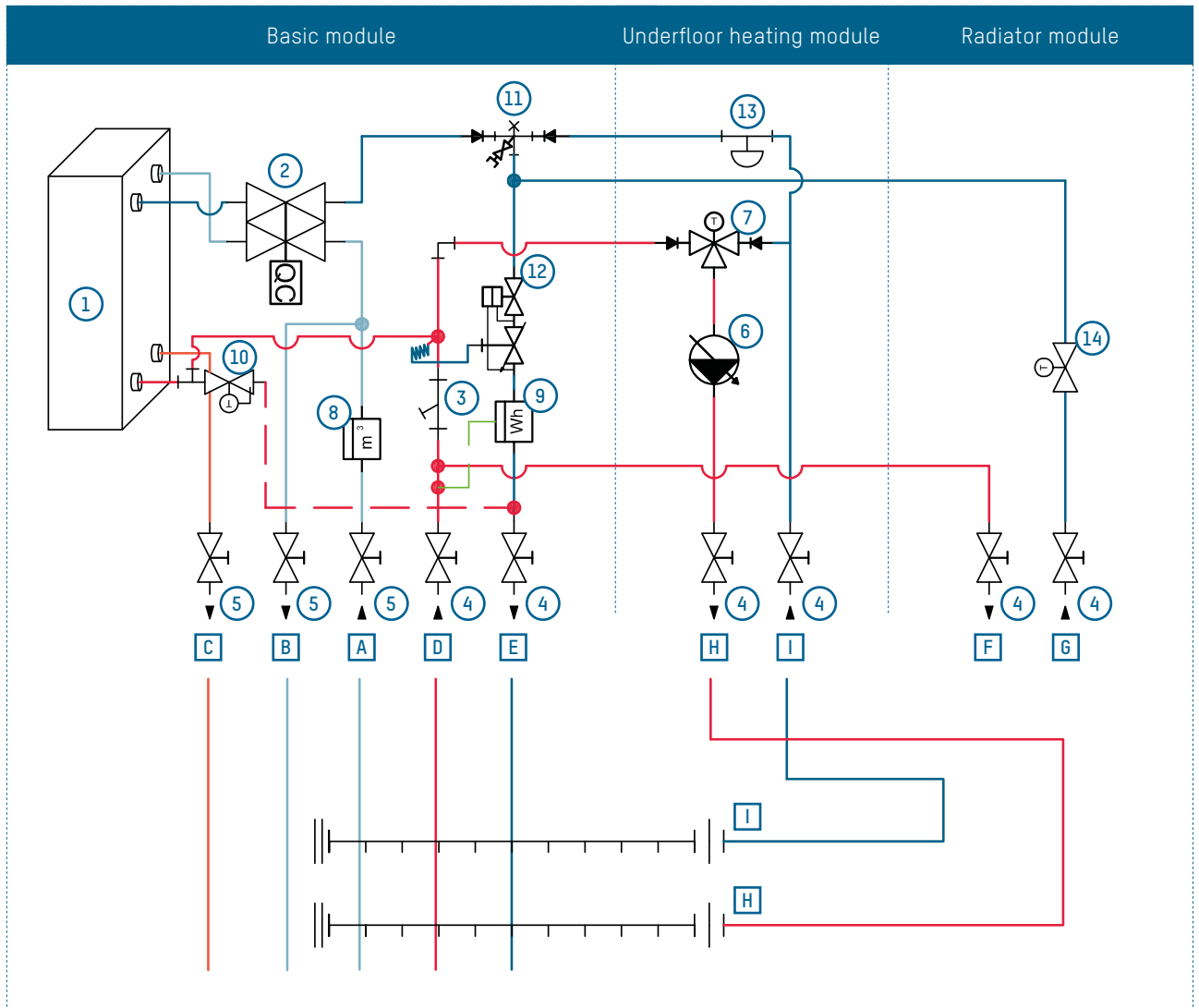
## DIMENSIONAL DRAWING



# FLOW DIAGRAM

Heating control: Fixed value

Connection for 2-pipe system



## Key

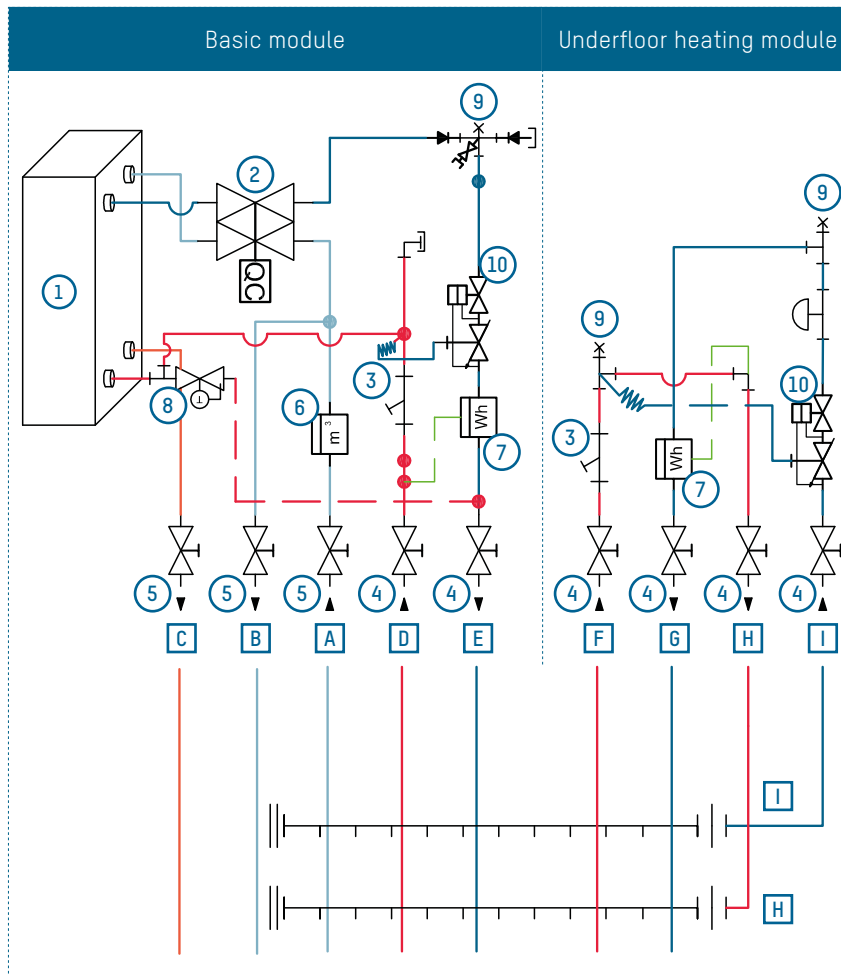
- 1 Plate heat exchanger
- 2 Proportional flow controller
- 3 Dirt trap with filter
- 4 Shut-off valve for heating
- 5 Shut-off valve with drinking water certification
- 6 Heating circuit pump
- 7 Fixed-value three-way mixer (NovaMix Value)
- 8 Cold water meter adjusting piece
- 9 Heat meter adjusting piece
- 10 Temperature storage module
- 11 Automatic air vent valve
- 12 Differential pressure controller
- 13 Zone valve
- 14 Return temperature limiter (optional)

## Connections

- A Connection for main supply line for cold water
- B Connection for cold water distribution
- C Connection for hot water distribution
- D Primary connection for heat supply on supply side
- E Primary connection for heat supply on return side
- F Radiator connection in supply circuit
- G Radiator connection in return circuit
- H Connection for underfloor heating on supply side
- I Connection for underfloor heating on return side

## FLOW DIAGRAM

Heating control: Fixed value  
Connection for 4-pipe system



### Key

- 1 Plate heat exchanger
- 2 Proportional flow controller
- 3 Dirt trap with filter
- 4 Shut-off valve for heating
- 5 Shut-off valve with drinking water certification
- 6 Cold water meter adjusting piece
- 7 Heat meter adjusting piece
- 8 Temperature storage module
- 9 Automatic air vent valve
- 10 Differential pressure controller

### Connections

- A Connection for main supply line for cold water
- B Connection for cold water distribution
- C Connection for hot water distribution
- D Primary connection for heat supply on supply side
- E Primary connection for heat supply on return side
- F Heat supply connection in supply circuit
- G Heat supply connection in return circuit
- H Connection for underfloor heating on supply side
- I Connection for underfloor heating on return side

## TYPE OVERVIEW

TacoTherm Fresh Piko PM2 | Pre-delivery of DHW module assembly

Order no.	DN	Connections	Version	Fits to	Cupboard width
276.2111.000S	15	¾" OT	Centralised heat interface unit, basic module	278.2111.000 278.2111.125 278.3111.000 278.3111.125	450 mm
276.2111.000M	15	¾" OT	Centralised heat interface unit, basic module incl. pump assembly for underfloor heating	278.2111.000F 278.2111.125F 278.3111.000F 278.3111.125F 278.2111.000R 278.2111.125R 278.3111.000R 278.3111.125R	620 mm
276.2111.002L	15	¾" OT	Centralised heat interface unit, basic module incl. assembly for radiator connection and pump assembly for 2-pipe underfloor heating system	278.2111.000FR 278.2111.125FR 278.3111.000FR 278.3111.125FR	750 mm
276.2111.004L	15	¾" OT	Centralised heat interface unit, basic module incl. assembly for radiator connection and pump assembly for 4-pipe underfloor heating system	278.2111.000FR 278.2111.125FR 278.3111.000FR 278.3111.125FR	750 mm

TacoTherm Fresh Piko PM2 | Subsequent delivery of DHW modules

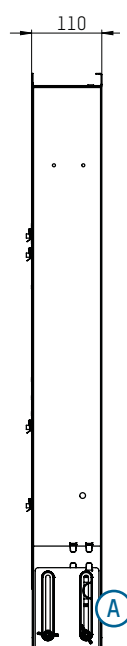
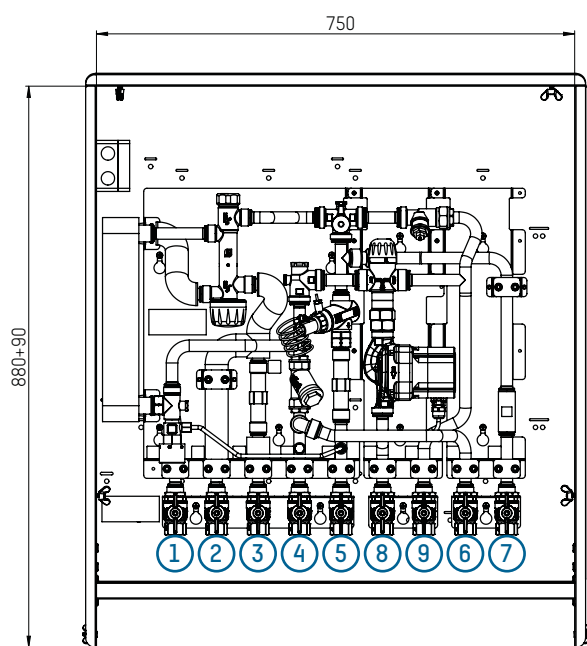
Order no.	DN	Connections	Dispensing range*	Version	Heat exchanger
278.2111.000	15	¾" OT	15 l/min	Centralised heat interface unit, basic module	26 plates Copper-soldered
278.2111.125			17 l/min		26 plates Stainless steel solder
278.3111.000					40 plates Copper-soldered
278.3111.125					40 plates Stainless steel solder
278.2111.000F	15	¾" OT		15 l/min	Centralised heat interface unit, basic module incl. pump assembly for underfloor heating
278.2111.125F			17 l/min	26 plates Stainless steel solder	
278.3111.000F				40 plates Copper-soldered	
278.3111.125F				40 plates Stainless steel solder	
278.2111.000R	15	¾" OT		15 l/min	Centralised heat interface unit, basic module incl. assembly for radiator connection
278.2111.125R			17 l/min	26 plates Stainless steel solder	
278.3111.000R				40 plates Copper-soldered	
278.3111.125R				40 plates Stainless steel solder	
278.2111.000FR	15	¾" OT		15 l/min	Centralised heat interface unit, basic module incl. assembly for radiator connection and pump assembly for underfloor heating
278.2111.125FR			17 l/min	26 plates Stainless steel solder	
278.3111.000FR				40 plates Copper-soldered	
278.3111.125FR				40 plates Stainless steel solder	

\* Performance data for primary = flow 55 °C / secondary = hot water 45 °C; Δp ≥ 300 mbar

## ACCESSORIES

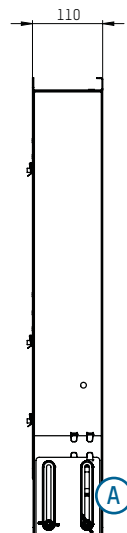
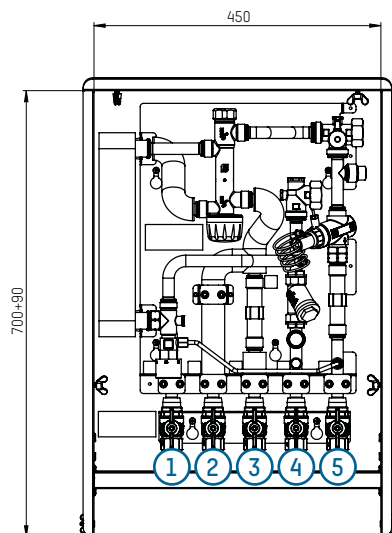
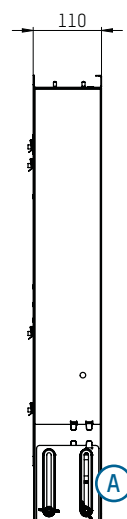
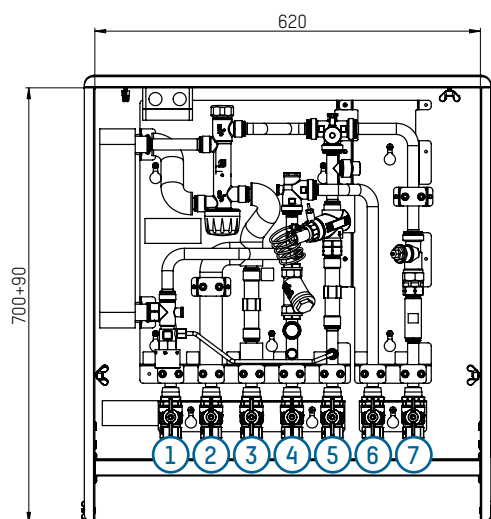
Order no.	Description
296.2111.001	TacoTherm Fresh Piko PM2 CL module
296.2111.002	TacoTherm Fresh PM2 ball valve kit (set with 2 ball valves)
296.3003.000	Return temperature limiter
257.1055.000	TopDrive actuator for zone control 24 V
257.2055.000	TopDrive actuator for zone control 230 V

## DIMENSIONAL DRAWING



- 1 DHW distribution connection
- 2 Cold water distribution connection
- 3 Main cold water supply line connection
- 4 Primary connection for heat supply, flow
- 5 Primary connection for heat supply, return
- 6 Connection for underfloor heating system, return
- 7 Connection for underfloor heating system, supply
- 8 Radiator supply connection
- 9 Radiator return connection

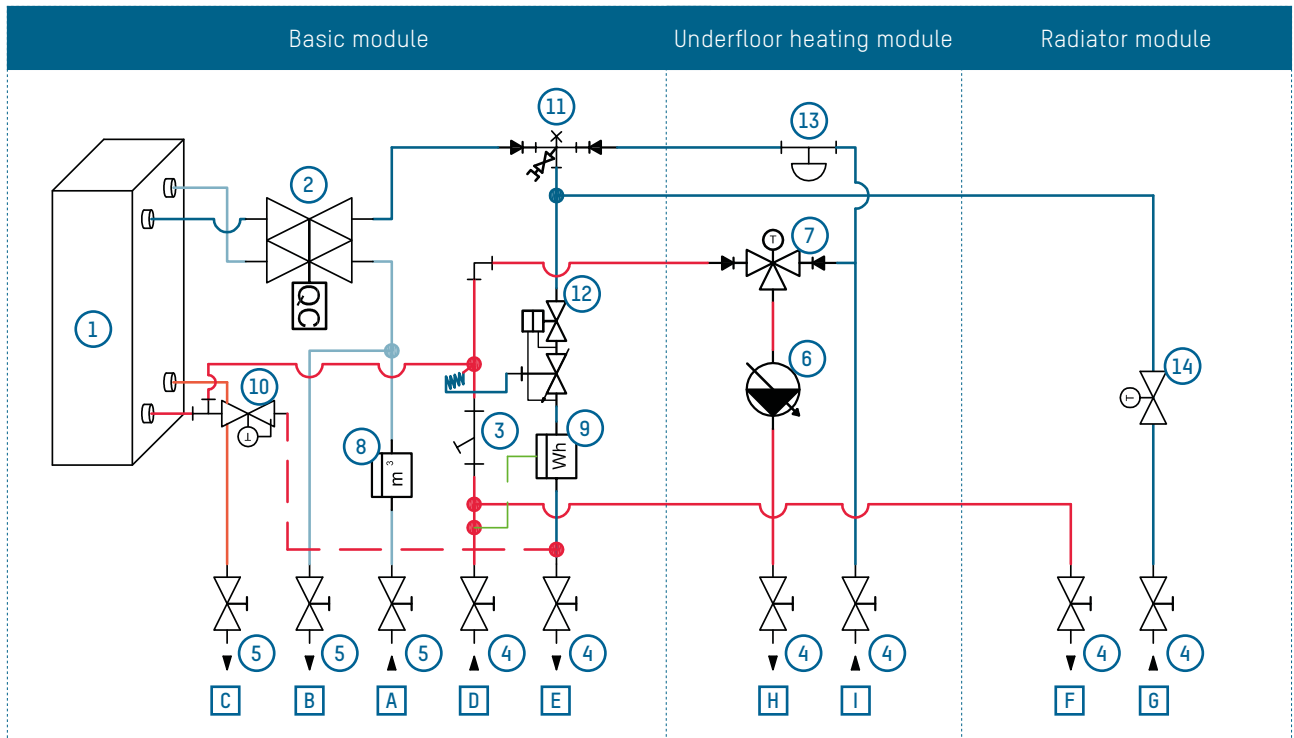
A Feet adjustable + 90 mm



## FLOW DIAGRAM

Heating control: Fixed value

Connection for 2-pipe system



### Key

- 1 Plate heat exchanger
- 2 Proportional flow controller
- 3 Dirt trap with filter
- 4 Shut-off valve for heating
- 5 Shut-off valve with drinking water certification
- 6 Heating circuit pump
- 7 Fixed-value three-way mixer (NovaMix Value)
- 8 Cold water meter adjusting piece
- 9 Heat meter adjusting piece
- 10 Temperature storage module
- 11 Automatic air vent valve
- 12 Differential pressure controller
- 13 Zone valve
- 14 Return temperature limiter (optional)

### Connections

- A Connection for main supply line for cold water
- B Connection for cold water distribution
- C Connection for hot water distribution
- D Primary connection for heat supply on supply side
- E Primary connection for heat supply on return side
- F Radiator connection in supply circuit
- G Radiator connection in return circuit
- H Connection for underfloor heating on supply side
- I Connection for underfloor heating on return side

## EXAMPLE OF INTERPRETING THE FLOW RATE AND PRESSURE LOSS DIAGRAMS

### Given

- DHW draw-off rate: 16 l/min
- Heating flow temperature, primary: 65 °C
- Required draw-off temperature: 45 °C

### Sought

- Heating water demand in l/h
- Primary and secondary pressure loss in mbar
- Heating return temperature, primary in °C

### Solution

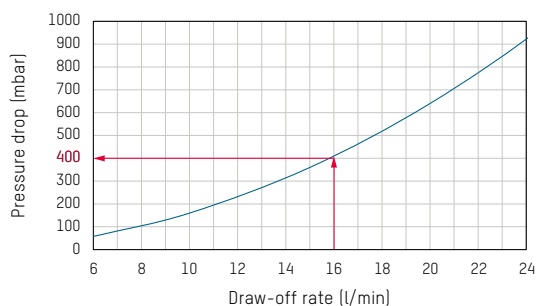
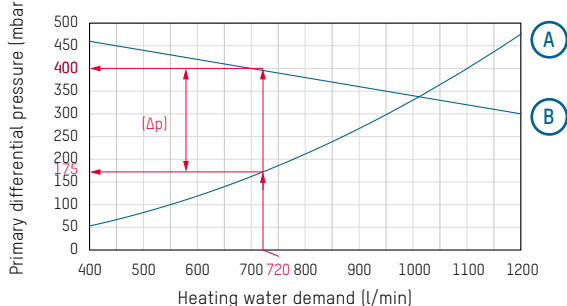
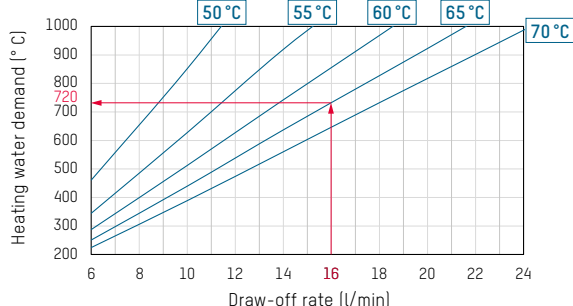
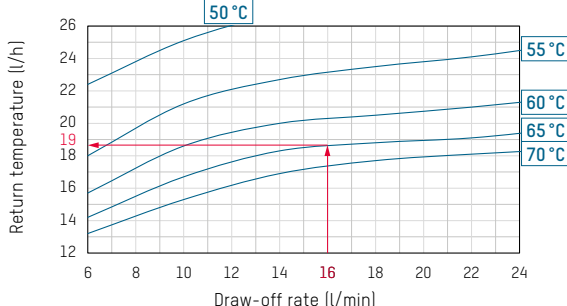
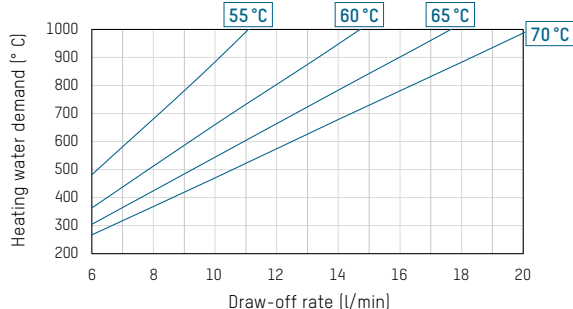
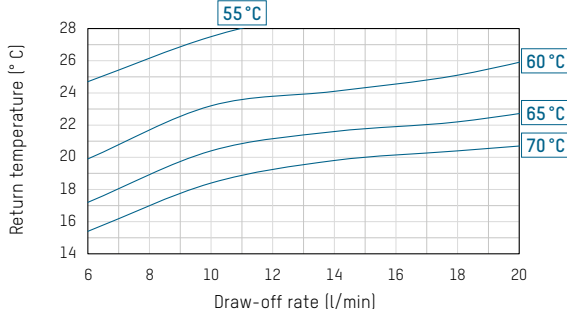
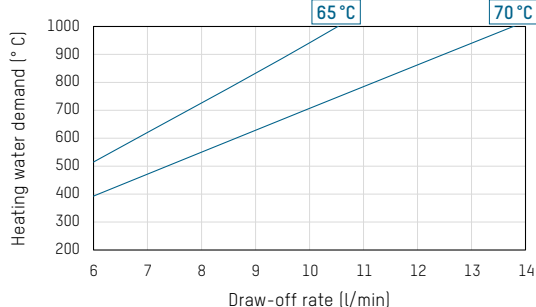
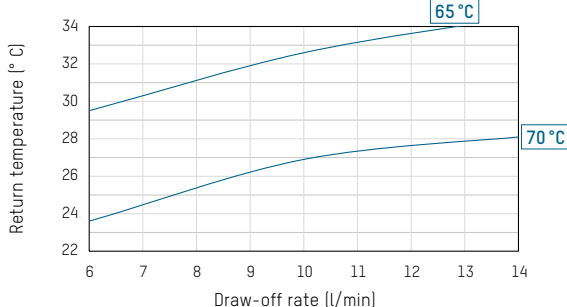
- On the basis of diagram A), a pressure loss of 400 mbar on the secondary side can be determined at the specified DHW draw-off rate of 16 l/min at the point of intersection.
- Diagram C) shows a heating water flow of 720 l/h is determined at 16 l/min with 45 °C DHW temperature and a primary flow temperature of 65 °C.

- In diagram D), a return temperature of 19 °C. is determined for the same values.
- Diagram B) shows a differential pressure on the primary side of 225 mbar for the a heating water demand of 720 l/h.

\* Example applies to plate heat exchangers with 40 plates



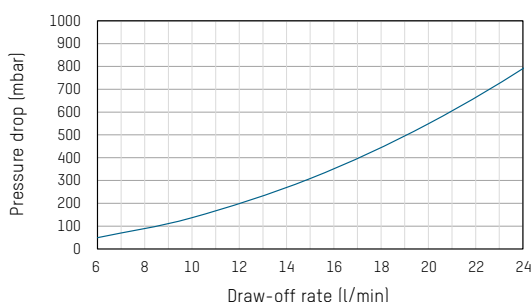
# FLOW, TEMPERATURE AND PRESSURE LOSS DIAGRAMS PLATE HEAT EXCHANGER WITH 26 PLATES

**A) Secondary pressure drop**

**B) Heating water demand/primary differential pressure**

**C) Heating water demand for heating DHW by 35 °C (10 – 45 °C)**

**D) Return temperature with heating DHW by 35 °C (10 – 45 °C)**

**E) Heating water demand for heating DHW by 40 °C (10 – 50 °C)**

**F) Return temperature with heating DHW by 40 °C (10 – 50 °C)**

**G) Heating water demand for heating DHW by 50 °C (10 – 60 °C)**

**H) Return temperature with heating DHW by 50 °C (10 – 60 °C)**

**A** Differential pressure primary

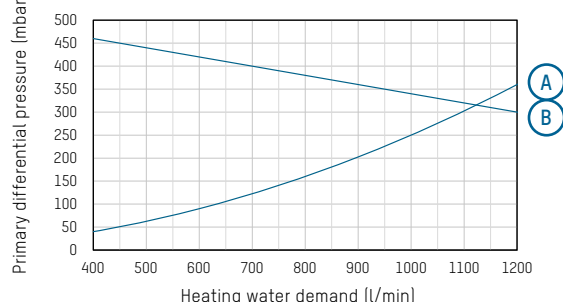
**B** Performance curve, differential pressure controller

# FLOW, TEMPERATURE AND PRESSURE LOSS DIAGRAMS PLATE HEAT EXCHANGER WITH 40 PLATES

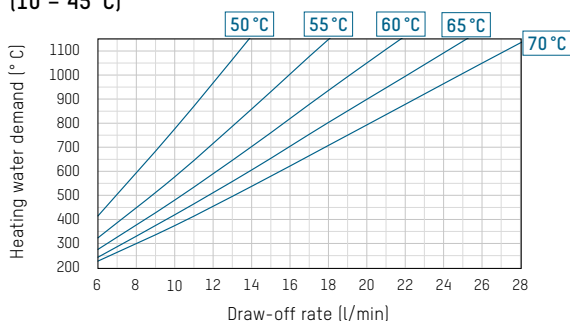
**A) Secondary pressure drop**



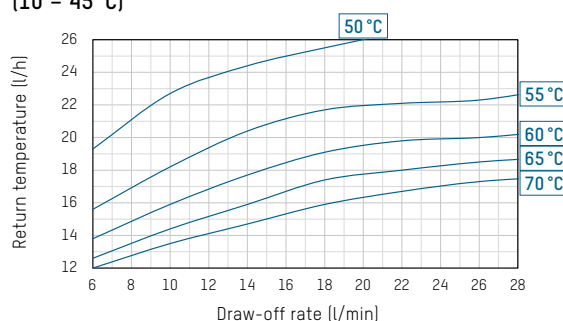
**B) Heating water demand/primary differential pressure**



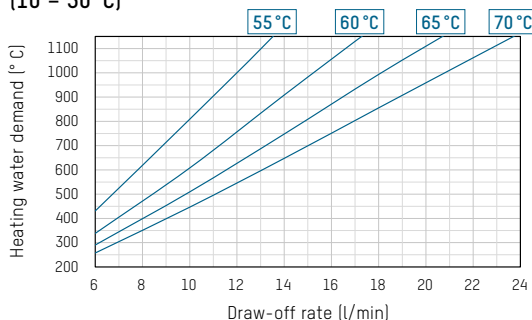
**C) Heating water demand for heating DHW by 35 °C (10 – 45 °C)**



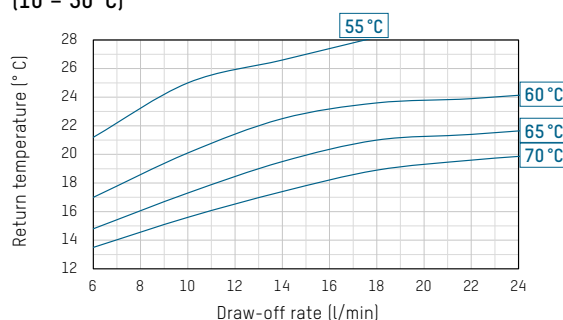
**D) Return temperature with heating DHW by 35 °C (10 – 45 °C)**



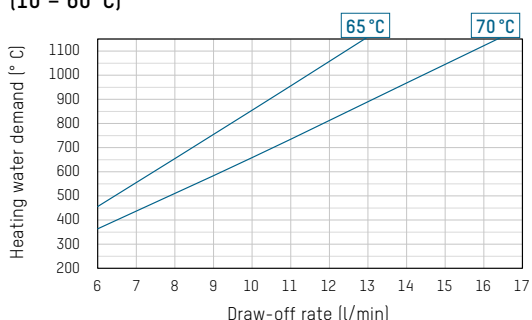
**E) Heating water demand for heating DHW by 40 °C (10 – 50 °C)**



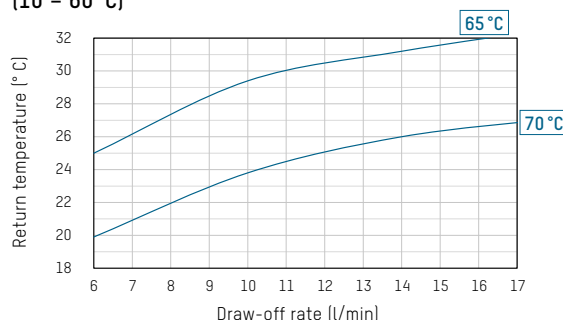
**F) Return temperature with heating DHW by 40 °C (10 – 50 °C)**



**G) Heating water demand for heating DHW by 50 °C (10 – 60 °C)**



**H) Return temperature with heating DHW by 50 °C (10 – 60 °C)**



- A** Differential pressure primary
- B** Performance curve, differential pressure controller

# TACOTHERM DUAL PIKO SMART CONNECT

## ELECTRONICALLY CONTROLLED DECENTRALISED HEAT INTERFACE UNIT



### ADVANTAGES

- Electronic drinking water heating with hot water priority switching for maximum comfort
- Large number of variants
- Available as a single fresh water or combination station
- On-demand, hygienic, decentralised DHW heating
- High hygiene standards by avoiding heated stagnant water
- Demand-driven calculation of energy costs

Preconfigured decentralised heat interface unit with slimline design, electronically controlled DHW heating and integrated heat distribution.

### DESCRIPTION

With its decentralised electric DHW heating, slimline design and various styles, the Piko series of decentralised heat interface units is ideal for virtually any installation and application scenario.

Units are available as single DHW or heating modules, or as combi units. The easily adjustable DHW temperature ensures demand-based DHW supply and energy billing.

### INSTALLATION

The decentralised heat interface units are available as heating modules and DHW modules, enabling pre-assembly during the building phase. The unit should preferably be sited close to the draw-off points of each apartment. This enables decentralised DHW and room heating for the apartment.

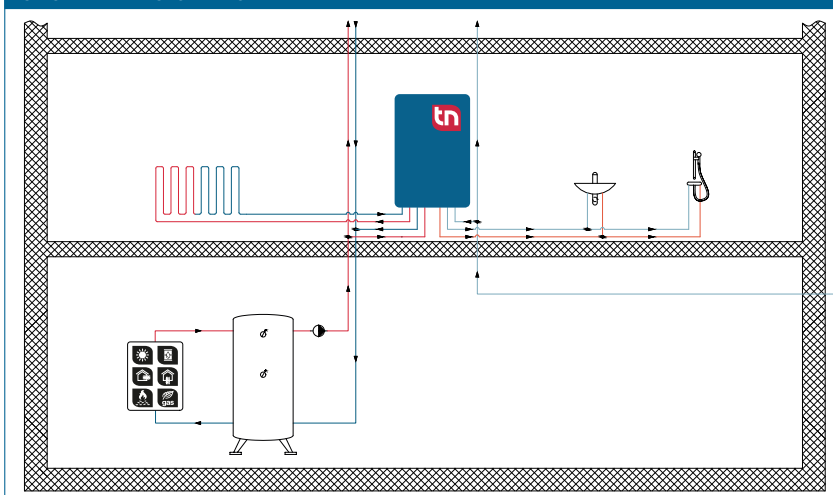
### OPERATION

Piko Smart Connect electronic decentralised heat interface units are designed for DHW heating and heat distribution, especially for low temperature heat generation. Primary energy is supplied via a central buffer cylinder. Decentralised DHW heating in the DHW module takes place on demand according to the instantaneous water heating principle.

In combi units, the heating surfaces in the living spaces are connected to the underfloor heating circuit manifolds of the heating module. The heating flow temperature in the living space is regulated via the central boiler controls.

Fittings are included in the modules for the installation of heat meters and cold water meters on site.

### SYSTEM/BASIC DIAGRAM



### BUILDING CATEGORIES

- Apartment blocks
- Hotels and residential homes
- Industrial buildings

## SPECIFICATION TEXT

See [www.taconova.com](http://www.taconova.com)

### GENERAL TECHNICAL DATA

#### General

- Max. operating pressure  $P_{0\max}$ :
  - Primary: 3 bar
  - Secondary: 10 bar
- Max. differential pressure  $\Delta p$  primary: 1000 mbar
- Combi unit installation dimensions:
  - 2 – 10 heating circuits: W 750 × H 1350 + 90 × D 110 mm
  - 11 – 12 heating circuits: W 840 × H 1350 + 90 × D 110 mm
- Weight of combination station (empty): 65 kg

#### Materials

- Housing: painted sheet steel
- Pipes: DN 15, stainless steel 1.4404
- Primary pump fresh hot water module: cast iron
- DHW circulation pump: brass
- Valve housing: brass
- Seals: AFM34 (flat sealing)

#### Performance data

See design diagram

#### Electrical connection data

- Mains voltage: 230 VAC ± 10 %
- Mains frequency: 50...60 Hz
- Power consumption fresh hot water module: max. 50 W
- Power consumption combination station incl. actuators: 120 – 140 W
- Protection type: IP 30
- EEI ≤ 0.20 – Part 2

#### Flow media

- Heating water (VDI 2035; SWKI BT 102-01; ÖNORM H 5195-1)
- Cold water as per DIN 1988-200 and DIN EN 806-5

## TECHNICAL DATA

### FRESH HOT WATER MODULE

#### General

- Max. operating temperature  $T_{0\max}$ : 90 °C
- Weight (empty): 35 kg
- Dimensions of structure on base plate: W 740 × H 568 × D 109 mm
- Primary pump: TacoFlow 3 GenS 15-85/130
- DHW circulation pump: TacoFlow 2 Pure

#### Materials

- Plate heat exchanger (plates and connector pieces):
  - Stainless steel 1.4401
  - Stainless-steel-soldered

## TECHNICAL DATA HEATING MODULE

#### General

- Max. operating temperature  $T_{0\max}$ : 65 °C
- Weight (empty): 30 kg
- Pre-delivery dimensions:
  - 2 – 10 heating circuits: B 750 × H 1350 + 90 × T 110 mm
  - 11 – 12 heating circuits: B 840 × H 1350 + 90 × T 110 mm
- Heating circuit pump: TacoFlow 3 GenS 15-85/130
- Change-over and control valve for weather-controlled regulation

## APPROVALS / CERTIFICATES

- Components in contact with potable water comply with UBA Evaluation Criteria 26/03/2018 and Directive (EU) 2015/1535

## NOTE

### REQUIREMENTS FOR FLOW MEDIA

A stainless steel brazed stainless steel plate heat exchanger is used as standard in the electronically controlled units. Before use, it is important to check at the system planning stage whether issues of corrosion protection and scale formation have been given sufficient consideration according to DIN 1988-200 and the current drinking water analyses as set out in DIN EN 806-5. See information sheet "Specifications for plate heat exchanger – limit values for drinking water quality".

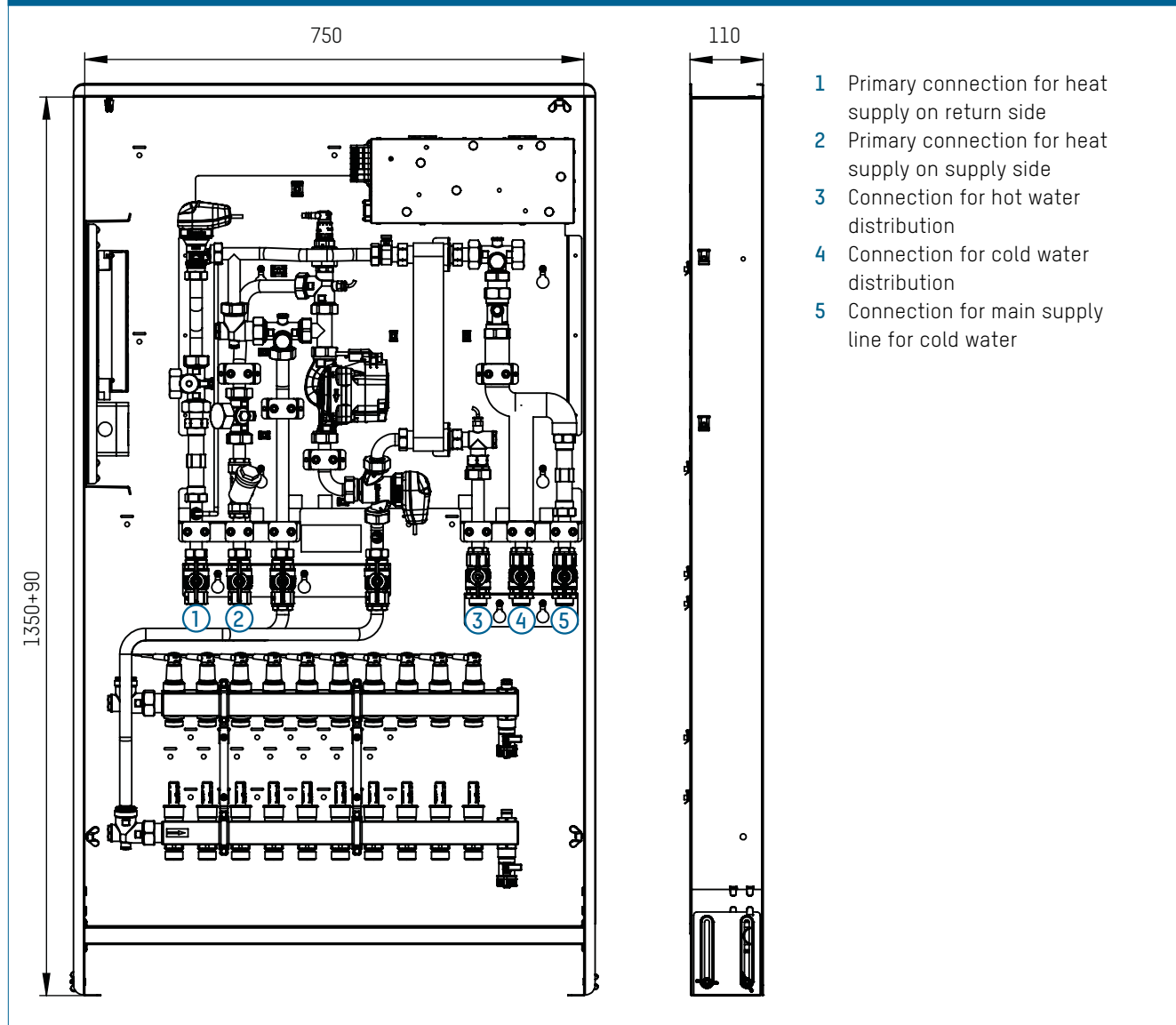
## TYPE OVERVIEW

TacoTherm Dual Piko Smart Connect | Heating module assembly with up to 12 heating circuits\*

Order no.	DN	Connections	Underfloor heating circuits	Version
278.2792.133P	15	3/4" IG	3	Module in a 4-pipe system
...			...	
278.2792.142P	15	3/4" IG	12	Module in a 2-pipe system
...			...	
278.2793.133P	15	3/4" IG	3	Module in a 2-pipe system
...			...	
278.2793.142P	15	3/4" IG	12	Module in a 2-pipe system
...			...	

\* Accessories required for completion and versions can be selected individually

## DIMENSIONAL DRAWING

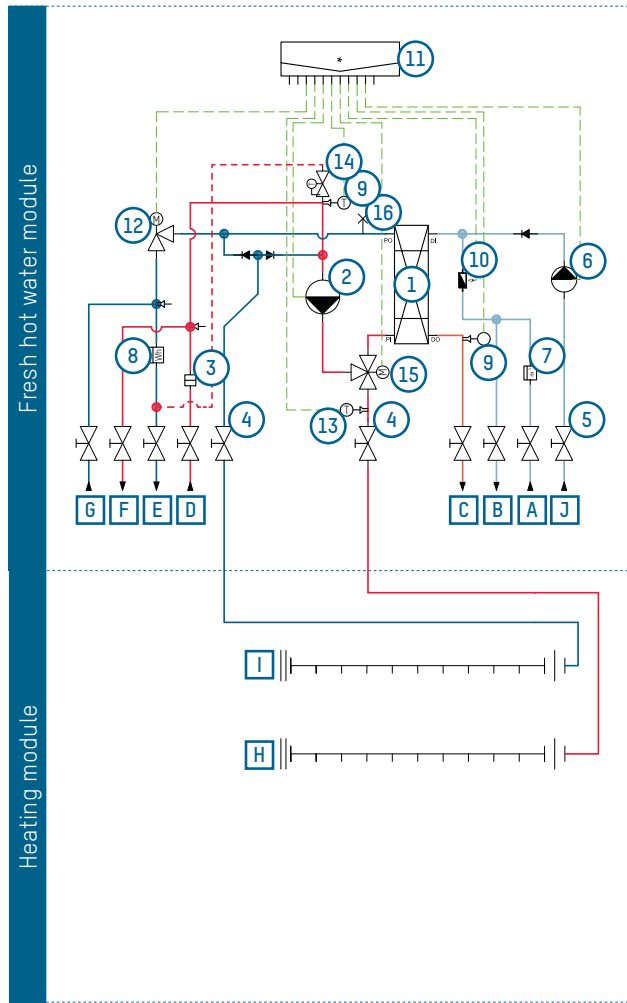


## ACCESSORIES

Order no.	Description
296.7038.000	Insulation shell for additional insulation of the centralised heat interface unit
296.7014.000	Mobile operating panel (HMI) for commissioning one or more decentralised heat interface units (we recommend storing at least one panel in the plant room of the property)
296.7014.001	WiFi stick for alternative operation of the unit via PC or tablet
296.7045.001	Outdoor temperature sensor PT 1000

# FLOW DIAGRAM

Heating control: Fixed value and weather-controlled  
Connection for 2-pipe system



## Key

- 1 Plate heat exchanger
- 2 Primary pump for domestic hot water and heating module
- 3 Dirt trap with filter
- 4 Shut-off valve for heating
- 5 Shut-off valve with domestic hot water certification
- 6 Optional DHW circulation pump
- 7 Cold water meter adjusting piece
- 8 Heat meter adjusting piece
- 9 Temperature sensor
- 10 Volume flow sensor
- 11 Heat interface unit controller
- 12 Drive with stepper motor
- 13 Flow sensor weather-controlled regulation
- 14 Warming module actuator
- 15 Heating/DHW heating diverter valve
- 16 Automatic air vent valve

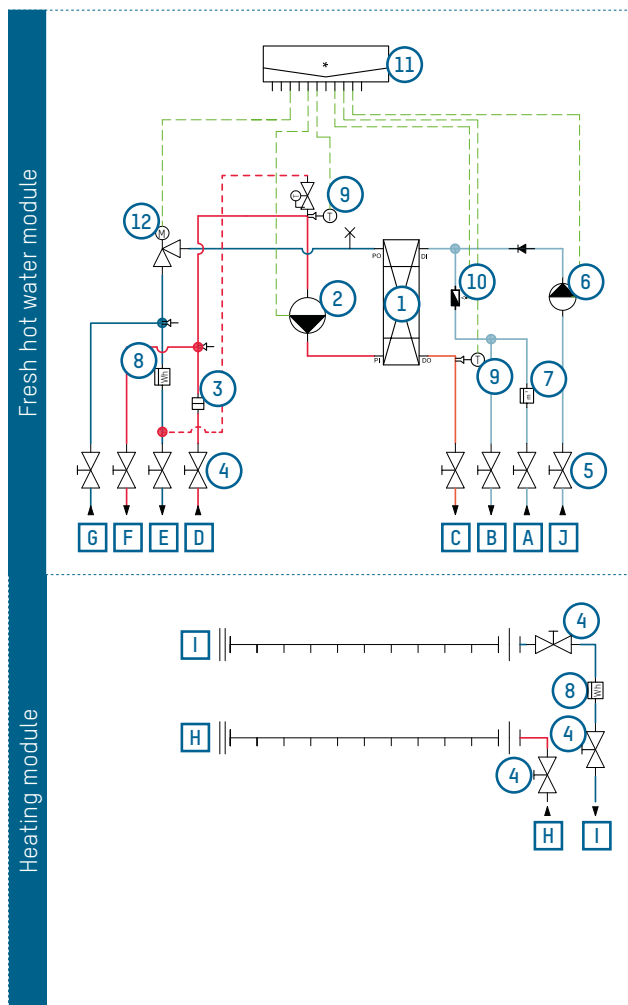
## Connections

- A Connection for main supply line for cold water
- B Connection for cold water distribution
- C Connection for hot water distribution
- D Primary connection for heat supply on supply side
- E Primary connection for heat supply on return side
- F Radiator connection in supply circuit
- G Radiator connection in return circuit
- H Connection for underfloor heating on supply side
- I Connection for underfloor heating on return side
- J Connection for DHW circulation

## FLOW DIAGRAM

Heating control: Fixed value

Connection for 4-pipe system



## Key

- 1 Plate heat exchanger
- 2 Primary pump for fresh hot water
- 3 Dirt trap with filter
- 4 Shut-off valve for heating
- 5 Shut-off valve with domestic hot water certification
- 6 Optional DHW circulation pump
- 7 Cold water meter adjusting piece
- 8 Heat meter adjusting piece
- 9 Temperature sensor
- 10 Volume flow sensor
- 11 Heat interface unit controller
- 12 Drive with stepper motor

## Connections

- A Connection for main supply line for cold water
- B Connection for cold water distribution
- C Connection for hot water distribution
- D Primary connection for heat supply on supply side
- E Primary connection for heat supply on return side
- F Radiator connection in supply circuit
- G Radiator connection in return circuit
- H Connection for underfloor heating on supply side
- I Connection for underfloor heating on return side
- J Connection for drinking water circulation

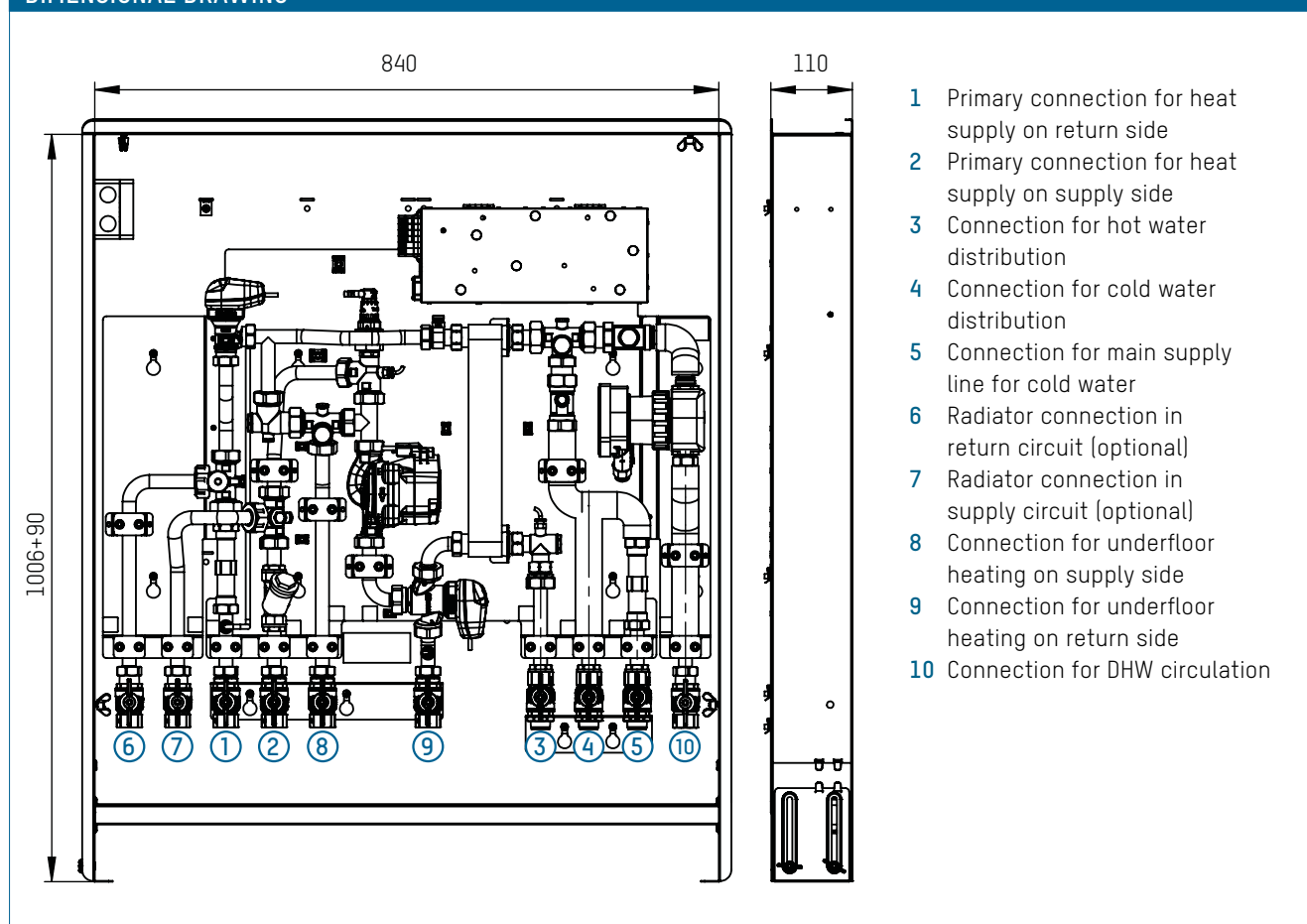
## TYPE OVERVIEW

TacoTherm Fresh Piko Smart Connect | Domestic hot water module

Order no.	DN	Connections	Dispensing range*	Version
278.2390.000	15	¾" fem.	25 l/min	DHW module for retrofitting on base plate for installation in a 2-pipe system
278.2391.000	15	¾" fem.	25 l/min	DHW module for retrofitting on base plate for installation in a 2-pipe system with DHW circulation
278.2392.000	15	¾" fem.	25 l/min	DHW module for retrofitting on base plate for installation in a 4-pipe system
278.2393.000	15	¾" fem.	25 l/min	DHW module for retrofitting on base plate for installation in a 4-pipe system with DHW circulation

\* Performance data for primary = flow 55 °C / secondary = hot water 45 °C

## DIMENSIONAL DRAWING



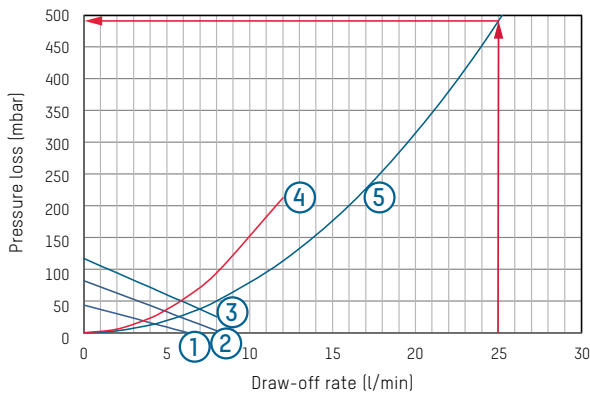
## ACCESSORIES

Order no.	Description
296.3011.000	Radiator connection kit (DN 20   Rp 1" × 18 mm)
296.7014.000	Mobile operating panel (HMI) for commissioning one or more decentralised heat interface units (we recommend storing at least one panel in the plant room of the property)
296.7014.001	WiFi stick for alternative operation of the unit via PC or tablet
296.7045.001	Outdoor temperature sensor PT 1000



## FLOW AND PRESSURE LOSS DIAGRAMS COLD WATER HEATING BY 35 K (10 ... 45 °C)

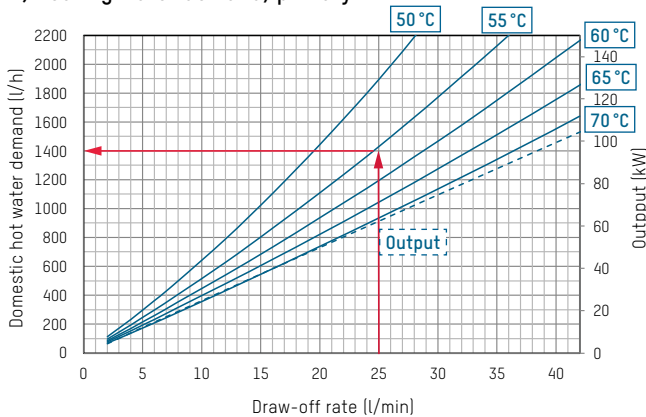
### D) Secondary pressure loss



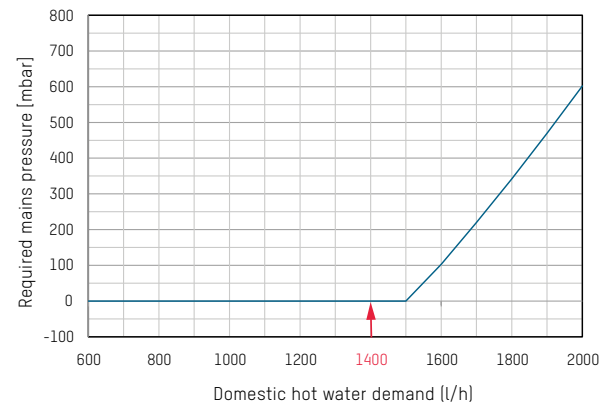
#### Key

- 1 DHW circulation pump stage 1
- 2 DHW circulation pump stage 2
- 3 DHW circulation pump stage 3
- 4 Circulation pressure drop
- 5 Secondary pressure drop

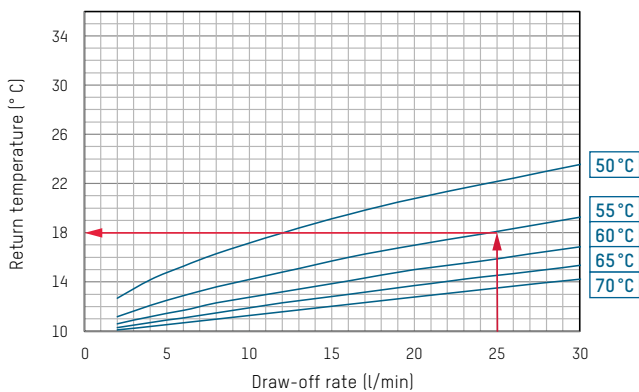
### A) Heating water demand, primary



### B) Pilot pressure required at the station depends on heating water demand



### C) Return temperatures on primary side



## EXAMPLE OF INTERPRETING THE FLOW RATE AND PRESSURE LOSS DIAGRAMS

#### Given

- Hot water dispensing volume: 25 l/min
- Primary heating flow temperature: 55 °C
- Draw-off temperature: 45 °C
- Pilot pressure at station, primary: 300 mbar

#### Sought

- Domestic hot water demand in l/h
- Primary pressure loss in mbar
- Primary heating return temperature in °C
- Secondary pressure loss in mbar
- System output monitoring

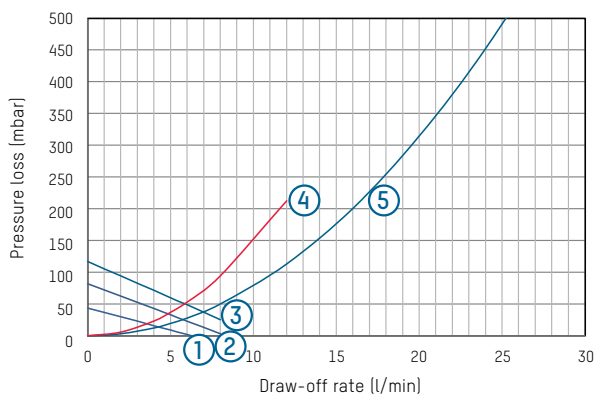
#### Approach

- From graph A), the heating water flow rate of 1400 l/min can be read off at the intersection of the given DHW draw-off rate and the existing primary flow temperature.
- On graph B), the pilot pressure required at the station can be calculated based on the determined hot water flow rate of 1400 l/h. Up to a heating water demand of 1500 l/h, the pressure drop of the station is not taken into account.

- In Diagram C) the primary return temperature for the given dispensing volume and the selected flow temperature of 55 °C is then 18 °C.
- In Diagram D) the secondary pressure loss for the given data is 300 mbar

# FLOW AND PRESSURE LOSS DIAGRAMS COLD WATER HEATING BY 45 K (10 ... 55 °C)

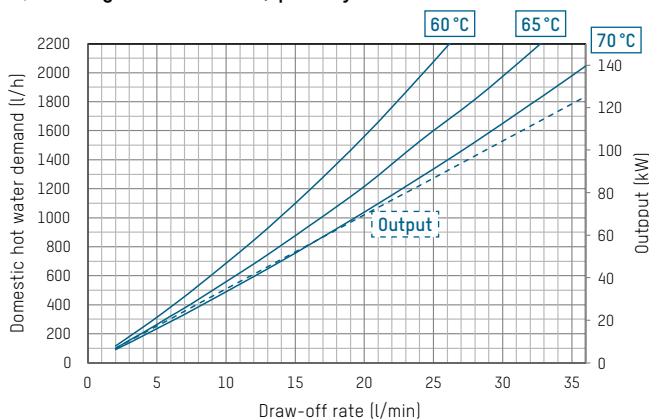
## E) Secondary pressure loss



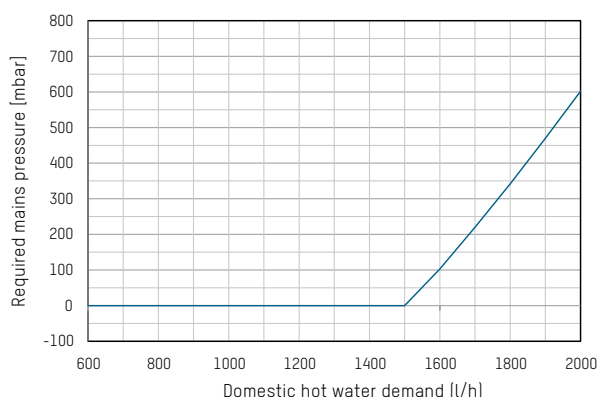
### Key

- 1 DHW circulation pump stage 1
- 2 DHW circulation pump stage 2
- 3 DHW circulation pump stage 3
- 4 Circulation pressure drop
- 5 Secondary pressure drop

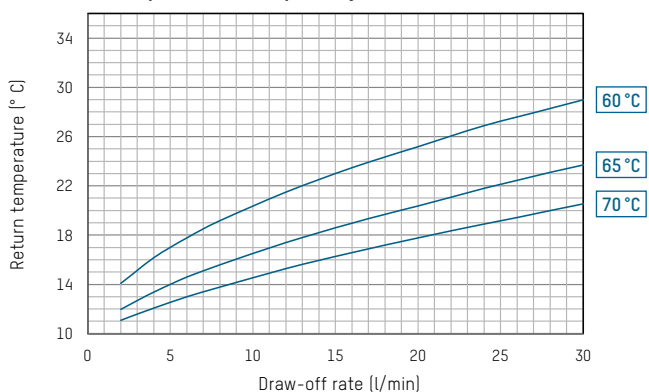
## A) Heating water demand, primary



## B) Pilot pressure required at the station depends on heating water demand

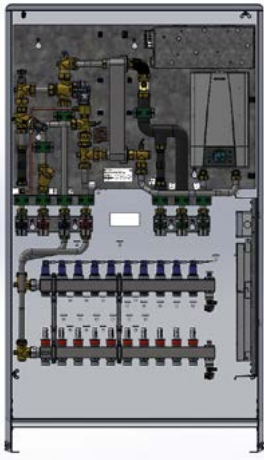


## C) Return temperatures on primary side



# TACOTHERM DUAL PIKO SMART HYBRID

## HYBRID DECENTRALISED HEAT INTERFACE UNIT



Pre-assembled decentralised heat interface unit in a slimline design, with electrical DHW booster heater and integrated heat distribution.

### DESCRIPTION

With its decentralised electrical booster heater, slimline design and various styles, the Piko series of decentralised heat interface units is ideal for virtually any installation and application scenario.

Units are available as single DHW or heating modules, or as combi units. The easily adjustable electrical booster heater ensures demand-based DHW heating and energy billing.

### INSTALLATION

The decentralised heat interface units are available as a heating module and a DHW module, enabling pre-assembly during the building phase.

The unit should preferably be sited close to the draw-off points of each apartment. This ensures decentralised domestic hot water and room heating for the apartment.

### ADVANTAGES

- Electric booster heater and DHW priority control for greater convenience
- Wide range of versions
- Available as a split pre-delivery or fully pre-assembled delivery
- On-demand, hygienic, decentralised DHW heating
- Volume of stored drinking water is minimised
- Demand-based energy billing

### OPERATION

Piko hybrid decentralised heat interface units are designed for DHW heating and heat distribution, especially for low temperature heat generation.

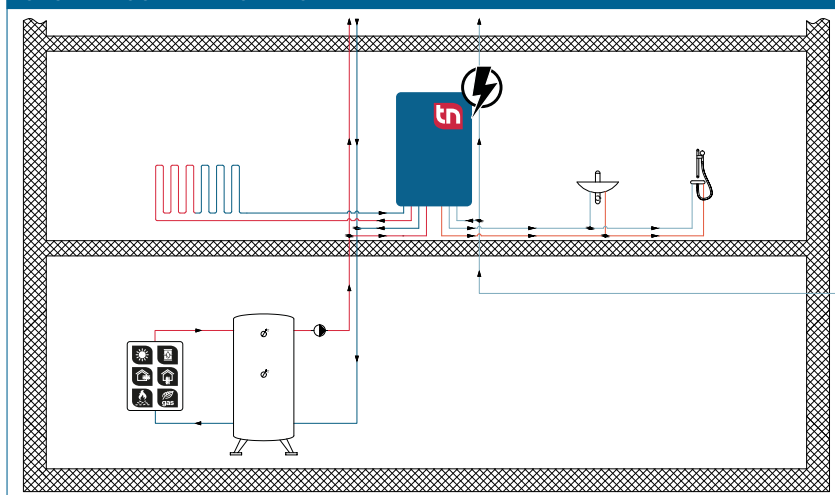
Energy is supplied primarily via a central buffer cylinder. Decentralised DHW heating with electric booster heater and DHW priority control in the DHW module take place on demand according to the instantaneous water heating principle.

In combi units, the heating surfaces in the living spaces are connected to the underfloor heating circuit manifolds of the heating module.

The heating flow temperature in the living space is regulated via the central boiler controls.

Fittings are included in the modules for the installation of heat meters and cold water meters on site.

### SYSTEM/SCHEMATIC DIAGRAM



### BUILDING CATEGORIES

- Apartment buildings
- Hotels and residential homes
- Industrial buildings

## TENDER DOCUMENTATION

See [www.taconova.com](http://www.taconova.com)

### GENERAL TECHNICAL DATA

#### General

- Max. static pressure  $P_{B \max}$ :
  - Primary: 3 bar
  - Secondary: 6 bar
- Max. differential pressure  $\Delta p$  primary: 1000 mbar
- Combi unit installation dimensions:
  - 2 – 10 heating circuits:  
B 750 × H 1350 + 90 × T 110 mm
  - 11 – 12 heating circuits  
B 840 × H 1350 + 90 × T 110 mm
- Weight of combi station without water: 65 kg

#### Materials

- Housing: painted sheet steel
- Pipes: DN 15 stainless steel 1.4404
- Valve housing: brass
- Gaskets: AFM34 (flat packing) / EPDM

#### Performance data

See design diagram

#### Electrical connection data for unit

- Mains voltage: 230 VAC ± 10 %
- Mains frequency: 50 to 60 Hz
- Power consumption: max. 4 – 180 W
- Protection rating: IP 30

#### Electrical connection data

##### for instantaneous water heater

- Mains voltage: 400 VAC ± 10 %
- Mains frequency: 50 to 60 Hz
- Power consumption:  
max. 13 kW / max. 21 kW
- Protection rating: IP 25

#### Flow media

- Heating water  
(VDI 2035; SWKI BT 102-01;  
ÖNORM H 5195-1)
- Cold water to DIN 1988-200 and  
DIN EN 806-5

### APPROVALS / CERTIFICATES

Components in contact with potable water comply with UBA Evaluation Criteria 11/01/2023 and Directive (EU) 2020/2184

## TECHNICAL DATA FOR DHW MODULE

#### General

- Max. operating temperature  $T_{B \max}$ : 95 °C
- Weight without water: 35 kg
- Dimensions of structure on base plate:  
W 740 × H 568 × D 109.2 mm

#### Material

- Plate heat exchanger (plates and connectors):
  - Stainless steel 1.4401
  - Stainless steel brazed

## TECHNICAL DATA FOR HEATING MODULE

#### General

- Max. operating temperature  $T_{B \max}$ : 70 °C
- Weight without water: 30 kg
- Pre-delivery dimensions:
  - 2 – 10 heating circuits:  
B 750 × H 1350 + 90 × T 110 mm
  - 11 – 12 heating circuits  
B 840 × H 1350 + 90 × T 110 mm
- Underfloor heating manifold with 2 – 12 heating circuits including actuators and TopMeter Plus balancing valve

## PLEASE NOTE

### REQUIREMENTS FOR FLOW MEDIA

A stainless steel brazed stainless steel plate heat exchanger is used as standard in the electronically controlled units. Before use, it is important to check at the system planning stage whether issues of corrosion protection and scale formation have been given sufficient consideration according to DIN 1988-200 and the current drinking water analyses as set out in DIN EN 806-5. See information sheet "Specifications for plate heat exchanger – limit values for drinking water quality".

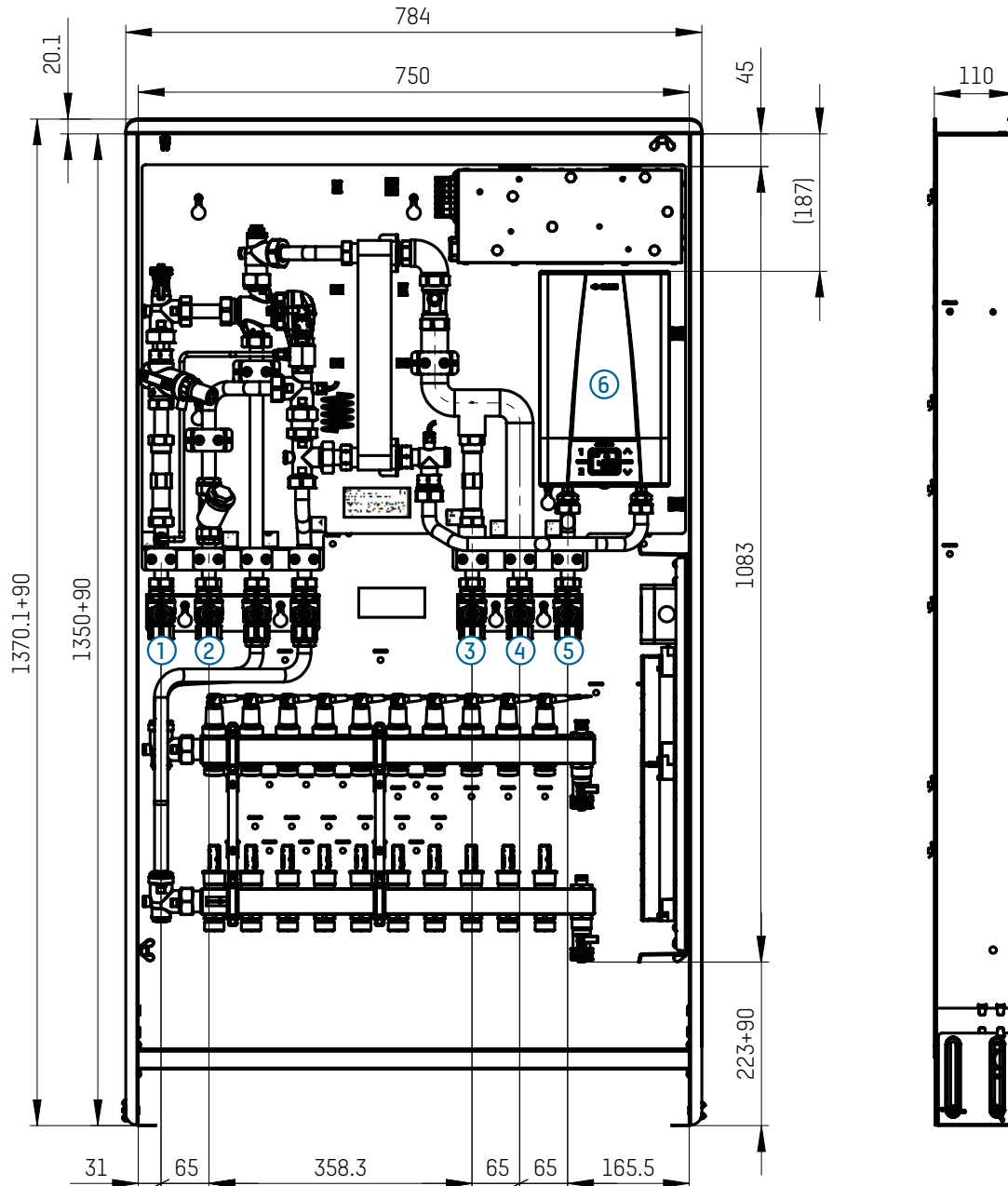
## TYPE OVERVIEW

TacoTherm Dual Piko Smart Hybrid | Heating module assembly with up to 12 heating circuits\*

Order no.	DN	Connections	Underfloor heating circuits	Version
276.7111.132P	15	ø 18 × 1	2	Module in flush-mounted cabinet
...			...	
276.7111.142P			12	

\* Accessories required for completion and versions can be selected individually

## DIMENSIONAL DRAWING



### Key

- 1 Primary connection for heat supply, return
- 2 Primary connection for heat supply, flow
- 3 Main cold water supply line connection
- 4 Cold water distribution connection
- 5 DHW distribution connection
- 6 Electrical booster heater

## TYPE OVERVIEW

TacoTherm Fresh Piko Smart Hybrid | Domestic hot water module

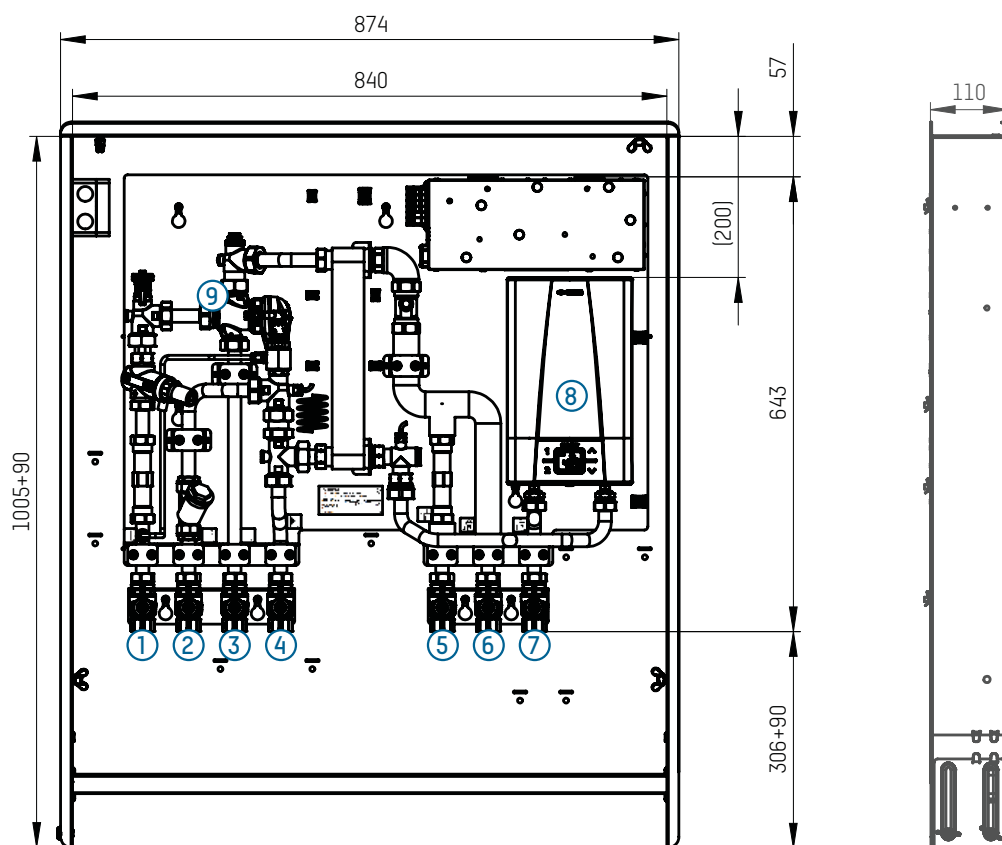
Order no.	DN	Connections	Power consumption	Mixed water draw-off*	Version
276.7111.001P	15	¾" fem.	max. 13 kW	19 l/min	DHW module for retrofitting on base plate
276.7111.002P	15	¾" fem.	max. 21 kW	23 l/min	DHW module for retrofitting on base plate
276.7112.000P	15	¾" fem.	–	–	Flush-mounted cabinet for fresh hot water module

\* Performance data at primary = flow 40 °C / secondary = DHW 38 °C; Δp ≥ 3 bar

## ACCESSORIES

Order no.	Description
296.7014.000	Mobile operating panel (HMI) for commissioning one or more decentralised heat interface units (we recommend storing at least one panel in the plant room of the property)
296.7014.001	WiFi stick for alternative operation of the unit via PC or tablet
296.7045.001	Bypass for initial filling

## DIMENSIONAL DRAWING

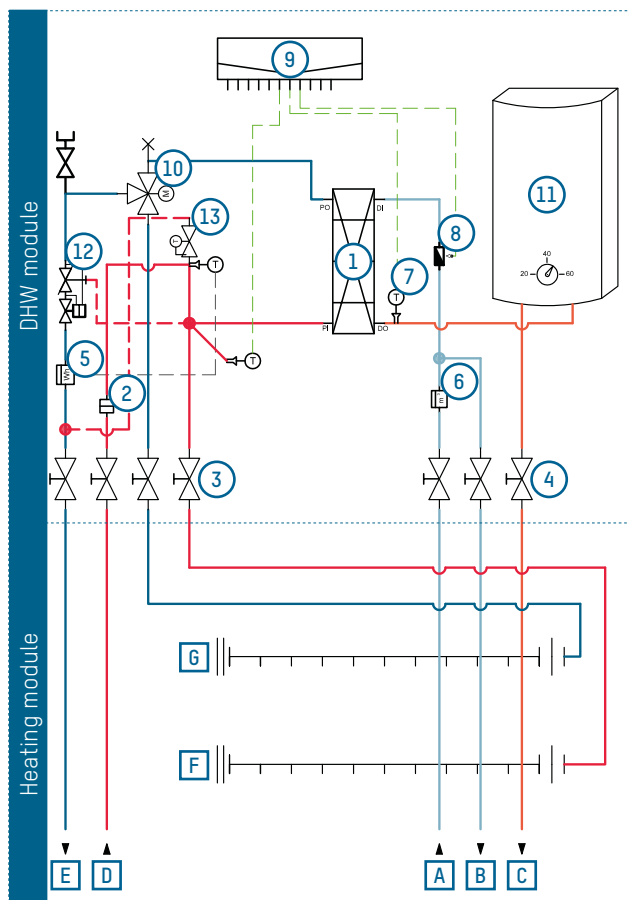


### Key

- 1 Primary connection for heat supply, return
- 2 Primary connection for heat supply, flow
- 3 Secondary heating return connection
- 4 Secondary heating flow connection
- 5 Main cold water supply line connection
- 6 Cold water distribution connection
- 7 DHW distribution connection
- 8 Electrical booster heater
- 9 DHW priority control

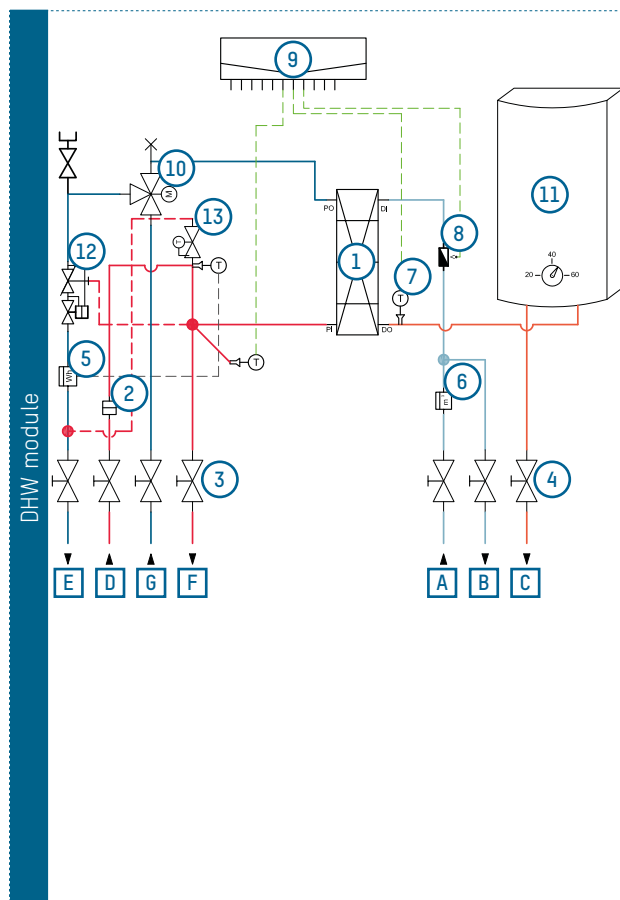
## FLOW DIAGRAM

Heating control: central heating flow control  
2-pipe system connection



## Key

- 1 Plate heat exchanger
- 2 Dirt trap with strainer
- 3 Shut-off valve for heating
- 4 Shut-off valve approved for DHW
- 5 Cold water meter fitting
- 6 Heat meter fitting
- 7 Temperature sensor
- 8 Volume flow sensor
- 9 Decentralised HIU controller
- 10 DHW heating control valve
- 11 Electrical instantaneous water heater
- 12 Differential pressure controller, primary
- 13 Unit temperature maintenance module

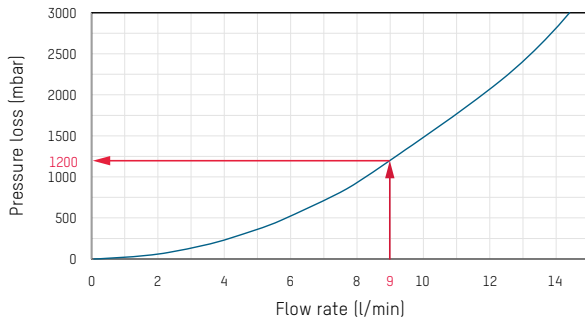


## Connections

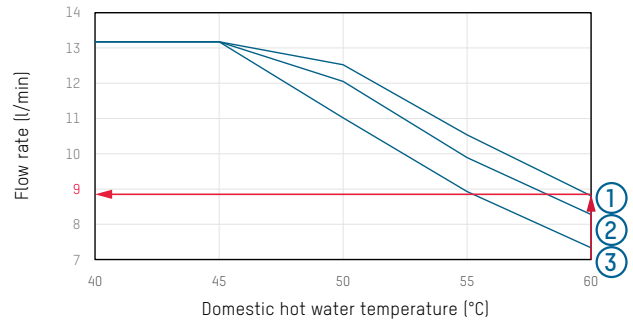
- A Main cold water supply line connection
- B Cold water distribution connection
- C DHW distribution connection
- D Primary connection for heat supply, flow
- E Primary connection for heat supply, return
- F Connection for underfloor heating system, flow
- G Connection for underfloor heating system, return

# FLOW AND PRESSURE LOSS DIAGRAMS VERSION 13.5 KW

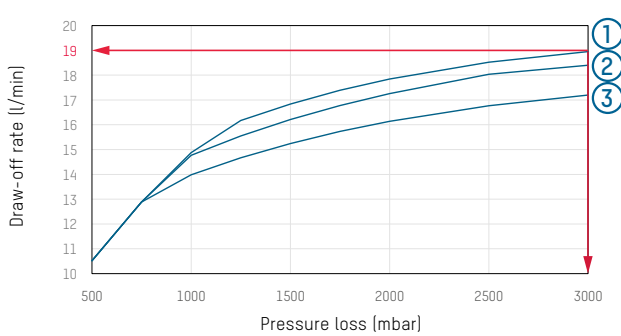
A) Secondary pressure loss



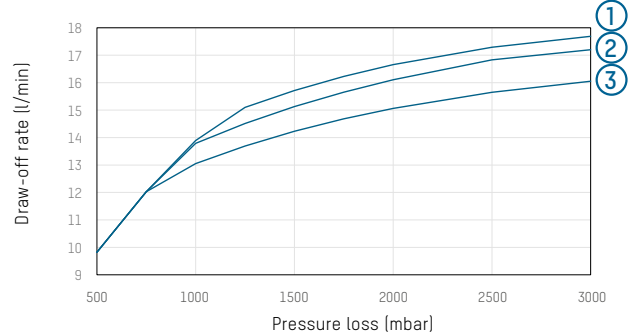
B) Maximum tapping performance at  $\Delta p$  2.5 bar



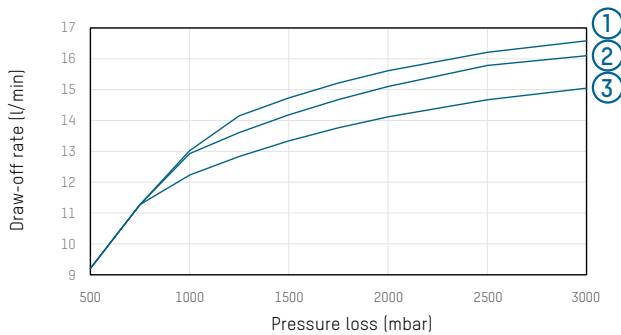
C) Maximum mixed water withdrawal (38 °C)



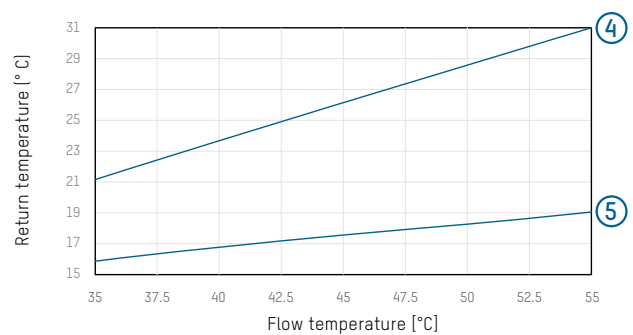
D) Maximum mixed water withdrawal (40 °C)



E) Maximum mixed water withdrawal (42 °C)



F) Return temperature when tapped from 2 – 14 l/min



## Heating flow temperature

- 1 40 °C
- 2 38 °C
- 3 35 °C

## Heating return temperature

- 4 Return temperature max. [°C]
- 5 Return temperature min. [°C]

The maximum return temperature is achieved at a tapping rate of 8.5 l/min, the minimum return temperature at 14 l/min.

# EXAMPLE OF INTERPRETING THE FLOW RATE AND PRESSURE LOSS DIAGRAMS

## Given

- Primary heating flow temperature: 40 °C
- Desired mixed water temperature: 38 °C

## Sought

- Dispensed quantity in l/h
- Secondary pressure loss in mbar

## Approach

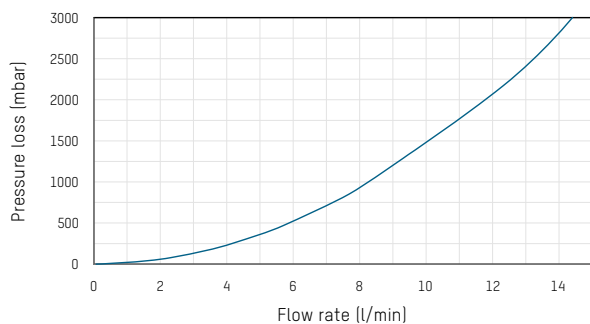
- Using diagram C, a maximum possible mixed water extraction of 19 l/min at 38 °C can be seen at the given primary flow temperature [40 °C].
- The primary differential pressure is 3000 mbar.

- In diagram B, for the given primary flow temperature [40 °C] and an outlet temperature at the home station [60 °C], a maximum tap capacity of 9 l/min is read.
- The secondary pressure loss in drinking water according to diagram A is 1200 mbar.

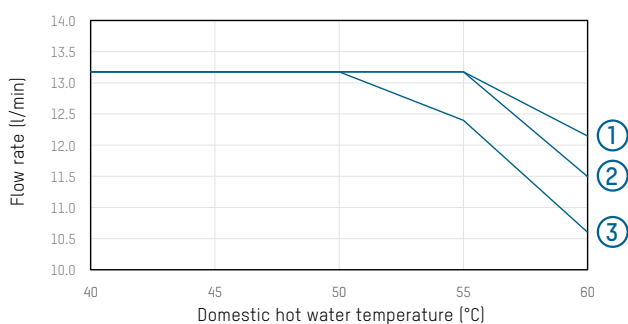


## FLOW AND PRESSURE LOSS DIAGRAMS VERSION 21 KW

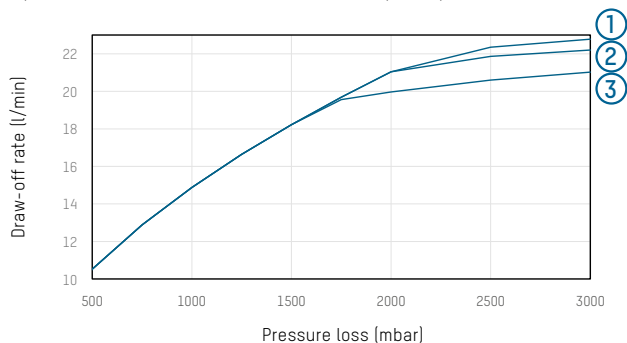
**A) Secondary pressure loss**



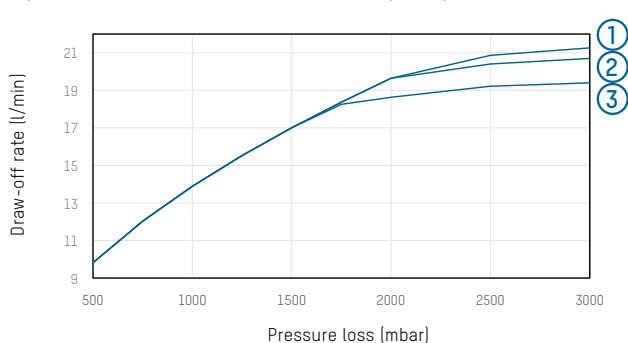
**B) Maximum tapping performance at  $\Delta p$  2.5 bar**



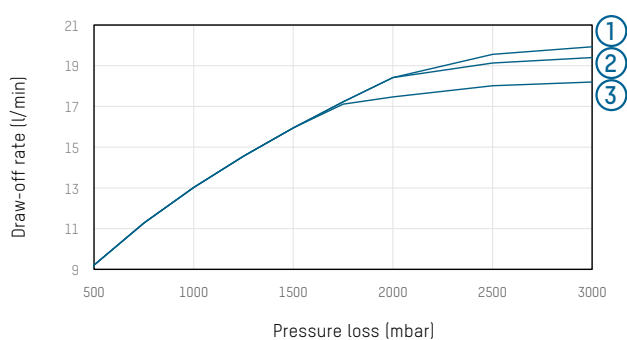
**C) Maximum mixed water withdrawal (38 °C)**



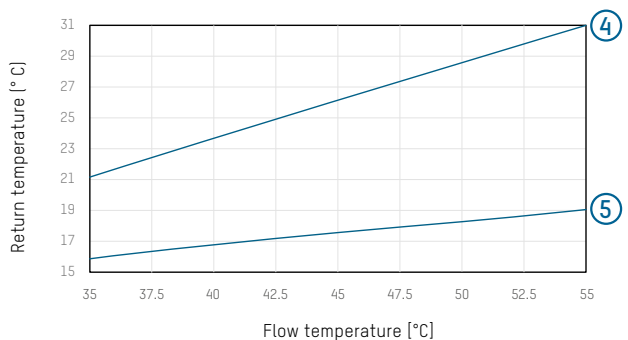
**D) Maximum mixed water withdrawal (40 °C)**



**E) Maximum mixed water withdrawal (42 °C)**



**F) Return temperature when tapped from 2 – 14 l/min**



### Heating flow temperature

- 1 40 °C
- 2 38 °C
- 3 35 °C

### Heating return temperature

- 4 Return temperature max. [°C]
- 5 Return temperature min. [°C]

The maximum return temperature is achieved at a tapping rate of 8.5 l/min, the minimum return temperature at 14 l/min.

# TACOTHERM FRESH NANO2

## GAS BOILER REPLACEMENT UNIT



### ADVANTAGES

- Compact design
- Preconfigured for straightforward installation
- On-demand, hygienic, decentralised DHW heating
- Reduction of stored drinking water volume to a minimum
- Demand-based energy billing

Preconfigured gas boiler replacement unit with a compact design.

### DESCRIPTION

The TacoTherm Fresh Nano2 gas boiler replacement unit suits practically any installation situation thanks to its compact design and various mounting versions. The unit is designed to replace decentralised wall mounted gas boilers with solutions that generate heat centrally, such as heat pumps. Optionally available additional components ensure on-demand heat distribution in the apartment as well as optimisation of the return temperature to the heating buffer cylinder.

Consumption-based billing of the energy costs is possible using the meter mounting boards provided.

### INSTALLATION POSITION

The TacoTherm Fresh Nano2 decentralised heat interface unit is fitted as a base station on a base plate. Models are available for shaft or surface mounting.

The version for surface mounting is available with a high quality housing casing.

This station is designed for the replacement of wall mounted gas boilers in addition to other applications.

### OPERATING PRINCIPLE

The decentralised heat interface units in the Nano2 series are designed for DHW heating and heat distribution in multi-story residential buildings.

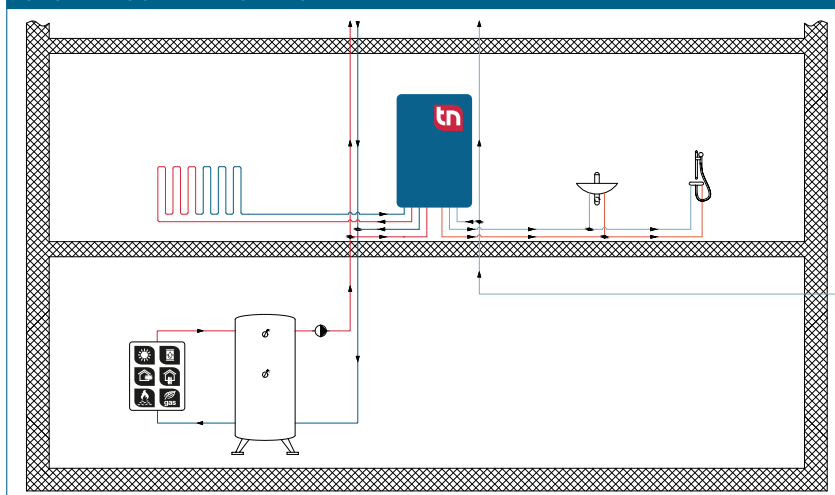
Primary energy is supplied via a central buffer cylinder; domestic hot water is heated in the DHW module as required, according to the instantaneous water heating principle.

Both fixed-value and weather-compensated control of the heating flow temperature is possible. Fittings are provided as standard for on-site installation of heat meters.

### BUILDING CATEGORIES

- Apartment buildings
- Hotels and residential homes
- Industrial buildings

### SYSTEM/SCHEMATIC DIAGRAM



## TENDER DOCUMENTATION

See [www.taconova.com](http://www.taconova.com)

## SPECIFICATION

## General

- Max. operating temperature  $T_{B \max}$ : 95 °C
- Max. static pressure  $P_{B \max}$ :
  - Primary: 6 bar
  - Secondary: 6 bar
- Overall dimensions (incl. cover): W 447 mm × H 800 mm × D 117 mm
- Weight without water: 35 kg

## Material

- Plate heat exchanger (plates and connectors): copper brazed / stainless steel brazed
- Housing: painted sheet steel
- Pipes: DN 20 stainless steel 1.4404
- Valve housing: brass
- Gaskets: AFM34 (flat packing)

## Performance data

See design diagram

## Flow media

- Heating water (VDI 2035; SWKI BT 102-01; ÖNORM H 5195-1)
- Cold water to DIN 1988-200 and DIN EN 806-5

## APPROVALS / CERTIFICATES

- Components in contact with potable water comply with UBA Evaluation Criteria 26/03/2018 and Directive (EU) 2015/1535

## TYPE OVERVIEW

TacoTherm Fresh Nano2 | Decentralised heat interface unit \*1)

Part no.	Flow rate *2)	Heat exchanger	Version
276.1119.000	15.5 l/min	Copper brazed 26 plates	Surface mounting
276.1119.125	15.5 l/min	Stainless steel brazed 26 plates	Surface mounting
276.2119.000	16.5 l/min	Copper brazed 40 plates	Surface mounting
276.2119.125	16.5 l/min	Stainless steel brazed 40 plates	Surface mounting
276.1110.000	15.5 l/min	Copper brazed 26 plates	On base plate
276.1110.125	15.5 l/min	Stainless steel brazed 26 plates	On base plate
276.2110.000	16.5 l/min	Copper brazed 40 plates	On base plate
276.2110.125	16.5 l/min	Stainless steel brazed 40 plates	On base plate

\* 1) Accessories required for completion can be selected individually

\* 2) Performance data at primary = flow 60 °C / secondary = DHW 45 °C;  $\Delta p \geq 300$  mbar (780 kg/h)

## ACCESSORIES

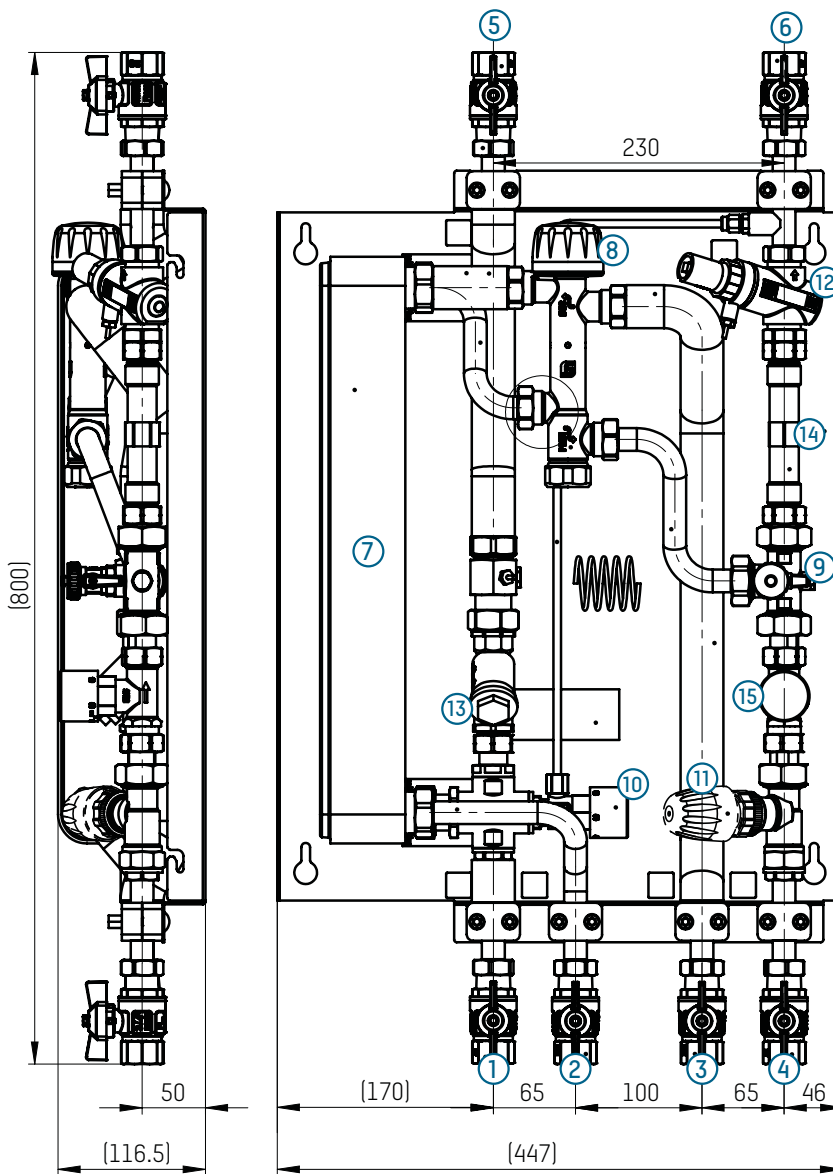
Part no.	Description
296.3003.000	Return temperature limiter
257.1055.000	TopDrive actuator for zone control 24V
257.2055.000	TopDrive actuator for zone control 230V

## PLEASE NOTE

## REQUIREMENTS FOR FLOW MEDIA

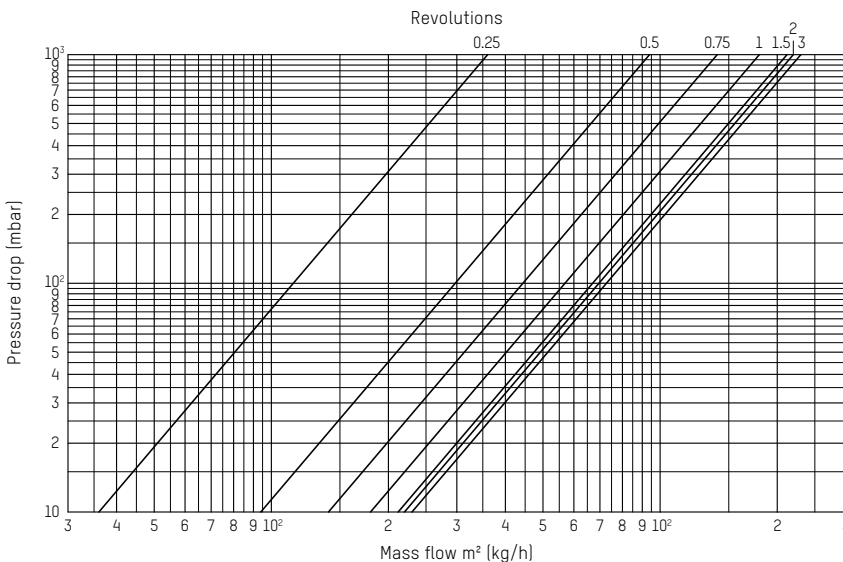
A copper brazed stainless steel plate heat exchanger is used in these units as standard. Before use, it is important to check at the system planning stage whether issues of corrosion protection and scale formation have been given sufficient consideration in accordance with DIN 1988-200 and the current drinking water analyses as set out in DIN EN 806-5. See information sheet "Specifications for plate heat exchanger – limit values for drinking water quality".

# DIMENSIONAL DRAWING

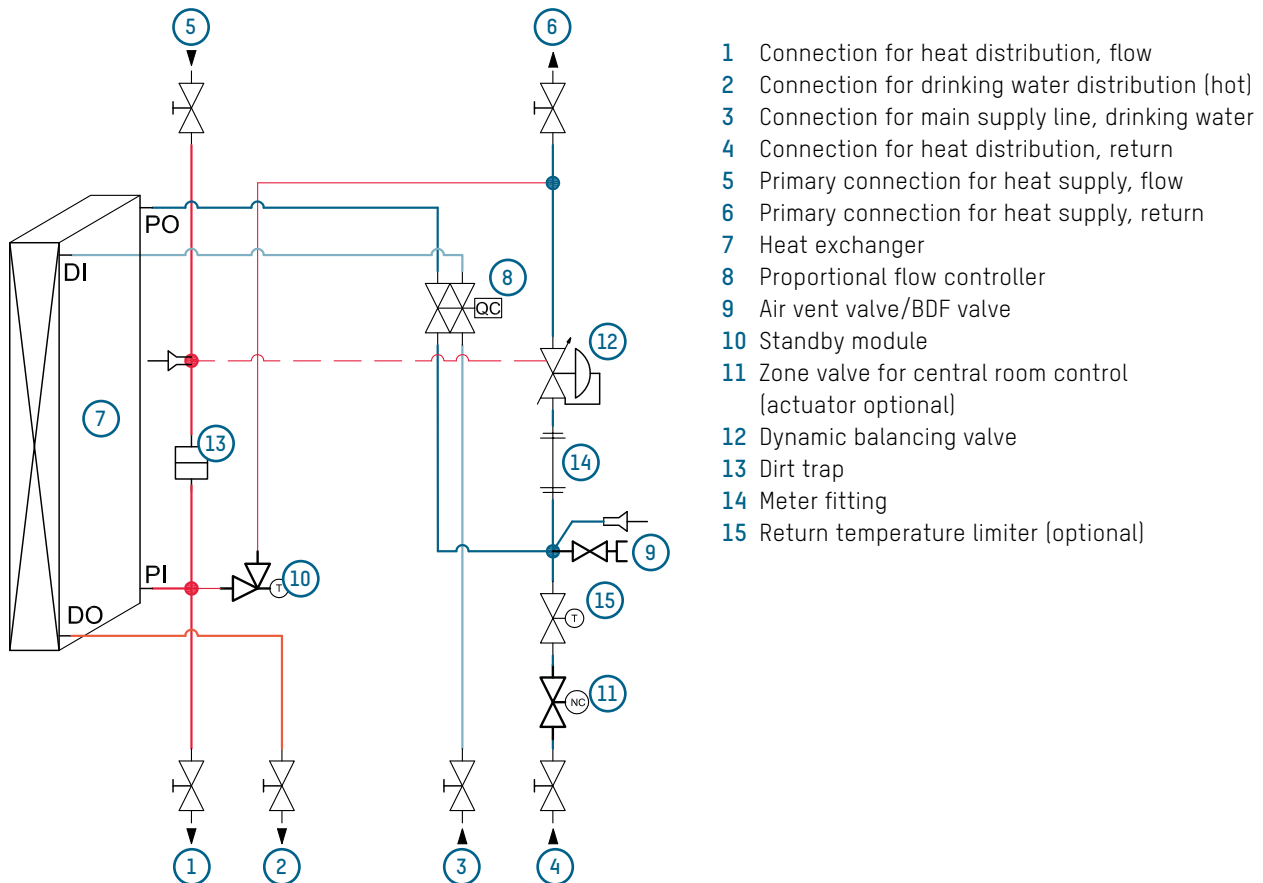


- 1 Connection for heat distribution, flow
- 2 Connection for drinking water distribution (hot)
- 3 Connection for main supply line, drinking water
- 4 Connection for heat distribution, return
- 5 Primary connection for heat supply, flow\*
- 6 Primary connection for heat supply, return\*
- 7 Heat exchanger
- 8 Proportional flow controller
- 9 Air vent valve/BDF valve
- 10 Standby module
- 11 Zone valve for central room control (actuator optional)
- 12 Dynamic balancing valve
- 13 Dirt trap
- 14 Heat meter fitting
- 15 Return temperature limiter (optional)

## PRESSURE DROP DIAGRAM RETURN TEMPERATURE LIMITER (DN15)



## FLOW DIAGRAM



## EXAMPLE OF INTERPRETING THE FLOW AND PRESSURE DROP DIAGRAMS

**Given**

- DHW draw-off rate: 18 l/min
- Heating flow temperature, primary: 65 °C
- Required draw-off temperature 45 °C

**Sought**

- Heating water demand in l/h
- Primary and secondary pressure drop in mbar
- Primary heating return temperature in °C

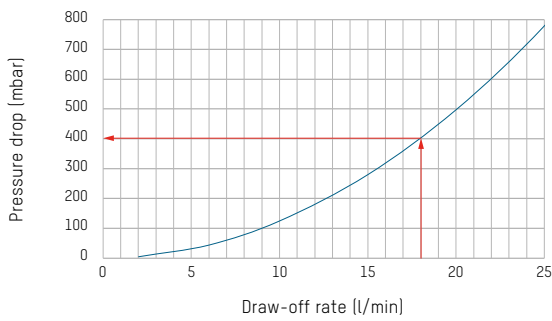
**Solution**

- On the basis of diagram A), a pressure drop on the secondary side of 400 mbar can be determined at the specified DHW draw-off rate of 18 l/min at the point of intersection.
- Diagram C) shows that a heating water flow of 750 l/h is determined at 18 l/min with 45 °C DHW temperature and a primary flow temperature of 65 °C.

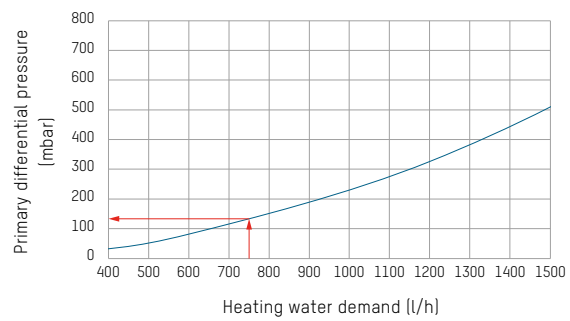
- Diagram D) shows that a return temperature of 16 °C is determined for the same values.
- Diagram B) shows a differential pressure on the primary side of 130 mbar for the given heating water demand of 750 l/h.
- Diagram I shows the setting of the differential pressure control valve as a function of the inlet pressure as calculated for planning purposes.

# FLOW AND PRESSURE DROP DIAGRAMS (PLATE HEAT EXCHANGER WITH 26 PLATES)

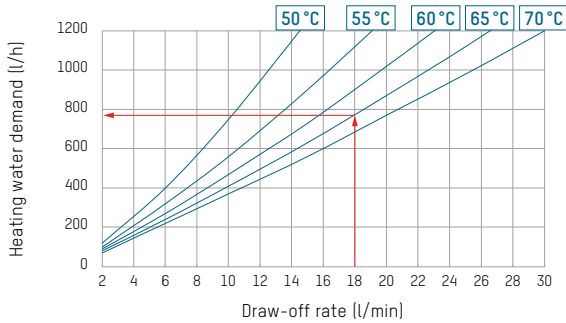
**A) Secondary pressure drop**



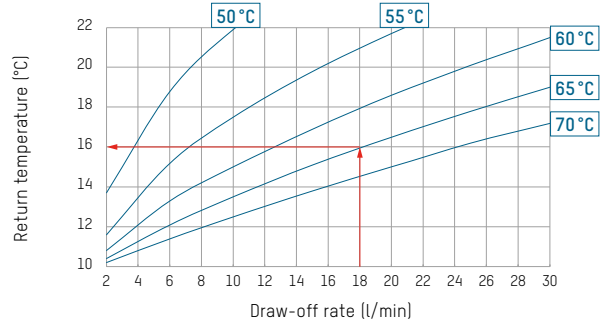
**B) Heating water demand/primary differential pressure**



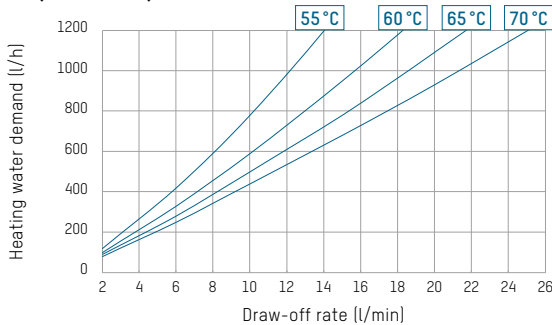
**C) Heating water demand for heating DHW by 35 °C (10 – 45 °C)**



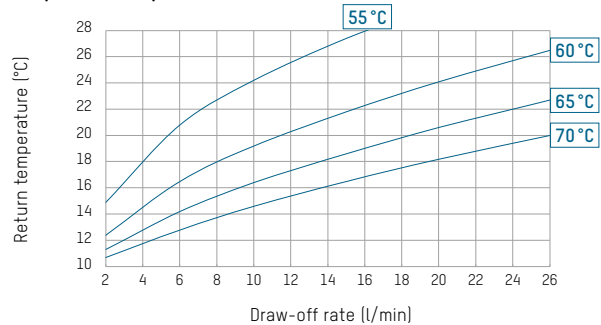
**D) Return temperature for heating DHW by 35 °C (10 – 45 °C)**



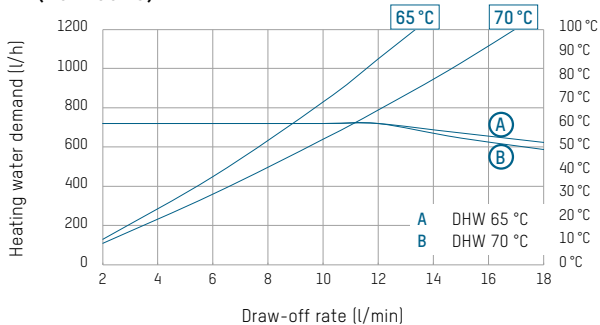
**E) Heating water demand for heating DHW by 40 °C (10 – 50 °C)**



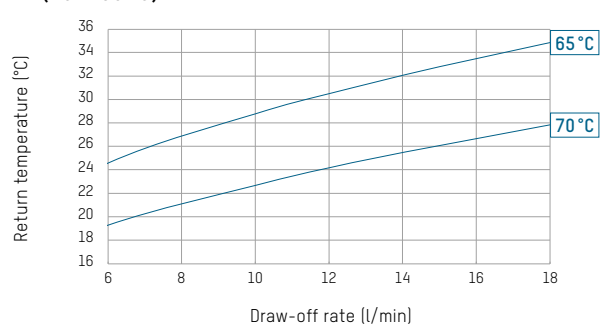
**F) Return temperature for heating DHW by 40 °C (10 – 50 °C)**



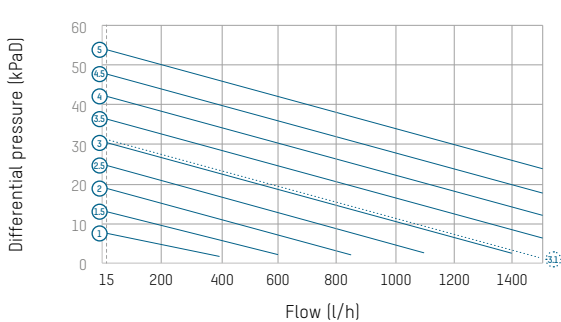
**G) Heating water demand for heating DHW by 50 °C (10 – 60 °C)**



**H) Return temperature for heating DHW by 50 °C (10 – 60 °C)**

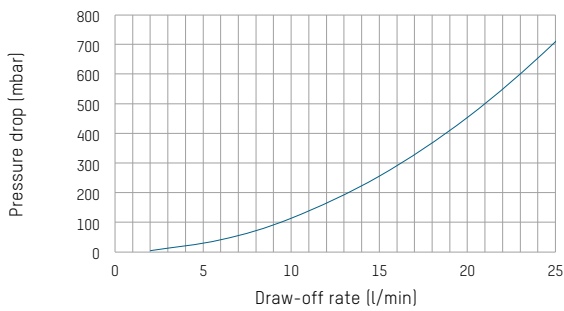


**I) Setting differential pressure regulator**

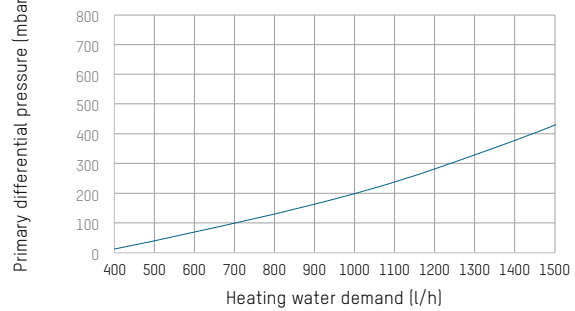


## FLOW AND PRESSURE DROP DIAGRAMS (PLATE HEAT EXCHANGER WITH 40 PLATES)

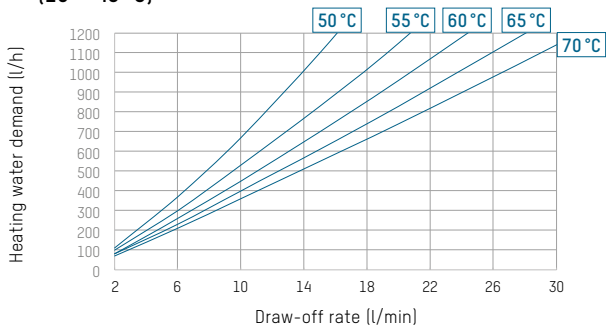
A) Secondary pressure drop



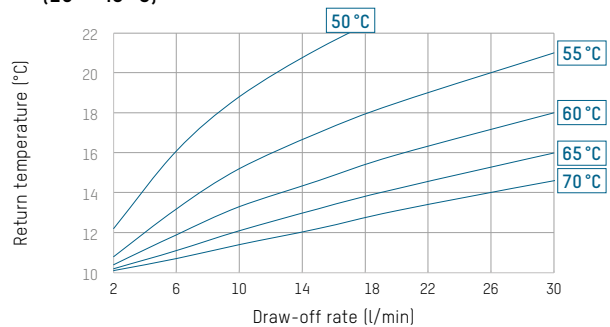
B) Heating water demand/primary differential pressure



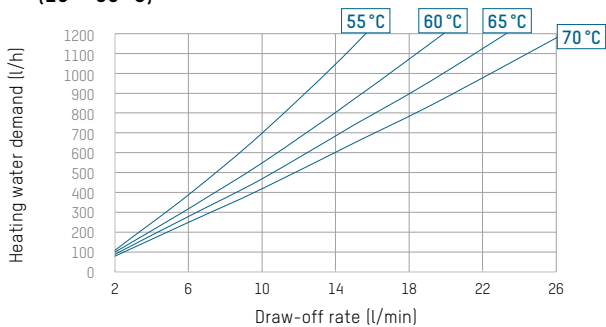
C) Heating water demand for heating DHW by 35 °C (10 – 45 °C)



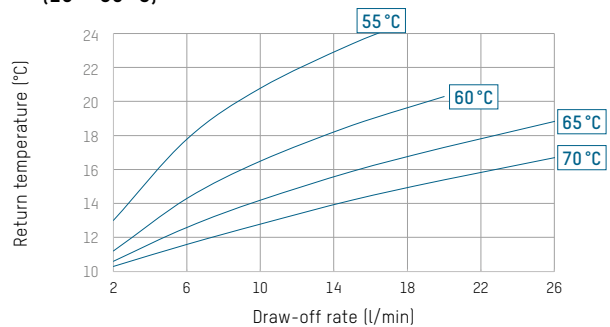
D) Return temperature for heating DHW by 35 °C (10 – 45 °C)



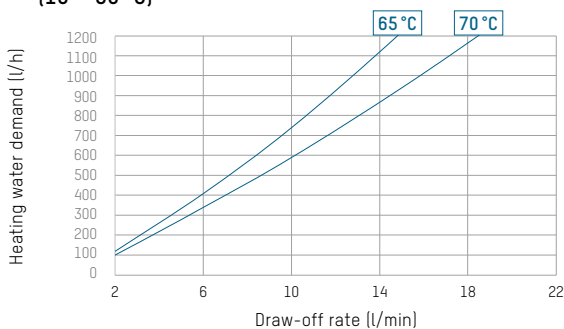
E) Heating water demand for heating DHW by 40 °C (10 – 50 °C)



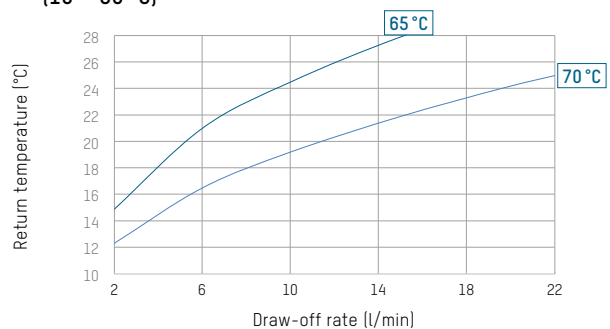
F) Return temperature for heating DHW by 40 °C (10 – 50 °C)



G) Heating water demand for heating DHW by 50 °C (10 – 60 °C)



H) Return temperature for heating DHW by 50 °C (10 – 60 °C)



# TACOTHERM H 3000E

## ELECTRONIC HEAT INTERFACE UNIT



Compact and connection-ready, this all-in-one heat interface unit offers indirect heat transfer to the heating and DHW systems.

### DESCRIPTION

The compact electronic heat interface unit is designed as an indirect transfer unit for supplying heat and serving dual purposes: decentralised DHW heating based on the instantaneous water heating principle and decentralised indirect heat distribution in residential units. With various hydraulic components available for selection, the unit ensures on-demand DHW heating, distribution of heat energy as well as calculation of energy costs.

### INSTALLATION POSITION

This electronic HIU is suitable for surface mounting and can be installed in pantries, storerooms, etc. Ideally, it should be located close to the domestic hot water draw-off points for each apartment. Can be installed in utility cupboards, closets, storerooms etc.

### ADVANTAGES

- Combined, prepared connection of radiators and underfloor heating systems
- Highly convenient domestic hot water supply
- Billing for cold water and energy costs as required
- Compact design
- BESA approved & tested
- Market leading overall VWART figures
- Billing of energy consumption

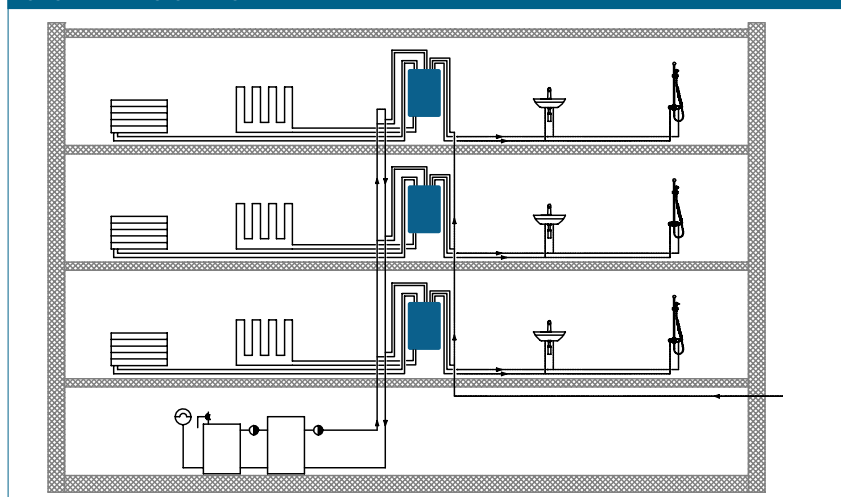
### OPERATING PRINCIPLE

The HIUs in the electronic series are designed for DHW heating and indirect heat distribution in multi-storey residential buildings. They utilise primary energy supplied via a central buffer cylinder; DHW is generated in the domestic hot water PHEX as required, according to the instantaneous water heating principle. Via the additional indirect heating circuit connection, the heating surfaces in the living space can be connected to underfloor heating circuit manifolds or radiators. The modules come with fittings ready for the installation of heat meters.

### BUILDING CATEGORIES

- Detached houses
- Apartment buildings
- Student accommodation
- Care Homes
- Extra Care facilities

### SYSTEM/BASIC DIAGRAM





## SPECIFICATION

### General

- Operating pressure  $P_{0 \max}$  primary: 6 bar, 16 bar on request
- Overall dimensions: W 455 mm × H 767.5 (830.5) mm × D 300 mm
- Weight without water: appr. 30 kg

### Primary Supply

- Operating temperature  $T_{0 \max}$ : 90 °C
- Operating pressure:  $P_{0 \max}$ : 10 bar (on request: 16 bar)
- DPCV: 5-50 kPa ; 15-1500 l/h
- Max. differential pressure  $\Delta p$  primary: 1000 mbar
- Heatmeter M Bus:

### Secondary Heating

- Operating temperature  $T_{0 \max}$ : 85 °C
- Operating pressure  $P_{0 \max}$ : 2.5 bar
- Safety valve: 2.5 bar
- Highly efficient circulation pump: TacoFlow2 (EEI ≤ 0,20-Part 2)
- Expansion vessel volume: 10l

### Domestic hot / cold water

- Operating temperature  $T_{0 \max}$ : 60 °C
- Operating pressure  $P_{0 \max}$ : 9.5 bar

### Material

- Heat exchanger: copper brazed
- Cover: EPP insulation
- Pipes: DN 20, stainless steel 1.4404
- Pump body: composite
- Valve body: brass
- Seals: AFM 34 (flat-sealing)

### Output data

- See design diagram

### Electrical connection information

- Protection class: IP40
- Rated voltage: 230 VAC +/- 10%
- Frequency: 50/60 Hz

### Power consumption

- Power consumption: max 50 W

### Flow media

- Heating water (VDI 2035; SWKI BT 10201; ÖNORM H 5195-1)
- Cold water to DIN 1988200 and DIN EN 8065

## APPROVALS / CERTIFICATES

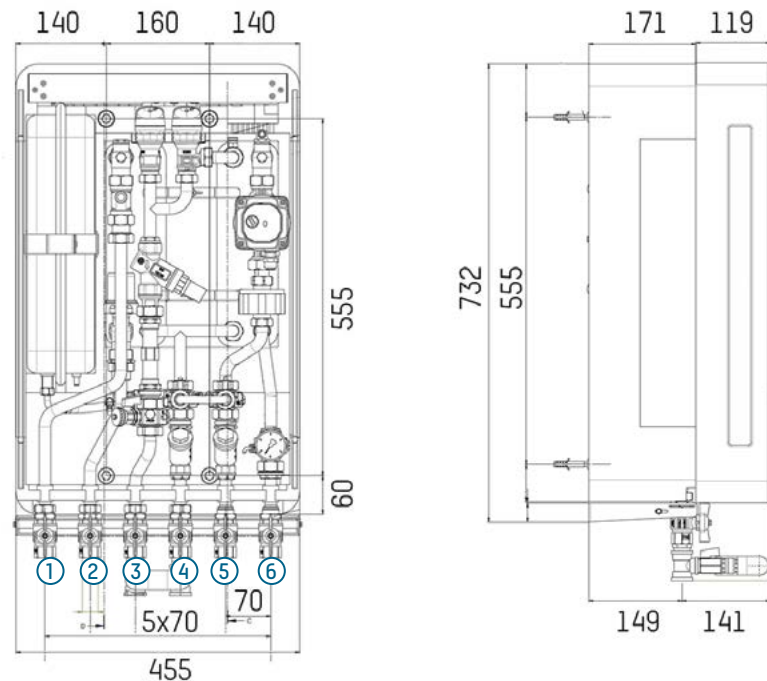
- Components in contact with drinking water comply with UBA Evaluation Criteria 26/03/2018 and Directive (EU) 2015/1535

## TYPE OVERVIEW

TacoTherm H 3000E | Electronic heat interface unit

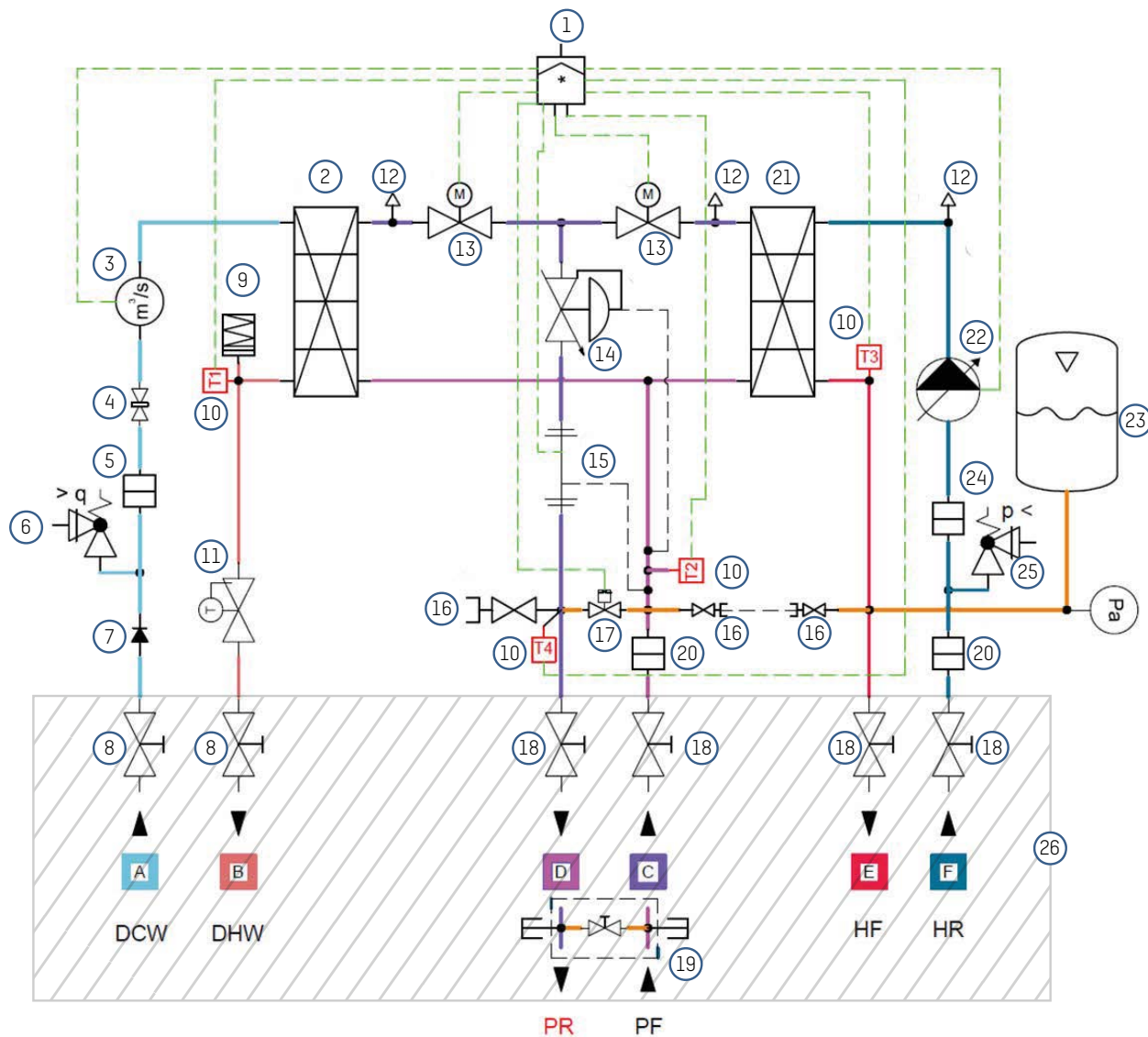
Part no.	DN	Rp	Number of plates for heating/DHW
274.2411.696	20	3/4"	10 / 26
274.2611.696	20	3/4"	10 / 40
274.2711.696	20	3/4"	10 / 50
274.4411.696	20	3/4"	16 / 26
274.4611.696	20	3/4"	16 / 40
274.4711.696	20	3/4"	16 / 50
274.6411.696	20	3/4"	26 / 26
274.6611.696	20	3/4"	26 / 40
274.6711.696	20	3/4"	26 / 50
274.8411.696	20	3/4"	40 / 26
274.8611.696	20	3/4"	40 / 40
274.8711.696	20	3/4"	40 / 50
274.2912.696C	20	3/4"	10 / 70
274.4912.696C	20	3/4"	16 / 70
274.6912.696C	20	3/4"	26 / 70
274.8912.696C	20	3/4"	40 / 70

## DIMENSIONAL DRAWING



- |  |  |
|--|--|
| 1 Main DCW supply line connection            | 4 Primary connection for heat supply, flow |
| 2 DHW distribution connection                | 5 Radiator connection, return              |
| 3 Primary connection for heat supply, return | 6 Radiator connection, flow                |

# FLOW DIAGRAM



1 Taco Control Z1

## Domestic hot / cold water circuit

- A District Cold water inlet
- B District Hot water outlet

- 2 PHE - DW
- 3 Flow sensor
- 4 Flow limiter (optional)
- 5 Filter
- 6 Safety valve (optional)
- 7 Check valve
- 8 Stop valve (optional with Fixrail)
- 9 Water hammer arrester
- 10 Temperature sensor NTC10K
- 11 Thermic safety valve (optional)

## Primary circuit

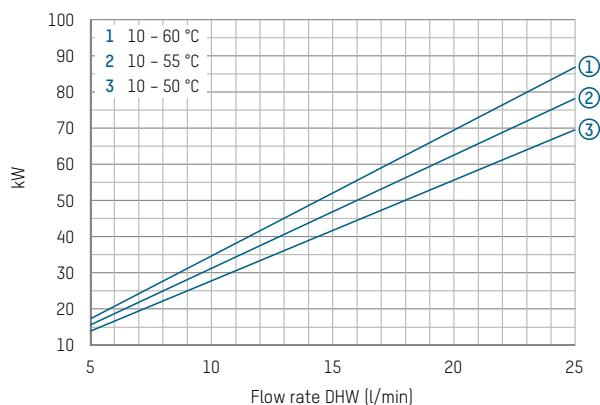
- C Primary Buffer flow
- D Primary Buffer return
- 12 Vent
- 13 Control valve
- 14 Differential pressure control valve
- 15 Heatmeter
- 16 Fill- / Flush- / Drain valve (Pressure test point)
- 17 2 way zone valve with actuator (TacoDrive)
- 18 Stop valve (optional with Fixrail)
- 19 Flushing bypass (option in connection with Fixrail)
- 20 Strainers

## Heating circuit

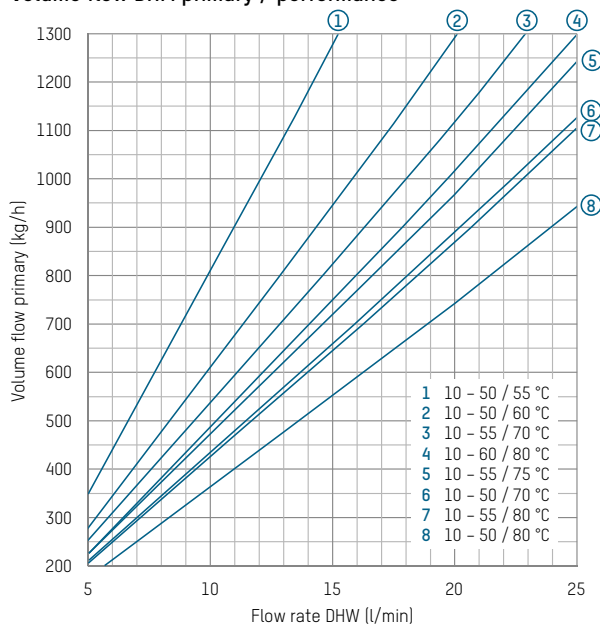
- E Heating flow
- F Heating return
- 21 PHE - SH
- 22 Circulation pump
- 23 Diaphragm type expansion tank
- 24 Magnet separator (optional)
- 25 Safety valve
- 26 Fixrail (accessory - containing 8/18/19)

## FLOW AND PRESSURE LOSS DIAGRAMS PLATE HEAT EXCHANGER WITH 26 PLATES (DOMESTIC HOT WATER)

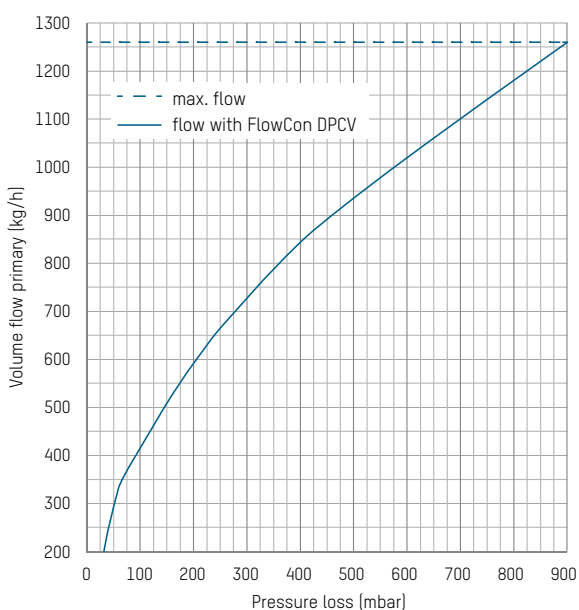
### Performance



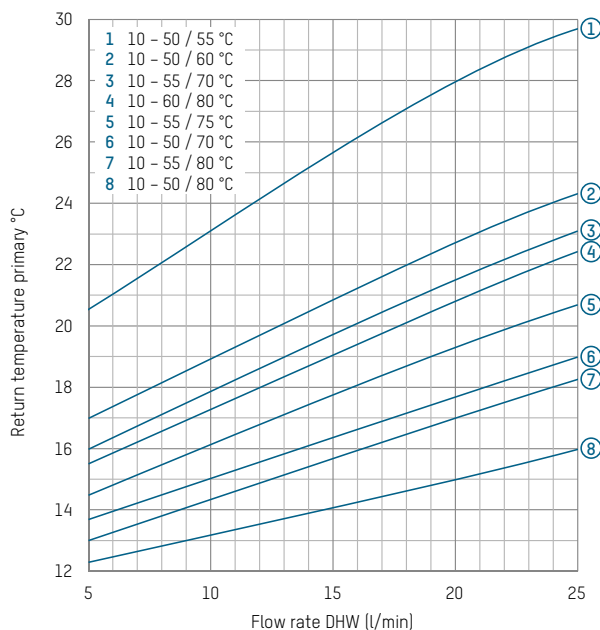
### Volume flow DHM primary / performance



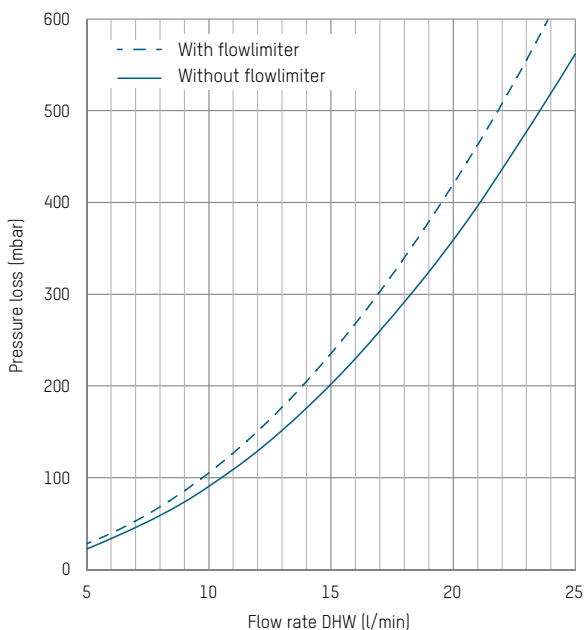
### Pressure loss primary with heatmeter



### Return temperature

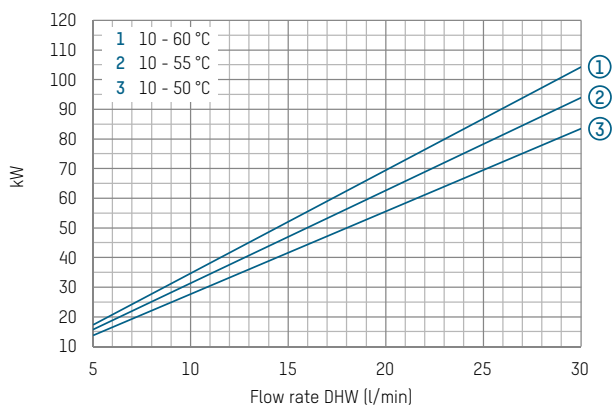


### Pressure loss DHW secondary

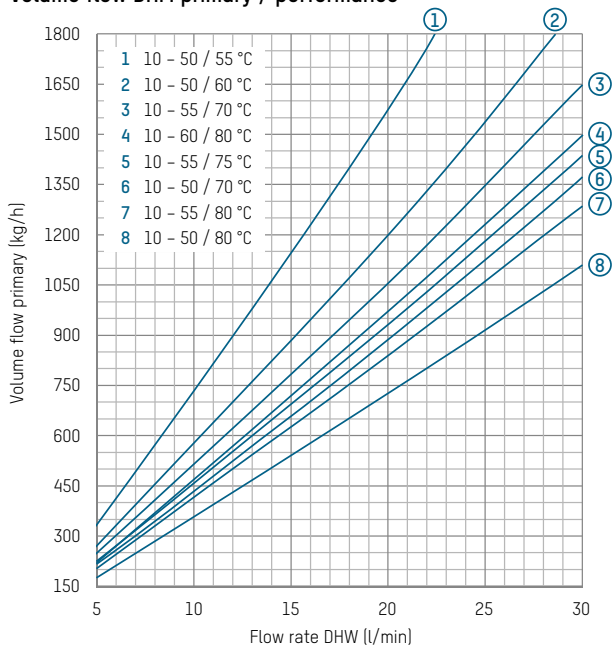


# FLOW AND PRESSURE LOSS DIAGRAMS PLATE HEAT EXCHANGER WITH 40 PLATES (DOMESTIC HOT WATER)

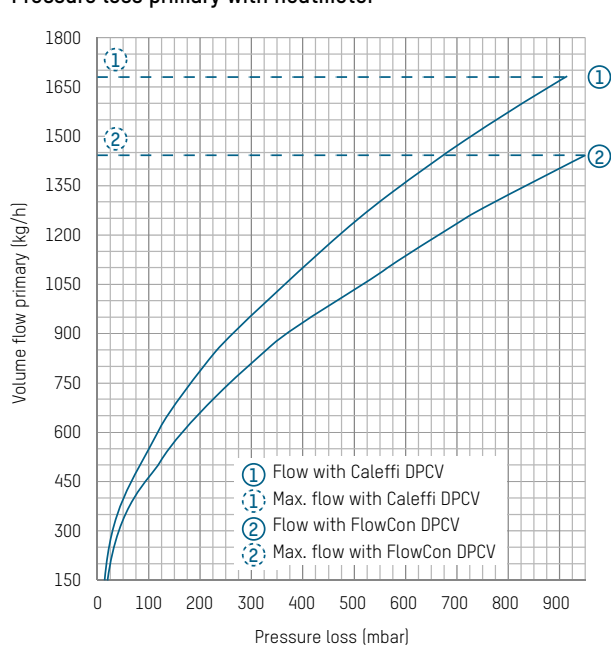
## Performance



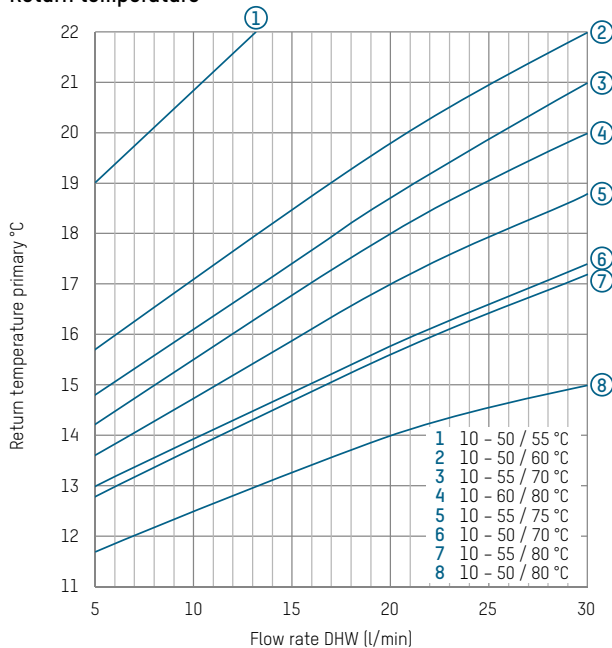
## Volume flow DHM primary / performance



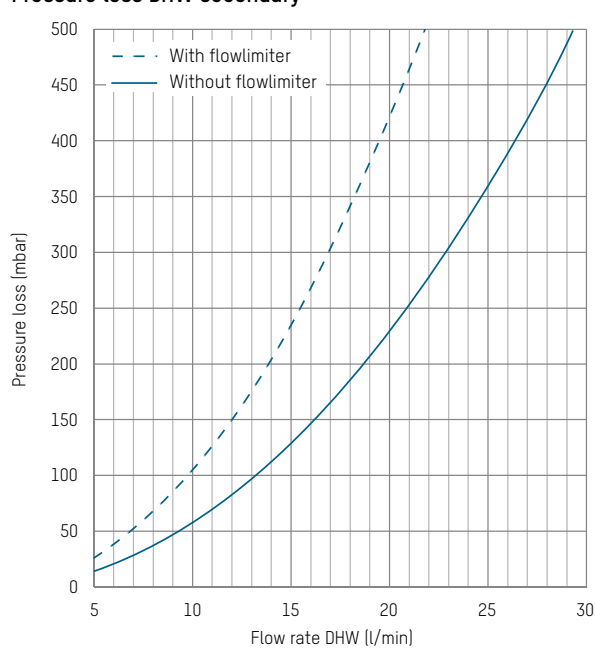
## Pressure loss primary with heatmeter



## Return temperature

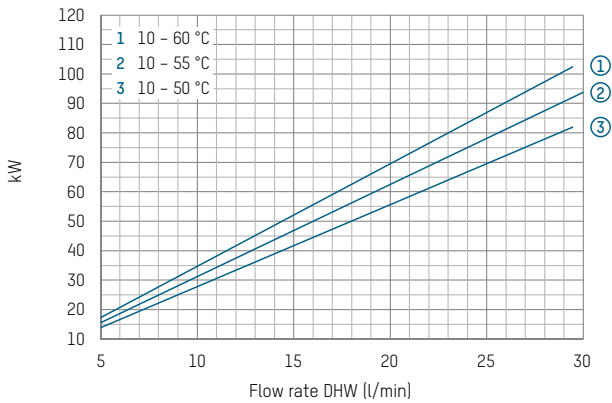


## Pressure loss DHW secondary

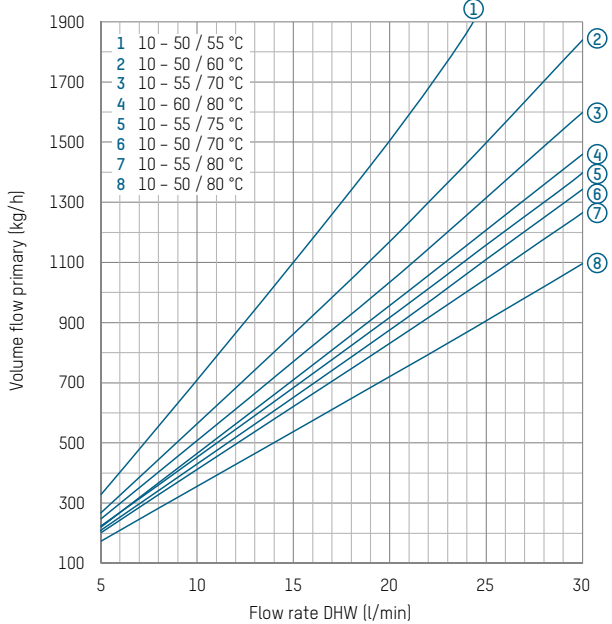


## FLOW AND PRESSURE LOSS DIAGRAMS PLATE HEAT EXCHANGER WITH 50 PLATES (DOMESTIC HOT WATER)

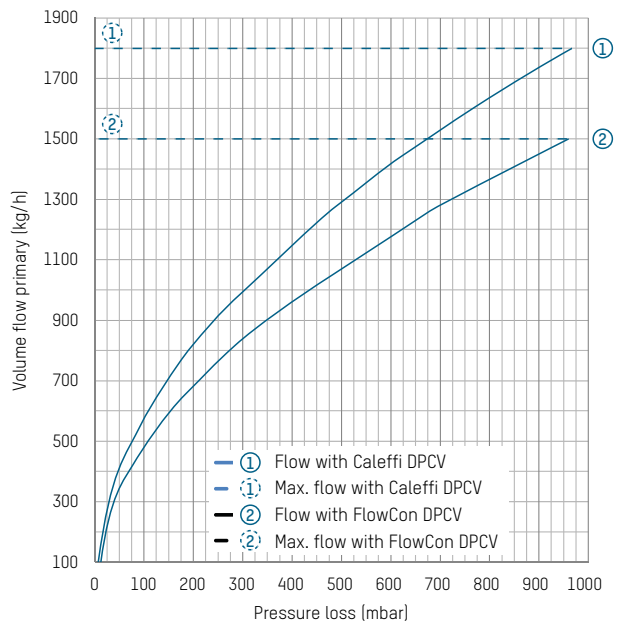
### Performance



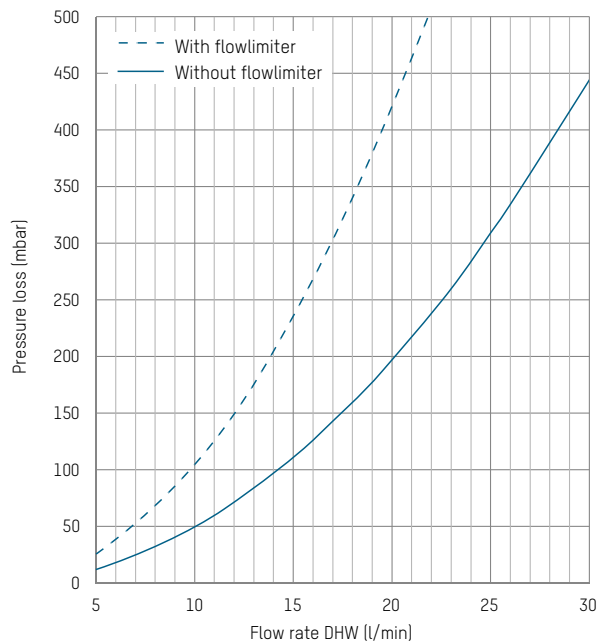
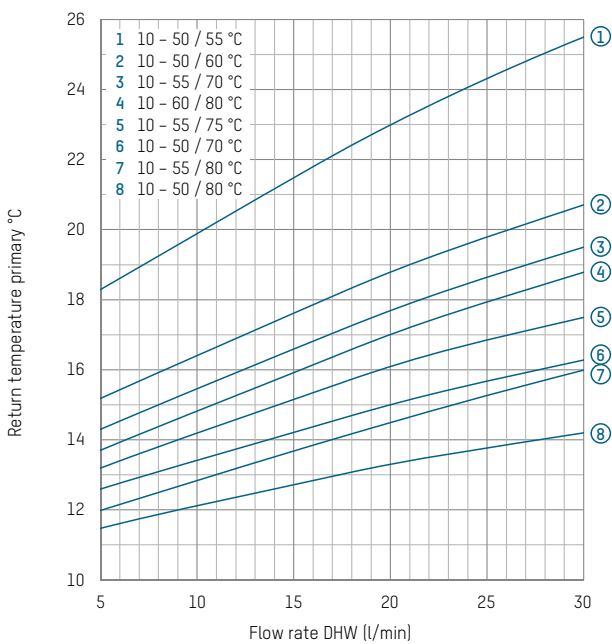
### Volume flow DHM primary / performance



### Pressure loss primary with heatmeter

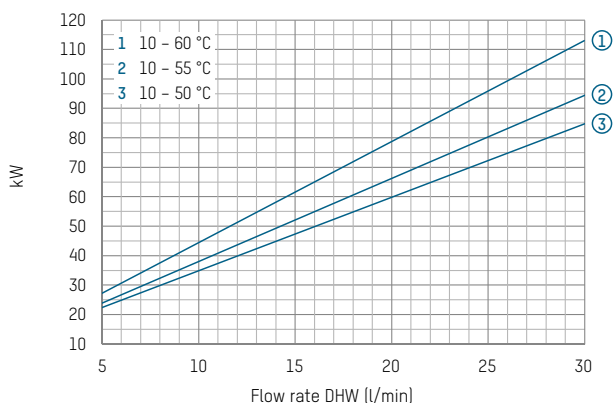


### Return temperature

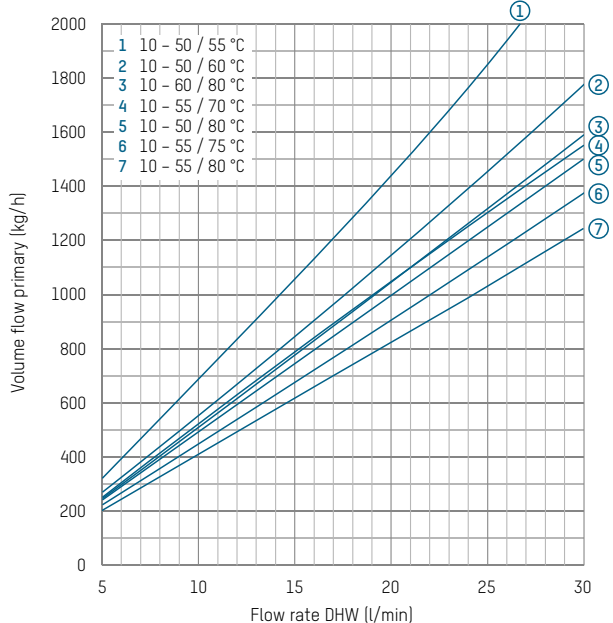


# FLOW AND PRESSURE LOSS DIAGRAMS PLATE HEAT EXCHANGER WITH 70 PLATES (DOMESTIC HOT WATER)

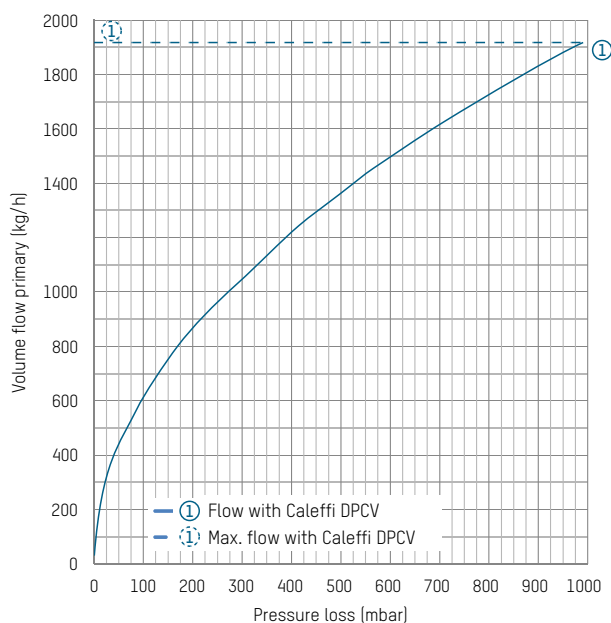
## Performance



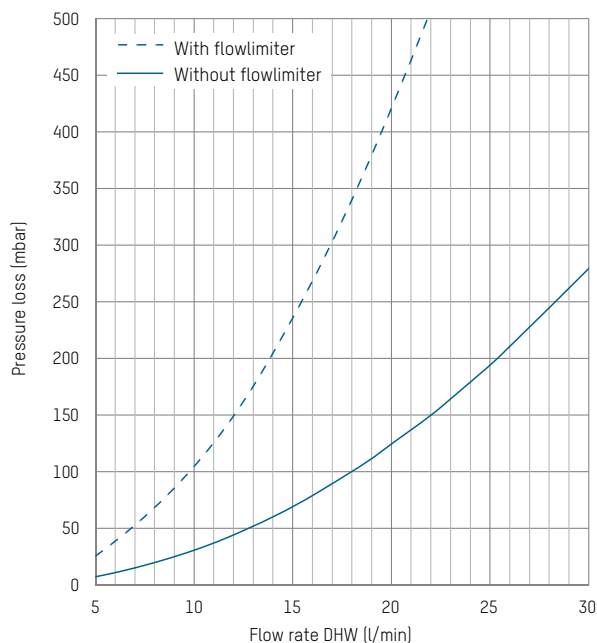
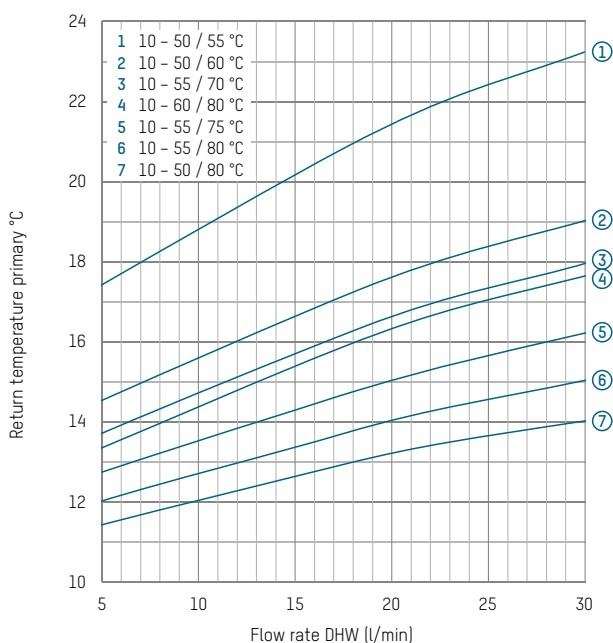
## Volume flow DHM primary / performance



## Pressure loss primary with heatmeter



## Return temperature



### EXAMPLE OF INTERPRETING THE FLOW RATE AND PRESSURE LOSS DIAGRAMS

#### Given

- Performance: 4 kW
- Temperature Building primary: 75°C
- Temperature Heating primary: 70 °C
- Temperature Heating Return: 40 °C

#### Wanted

- Size of the PHE
- Specific values to match performance

#### Solution:

- Table A) determines the size of the PHE. For this purpose, the desired performance value 4 kW must be smaller than the maximum performance values of the PHE at the corresponding temperatures (75°C / 70°C / 40°C).  
--> The 10 plates heat exchanger fits.
  - To find the specific values matching to the desired performance of 4 kW go to the diagrams B), C) and D).
- In diagram B) the volume flow of heating secondary at the intersection point of the performance of 4 kW and the temperature difference of 30K (70°C - 40°C) is 115 kg/h.

- In diagram C) the secondary pressure loss for the secondary volume flow demand of 115 kg/h is 27 mbar. The pump head is 193 mbar, so the residual pump head is 166 mbar ( $\Delta p$ ) (193-27=166).
- The primary volume flow must be calculated using the maximum performance (8.7 kW) and flow rate ( $q=278$  kg/h) from Table A) and the desired performance (4 kW).

$$\frac{\text{Performance}}{\text{max. Performance}} * q_{\text{primary.max}} = q_{\text{desired}}$$

$$\frac{4 \text{ kW}}{8.7 \text{ kW}} * 278 \frac{\text{kg}}{\text{h}} = 128 \frac{\text{kg}}{\text{h}}$$

- In diagram D) the primary pressure loss at the intersection point of the calculated primary volume flow (128 kg/h) and the curve of the 10 PHE is 105 mbar.
- The specific values for 10 PHE at 4kW are:
  - $q_{\text{prim.}}: 128 \text{ kg/h}$ ,  $dp_{\text{prim.}}: 105 \text{ mbar}$
  - $q_{\text{sec.}}: 115 \text{ kg/h}$ ,  $dp_{\text{sec.}}: 27 \text{ mbar}$

### FLOW AND PRESSURE LOSS DIAGRAMS

#### PLATE HEAT EXCHANGER WITH 10, 16 AND 26 PLATES (HEATING MODULE)

A Values of the heat exchangers at maximum performance.

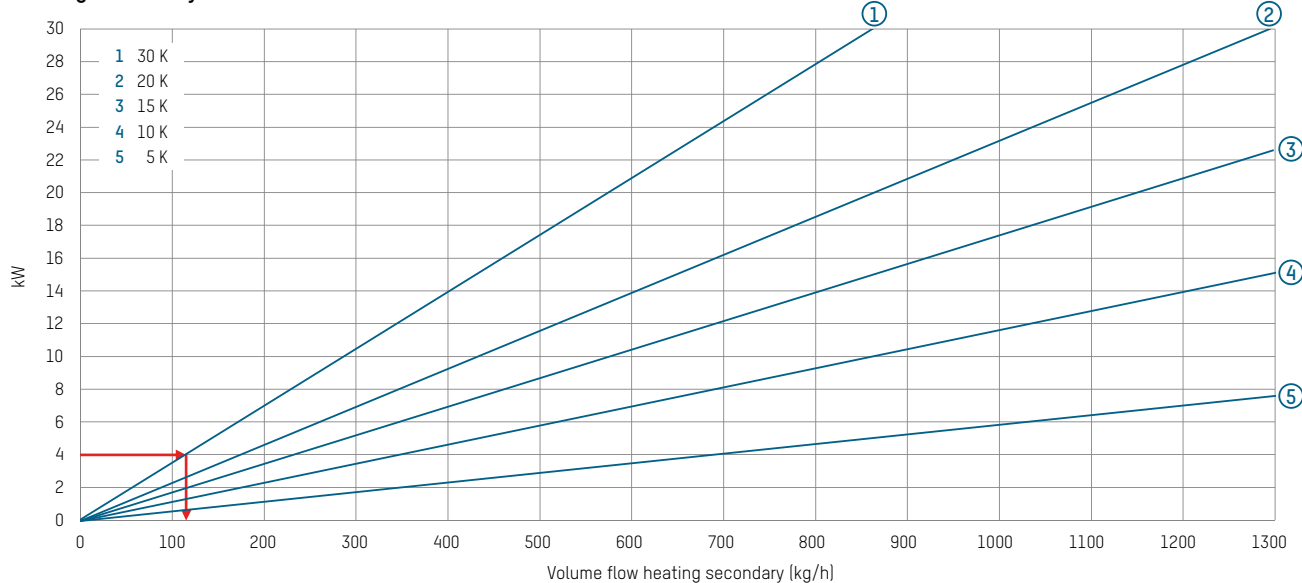
Building primary	Heating Primary	Heating Return	10 plates				16 plates				26 plates			
			prim				prim				prim			
			Max. Performance	Return Temperature	Pressure loss	Flowrate q	Max. Performance	Return Temperature	Pressure loss	Flowrate q	Max. Performance	Return Temperature	Pressure loss	Flowrate q
°C	°C	°C	kW	°C	mbar	kg/h	kW	°C	mbar	kg/h	kW	°C	mbar	kg/h
75	70	40	8.7	48	229	278	12.5	47	152	386	27.8	48	447	889
	65	35	8.7	40	136	214	12.5	39	92	300	27.8	40	266	686
70	65	35	8.7	43	229	278	12.5	42	152	386	27.8	43	447	889
	60	30	8.7	33	122	203	12.5	35	97	309	27.8	36	282	706
65	60	40	5.8	44	169	238	8.4	44	120	343	18.6	44	328	762
		30	8.7	39	247	288	12.5	38	163	400	27.8	38	447	889
	55	35	5.8	38	102	185	8.4	38	73	267	18.6	38	199	593
60	55	35	5.8	40	186	250	8.4	39	120	343	18.6	39	328	762
	50	40	2.9	41	51	132	4.2	41	37	189	9.3	41	100	421
		30	5.8	32	95	179	8.4	33	73	267	18.6	33	199	593
	45	35	2.9	36	32	104	4.2	36	23	150	9.3	36	63	333
55	50	40	2.9	41	95	179	4.2	41	67	257	9.3	41	185	571
		30	5.8	35	186	250	8.4	34	120	343	18.6	35	362	800
	45	35	2.9	36	51	132	4.2	36	37	189	9.3	36	100	421

sec	dp	125 mbar	130 mbar	175 mbar
	res. Pump head	85 mbar	95 mbar	100 mbar
	q	250 kg/h	360 kg/h	800 kg/h

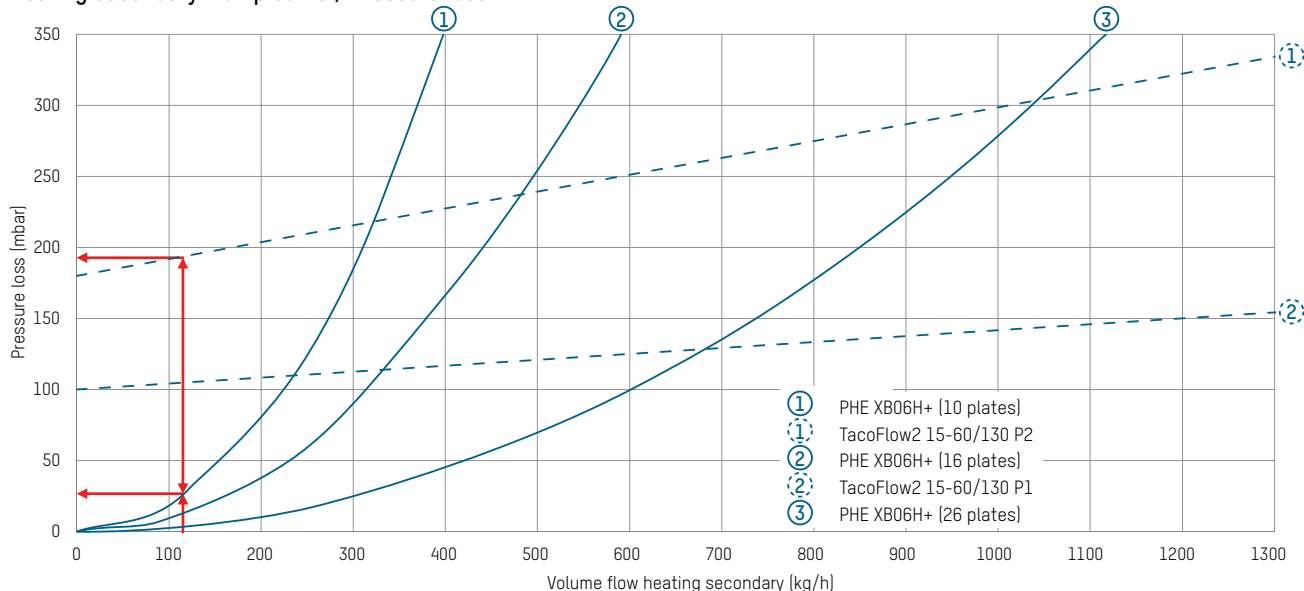
# FLOW AND PRESSURE LOSS DIAGRAMS

## PLATE HEAT EXCHANGER WITH 10, 16 AND 26 PLATES (HEATING MODULE)

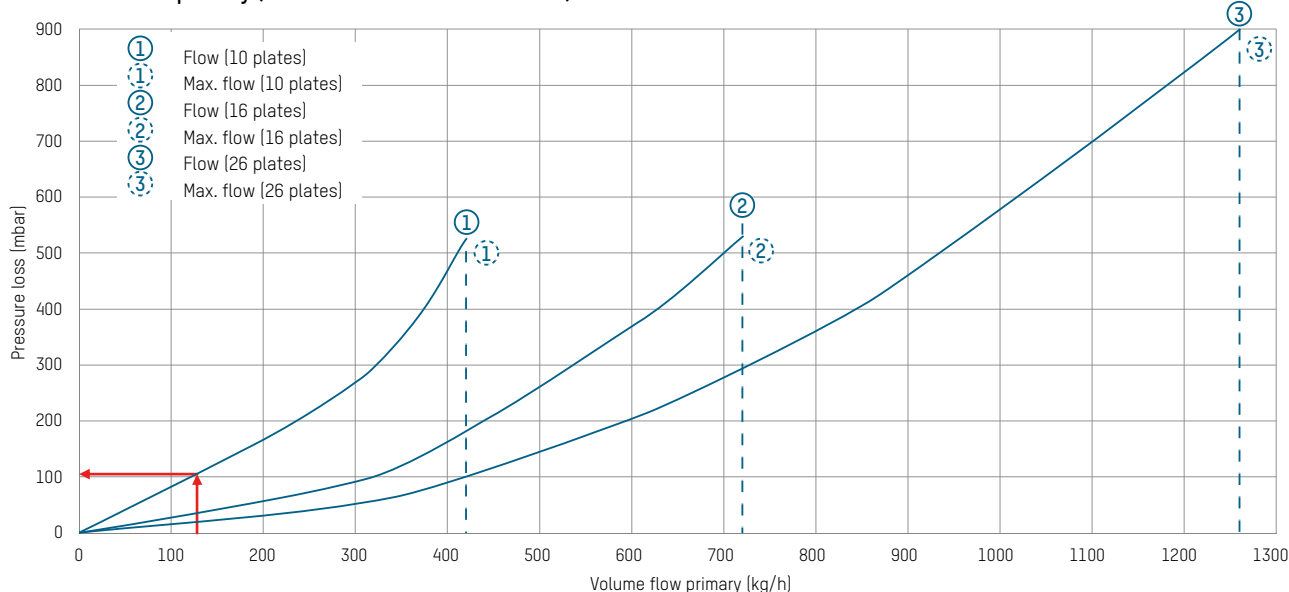
### Heating secondary Performance



### Heating secondary: Pump Curve / Pressure loss



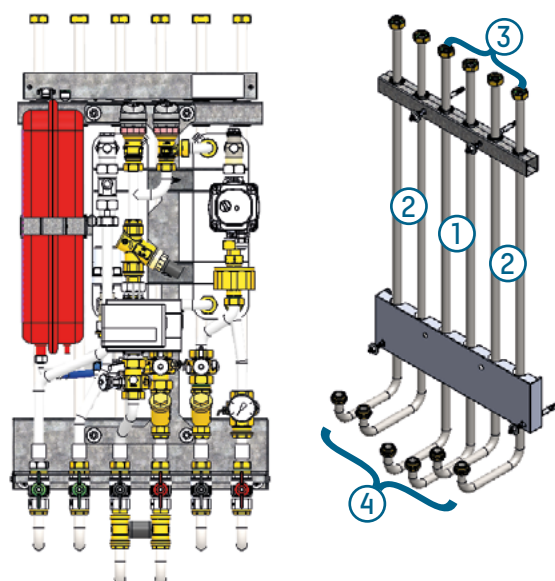
### C Pressure loss primary (with FlowCon DPCV heatmeter)





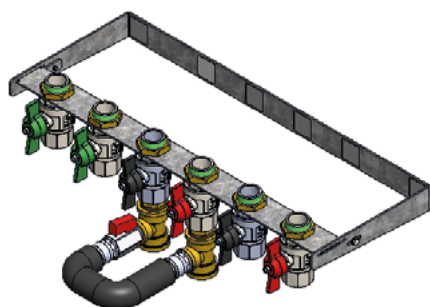
## ACCESSORIES

## Set of pipes



- 1 295.0004.696 | Pipeset top 1: prim. heating
- 2 295.0005.696 | Pipeset top 2: sec. DHW or sec. heating
- 3 295.0006.696 | Pipeset top 3: prim. heating + sec DHW or sec heating
- 4 295.0007.696 | Pipeset top 4: all connections

## Fixrail including flushing Bypass



296.0100.696 | Fixrail including flushing bypass

## ACCESSORIES

Part no.	Description
296.0100.696	Fixrail including flushing bypass
295.0004.696	Pipeset top 1: prim. heating
295.0005.696	Pipeset top 2: sec. DHW or sec. heating
295.0006.696	Pipeset top 3: prim. heating + sec DHW or sec heating
295.0007.696	Pipeset top 4: all connections
296.7014.000	HMI for Taco Control Z1

## OPTIONS

Part no.	Description
276.xx0x.696	No Heatmeter
276.xxx2.696	White Frontcover (on request: metal sheet cover)
xxx.xxxx.xxx C	Hi-Flow DPCV
xxx.xxxx.xxx S	Safety Valve DCW
xxx.xxxx.xxx F	Flow limiters
295.0008.696	Fixrail enclosure

# HOT WATER AS AND WHEN YOU NEED IT

Centralized and decentralized preparation of domestic hot water in accordance with the continuous flow principle offers the advantage of on-demand supply without prior storage of domestic hot water, thus providing effective protection against Legionella bacteria.

## HYGIENIC HOT DRINKING WATER

Good quality drinking water is fundamental to our nutritional needs. Legislators have set down principles in this regard in a variety of ordinances and directives. Replacing drinking water storage units with fresh water stations ensures the needs-based heating of drinking water and the associated hygienic requirements. In addition, such systems provide reliable protection against scalding and ensure the best possible use of the available energy source.

## HEATING DRINKING WATER WITH FRESH WATER STATIONS

A larger quantity of heated drinking water is stored for supply in domestic hot water storage tanks. Such volumes must be stored at a constant temperature of  $>60^{\circ}\text{C}$  to avoid the risk of germ formation. Should technical problems arise in the system, however, this leads to an increased hygiene risk owing to the large volume. Centralized heat interface units only heat the drinking water immediately on demand and thus avoid the hygiene problems that come with storage. The thermal energy required is drawn directly from a storage tank or stratified storage unit and the process water contained within. The user is protected against scalding at the same time thanks to the electronic regulation of the outlet temperature.

## CAN BE COMBINED WITH ANY ENERGY SYSTEM

The use of thermal energy from a storage tank means that the decentralized heating of drinking water does not depend on the way in which heat is generated: The storage tank can be loaded by means of solar energy, gas or oil-fueled burners, pellet or wood-burning boilers or heat pumps. The TacoTherm Fresh Mega3 and Peta2 station variants also offer the option of integrating the station with the building control system via an interface.

## DECENTRALIZED HEATING OF DRINKING WATER FOR RESIDENTIAL CONSTRUCTION

Using the decentralised heat interface unit means that there is no need for large central drinking water storage systems and thus minimizes the technical measures needed to protect against Legionella. In order to cater for the domestic hot water requirements of individual residential units, Taconova has added the TacoTherm Dual Piko and Nano transfer stations to its range, enabling the decentralized supply of potable hot water in residential buildings.

## HIGH HOT WATER OUTPUT IN COMMERCIAL PROPERTIES

In commercial buildings, such as sports halls, high simultaneous drawing of domestic hot water is to be expected. For these applications, the TacoTherm Fresh Mega3 and Peta2 product versions can be installed in a cascade. The number of units in this case also ensures excellent fail-safe reliability for heating drinking water. The solar heat stored in the storage tank is thus also available to support the heating process, enhancing efficiency.

## OPTIMUM USE OF SPACE

The compact design of the fresh water station outside the solar storage unit and storage tank means that there is no need for a hot drinking water storage tank and the additional space available can be used to add more or bigger storage tanks.

# THE LINK BETWEEN THE STORAGE TANK AND THE DISPENSING POINT

Centralised heat interface units heat up drinking water as and when needed using any storage tank.

## BENEFITS AT THE PLANNING STAGE

- Simplified planning of low-temperature heating systems while at the same time ensuring the quality of the domestic hot water
- Modules and materials approved for drinking water
- Efficient planning thanks to hydraulic design and station configuration by the manufacturer



## BENEFITS AT THE INSTALLATION STAGE

- Less time required to install, commission and maintain the system
- Service and guarantee from a single source
- Reliable operation thanks to high-quality components
- Easier to provide proof of hot water quality

### TacoTherm Fresh centralized heat interface units

Connection-ready centralized heat interface units for on-demand preparation of domestic hot water in accordance with the continuous flow principle

- The required primary energy is obtained directly from the heating system storage tank
- No pre-storage of domestic hot water, which means water is not allowed to stagnate and effective protection is provided against Legionella

Product photo	Station / Type	Dispensing rate	Version
	TacoTherm Fresh Mega3	22 l/min*	<ul style="list-style-type: none"> <li>▪ With and without drinking water circulating pump</li> <li>▪ With and without dual-zone stratification</li> <li>▪ With ModBus RTU interface</li> <li>▪ Cascadable</li> </ul>
	TacoTherm Fresh Mega3 X	34 l/min*	
	TacoTherm Fresh Peta2	63.5 l/min*	
	TacoTherm Fresh Peta2 X	98 l/min*	

\* Output levels at 70 °C primary temperature, domestic hot water heating from 10 °C to 60 °C and 100 mbar residual head. You will find information on the previous TacoTherm Fresh Mega, Tera and Exa stations on request.

# TACOTHERM FRESH MEGA3 (C/CL)

CENTRALISED HIU WITH HIGH-EFFICIENCY PUMPS



## ADVANTAGES

### Compact and versatile

- Models: with and without circulation pump, dual-zone return stratification
- Cascading possible

### Secure

- Integration in building control system via optionally available eLink ModBus RTU interface
- Integrated safety subassembly and soft-close valves

### Simple

- Valves and components are fully preassembled and ready for connection

### Efficient

- Simple and fast commissioning

Centralised heat interface unit for hygienically heating drinking water in accordance with the continuous flow principle with innovative regulation technology

## DESCRIPTION

The TacoTherm Fresh Mega3 (C/CL) is a centralised heat interface unit used for on-demand preparation of domestic hot water in accordance with the continuous flow principle. It retrieves the heat from the storage tank of an existing or new heating system, which uses solid-fuel boilers, heat pumps, solar systems, etc. as a heat source. The station replaces the storage of hot drinking water and thus provides a high degree of protection against Legionella by avoiding water stagnation.

## INSTALLATION POSITION

Vertical wall-mounting in the vicinity of the hot water storage tank or on the tank itself.

## OPERATION

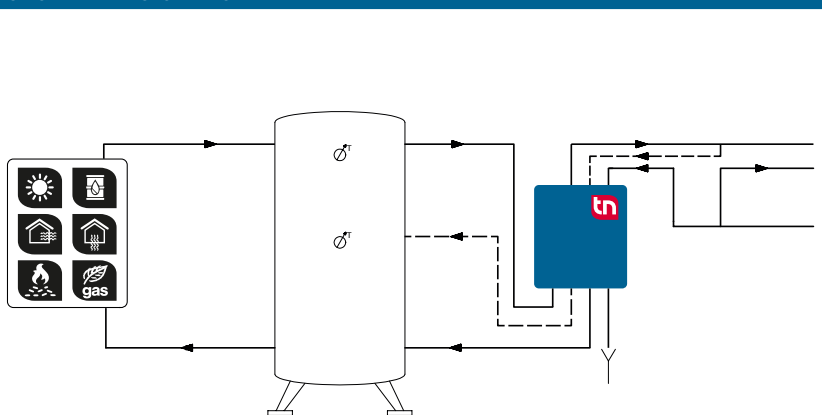
Drinking water is heated to the defined dispensing temperature in the TacoTherm Fresh Mega3 (C/CL) in accordance with the continuous flow principle. The integrated heat exchanger is supplied with as little hot water from the storage tank as is required to maintain a constant dispensing temperature.

The latest pump and regulation technology is used. In recording the temperature difference and flow rate data, the electronic regulator simultaneously records and stores the quantity of heat consumed. In addition to an additional circulation pump that can be installed, the TacoTherm Fresh Mega3 (C/CL) can also be supplied with a switching valve for dual-zone return stratification. The primary pump, circulation pump as well as load valve are controlled by the integrated regulator in accordance with specifications.

## BUILDING CATEGORIES

- Apartment blocks
- Housing estates
- Multiple dwelling units
- Smaller public buildings
- Facilities with partial use – for example barracks, camping sites, etc.

## SYSTEM/BASIC DIAGRAM



## SPECIFICATION TEXT

See [www.taconova.com](http://www.taconova.com)

## TECHNICAL DATA

### General

- TacoTherm Fresh Mega3 controller
- Weight (empty): 17.5 – 20 kg
- Overall dimensions (incl. hood):  
W 470 mm × H 685 mm × D 193 mm

### Material

- Base plate: Galvanized sheet steel
- Rear panel and hood: EPP design insulation
- Pumps:
  - Primary: Cast steel
  - Secondary: PPS (plastic, approved for drinking water)
- Valve housing: Brass
- Pipes: DN 20 stainless steel 1.4404
- Plate heat exchanger:
  - Plates and connector pieces: Stainless steel 1.4401
  - Heat exchanger solder: 99.99 % copper (on request: stainless steel solder)
- Seals: AFM flush seal

### Primary side

- Operating temperature  $T_{0\max}$ : 95 °C
- Operating pressure  $P_{0\max}$ : 10 bar
- Primary pump: TacoFlow3 GenS 15-85/130 C6 DS P

### Secondary side

- Operating temperature  $T_{0\max}$ : 85 °C
- Operating pressure  $P_{0\max}$ : 10 bar
- Safety valve (intrinsic safety): 10 bar
- Circulation pump: TacoFlow2 Pure C 15-40/130 C6

### Electrical connection data

- Mains voltage: 230 VAC ± 10 %
- Mains frequency: 50...60 Hz
- Power consumption: max. 250 W
- 3.5 AT fuse
- eBus interface
- Protection type: IP 40

### Flow media

- Heating water (VDI 2035; SWKI BT 102-01; ÖNORM H 5195-1)

## APPROVALS / CERTIFICATES

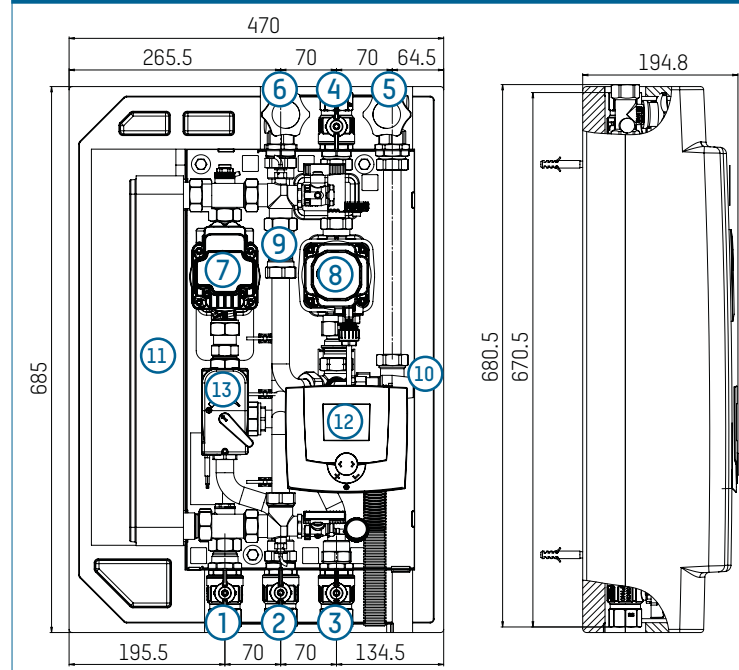
- Components in contact with potable water comply with UBA Evaluation Criteria 26/03/2018 and Directive (EU) 2015/1535
- SVGW: 1808-6783

## TYPE OVERVIEW

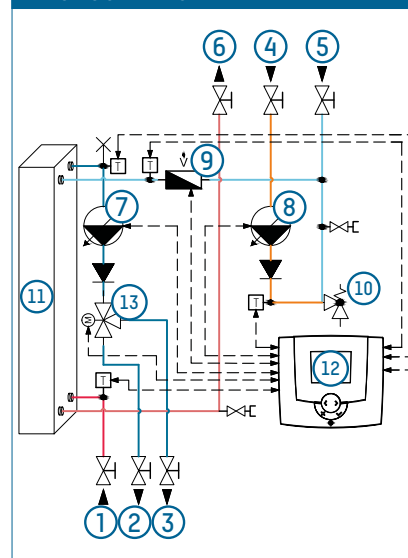
TacoTherm Fresh Mega3 | Centralised heat interface unit

Order no.	Rp ¾"	Rp 1"	Version	Version
272.2026.000	⑤ ⑥	① ②		Without circulating pump, without dual-zone return stratification
273.2226.000	⑤ ⑥	① ③ ④	C	With circulating pump, without dual-zone return stratification
273.2229.000	⑤ ⑥	①-④	CL	With circulating pump and dual-zone return stratification

## DIMENSIONAL DRAWING



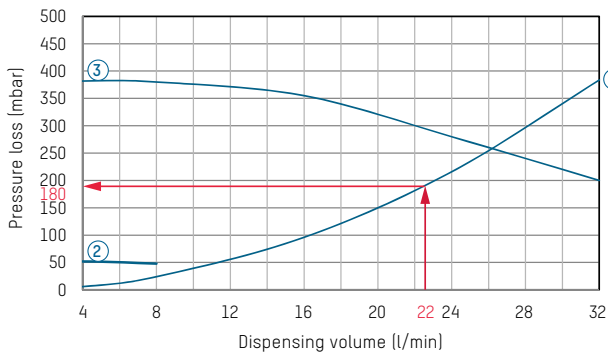
## PRODUCT DIAGRAM



- 1 Primary hot water flow
- 2 Primary hot water return 1 (integration of storage tank in center in CL models)
- 3 Primary hot water return 2 (integration of storage tank below)
- 4 Circulation (C/CL version)
- 5 Cold water connection (¾")
- 6 Hot water connection
- 7 Primary pump
- 8 Circulation pump (C/CL version)
- 9 Flow rate sensor
- 10 Safety valve
- 11 Heat exchanger
- 12 Regulator
- 13 Switching valve (CL version)

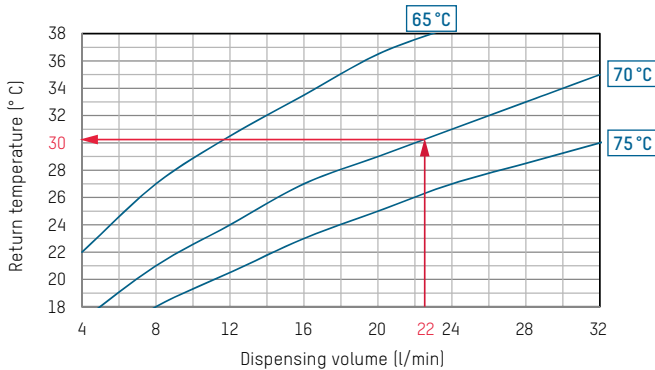
## FLOW AND PRESSURE LOSS DIAGRAMS COLD WATER HEATING AT 50K (10 ... 60 °C)

### D) Secondary pressure loss

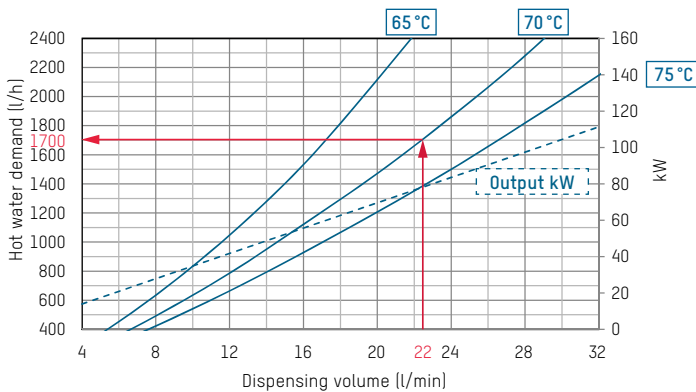


- 1 Pressure loss for cold water and circulation (secondary)
- 2 Circulation pump min
- 3 Circulation pump max
- 4 Primary pressure loss
- 5 Pump characteristic primary side

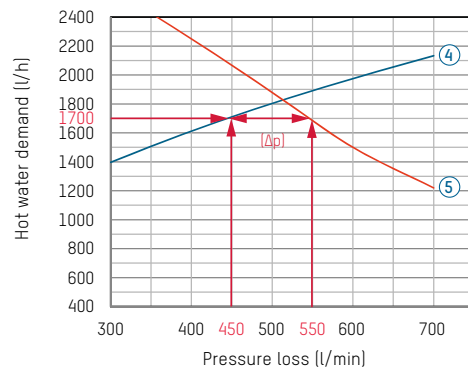
### C) Return temperatures



### A) Cold water heating at 50K



### B) Residual head | Primary pressure loss



## EXAMPLE FOR INTERPRETING THE FLOW RATE AND PRESSURE LOSS DIAGRAMS

### Given

- Hot water dispensing volume: 22 l/min
- Primary heating flow temperature: 70 °C

### Sought

- Hot water demand (l/h)
- Primary heating return temperature in °C
- Secondary pressure loss in mbar
- Primary pressure loss in mbar

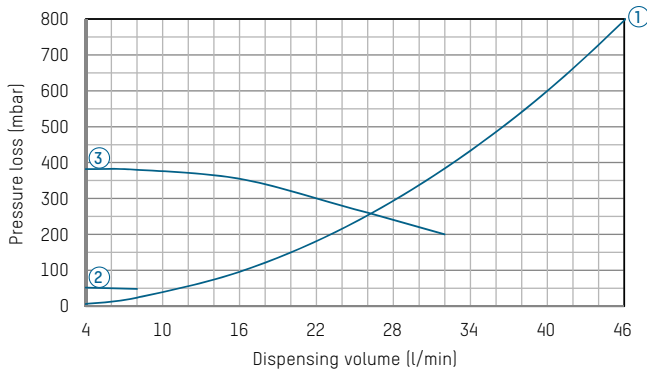
### Approach

- In Diagram A) the hot water demand at the intersection point of the dispensing volume of 22 l/min and primary flow temperature of 70 °C is 1700 l/h.
- In Diagram B) the primary pressure loss for a hot water demand of 1700 l/h is 450 mbar. The pump delivery head is 550 mbar, discounting the pressure loss this gives rise to a residual pump head of 100 mbar ( $\Delta p$ ).

- In Diagram C) the primary return temperature for a given dispensing volume of 22 l/min and the selected flow temperature of 70 °C is 30 °C.
- In Diagram D) the secondary pressure loss for the given data is 180 mbar

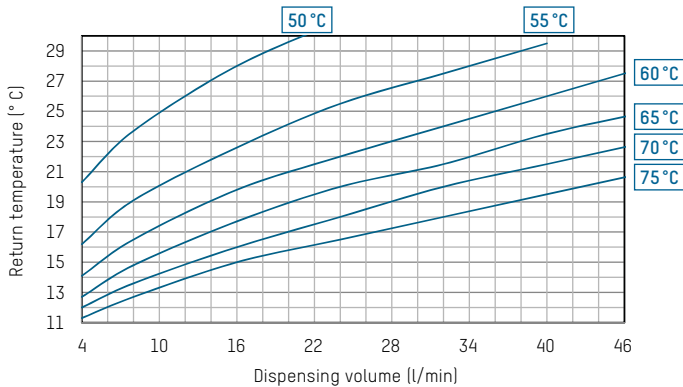
## FLOW AND PRESSURE LOSS DIAGRAMS COLD WATER HEATING AT 35K (10 ... 45 °C)

### D) Secondary pressure loss

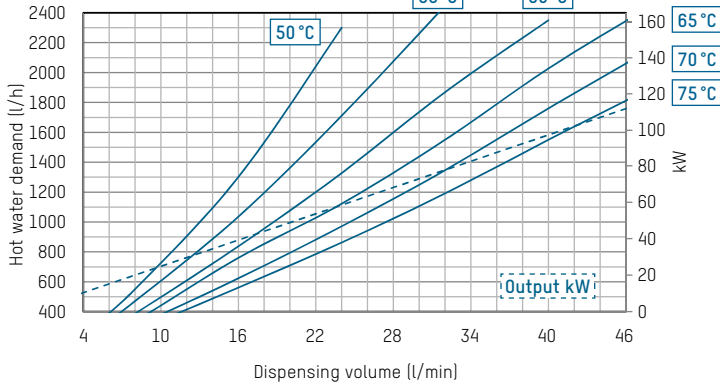


- 1 Pressure loss for cold water and circulation (secondary)
- 2 Circulation pump min
- 3 Circulation pump max
- 4 Primary pressure loss
- 5 Pump characteristic primary side

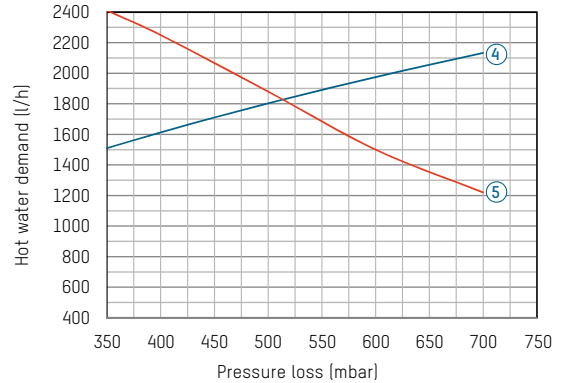
### C) Return temperatures



### A) Cold water heating at 35K



### B) Residual head



## NOTE

### REQUIREMENTS FOR FLOW MEDIA

The units use a copper-soldered stainless steel plate heat exchanger as standard. It must be checked prior to use in the framework of system planning whether the issues of corrosion protection and scale formation have been sufficiently taken into account in accordance with DIN 1988200 and current drinking water analyses according to DIN EN 8065. See datasheet „Plate Heat Exchanger Requirements - Limit Values for Drinking Water Quality“.

## ACCESSORIES



## COMPONENTS FOR REMOTE ACCESS

Order no.	Rp	Description
296.7027.000		eLink ModBus RTU interface
296.7028.000		eLink RC7020 interface

## ACCESSORIES FOR CASCADES

Order no.	Rp	Description
295.0500.000		Basic construction kit
295.0501.000		Extension kit
296.7024.000	1 1/4"	External storage restratification
296.7025.000	2"	External storage restratification
296.0502.000		External circulation

## SAMPLE ORDER



## CASCADE MODULE

With integrated circulation and storage stratification

Order no.	2-way cascade	3-way cascade	4-way cascade	5-way cascade
272.2026.000	1	2	3	4
273.2229.000	1	1	1	1
295.0500.000	1	1	1*	1*
295.0501.000	0	1	2*	3*

With external circulation and external storage stratification

Order no.	2-way cascade	3-way cascade	4-way cascade	5-way cascade
272.2026.000	2	3	4	5
295.0500.000	1	1	1*	1*
295.0501.000	0	1	2*	3*
296.7024.000	1*	0	0	0
296.7025.000	0	1	1	1
296.0502.000	1	1	1	1

\* Attention: Note pressure losses in the cascade pipe sets and diverting valves.

## CASCADE MODULE WITH TACOTHERM CIRC MEGA3 CIRCULATION STATION

Cascade circuit with circulation module

Order no.	2-way cascade	3-way cascade	4-way cascade	5-way cascade
272.2026.000	2	3	4	5
272.0216.000	1	1	1	1
295.0500.000	1	1	1	1
295.0502.000	1	1	1	1
295.0501.000	0	1	2	3





# TACOTHERM FRESH MEGA3 X (C/CL)

## CENTRALISED HIU WITH HIGH-EFFICIENCY PUMPS



### ADVANTAGES

#### Compact and versatile

- Models: with and without circulation pump, dual-zone return stratification
- Cascading possible

#### Secure

- Integration in building control system via optionally available eLink ModBus RTU interface
- Integrated safety subassembly and soft-close valves

#### Simple

- Valves and components are fully preassembled and ready for connection

#### Efficient

- Simple and fast commissioning

Centralised heat interface unit for hygienically heating drinking water in accordance with the continuous flow principle with innovative regulation technology

### DESCRIPTION

The TacoTherm Fresh Mega3 X (C/CL) is a centralised heat interface unit used for on-demand preparation of domestic hot water in accordance with the continuous flow principle. It retrieves the heat from the storage tank of an existing or new heating system, which uses solid-fuel boilers, heat pumps, solar systems, etc. as a heat source. The station replaces the storage of hot drinking water and thus provides a high degree of protection against Legionella by avoiding water stagnation.

### INSTALLATION POSITION

Vertical wall-mounting in the vicinity of the hot water storage tank or on the tank itself.

### OPERATION

Drinking water is heated to the defined dispensing temperature in the TacoTherm Fresh Mega3 X (C/CL) in accordance with the continuous flow principle. The integrated heat exchanger is supplied with as little hot water from the storage tank as is required to maintain a constant dispensing temperature.

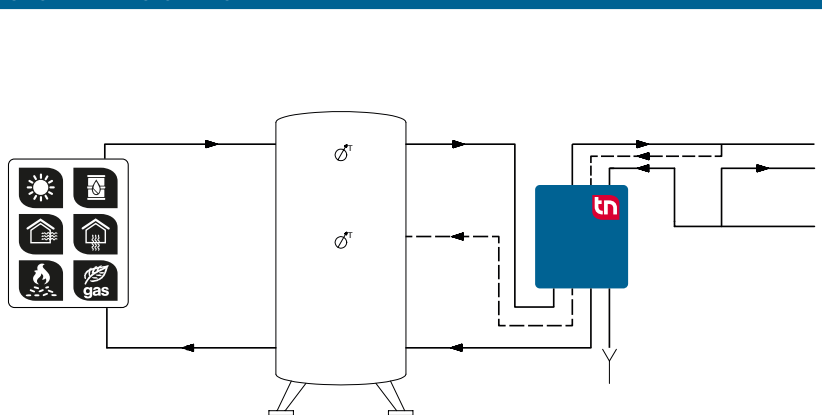
The latest pump and regulation technology is used. In recording the temperature difference and flow rate data, the electronic regulator simultaneously records and stores the quantity of heat consumed. In addition to an additional circulation pump that can be installed, the TacoTherm Fresh Mega3 X (C/CL) can also be supplied with a switching valve for dual-zone return stratification.

The primary pump, circulation pump as well as load valve are controlled by the integrated regulator in accordance with specifications.

### BUILDING CATEGORIES

- Apartment blocks
- Housing estates
- Multiple dwelling units
- Smaller public buildings
- Facilities with partial use – for example barracks, camping sites, etc.

### SYSTEM/BASIC DIAGRAM



## SPECIFICATION TEXT

See [www.taconova.com](http://www.taconova.com)

## TECHNICAL DATA

### General

- TacoTherm Fresh Mega3 X controller
- Weight (empty): 19.5 – 22 kg
- Overall dimensions (incl. hood):  
W 470 mm × H 685 mm × D 193 mm

### Material

- Base plate: Galvanized sheet steel
- Rear panel and hood: EPP design insulation
- Pumps:
  - Primary: Cast steel
  - Secondary: PPS (plastic, approved for drinking water)
- Valve housing: Brass
- Pipes: DN 20 stainless steel 1.4404
- Plate heat exchanger:
  - Plates and connector pieces: Stainless steel 1.4401
  - Heat exchanger solder: 99.99 % copper (on request: stainless steel solder)
- Seals: AFM flush seal

### Primary side

- Operating temperature  $T_{0\max}$ : 95 °C
- Operating pressure  $P_{0\max}$ : 10 bar
- Primary pump: Wilo ParaG 25-130/9-87/PWM1

### Secondary side

- Operating temperature  $T_{0\max}$ : 85 °C
- Operating pressure  $P_{0\max}$ : 10 bar
- Safety valve (intrinsic safety): 10 bar
- Circulation pump: TacoFlow2 Pure C 15-40/130 C6

### Electrical connection data

- Mains voltage: 230 VAC ± 10 %
- Mains frequency: 50...60 Hz
- Power consumption: max. 250 W
- 3.5 AT fuse
- eBus interface
- Protection type: IP 40

### Flow media

- Heating water (VDI 2035; SWKI BT 102-01; ÖNORM H 5195-1)
- Cold water

## APPROVALS / CERTIFICATES

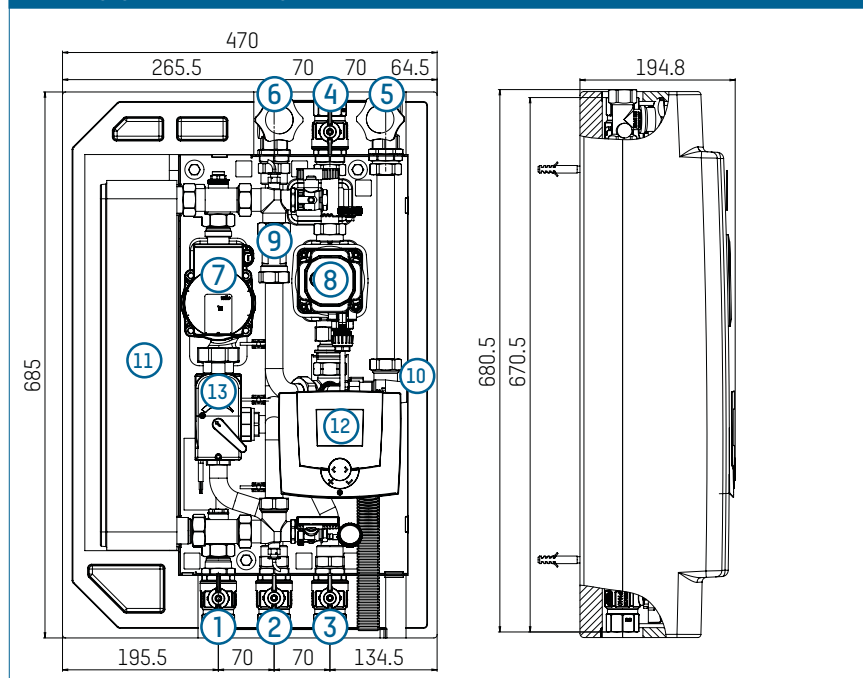
- Components in contact with potable water comply with UBA Evaluation Criteria 26/03/2018 and Directive (EU) 2015/1535
- SVGW: 1808-6783

## TYPE OVERVIEW

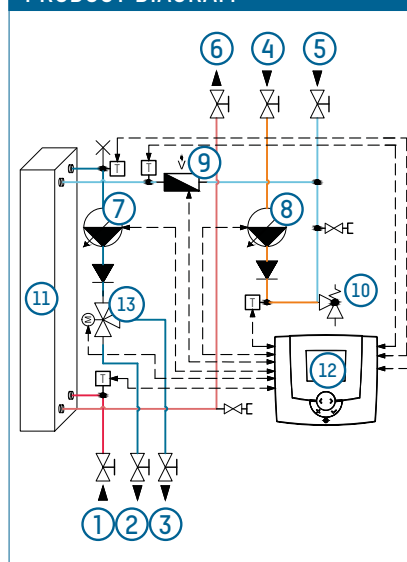
TacoTherm Fresh Mega3 X | Centralised heat interface unit

Order no.	Rp ¾"	Rp 1"	Version	Version
272.5076.000	⑤ ⑥	① ②	X	Without circulating pump, without dual-zone return stratification
273.5276.000	⑤ ⑥	① ③ ④	XC	With circulating pump, without dual-zone return stratification
273.5279.000	⑤ ⑥	①-④	XCL	With circulating pump and dual-zone return stratification

## DIMENSIONAL DRAWING



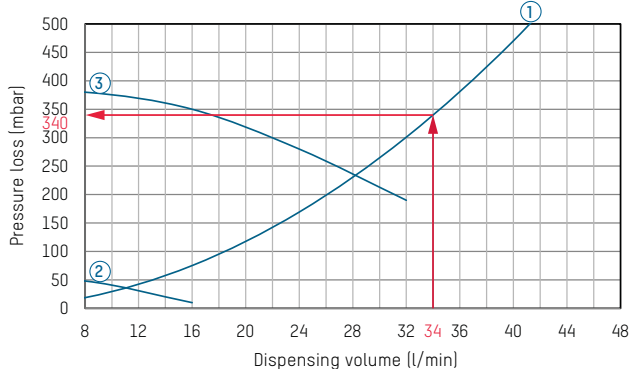
## PRODUCT DIAGRAM



- 1 Primary hot water flow
- 2 Primary hot water return 1 (integration of storage tank in center in CL models)
- 3 Primary hot water return 2 (integration of storage tank below)
- 4 Circulation (C/CL version)
- 5 Cold water connection (¾")
- 6 Hot water connection
- 7 Primary pump
- 8 Circulation pump (C/CL version)
- 9 Flow rate sensor
- 10 Safety valve
- 11 Heat exchanger
- 12 Regulator
- 13 Switching valve (CL version)

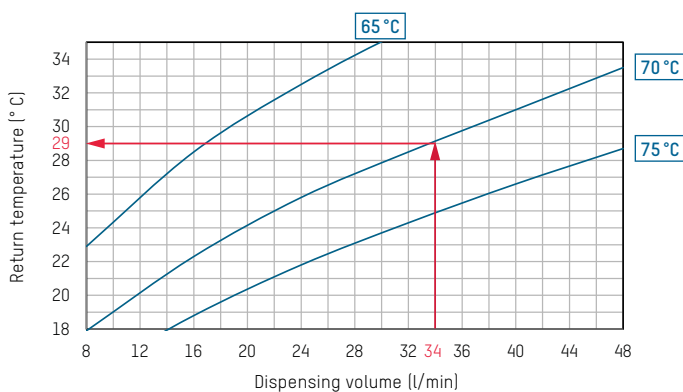
# FLOW AND PRESSURE LOSS DIAGRAMS COLD WATER HEATING AT 50K (10 ... 60 °C)

## D) Secondary pressure loss

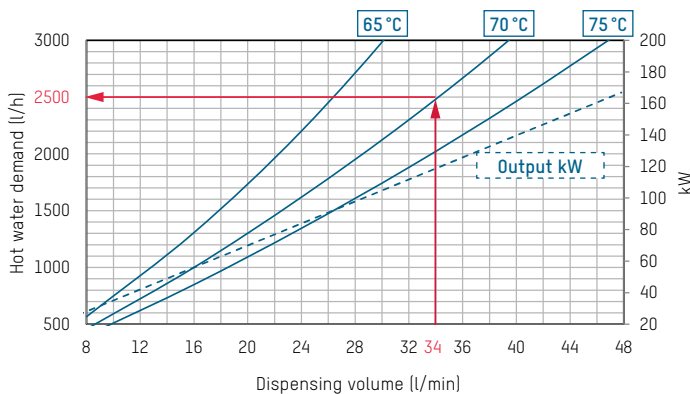


- 1 Pressure loss for cold water and circulation [secondary]
- 2 Circulation pump min
- 3 Circulation pump max
- 4 Primary pressure loss
- 5 Pump characteristic primary side

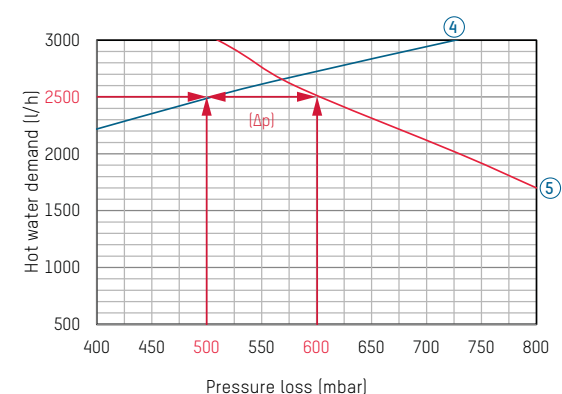
## C) Return temperatures



## A) Cold water heating at 50K



## B) Residual head



## EXAMPLE FOR INTERPRETING THE FLOW RATE AND PRESSURE LOSS DIAGRAMS

### Given

- Hot water dispensing volume: 34 l/min
- Primary heating flow temperature: 70 °C

### Sought

- Hot water demand (l/h)
- Primary heating return temperature in °C
- Secondary pressure loss in mbar
- Primary pressure loss in mbar

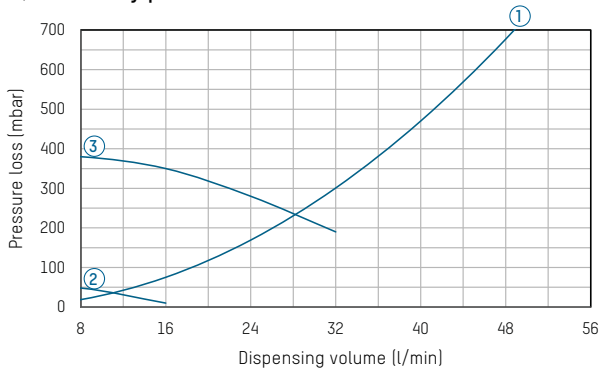
### Approach

- In Diagram A) the hot water demand at the intersection point of the dispensing volume of 34 l/min and primary flow temperature of 70 °C is 2500 l/h.
- In Diagram B) the primary pressure loss for a hot water demand of 2500 l/h is 500 mbar. The pump delivery head is 600 mbar, discounting the pressure loss this gives rise to a residual pump head of 100 mbar ( $\Delta p$ ).

- In Diagram C) the primary return temperature for a given dispensing volume of 34 l/min and the selected flow temperature of 70 °C is 29 °C.
- In Diagram D) the secondary pressure loss for the given data is 340 mbar.

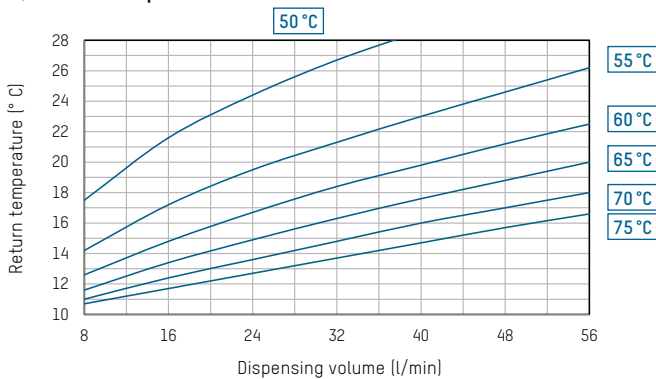
## FLOW AND PRESSURE LOSS DIAGRAMS COLD WATER HEATING AT 35K (10 ... 45 °C)

### D) Secondary pressure loss

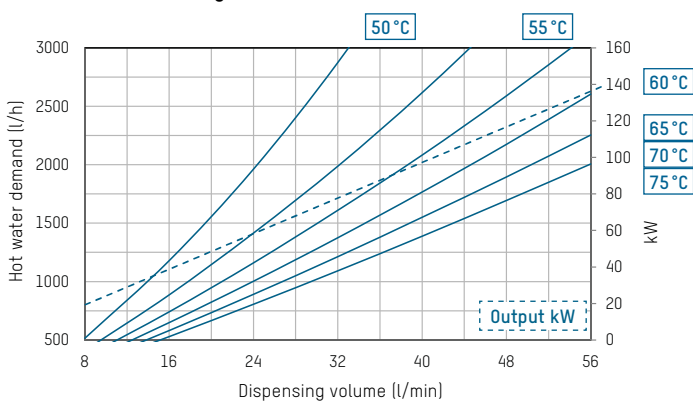


- 1 Pressure loss for cold water and circulation (secondary)
- 2 Circulation pump min
- 3 Circulation pump max
- 4 Primary pressure loss
- 5 Pump characteristic primary side

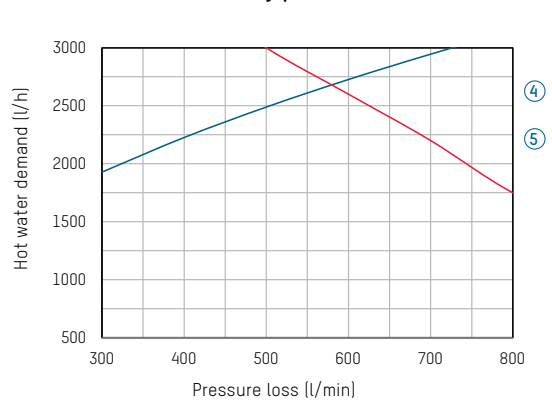
### C) Return temperatures



### A) Cold water heating at 35K



### B) Residual head | Primary pressure loss



## NOTE

### REQUIREMENTS FOR FLOW MEDIA

The units use a copper-soldered stainless steel plate heat exchanger as standard. It must be checked prior to use in the framework of system planning whether the issues of corrosion protection and scale formation have been sufficiently taken into account in accordance with DIN 1988200 and current drinking water analyses according to DIN EN 8065. See datasheet „Plate Heat Exchanger Requirements - Limit Values for Drinking Water Quality“.

## ACCESSORIES



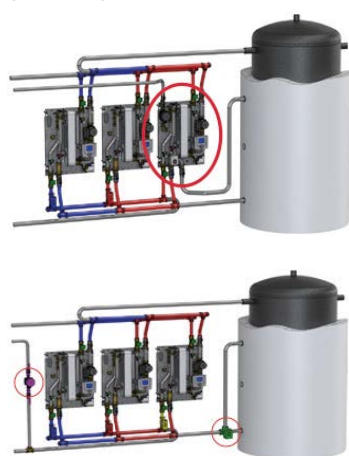
## COMPONENTS FOR REMOTE ACCESS

Order no.	Rp	Description
296.7027.000		eLink ModBus RTU interface
296.7028.000		eLink RC7020 interface

## ACCESSORIES FOR CASCADES

Order no.	Rp	Description
295.0500.000		Basic construction kit
295.0501.000		Extension kit
296.7024.000	1 1/4"	External storage restratification
296.7025.000	2"	External storage restratification
296.0502.000		External circulation

## SAMPLE ORDER



## CASCADE MODULE

With integrated circulation and storage stratification

Order no.	2-way cascade	3-way cascade	4-way cascade	5-way cascade
272.5076.000	1	2	3	4
273.5279.000	1	1	1	1
295.0500.000	1	1	1*	1*
295.0501.000	0	1	2*	3*

With external circulation and external storage stratification

Order no.	2-way cascade	3-way cascade	4-way cascade	5-way cascade
272.5076.000	2	3	4	5
295.0500.000	1	1	1*	1*
295.0501.000	0	1	2*	3*
296.7024.000	1*	0	0	0
296.7025.000	0	1	1	1
296.0502.000	1	1	1	1

\* Attention: Note pressure losses in the cascade pipe sets and diverting valves.

## CASCADE MODULE WITH TACOTHERM CIRC MEGA3 X CIRCULATION STATION

Cascade circuit with circulation module

Order no.	2-way cascade	3-way cascade	4-way cascade	5-way cascade
272.5076.000	2	3	4	5
272.0216.000	1	1	1	1
295.0500.000	1	1	1	1
295.0502.000	1	1	1	1
295.0501.000	0	1	2	3



# TACOTHERM FRESH PETA2 (C/CL)

CENTRALISED HIU WITH HIGH-EFFICIENCY PUMPS



Centralised heat interface unit for hygienically heating drinking water in accordance with the continuous flow principle with and without dual-zone return stratification of the storage tank.

## DESCRIPTION

The TacoTherm Fresh Peta2 (C/CL) is a centralised heat interface unit used for on-demand preparation of domestic hot water in accordance with the continuous flow principle. It retrieves the heat from the storage tank of an existing or new heating system, which uses solid-fuel boilers, heat pumps, solar systems, etc. as a heat source. The station replaces the storage of hot drinking water and thus provides a high degree of protection against Legionella by avoiding water stagnation.

## INSTALLATION POSITION

Vertical wall-mounting in the vicinity of the hot water storage tank or on the tank itself.

## OPERATION

Drinking water is heated to the defined dispensing temperature in the TacoTherm Fresh Peta2 (C/CL) in accordance with the continuous flow principle. The integrated heat exchanger is supplied with as little hot water from the storage tank as is required to maintain a constant dispensing temperature.

## ADVANTAGES

### Compact and versatile

- Models: with and without circulation pump, dual-zone return stratification
- Cascading possible

### Secure

- Integration in building control system via optionally available eLink ModBus RTU interface
- Integrated safety subassembly and soft-close valves

### Simple

- Valves and components are fully preassembled and ready for connection

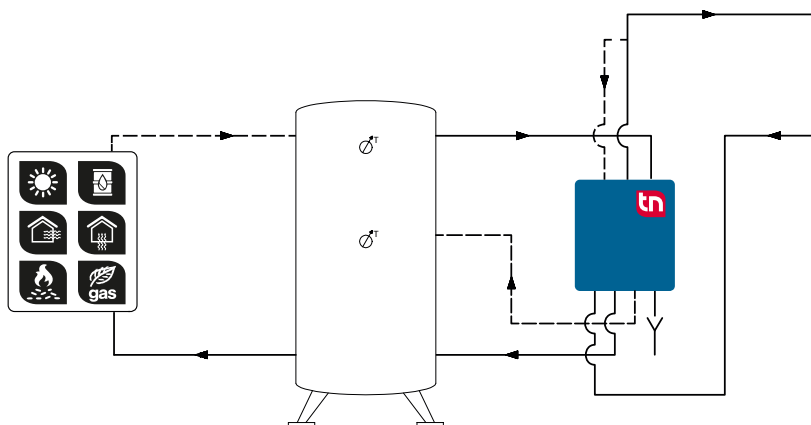
### Efficient

- High transmission performance and low pressure loss thanks to microplate plate heat exchanger

A low return temperature of the heating water to the storage tank can be expected owing to the special design of the heat exchanger. In recording the temperature difference and flow rate data, the electronic regulator simultaneously records and stores the quantity of heat consumed. In addition to an additional circulation pump that can be installed, the TacoTherm Fresh Peta2 (C/CL) can also be supplied with a switching valve for dual-zone return stratification.

The primary pump, circulation pump as well as load valve are controlled by the integrated regulator in accordance with specifications.

## SYSTEM/BASIC DIAGRAM



## BUILDING CATEGORIES

- Apartment blocks
- Housing estates
- Multiple dwelling units
- Residential care facilities and hospitals
- Administration and service buildings
- Hotels and restaurants, industrial kitchens
- School buildings and sports facilities
- Commercial and industrial buildings, industrial facilities
- Facilities with partial use – for example barracks, camping sites, etc.

## SPECIFICATION TEXT

See [www.taconova.com](http://www.taconova.com)

## TECHNICAL DATA

### General

- TacoTherm Fresh Peta2 controller with display
- Weight (empty): 39.5 – 43 kg
- Overall dimensions (incl. hood):  
W 530 mm × H 854 mm × D 194 mm

### Material

- Base plate: Galvanized sheet steel
- Hood: stylish EPP insulation
- Pumps:
  - Primary: Cast iron
  - Secondary: PPS (plastic, approved for drinking water)
- Valve housing: Brass
- Pipes:
  - Primary/secondary DN 32, stainless steel 1.4404
  - Circulation DN 25, stainless steel 1.4404
- Microplate plate heat exchanger:
  - Plates and connector pieces: Stainless steel 1.4401
  - Heat exchanger solder: 99.99 % copper (on request: stainless steel solder)
- Seals: AFM flush seal

### Primary side

- Operating temperature  $T_{0\max}$ : 95 °C
- Operating pressure  $P_{0\max}$ : 10 bar
- Primary pump: Wilo-Para G 25-130/PWM1

### Secondary side

- Operating temperature  $T_{0\max}$ : 85 °C
- Operating pressure  $P_{0\max}$ : 10 bar
- Safety valve (intrinsic safety): 10 bar
- Circulation pump: TacoFlow2 Pure 15-40/130 C6

### Electrical connection data

- Mains voltage: 230 VAC ± 10 %
- Mains frequency: 50...60 Hz
- Power consumption: max. 250 W
- 3.5 AT fuse
- eBus interface
- Protection type: IP 40

### Flow media

- Heating water (VDI 2035; SWKI BT 102-01; ÖNORM H 5195-1)
- Cold water

## APPROVALS / CERTIFICATES

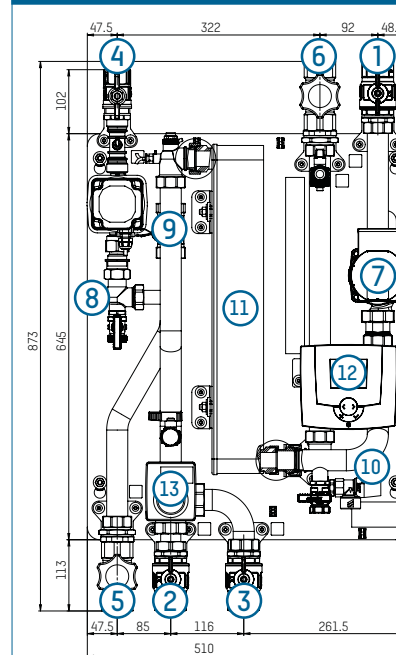
- Components in contact with potable water comply with UBA Evaluation Criteria 26/03/2018 and Directive (EU) 2015/1535
- SVGW: 1808-6782

## TYPE OVERVIEW

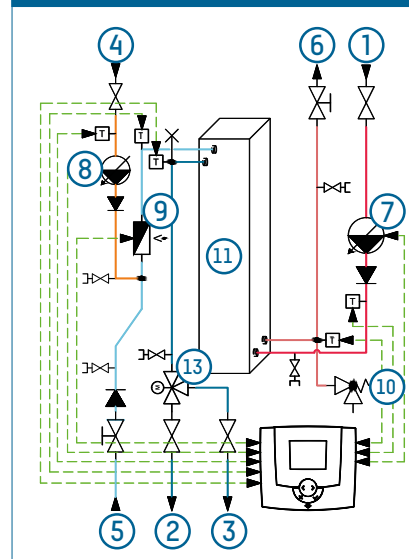
TacoTherm Fresh Peta2 | Centralised heat interface unit

Order no.	Rp 1"	Rp 1 1/4"	Version	Version
272.5066.000		① ② ⑤ ⑥		Without circulating pump, without dual-zone return stratification
273.5266.000	④	① ② ⑤ ⑥	C	With circulating pump, without dual-zone return stratification
273.5269.000	④	① ② ③ ⑤ ⑥	CL	With circulating pump and dual-zone return stratification

## DIMENSIONAL DRAWING



## PRODUCT DIAGRAM

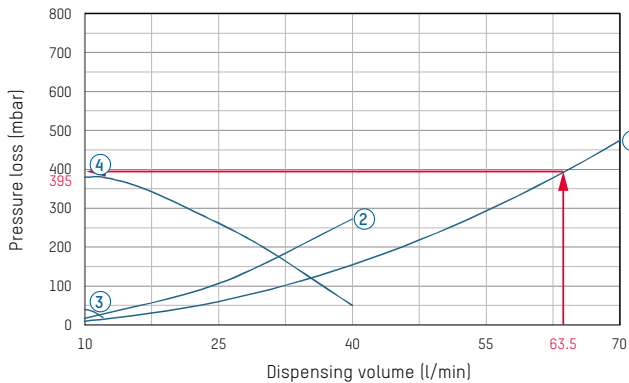


- Primary hot water flow
- Primary hot water return 1 (integration of storage tank below)
- Primary hot water return 2 (integration of storage tank in center in CL models)
- Circulation (C/CL version) (1")
- Cold water connection
- Hot water connection
- Primary pump
- Circulation pump (C/CL version)
- Flow rate sensor
- Safety valve
- Heat exchanger
- Regulator
- Switching valve (CL version)



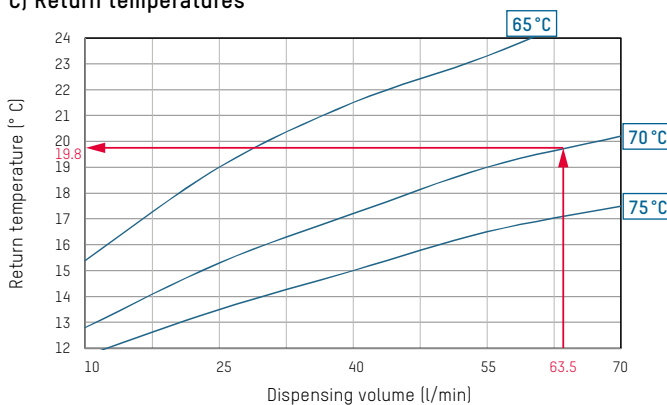
# FLOW AND PRESSURE LOSS DIAGRAMS COLD WATER HEATING AT 50K (10 ... 60 °C)

## D) Secondary pressure loss

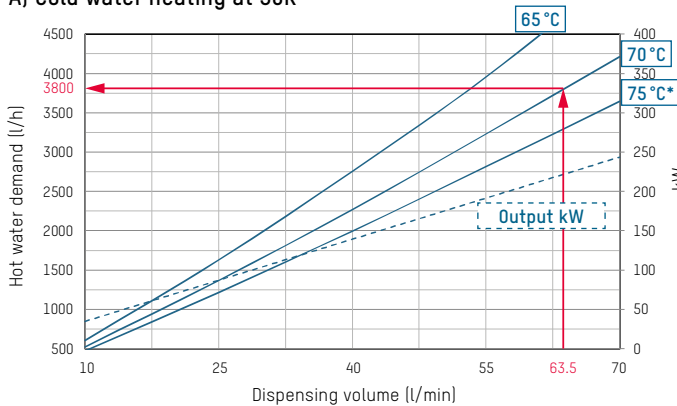


- 1 Secondary pressure loss
- 2 Secondary pressure loss in circulation
- 3 Circulation pump min
- 4 Circulation pump max
- 5 Primary pressure loss
- 6 Pump characteristic primary side

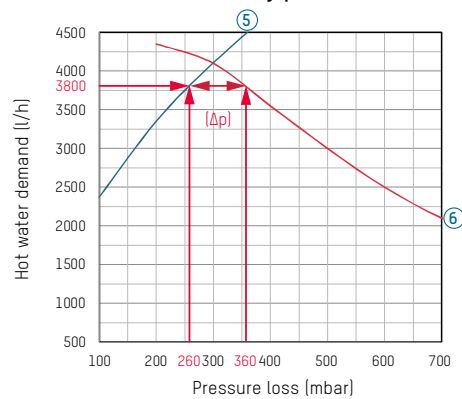
## C) Return temperatures



## A) Cold water heating at 50K



## B) Residual head | Primary pressure loss



## EXAMPLE FOR INTERPRETING THE FLOW RATE AND PRESSURE LOSS DIAGRAMS

### Given

- Hot water dispensing volume: 63.5 l/min
- Primary heating flow temperature: 70 °C

### Sought

- Hot water demand (l/h)
- Primary heating return temperature in °C
- Secondary pressure loss in mbar
- Primary pressure loss in mbar

### Approach

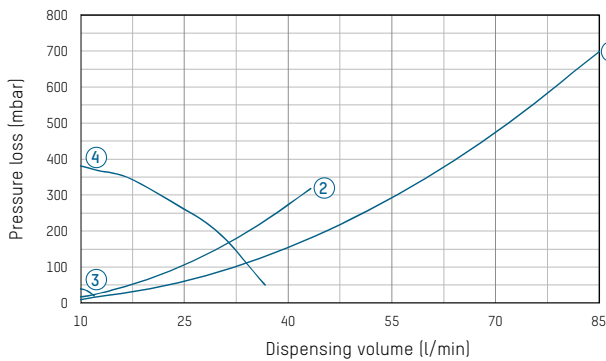
- In Diagram A) the hot water demand at the intersection point of the dispensing volume of 63.5 l/min and primary flow temperature of 70 °C is 3800 l/h.
- In Diagram B) the primary pressure loss for a hot water demand of 3800 l/h is 260 mbar. The pump delivery head is 360 mbar, discounting the pressure loss this gives rise to a residual pump head of 100 mbar (Δp).

- In Diagram C) the primary return temperature for a given dispensing volume of 63.5 l/min and the selected flow temperature of 70 °C is 19.8 °C.
- In Diagram D) the secondary pressure loss for the given data is 395 mbar



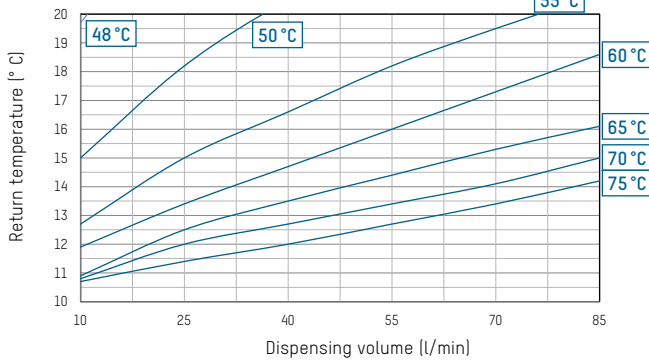
# FLOW AND PRESSURE LOSS DIAGRAMS COLD WATER HEATING AT 35K (10 ... 45 °C)

## D) Secondary pressure loss

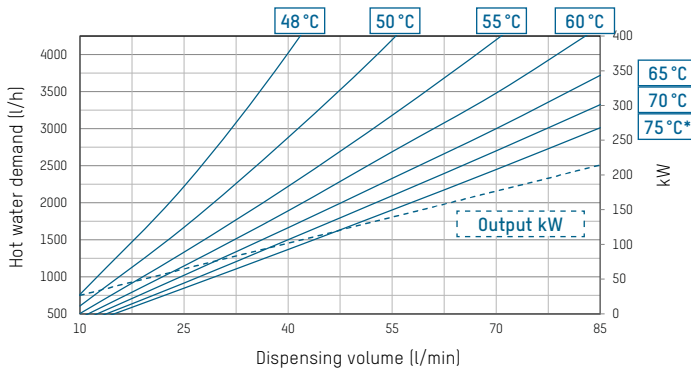


- 1 Secondary pressure loss
- 2 Secondary pressure loss in circulation
- 3 Circulation pump min
- 4 Circulation pump max
- 5 Primary pressure loss
- 6 Pump characteristic primary side

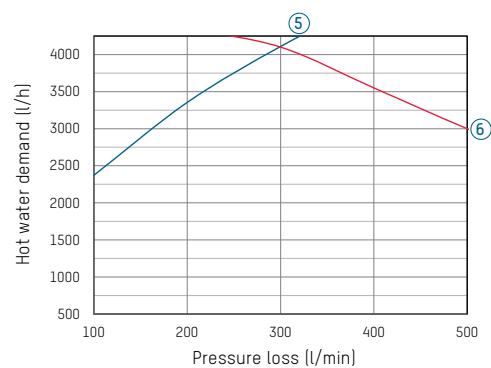
## C) Return temperatures



## A) Cold water heating at 35K



## B) Residual head | Primary pressure loss



## NOTE

### REQUIREMENTS FOR FLOW MEDIA

The units use a copper-soldered stainless steel plate heat exchanger as standard. It must be checked prior to use in the framework of system planning whether the issues of corrosion protection and scale formation have been sufficiently taken into account in accordance with DIN 1988200 and current drinking water analyses according to DIN EN 8065. See datasheet „Plate Heat Exchanger Requirements - Limit Values for Drinking Water Quality“.

## ACCESSORIES



## COMPONENTS FOR REMOTE ACCESS

Order no.	Rp	Description
296.7027.000		eLink ModBus RTU interface
296.7028.000		eLink RC7020 interface

## ACCESSORIES FOR CASCADES

Order no.	Rp	Description
295.0400.000		Basic construction kit
295.0401.000		Extension kit
296.7026.000		Second zone valve for basic construction kit (sequence switching operation)
296.7024.000	1 1/4"	External storage restratification
296.7025.000	2"	External storage restratification
296.0502.000		External circulation

## SAMPLE ORDER



## CASCADE MODULE

With integrated circulation and storage stratification

Order no.	2-way cascade	3-way cascade	4-way cascade	5-way cascade
272.5066.000	1	2	3	4
273.5269.000	1	1	1	1
295.0400.000	1	1	1*	1*
295.0401.000	0	1	2*	3*

With external circulation and external storage stratification

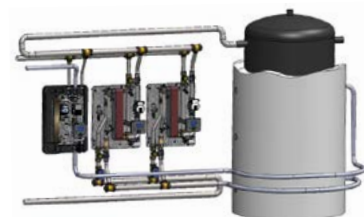
Order no.	2-way cascade	3-way cascade	4-way cascade	5-way cascade
272.5066.000	2	3	4	5
295.0400.000	1	1	1*	1*
295.0401.000	0	1	2*	3*
296.7024.000	1*	0	0	0
296.7025.000	0	1	1	1
296.0502.000	1	1	1	1

\* Attention: Note pressure losses in the cascade pipe sets and diverting valves.

## CASCADE MODULE WITH TACOTHERM CIRC PETA2 CIRCULATION STATION

Cascade circuit with circulation module

Order no.	2-way cascade	3-way cascade	4-way cascade	5-way cascade
272.5066.000	2	3	4	5
272.0217.000	1	1	1	1
295.0400.000	1	1	1	1
295.0402.000	1	1	1	1
295.0401.000	0	1	2	3



# TACOTHERM FRESH PETA2 X (C/CL)

## CENTRALISED HIU WITH HIGH-EFFICIENCY PUMPS



Centralised heat interface unit for hygienically heating drinking water in accordance with the continuous flow principle with and without dual-zone return stratification of the storage tank.

### DESCRIPTION

The TacoTherm Fresh Peta2 X (C/CL) is a centralised heat interface unit used for on-demand preparation of domestic hot water in accordance with the continuous flow principle. It retrieves the heat from the storage tank of an existing or new heating system, which uses solid-fuel boilers, heat pumps, solar systems, etc. as a heat source. The station replaces the storage of hot drinking water and thus provides a high degree of protection against Legionella by avoiding water stagnation.

### INSTALLATION POSITION

Vertical wall-mounting in the vicinity of the hot water storage tank or on the tank itself.

### OPERATION

Drinking water is heated to the defined dispensing temperature in the TacoTherm Fresh Peta2 X (C/CL) in accordance with the continuous flow principle. The integrated heat exchanger is supplied with as little hot water from the storage tank as is required to maintain a constant dispensing temperature.

### ADVANTAGES

#### Compact and versatile

- Models: with and without circulation pump, dual-zone return stratification
- Cascading possible

#### Secure

- Integration in building control system via optionally available eLink ModBus RTU interface
- Integrated safety subassembly and soft-close valves

#### Simple

- Valves and components are fully preassembled and ready for connection

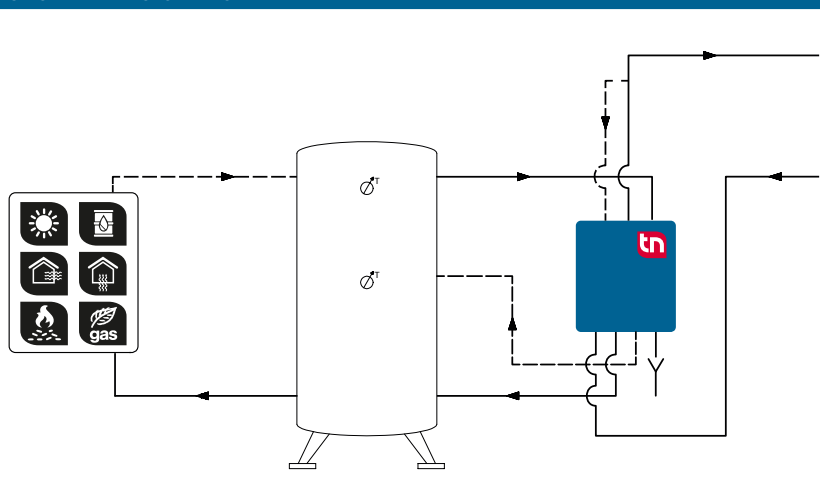
#### Efficient

- High transmission performance and low pressure loss thanks to microplate plate heat exchanger

A low return temperature of the heating water to the storage tank can be expected owing to the special design of the heat exchanger. In recording the temperature difference and flow rate data, the electronic regulator simultaneously records and stores the quantity of heat consumed. In addition to an additional circulation pump that can be installed, the TacoTherm Fresh Peta2 X (C/CL) can also be supplied with a switching valve for dual-zone return stratification.

The primary pump, circulation pump as well as load valve are controlled by the integrated regulator in accordance with specifications.

### SYSTEM/BASIC DIAGRAM



### BUILDING CATEGORIES

- Apartment blocks
- Housing estates
- Multiple dwelling units
- Residential care facilities and hospitals
- Administration and service buildings
- Hotels and restaurants, industrial kitchens
- School buildings and sports facilities
- Commercial and industrial buildings, industrial facilities
- Facilities with partial use – for example barracks, camping sites, etc.

## SPECIFICATION TEXT

See [www.taconova.com](http://www.taconova.com)

## TECHNICAL DATA

### General

- TacoTherm Fresh Peta2 controller with display
- Weight (empty): 42 – 46 kg
- Overall dimensions (incl. hood):  
W 530 mm × H 854 mm × D 194 mm

### Material

- Base plate: Galvanized sheet steel
- Hood: stylish EPP insulation
- Pumps:
  - Primary: Cast iron
  - Secondary: PPS (plastic, approved for drinking water)
- Valve housing: Brass
- Pipes:
  - Primary/secondary DN 32, stainless steel 1.4404
  - Circulation DN 25, stainless steel 1.4404
- Microplate plate heat exchanger:
  - Plates and connector pieces: Stainless steel 1.4401
  - Heat exchanger solder: 99.99 % copper (on request: stainless steel solder)
- Seals: AFM flush seal

### Primary side

- Operating temperature  $T_{0\text{ max}}$ : 95 °C
- Operating pressure  $P_{0\text{ max}}$ : 10 bar
- Primary pump: TacoFlow3 MAX 25-100/180 C6

### Secondary side

- Operating temperature  $T_{0\text{ max}}$ : 85 °C
- Operating pressure  $P_{0\text{ max}}$ : 10 bar
- Safety valve (intrinsic safety): 10 bar
- Circulation pump: Wilo Yonos PARA-Z 15/7.0

### Electrical connection data

- Mains voltage: 230 VAC ± 10 %
- Mains frequency: 50...60 Hz
- Power consumption: max. 250 W
- 3.5AT fuse
- eBus interface
- Protection type: IP 40

### Flow media

- Heating water (VDI 2035; SWKI BT 102-01; ÖNORM H 5195-1)
- Cold water

## APPROVALS / CERTIFICATES

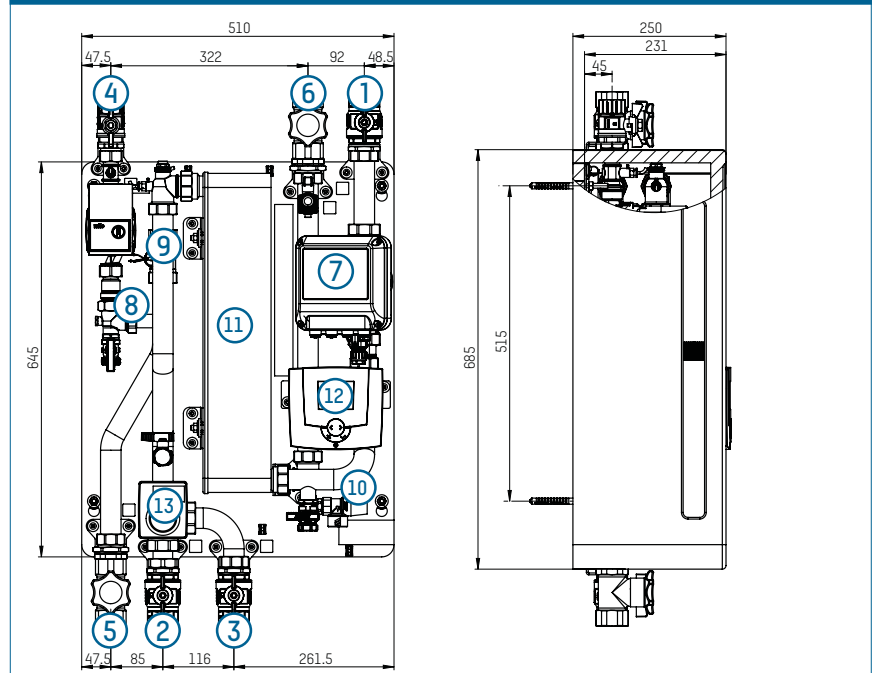
- Components in contact with potable water comply with UBA Evaluation Criteria 26/03/2018 and Directive (EU) 2015/1535
- SVGW: 1808-6782

## TYPE OVERVIEW

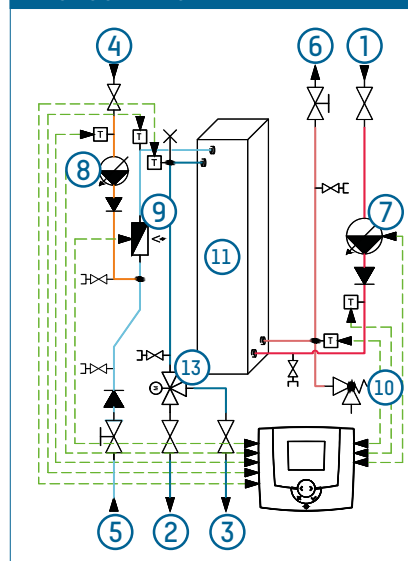
TacoTherm Fresh Peta2 X | Centralised heat interface unit

Order no.	Rp 1"	Rp 1 1/4"	Version	Version
272.2056.000		① ② ⑤ ⑥	X	Without circulating pump, without dual-zone return stratification
273.2556.000	④	① ② ⑤ ⑥	X C	With circulating pump, without dual-zone return stratification
273.2559.000	④	① ② ③ ⑤ ⑥	X CL	With circulating pump and dual-zone return stratification

## DIMENSIONAL DRAWING



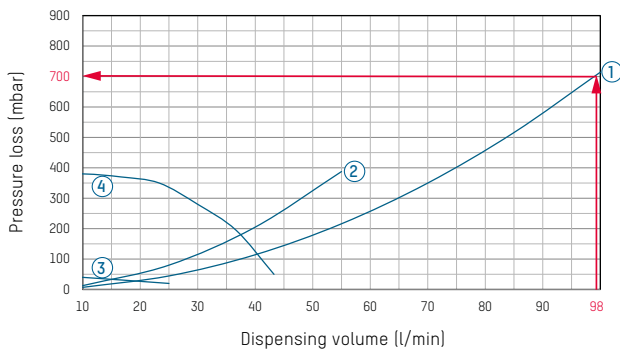
## PRODUCT DIAGRAM



- 1 Primary hot water flow
- 2 Primary hot water return 1 (integration of storage tank below)
- 3 Primary hot water return 2 (integration of storage tank in center in CL models)
- 4 Circulation [C/CL version] 1"
- 5 Cold water connection
- 6 Hot water connection
- 7 Primary pump
- 8 Circulation pump [C/CL version]
- 9 Flow rate sensor
- 10 Safety valve
- 11 Heat exchanger
- 12 Regulator
- 13 Switching valve [CL version]

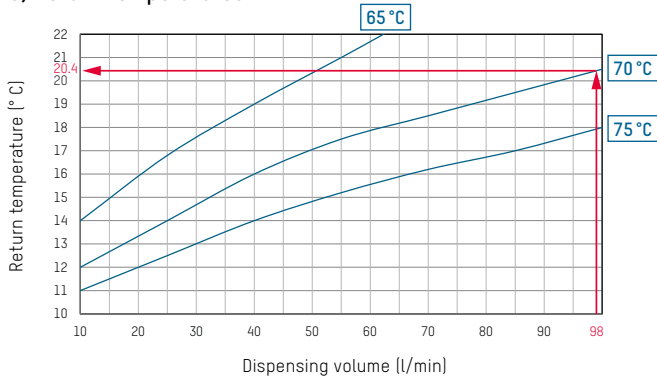
# FLOW AND PRESSURE LOSS DIAGRAMS COLD WATER HEATING AT 50K (10 ... 60 °C)

## D) Secondary pressure loss

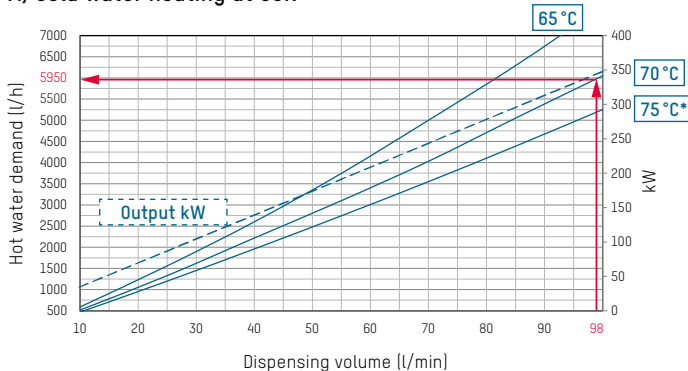


- 1 Secondary pressure loss
- 2 Secondary pressure loss in circulation
- 3 Circulation pump min
- 4 Circulation pump max
- 5 Primary pressure loss
- 6 Pump characteristic primary side

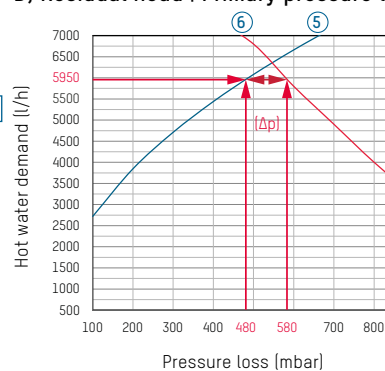
## C) Return temperatures



## A) Cold water heating at 50K



## B) Residual head | Primary pressure loss



## EXAMPLE FOR INTERPRETING THE FLOW RATE AND PRESSURE LOSS DIAGRAMS

### Given

- Hot water dispensing volume: 98 l/min
- Primary heating flow temperature: 70 °C

### Sought

- Hot water demand (l/h)
- Primary heating return temperature in °C
- Secondary pressure loss in mbar
- Primary pressure loss in mbar

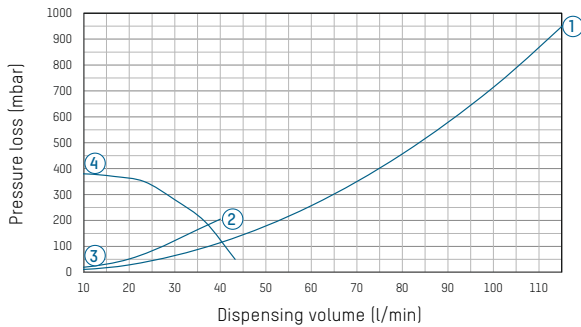
### Approach

- In Diagram A) the hot water demand at the intersection point of the dispensing volume of 98 l/min and primary flow temperature of 70 °C is 5950 l/h.
- In Diagram B) the primary pressure loss for a hot water demand of 5950 l/h is 480 mbar. The pump delivery head is 580 mbar, discounting the pressure loss this gives rise to a residual pump head of 100 mbar (Δp).

- In Diagram C) the primary return temperature for a given dispensing volume of 98 l/min and the selected flow temperature of 70 °C is 20.4 °C.
- In Diagram D) the secondary pressure loss for the given data is 700 mbar

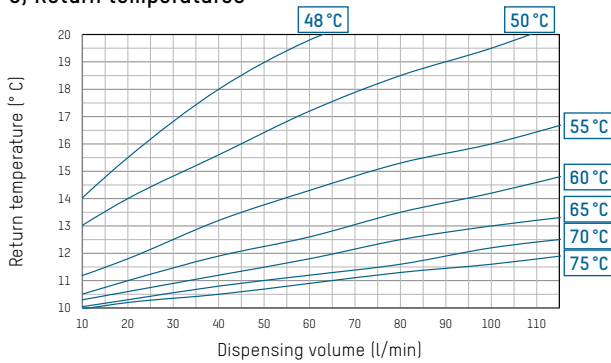
## FLOW AND PRESSURE LOSS DIAGRAMS COLD WATER HEATING AT 35K (10 ... 45 °C)

### D) Secondary pressure loss

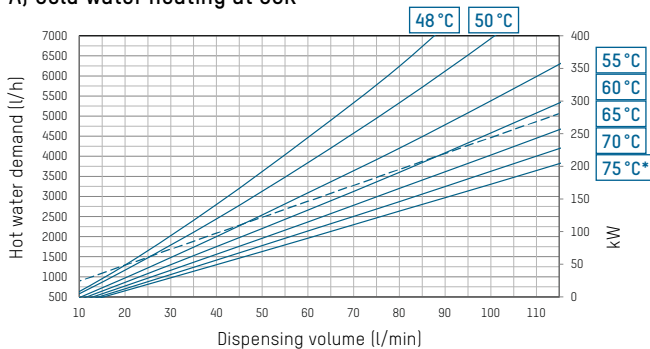


- 1 Secondary pressure loss
- 2 Secondary pressure loss in circulation
- 3 Circulation pump min
- 4 Circulation pump max
- 5 Primary pressure loss
- 6 Pump characteristic primary side

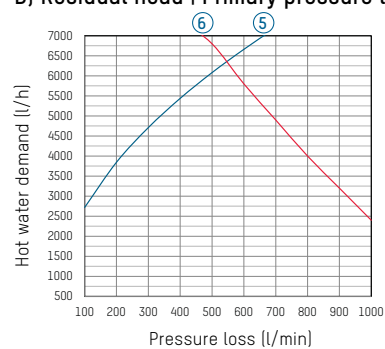
### C) Return temperatures



### A) Cold water heating at 35K



### B) Residual head | Primary pressure loss



## NOTE

### REQUIREMENTS FOR FLOW MEDIA

The units use a copper-soldered stainless steel plate heat exchanger as standard. It must be checked prior to use in the framework of system planning whether the issues of corrosion protection and scale formation have been sufficiently taken into account in accordance with DIN 1988200 and current drinking water analyses according to DIN EN 8065. See datasheet „Plate Heat Exchanger Requirements - Limit Values for Drinking Water Quality“.

## ACCESSORIES



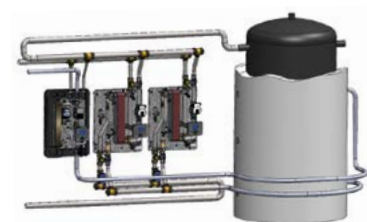
## COMPONENTS FOR REMOTE ACCESS

Order no.	Rp	Description
296.7027.000		eLink ModBus RTU interface
296.7028.000		eLink RC7020 interface

## ACCESSORIES FOR CASCADES

Order no.	Rp	Description
295.0400.000		Basic construction kit
295.0401.000		Extension kit
296.7026.000		Second zone valve for basic construction kit (sequence switching operation)
296.7025.000	2"	External storage restratification
296.0502.000		External circulation

## SAMPLE ORDER



## CASCADE MODULE

With integrated circulation and storage stratification

Order no.	2-way cascade	3-way cascade	4-way cascade	5-way cascade
272.2056.000	1	2	3	4
273.2559.000	1	1	1	1
295.0400.000	1	1	1*	1*
295.0401.000	0	1	2*	3*

With external circulation and external storage stratification

Order no.	2-way cascade	3-way cascade	4-way cascade	5-way cascade
272.2056.000	2	3	4	5
295.0400.000	1	1	1*	1*
295.0401.000	0	1	2*	3*
296.7025.000	1	1	1	1
296.0502.000	1	1	1	1

\* Attention: Note pressure losses in the cascade pipe sets and diverting valves.

## CASCADE MODULE WITH TACOTHERM CIRC PETA2 X CIRCULATION STATION

Cascade circuit with circulation module

Order no.	2-way cascade	3-way cascade	4-way cascade	5-way cascade
272.2056.000	2	3	4	5
272.0217.000	1	1	1	1
295.0400.000	1	1	1	1
295.0402.000	1	1	1	1
295.0401.000	0	1	2	3



# TACOTHERM CIRC MEGA / PETA

CIRCULATION MODULE WITH HIGH EFFICIENCY PUMPS



Circulation modules for combination with centralised heat interface units for hygienic DHW heating following the instantaneous water heating principle

## DESCRIPTION

The TacoTherm Circ Mega and Peta circulation modules are used in combination with centralised heat interface units for on-demand DHW heating following the instantaneous water heating principle. They obtain heat from the buffer cylinder of an existing or new heating system whose heat source can be a solid fuel boiler, heat pump, solar thermal system, etc. The units ensure that DHW is quickly available and provide a high level of protection against legionella bacteria as water stagnation is avoided.

## INSTALLATION POSITION

Vertically on a wall, close to the buffer cylinder and the centrally installed centralised heat interface units.

## OPERATING PRINCIPLE

In the TacoTherm Circ circulation modules, the DHW is heated to the specified circulation temperature following the instantaneous water heating principle. Only as much heating water is fed from the buffer cylinder to the integral heat exchanger as is required to maintain a constant circulation temperature.

## BENEFITS

### Energy efficiency and convenience

- No mixing in the cylinder during circulation
- Required draw-off temperature is guaranteed – even at more distant draw-off points

### Safe

- Integration into the building management system via optionally available eLink ModBus RTU interface
- Integrated safety assembly

### Simple

- Valves, accessories and components are fully pre-assembled and wired

### Efficient

- Quick and straightforward commissioning

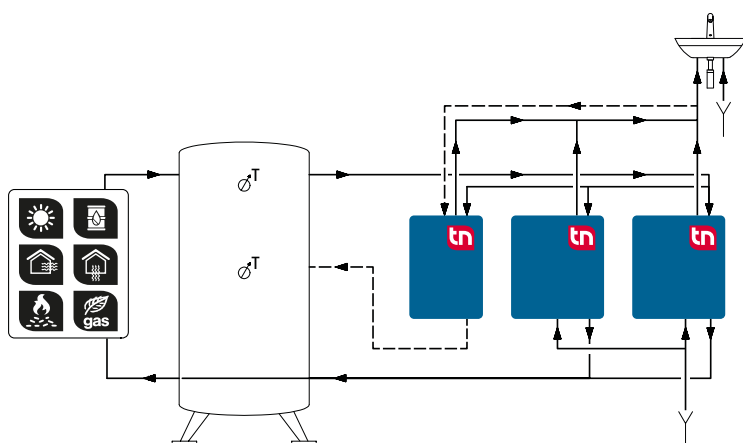
The latest pump and control technology is used. At the same time, the electronic controller monitors the temperature difference to calculate and store the amount of heat consumed.

The primary pump and the circulation pump are actuated by the integral controller according to requirements. Stratification of the primary side return occurs in the upper section of the buffer cylinder, thus preventing excessive mixing and associated reduction in buffer cylinder temperature.

## BUILDING CATEGORIES

- Apartment buildings
- Estates of single-family houses
- Multi-family houses
- Smaller public buildings
- Facilities not in constant use, such as barracks, campsites

## SYSTEM/SCHEMATIC DIAGRAM





## TENDER DOCUMENTATION

See [www.taconova.com](http://www.taconova.com)

## SPECIFICATION

### General

- TacoTherm Circ Mega / Peta controller
- Weight, emwpty:  
17.5 – 20 kg
- Overall dimensions (incl. cover):  
W 470 mm × H 690 mm × D 195 mm

### Material

- Base plate: galvanised sheet steel
- Back panel and cover: stylish EPP insulation
- Pumps:
  - Primary: cast steel
  - Secondary: PPS (plastic, approved for drinking water)
- Valve housing: brass
- Pipes: DN 20, ¾" fem., stainless steel 1.4404
- Plate heat exchanger:
  - Plates and connectors: stainless steel 1.4401
  - Heat exchanger solder: 99.99 % copper (on request: stainless steel brazed)
- Gaskets: AFM, flat packing

### Primary side

- Max. operating temperature  $T_{B \max}$ : 95 °C
- Max. static pressure  $P_{B \max}$ : 6 or 10 bar (see datasheets for TacoTherm Fresh Mega and Peta at [taconova.com](http://taconova.com))
- Primary pump: TacoFlow3 GenS 15-85/130 C6 DS P

### Secondary side

- Max. operating temperature  $T_{B \max}$ : 95 °C
- Max. static pressure  $P_{B \max}$ : 10 bar
- Safety valve (intrinsic safety): 10 bar
- Circulation pump: WIL0 Yonos PARA Z 15/7.0

### Electrical connection information

- Mains voltage: 230 VAC ± 10 %
- Mains frequency: 50 to 60 Hz
- Power consumption: max. 250 W
- Fuse protection, controller: 3.5 A slow
- eBus interface
- Protection rating: IP 40

### Flow media

- Heating water (VDI 2035; SWKI BT 102-01; ÖNORM H 5195-1)
- Cold water

## APPROVALS / CERTIFICATES

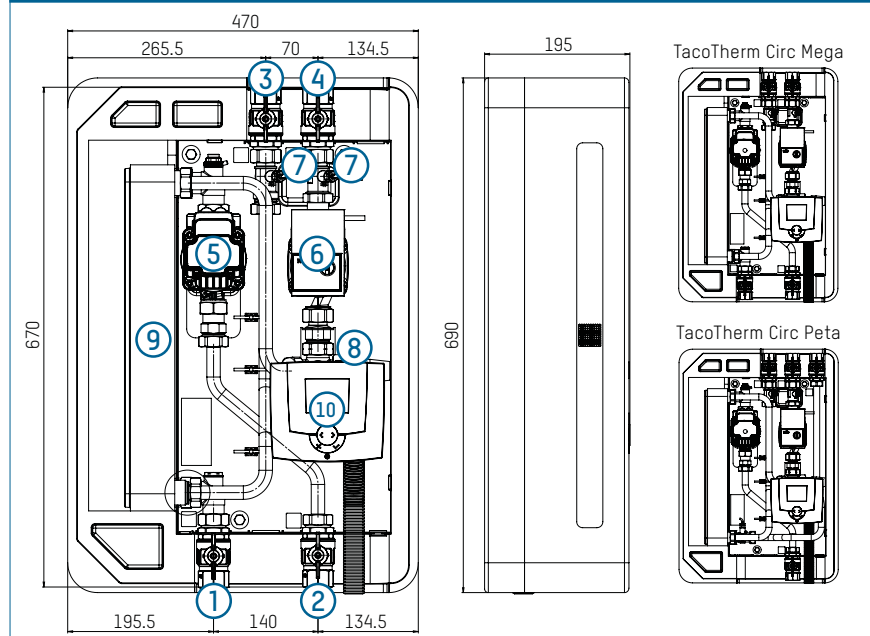
- Components in contact with drinking water comply with UBA Evaluation Criteria 26/03/2018 and Directive (EU) 2015/1535
- SVGW: xxxxxxxx

## TYPE OVERVIEW

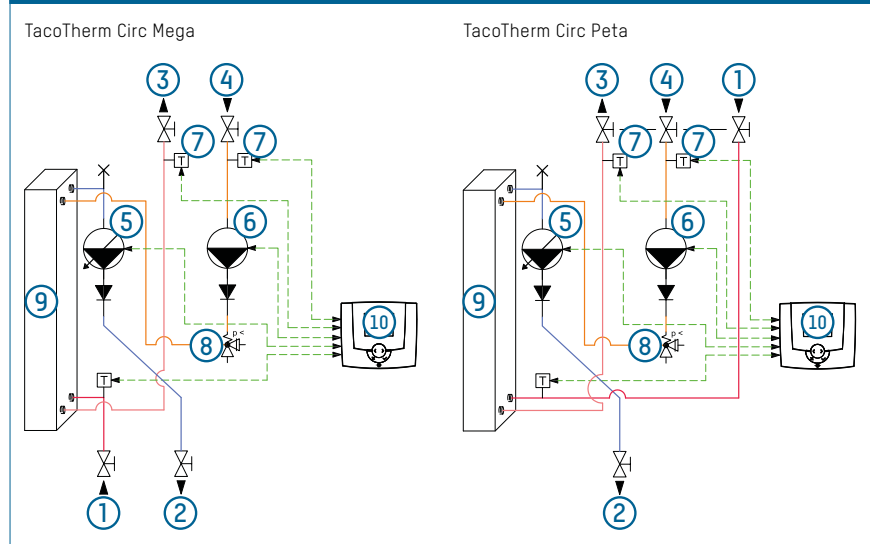
TacoTherm Circ Mega / Peta | Circulation module with high efficiency pumps

Part no.	Rp 1"	Version	Plate heat exchanger
272.0216.000	① ② ③ ④	TacoTherm Circ Mega	Copper brazed
272.0216.125	① ② ③ ④	TacoTherm Circ Mega	Stainless steel brazed
272.0217.000	① ② ③ ④	TacoTherm Circ Peta	Copper brazed
272.0217.125	① ② ③ ④	TacoTherm Circ Peta	Stainless steel brazed

## DIMENSIONAL DRAWING



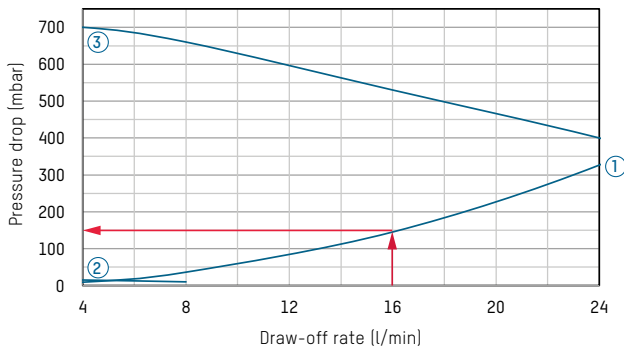
## HYDRAULIC SYSTEM DIAGRAM



- |                                  |                      |
|----------------------------------|----------------------|
| 1 Primary DHW flow               | 6 Circulation pump   |
| 2 Primary DHW return 1           | 7 Temperature sensor |
| 3 Circulation connection, flow   | 8 Safety valve       |
| 4 Circulation connection, return | 9 Heat exchanger     |
| 5 Primary pump                   | 10 Controller        |

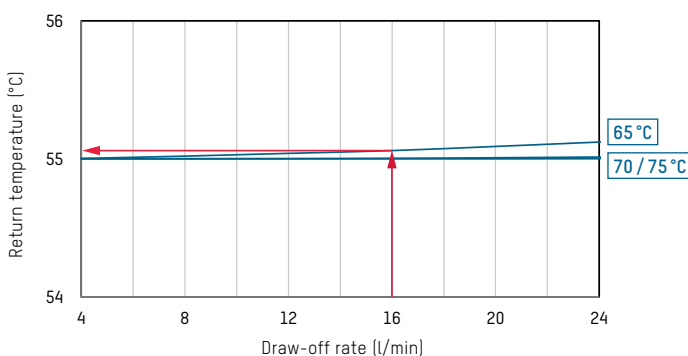
## FLOW AND PRESSURE DROP DIAGRAMS DHW HEATING BY 5 K (55 TO 60 °C)

### D) Secondary pressure drop

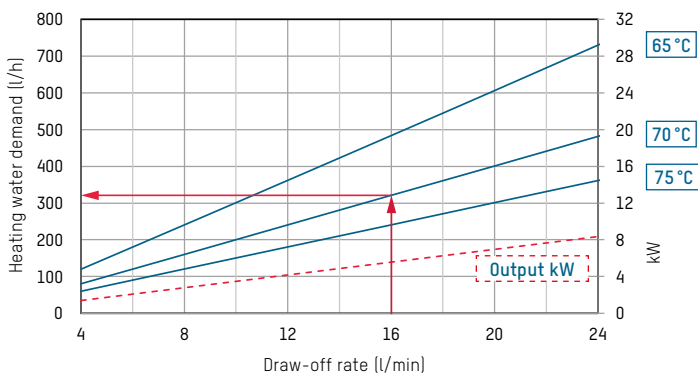


- 1 Pressure drop, cold water and circulation (secondary)
- 2 Circulation pump, min.
- 3 Circulation pump, max.
- 4 Primary pressure drop
- 5 Pump curve – system curve, primary side

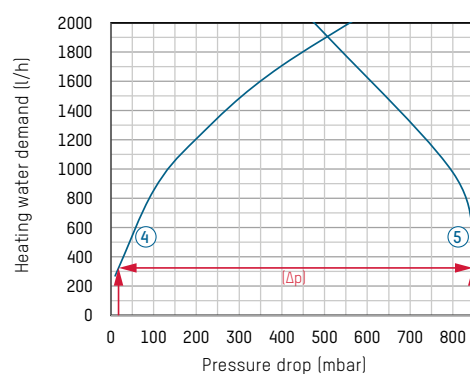
### C) Return temperatures



### A) Cold water heating by 5K



### B) Residual head | Primary pressure drop



## EXAMPLE OF INTERPRETING THE FLOW AND PRESSURE DROP DIAGRAMS

### Given

- Circulation flow rate: 16 l/min
- Heating flow temperature, primary: 70 °C

### Sought

- Heating water demand in l/h
- Heating return temperature, primary in °C
- Pressure drop, secondary in mbar
- Pressure drop, primary in mbar

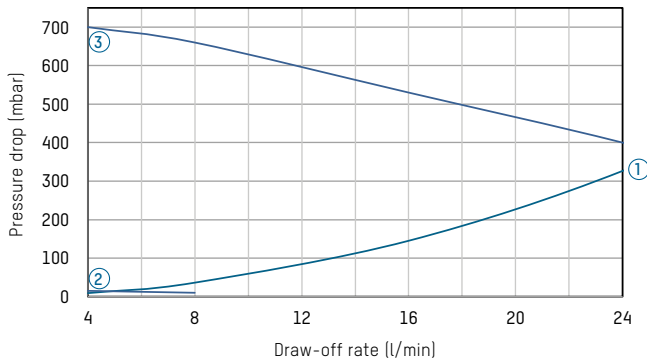
### Solution

- In diagram A), a heating water demand of 320 l/h can be read off at the intersection of the circulation flow rate of 16 l/min and the primary flow of 70 °C.
- In diagram B), a primary pressure drop of 15 mbar is to be expected with a heating water demand of 320 l/h.

- The pump head is 845 mbar; when the pressure drop is deducted, therefore, this produces a pump residual head of 830 mbar ( $\Delta p$ ).
- In diagram C), a primary return temperature of 55 °C is obtained for a given draw-off rate of 16 l/min and the selected flow temperature of 70 °C.
- In diagram D), the secondary pressure drop for the given data is 150 mbar

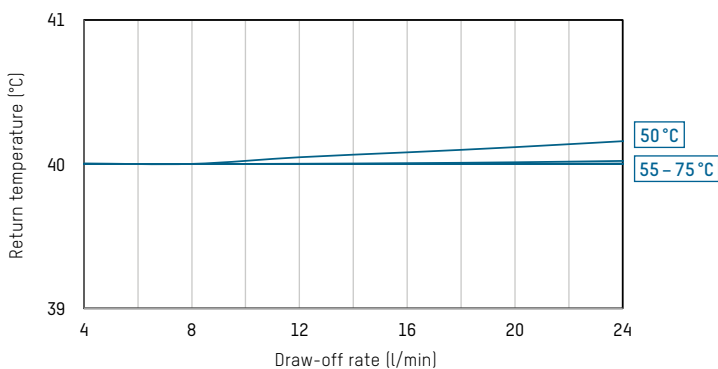
## FLOW AND PRESSURE DROP DIAGRAMS COLD WATER HEATING BY 5 K (40 TO 45 °C)

### D) Secondary pressure drop

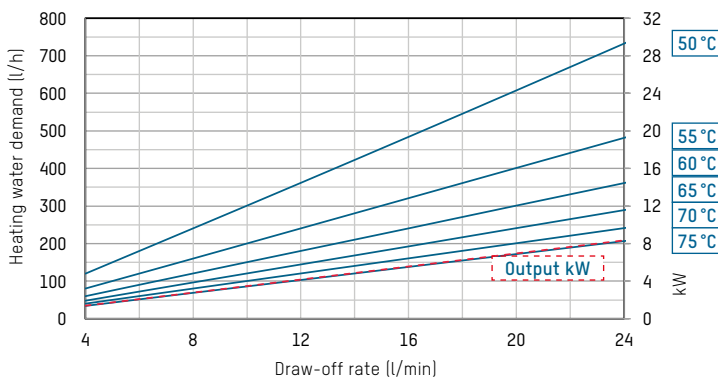


- 1 Pressure drop, cold water and circulation (secondary)
- 2 Circulation pump, min.
- 3 Circulation pump, max.
- 4 Primary pressure drop
- 5 Pump curve – system curve, primary side

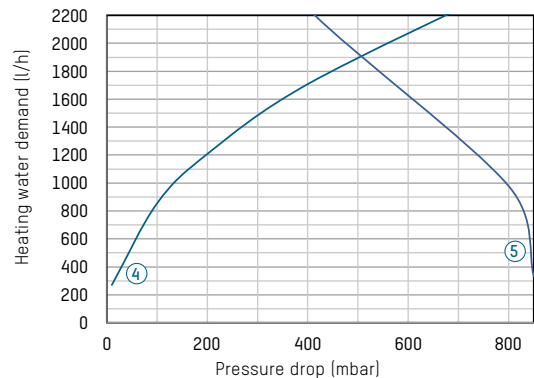
### C) Return temperatures



### A) Cold water heating by 5K



### B) Residual head | Primary pressure drop



## PLEASE NOTE

### REQUIREMENTS FOR FLOW MEDIA

A copper brazed stainless steel plate heat exchanger is used in these units as standard. Before use, it is important to check at the system planning stage whether issues of corrosion protection and scale formation have been given sufficient consideration in accordance with DIN 1988-200 and the current drinking water analyses as set out in DIN EN 806-5. See information sheet "Specifications for plate heat exchanger – limit values for drinking water quality".

## ACCESSORIES



## COMPONENTS FOR REMOTE ACCESS

Part no.	Designation
296.7027.000	eLink ModBus RTU interface
296.7028.000	eLink RC7020 interface

## CASCADE CIRCUIT

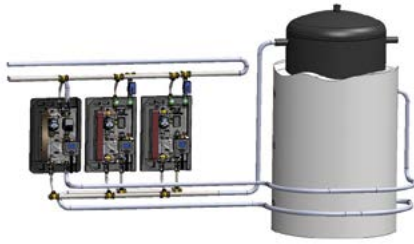
### TacoTherm Fresh Mega3 with circulation station

Part no.	Nominal width Collector pipe		Nominal width Station connection		Designation
	DN	Rp	DN	Rp	
295.0500.000	42	1 ½"	22	1"	Basic kit for TacoTherm Fresh Mega3 cascade
295.0501.000	42	1 ½"	22	1"	Extension kit for TacoTherm Fresh Mega3 cascade
295.0502.000	42	1 ½"	22	1"	Extension kit for TacoTherm Circ Mega
272.0216.000	18	1"	18	1"	TacoTherm Circ circulation station Mega3 (heat exchanger: copper brazed)
272.0216.125	18	1"	18	1"	TacoTherm Circ circulation station Mega3 (heat exchanger: stainless steel brazed)

### TacoTherm Fresh Peta2 with circulation station

Part no.	Nominal width Collector pipe		Nominal width Station connection		Designation
	DN	Rp	DN	Rp	
295.0400.000	54	2"	35	1 ¼"	Basic kit for TacoTherm Fresh Peta2 cascade
295.0401.000	54	2"	35	1 ¼"	Extension kit for TacoTherm Fresh Peta2 cascade
295.0402.000	54	2"	22	1"	Extension kit for Taco Them Circ Peta
272.0217.000	18	1"	18	1"	TacoTherm Circ circulation station Peta2 (heat exchanger: copper brazed)
272.0217.125	18	1"	18	1"	TacoTherm Circ circulation station Peta2 (heat exchanger: stainless steel brazed)

## EXAMPLE ORDER



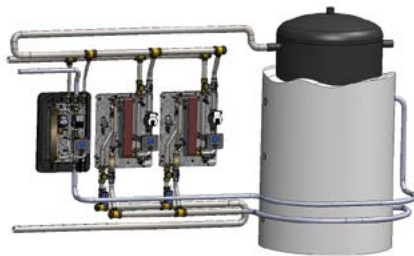
## CASCADE MODULE WITH SEQUENCE CHANGEOVER

## Cascade circuit with TacoTherm Fresh Mega3

Part no.	2HC cascade	3HC cascade	4HC cascade	5HC cascade
272.2026.000	2	3	4	5
272.0216.000	1	1	1	1
295.0500.000	1	1	1	1
295.0502.000	1	1	1	1
295.0501.000	0	1	2	3

## Cascade circuit with TacoTherm Fresh Mega3 X

Part no.	2HC cascade	3HC cascade	4HC cascade	5HC cascade
272.5076.000	2	3	4	5
272.0216.000	1	1	1	1
295.0500.000	1	1	1	1
295.0502.000	1	1	1	1
295.0501.000	0	1	2	3



## Cascade circuit with TacoTherm Fresh Peta2

Part no.	2HC cascade	3HC cascade	4HC cascade	5HC cascade
272.5066.000	2	3	4	5
272.0217.000	1	1	1	1
295.0400.000	1	1	1	1
295.0402.000	1	1	1	1
295.0401.000	0	1	2	3

## Cascade circuit with TacoTherm Fresh Peta2 X

Part no.	2HC cascade	3HC cascade	4HC cascade	5HC cascade
272.2056.000	2	3	4	5
272.0217.000	1	1	1	1
295.0400.000	1	1	1	1
295.0402.000	1	1	1	1
295.0401.000	0	1	2	3

# PLATE HEAT EXCHANGER – LIMIT VALUES FOR DRINKING WATER QUALITY

Corrosion resistance of soldered plate heat exchangers to water-borne substances – the soldered plate heat exchanger consists of stamped stainless steel plates 1.4401/1.4404 or SA240 316/SA240 316L

The plate heat exchangers in Taconova fresh hot water stations are produced as standard as copper soldered stainless steel plate heat exchangers. Before these heat exchangers can be used, building services engineers and installation companies have to check in the framework of system planning whether the issues of corrosion protection and scale formation have been sufficiently taken into account in accordance with

DIN 1988-200 and DIN EN 806-5 as well as current drinking water analyses. This includes the following points:

- Selection of materials
- Consideration of corrosion-related changes to the drinking water quality
- Performance of installation
- Consideration of anticipated operating conditions

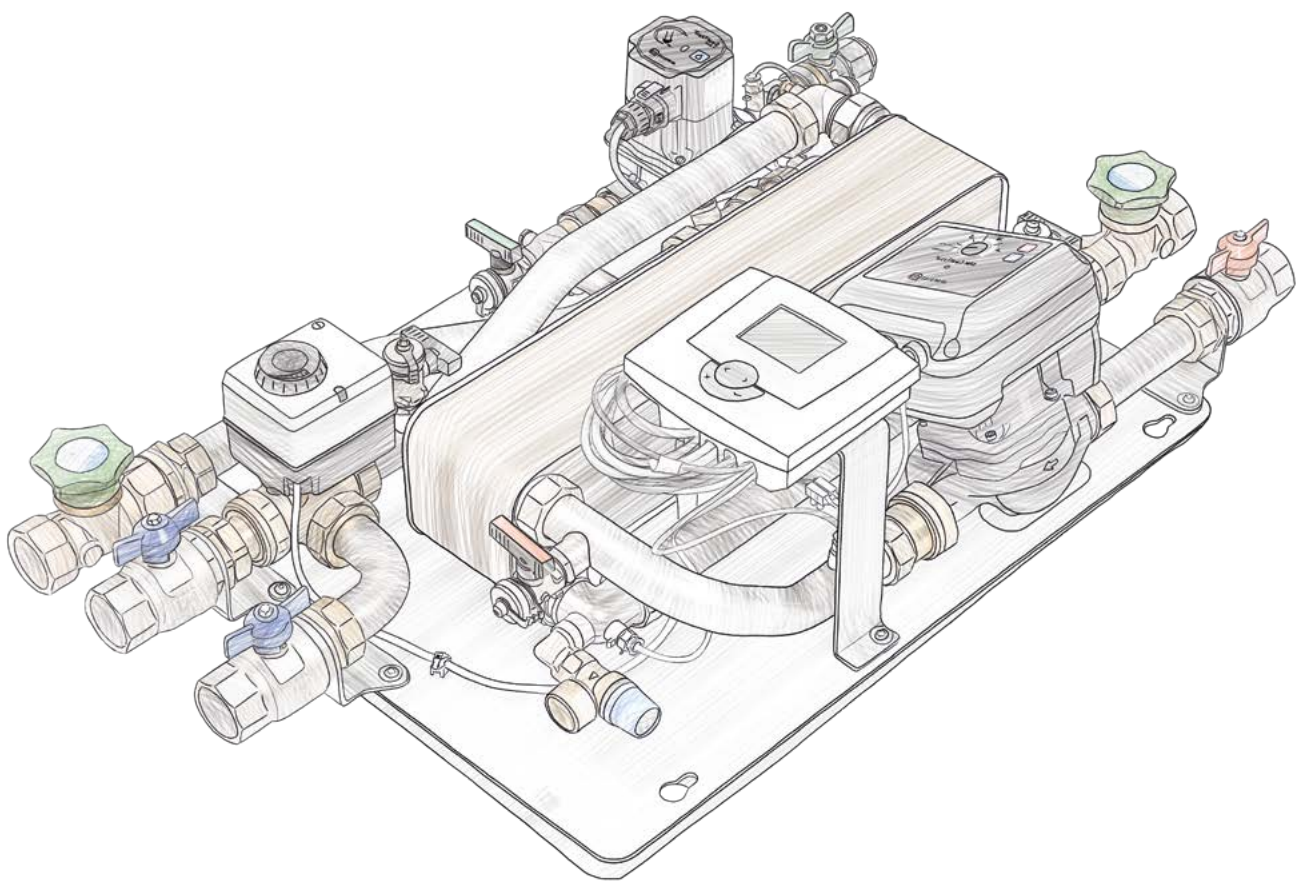
Signs of corrosion may occur in copper materials with high electrical

conductivity of the drinking water of more than 500  $\mu\text{S}/\text{cm}$ , which could cause damage to the copper solder in the heat exchanger. For electrical conductivities of  $> 500 \mu\text{S} / \text{cm}$ , we therefore recommend the use of our nickel- or stainless-steel-soldered plate heat exchangers. The following values for water-borne substances and characteristic values should be observed [1.4401/1.4404 / SA240 316/SA240 316L]:

Water-borne substances and characteristic values	Unit	Plate heat exchanger		
		Copper-soldered	Nickel-soldered	Stainless-steel-soldered
pH value		7 – 9 (considering the SI index)	6 – 10	6 – 10
Saturation index SI (delta pH value)		-0,2 < 0 < +0,2	Not specified	
Total hardness	°dH	6 – 15	6 – 15	6 – 15
Conductivity	$\mu\text{S}/\text{cm}$	10 ... 500	10-1000	Not specified
Substances that can be filtered out	mg/l	< 30	< 30	< 30
Chloride*	mg/l	No chloride permitted above 100° C		
Free chlorine free	mg/l	< 0,5	< 0,5	< 0,5
Hydrogen sulfide (H <sub>2</sub> S)	mg/l	< 0,05	Not specified	
Ammonia (NH <sub>3</sub> /NH <sub>4</sub> <sup>+</sup> )	mg/l	< 2	< 2	Not specified
Sulfate	mg/l	< 100	< 300	< 400
Hydrogen carbonate	mg/l	< 300	Not specified	
Hydrogen carbonate / sulfate	mg/l	> 1,0	Not specified	
Sulfide	mg/l	< 1	< 5	< 7
Nitrate	mg/l	< 100	Not specified	
Nitrite	mg/l	< 0,1	Not specified	
Iron (dissolved)	mg/l	< 0,2	Not specified	
Manganese	mg/l	< 0,1	Not specified	
Free (aggressive) carbonic acid	mg/l	< 20	Not specified	

\* At 20 °C max. 600 mg/l | At 25 °C max. 500 mg/l | At 50 °C max. 200 mg/l | At 75 °C max. 75 mg/l |  $\geq 100$  °C max. 0 mg/l

The specified values are guide values, which may deviate under certain operating conditions



# MAXIMUM ENERGY USE BY THE COLLECTOR

Storage loading stations transfer the solar heat from the collector to the right storage tank zone.

## OPTIMAL USE OF THE SOLAR COLLECTOR

The TacoSol Load storage loading stations increase the usage heat from solar systems by loading different zones of the storage tank depending on the available temperature from the solar circuit. In order to achieve optimum discharge of the solar collector, the temperature difference of the flow and return of the solar thermal energy system is significant.

Low return temperatures ensure a high level of thermal transfer in the storage tank and the optimum discharge of the collector.

## SECURE AND EFFICIENT USE OF SOLAR ENERGY AND REGENERATIVE ENERGIES

When using heat generators that are powered by renewable energies or that operated according to the principle of power-heat coupling, the heat produced is stored in a storage tank. Examples of this are solar heating systems, heat pumps, block heating stations or wood pellet and wood burning boilers. The storage tank means that long burner/aggregate running times can be achieved and free solar energy can be used efficiently.

## STRATIFIED STORAGE UNIT LOADING WITH EXTERNAL LOADING STATIONS

The loading of storage tanks has a major influence over how efficiently the thermal energy generated by a solar energy or heating system can be used. It is important to avoid disrupting currents in the storage tank in order to support stratification. Eddies that impact on stratification mainly occur due to the difference in temperature between the contents of the storage tank and the heated water that flows in. The storage is generally loaded with the same temperature level as in the solar circuit. This means that although solar heat is pumped into the storage unit, mixing necessarily occurs if there is a difference in temperature. Stratified storage unit loading stations increase the amount of thermal energy that can be used when different storage tank zones are loaded, depending on the available temperature level.

## STRATIFIED LOADING WITH TEMPERATURE BALANCING

Storage tank loading stations bring together the functions of the solar station and module in a pre-assembled module.

Loading stations are used to load storage tanks with solar heat by means of powerful plate heat exchangers. A temperature-based storage tank loading means that the relevant storage tank zones are loaded in accordance with the temperature level available in the solar thermal energy system.

## CONTROLLER COMPARES THE COLLECTOR AND STORAGE UNIT TEMPERATURE

The electronic controller ensures that the solar-heated water is delivered to the storage tank at precisely the temperature available at one of two storage unit inputs. The controller evaluates the temperature differences of the primary and secondary side for this purpose.

The temperature values at the flow connections of the storage tank and in the collector determine which of the two buffer inputs is controlled.

The temperature data influences the pump speed in such a way that the hot water in the plate heat exchanger is heated to the temperature of the storage tank zone nearer to the collector temperature.

## STABLE LOADING IN THE STORAGE TANK

The storage unit loading stations were developed for high energy yield in the collector and to establish stable stratification in the storage tanks without an internal heat exchanger. The electronically regulated loading station considers both the solar heat available from the collector circuit and the temperature in the storage tank. Depending on their configuration, some storage unit loading stations for large solar energy systems allow large solar collector areas to be connected, achieving a high energy yield.



# STRATIFIED STORAGE UNIT LOADING FOR TWO STORAGE TANK ZONES

The storage unit loading stations achieve a high energy yield from the collector and stable stratification in the storage unit.

## BENEFITS AT THE PLANNING STAGE

- Certainty during planning and dimensioning thanks to the compact installation-ready design
- Efficient planning thanks to hydraulic design and station configuration by the manufacturer
- Can be combined with a wide variety of heat generator and storage systems
- The compact design makes planning easier
- Costs can be kept under control during planning thanks to a clear, pre-configured component specification
- Enables the planner to position himself as an innovator


## BENEFITS AT THE INSTALLATION STAGE

- Less time required to install, commission and maintain the system
- Increased sales
- Service and guarantee from a single source
- Reliable operation thanks to high quality components
- Compact design means that less space is required for installation
- Easy to provide evidence of energy yield
- Satisfied customers
- Enables the fitter to position himself as an innovator

### TacoSol Load storage loading station

Solar station and loading module (system separation) in one:

- Connection-ready storage loading stations with integrated system separation for loading one or two storage tank or domestic water storage heating units by means of a solar thermal energy system
- Maximum solar yield and efficient operation thanks to sensor technology
- Ideally complements the TacoTherm Fresh centralized heat interface units

Product photo	Series	Heat output * <sup>1)</sup>	Collector surface * <sup>2)</sup>	Comments
	Mega	12.5 kW	Approx. 25 m <sup>2</sup>	<ul style="list-style-type: none"> <li>▪ Solar station with permanent automatic venting</li> <li>▪ External heat exchanger for loading a storage tank at one or two levels</li> </ul>

\*<sup>1)</sup> according to VDI 6002

\*<sup>2)</sup> depends on overall pressure loss of solar circuit including collector

# TACOSOL LOAD MEGA

## STORAGE LOADING STATION



Connection-ready storage loading station with high-efficiency pumps for efficient thermal transfer of solar energy to one or two storage tanks

### DESCRIPTION

The TacoSol Load Mega storage loading station performs the zone-based loading of one storage tank or loading of two storage tanks via a thermal solar installation according to the available flow temperature.

### INSTALLATION

The station is fully preassembled, connection-ready and can be fitted directly to the storage tank or to the wall. Only the storage and collector sensors as well as the ventilating safety unit have to be assembled.

### OPERATION

The TacoSol Load Mega is a compact loading station equipped with EPP design insulation for loading one or two storage tanks by means of a solar system.

The solar energy recovered is transferred via a high-efficiency stainless steel plate heat exchanger to the storage tank(s). By controlling the speed of the primary and also the secondary pump, the integrated controller ensures the optimal conditions are in place for achieving the best possible solar yield.

### ADVANTAGES

- Maximum solar yield from the roof to the storage tanks owing to high-quality stainless steel plate heat exchanger
- Zone-based loading of one storage tank or loading of two storage tanks
- Speed control of the primary and also secondary pump for optimal temperature differentiation
- Stable stratified loading in the storage tank
- TacoControl Tronic for recording the primary return temperature and the primary flow rate
- Maximum energy efficiency, for example for generating fresh hot water with the TacoTherm Fresh fresh water stations

The parameters required for this purpose for the TacoSol Load Mega L with switching valve are determined, for example, by means of TacoControl Tronic. The controller regulates the three-way switching valve to operate either storage inflow 1 or 2. This ensure optimal loading of one or more storage tanks.

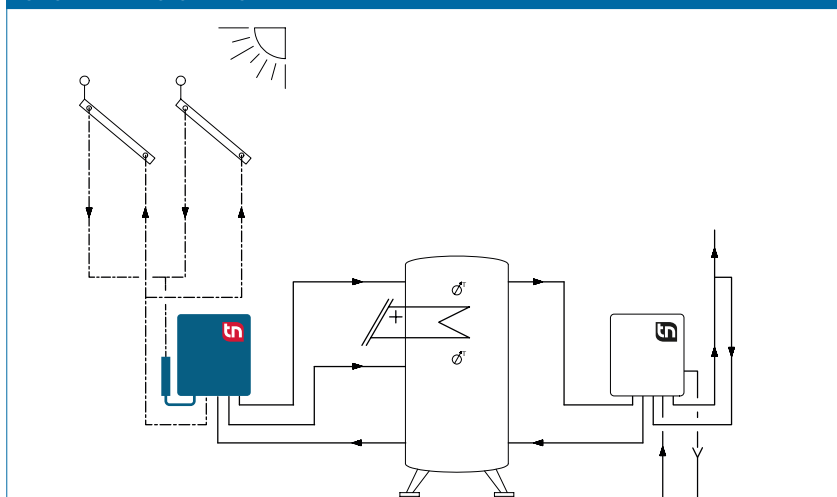
### BUILDING CATEGORIES

- Single family homes, multiple dwelling units
- Hotels and restaurants
- School buildings and sports facilities
- Industrial buildings and systems

### EXPANSION OPTION

The TacoTherm Fresh fresh water stations ideally complement the innovative TacoSol Load Mega zone-based storage loading system. They are used for hygienic fresh water preparation.

### SYSTEM/BASIC DIAGRAM



## SPECIFICATION TEXT

See [www.taconova.com](http://www.taconova.com)

## TECHNICAL DATA

### General

- Controller with display
- Weight (empty): approx. 12 kg
- Overall dimensions (incl. hood):  
W 698.5 mm × H 636 mm × D 181 mm

### Material

- Designer hood made from EPP
- Pumps: Cast iron
- Valve housing: Brass
- Pipes: Stainless steel 1.4404
- Plate heat exchanger:  
Stainless steel
- Plates and connector pieces:  
Stainless steel 1.4401
- Solder: 99.99 % copper
- Seals: AFM34 (flat sealing)

### Primary side

- Operating temperature  $T_{0 \max}$ :
  - Flow: 110 °C, briefly (2h): 140 °C
  - Return: 95 °C
- Max. operating pressure  $P_{0 \max}$ : 6 bar
- Primary pump:  
WILO Yonos Para ST 15/7.5
- Ventilator group with integrated  
shutoff, filling, purging and drainage  
facility
- Safety valve 6 bar
- TacoControl Tronic measurement  
range: 2 – 40 l/min

### Secondary side

- Operating temperature  $T_{0 \max}$ : 110 °C
- Max. operating pressure  $P_{0 \max}$ : 3 bar
- Secondary pump: WIL0 Yonos Para ST 15/7.5
- Zone switching valve

### Performance data

- See design diagram

### Electrical connection data

- Mains voltage: 230 VAC ± 10 %
- Mains frequency: 50...60 Hz
- Power consumption of station:  
max. 130 W
- Power consumption of pump:  
solpump: 4-75 W
- Power consumption of pump in  
standby mode: 0.8 W
- Fuse 2 AT
- Protection type: IP 40

### Flow media

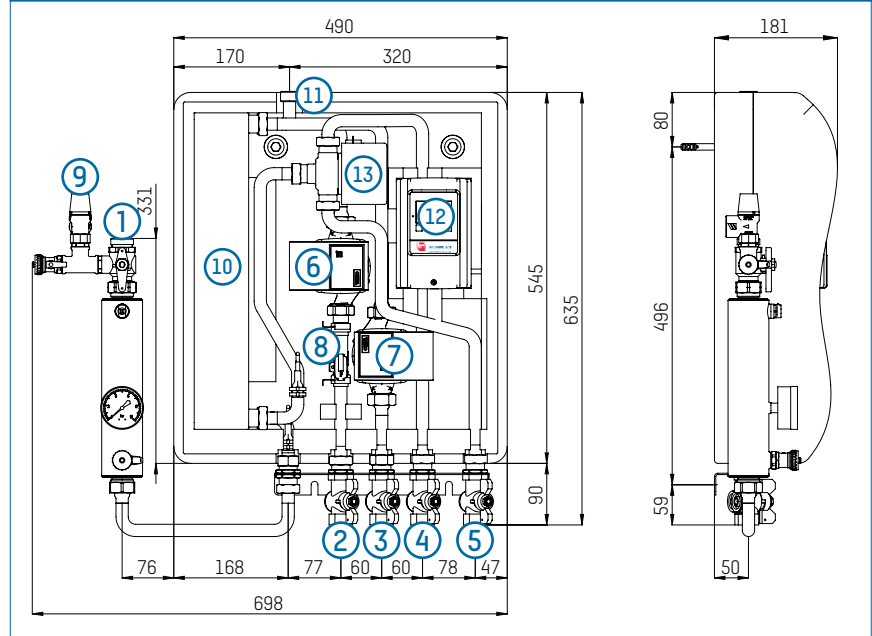
- Heating water  
(VDI 2035; SWKI BT 102-01;  
ÖNORM H 5195-1)
- Typical glycol mixtures up to 40%

## TYPE OVERVIEW

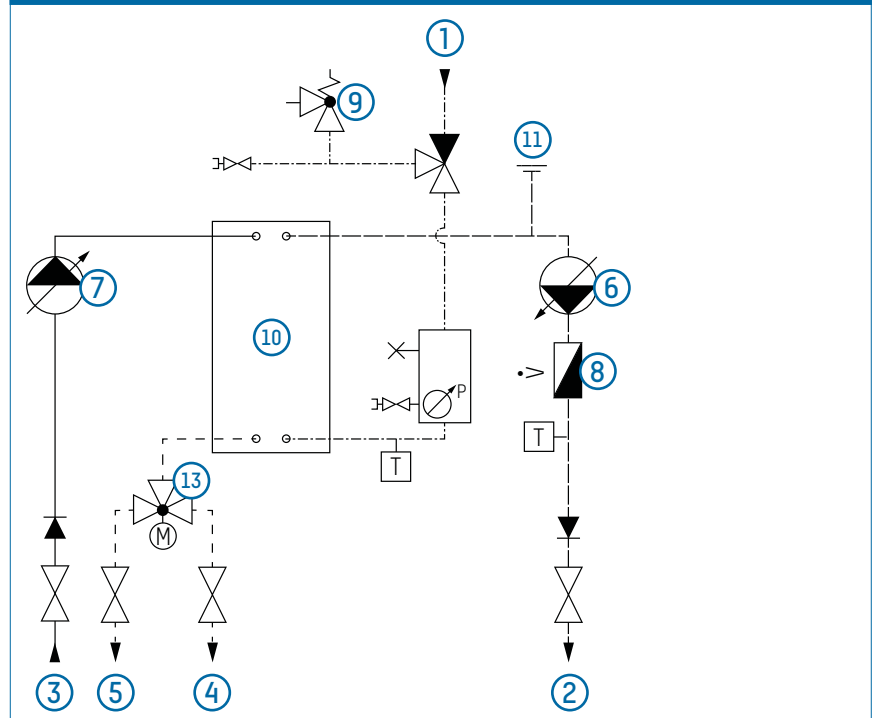
### TacoSol Load Mega | Storage loading station

Order no.	Rp	Version	Version
271.5512.000B	¾" IG	L	with switching valve
271.5511.000	¾" IG		without switching valve

## DIMENSIONAL DRAWING



## HYDRAULIC DIAGRAM



- |  |  |
|--|--|
| 1 Primary – solar flow                                       | 7 Secondary storage loading pump         |
| 2 Primary – solar return                                     | 8 Flow rate sensor                       |
| 3 Secondary – storage return                                 | 9 Solar safety valve                     |
| 4 Secondary – storage flow 1                                 | 10 Heat exchanger                        |
| 5 Secondary – storage flow 2<br>(optional zu Umschaltventil) | 11 Connection of expansion vessel        |
| 6 Primary solar pump   | 12 Regulator                             |
|  | 13 Switching valve (TacoSol Load Mega L) |

## CHARACTERISTIC OF PLATE HEAT EXCHANGER

### BASICS

Calculation values 500 [W/m²]

### LEGEND / EXPLANATION

$\Delta T$	<5K	Efficient operation
$\Delta T$	5-7K	Reduced yield
$\Delta T$	>7K	Considerably reduced yield

### AVERAGE LOG TEMP DIFFERENCE [LOG DELTA T]

Spec. flow rate  
[l/(h·m²)]

10

25

35

50

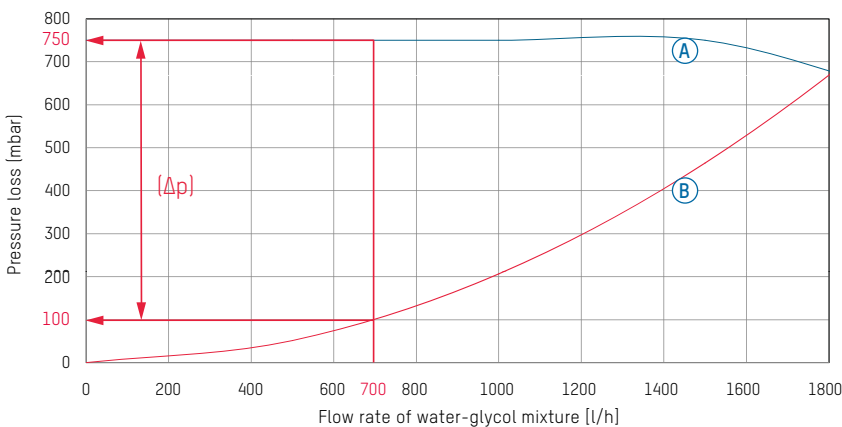
Collector surface (m²)

5	10	15	20
7.6	8.4	8.5	9.5
3.6	4.3	5.5	6.0
2.8	4.2	4.5	5.0
2.2	3.4	3.7	4.0

## FLOW AND PRESSURE LOSS DIAGRAMS

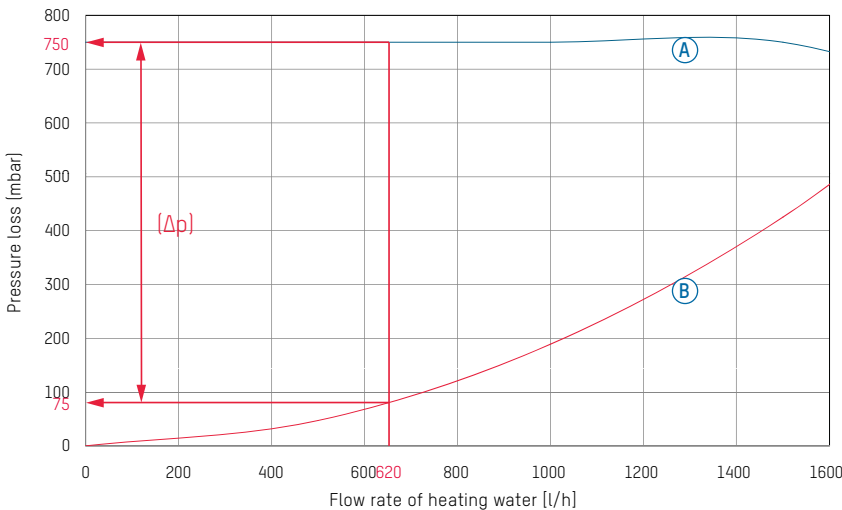
### A) Pump characteristic

System characteristic primary side



### B) Pump characteristic

System characteristic secondary side



A Pump characteristic | B System characteristic

## EXAMPLE OF INTERPRETING THE DIAGRAMS

### Given

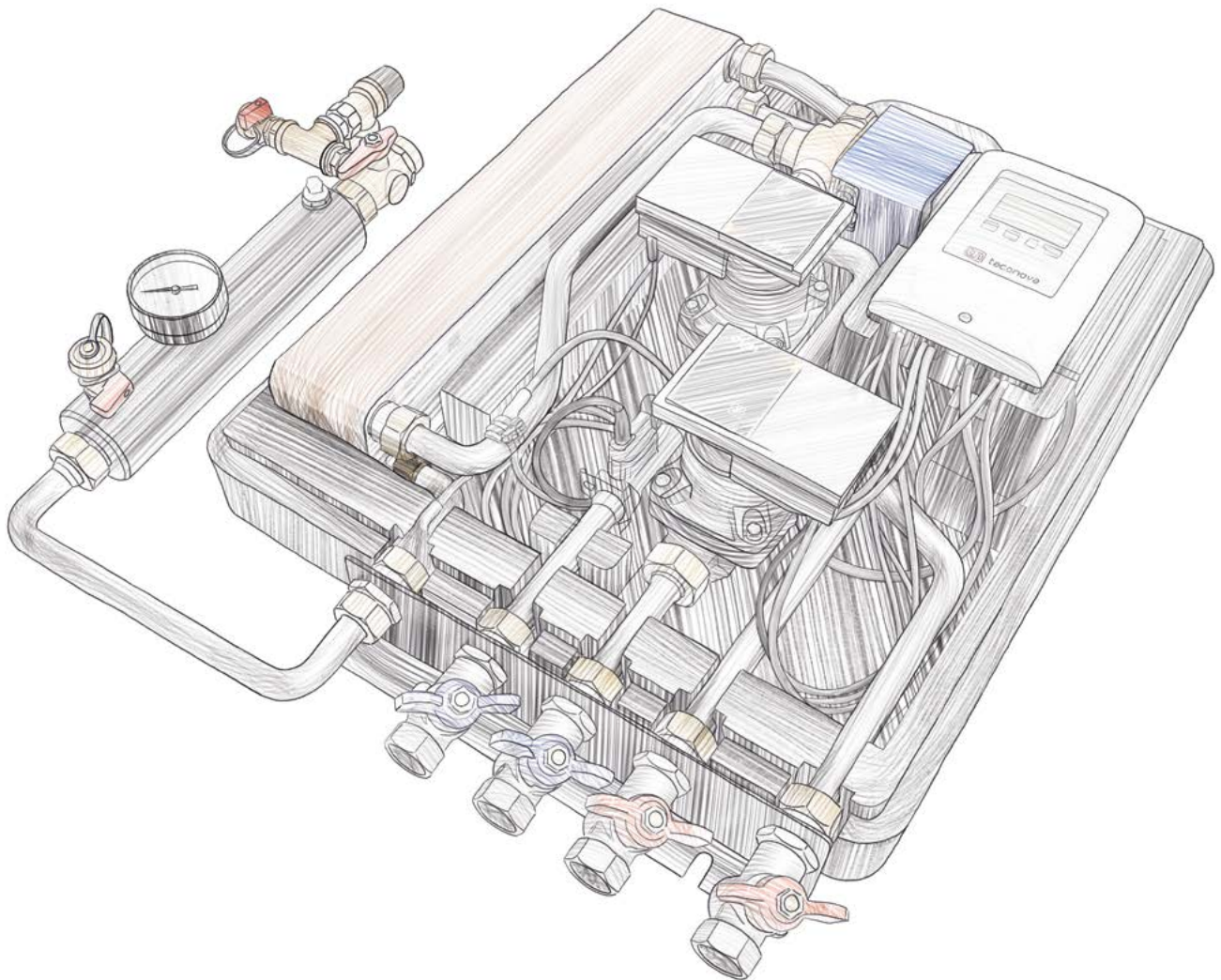
- Collector surface: 20 m²
- Output: 12.5 kW
- Average log temp difference: 5.0
- Spec. flow rate 35 l/h × m²

### Sought

- Residual pump head primary circuit
- Residual pump head secondary circuit

### Approach

- The primary flow rate of 700 l/h is calculated based on: Collector surface × Specific flow rate
- In Diagram A) the primary pressure loss at the intersection point of the system characteristic is 100 mbar.
- The residual pump head is 750 mbar. Discounting the pressure loss this gives rise to a residual pump head of 650 mbar (Δp).
- In Diagram B) the primary flow rate is 620 l/h. The difference between the flow rates is based on the different thermal capacities of the heating water on the secondary side and the ethylene-glycol mixture on the primary side.
- The secondary pressure loss at the intersection of the system characteristic is 75 mbar.
- The residual pump head is 750 mbar. Discounting the pressure loss this gives rise to a residual pump head of 670 mbar (Δp).



# EFFICIENT AND SAFE USE OF REGENERATIVE ENERGIES

Safety and efficiency are the key criteria when installing and operating solar thermal energy systems.

## EFFICIENT OPERATION OF THE SOLAR THERMAL SYSTEM

When used in conjunction with conventional heating systems, regenerative energy systems secure the thermal energy requirements of buildings. Special requirements apply when integrating solar thermal systems. In addition to intrinsically safe operation, the efficient transfer of solar heat from the collector to the thermal storage station is an important criterion.

The efficient operation of the solar thermal system largely depends on the system being correctly ventilated and the performance-specific adjustment of volume flow.

## INTRINSIC SAFETY OF SOLAR THERMAL SYSTEMS

Solar stations link the collector circuit to the solar storage tank. The most important functions are pumping, regulating and ventilating in order to ensure safe and efficient operation of the system under all operating conditions.

Thus, the function of a solar station is not just to circulate the solar fluid, but also:

Demand-driven volume flow regulation

- to protect against circulatory malfunctions
- to protect the components from overpressure
- to monitor the temperature
- to separate the air

In addition, the solar station makes it easier to perform maintenance tasks when filling and emptying the various circuits by means of the integral multifunctional valves.

## PROTECTION AGAINST STEAM AND CAVITATION

One of the design features of the TacoSol Circ solar station is the connection for the solar expansion vessel on the intake side in front of the pump. This prevents a negative operating pressure (underpressure) from building up in front of the pump, thus ensuring that the expansion vessel and circulating pump are protected from cavitation.

## AUTOMATIC AIR SEPARATION

It is necessary to ventilate the solar circuit after it is first filled and during ongoing operation. Air pockets impair the operation of the system, reduce solar yield and also cause the solar fluid to age prematurely.

The TacoSol Circ solar station has an integrated ventilating flask with built-in manometer, the innovative design of which ensures automatic air separation both when filling the system and during ongoing operation. This makes it possible to ventilate and check the pressure of the solar circuit directly at the station. This saves time when commissioning and maintaining the solar station.

## VALVE AND PUMP GROUP FOR THE INTRINSICALLY SAFE OPERATION OF SOLAR STATIONS

As a compact, preassembled valve group, the TacoSol Circ solar station brings together the most important regulating and safety components, such as circulating pump, safety valve, non-return valve, flow rate control, ventilating flask, manometer and thermometer.

# SAFE USE OF SOLAR ENERGY

The pre-assembled, pre-configured components in the solar stations make it easier to plan, install and efficiently operate the solar thermal energy system.

## BENEFITS AT THE PLANNING STAGE

- Certainty during planning and dimensioning thanks to pre-assembled main components
- Efficient planning thanks to hydraulic pre-dimensioning and station configuration
- Costs can be kept under control during planning thanks to preconfigured stations and clear component specification
- The compact design makes planning easier
- Enables the planner to position himself as an innovator



## BENEFITS AT THE INSTALLATION STAGE

- Less time required to install, commission and maintain the system
- Increased sales
- Service and guarantee from a single source
- Reliable operation thanks to high quality components
- Compact design means that less space is required for installation
- Easy to provide evidence of energy yield
- Satisfied customers
- Enables the fitter to position himself as an innovator

### TacoSol Circ Solar stations

Connection-ready, fully assembled pump groups for direct installation in the solar circuit of solar power systems.

- Hydraulic balancing and flow measurement and control can be carried out directly on the solar station in all versions
- Permanent, automatic air separation in the integrated ventilating flask (mounted on intake side upstream of the pump on the expansion vessel connection)

Product photo	Station / Type	Version	Circulating pump type	Comments
	TacoSol Circ ER HE	Single-line	High-efficiency pump	▪ Available with or without safety subassembly
	TacoSol Circ ZR HE	Two-line	High-efficiency pump	▪ Available with cover plate or support for controller



# TACOSOL CIRC ER HE

## SINGLE LINE SOLAR STATION



Pump assembly with high-efficiency pumps, balancing valve and optional safety subassembly for solar heating energy systems.

### DESCRIPTION

Hydraulic balancing and flow measurement can be carried out directly on the station in the case of the TacoSol Circ ER HE solar station. The integrated TacoSetter Inline 130 allows the volume flow in the primary circuit to be precisely and conveniently adjusted and checked. Systems that are correctly balanced hydraulically ensure optimal energy transfer from the collector panel to the heat storage unit and therefore allow economical operation of the solar system.

Using scales that are pre-calibrated for inhibitors, specialists locally can adjust and check the flow values. Training and costly measuring devices are no longer needed.

### INSTALLATION POSITION

The solar station must be installed vertically. The installation can be carried out by a single installer.

### ADVANTAGES

#### Compact

- Equipped with all the necessary valves and components

#### Simple

- Hydraulic balancing and functional checking of the system with TacoSetter Inline 130
- Pump can be changed with ease as it is lockable on the intake and output sides
- Simple filling, draining and servicing of the system owing to multifunctional ball valve

#### Efficient

- Highly efficient system operation owing to permanent air separation with use of HE pumps

#### Flexible

- Flexibility thanks to the option of integrating control systems

### OPERATION

In combination with a solar controller, the solar station transports the solar liquid heated in the collector to the hot water/drinking water storage tank via a heat exchanger.

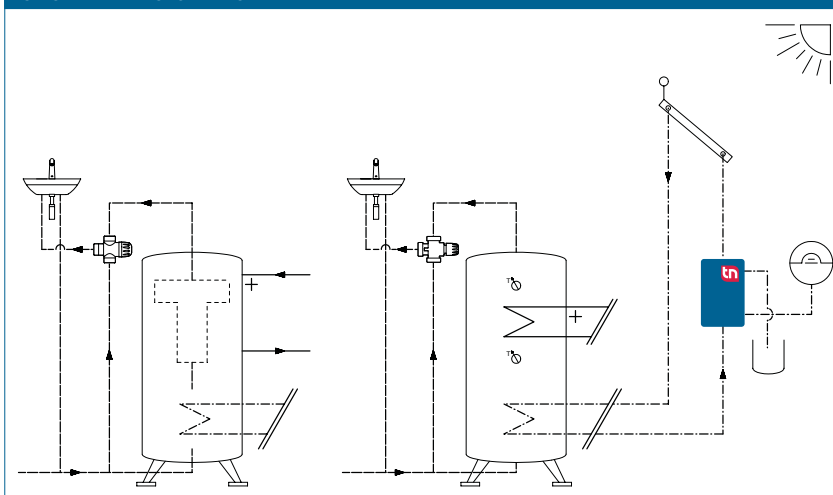
The integrated TacoSetter Inline 130 balancing valve enables the volume flow to be adjusted to the performance of the collector or heat exchanger and checked.

The flow measurement of this balancing valve is based on the principle of a float. The regulating screw on the flow meter is used to adjust the flow. The reading position is the lower edge of the float element.

### BUILDING CATEGORIES

- Apartments, apartment blocks
- Single family homes, housing estates
- Multiple dwelling units

### SYSTEM/BASIC DIAGRAM





## SPECIFICATION TEXT

See [www.taconova.com](http://www.taconova.com)

## TECHNICAL DATA

### General

- Max. operating temp.  $T_{0 \max}$ : 110 °C
- Max. operating pressure  $P_{0 \max}$ : 6 bar
- Safety valve: 6 bar
- $k_{VS}$  value and measurement range according to „Type overview“ table
- Thread according to DIN 2999/ISO 7 and ISO 228
- Measuring accuracy  $\pm 10\%$  of the final value
- Solar circuit pump: TacoFlow3 GenS Solar 15-85/130 C3 AS N

### Material

- Valve housing: Brass
- Internal parts: Stainless steel, brass, plastic; borosilicate (sight glass)
- O-ring seals: FKM
- Flat seals: AFM34
- Insulation: EPP

### Electric connection data

- TacoFlow3 GenS Solar 15-80/130
  - Mains voltage: 230 VAC  $\pm 10\%$
  - Mains frequency: 50/60 Hz
  - Power consumption:
    - Speed P1 [W] min. 3 // max. 50
    - II/1 [A] min 0.05 max. 0.44
  - Protection class: IPX4D
  - EEL  $\leq 0.20$

### Fluids

- Water and proprietary additives used against corrosion and freezing up to 40% (display scale for medium viscosity  $\nu = 2,3 \text{ mm}^2/\text{s}$ )
- Heating water (VDI 2035; SWKI BT 102-01; ÖNORM H 5195-1)

## TYPE OVERVIEW

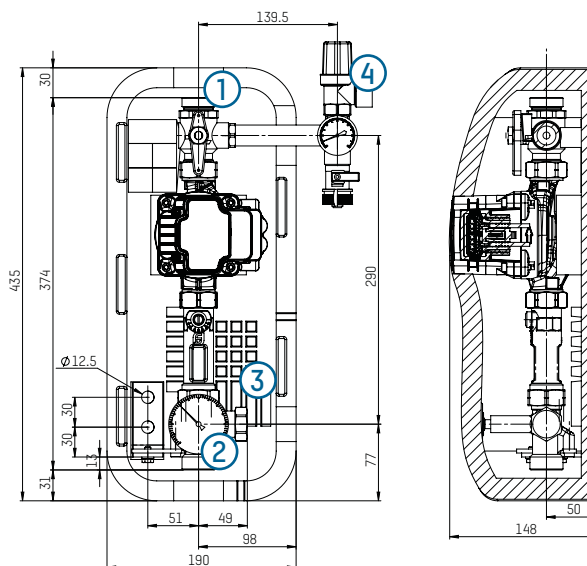
TacoSol Circ ER HE | Single line design with safety subassembly with high-efficiency circulating pump

Order no.	$k_{VS}$ <sup>1)</sup>	Measuring range <sup>2)</sup>
270.2006.345	1.5	1,5 – 6,0 l/min
270.2016.345	3.3	4,0 – 16,0 l/min
270.2028.345	3.5	8,0 – 28,0 l/min

<sup>1)</sup>  $k_{VS}$  [m³/h] at  $\nu = 1 \text{ mm}^2/\text{s}$

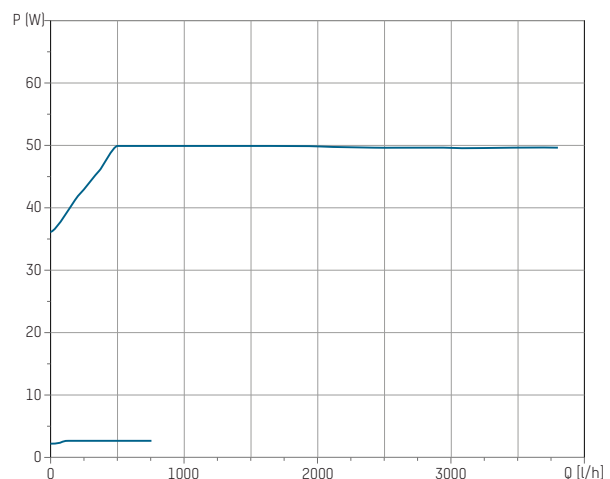
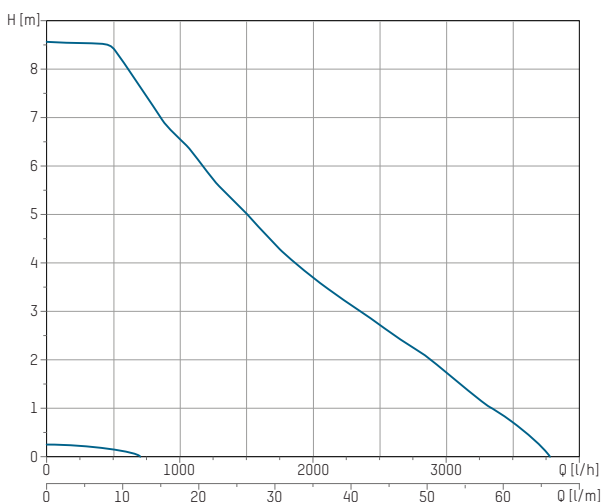
<sup>2)</sup> Reading scale for water-glycol mix with  $\nu = 2,3 \text{ mm}^2/\text{s}$

## DIMENSIONAL DRAWING



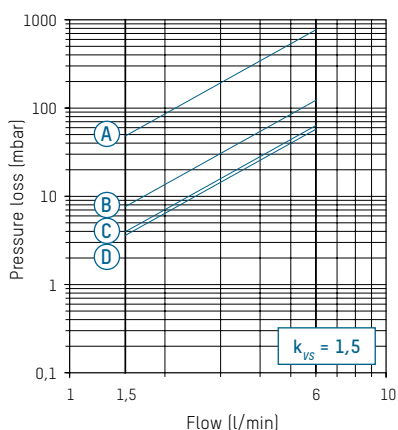
- 1 Connection of collector return (AG ISO 228, G 1" flat sealing and cutting ring)
- 2 Connection of storage return (AG ISO 228, G 1" flat sealing and cutting ring)
- 3 Connection of expansion vessel (AG ISO 228, G ¾" flat sealing and cutting ring)
- 4 Connection of safety valve drainage line (IG DIN 2999 / ISO 7, Rp ¾")

## PUMP CHARACTERISTIC

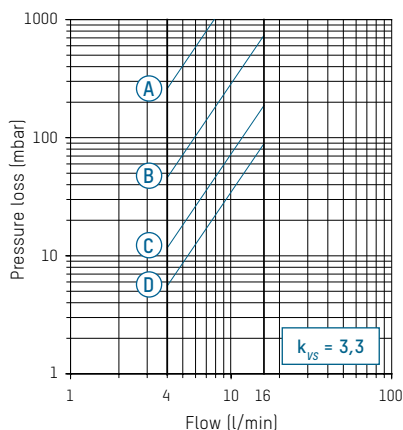


## PRESSURE LOSS DIAGRAMS

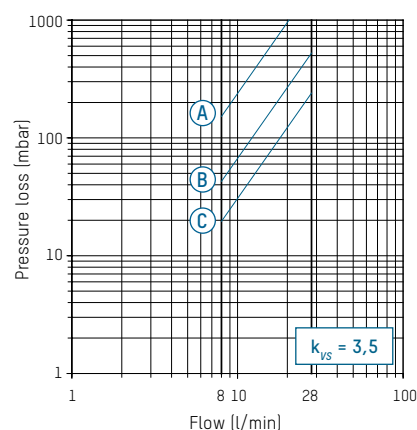
270.X006.XXX (DN 20 | 1" | 1,5...6 l/min)



270.X016.XXX (DN 20 | 1" | 4...16 l/min)



270.X028.XXX (DN 20 | 1" | 8...28 l/min)



A – D Return characteristics of valve position for TacoSetter Inline 130

## ACCESSORIES



### FILL AND DRAIN COCK 3WAY CONNECTOR

For connection to the expansion vessel connector piece, consisting of a T- joint with fill and drain cock, lock nut with G  $\frac{3}{4}$ " internal thread with flat seal suitable for solar technology, G  $\frac{3}{4}$ " outer thread connector.

Order no.	DN	G
296.7001.354	20	$\frac{3}{4}$ "



### EXPANSION VESSEL MOUNTING BRACKET WITH QUICK ACTION COUPLING

For mounting the expansion vessel on the wall with quick-action shut-off coupling 1 x internal thread, 1 x external thread G  $\frac{3}{4}$ ".

Order no.	DN	G
296.7002.000	20	$\frac{3}{4}$ "



### STAINLESS STEEL TUBE

For connecting the expansion vessel, incl.  $\frac{3}{4}$ " lock nut and flat seals suitable for solar technology.

Order no.	DN	G	Length
296.7003.000	20	$\frac{3}{4}$ "	0,5 m



### SOLAR CONTROLLER SOREL

Order no.	Type	Info
296.7016.000	TDC 4	Complex solar systems and high efficiency pumps

# TACOSOL CIRC ZR HE

## TWO-LINE SOLAR STATION



Two-line pump assembly with high-efficiency pumps, balancing valve, ventilation unit and safety subassembly for solar heating energy systems

### DESCRIPTION

Hydraulic balancing, flow measurement and ventilation can be carried out directly on the station in the case of the TacoSol Circ ZR HE solar station. The integrated TacoSetter Inline 130 allows the volume flow in the primary circuit to be precisely and conveniently adjusted and checked. Permanent air separation in the integrated ventilating flask allows energy-efficient operation of the system. Systems that are correctly balanced hydraulically and air-free guarantee optimal energy extraction and are thus more cost-effective in the sense of the energy-saving directives laid down by law.

Using scales that are pre-calibrated for inhibitors, specialists locally can adjust and check the flow values. Training and costly measuring devices are no longer needed.

### INSTALLATION POSITION

The solar station must be installed vertically to ensure that the ventilation unit functions correctly. Installation and ventilation can be performed by a single installer.

### ADVANTAGES

- **Compact:** Equipped with all the necessary valves and components
- **Secure:** Intrinsic safety of the system thanks to an integrated safety subassembly
- **Simple:** Hydraulic balancing and functional checking of the system with TacoSetter Inline 130. Pump can be changed with ease as it lockable on the intake and output sides
- **Efficient:** Highly efficient system operation owing to permanent air separation and use of high-efficiency pumps
- **Flexible:** Flexibility thanks to the option of integrating control systems

### OPERATION

In combination with a solar controller, the solar liquid heated in the collector is transported to the hot water/drinking water storage tank via a heat exchanger with the help of the solar station.

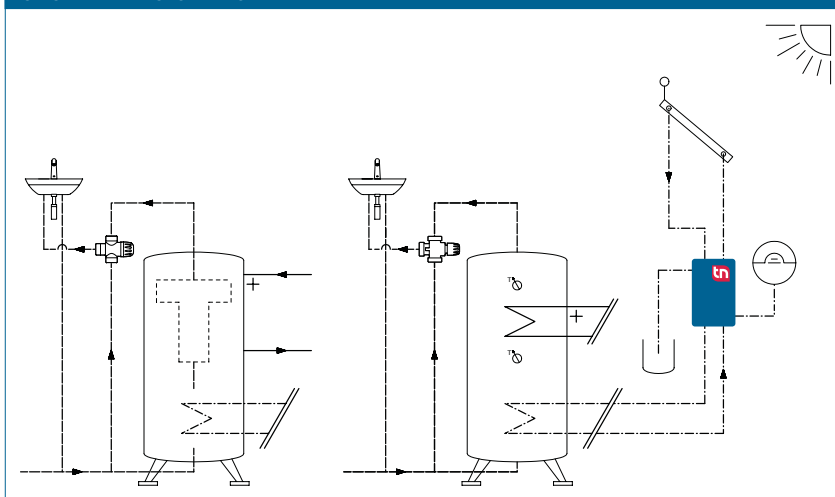
The integrated TacoSetter Inline 130 balancing valve enables the volume flow to be adjusted to the performance of the collector or heat exchanger and checked. The flow measurement of this balancing valve is based on the principle of a float. The regulating screw on the flow meter is used to adjust the flow. The reading position is the lower edge of the float element.

The integrated ventilating flask with innovative flow technology design ensures permanent air separation and thereby increases the efficiency of the system.

### BUILDING CATEGORIES

- Apartments, apartment blocks
- Single family homes, housing estates
- Multiple dwelling units

### SYSTEM/BASIC DIAGRAM



## SPECIFICATION TEXT

See [www.taconova.com](http://www.taconova.com)

## TECHNICAL DATA

### General

- Maximal operating temperatures:
  - Flow line (ventilator side)  $T_{0\text{ max}}$ : 150 °C
  - Return line (pump side)  $T_{0\text{ max}}$ : 110 °C
- Max. operating pressure  $P_{0\text{ max}}$ : 6 bar
- Safety valve: 6 bar
- $k_{VS}$  value and measurement range according to „Type overview“ table
- Thread according to DIN 2999/ISO 7 and ISO 228
- Measuring accuracy  $\pm 10\%$  of the final value

### Material

- Vent pipe: Painted steel
- Valve housing parts: Brass
- Internal parts: Stainless steel, brass and plastic, borosilicate (sight glass)
- O-ring seals: FKM
- Flat seals: AFM34
- Insulation: EPP

### Electric connection data

- TacoFlow3 GenS Solar 15-85/130 C3 AS N:
  - Mains voltage: 230 VAC  $\pm 10\%$
  - Mains frequency: 50/60 Hz
  - Power consumption:
    - Speed P1 [W] min. 3 // max. 50
    - I1/I [A] min 0.05 max. 70 0.44
  - Protection class: IPX4D
  - EEL  $\leq 0.20$

### Fluids

- Water and proprietary additives used against corrosion and freezing up to 40% (display scale for medium viscosity  $\nu = 2,3\text{ mm}^2/\text{s}$ )
- Heating water (VDI 2035; SWKI BT 102-01; ÖNORM H 5195-1)

## TYPE OVERVIEW

### TacoSol Circ ZR HE | Two-line design with high-efficiency pump

Version with carrier for controller

Order no.	$k_{VS}^{1)}$	$k_{VS}^{2)}$	Measuring range <sup>3)</sup>
270.2506.356	1,5	6,0	1,5 – 6,0 l/min
270.2516.356	3,3	6,0	4,0 – 16,0 l/min
270.2528.356	3,5	6,0	8,0 – 28,0 l/min

### TacoSol Circ ZR HE | Two-line design with high-efficiency pump

Version with cover plate

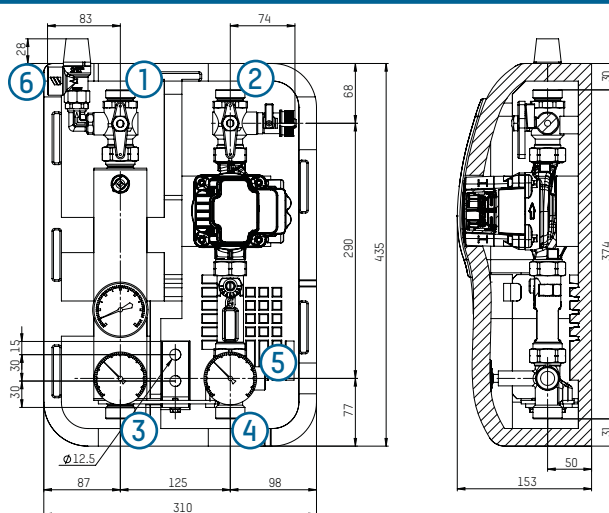
Order no.	$k_{VS}^{1)}$	$k_{VS}^{2)}$	Measuring range <sup>3)</sup>
270.2506.000	1,5	6,0	1,5 – 6,0 l/min
270.2516.000	3,3	6,0	4,0 – 16,0 l/min
270.2528.000	3,5	6,0	8,0 – 28,0 l/min

<sup>1)</sup>  $k_{VS}$  [m³/h] at  $\nu = 1\text{ mm}^2/\text{s}$  in the return line (pump side)

<sup>2)</sup>  $k_{VS}$  [m³/h] at  $\nu = 1\text{ mm}^2/\text{s}$  in the flow line (ventilator side)

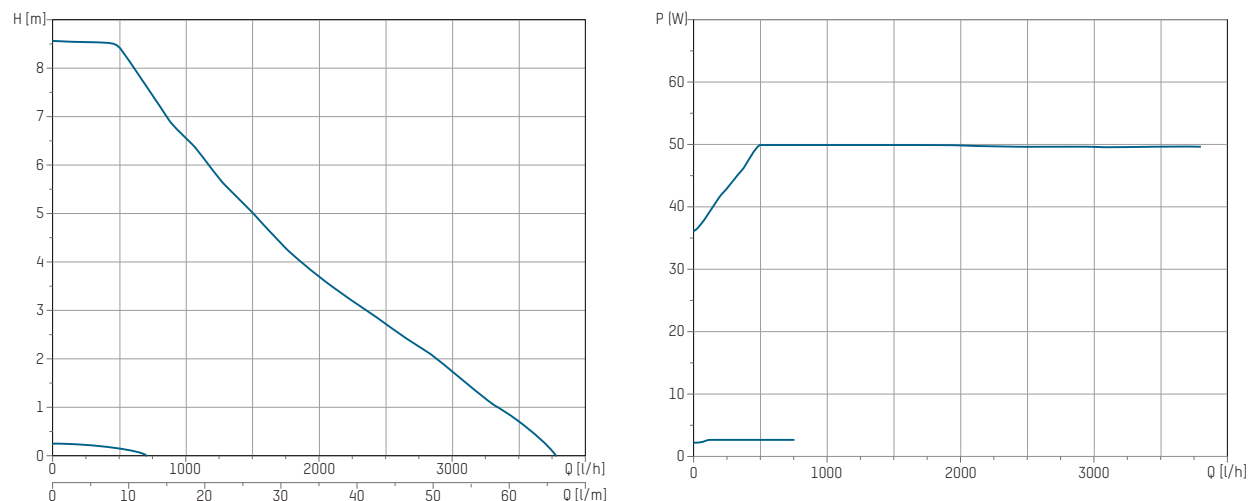
<sup>3)</sup> Reading scale for water-glycol mix with  $\nu = 2,3\text{ mm}^2/\text{s}$

## DIMENSIONAL DRAWING



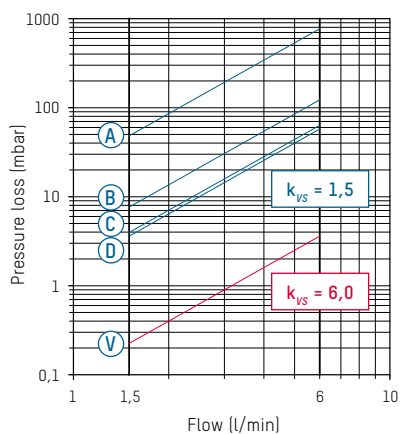
- 1 Connection of collector flow (AG ISO 228, G 1" flat sealing and cutting ring)
- 2 Connection of collector return (AG ISO 228, G 1" flat sealing and cutting ring)
- 3 Connection of storage flow (AG ISO 228, G 1" flat sealing and cutting ring)
- 4 Connection of storage return (AG ISO 228, G 1" flat sealing and cutting ring)
- 5 Connection of expansion vessel (AG ISO 228, G ¾" flat sealing and cutting ring)
- 6 Connection of safety valve drainage line (IG DIN 2999 / ISO 7, Rp ¾")

## PUMP CHARACTERISTIC

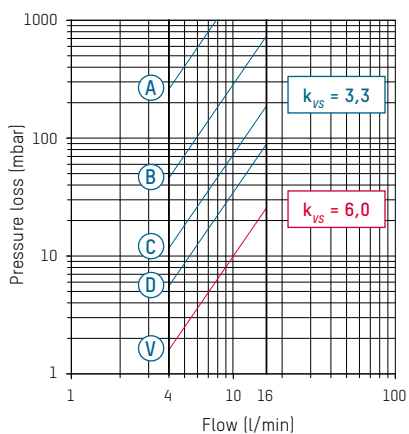


## PRESSURE LOSS DIAGRAMS

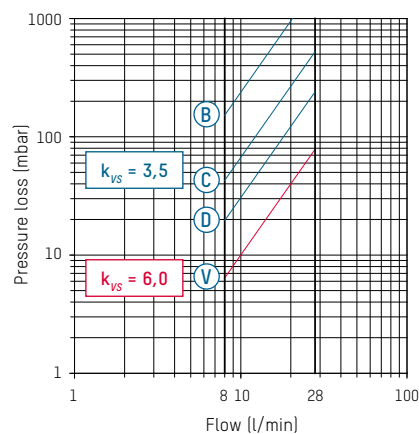
270.X506.XXX (DN 20 | 1" | 1,5...6 l/min)



270.X516.XXX (DN 20 | 1" | 4...16 l/min)

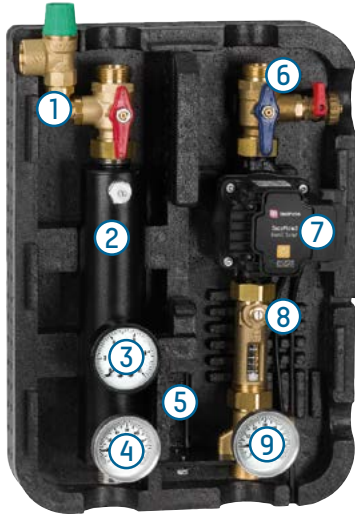


270.X528.XXX (DN 20 | 1" | 8...28 l/min)



A – D Return characteristics of valve position for TacoSetter Inline 130  
 V Flow characteristic (vent line)

## COMPONENTS



### 1 Shutoff ball valve with safety valve and integrated backflow preventer

- Integrated backflow preventer and check valve
- Option of lead sealing to protect against incorrect operation by the handle
- Safety valve function in each ball valve position guaranteed in accordance with safety standards

### 2 Ventilating flask with ventilating valve

- Permanent air separation
- Air collection volume 2.5 dl
- Integrated manual air vent for ventilating and checking the leak tightness

### 3 Manometer

- Display range 0-10 bar

### 4 Thermometer

- Display range 0-160 °C
- Dipping sensors installed in the safety pipe

### 5 Wall mounting

### 6 Shutoff ball valve with integrated backflow preventer as well as filling and draining valve

- Multifunctional valve for filling, draining and shutting off the collector circuit
- Hose connection outer thread G 3/4"
- Option of lead sealing to protect against incorrect operation by the handle

### 7 Circulation pump solar version

- TacoFlow3 GenS Solar 15-85/130 C3 AS N

### 8 TacoSetter Inline 130 balancing valve

- Sight glass with scale for medium viscosity of  $\approx 2.3 \text{ mm}^2/\text{s}$
- Setting ranges in accordance with design
- 1.5-6 l/min | 4-16 l/min | 8-28 l/min
- Integrated shut-off function
- Hydraulic balancing of pump group without correction curves and measuring devices
- Functional checking of system at sight glass

### 9 Thermometer

- Display range 0-160 °C
- Dipping sensors installed in the safety pipe

### Insulation and mounting accessories

- 2 hexagon wood screws 8 x 50 mm
- 2 washers
- 2 mounting pins 10 x 50 mm
- Installation instructions
- Operating and safety instructions

## ACCESSORIES



## FILL AND DRAIN COCK 3WAY CONNECTOR

For connection to the expansion vessel connector piece, consisting of a T-joint with fill and drain cock, lock nut with G  $\frac{3}{4}$ " inner thread with flat seal suitable for solar technology and G  $\frac{3}{4}$ " outer thread connector.

Order no.	DN	G
296.7001.354	20	$\frac{3}{4}$ "



## EXPANSION VESSEL MOUNTING BRACKET WITH QUICK ACTION COUPLING

For mounting the expansion vessel on the wall with quick-action shut-off coupling. 1 x inner thread, 1 x outer thread G  $\frac{3}{4}$ ".

Order no.	DN	G
296.7002.000	20	$\frac{3}{4}$ "



## STAINLESS STEEL TUBE

For connecting the expansion vessel, incl.  $\frac{3}{4}$ " lock nut and flat seals suitable for solar technology.

Order no.	DN	G	Length
296.7003.000	20	$\frac{3}{4}$ "	0,5 m



## SOLAR CONTROLLER SOREL

Order no.	Type	Application
296.7016.000	TDC 4	Version with high-efficiency pumps



## CARRIER FOR CONTROLLER

Order no.	Application
296.7020.000	TacoSol Circ ZR HE



## COVER PLATE

Order no.	Application
296.7021.000	TacoSol Circ ZR HE

# IDEAL INTERACTION BETWEEN HEAT GENERATOR AND HEAT CONSUMER

Heating circuit pump assemblies form a unit consisting of several components, making them quick and easy to install in the heating circuit.

## SPACE SAVING SUPPLY THAT ALWAYS PROVIDES THE RIGHT TEMPERATURE

The TacoHeat Mix heating circuit pump assembly can be installed on a buffer cylinder, for example, without taking up much space. In combination with a TacoSol Circ solar loading station and a TacoTherm Fresh domestic hot water station, it supplies the underfloor heating circuit manifold or radiators with the right temperature.

Products developed by Taconova are ideally matched and therefore operate perfectly with each other.

The TacoHeat Mix is also suitable for use as a link between heat generator and heat consumer, and ensures trouble-free interaction between these units.



# HEATING CIRCUIT PUMP ASSEMBLIES FOR ALL HEAT GENERATOR TYPES

Pre-assembled and pre-configured components in the heating circuit pump assembly simplify the design, installation and energy efficient operation of the heating system.

## BENEFITS AT THE PLANNING STAGE

- Peace of mind at the design and sizing stage due to pre-assembly of the main components
- Efficient design thanks to compact build
- Simplified room design due to compact build
- Positioning as an innovative designer


## BENEFITS AT THE INSTALLATION STAGE

- Save time when installing, commissioning and servicing the system
- Service and warranty from a single provider
- Reliable operation due to high quality components
- Compact build requires little space for installation

### TacoHeat heating circuit pump assemblies

Connection-ready pump assemblies for direct installation in the heating circuit of heating systems.

- Shutting off the suction and pressure sides allows easy pump replacement
- Use of a high efficiency pump

Product photo	Heating circuit pump assembly	Circulating pump type	Comments
	TacoHeat Mix	High-efficiency pump	<ul style="list-style-type: none"> <li>▪ Fully assembled with mixer motor and circulation pump</li> </ul>

# TACOHEAT MIX

## HEATING CIRCUIT PUMP ASSEMBLY



### BENEFITS

- **Compact:** All necessary valves, accessories and components are fitted
- **Simple:** Suction and pressure sides can be shut off for simple pump replacement
- **Efficient:** High efficiency pump used with  $EEL \leq 0.20$
- **Flexible:** Can be used with any heat generator

Pump assembly with mixer, actuator, high efficiency pump and shut-off ball valves with thermometer for heating circuits

### DESCRIPTION

The TacoHeat Mix pre-assembled pump assembly is suitable for heating circuits. It consists of a three-way mixer with actuator, high efficiency pump, two shut-off ball valves with integral thermometers and a non-return valve integrated into the return.

### INSTALLATION POSITION

The heating circuit pump assembly must be installed vertically so that correct ventilation can be ensured. It can be installed by one person.

### OPERATING PRINCIPLE

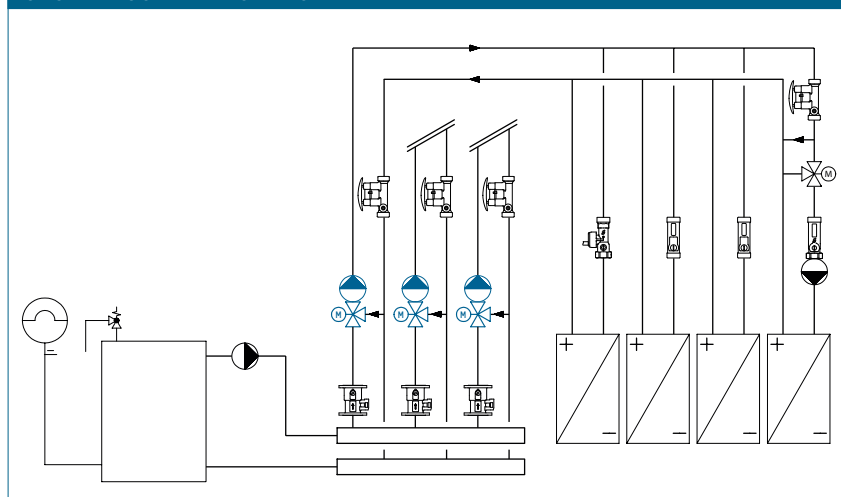
The integral three-way mixer with actuator regulates the required flow temperature to the selected set value in conjunction with the flow sensor and the consumer heating controller. The mixer has an internal bypass which ensures circulation of the return.

It reduces the high flow temperature from the heat generator down to the required level, which also results in an increase in the flow rate, as required for underfloor heating circuits. This allows the actuator to operate across the entire setting range. The high efficiency circulation pump has various operating modes which can be adjusted to suit the relevant heating circuit. The non-return valve integrated into the return prevents incorrect circulation or heat backflow.

### BUILDING CATEGORIES

- Apartments, apartment buildings
- Detached houses, estates of detached houses
- Multi family homes

### SYSTEM/SCHEMATIC DIAGRAM



## TENDER DOCUMENTATION

See [www.taconova.com](http://www.taconova.com)

## SPECIFICATION

### General

- Operating temperature  $T_{B \max}$ : 110 °C
- Operating pressure  $P_{B \max}$ : 10 bar
- $k_{vs}$  value of mixing valve: 4 m<sup>3</sup>/h
- Thread to DIN 2999/ISO 7 and ISO 228
- Recommended application area:
  - Radiator heating system: 2000 l/h x 15 K = 35 kW
  - Underfloor heating system: 2000 l/h x 7 K = 16 kW (11.6 kW at 5 K)

### Material

- Base plate: zinc-plated sheet steel
- Back panel and cover: stylish EPP insulation
- Flow:
  - Ball valve: hot-pressed brass nickel-plated
  - Circulation pump: cast iron
  - Three-way mixer: brass
  - Servomotor housing: plastic
- Return:
  - Ball valve: hot-pressed brass nickel-plated
  - Connection pipe: plastic
  - Tee for three-way mixer: brass
  - Non-return valve: plastic
- Gaskets/seals: EPDM, PTFE

### Electrical connection information

- TacoFlow2 ADAPT 15-60/130
  - Rated voltage: AC 230 V
  - Permissible voltage deviation: +10%
  - Rated frequency: 50/60 Hz
  - Power consumption:
    - Speed P1 [W] min. 3, max. 42
    - I<sub>l</sub>/I [A] min. 0.03, max. 0.33
  - Protection rating: IP 44
  - EEL ≤ 0.20
- UNI 3P rotary drive
  - Rated voltage: AC 230 V
  - Permissible voltage deviation: ± 10 %
  - Rated voltage: AC 230 V ± 10 %
  - Rated frequency: 50 Hz
  - Actuating signal: 3-point floating SPDT
  - Power consumption: 6 VA
  - Runtime: 147 s/90°
  - Torque: 15 Nm
  - Protection rating: IP 44

## SPECIFICATION (CONTINUED)

### Flow media

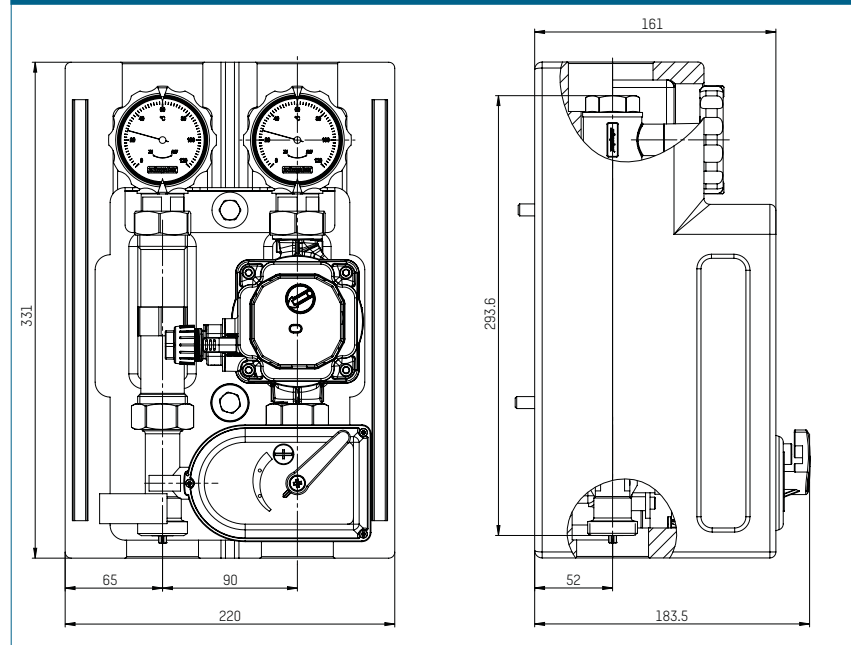
- Water and proprietary additives used against corrosion and freezing up to 30%
- Heating water (VDI 2035; SWKI BT 102-01; ÖNORM H 5195-1)

## TYPE OVERVIEW

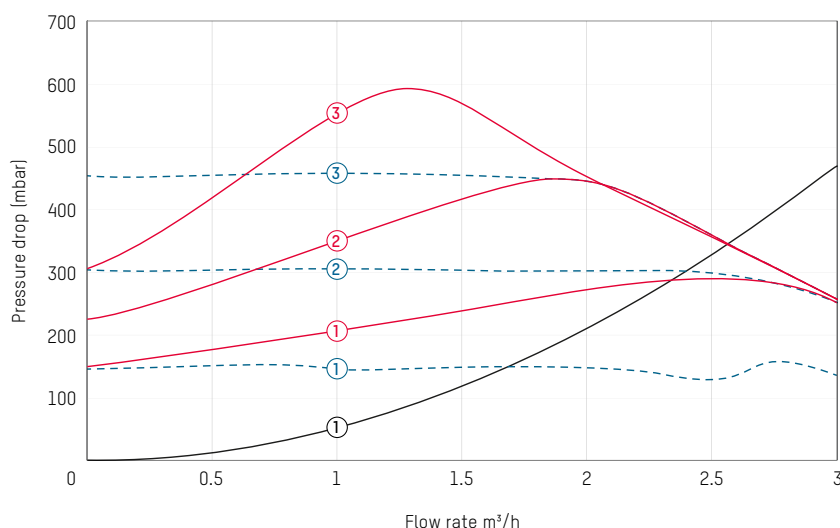
TacoHeat Mix | Heating circuit pump assembly

Part no.	Connection	Equipment level
277.2200.000	G 1" / Rp ¾"	Mixing valve, actuator and high efficiency pump

## DIMENSIONAL DRAWING



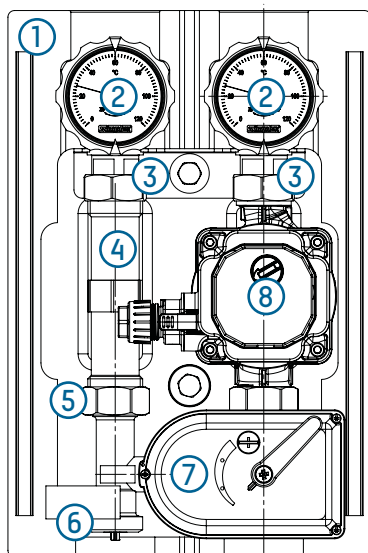
## PRESSURE DROP CHART



### Key

- 1 Constant pressure CP1
- 2 Constant pressure CP2
- 3 Constant pressure CP3
- 1 Proportional pressure PP1
- 2 Proportional pressure PP2
- 3 Proportional pressure PP3
- 1 Pressure drop with non-return valve

## COMPONENTS



### 1 Wall mounting

### 2 Ball valve with fem. connection

- 3/4" (fem. thread), DN 20 with round thermometer bezel (red for flow; blue for return)
- Thermometer Ø: 63 mm
- Indicator range: 0 – 120 °C

### 3 Adaptor fittings

- 3/4" (male thread) – union nut G 1"

### 4 Connection pipe

- 1" (male thr. - male thr.), L = 130 mm

### 5 Three-way mixer

- DN 20 with integral tee

### 6 Non-return valve

- DN 20 Neoperl

### 7 Rotary drive

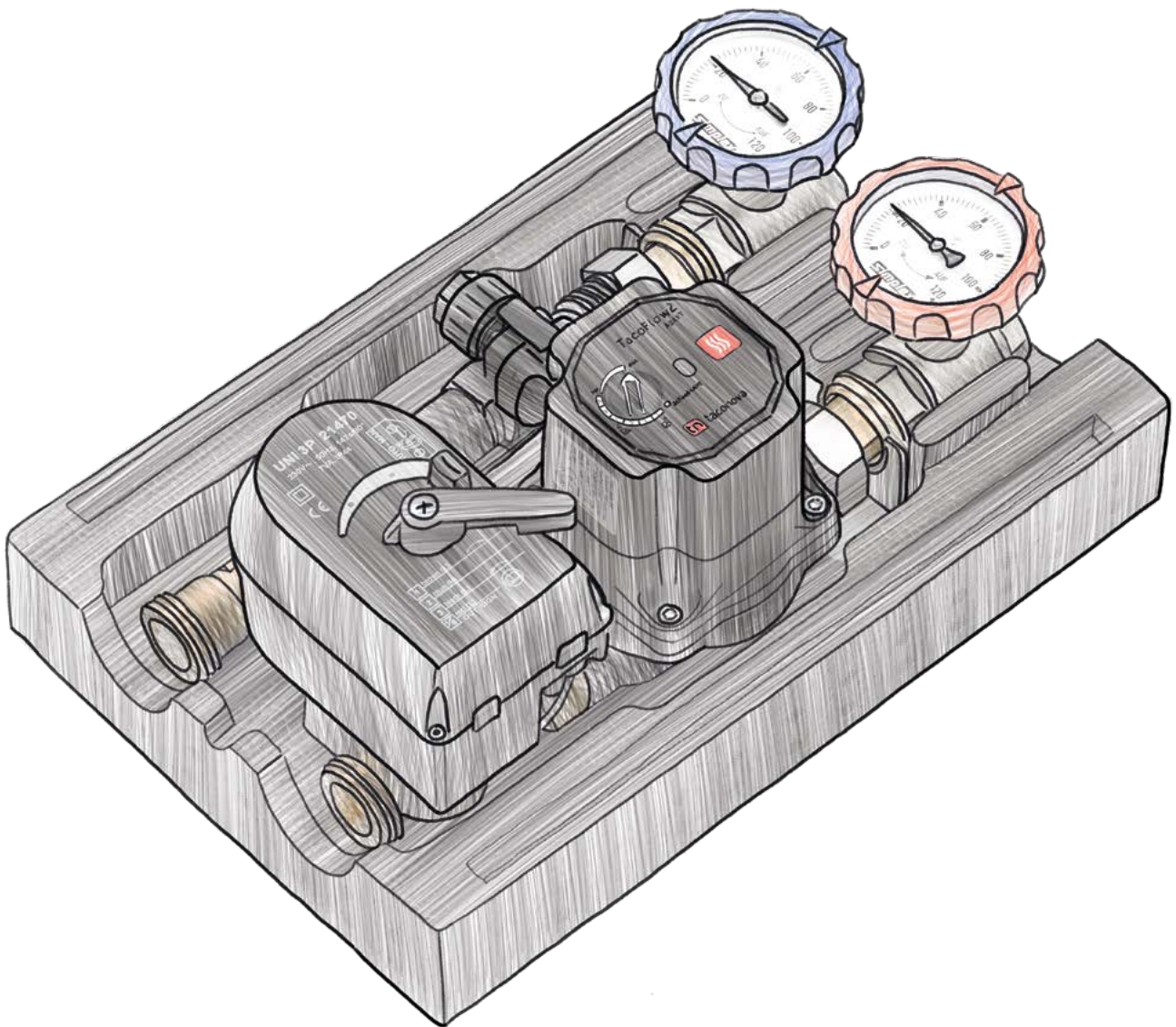
- FIRST UNI 3P 230 V

### 8 High efficiency circulation pump

- TacoFlow2 ADAPT 15-60/130, L = 130 mm

### Insulation and installation accessories

- EPDM rubber seal
- Flat gasket
- 2x M12 insulating sleeves
- Washers
- 2x M8x40 hexagon bolts
- Installation instructions
- EPP insulation for pump assembly



# EFFICIENT AND SPACE SAVING ENERGY STORAGE IN BUILDINGS

Space saving stratification cylinders with innovative fittings as an interface between heat generator and Taconova system technology products.

## **COST SAVING, CLIMATE FRIENDLY HEAT STATION**

The multi-talented TacoTherm Store system cylinders are the beating heart of any heating system. These space saving stratification cylinders featuring innovative fittings protect the climate, cut running costs and combine all the functions of a domestic heat station.

The temperature sensors can be installed at different locations for great flexibility. This means that the connected heat generators and the decentralised and centralised heat interface units can be efficiently integrated and managed.

# SYSTEM CYLINDERS FOR ALL OUTPUT REQUIREMENTS

Innovative fittings together with options for connecting to system cylinders simplify the planning, installation and energy efficient operation of the heating system.

## BENEFITS AT THE PLANNING STAGE

- Peace of mind when planning and sizing due to the Taconova system guarantee
- Efficient planning thanks to compact design and wide range of applications
- Simplified room planning on account of compact design
- Positioning as an innovative specifier


## BENEFITS AT THE INSTALLATION STAGE

- Save time on system installation, commissioning and maintenance
- Service and guarantee from one source
- Efficient operation thanks to innovative fittings and high quality insulation
- Minimal space requirement for installation due to compact design

### TacoTherm Store system buffer cylinders

High performance buffer cylinders as an interface between heat generator and Taconova system technology products..

- Efficient stratification and re-stratification as well as utilisation of the heating energy through layer separating plate and layer loading unit
- Sleeve connections to protect the connection threads
- Additional sleeve for the installation of an E-cartridge
- Integrated sensor core tube for optimum sensor placement

Product photo	Type	Diameter	Comments
	500/750/1000/1500	860/1000/1000/1200	<ul style="list-style-type: none"> <li>▪ System buffer cylinder with fleece insulation</li> <li>▪ Sleeve connections with female thread</li> <li>▪ Drain at bottom of cylinder</li> <li>▪ Various sensor wells</li> </ul>

# TACOTHERM STORE

## STRATIFIED BUFFER CYLINDER



High performance latest-generation buffer cylinder for system connection of Taconova decentralised and centralised heat interface units

### BENEFITS

- Low radiation losses and excellent fire protection properties guaranteed thanks to high quality fleece insulation
- Efficient stratification and re-stratification as well as utilisation of the heating energy through layer separating plate and layer loading unit
- Sleeve connections to protect the connection threads
- Additional sleeve for the installation of an E-cartridge
- Integrated sensor core tube for optimum sensor placement

### DESCRIPTION

TacoTherm Store high performance buffer cylinders are available in four designs and are manufactured in an upright cylindrical version with dished bottoms and feet for optimum installation in the plant room. Inside the cylinder, a layer separating plate, layer loading unit, and various inflow baffles ensure efficient operation of the cylinder with low radiation losses due to the all-round high quality flow insulation.

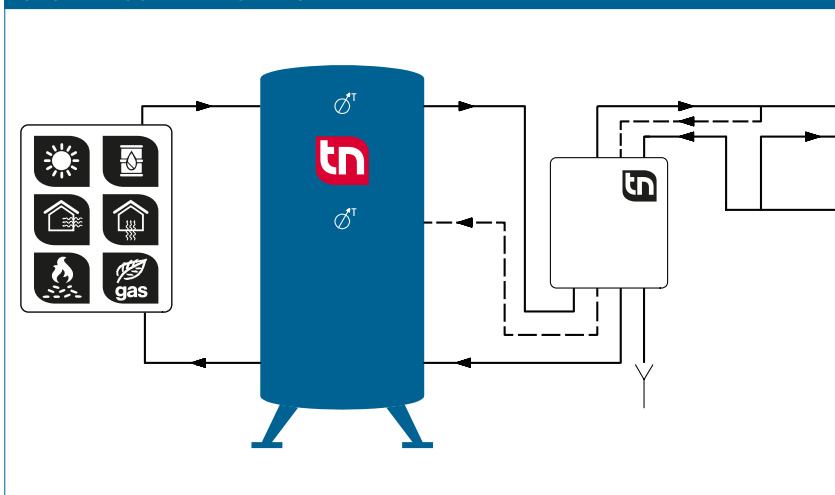
### AREA OF APPLICATION

Taconova stratified buffer cylinders are suitable for all DHW and central heating systems in combination with Taconova decentralised or centralised heat interface units and enable both efficient operation and the versatile use of regenerative as well as conventional heat generators.

### DESIGN

- Two connection sleeves arranged at a 45° angle to the top to prevent pipe circulation (siphon effect).
- Central layer separating plate with 25 % throughput to ensure efficient stratification zones.
- Layer loading unit (loading pan) closed at the top to control the inflow.
- Central sleeve connection for E-cartridge 1 1/2"
- Integrated inflow baffles and sensor core tube for improved stratification and monitoring of the thermal energy supplied
- Highly efficient fleece insulation and unbeatable fire protection properties

### SYSTEM/SCHEMATIC DIAGRAM



### BUILDING CATEGORIES

- Apartment buildings
- Hotels and residential homes
- Industrial buildings

### NOTE

Only available in Germany!



## TYPE OVERVIEW

TacoTherm Store 500 / 750 / 1000 / 1500 | Stratified buffer cylinder

Part no.	Type	Dimensions (mm)									Weight (kg)		Ø (mm)	Tilted height (mm)
		A	B	C	D	E	F	G	H	I	empty	full		
280.0500.000	500	1783	1516	1346	1103	963	896	690	496	276	90	581	890* (650**)	1748
280.0750.000	750	1783	1516	1346	1103	963	896	690	496	276	130	908	1030* (790**)	1843
280.1000.000	1000	1983	1695	1546	1236	1096	1014	792	546	294	145	1107	1030* (790**)	2024
280.1500.000	1500	2033	1745	1546	1236	1096	1014	792	546	294	210	1715	1230* (990**)	2200

\* with insulation | \*\* without insulation

## TENDER DOCUMENTATION

See [www.taconova.com](http://www.taconova.com)

## SPECIFICATION

### General

- Max. static pressure  $P_{B \max}$ : 4.5 bar
- Max. test pressure: 6 bar
- Medium: Heating water up to 110 °C

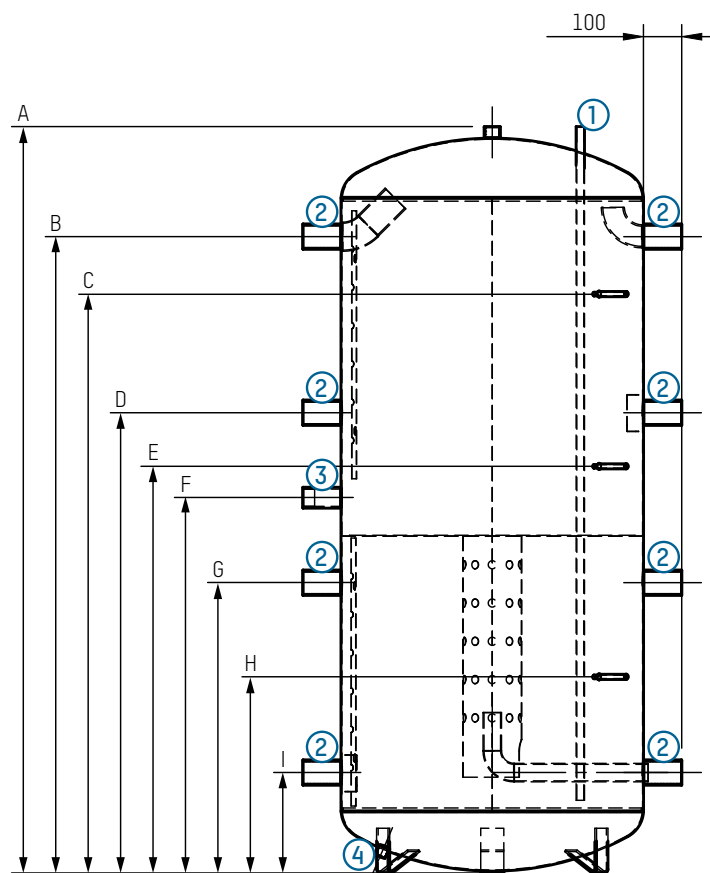
### Material

- Housing: Steel AISI 1015
- Sensor tube: Stainless steel AISI 446
- Insulation: 120 mm fleece

### Heating water

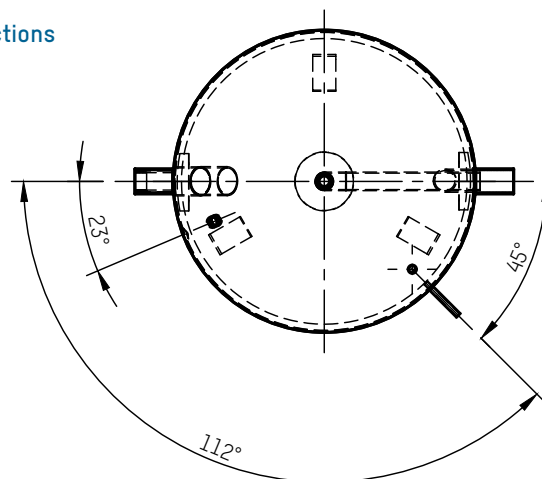
- Heating water  
(VDI 2035; SWKI BT 102-01;  
ÖNORM H 5195-1)

## DIMENSIONAL DRAWING

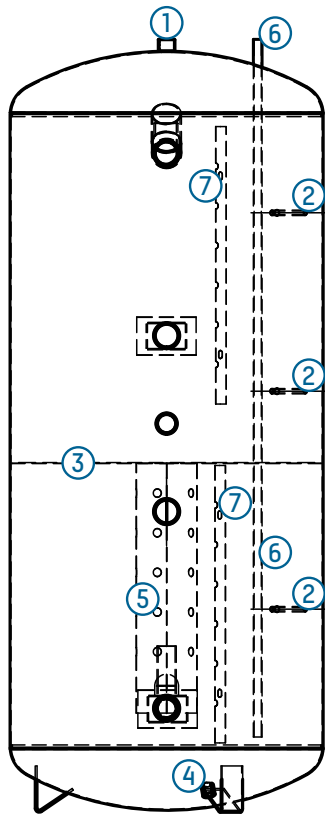


### Female connections

- ① 1 1/4"
- ② 2"
- ③ 1 1/2"
- ④ 3/4"



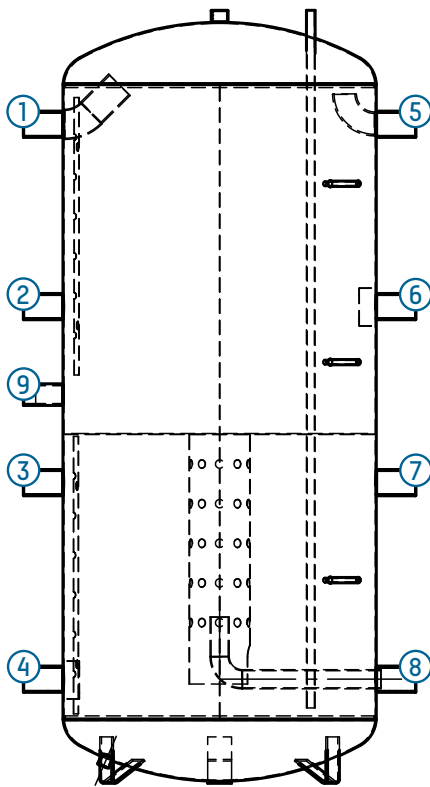
## COMPONENTS



### Components

- 1 Air vent valve
- 2 Sensor tube
- 3 Layer separating plate
- 4 Drain
- 5 Layer loading unit
- 6 Long sensor tube
- 7 Sensor terminal block

## COMPONENTS

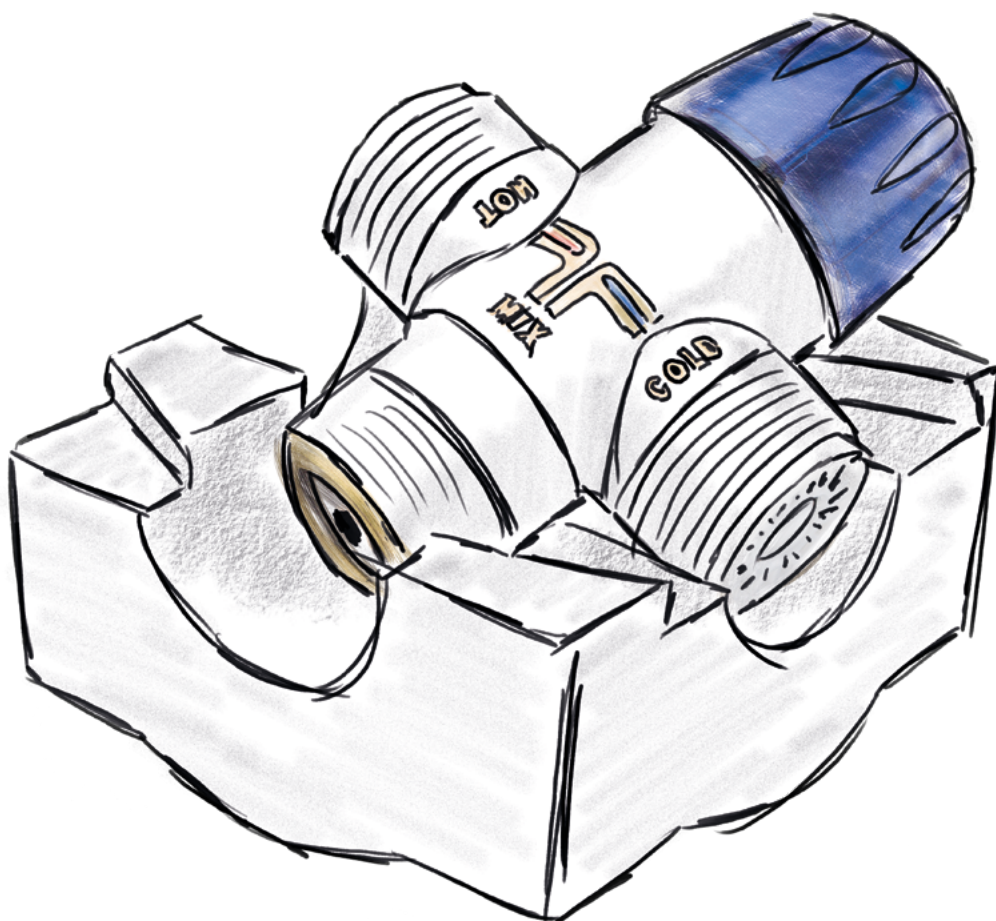


## Connections

- 1 Heat generation flow 1
- 2 Heat generation flow 2
- 3 Heat generation return 1
- 4 Heat generation return 2
- 5 Heat distribution flow 1
- 6 Heat distribution flow 2
- 7 Heat distribution return 1
- 8 Heat distribution return 2
- 9 Connection, electric heating cartridge

## VALVES AND ACCESSORIES

A smoothly running heating or cooling system requires a large number of compact supporters. Thermal mixing valves from Taconova reduce the high domestic hot water temperatures to a constant, non-scalding temperature at the outlet. The electric zone valves NovaZone Ball and NovaZone Valve regulate the volume flows in HVAC systems. The Taconova valves and accessories vent heating systems automatically since only continuously vented and cleaned heating systems work with the greatest efficiency. Multifunctional valves and accessories for monitoring the pressure in heating systems provide additional safety.



# FOR THE GREATEST SAFETY IN BUILDING SERVICES

Professionally installed measuring and control valves and accessories are essential elements in the protection of people and equipment against damage. Taconova offers a wide range of top-quality products.

## OVERVIEW OF PRODUCT GROUPS



### THE INDEPENDENT UNIT

The thermal mixing valves from Taconova work independently and completely without auxiliary energy. The high-quality NovaMix valves are used in the solar, sanitary and heating areas – i.e., everywhere where reliably constant mixing temperatures are needed.



### MEASURED FLOW

Volume flows in hydraulic heating, solar energy, sanitary and cooling systems must be controlled and regulated. The easiest way to do this is to use the electric zone valves NovaZone Ball (motor-driven ball valve) and NovaZone Valve (motor-driven valve) from Taconova. Whether the valve has a 2-way or 3-way design, Taconova has the right valve for your application.



### THE AIR VENT

The proven automatic TacoVent air vents reliably remove unwanted air particles from heating systems. They increase efficiency and therefore reduce energy consumption and operating costs. Regardless of whether radiators or system venting, Taconova provides the ideal solution.

# RELIABLE LIMITATION OF HOT WATER OUTLET TEMPERATURE

A convenient supply of hot water is closely linked with the need to have hygienic drinking water and to save energy. Measures to prevent scalding are essential in both private sanitary systems and in private homes.

## PROTECTION AGAINST SCALDING IN ALL SITUATIONS

Mixing valves from Taconova cover a wide range of application areas, from single wash hand basin to central temperature limiting for large throughput volumes:

### At the wash stand connection:

The NovaMix Compact mixing valve limits the hot water temperature directly at the wash hand basin connection, thereby providing effective protection against scalding in both public and private sanitary systems. This means that the hot water temperature can have high temperatures applied until directly before the dispensing point.

### At the outlet of the hot water storage unit or continuous water heaters:

This type of installation offers the necessary protection against scalding in small hot water supply systems, such as detached, single family homes. The mixing valve ensures a constant and precise mixing temperature.

### In large hot water supply systems:

With large throughput volumes of up to 100 l/min, the NovaMix High Capacity regulates the set temperature.

### In panel heating systems:

For mixing the required flow temperature.

### In renewable energy systems:

For ensuring correct loading of the storage tank when using solid fuels.

## SAFE TEMPERATURE CONTROL

A fast-response thermal element in the NovaMix mixing valve ensures effective protection against scalding, precise temperature regulation and constant hot water temperatures at the dispensing point. Should the cold water feed fail, the regulating unit automatically stops the hot water feed.

Those parts of the NovaMix mixing valves that come in contact with the medium are approved for use in drinking water installations.

The internal parts have a protective layer to prevent calcification.

## THERMAL DISINFECTION

For manual thermal disinfection the setting can simply be changed to maximum temperature and then back again.

## MAINTAINING A CONSTANT TEMPERATURE IN HOT WATER CIRCULATION SYSTEMS

In addition to the main function for limiting the temperature, the NovaMix mixing valves can also be used to reduce energy consumption in circulation systems. For this the thermostatic mixing valve is used as a bypass between the circulation and hot water line before the water re-enters the hot water storage station. If no hot water is dispensed, the set temperature is maintained in the circulating circuit without unnecessarily pumping the water through the storage unit.

## MIXING VALVE FOR TEMPERATURE ISOLATION

One possible application for cooling systems and air-conditioning systems is to use the NovaMix as a diverting valve. The valve is supplied with water from the mixing water connection and separates the medium into two temperature zones.

# SAFE USE OF THE HOT WATER AT A CONSTANT TEMPERATURE

The thermostatic mixing valves from Taconova provide reliable temperature controls, meeting the requirements to prevent scalding. The automatic function of the mixing valves requires no auxiliary energy and therefore removes the need for additional regulatory components.

## BENEFITS AT THE PLANNING STAGE

- Compliance with drinking water regulations
- Compliance with the Energy Conservation Act (EnEV) as no auxiliary energy is required for regulating the mixer
- Can be used for maintaining the temperature in hot drinking water systems; surface heating systems; load valves for wood-burning boilers
- Can be used as a diverting valve when water needs to be separated into two temperature zones
- Compliance with applicable design regulations for:
  - Constant hot water temperatures
  - Cold water feed failure
  - Protection against scalding

## BENEFITS AT THE INSTALLATION STAGE

- Variable installation position
- Possibility to lock the set point adjustment (tamper proofing)
- Low-maintenance thanks to internal parts with non-stick coating to prevent calcification
- Backflow preventer can be integrated as an accessory
- Replaceable thermostat element
- High temperature regulation range for thermal disinfection
- Constant hot water temperatures without additional installation of sensors and regulators

## Mixing valves

The reliable NovaMix mixing valves ensure constant mixing temperatures at the outlet and prevent scalding. Used in the sanitation, heating and solar thermal areas where quality and safety are required.

- NovaMix Value
- NovaMix Standard
- NovaMix High Capacity
- NovaMix Compact

## APPLICATIONS

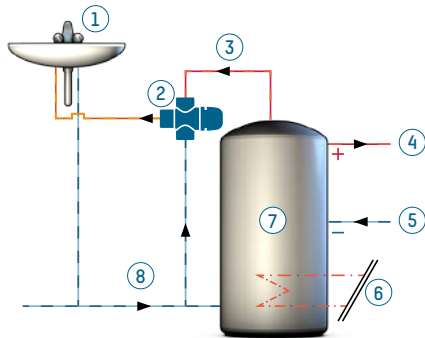
Valves and accessories from Taconova can be used in various ways in heating, air conditioning, ventilation and sanitary systems:

Heating and cooling energy generation	Heating and cooling energy distribution (Indoor temperature control)	Sanitary systems
<ul style="list-style-type: none"> <li>▪ Solar thermal energy</li> <li>▪ Oil, gas, electricity, biomass</li> <li>▪ District heating</li> </ul>	<ul style="list-style-type: none"> <li>▪ Underfloor heating</li> <li>▪ Radiators</li> <li>▪ Chilled and heated ceilings</li> </ul>	<ul style="list-style-type: none"> <li>▪ Fresh water</li> </ul>

# SCHEMATIC OVERVIEW OF VARIOUS APPLICATIONS

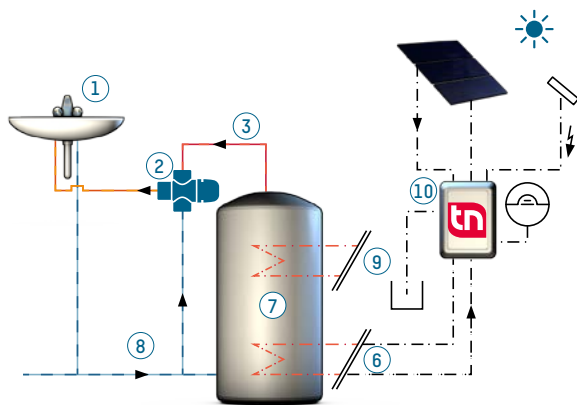
## DRINKING WATER AND PANEL HEATING

### DRINKING WATER AT A CENTRAL LOCATION



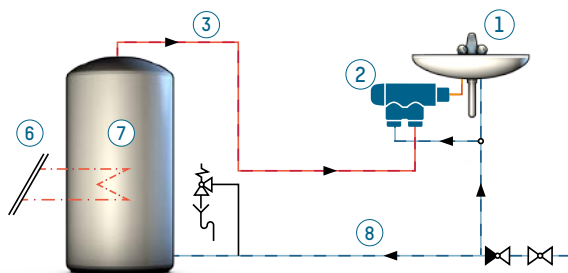
- ① Wash basin
- ② Mixing valve (Standard, Value, Compact)
- ③ Fresh hot water output
- ④ Heating flow
- ⑤ Heating return
- ⑥ Heat exchanger primary circuit
- ⑦ Storage
- ⑧ Cold water inlet

### DRINKING WATER AT A CENTRAL LOCATION WITH SOLAR ASSISTANCE

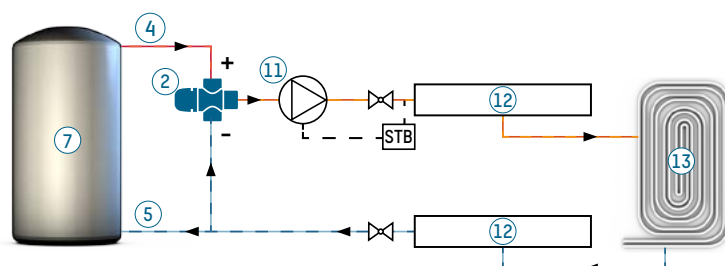


- ⑨ Alternative heat source
- ⑩ TacoSol Circ solar station

### DRINKING WATER AT THE OUTLET



### PANEL HEATING SYSTEM



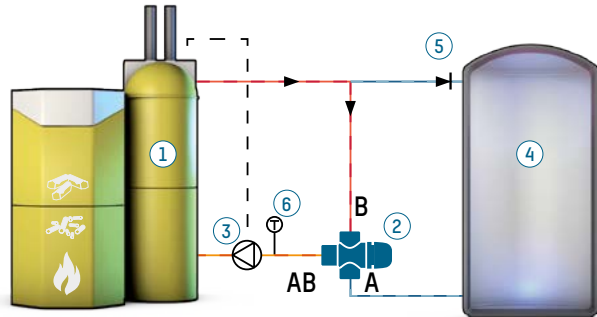
- ⑪ Pump
- ⑫ Distributor
- ⑬ Panel heating system

A safety temperature limiter (STB) must be installed.



## STORAGE TANK LOADING WITH SOLID FUELS

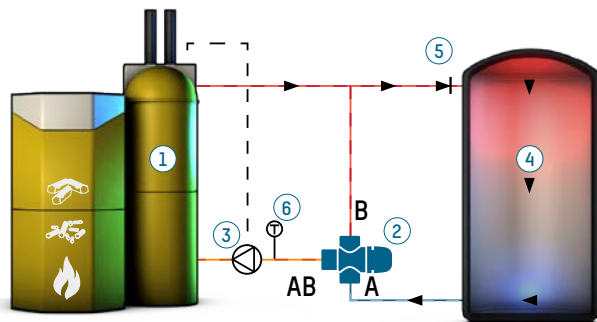
### FUNCTION: MIXING, BOILER CIRCUIT



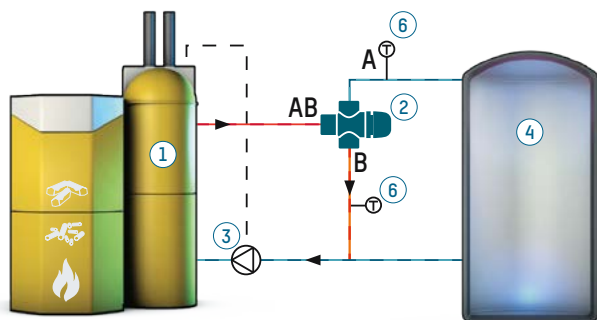
- ① Solid-fuel boiler
- ② Mixing valve
- ③ Pump
- ④ Storage
- ⑤ Check valve
- ⑥ Thermometer

A Cold water connection  
B Hot water connection  
AB Mixing water connection

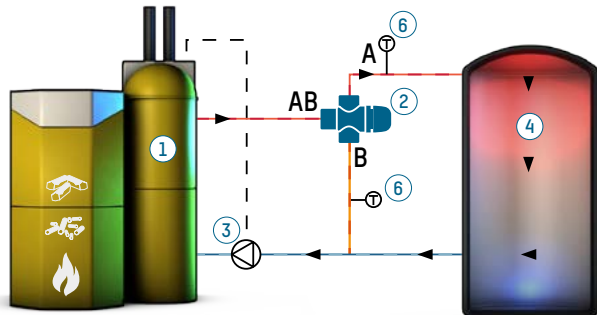
### FUNCTION: MIXING, STORAGE LOADING CIRCUIT



### FUNCTION: DISTRIBUTING, BOILER CIRCUIT



### FUNCTION: DISTRIBUTING, STORAGE LOADING CIRCUIT



# NOVAMIX RANGE OF MIXING VALVES

INFLOW	TEMPERATURE RANGE & PRODUCT	ARTICLE-NUMBER	 DRINKING WATER AT CENTRAL LOCATION		 DRINKING WATER AT CENTRAL LOCATION WITH SOLAR ASSISTANCE		 DRINKING WATER AT THE OUTLET		 PANEL HEATING SYSTEM (FLOOR, CEILING, WALL, THERMAL ACTIVATION OF BUILDING STRUCTURE)		 STORAGE LOADING (SOLID FUELS)	
			$k_{VS} < 2$	$k_{VS} > 2$	$k_{VS} < 2$	$k_{VS} > 2$	$k_{VS} < 2$	$k_{VS} > 2$	$k_{VS} < 2$	$k_{VS} > 2$	$k_{VS} < 2$	$k_{VS} > 2$
	20 – 40 °C Standard (MT52)	252.6023.104										
		252.6024.104										
		252.6023.107										
		252.6024.107										
	20 – 70 °C High Capacity (MT52)	252.6034.107										
	20 – 50 °C Value	253.3002.000										
		253.3003.000										
		253.3004.000										
		253.3102.000*										
		253.3103.000*										
		253.3104.000*										
	45 – 65 °C Value (MT53)	253.1002.000										
		253.1003.000										
		253.1004.000										
		253.1102.000*										
		253.1103.000*										
		253.1104.000*										
	35 – 70 °C Value (MT53)	253.2002.000										
		253.2003.000										
		253.2004.000										
		253.2102.000*										
		253.2103.000*										
		253.2104.000*										
	30 – 70 °C Standard (MT52)	252.6003.104										
		252.6003.107										
		252.6003.330*										
		252.6043.104										
		252.6004.104										
		252.6004.107										
	30 – 50 °C Compact 50 TMV-2	252.6073.107*										
	30 – 70 °C Compact 70	252.6072.104*										

\* Integrated backflow preventer (backflow preventers are not required for panel heating and check valves).

# NOVAMIX VALUE

## THERMOSTATIC MIXING VALVE



### ADVANTAGES

- Constant temperature of the water at the outlet
- Automatic mixing function without the need for auxiliary power and infinite regulation of the mixed water temperature
- High regulation precision
- Protection against scalding
- High  $k_{VS}$  values
- In the functional area: polished surfaces to prevent limescale deposits
- Mechanism to prevent adjustment of the nominal value
- No additional seals required when using the check valves (CV)
- Can be used in panel heating systems and for loading storage tanks by means of solid-fuel boilers

Maintaining constant mix temperatures and limiting temperatures in hot water systems

### DESCRIPTION

The automatic thermostatic mixing valve NovaMix Value ensures a constant temperature of the mixed water at the outlet when used as the central mixing device.

This prevents scalding at the outlet, even with high storage tank temperatures.

Wide area of possible application thanks to three different valve dimensions. Available with  $\frac{3}{4}$ " (DN15), 1" (DN20) and  $1\frac{1}{4}$ " (DN25) connection. Special valve seals at the regulator piston keep undesired admixtures to a minimum\*, resulting in maximum utilisation of the storage tank temperature.

The NovaMix Value is mainly used in sanitary applications as a regulating device for reducing the temperature of the water coming out of hot water storage tanks. For example as a mixing unit for constant water mixing temperatures in panel heating systems and for loading storage tanks by means of solid-fuel boilers. If the cold water supply fails, the DHW supply is automatically interrupted and sealed off.

### INSTALLATION POSITION

Any.

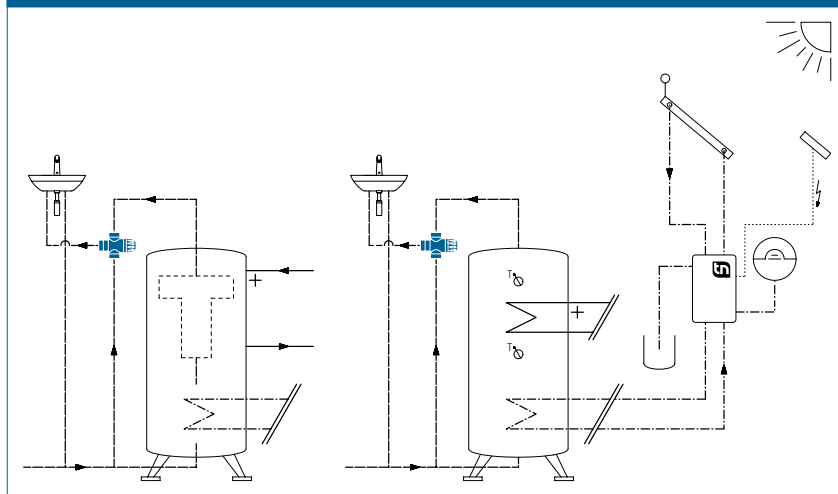
### OPERATION

The mixing valve is supplied with hot water from the storage tank and cold water from the mains network.

The temperature of the mixed water is detected by the thermostatic expansion element. If the mixed water temperature diverges from the target value, the thermostatic expansion element moves the regulator piston, thus regulating the hot and cold water intake quantity accordingly, until the mixed water temperature corresponds to the target value.

\* If the hot water lies 3 K below the set mixing temperature, the cold water leak rate = 0. Otherwise, the maximum value for admixtures is 3K.

### SYSTEM/BASIC DIAGRAM



### BUILDING CATEGORIES

For pipe installations in drinking water and heating area:

- Apartment blocks, housing estates, multiple dwelling units
- Residential care facilities, hospitals
- Administration and service buildings
- Hotels and restaurants, industrial kitchens
- School buildings and sports facilities
- Commercial and industrial buildings

## SPECIFICATION TEXT

See [www.taconova.com](http://www.taconova.com)

## TECHNICAL DATA

### General

- Adjustable temperature ranges:
  - 20 – 50 °C
  - 45 – 65 °C
  - 35 – 70 °C
- $k_{VS}$  values and dimensions as per the relevant tables
- Operating temperature  $T_{0\ max}$ : 100 °C
- Operating temperature  $T_{0\ max}$  with check-valve (CV): 90 °C
- Max. operating pressure  $P_{0\ max}$ : 10 bar
- Min. operating pressure  $P_{0\ min}$ : 0,5 bar
- Working pressure (dynamic):
  - max. 5 bar
- Constant inlet pressure differential:
  - max. 2 bar
- Temperature stability for mixing:
  - max. 3 K (for change in hot water temperature: 15 K)
- Locking function in the event of failure of the cold water supply
- Noise class 2
- Installation position: can be installed in any position

### Material

- Housing: brass (resistant to dezincification)
- Internal parts: High-quality plastic
- Seals: EPDM
- In the functional area: polished surfaces to prevent limescale deposits

### Fluids

- Heating water (VDI 2035; SWKI BT 102-01; ÖNORM H 5195-1)
- Potable water (DIN 1988-200)

### Special application

- Diverting function possible (inflow via a mixing gate)
- DN 15 and DN 20 are also suitable for flow water heating units

## APPROVALS / CERTIFICATES

- DVGW (UBA hygiene conformity), ACS, PZH

## NOTE

The brochure „NOVAMIX ONE RANGE – NEW APPLICATIONS“ contains additional information on the various applications of Taconova mixing valves.

## TYPE OVERVIEW

NovaMix Value 50 FS (Fail Safe) | Thermostatic mixing valve

Temperature range 20 – 50 °C

Order no.	DN	G	Built-in check valve	A	E (l/min)	$k_{VS}$
253.3002.000	15	¾"	no	76	26	1.6
253.3003.000	20	1"	no	77	36	2.2
253.3004.000	25	1 ¼"	no	77	56	3.4
253.3102.000	15	¾"	yes	76	25	1.5
253.3103.000	20	1"	yes	77	35	2.1
253.3104.000	25	1 ¼"	yes	77	55	3.3

NovaMix Value 65 FS (Fail Safe) | Thermostatic mixing valve

Temperature range 45 – 65 °C (compliant with EN15092)

Order no.	DN	G	Built-in check valve	A	E (l/min)	$k_{VS}$
253.1002.000	15	¾"	no	76	26	1.6
253.1003.000	20	1"	no	77	36	2.2
253.1004.000	25	1 ¼"	no	77	56	3.4
253.1102.000	15	¾"	yes	76	25	1.5
253.1103.000	20	1"	yes	77	35	2.1
253.1104.000	25	1 ¼"	yes	77	55	3.3

NovaMix Value 70 FS (Fail Safe) | Thermostatic mixing valve

Temperature range 35 – 70 °C (75 °C for Legionella flushing)

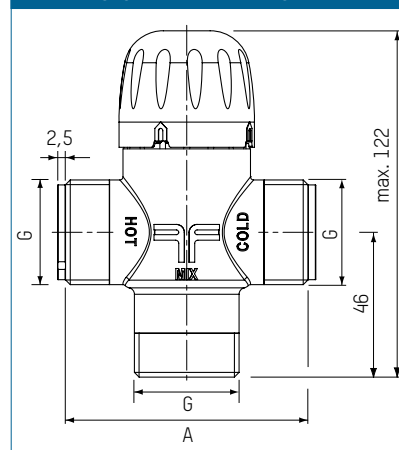
Order no.	DN	G	Built-in check valve	A	E (l/min)	$k_{VS}$
253.2002.000	15	¾"	no	76	26	1.6
253.2003.000	20	1"	no	77	36	2.2
253.2004.000	25	1 ¼"	no	77	56	3.4
253.2102.000	15	¾"	yes	76	25	1.5
253.2103.000	20	1"	yes	77	35	2.1
253.2104.000	25	1 ¼"	yes	77	55	3.3

A = Housing without check valves

E = Extracted (outlet) quantity at  $\Delta p = 1,0$  bar

No additional seals required when using the check valves

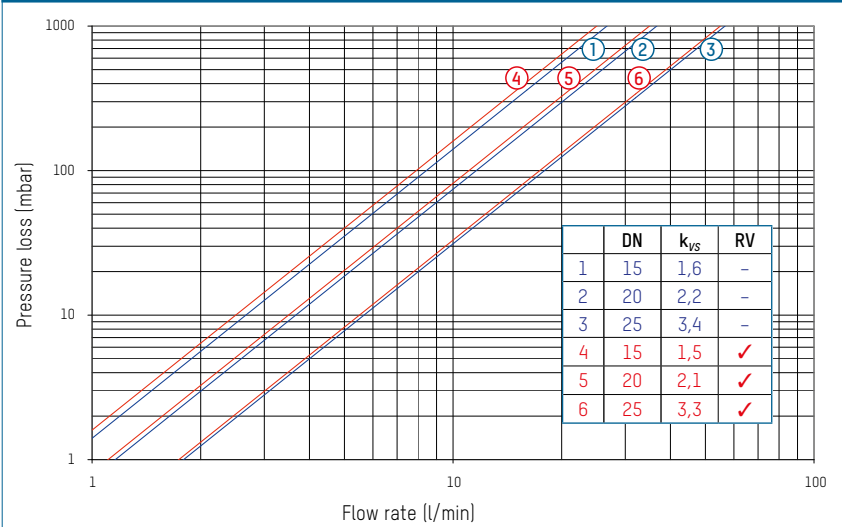
## DIMENSIONAL DRAWING



## INFORMATION

If the handwheel of the mixing valves with temperature ranges of 20 – 50 °C and 35 – 70 °C is fully open, the mixing element will not work. As a result, the outlet temperature may be above the controllable temperature range and may be approximately the same as the hot water inlet temperature.

### PRESSURE LOSS DIAGRAM



### ACCESSORIES



#### INSULATION BOX

Order no.	DN
296.2329.000	15
296.2330.000	20
296.2331.000	25



#### CONNECTION SET FOR THREADED PIPE

Order no.	DN	G x R
210.6630.000	15	3/4" x 1/2"
210.6631.000	20	1" x 1/2"
210.6632.000	20	1" x 3/4"
210.6633.000	25	1 1/4" x 1"
210.6630.004	15	3/4" x 1/2"
210.6631.004	20	1" x 1/2"
210.6632.004	20	1" x 3/4"
210.6633.004	25	1 1/4" x 1"



#### CHECK VALVE

Order no.	DN	G
296.5210.003	15	3/4"
296.5211.003	20	1"
296.5212.003	25	1 1/4"



#### PRECISION THERMOMETER, QUICK RESPONSE

Fits in 1/2" T-piece, Indication range: 0 – 80 °C (accuracy class 2,5 within the range 40 – 60 °C), Sensor tube stainless steel, Sensor length: 39 mm

Order no.	R
296.5212.003	1/2"

## SPARE PARTS



## REGULATING PISTON WITH THERMOSTATIC ELEMENT

Order no.	Control range
298.5280.000	45 – 65 °C / 35 – 70 °C
298.5289.000	20 – 50 °C



## CAP AND SPINDEL

Order no.	Control range	G
298.5281.000	45 – 65 °C	$\frac{3}{4}$ "
298.5282.000	45 – 65 °C	1 "
298.5283.000	45 – 65 °C	1 $\frac{1}{4}$ "
298.5284.000	20 – 50 °C / 35 – 70 °C	$\frac{3}{4}$ " + 1 "
298.5285.000	20 – 50 °C / 35 – 70 °C	1 $\frac{1}{4}$ "

# NOVAMIX STANDARD

## THERMOSTATIC MIXING VALVE



### ADVANTAGES

- Constant temperature of the water at the outlet
- Automatic mixing function without the need for auxiliary power
- Infinite regulation of the nominal temperature in 2 ranges: 20 – 40 °C / 30 – 70 °C
- Protection against scalding; the NovaMix Standard 70 FS model closes tightly
- In the functional area: polished surfaces to prevent limescale deposits
- Can be used in panel heating systems and for loading storage tanks by means of solid-fuel boilers

Maintaining constant mixing temperatures and limiting temperatures in hot water systems

### DESCRIPTION

The automatic thermostatic mixing valve NovaMix Standard ensures a constant temperature of the mixed water at the outlet when used as the central mixing device.

The NovaMix Standard is mainly used in sanitary applications as a regulating device for reducing the temperature of the water coming out of hot water storage tanks. It can also be used in numerous other applications requiring a constant mixing temperature, For example as a mixing unit for constant water mixing temperatures in panel heating systems and for loading storage tanks by means of solid-fuel boilers.

### INSTALLATION POSITION

Any.

### OPERATION

#### Standard design:

A thermostatic cartridge and a return spring ensure the constant blend temperature at the outlet.

Thanks to the design of the mixing valve, the thermostatic cartridge can be easily replaced in the installed valve if the performance decreases, which occurs due to normal wear and tear.

### Special design NovaMix Standard 70 FS (Fail Safe):

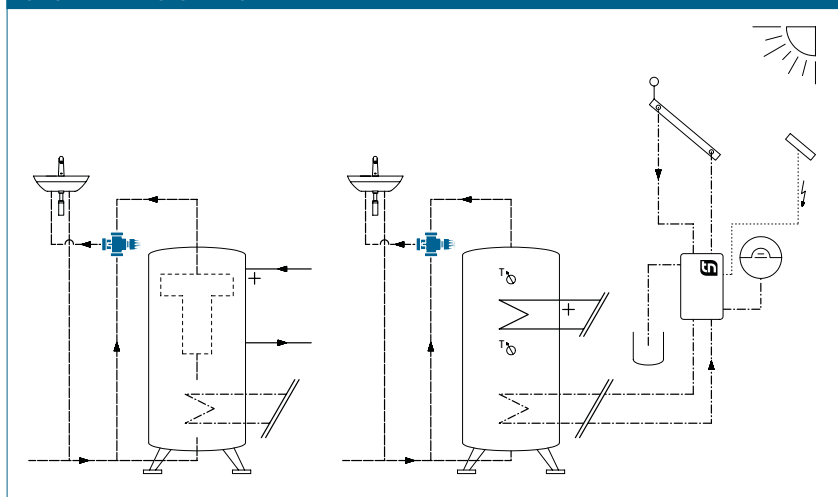
In the case of cold water failure, the hot water supply shuts off automatically and hermetically.

### BUILDING CATEGORIES

For pipe installations in drinking water and heating area:

- Apartment blocks, housing estates, multiple dwelling units
- Residential care facilities, hospitals
- Administration and service buildings
- Hotels and restaurants, industrial kitchens
- School buildings and sports facilities
- Commercial and industrial buildings

### SYSTEM/BASIC DIAGRAM



## SPECIFICATION TEXT

See [www.taconova.com](http://www.taconova.com)

## TECHNICAL DATA

### General

- Operating temperature  $T_{0 \max}$  adjustable temperature ranges,  $k_{vs}$  values and dimensions as per the relevant tables
- Operating temperature  $T_{0 \max}$  with check-valve (CV): 90 °C
- Max. operating pressure  $P_{0 \max}$ : 10 bar
- Min. operating pressure  $P_{0 \min}$ : 0,5 bar
- Working pressure (dynamic): max. 5 bar
- Constant inlet pressure differential: max. 2 bar
- Temperature stability for mixing: max. 3 K (for change in hot water temperature: 15 K)
- Locking function in the event of failure of the cold water supply
- Noise class 2
- Installation position: can be installed in any position

### Material

- Housing and inner parts: brass (resistant to dezincification)
- Seals: EPDM
- In the functional area: polished surfaces to prevent limescale deposits

### Fluids

- Heating water (VDI 2035; SWKI BT 102-01; ÖNORM H 5195-1)
- Potable water (DIN 1988-200)

### Special application

- Diverting function possible (inflow via a mixing gate)

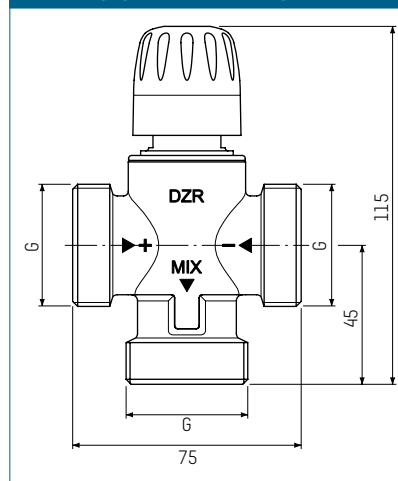
## APPROVALS / CERTIFICATES

- DVGW (UBA hygiene conformity), ACS, PZH

## NOTE

The brochure „NOVAMIX ONE RANGE - NEW APPLICATIONS“ contains additional information on the various applications of Taconova mixing valves.

## DIMENSIONAL DRAWING



## INFORMATION

If the handwheel of the mixing valve is fully open, the mixing element will not work. As a result, the outlet temperature may be above the controllable temperature range and may be approximately the same as the hot water inlet temperature.

## TYPE OVERVIEW

NovaMix Standard 70 / 40 | Thermostatic mixing valve for storage water heating unit

Order no.	DN	G	Control range	$T_{0 \max}$	V (l/min)	$k_{vs}^1$	$k_{vs}^2$
252.6003.104	20	1"	30 – 70 °C	100 °C	31,7	1,9	1,65
252.6003.330*	20	1"	30 – 70 °C	100 °C	27,5	–	1,65
252.6004.104	25	1 1/4"	30 – 70 °C	100 °C	43,3	2,6	2,25
252.6023.104**	20	1"	20 – 40 °C	80 °C	31,7	1,9	1,65
252.6024.104**	25	1 1/4"	20 – 40 °C	80 °C	43,3	2,6	2,25

\* With integrated check valve

\*\* On request [successor versions see NovaMix Value 20 – 50 °C]

NovaMix Standard 70 FR (Fast Response) | Thermostatic mixing valve for continuous flow water heating

Order no.	DN	G	Control range	$T_{0 \max}$	V (l/min)	$k_{vs}^1$	$k_{vs}^2$
252.6043.104	20	1"	30 – 70 °C	100 °C	18,3	1,1	0,7

NovaMix Standard 70 FS (Fail Safe) | Thermostatic mixing valve | Special design with anti-scalding protection in the event of failure of the cold water supply for storage water heating units

Order no.	DN	G	Control range	$T_{0 \max}$	V (l/min)	$k_{vs}^1$	$k_{vs}^2$
252.6003.107	20	1"	30 – 70 °C	100 °C	31,7	1,9	1,65
252.6004.107	25	1 1/4"	30 – 70 °C	100 °C	43,3	2,6	2,25

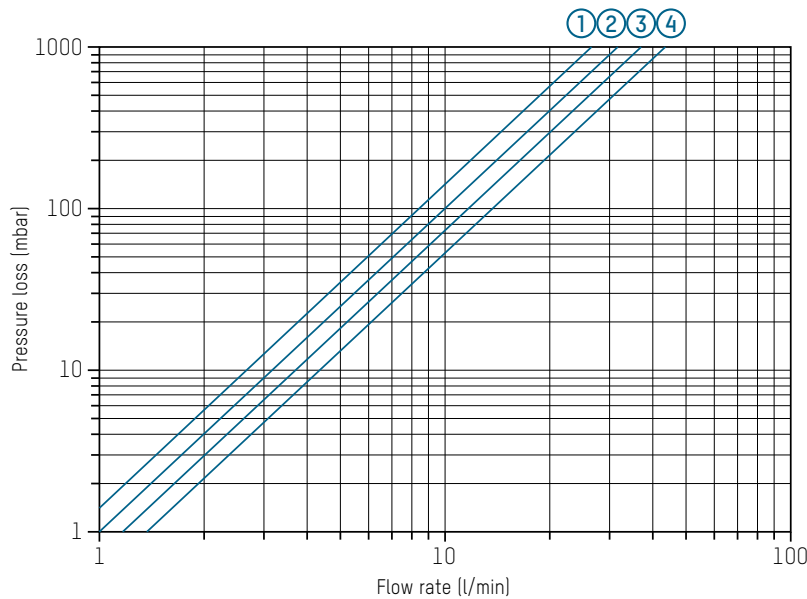
V = Volume obtained at  $\Delta p = 1,0$  bar (without check-valve)

$k_{vs}^1$  = without check-valve

$k_{vs}^2$  = with check-valve



## PRESSURE LOSS DIAGRAM



- 1 252.6043.104
- 2 252.6003.330
- 3 252.6003.104 | 252.6023.104 | 252.6003.107
- 4 252.6004.104 | 252.6024.104 | 252.6004.107

## ACCESSORIES



## INSULATION BOX

Order no.	DN
296.2326.000	20
296.2327.000	25



## CHECK-VALVE

Operating temperature  $T_{0\max}$ : 95 °C, operating pressure  $P_{0\max}$ : 10 bar  
For insertion in the screw connection at the cold and hot water inlets.

Order no.	Fits to order no.
296.5203.003	252.6003.XXX   252.6023.104   252.6043.104
296.5204.003	252.6004.XXX   252.6024.104



## PRECISION THERMOMETER, QUICK RESPONSE

Fits in 1/2" T-piece, Indication range: 0 – 80 °C (accuracy class 2,5 within the range 40 – 60 °C), Sensor tube stainless steel, Sensor length: 39 mm

Order no.	R
296.5212.003	1/2"

## SCREW CONNECTIONS

You will find various suitable screw connections in our price list.

## SPARE PARTS



## THERMAL ELEMENT WITH REGULATING PISTON

Order no.	Description
298.5263.000	20 – 40 °C for NovaMix Standard 40
298.5262.000	30 – 70 °C for NovaMix Standard 70/70 FR
298.5264.109	30 – 70 °C for NovaMix Standard 70 FS

# NOVAMIX HIGH CAPACITY

## THERMOSTATIC MIXING VALVE



### ADVANTAGES

- Constant temperature of the water at the outlet
- Automatic mixing function without the need for auxiliary power
- Infinite regulation of the mixed water temperature in the range from 20 – 70 °C
- Protection against scalding; the NovaMix High Capacity model closes tightly
- In the functional area: polished surfaces to prevent limescale deposits
- Can be used in panel heating systems and for loading storage tanks by means of solid-fuel boilers

Maintaining constant mix temperatures and limiting temperatures in hot water systems

### DESCRIPTION

The automatic thermostatic mixing valve NovaMix High Capacity ensures a constant temperature of the mixed water at the outlet when used as the central mixing device. This prevents scalding at the outlet, even with high storage tank temperatures.

The large valve cross sections in the NovaMix High Capacity reduce the valve's intrinsic pressure loss (high  $k_{vs}$ ), permitting high flow rates even at peak times. Special valve seals on the controller piston reduce unwanted mixtures to a minimum (very low internal cold water leakage rate), which provides maximum utilization of the storage temperature.

The NovaMix High Capacity is mainly used in sanitary applications as a regulating device for reducing the temperature of the water coming out of hot water tanks. If the cold water supply fails, the DHW supply is automatically interrupted and sealed off. It can also be used in numerous other applications requiring a constant mixing temperature. For example as a mixing unit for constant water mixing temperatures in panel heating systems and for loading storage tanks by means of solid-fuel boilers.

### INSTALLATION POSITION

Any.

### OPERATION

The mixing valve is supplied with hot water from the storage tank and cold water from the mains network.

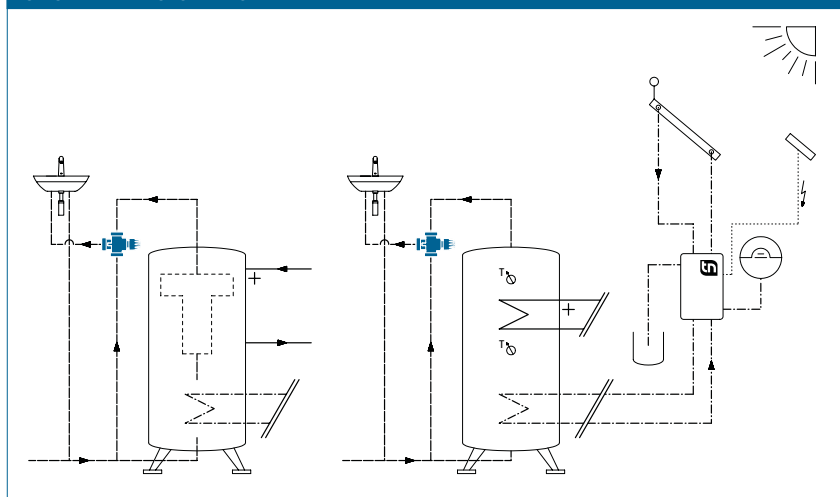
The temperature of the mixed water is detected by the thermostatic expansion element. If the mixed water temperature diverges from the target value, the thermostatic expansion element moves the regulator piston, thus regulating the hot and cold water intake quantity accordingly, until the mixed water temperature corresponds to the target value.

### BUILDING CATEGORIES

For pipe installations in drinking water and heating area:

- Apartment blocks, housing estates, multiple dwelling units
- Residential care facilities, hospitals
- Administration and service buildings
- Hotels and restaurants, industrial kitchens
- School buildings and sports facilities
- Commercial and industrial buildings

### SYSTEM/BASIC DIAGRAM



## SPECIFICATION TEXT

See [www.taconova.com](http://www.taconova.com)

## TECHNICAL DATA

### General

- Adjustable temperature range: 20 – 70 °C
- $k_{VS}$  values and dimensions as per the relevant tables
- Operating temperature  $T_{0\max}$ : 90 °C
- Max. operating pressure  $P_{0\max}$ : 10 bar
- Constant inlet pressure differential: max. 2 bar
- Temperature stability for mixing: max. 4 K (for change in hot water temperature: 20 K)
- Locking function in the event of failure of the cold water supply
- Weight: 0.9 kg
- Recommended minimum tap flow rate: 5 l/min
- Male thread G (cylindrical) to ISO 228
- Noise class 2
- Installation position: can be installed in any position

### Material

- Housing and inner parts: brass (resistant to dezincification)
- Seals: EPDM, NBR
- In the functional area: polished surfaces to prevent limescale deposits

### Fluids

- Heating water (VDI 2035; SWKI BT 102-01; ÖNORM H 5195-1)
- Potable water (DIN 1988-200)

### Special application

- Diverting function possible (inflow via a mixing gate)

## APPROVALS / CERTIFICATES

- DVGW (UBA hygiene conformity), ACS, PZH

### NOTE

The brochure „NOVAMIX ONE RANGE – NEW APPLICATIONS“ contains additional information on the various applications of Taconova mixing valves.

## TYPE OVERVIEW

NovaMix High Capacity | Thermostatic mixing valve for storage water heating unit, temperature range 20 – 70 °C

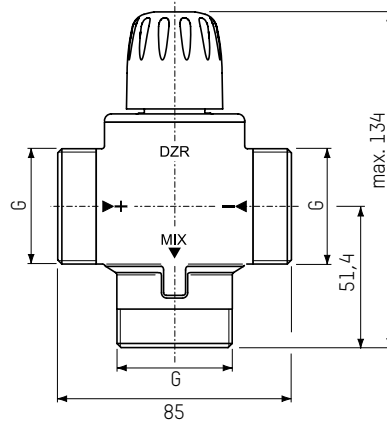
Order no.	DN	G	E (l/min)	$k_{VS}$ 1	$k_{VS}$ 2
252.6034.107	25	1 1/4"	102	6,1	5,9

E = Extracted (outlet) quantity at  $\Delta p = 1,0$  bar

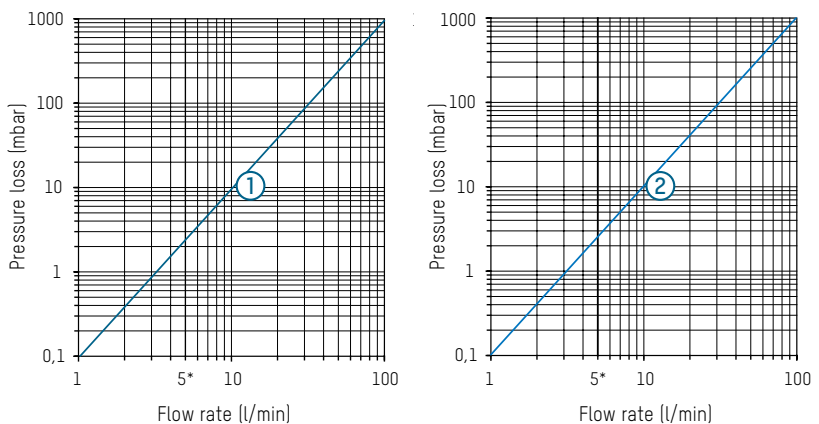
$k_{VS}$  1 = without check valve

$k_{VS}$  2 = with check valve

## DIMENSIONAL DRAWING



## PRESSURE LOSS DIAGRAMS



1 252.6034.107 without check valve:  $k_{VS} = 6,1$

2 252.6034.107 with check valve:  $k_{VS} = 5,9$

\* Recommended minimum tap flow rate

## INFORMATION

If the handwheel of the mixing valve is fully open, the mixing element will not work. As a result, the outlet temperature may be above the controllable temperature range and may be approximately the same as the hot water inlet temperature.

## ACCESSORIES



## INSULATION BOX

Order no.	DN
296.2328.000	25



## CONNECTION SET FOR THREADED PIPE

Order no.	DN	G x R
210.6633.000	25	1 1/4" x 1"



## CONNECTION SET FOR THREADED PIPE WITH CHECK VALVE

Order no.	DN	G x R
296.5205.003	25	1 1/4" x 1"



## PRECISION THERMOMETER, QUICK RESPONSE

Fits in 1/2" T-piece, Indication range: 0 – 80 °C (accuracy class 2,5 within the range 40 – 60 °C), Sensor tube stainless steel, Sensor length: 39 mm

Order no.	R
296.5212.003	1/2"

## SPARE PARTS



## REGULATING PISTON WITH THERMOSTATIC ELEMENT

Order no.
298.5268.000

# NOVAMIX COMPACT 70

## THERMOSTATIC MIXING VALVE



### ADVANTAGES

- Constant temperature of the water at the outlet
- Automatic mixing function without the need for auxiliary power and infinite regulation of the mixed water temperature
- Protection against scalding in accordance with EN 1111
- In the functional area: polished surfaces to prevent limescale deposits
- Check-valves built into cold and hot water connections

### Maintaining constant mix temperatures and limiting temperatures in hot water systems

#### DESCRIPTION

The automatic thermostatic mixing valve NovaMix Compact 70 ensures a constant temperature of the mixed water at the outlet when used as the central mixing device. This prevents scalding at the outlet, even with high storage tank temperatures.

The mixing valve can be used in sanitary applications in both public and private areas. Due to its attractive design, it is also suitable for visible installation directly beneath the wash-basin.

Temperature can be regulated up to 70°C, thermal disinfection can be carried out.

Backflow preventers are already installed ensuring optimum hydraulic functionality.

#### INSTALLATION POSITION

Any.

#### OPERATION

A thermostatic cartridge and a return spring ensure the constant blend temperature at the outlet.

Thanks to the design of the mixing valve, the thermostatic cartridge can be easily replaced in the installed valve if the performance decreases, which occurs due to normal wear and tear.

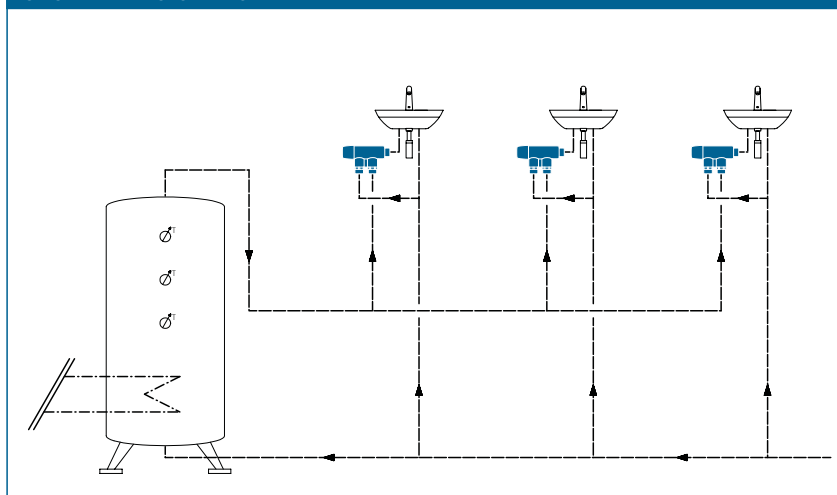
In case of cold water failure, the hot water supply shuts off automatically and hermetically. This ensures full protection against scalding.

#### BUILDING CATEGORIES

For pipe installations in drinking water and heating area:

- Apartment blocks, housing estates, multiple dwelling units
- Residential care facilities, hospitals
- Administration and service buildings
- Hotels and restaurants, industrial kitchens
- School buildings and sports facilities
- Commercial and industrial buildings

### SYSTEM/BASIC DIAGRAM



## SPECIFICATION TEXT

See [www.taconova.com](http://www.taconova.com)

## TECHNICAL DATA

### General

- Adjustable temperature range: 30 – 70 °C
- $k_{vs}$  values and dimensions as per the relevant tables
- Operating temperature  $T_{0 \max}$ : 90 °C
- Max. operating pressure  $P_{0 \max}$ : 10 bar
- Min. operating pressure  $P_{0 \min}$ : 0,5 bar
- Temperature stability for mixing: max. 3 K (for change in hot water temperature: 15 K)
- Locking function in the event of failure of the cold water supply
- Noise class 2
- Installation position: can be installed in any position

### Material

- Housing: brass (DZR), nickel-plated
- Internal parts: Stainless steel, brass, high-quality plastic
- Seals: EPDM
- In the functional area: polished surfaces to prevent limescale deposits

### Fluids

- Heating water (VDI 2035; SWKI BT 102-01; ÖNORM H 5195-1)
- Potable water (DIN 1988-200)

## APPROVALS / CERTIFICATES

- DVGW (UBA hygiene conformity), ACS, PZH

### NOTE

The brochure „NOVAMIX ONE RANGE – NEW APPLICATIONS“ contains additional information on the various applications of Taconova mixing valves.

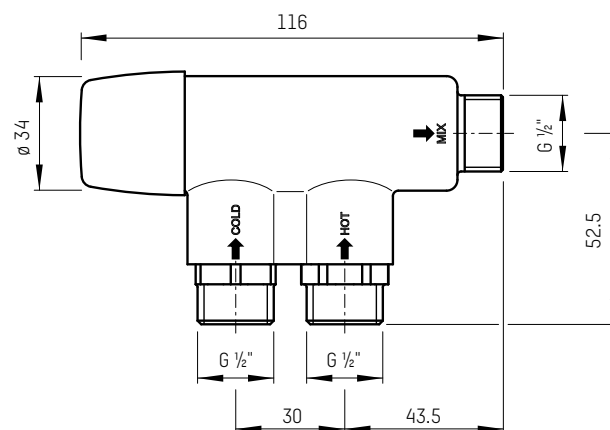
## TYPE OVERVIEW

NovaMix Compact 70 | Thermostatic mixing valve  
Temperature range 30 – 70 °C

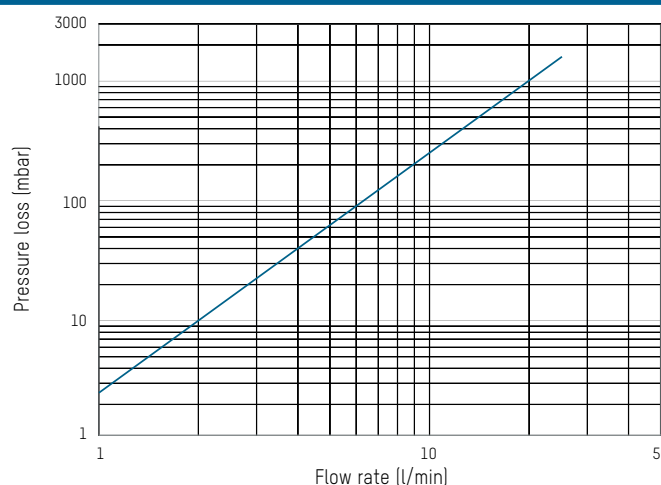
Order no.	DN	G	E (l/min)	$k_{vs}$
252.6072.104	15	1/2"	20	1,2

E = Extracted (outlet) quantity at  $\Delta p = 1$  bar

## DIMENSIONAL DRAWING



## PRESSURE LOSS DIAGRAM



## INFORMATION

If the handwheel of the mixing valve is fully open, the mixing element will not work. As a result, the outlet temperature may be above the controllable temperature range and may be approximately the same as the hot water inlet temperature.

## ACCESSORIES



### ADAPTER FOR FLAT SEALING FITTINGS

**Order no.**

296.5223.004



### CONNECTIONS

Compression fitting joint with nut, clamping ring and supporting sleeve

Order no.	G × mm	Version for
210.3222.000	½" × 10	Copper pipe 10/1
210.3225.000	½" × 15	Copper pipe 15/1

# NOVAMIX COMPACT 50 TMV2

## THERMOSTATIC MIXING VALVE



### ADVANTAGES

- Constant temperature of the water at the outlet
- Automatic mixing function without auxiliary power
- Protection against scalding in accordance with EN 1111
- In the functional area: polished surfaces to prevent limescale deposits
- Back-flow preventers (check-valves) built into cold and hot water connections
- Certified according to TMV2 (BS EN 1111)

Limits and maintains constant levels of mixing temperatures in systems.

### DESCRIPTION

The autonomous thermostatic mixing valve NovaMix Compact 50 ensures a constant mixed water temperature at the outlet. This gives permanent protection against scalding, even with high storage tank temperatures. The mixing valve can be used in sanitary applications in both public and private areas. Due to its attractive design, it is also suitable for visible installation directly beneath the wash-basin. Temperature can be regulated up to 50 °C, thermal disinfection can be carried out.

Backflow preventers are already installed ensuring optimum hydraulic functionality.

### INSTALLATION POSITION

Any.

### OPERATION

A thermostatic cartridge and a return spring ensure the constant blend temperature at the outlet. Thanks to the design of the mixing valve, the thermostatic cartridge can be easily replaced in the installed valve if the performance decreases, which occurs due to normal wear and tear.

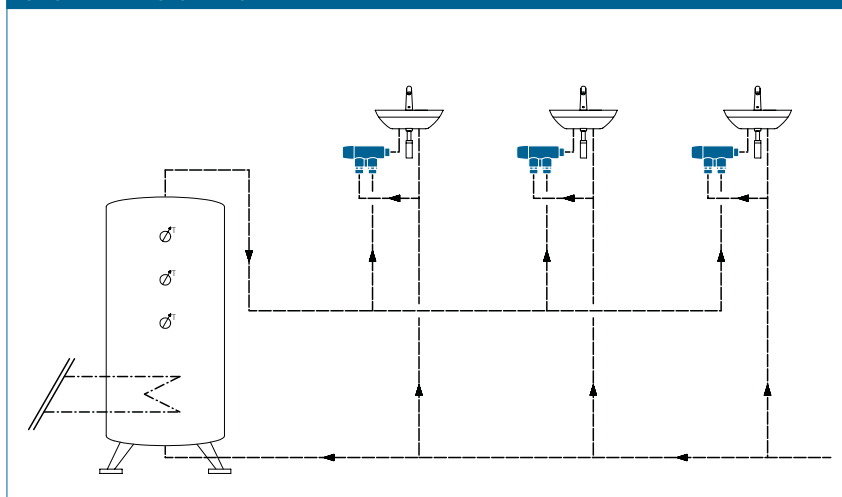
In case of cold water failure, the hot water supply shuts off automatically and hermetically. This ensures full protection against scalding.

### BUILDING CATEGORIES

For pipe installations in drinking water and heating area:

- Apartment blocks, housing estates, multiple dwelling units
- Residential care facilities, hospitals
- Administration and service buildings
- Hotels and restaurants, industrial kitchens
- School buildings and sports facilities
- Commercial and industrial buildings

### SYSTEM/BASIC DIAGRAM





## SPECIFICATION TEXT

See [www.taconova.com](http://www.taconova.com)

## TECHNICAL DATA

### General

- $k_{vs}$  values and dimensions as per the relevant tables
- Max. operating temperature  $T_{0 \max}$ : 90 °C
- Max. operating pressure  $P_{0 \max}$ : 10 bar
- Min. operating pressure  $P_{B \min}$ : 0,5 bar
- Adjustable temp. range: 30 – 50 °C
- Mix temperature stability: max. 3 K (for hot water temp. change 15 K)
- Shut-off function in event of cold water failure
- Noise class 2
- Installation position: any

### Material

- Housing: brass (DZR), nickel-plated
- Internal parts: Stainless steel, brass, high-quality plastic
- Seals: EPDM
- In the functional area: polished surfaces to prevent limescale deposits

### Flow media

- Heating water (VDI 2035; SWKI BT 102-01; ÖNORM H 5195-1)
- Potable water (DIN 1988-200)

## APPROVALS

- TMV2 (BS EN 1111), DVGW (UBA hygiene conformity), ACS, PZH

### NOTE

The brochure „NOVAMIX ONE RANGE – NEW APPLICATIONS“ contains additional information on the various applications of Taconova mixing valves.

## TYPE PROGRAM

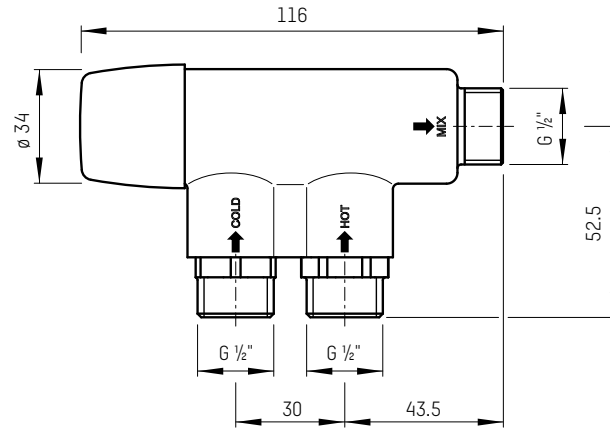
NovaMix Compact 50 TMV2 | Thermostatic mixing valve

Temperature range 30 – 70 °C

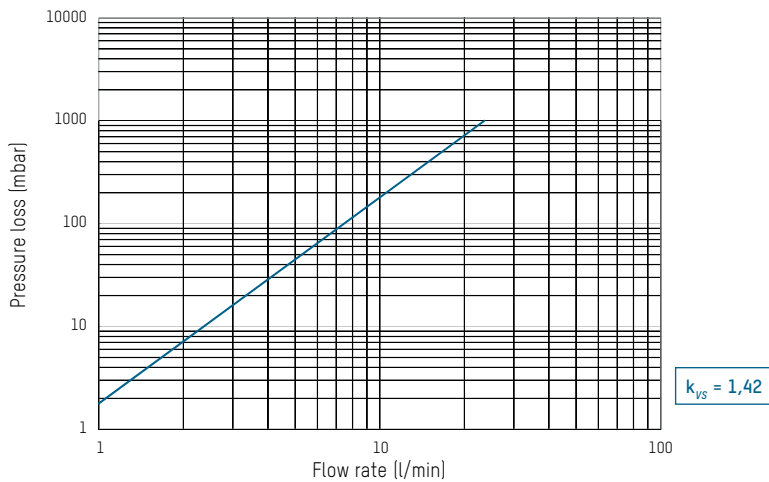
Item no.	DN	G	E (l/min)	$k_{vs}$
252.6073.107	15	1/2"	23,7	1,42

E = Extracted outlet quantity at  $\Delta p = 1$  bar

## DIMENSIONAL DRAWING



## PRESSURE LOSS DIAGRAM



## INFORMATION

If the handwheel of the mixing valve is fully open, the mixing element will not work. As a result, the outlet temperature may be above the controllable temperature range and may be approximately the same as the hot water inlet temperature.

## ACCESSORIES



## ADAPTER FOR FLAT SEALING FITTINGS

Item no.

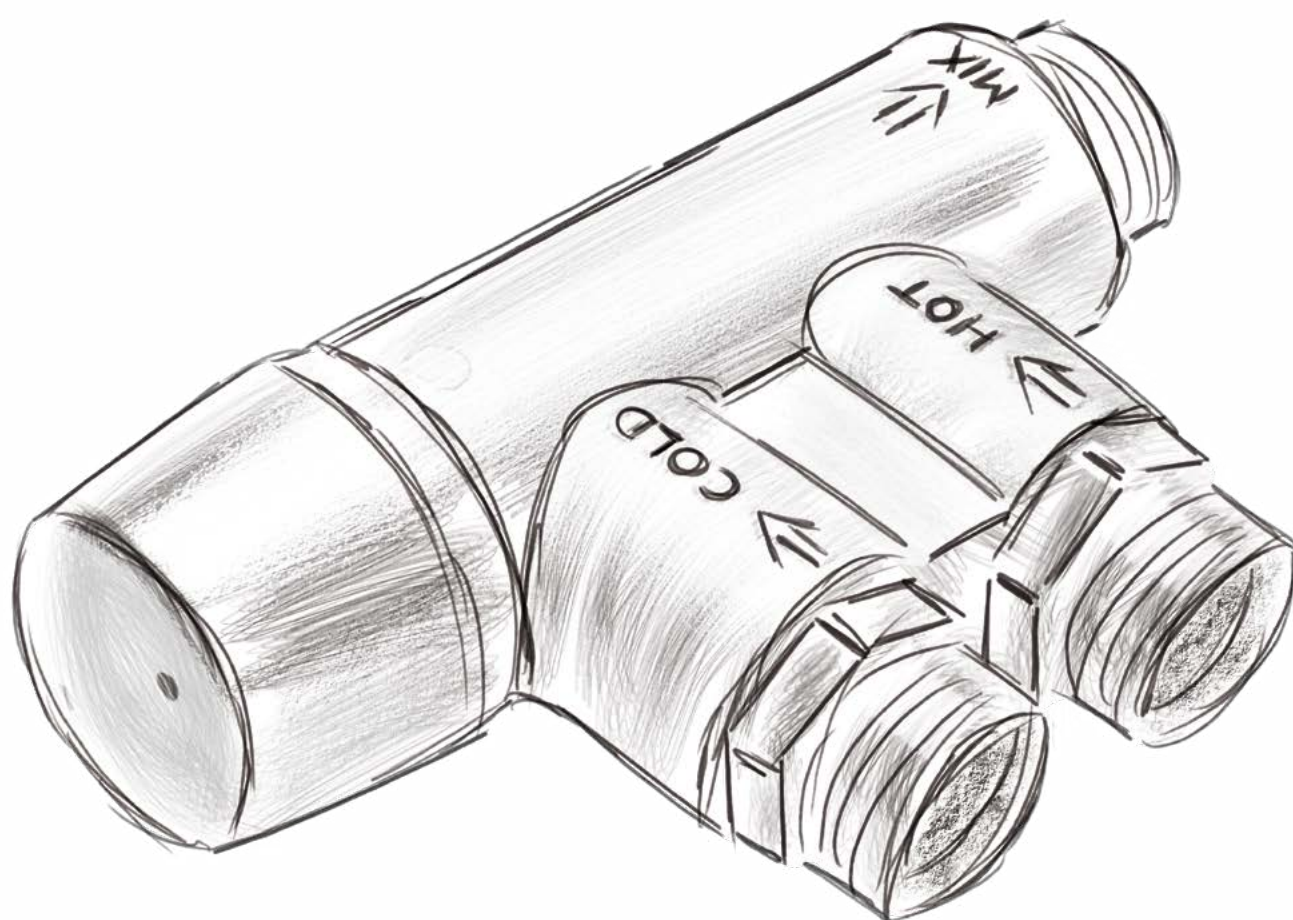
296.5223.004



## CONNECTIONS

Compression fitting joint with nut, clamping ring and supporting sleeve

Item no.	G × mm	Version for
210.3222.000	½" × 10	Copper pipe 10/1
210.3225.000	½" × 15	Copper pipe 15/1



# SWITCHING WITH AN AUTOMATIC DRIVE

Motorized valves control the direction of flow of the medium by opening or closing the valve.

## VERSATILE APPLICATIONS FOR RENEWABLE ENERGIES

The integration of renewable energies in the heating systems and the energy-efficient operation of heat generators, heat distributors, air conditioning and drinking water heaters pose major challenges to installation technology. Heating systems with multiple heat generators or that integrate renewable energies are becoming increasingly the norm, but require corresponding hydraulic circuits.

The areas of application of two and three-way motorized valves include, for example: switching the loading of solar storage units

- Storage tank loading in various temperature levels
- Increasing the return for biomass heating boilers
- Switching between storage tanks and heat generators
- Controlling different heat exchangers
- Switching between different storage systems

## RAPID SWITCHING

The NovaZone Ball motorized ball valves and NovaZone Valve motorized valves feature short regulating times and a broad area of applications for automatic switching, opening and closing of hydraulic systems.

## SWITCHING AND CONTROLLING SYSTEM HYDRAULICS

The opening, closing and switching processes are triggered by the NovaZone Ball motorized ball valves and NovaZone Valve motorized valves by means of a control contact (e.g. a thermostat or switch). The drives of the motorized ball valves are controlled by means of relays and only consume power for the opening and closing processes. On the motorized valve, the return to home position is achieved by means of a return spring (closed when off operating mode). The motorized ball valves in dimensions up to DN 100 offer a broad range of applications. These have an additional benefit for system automation thanks to potential-free auxiliary switches that can be used to output signal messages or control pumps, for example. The motorized ball valves and motorized valves can also be activated manually with a lever, which is supplied as part of the deliverables.

# AUTOMATIC CONTROL AND SAFETY WHEN OPERATING THE SYSTEM

NovaZone Ball motorized ball valves and NovaZone Valve motorized valves enable automatic two-way or three-way control in heating, solar energy and cooling systems.

## BENEFITS AT THE PLANNING STAGE

- Automatically operated two-way and three-way valves for switching the direction of flow in hydraulic systems
- System automation by means of potential-free auxiliary switches
- Short regulating times
- Power is only consumed for the opening and closing process
- Potential-free auxiliary switches for outputting signals and controlling pumps

## BENEFITS AT THE INSTALLATION STAGE

- Automatically operated two-way and three-way valves for switching the direction of flow in hydraulic systems
- System automation by means of potential-free auxiliary switches
- Short regulating times
- Power is only consumed for the opening and closing process
- Potential-free auxiliary switches for outputting signals and controlling pumps
- Drinking water quality approval for use in drinking water heating and hot water solar energy systems or for closing drinking water lines by remote control

## Zone valves

The NovaZone Ball and NovaZone Valve zone valves supply system components or individual units with the appropriate volume flow or switch them off.

- NovaZone Ball
- NovaZone Valve

## APPLICATIONS

Valves and accessories from Taconova can be used in various ways in heating, air conditioning, ventilation and sanitary systems

### Heating and cooling energy generation

- Solar thermal energy
- Oil, gas, electricity, biomass
- District heating

### Heating and cooling energy distribution (Indoor temperature control)

- Underfloor heating
- Radiators
- Chilled and heated ceilings

# NOVAZONE BALL

## MOTOR-DRIVEN BALL VALVE



Control of volume flows for different fluids in HVAC systems

### DESCRIPTION

Drive with relay for controlling volume flows in HVAC systems. System parts or individual units are supplied with fluid or switched off depending on the switching criterion (open/closed for 2-way valves and switching for 3-way valves). Range of applications for different fluids (water, glycol mixtures).

### INSTALLATION POSITION

The motor-driven ball valve can be installed horizontally or vertically [180°].

### OPERATION

System parts or individual units are supplied with fluid or switched off depending on the switching criterion. The ball valve is moved from its initial to its final position by means of a 1-pin control contact (thermostat, switch, etc.). Depending on the control contact, the valve rotates forwards or backwards until it reaches its final position. In the case of an open control contact, the relay falls away and causes the direction to be reversed. The ball valve cannot be held in an intermediate position. The motor-driven ball valve can allow flows in both directions.

### ADVANTAGES

#### NovaZone Ball up to 2"

- One potential-free auxiliary switch
- Short actuating times
- Lever for manual operation
- 3-way with inversion of direction of operation
- Valve setting is evident from the motor
- Protection class IP 42
- Low maintenance
- Low noise

#### NovaZone Ball up to 2 1/2"

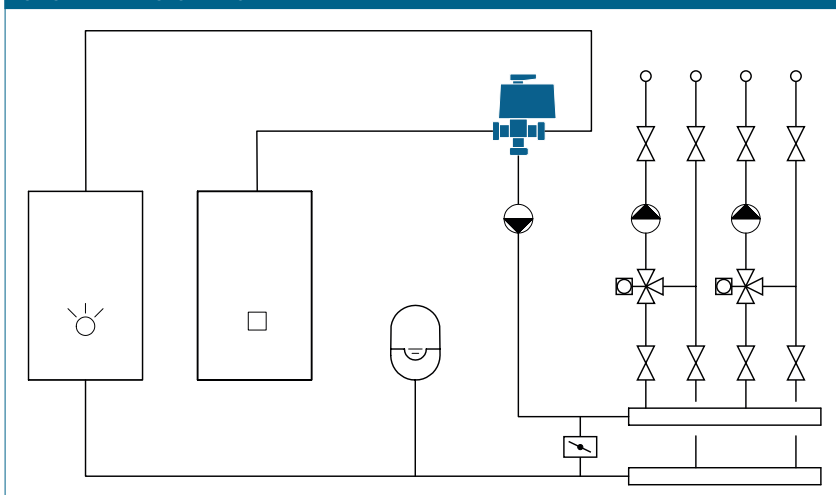
- Available in sizes up to DN 100 [2-way]
- Two potential-free auxiliary switches
- Two limit switches acting as toggles
- Protection type IP 65
- Low maintenance
- Low noise

### BUILDING CATEGORIES

For pipe installations in heating and cooling area:

- Apartment blocks, housing estates, multiple dwelling units
- Residential care facilities and hospitals
- Administration and service buildings
- Hotels and restaurants, industrial kitchens
- School buildings and sports halls / sports facilities
- Commercial and industrial buildings
- Facilities with partial use – for example, barracks, camping sites etc.

### SYSTEM/BASIC DIAGRAM



## TYPE OVERVIEW

**NovaZone Ball 2way** | 2-way motor-driven valve with relay, open/closed function

Order no. 230 V	DN	Rp	k <sub>vs</sub>	Weight (kg)	Protection standard	Duration	Auxiliary switch
256.2172.999	15	½"	30.0	1,330	IP 42	45 Sec	1 potential-free
256.2173.999	20	¾"	55.6	1,450	IP 42	45 Sec	1 potential-free
256.2174.999	25	1"	85.0	1,630	IP 42	45 Sec	1 potential-free
256.2175.999	32	1 ¼"	120.5	1,875	IP 42	45 Sec	1 potential-free
256.2176.999	40	1 ½"	240.0	2,230	IP 42	45 Sec	1 potential-free
256.2177.999	50	2"	360.0	2,845	IP 42	45 Sec	1 potential-free
256.2178.999	65	2 ½"	410.0	6,480	IP 65	60 Sec	2 potential-free
256.2179.999 *	80	3"	470.0	8,070	IP 65	60 Sec	2 potential-free
256.2180.999 *	100	4"	866.0	10,500	IP 65	60 Sec	2 potential-free

**NovaZone Ball 3way** | 3-way motor-driven valve with relay, switching function

Order no. 230 V	DN	Rp	k <sub>vs</sub>	Weight (kg)	Protection standard	Duration	Auxiliary switch
256.3172.999	15	½"	6.5	1,400	IP 42	90 Sec	1 potential-free
256.3173.999	20	¾"	10.5	1,510	IP 42	90 Sec	1 potential-free
256.3174.999	25	1"	16.5	1,680	IP 42	90 Sec	1 potential-free
256.3175.999	32	1 ¼"	27.2	2,300	IP 42	90 Sec	1 potential-free
256.3176.999	40	1 ½"	47.3	2,800	IP 42	90 Sec	1 potential-free
256.3177.999	50	2"	73.0	4,000	IP 42	90 Sec	1 potential-free
256.3178.999 *	80	3"	177.5	10,400	IP 65	120 Sec	2 potential-free

\* 8-week delivery time

## SPECIFICATION TEXT

See [www.taconova.com](http://www.taconova.com)

## TECHNICAL DATA

### General

#### Drive

- Operating voltage
  - 230 V ( $\pm 10\%$ ) 50 Hz
  - $\leq 2''$ : 24 V (please order ball valve and drive [298.X...] separately (see pricelist))
- Power consumption
  - Motor  $\leq 2''$ : 4,4 VA
  - Motor  $> 2\frac{1}{2}''$ : 10,3 VA
  - Relays: 1,75 VA
- Relay controlled
- Protection class I (earthed)
- Protection class of actuator:
  - $\leq 2''$ : IP42
  - $\geq 2\frac{1}{2}''$ : IP65
- NovaZone Ball 2-way limit switch
  - $> 2\frac{1}{2}''$ : Limit switches acting as toggles, not potential-free
- NovaZone Ball 3way limit switch
  - $> 2\frac{1}{2}''$ : Limit switches acting as toggles, not potential-free
- Switching current: 5 (2) A
- Angle of rotation limited by limit switches
  - NovaZone Ball 3-way: both limit switches acting as toggles, with terminal output
- Ambient temperature: -10 – 55 °C

#### Valve bodies

- Operating temperature  $T_{0\max}$ : 110 °C
- Operating pressure  $P_{0\max}$ : 10 bar
- Differential pressure: max. 10 bar
- Temperature of medium: -15 – 110 °C (NovaZone Ball 3way DN 80 to 95 °C)
- Inner thread Rp (cylindrical) under DIN 2999 / ISO 7

#### Material

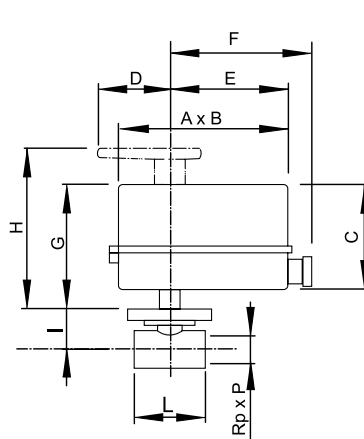
- Housing: Brass, nickel-plated
- Ball: Brass, hard-chrome plated
- Seal seat: PTFE
- Seals: EPDM

#### Fluids

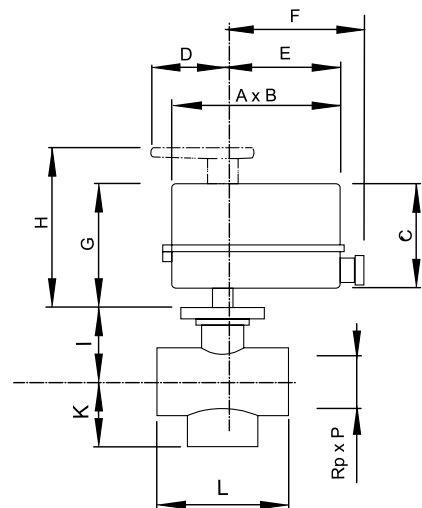
- Heating water (VDI 2035; SWKI BT 102-01; ÖNORM H 5195-1)
- Water and proprietary additives used against corrosion and freezing up to 45%

## DIMENSIONAL DRAWING

NovaZone Ball 2way



NovaZone Ball 3way



## MEASUREMENT TABLE

NovaZone Ball 2way

Order no.	DN	Rp x P	A x B	C	D	E	F	G	H	I	L
256.2172.999	15	$\frac{1}{2}'' \times 14$	130 x 73	84	55	90	110	100	129	41	56
256.2173.999	20	$\frac{3}{4}'' \times 16$	130 x 73	84	55	90	110	100	129	45	66
256.2174.999	25	1" x 16	130 x 73	84	55	90	110	100	129	49	76
256.2175.999	32	1 $\frac{1}{4}'' \times 18$	130 x 73	84	55	90	110	100	129	61	86
256.2176.999	40	1 $\frac{1}{2}'' \times 19$	130 x 73	84	55	90	110	100	129	66	97
256.2177.999	50	2" x 20	130 x 73	84	55	90	110	100	129	72	112
256.2178.999	65	2 $\frac{1}{2}'' \times 22$	168 x 95	107	-	76	102	145	-	103	141
256.2179.999	80	3" x 25	168 x 95	107	-	76	102	145	-	114.5	159
256.2180.999	100	4" x 28	168 x 95	107	-	76	102	145	-	145	190

NovaZone Ball 3way

Order no.	DN	Rp x P	A x B	C	D	E	F	G	H	I	L	K
256.3172.999	15	$\frac{1}{2}'' \times 14$	130 x 73	84	55	90	110	100	129	41	56	30
256.3173.999	20	$\frac{3}{4}'' \times 16$	130 x 73	84	55	90	110	100	129	45	66	35
256.3174.999	25	1" x 17	130 x 73	84	55	90	110	100	129	49	76	40
256.3175.999	32	1 $\frac{1}{4}'' \times 23$	130 x 73	84	55	90	110	100	129	61	86	54
256.3176.999	40	1 $\frac{1}{2}'' \times 24$	130 x 73	84	55	90	110	100	129	66	97	61
256.3177.999	50	2" x 28	130 x 73	84	55	90	110	100	129	72	112	73
256.3178.999	80	3" x 33	168 x 95	107	-	76	102	145	-	145	190	108

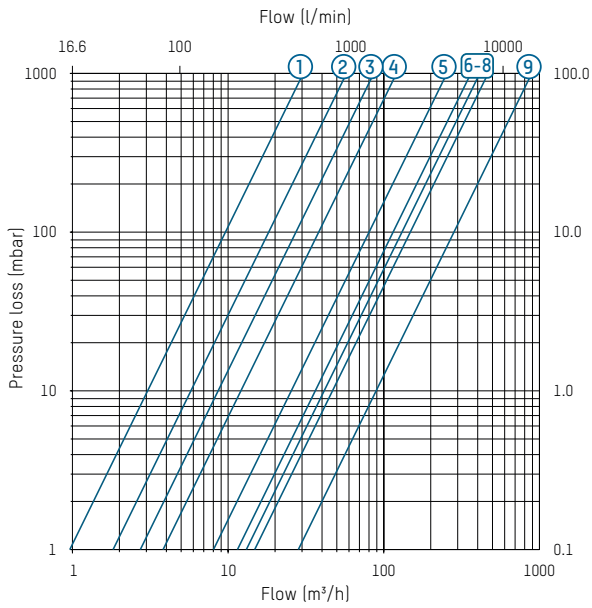
## NOTES

- Avoid formation of condensation in drive
- With the NovaZone Ball 3way, the volume flow is briefly interrupted when switching



## PRESSURE LOSS AND FLOW DIAGRAMS

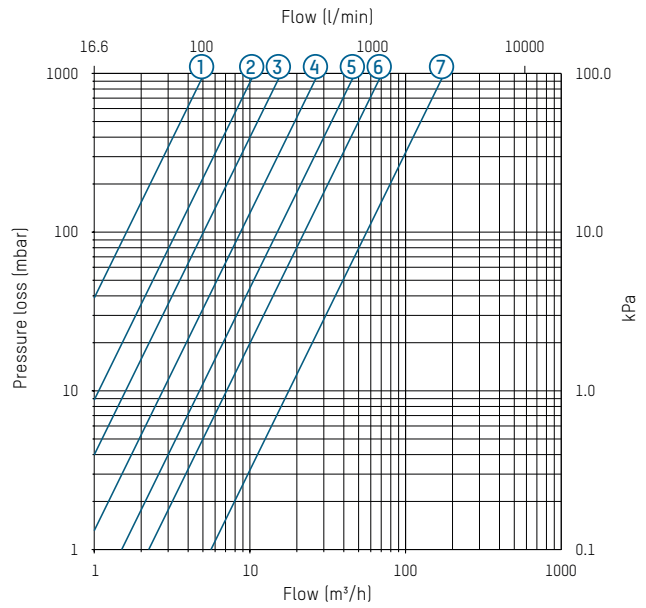
**NovaZone Ball 2way**



**Key**

1	256.2172.999	6	256.2177.999
2	256.2173.999	7	256.2178.999
3	256.2174.999	8	256.2179.999
4	256.2175.999	9	256.2180.999
5	256.2176.999		

**NovaZone Ball 3way**



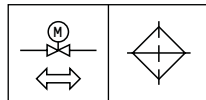
**Key**

1	256.3172.999	5	256.3176.999
2	256.3173.999	6	256.3177.999
3	256.3174.999	7	256.3178.999
4	256.3175.999		

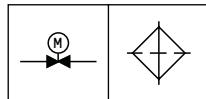
## ANGLE OF ROTATION

**NovaZone Ball 2way – Angle of rotation 90°**

Position 0°

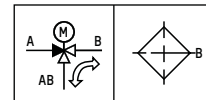


Position 90°

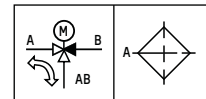


**NovaZone Ball 3way – Angle of rotation 180°**

Position 0°

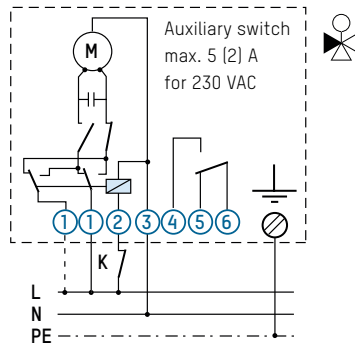
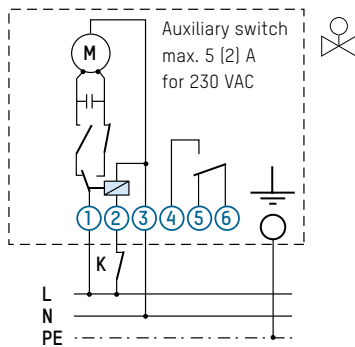


Position 180°

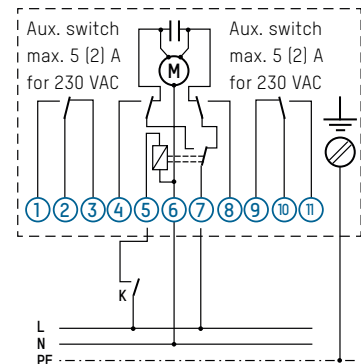


## CIRCUIT DIAGRAM

**NovaZone Ball 2way**



**NovaZone Ball 3way**



## SPARE PARTS



## DRIVE FOR BALL VALVE FROM ½" – 2"

Order no.	Fits
298.5625.999	NovaZone Ball 2way, 230 V
298.5635.999	NovaZone Ball 3way, 230 V
298.5627.999	NovaZone Ball 2way, 24 V
298.5637.999	NovaZone Ball 3way, 24 V

## DRIVE FOR BALL VALVE FROM 2 ½" – 4"

Order no.	Fits
298.5626.999	NovaZone Ball 2way
298.5636.999	NovaZone Ball 3way

## BALL VALVES FOR NOVAZONE BALL 2WAY

Bestell-Nr.	passend zu
298.5662.999 *	DN 15
298.5663.999 *	DN 20
298.5664.999 *	DN 25
298.5665.999 *	DN 32
298.5666.999 *	DN 40
298.5667.999 *	DN 50
298.5668.999 *	DN 65
298.5669.999 *	DN 80
298.5670.999 *	DN 100

## BALL VALVES FOR NOVAZONE BALL 3WAY

Bestell-Nr.	passend zu
298.5672.999 *	DN 15
298.5673.999 *	DN 20
298.5674.999 *	DN 25
298.5675.999 *	DN 32
298.5676.999 *	DN 40
298.5677.999 *	DN 50
298.5678.999 *	DN 80

\* on request (see pricelist)

# NOVAZONE VALVE

## ZONE VALVE



### ADVANTAGES

- Short actuating times (max. 20 seconds)
- With lever for manual operation
- Low maintenance
- For water, heating water and glycol/water mixtures
- Suitable for solar systems up to 160°C
- Versions with micro switch also available

### Control of volume flows for different fluids in HVAC systems

#### DESCRIPTION

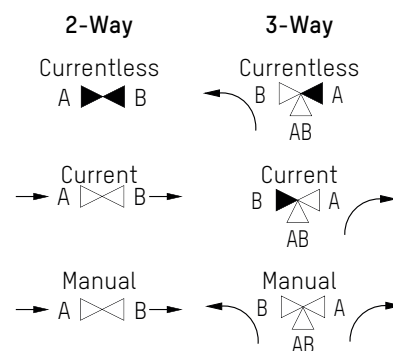
Zone valve with electromotive drive and spring return for control in HVAC systems. System parts or individual units are supplied with fluid or switched off depending on the switching criterion (open/closed for 2-way valves and switching for 3-way valves). With lever for manual operation. The rotary spindle is sealed with 3 O-rings. Range of applications for different fluids (water, glycol mixtures). Versions with a micro switch indicate the end position when it has been reached.

#### INSTALLATION POSITION

The installation position is variable. Only the letters (A+B) for the flow direction of the medium must be observed.

#### OPERATION

The valve body is moved from its initial to its final position by means of a 1-pin control contact (e.g. thermostat, switch, etc.). The valve is returned to its initial position in a currentless state by means of a return spring.

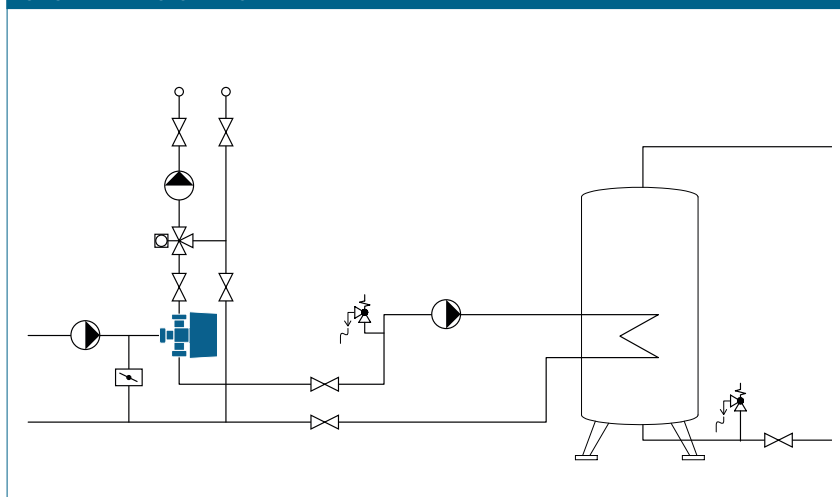


### BUILDING CATEGORIES

For pipe installations in heating and cooling area:

- Apartment blocks, housing estates, multiple dwelling units
- Residential care facilities and hospitals
- Administration and service buildings
- Hotels and restaurants, industrial kitchens
- School buildings and sports halls / sports facilities
- Commercial and industrial buildings
- Facilities with partial use, such as barracks, camping sites

### SYSTEM/BASIC DIAGRAM



## SPECIFICATION TEXT

See [www.taconova.com](http://www.taconova.com)

## TECHNICAL DATA

### General

- Operating mode: normally closed
- Ambient temperature: up to 50 °C

### Drive

- Ambient temperature: up to 50 °C
- Operating voltage: 230 V (± 10 %) 50 Hz
- Power consumption: 6 W
- Protection type IP 20
- CE conformance
- Cable length 1 m:
  - .999S: 3 wires
  - .999E (with micro-switch): 5 wires
- Micro-switch: potential-free, max. 6 A
- Opening times: 12 sec.
- Closing times: 5 sec.

### Valve bodies

- Operating temperature  $T_{0\max}$ : 160 °C
- Operating pressure  $P_{0\max}$ : 10 bar
- Temperature of medium: -20 – 160 °C
- Rotary spindle seal: 3 O-rings

### Material

- Housing: brass
- Paddle: EPDM

### Fluids

- Heating water (VDI 2035; SWKI BT 102-01; ÖNORM H 5195-1)
- Water and proprietary additives used against corrosion and freezing up to 50%

## TYPE OVERVIEW

**NovaZone Valve 2way** | 2-way zone valve with electromotive drive and spring return, standard version for medium temperatures of -20 – 160 °C

Function: Open / Closed, Voltage: 230 V

Order no.	Micro-switch	DN	Rp	$K_{vs} \text{ m}^3/\text{h}$	$\Delta p_{\max} \text{ (bar)}$
256.5242.999S	no	15	½"	3600 l/h	1,4
256.5243.999S	no	20	¾"	6200 l/h	0,7
256.5244.999S	no	25	1"	6200 l/h	0,7
256.5242.999E	yes	15	½"	3600 l/h	1,4
256.5243.999E	yes	20	¾"	6200 l/h	0,7
256.5244.999E	yes	25	1"	6200 l/h	0,7

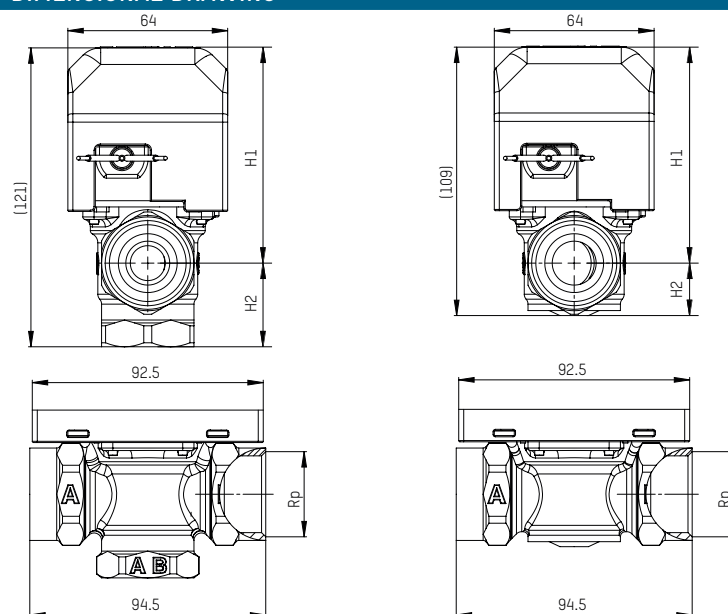
**NovaZone Valve 3way** | 3-way zone valve with electromotive drive and spring return, standard version for medium temperatures of -20 – 160 °C

Function: Switching, Voltage: 230 V

Order no.	Micro-switch	DN	Rp	$K_{vs} \text{ m}^3/\text{h}$	$\Delta p_{\max} \text{ (bar)}$
256.5342.999S	no	15	½"	4000 l/h	1,4
256.5343.999S	no	20	¾"	6400 l/h	0,7
256.5344.999S*	no	25	1"	8800 l/h	0,5
256.5342.999E	yes	15	½"	4000 l/h	1,4
256.5343.999E	yes	20	¾"	6400 l/h	0,7
256.5344.999E*	yes	25	1"	8800 l/h	0,5

\* high  $k_{vs}$  value

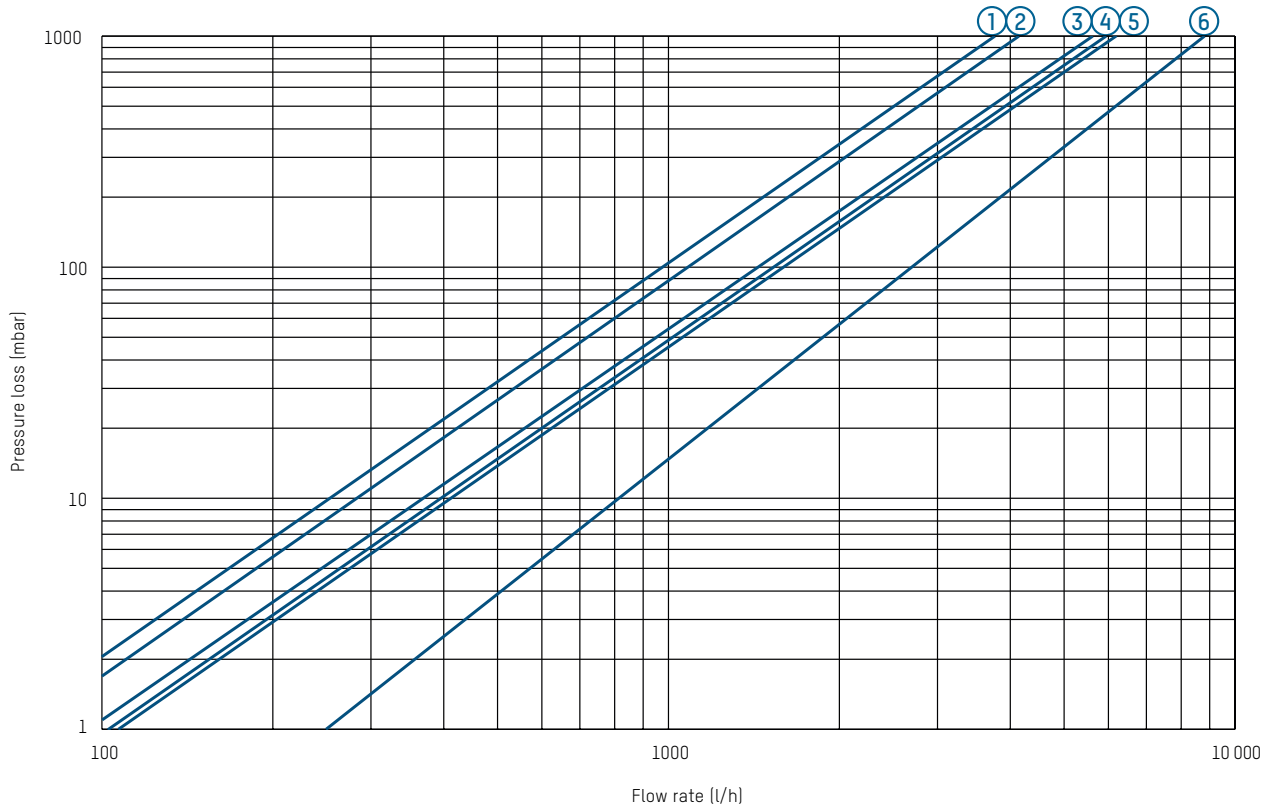
## DIMENSIONAL DRAWING



## SIZE MEASUREMENT

Fits	H	H1	H2
All DN 15 2-way through valves	109	87	22
All DN 20 2-way through valves	109	87	22
All DN 25 2-way through valves	109	87	22
All DN 15 3-way switching valves	121	87	34
All DN 20 3-way switching valves	121	87	34
All DN 25 3-way switching valves	121	87	34

VALVE CHARACTERISTIC CURVE (ALL VERSIONS)



Key

- |                |                |
|----------------|----------------|
| 1 DN15 (2-Way) | 4 DN25 (2-Way) |
| 2 DN15 (3-Way) | 5 DN20 (2-Way) |
| 3 DN20 (3-Way) | 6 DN25 (3-Way) |

# AIR IN HYDRONIC PLANT SYSTEMS

The energy wasted as a result of trapped air in flow systems should not be underestimated. Operational safety and comfort require that air should be drained in all closed-cycle systems.

## THERMAL CONDUCTIVITY OF CARRIER MEDIUM IMPAIRED

Air and gases trapped in the heating system reduce heating comfort, impede circulation and reduce energy efficiency. They also diminish the performance and lifetime of the heating system through the formation of erosion and incrustations.

## IT IS ALMOST IMPOSSIBLE TO PREVENT THE ENTRY OF AIR

There are different reasons why air enters heating and plumbing systems and why gases are released.

This can result from underpressure on the intake side of the circulating pump, for example, or can happen if the system filling pressure is too low, when air is drawn into the pipe system because connections (such as screw connections) are not absolutely air-tight.

Another cause is the change in temperature when the heating water heats up and radiates heat, causing soluble gases in the water to be released. This means that there is a high concentration of air and gas freshly driven from the water at the outlet of the heat flow in the boiler circuit after water has been heated.

## VENTILATOR HOUSING FOR HORIZONTAL AND VERTICAL PIPELINES

In order effectively to remove air and released gases from long pipe networks with a large capacity, special air separator housings aid the air and water separation process. The design of the TacoVent AirScoop Horizontal and AirScoop Vertical housing means that the flow is guided in such a way that the air bubbles rise and the accumulated air can be released via the integrated ventilation valves.

## REMOVING ACCUMULATED AIR FROM BOILERS, TANKS AND DISTRIBUTORS

Float ventilating valves are used to remove the air from parts of systems such as boilers, storage tanks and the highest points of distribution and connecting lines. The ventilating valve has a float on the surface of the water that holds the ventilating bore tightly closed. When air collects, the float is lowered as the water level drops, opening the air outlet.

## AUTOMATIC VENTILATION FUNCTION

There is an expandable membrane in the valve insert of the TacoVent Vent automatic ventilating valve that dries when it comes in contact with air, thus becoming air-permeable. As soon as the air has escaped from the radiator and the membrane is once again comes in contact with hot water, the membrane immediately expands again, preventing water from escaping.

## AIR IN THE SOLAR ENERGY CIRCUIT PREVENTS UNIMPEDED CIRCULATION

When a solar thermal system is commissioned and filled for the first time, the trapped air needs to be removed: eddying as the solar liquid flows in can cause air to be absorbed which is only gradually released again during operation. Air and gases are also released during operation due to the occasional evaporation of the anti-freeze mixture. Air in the solar energy system impedes circulation or even blocks it entirely, reducing the solar yield and thus also causing the anti-freeze mixture to age prematurely.

# AUTOMATIC VENTILATION FOR SMOOTH SYSTEM OPERATION

In heating systems, vent valves from Taconova can be used to automatically vent trapped air from the system components and pipes even in inaccessible areas.

## BENEFITS AT THE PLANNING STAGE

- The range covers all areas where venting is required in heating systems
- Optimized operating costs thanks to energy savings
- Constant heat output with radiators and surface heating systems

## BENEFITS AT THE INSTALLATION STAGE

- Fast installation and simple replacement of valves
- Simple ventilation during commissioning and maintenance of heating systems
- Simple and safe operation

### Vent valves

The reliable TacoVent vent valves remove unwanted air from heating systems. This increases the efficiency and reduces costs.

- TacoVent HyVent
- TacoVent Vent

## APPLICATIONS

Valves and accessories from Taconova can be used in in heating, air conditioning and ventilation systems:

### Heating and cooling energy generation


- Oil, gas, electricity, biomass
- District heating

### Heating and cooling energy distribution (Indoor temperature control)


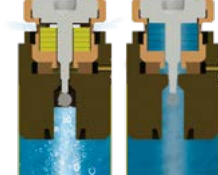
- Underfloor heating
- Radiators
- Chilled and heated ceilings

# SOLUTIONS FOR EVERY SITUATION

## AIR SEPARATOR - CONTINUOUS AIR SEPARATION FOR AUTOMATIC VENTILATION

Operating principle	Description	Advantages	Product variants
<b>Baffle plate</b> 	<p>This technology is based on the breakdown of the water flow into laminar and turbulent flows through integrated flow elements. The special size and positioning of the flow bodies causes a laminar flow in the upper area of the valve. Loosened gas bubbles can rise in the reservoir from this laminar flow area and escape automatically here from the heating system.</p>	<ul style="list-style-type: none"> <li>▪ High separation performance</li> <li>▪ Robust, nonsensitive design</li> <li>▪ Fault and maintenance-free design</li> <li>▪ Additional connections available from 3" for safety valve or thermometer</li> </ul>	<b>TacoVent AirScoop</b> Air Separator

## AUTOMATIC VENT VALVE - CONTINUOUS AND AUTOMATIC VENTILATION AND AERATION

Operating principle	Description	Advantages	Product variants
<b>Float</b> 	<p>When air collects in the vent, the float is lowered as the water level drops, opening the vent valve. As the water level rises, the float closes the air outlet again.</p>	<ul style="list-style-type: none"> <li>▪ Automatic ventilation of systems during filling and in operation</li> <li>▪ Automatic aeration of systems when emptying</li> <li>▪ Design allows dirt-sensitive operation</li> <li>▪ Trouble-free replacement thanks to a check valve</li> <li>▪ Time-saving assembly</li> <li>▪ DN10 with drinking water certification (SVGW)</li> </ul>	<b>TacoVent HyVent</b> Float Vent Valve
<b>Swelling discs</b> 	<p>An expandable membrane in the valve insert dries when it comes in contact with air, thus becoming air-permeable. As soon as the air has escaped from the radiator, the membrane immediately expands again, preventing water from escaping.</p>	<ul style="list-style-type: none"> <li>▪ Reliable and long-lasting operation</li> <li>▪ Versatile use</li> <li>▪ Additional fast manual ventilation</li> <li>▪ Integrated check valve</li> <li>▪ Small and compact design</li> <li>▪ Self-sealing (DN15)</li> </ul>	<b>TacoVent Vent</b> Heating Radiator Vent Valves



# TACOVENT VENT

## HEATING RADIATOR VENT VALVES



### ADVANTAGES

- Reliable, long-life operation
- Versatile application in water-ducting systems
- Additional manual quick-venting
- Built-in automatic check valve requires no draining of the system in case of replacement of the valve insert
- Small and compact design
- Saving of energy by optimal vented system

Permanent and automatic venting.

### DESCRIPTION

The TacoVent Vent valves can be used in all systems of water.

The valve automatically vents hydraulic systems such as heating radiators, pipe manifolds, pipes, boilers, reservoirs and underfloor heating manifolds on a continuous basis.

This automatic function improves operational safety [corrosion reduction] and enhances the user's comfort [no airborne noises].

The manual quick-venting allows the fast filling in of the system due to the venting capacity.

### INSTALLATION POSITION

Vertically upwards and horizontally.

### OPERATION

The automatic operation of the vent valve relies on the special swelling discs built in the valve insert.

In dry conditions, the swell discs allow air and gas to escape. The immediate swelling prevents water leakage.

Manual air venting is achieved by undoing the knurled screw and allowing air and gas to escape. Replacement of the valve insert (including seal and swelling discs) is possible due to the automatic check valve integrated in the vent valve.

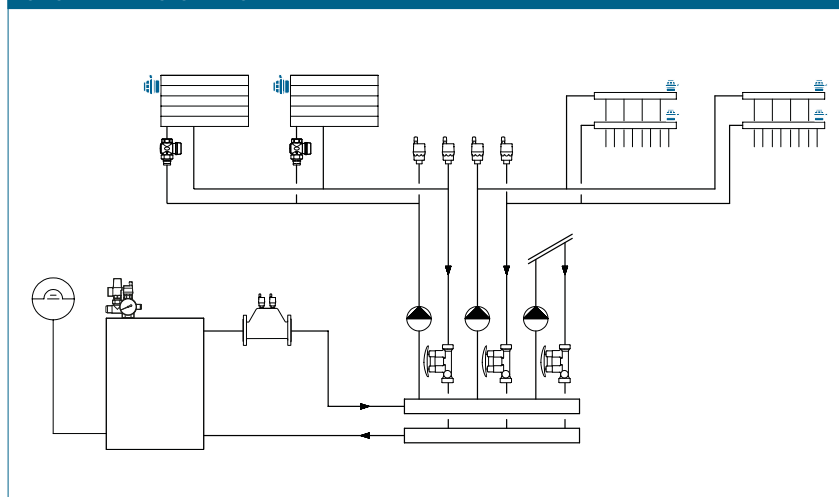
At the first start of operation, it's possible that a few drops come out as long as the swelling discs are dry. This doesn't occur in operation.

### BUILDING CATEGORIES

For pipe installations in heating area:

- Apartment blocks, housing estates, multiple dwelling units
- Residential care facilities, hospitals
- Administration and service buildings
- Hotels and restaurants, industrial kitchens
- School buildings and sports facilities
- Commercial and industrial buildings

### SYSTEM/BASIC DIAGRAM



## SPECIFICATION TEXT

See [www.taconova.com](http://www.taconova.com)

## TECHNICAL DATA

### General

- Operating temperature  $T_{0\max}$ : 115 °C
- Operating pressure  $P_{0\max}$ : 8.5 bar
- Nominal width:
  - $\frac{1}{8}$ " -  $\frac{3}{8}$ "
  - $\frac{1}{2}$ " self-sealing (O-ring)

### Material

- Valve body: brass nickel-plated
- Valve insert: brass nickel-plated
- Automatic check valve: stainless steel
- Seals: silicone, EPDM

### Fluids

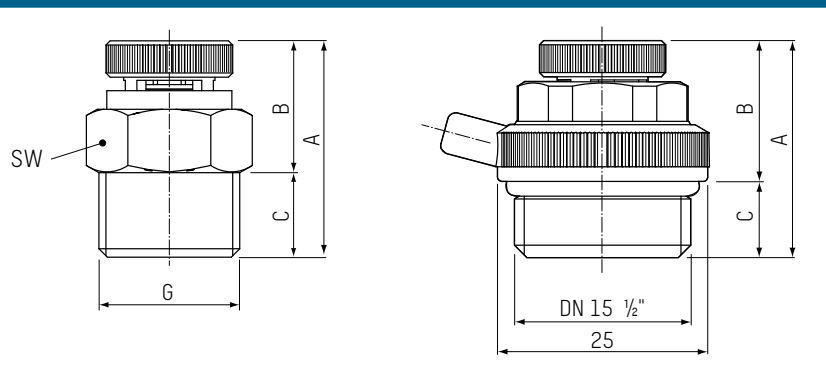
- Heating water  
(VDI 2035; SWKI BT 102-01;  
ÖNORM H 5195-1)
- Water free of chemical additives

## TYPE OVERVIEW

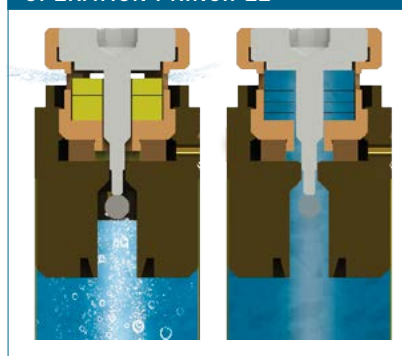
TacoVent Vent | Heating Radiator Vent Valves

Order no.	DN	G	Self-sealing
240.5417.000	6	$\frac{1}{8}$ "	-
240.5418.000	8	$\frac{1}{4}$ "	-
240.5419.000	10	$\frac{3}{8}$ "	-
240.5420.000	15	$\frac{1}{2}$ "	✓

## DIMENSIONAL DRAWING



## OPERATION PRINCIPLE

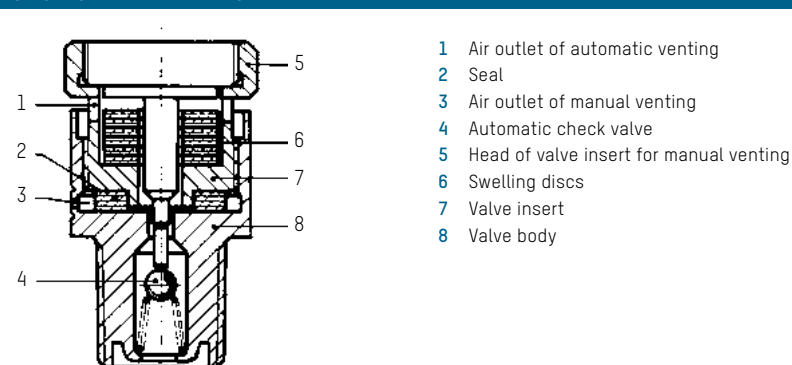


## MEASUREMENT TABLE

TacoVent Vent | Heating Radiator Vent Valves

Order no.	G	A	B	C	SW
240.5417.000	$\frac{1}{8}$ "	26	16	10	14
240.5418.000	$\frac{1}{4}$ "	26	16	10	14
240.5419.000	$\frac{3}{8}$ "	26	16	10	17
240.5420.000	$\frac{1}{2}$ "	26	17	9	19

## SECTIONAL DRAWING



## SPARE PART



## COMPLETE VALVE INSERT

Order no.	Version
298.4001.000	Including seal and swelling discs

# TACOVENT HYVENT

## FLOAT AIR VENTILATOR



### ADVANTAGES

- Automatic air venting of systems during filling or normal operation
- Automatic aerating at draining
- Trouble-free replacement of the float vent valve under full system pressure thanks to a check valve
- Time saving installation of the float vent valve with the automatic check valve

Permanent and automatic venting and aerating.

### DESCRIPTION

The valve automatically vents and provides air from and to hydraulic systems such as heating, cooling, air conditioning and sanitary equipment on a continual basis.

The combination of an air separator with the aerating and venting greatly increases the efficiency of the venting operation. The automatic self-sealing check valve prevents water from escaping from the mains should the vent valve need to be replaced.

### INSTALLATION POSITION

Vertically upwards.

### OPERATION

The ventilation valve is closed by means of a float. If air collects in the cup, the float sinks and releases the ventilation valve.

The accumulated air escapes until the (inflowing) water pushes the floater down again and the valve closes.

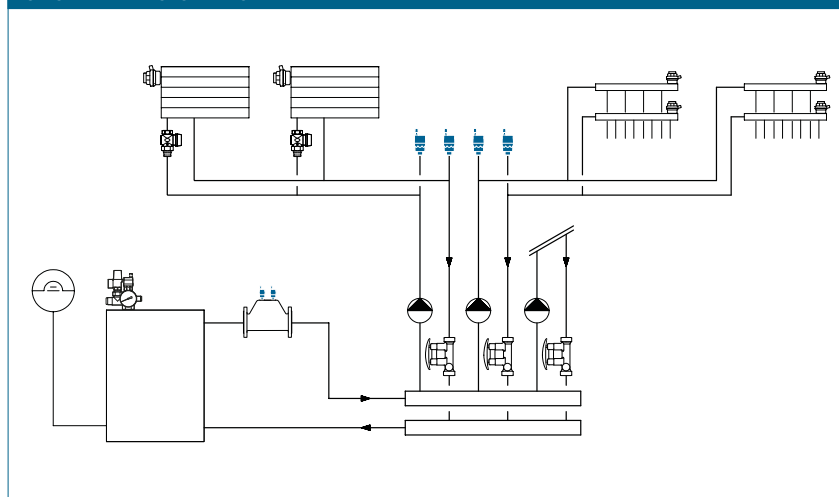
The water once more presses the float against the ventilation valve, and closes the latter. In combination with an upstream TacoVent AirScoop, this guarantees efficient separation of the air-water mixture, and the system is rapidly and automatically vented.

### BUILDING CATEGORIES

For pipe installations in heating area:

- Apartment blocks, housing estates, multiple dwelling units
- Residential care facilities, hospitals
- Administration and service buildings
- Hotels and restaurants, industrial kitchens
- School buildings and sports facilities
- Commercial and industrial buildings

### SYSTEM/BASIC DIAGRAM



## SPECIFICATION TEXT

See [www.taconova.com](http://www.taconova.com)

## TECHNICAL DATA

### General

- Operating temperature  $T_{0\max}$ : 115 °C
- Operating pressure  $P_{0\max}$ : 10 bar
- Exterior threads:  
G 3/8" and G 1/2" as per ISO 228

### Material

- Internal parts: Plastic, stainless steel
- Housing: Brass
- Seals: EPDM, NBR, silicone

### Fluids

- Heating water  
(VDI 2035; SWKI BT 102-01;  
ÖNORM H 5195-1)

## TYPE OVERVIEW

TacoVent HyVent | Float air ventilator DN10

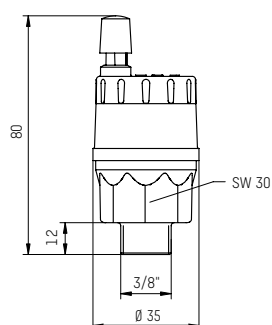
Order no.	G <sup>1</sup>	Automatic check valve
242.5072.001	3/8"	-
242.5072.002	3/8"	3/8"
242.5072.021	3/8"	1/2"

Automatic check valve DN10

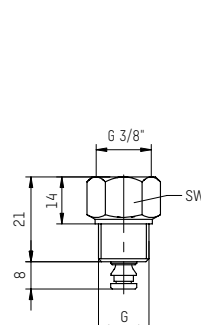
Order no.	G <sup>1</sup> × G <sup>2</sup>	To be used with
220.5235.000	3/8" × 3/8"	242.5072.001, 242.5072.002
220.5236.000	3/8" × 1/2"	242.5072.001, 242.5072.021

## DIMENSIONAL DRAWING

Float air ventilator DN10



Automatic check valve DN10

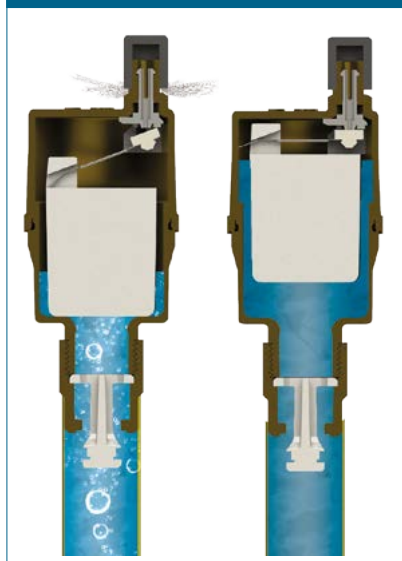


## MEASUREMENT TABLE

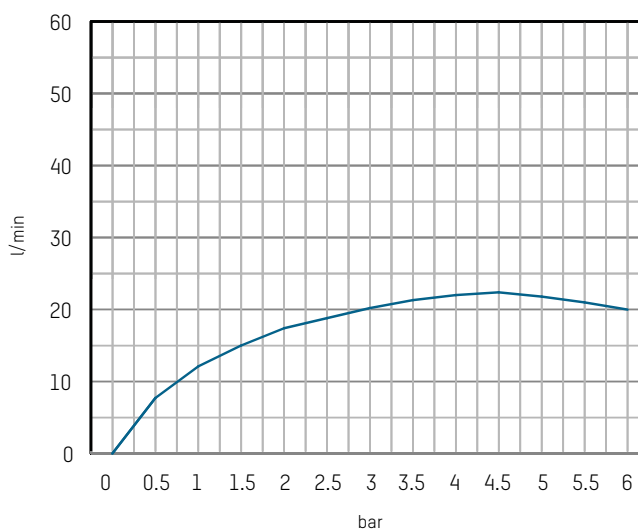
Check valve DN10

Order no.	G	SW
220.5235.000	3/8"	19
220.5236.000	1/2"	21

## OPERATION PRINCIPLE



## VENTING CAPACITY (DRY VENTING)



# TACOVENT AIRSCOOP

## AIR SEPARATOR



Permanent air separation.

### DESCRIPTION

The air separator is fitted in the inlet pipe immediately behind the heating source. This is the point with the highest concentration of air and gas driven out of the water.

The expansion occurring inside the AirScoop and the built-in deflectors speed up the process of separating air and water.

When combined with the float air vent TacoVent HyVent, this system ensures air separation as well as elimination.

### INSTALLATION POSITION

The air separator may only be installed horizontally. The direction of flow must be kept in mind.

### ADVANTAGES

- High air separation capacity
- Strong robust design
- Service and maintenance-free structure

### OPERATION

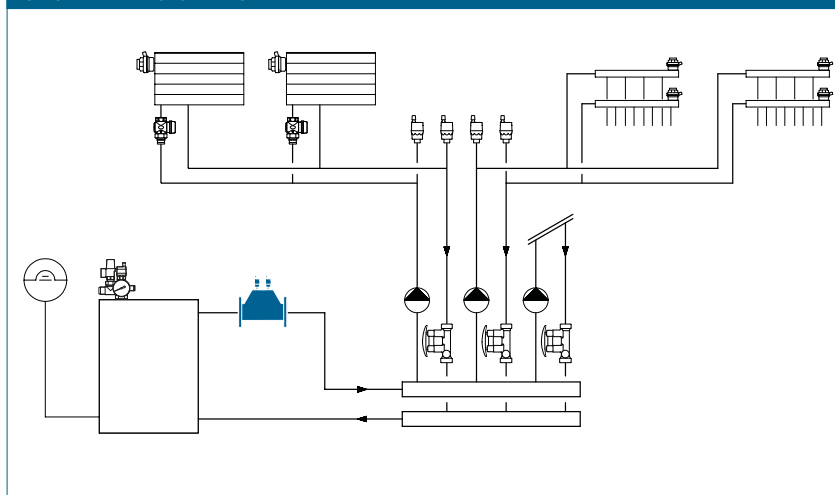
The air expelled from the water into the heating circuit enters the air separator device as air bubbles. The flow-deflector in the housing drives the air bubbles to the top. The collected air is automatically vented via the TacoVent HyVent. The air-separation capacity can be increased by installing a straight piece of piping of approx. 0.5 m in length upstream the separator.

### BUILDING CATEGORIES

For pipe installations in heating area:

- Apartment blocks, housing estates, multiple dwelling units
- Residential care facilities, hospitals
- Administration and service buildings
- Hotels and restaurants
- School buildings and sports facilities
- Commercial and industrial buildings

### SYSTEM/BASIC DIAGRAM



## SPECIFICATION TEXT

See [www.taconova.com](http://www.taconova.com)

## TECHNICAL DATA

### General

- Operating temperature  $T_{0 \max}$ : 135 °C  
with float vent valve  $T_{0 \max}$ : 115 °C
- Operating pressure  $P_{0 \max}$ : 10 bar

### Material

- Housing in cast iron GG 25, lacquered

### Fluids

- Heating water  
(VDI 2035; SWKI BT 102-01;  
ÖNORM H 5195-1)

## TYPE OVERVIEW

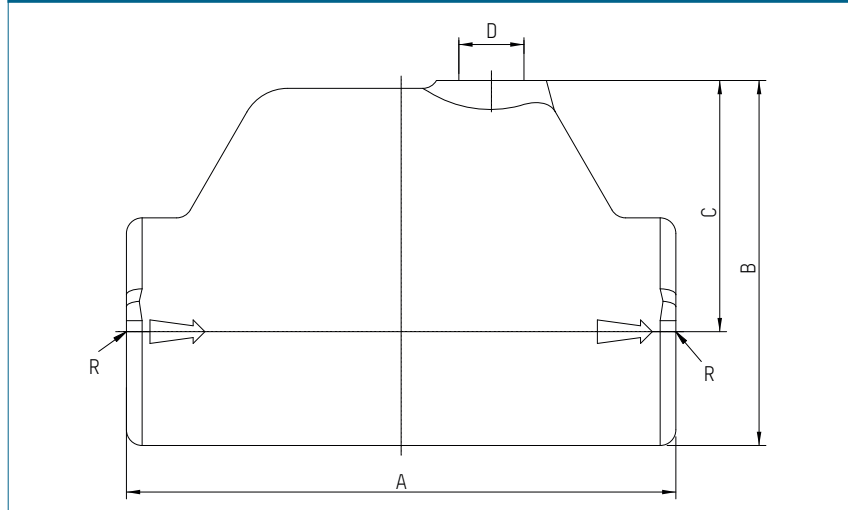
TacoVent AirScoop | Air separator (horizontal), thread connection

Order no.	DN	Rp	Zeta $\zeta$	$k_v$ (m³/h)	Weight
243.5001.000	20	¾"	1,1	17,1	0,6 kg
243.5002.000	25	1"	1,0	28,8	0,8 kg
243.5003.000	32	1¼"	1,0	50,4	1,6 kg
243.5004.000	40	1½"	1,1	64,4	3,2 kg
243.5005.000	50	2"	0,84	114,0	3,2 kg
243.5006.000	65	2½"	0,67	237,0	6,8 kg

## OPERATION PRINCIPLE



## DIMENSIONAL DRAWING



## MEASUREMENT TABLE

TacoVent AirScoop | Air separator (horizontal)

Order no.	R	A	B	C	D
243.5001.000	Rp ¾"	110	69	48	Rp ⅜"
243.5002.000	Rp 1"	120	79	55	Rp ⅜"
243.5003.000	Rp 1¼"	140	93	64	Rp ⅜"
243.5004.000	Rp 1½"	160	96	64	Rp ⅜"
243.5005.000	Rp 2"	228	120	80	Rp ⅜"
243.5006.000	Rp 2½"	235	144	95	Rp ⅜"

## ACCESSORIES



## TACOVENT HYVENT

See separate data sheet

Order no.	DN	G	Version
242.5072.001	10	⅜"	without automatic check valve
242.5072.002	10	⅜"	with automatic check valve

# MEGAFILL 5000 ALU

## FILLING UNIT



Filling unit for the preparation of heating water and coolant in accordance with VDI guideline 2035

### DESCRIPTION

Demineralization unit for filling water in heating systems in accordance with VDI Directive 2035 for non-refillable use.

By mixing selected ion exchange resins and a pH stabilizer, the water is largely demineralized and at the same time alkalized at pH values of between 8.2 and 9.0.

Since corrosive ions, such as chloride and sulfate, can also be removed, sustainable corrosion protection can be achieved.

MegaFill 5000 ALU is suitable for systems with/without aluminium components.

### INSTALLATION

According to DIN standards, a system separator must be connected to the fresh water supply prior to filling.

A water meter should then be connected to measure the filling volume. For best results, the flow should not exceed 8 l/min during filling. This can be checked with a water meter or optionally with a TacoSetter.

For filling, the MegaFill is connected to the heating system in the direction of flow (arrow) by means of two single hose pieces with a 3/4" connection.

Ensure that the previously calculated maximum capacity is complied with when filling.

### ADVANTAGES

- Prevention of damage in hot water heating systems
- Filling in accordance with VDI 2035 Part 1 and 2
- Preservation of warranty in case of damage
- Three functions combined in one: decalcification, demineralisation, pH stabilization
- No corrosion, no scale formation
- Improved energy utilization since no lime precipitates
- Low costs
- Also suitable for retrofitting, thereby extending the lifetime of the heating system
- Easy handling

MegaFill can be removed after filling and the heating system vented as usual. MegaFill is not suitable for permanent fixed installation. Used MegaFill filling units can be disposed of with residual waste.

### OPERATION

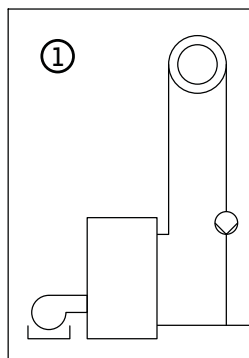
The cartridge contains a mixed bed resin with anion and cation exchangers and a pH stabilizer that neutralize salts and carbonates in the drinking water.

### BUILDING CATEGORIES

For pipe installations in drinking water, heating and cooling areas:

- Apartment blocks, housing estates
- Multiple dwelling units
- Residential care facilities and hospitals
- Administration and service buildings
- Hotels and restaurants, industrial kitchens
- School buildings and sports halls / sports facilities
- Commercial and industrial buildings
- Facilities with partial use, such as barracks, camping sites

### SYSTEM/BASIC DIAGRAM



- 1 Heating system
- 2 Safety valve according to DIN EN 1717
- 3 Connection to the drinking water supply according to DIN 1988-2

## TENDER TEXT

See [www.taconova.com](http://www.taconova.com)

## TECHNICAL DATA

### General

- Max. filling temperature  $T_{F \max}$  50 °C
- Max. operating pressure  $P_{0 \max}$  6 bar
- Max. flow: 8 l/min
- Capacity: approx. 5000 °GSG (total salt content) × litre
- Lifetime: 36 months
- Dimensions and weight: see type overview
- Suitable for systems with/without aluminium components

### Flow media

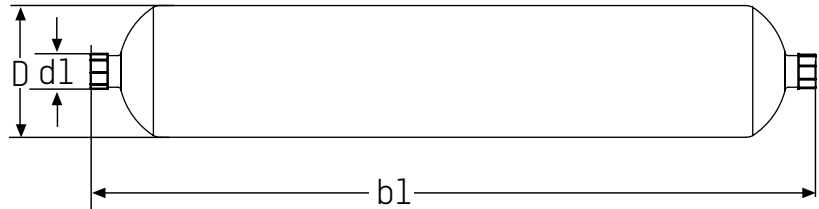
- Heating water  
(VDI 2035; SWKI BT 102-01;  
ÖNORM H 5195-1)
- Cold water according to DIN 1988-7

## TYPE OVERVIEW

### MegaFill 5000 ALU | Filling Unit

Order no.	D	d1	b1	kg	pH range
298.5041.000	110 mm	¾"	606 mm	4.5	8.2 – 9

## DIMENSIONAL DRAWING



## GUIDELINE VALUES FOR FILL AND TOP-UP WATER IN °D

To determine the required target hardness, you need the boiler output and the specific system volume (SAV).

The boiler output P is expressed in kW, the specific plant volume is obtained from the system volume in l divided by boiler output in kW and is specified in l/kW.

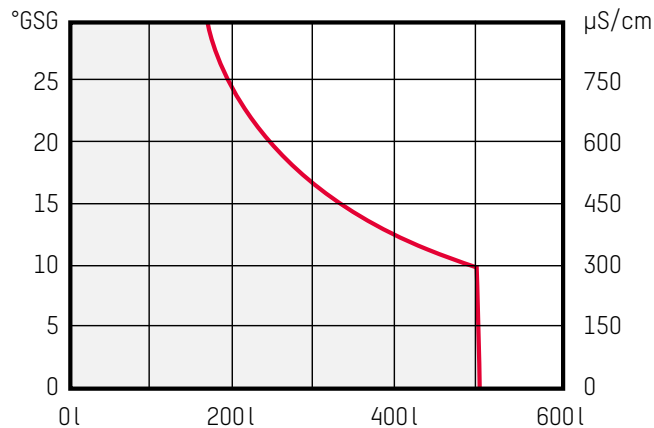
Using the following diagram, you can calculate the maximum permissible hardness in °d for the heating system filling water for the respective application.

Boiler output P in kW \ Specific system volume (SSV)	SSV < 20 l/kW	20 l/kW < SSV < 40 l/kW	SSV > 40 l/kW
P ≤ 50	–	≤ 16,8	< 0,3
P ≤ 50 (for circulation heaters)	≤ 16,8	≤ 8,4	< 0,3
50 < P ≤ 200	≤ 11,2	≤ 5,6	< 0,3
200 < P ≤ 600	≤ 8,4	< 0,3	< 0,3
P > 600	< 0,3	< 0,3	< 0,3

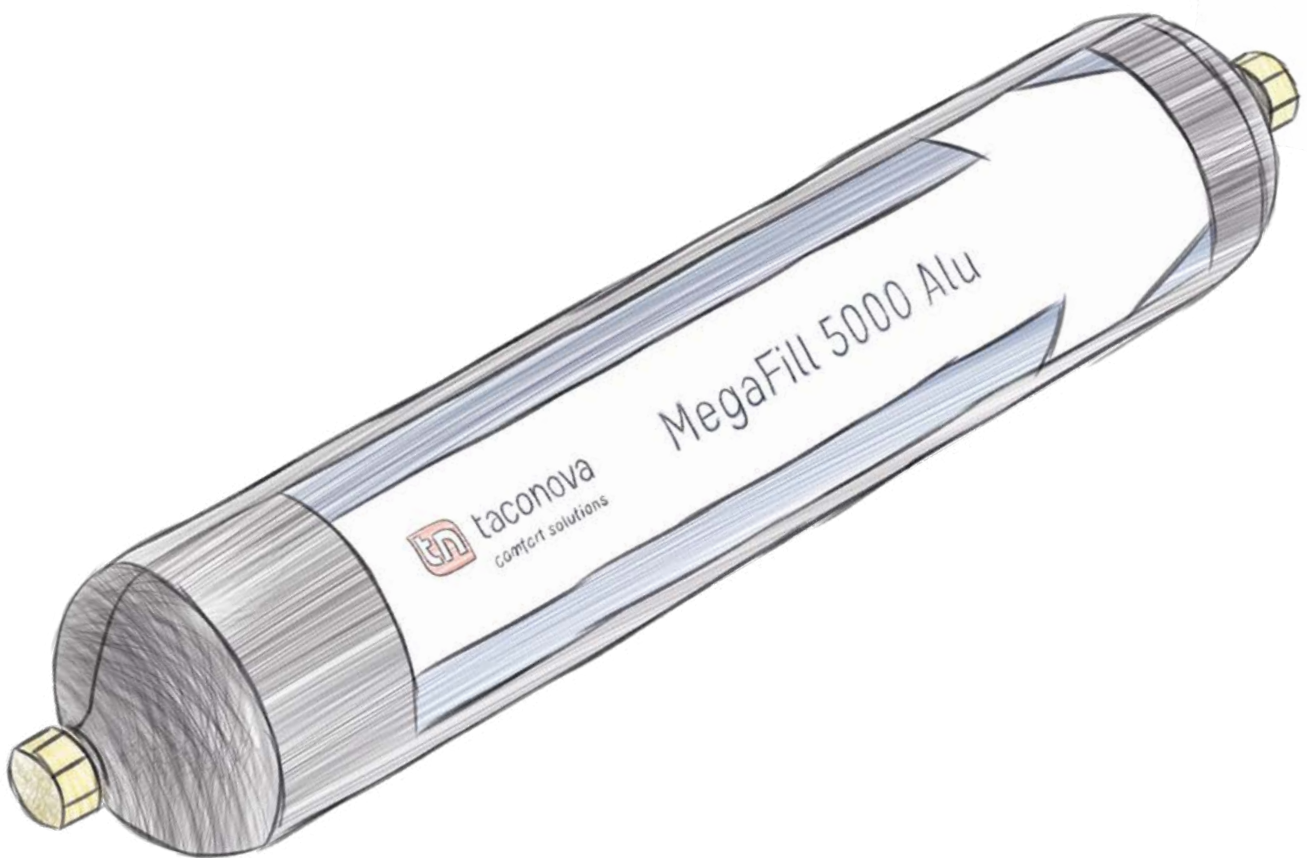
## CAPACITY OF WATER WITH LOW SALT CONTENT

5000 °GSG x L

- Determine the electrical conductivity of the untreated water in µS/cm
- Divide the value by 30 to calculate the total salt content (°GSG).  
For example: 600 µS/cm: 30 = 20°GSG
- To calculate the maximum treatment quantity, divide the capacity of MegaFill by the specified total salt content of the untreated water.  
For example: 5000°GSG x L: 20°GSG = 250 litres

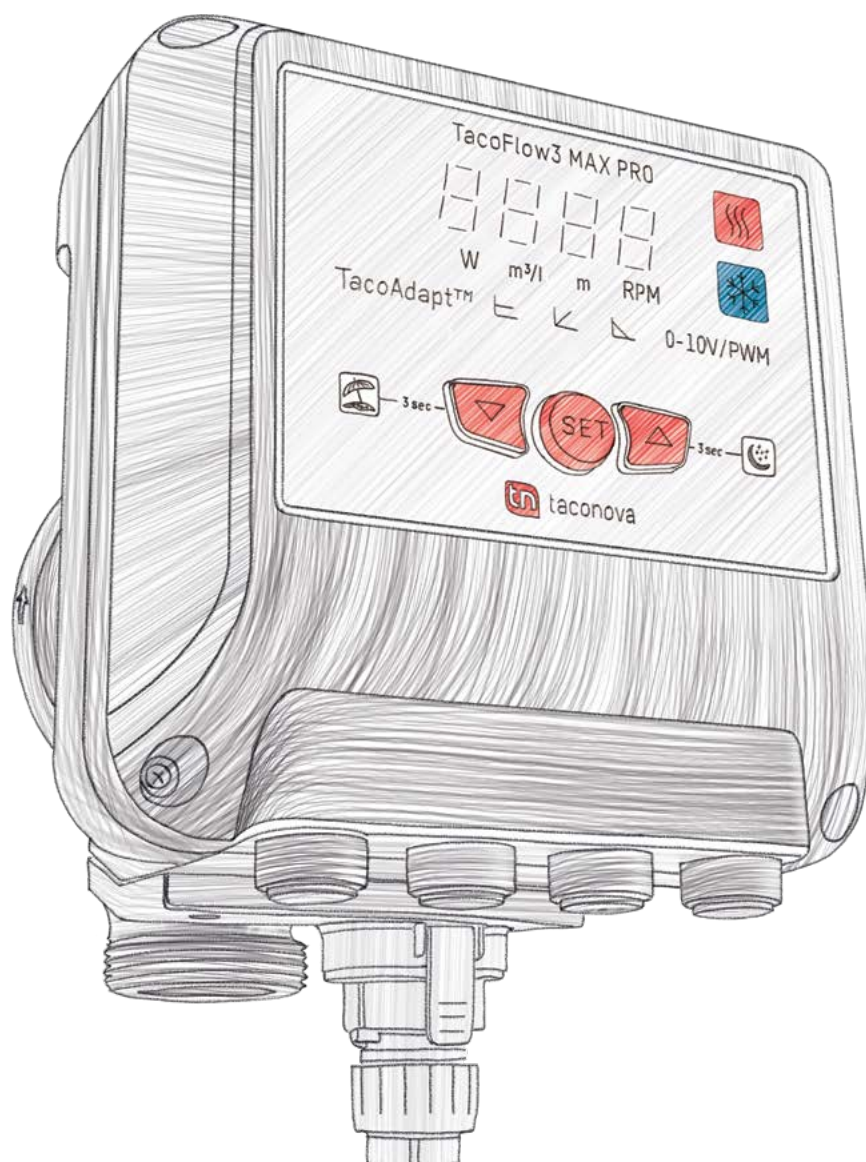






## PUMP TECHNOLOGY

Pumps are at the heart of hydraulic heating and cooling systems in buildings. They ensure the reliable transport of the required energy and thus provide a comfortable building climate. A wide range of suitable pumps in combination with balancing valves from Taconova ensure efficient heat distribution. This increases the energy efficiency of heating systems and therefore reduces operating costs. Renowned customers have been using these reliable, high quality products for many years.



# BETWEEN HEAT GENERATOR AND HEAT DISTRIBUTION

Pump technology is a new addition to Taconova's comprehensive range. This proven, yet innovative, technology has been developed and refined over many years at Taconova's parent and subsidiary companies Taco Inc. and Taco Italia. As of 2019, circulation pumps will be part of the Taconova product range. All pumps now feature a plug & play connection.

## OVERVIEW OF PRODUCT GROUPS



### VERSATILE PUMPS

These heating circuit pumps are divided into three categories: TacoFlow2, driven by a permanent synchronous motor and adjustable via three setting functions (min./max., proportional pressure and constant pressure). The TacoFlow2 ADAPT circulation pump with TacoAdapt function, which automatically adjusts the pump rate to the specific requirements of the system. In addition to the TacoAdapt functions, the TacoFlow2 eLink makes it possible to adjust pump settings wirelessly via smart devices (mobile phone or tablet). This allows additional, even finer adjustments, and the selected settings can be saved and logged.



### POWERFUL PUMPS

In the area of heating and cooling, TacoFlow MAX pumps cover a wider performance spectrum, especially for commercial applications: TacoFlow3 MAX with rotary selector for setting the required functions. TacoFlow3 MAX PRO offers numerous additional functions – for example, the ability to show operating conditions such as the flow rate, heat amount and current energy consumption directly on the display screen.



### SUSTAINABLE PUMPS

In the field of solar thermal systems, TacoFlow2 SOLAR circulation pumps enable the use of solar energy for heat generation. The use of this renewable energy reduces the need for fossil fuels, which is good news for the environment.



### PURE PUMPS

The TacoFlow2 PURE (C) DHW circulation pumps for potable water systems ensure that hygienic domestic hot water is always available. In addition, it prevents water being wasted, as hot water is immediately available when required, which also increases user convenience.

# OPTIMUM DISTRIBUTION OF VOLUME FLOW TO CONSUMERS

Circulation pumps supply various consumers with the required volume flow. This ensures a comfortable room climate or faster availability of hot water at the tap, and increases convenience.

## HIGHLY EFFICIENT CIRCULATION PUMPS

TacoFlow circulation pumps comply with the ErP Directive – and with their low EEI (Energy Efficiency Index) of < 0.20, they are among the most efficient on the market. They are used in residential and commercial buildings. In combination with hydronic balancing, they are eligible for subsidies in some countries.

## THE RIGHT PUMP SETTING FOR EVERY APPLICATION

Our heating pumps feature a broad range of possible operating modes. The options available are as follows: proportional pressure, constant pressure, TacoAdapt and a fixed min./max. speed. These options can be selected according to the respective application.

## THE RIGHT PUMP FOR EVERY APPLICATION

The product range includes circulation pumps for heating, cooling, solar and domestic hot water. The use of high grade materials ensures a long service life. They also stand apart through their efficient operation.

## NEW PRODUCT NAMES

With the addition to the range of Taconova, the Taco Italia circulation pumps get new product names:

Product name as of 2019	Product name up to 2018
<ul style="list-style-type: none"> <li>▪ TacoFlow2</li> <li>▪ TacoFlow2 ADAPT</li> <li>▪ TacoFlow2 eLink</li> <li>▪ TacoFlow3 MAX</li> <li>▪ TacoFlow3 MAX PRO</li> <li>▪ TacoFlow2 SOLAR</li> <li>▪ TacoFlow2 PURE C</li> <li>▪ TacoFlow2 PURE</li> <li>▪ TacoFlow3 GenS (Solar)</li> </ul>	<ul style="list-style-type: none"> <li>▪ ES2</li> <li>▪ ES2 Adapt</li> <li>▪ Innovation</li> <li>▪ Innovation</li> <li>▪ Innovation</li> <li>▪ ES2 Solar</li> <li>▪ ES2 Pure C</li> <li>▪ Innovation</li> <li>▪ Innovation</li> </ul>

# HIGH EFFICIENCY CIRCULATION PUMPS FOR VARIOUS BUILDING TECHNOLOGY APPLICATIONS

The entire range of Taconova circulation pumps is driven by synchronous motors with permanent magnet technology, which ensures efficient operation.

## BENEFITS AT THE PLANNING STAGE

- Safety at the design stage, thanks to a large number of built-in safety functions
- Meets the energy requirements of the relevant legislation (ErP 2009/125/EC)
- Can be adapted to suit any system situation thanks to a large number of operating modes

## ADVANTAGES AT THE INSTALLATION STAGE

- Straightforward installation of the circulation pumps
- Various operating mode settings, recognisable at a glance via LEDs
- Minimal space requirement due to compact design
- Reliable operation thanks to high quality components

## High efficiency circulation pumps

TacoFlow are circulation pumps featuring a glandless design. This means that all rotating parts of the motor are flushed with the pumped medium, which has a cooling and lubricating effect on the individual components.

The range includes various circulation pumps for heating, cooling, solar and domestic hot water applications, which deliver the required flow rate to the corresponding consumers.

- TacoFlow2
- TacoFlow2 ADAPT
- TacoFlow2 eLink
- TacoFlow3 MAX
- TacoFlow3 MAX PRO
- TacoFlow2 SOLAR
- TacoFlow2 PURE (C)

## APPLICATIONS

Taconova circulation pumps can be used widely in sanitary and HVAC systems:

Heating and cooling energy generation	Heating and cooling energy distribution (Indoor temperature control)	Sanitary systems
<ul style="list-style-type: none"> <li>▪ Solar thermal energy</li> <li>▪ Oil, gas, electricity, biomass</li> <li>▪ District heating</li> </ul>	<ul style="list-style-type: none"> <li>▪ Underfloor heating</li> <li>▪ Radiators</li> <li>▪ Chilled and heated ceilings</li> </ul>	<ul style="list-style-type: none"> <li>▪ Fresh water</li> </ul>

# TACOFLOW2 (C A)

## HEATING CIRCUIT PUMPS



Glandless circulation pumps for hot water heating systems in residential and commercial buildings.

### DESCRIPTION

The TacoFlow2 is driven by permanent-magnet synchronous motors. These innovative motors achieve a high efficiency at low operating costs.

They are maintenance-free and do not need replacement of seals and gaskets.

### INSTALLATION POSITION

The pump can be installed both horizontally or vertically. The arrow indicating the medium's flow direction must be observed.

### ADVANTAGES

- Efficient throughput setting with variable  $\Delta p$ -v proportional pressure curves, constant-pressure curves  $\Delta p$ -c or fixed Min-Max speed
- Media temperature range from +2 °C to +95 °C
- A colour LED indicates the current operating state

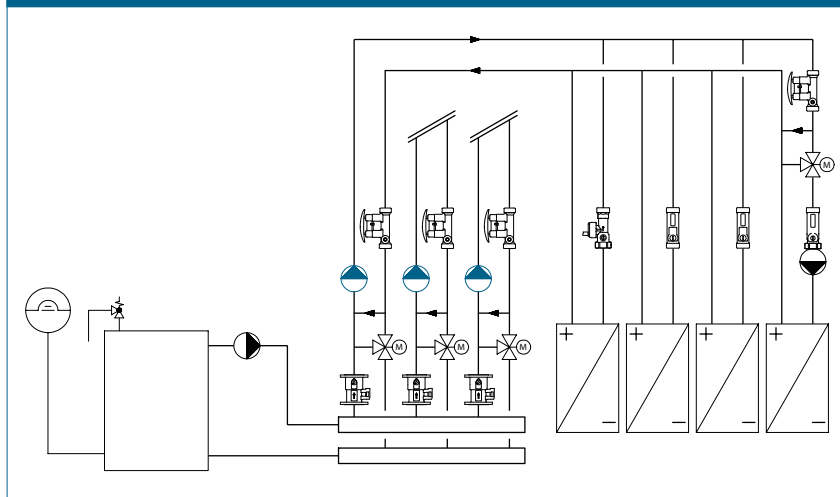
### OPERATION

The circulation pump are of a glandless design, since the rotating parts of the motor run inside the pumped medium. This provides lubrication for the motor and the rotating parts. The circulation pump is equipped with anti-blocking protection, since the high efficiency pumps no longer have a pump head screw for manual unblocking. They also feature an automatic venting function, which detects and indicates any air in the pump.

### BUILDING CATEGORIES

- Apartment blocks, single family dwellings, housing estates, multiple dwelling units
- Smaller public buildings
- Hotels and restaurants, industrial kitchens
- School buildings and sports facilities
- Office, commercial and industrial buildings
- Facilities with partial use, such as barracks, camping sites

### SYSTEM/BASIC DIAGRAM



## SPECIFICATION TEXT

See [www.taconova.com](http://www.taconova.com)

## TECHNICAL DATA

### Pump

- Ambient temperature:  
+0 °C to +40 °C
- Permissible temperature range\*:  
+2 °C to +95 °C
- Permissible temperature ranges  
at max. ambient temperature:
  - at 30 °C: +30 °C to +95 °C
  - at 35 °C: +35 °C to +90 °C
  - at 40 °C: +40 °C to +70 °C
- Static pressure:  
Max. 0.6 MPa - 6 bar
- Minimum pressure at suction port:
  - 0.03 MPa (0.3 bar) at 50 °C
  - 0.10 MPa (1.0 bar) at 95 °C
- Max. relative humidity: ≤ 95%
- Sound pressure level: <43 dB (A)
- Low Voltage Directive (2006/95/EC): Standards applied: EN 62233, EN 60335-1 and EN 60335-2-51
- EMC Directive (2004/108/EC); Standards applied: EN 61000-3-2, EN 61000-3-3, EN 55014-1 and EN 55014-2
- Ecodesign Directive (2009/125/EC); Standards applied: EN 16297-1 and EN 16297-2

### Material

- Pump body: Cast iron, CDP-coated (EN-GJL-200)
- Impeller: Composite plastic
- Shaft: Ceramic
- Bearing: Graphite
- Axial thrust bearing: Ceramic
- Can: Composite plastic

\* To prevent condensate in the motor and on the control electronics, the temperature of the pumped medium must always be higher than the ambient temperature.

## TECHNICAL DATA (CONTINUED)

### Motor and electronics

- Supply voltage: 1x230 V (±10%); frequency: 50/60 Hz
- Pump power plug
- Power rating (P1):  
Min. 3 W, max. 42 W
- Rated current (I1):  
Min. 0.03 A, max. 0.33 A
- Insulation class: H
- Protection rating: IP 44
- Safety category: II

## TYPE OVERVIEW

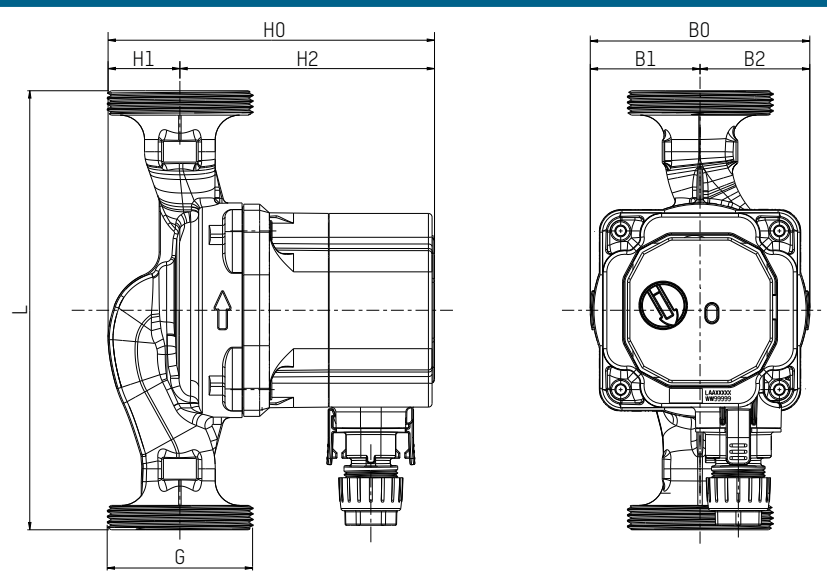
TacoFlow2 | Heating circuit pumps

Cast iron high efficiency pump with plug connection.

Pump head: 6 m

Order no.	Designation	Connection	Centre distance	Weight
302.2231.000	15-60/130	G 1"	130 mm	1,67 kg
302.4231.000	25-60/130	G 1 ½"	130 mm	1,81 kg
302.5231.000	25-60/180	G 1 ½"	180 mm	1,96 kg
302.6231.000	32-60/180	G 2"	180 mm	2,10 kg

## DIMENSIONAL DRAWING



## MEASUREMENT TABLE

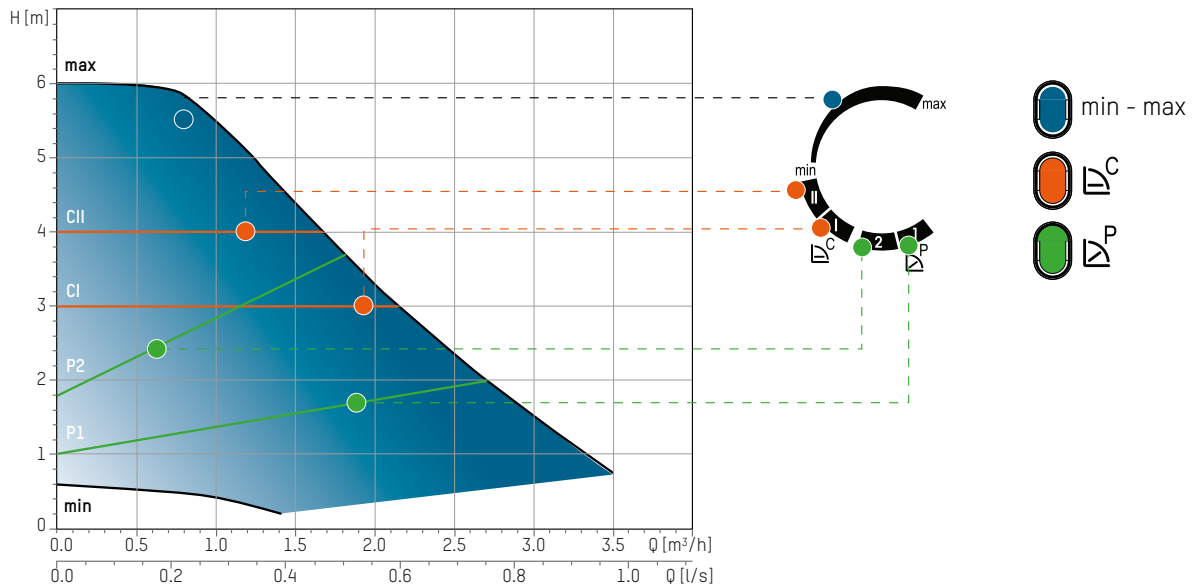
Order no.	L	B0	B1	B2	H0	H1	H2
302.2231.000	130	90	45	45	133,8	29,4	104,4
302.4231.000	130	90	45	45	133,8	29,4	104,4
302.5231.000	180	90	45	45	133,8	29,4	104,4
302.6231.000	180	90	45	45	133,8	29,4	104,4

## ENERGY EFFICIENCY INDEX

### EEI ≤ 0,20 - Part 2

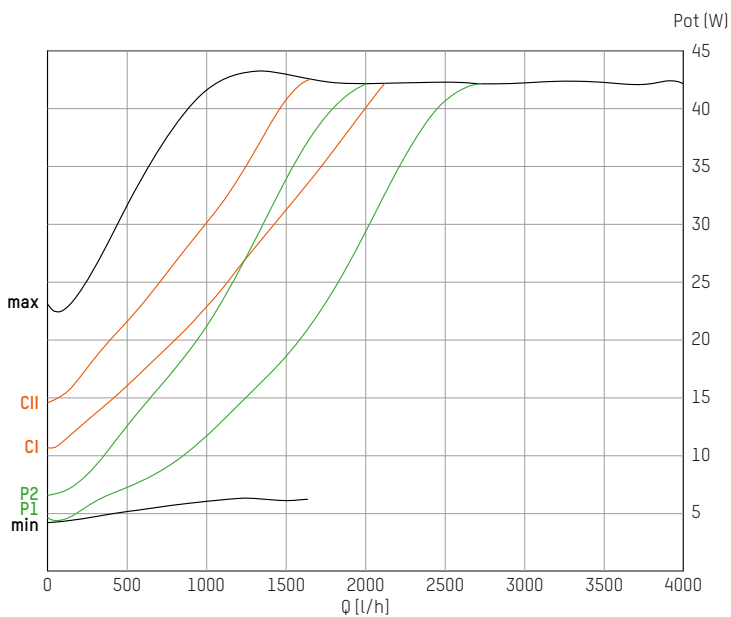
Reference value for the most efficient circulation pump is EEI ≤ 0.20

# PERFORMANCE CURVES



$Q [m^3/h]$	0.4	0.8	1.2	1.6	2	2.4	2.8	3.2
$H [m]$	6	5.9	5	4.4	3.4	2.6	2.8	1.2

# POWER CONSUMPTION CURVES





## SPECIFICATION TEXT

See [www.taconova.com](http://www.taconova.com)

## TECHNICAL DATA

### Pump

- Ambient temperature:  
+0 °C to +40 °C
- Permissible temperature range\*:  
+2 °C to +95 °C
- Permissible temperature ranges  
at max. ambient temperature:
  - at 30 °C: +30 °C to +95 °C
  - at 35 °C: +35 °C to +90 °C
  - at 40 °C: +40 °C to +70 °C
- Static pressure:  
Max. 0.6 MPa - 6 bar
- Minimum pressure at suction port:
  - 0.03 MPa (0.3 bar) at 50 °C
  - 0.10 MPa (1.0 bar) at 95 °C
- Max. relative humidity: ≤ 95%
- Sound pressure level: <43 dB (A)
- Low Voltage Directive (2006/95/EC): Standards applied: EN 62233, EN 60335-1 and EN 60335-2-51
- EMC Directive (2004/108/EC): Standards applied: EN 61000-3-2, EN 61000-3-3, EN 55014-1 and EN 55014-2
- Ecodesign Directive (2009/125/EC): Standards applied: EN 16297-1 and EN 16297-2

### Material

- Pump body: Cast iron, CDP-coated (EN-GJL-200)
- Impeller: Composite plastic
- Shaft: Ceramic
- Bearing: Graphite
- Axial thrust bearing: Ceramic
- Can: Composite plastic

\* To prevent condensate in the motor and on the control electronics, the temperature of the pumped medium must always be higher than the ambient temperature.

## TECHNICAL DATA (CONTINUED)

### Motor and electronics

- Supply voltage: 1x230 V (±10%); frequency: 50/60 Hz
- Pump power plug
- Power rating (P1):  
Min. 3 W, max. 56 W
- Rated current (I1):  
Min. 0.03 A, max. 0.44 A
- Insulation class: H
- Protection rating: IP 44
- Safety category: II

## TYPE OVERVIEW

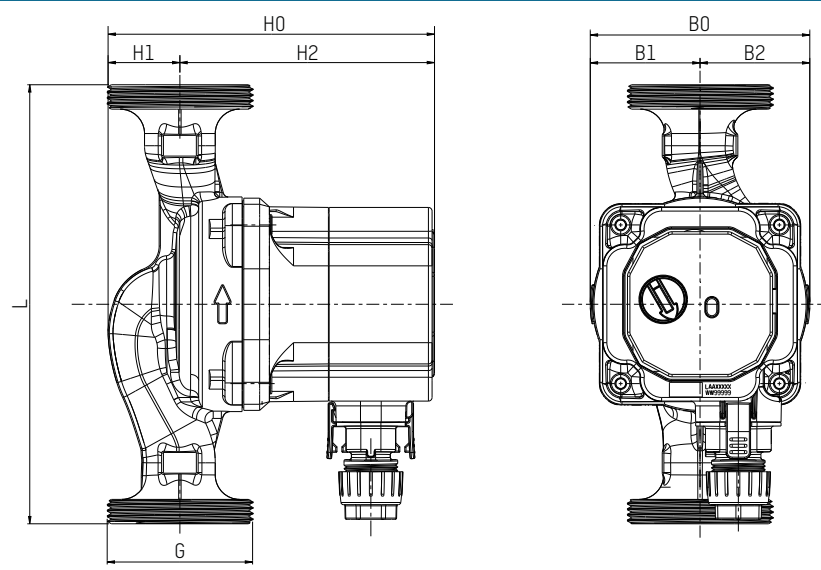
TacoFlow2 | Heating circuit pumps

Cast iron high efficiency pump with plug connection.

Pump head: 7 m

Order no.	Designation	Connection	Centre distance	Weight
302.2241.000	15-70/130	G 1"	130 mm	1,91 kg
302.4241.000	25-70/130	G 1 1/2"	130 mm	2,05 kg
302.5241.000	25-70/180	G 1 1/2"	180 mm	2,20 kg
302.6241.000	32-70/180	G 2"	180 mm	2,34 kg

## DIMENSIONAL DRAWING



## MEASUREMENT TABLE

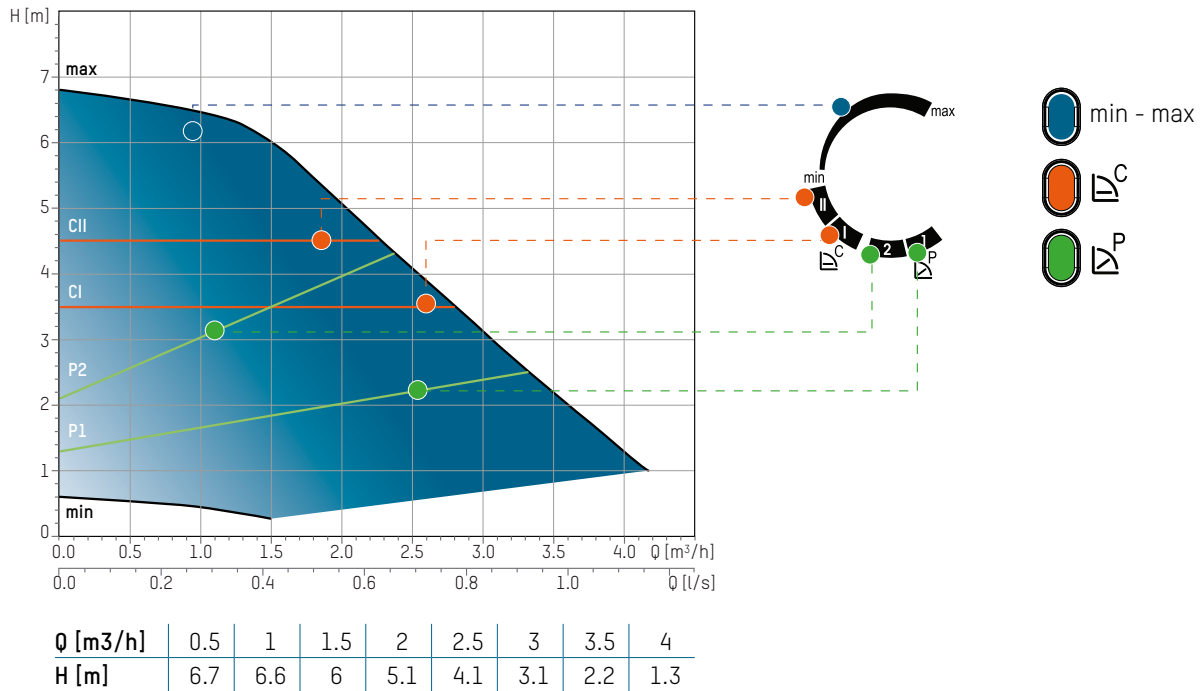
Order no.	L	B0	B1	B2	H0	H1	H2
302.2241.000	130	90	45	45	143,8	29,4	114,4
302.4241.000	130	90	45	45	143,8	29,4	114,4
302.5241.000	180	90	45	45	143,8	29,4	114,4
302.6241.000	180	90	45	45	143,8	29,4	114,4

## ENERGY EFFICIENCY INDEX

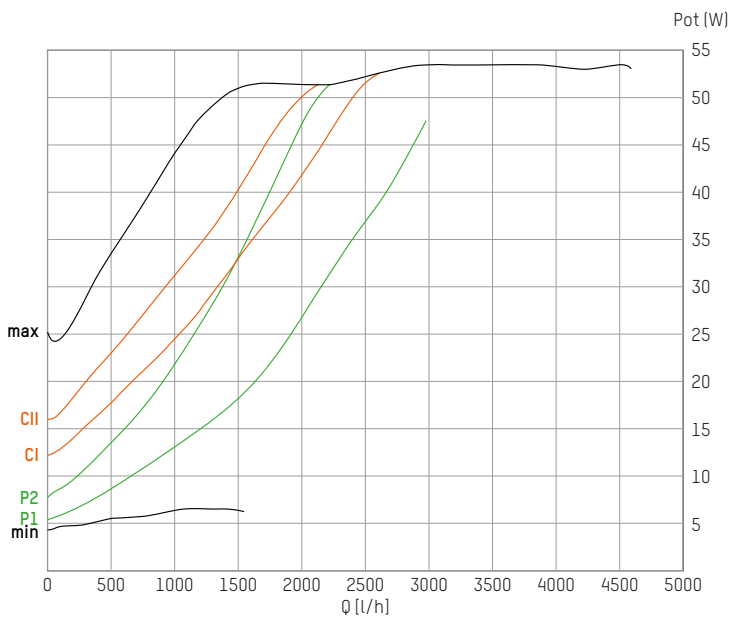
### EEI ≤ 0,21 - Part 2

Reference value for the most efficient circulation pump is  
EEI ≤ 0.20

# PERFORMANCE CURVES



# POWER CONSUMPTION CURVES



## SPECIFICATION TEXT

See [www.taconova.com](http://www.taconova.com)

## TECHNICAL DATA

### Pump

- Ambient temperature:  
+0 °C to +40 °C
- Permissible temperature range\*:  
+2 °C to +95 °C
- Permissible temperature ranges  
at max. ambient temperature:
  - at 30 °C: +30 °C to +95 °C
  - at 35 °C: +35 °C to +90 °C
  - at 40 °C: +40 °C to +70 °C
- Static pressure:  
Max. 0.6 MPa - 6 bar
- Minimum pressure at suction port:
  - 0.03 MPa (0.3 bar) at 50 °C
  - 0.10 MPa (1.0 bar) at 95 °C
- Max. relative humidity: ≤ 95%
- Sound pressure level: <43 dB (A)
- Low Voltage Directive (2006/95/EC): Standards applied: EN 62233, EN 60335-1 and EN 60335-2-51
- EMC Directive (2004/108/EC); Standards applied: EN 61000-3-2, EN 61000-3-3, EN 55014-1 and EN 55014-2
- Ecodesign Directive (2009/125/EC); Standards applied: EN 16297-1 and EN 16297-2

### Material

- Pump body: Composite plastic PA 66GF
- Impeller: Composite plastic
- Shaft: Ceramic
- Bearing: Graphite
- Axial thrust bearing: Ceramic
- Can: Composite plastic

\* To prevent condensate in the motor and on the control electronics, the temperature of the pumped medium must always be higher than the ambient temperature.

## TECHNICAL DATA (CONTINUED)

### Motor and electronics

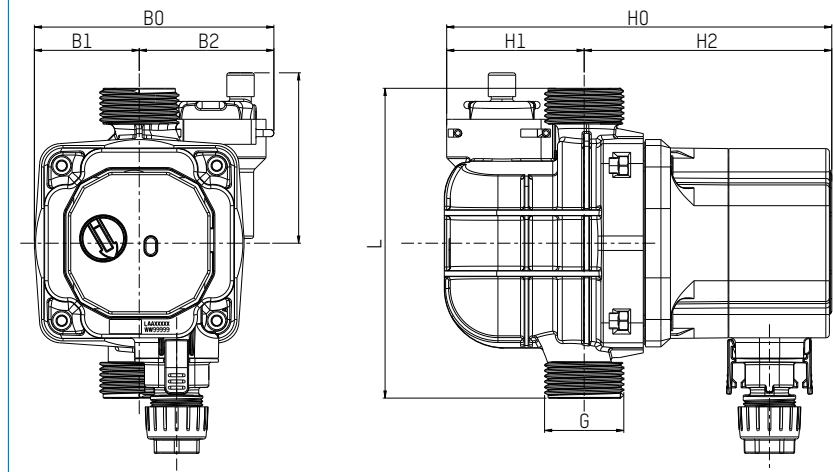
- Supply voltage: 1x230 V (±10%); frequency: 50/60 Hz
- Pump power plug
- Power rating (P1):  
Min. 3 W, max. 42 W
- Rated current (I1):  
Min. 0.03 A, max. 0.33 A
- Insulation class: H
- Protection rating: IP 44
- Safety category: II

## TYPE OVERVIEW

TacoFlow2 C A | Heating circuit pumps with air separator  
Composite plastic high efficiency pump with plug connection.  
Pump head: 6 m

Order no.	Designation	Connection	Centre distance	Weight
302.2134.000	C A 15 - 60/130	G 1"	130 mm	1,25 kg

## DIMENSIONAL DRAWING



## MEASUREMENT TABLE

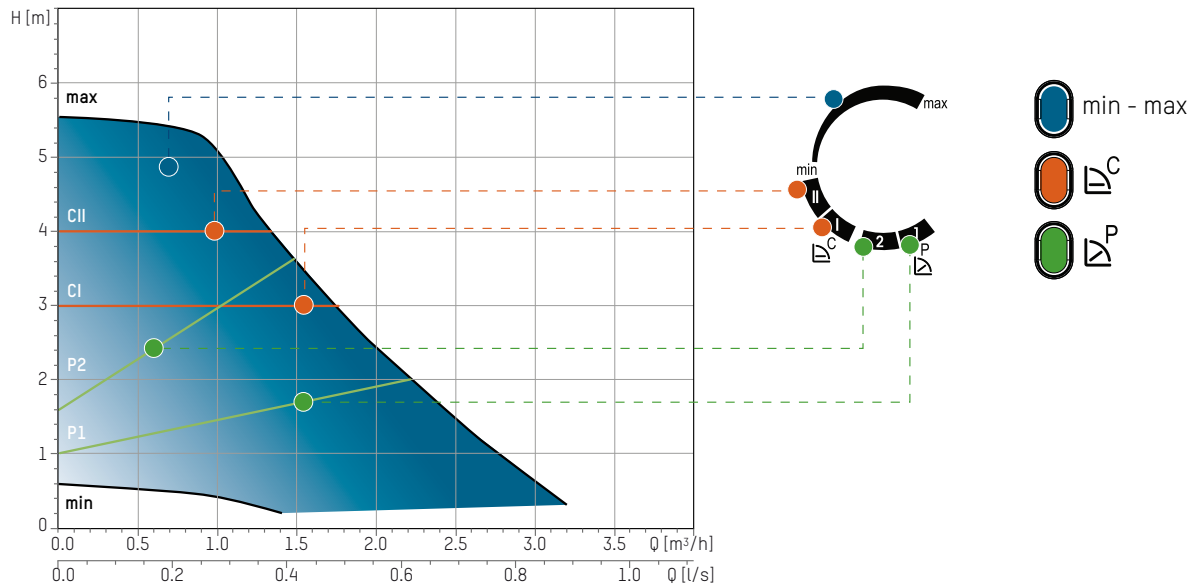
Order no.	L	L1	B0	B1	B2	H0	H1	H2
302.2134.000	130	71,5	100,5	44	56,5	161,4	58,7	102,7

## ENERGY EFFICIENCY INDEX

### EEI ≤ 0,23 - Part 2

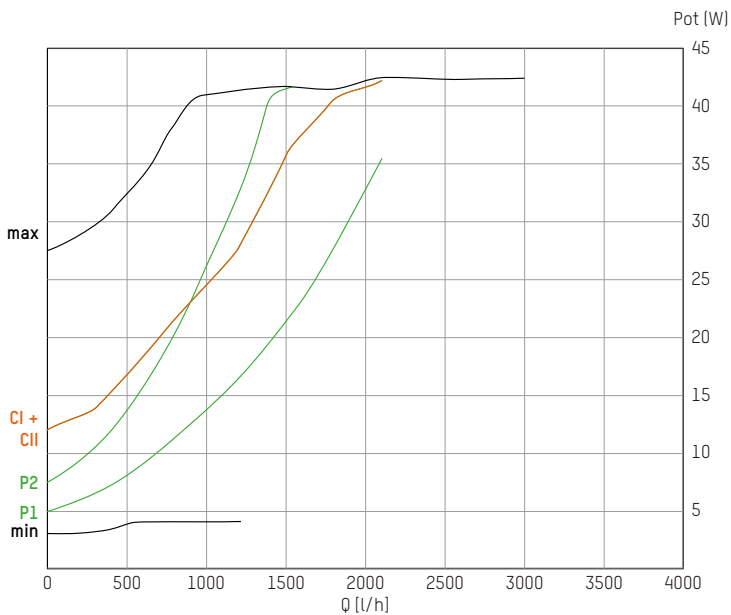
Reference value for the most efficient circulation pump is  
EEI ≤ 0.20

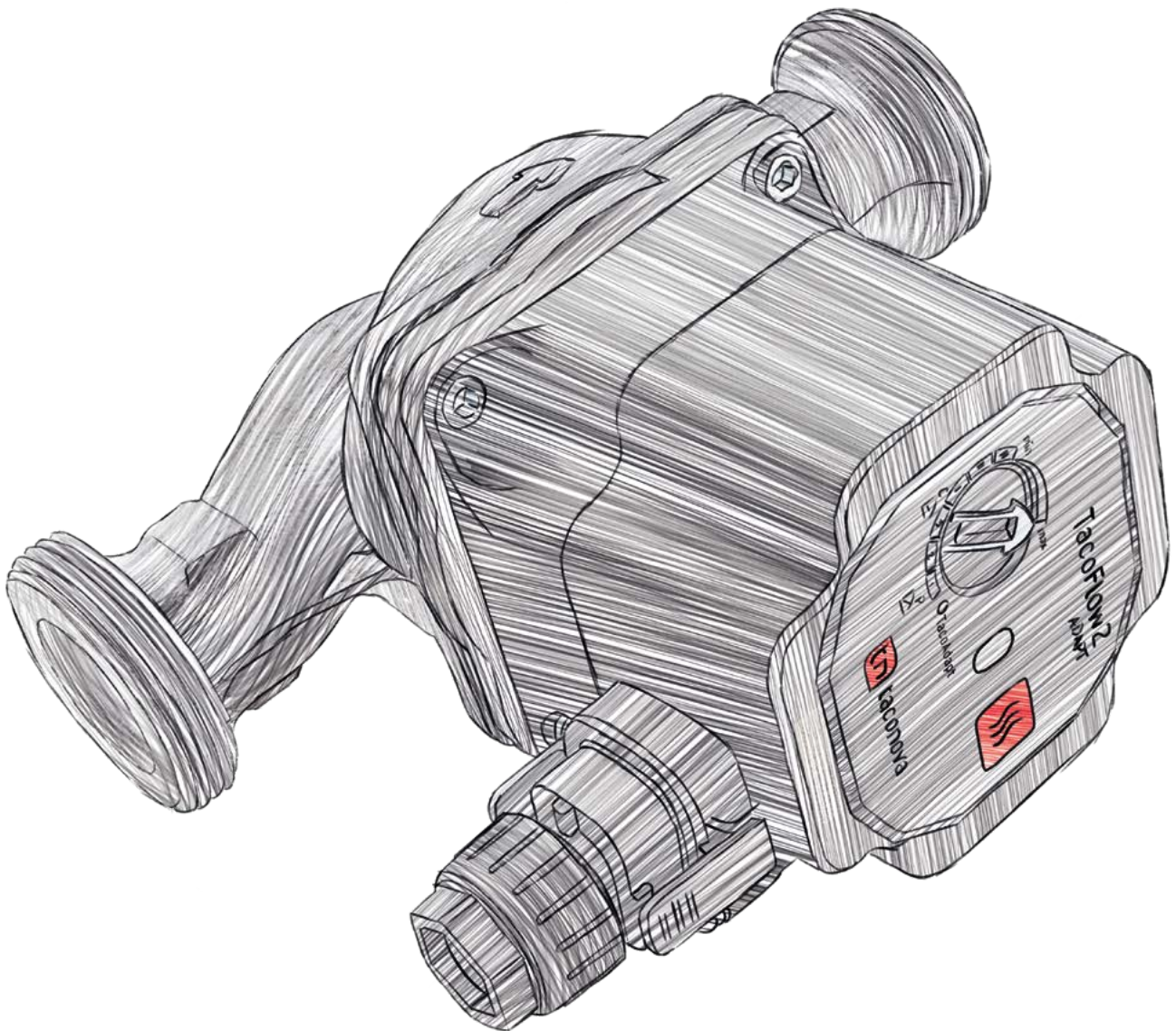
# PERFORMANCE CURVES



$Q$ [m³/h]	0.4	0.8	1.2	1.6	2	2.4	2.8	3.2
$H$ [m]	5.6	5.5	4.6	3.4	2.5	1.7	0.9	0.4

# POWER CONSUMPTION CURVES





# TACOFLOW2 ADAPT

## HEATING CIRCUIT PUMPS



Glandless circulation pumps for hot water heating systems in residential and commercial buildings.

### DESCRIPTION

The TacoFlow2 ADAPT is driven by permanent-magnet synchronous motors.

These innovative motors achieve a high efficiency at low operating costs.

They are maintenance-free and do not need replacement of seals and gaskets.

### INSTALLATION POSITION

The pump can be installed both horizontally or vertically.

The arrow indicating the medium's flow direction must be observed.

### ADVANTAGES

- TacoAdapt™ function: Automatic adaptation of the pump rate to the specific requirements of the system
- Efficient throughput setting with variable  $\Delta p$ -v proportional pressure curves, constant-pressure curves  $\Delta p$ -c or fixed Min-Max speed
- Media temperature range from +2°C to +110°C
- Insulation shell supplied as standard
- A colour LED indicates the current operating state

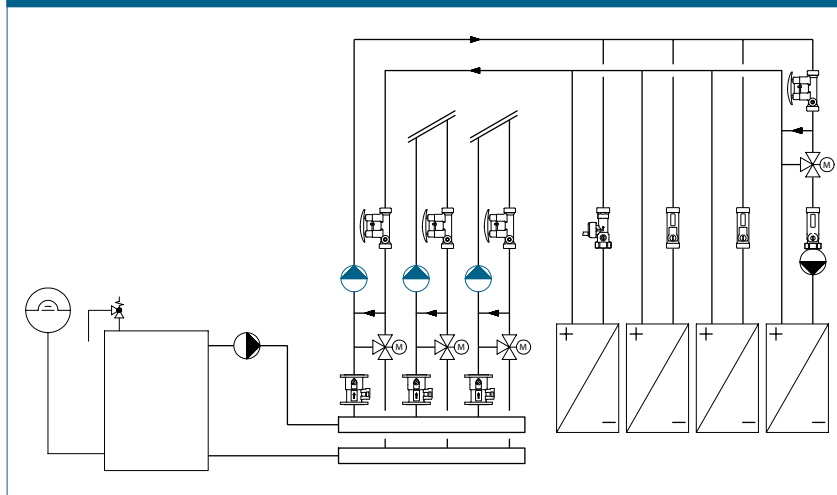
### OPERATION

The circulation pump are of a glandless design, since the rotating parts of the motor run inside the pumped medium. This provides lubrication for the motor and the rotating parts. The circulation pump is equipped with anti-blocking protection, since the high efficiency pumps no longer have a pump head screw for manual unblocking. They also feature an automatic venting function, which detects and indicates any air in the pump.

### BUILDING CATEGORIES

- Apartment blocks, single family dwellings, housing estates, multiple dwelling units
- Smaller public buildings
- Hotels and restaurants, industrial kitchens
- School buildings and sports facilities
- Office, commercial and industrial buildings
- Facilities with partial use, such as barracks, camping sites

### SYSTEM/BASIC DIAGRAM





## SPECIFICATION TEXT

See [www.taconova.com](http://www.taconova.com)

## TECHNICAL DATA

### Pump

- Ambient temperature:  
+0 °C to +40 °C
- Permissible temperature range\*:  
+2 °C to +110 °C
- Permissible temperature ranges  
at max. ambient temperature:
  - at 30 °C: +30 °C to +110 °C
  - at 35 °C: +35 °C to +90 °C
  - at 40 °C: +40 °C to +70 °C
- Static pressure:  
Max. 1.0 MPa - 10 bar
- Minimum pressure at suction port:
  - 0.03 MPa (0.3 bar) at 50 °C
  - 0.10 MPa (1.0 bar) at 95 °C
  - 0.15 MPa (1.5 bar) at 110 °C
- Max. relative humidity: ≤ 95%
- Sound pressure level: <43 dB (A)
- Low Voltage Directive (2006/95/EC): Standards applied: EN 62233, EN 60335-1 and EN 60335-2-51
- EMC Directive (2004/108/EC); Standards applied: EN 61000-3-2, EN 61000-3-3, EN 55014-1 and EN 55014-2
- Ecodesign Directive (2009/125/EC); Standards applied: EN 16297-1 and EN 16297-2

### Material

- Pump body: Cast iron, CDP-coated (EN-GJL-200)
- Impeller: Composite plastic
- Shaft: Ceramic
- Bearing: Graphite
- Axial thrust bearing: Ceramic
- Can: Composite plastic

\* To prevent condensate in the motor and on the control electronics, the temperature of the pumped medium must always be higher than the ambient temperature.

## TECHNICAL DATA (CONTINUED)

### Motor and electronics

- Supply voltage: 1x230 V (±10%); frequency: 50/60 Hz
- Pump power plug
- Power rating (P1):  
Min. 3 W, max. 42 W
- Rated current (I1):  
Min. 0.03 A, max. 0.33 A
- Insulation class: H
- Protection rating: IP 44
- Safety category: II

## TYPE OVERVIEW

TacoFlow2 ADAPT | Heating circuit pumps

Cast iron high efficiency pump with plug connection and TacoAdapt™ function. Standard thermal insulation shell.

Pump head: 6 m

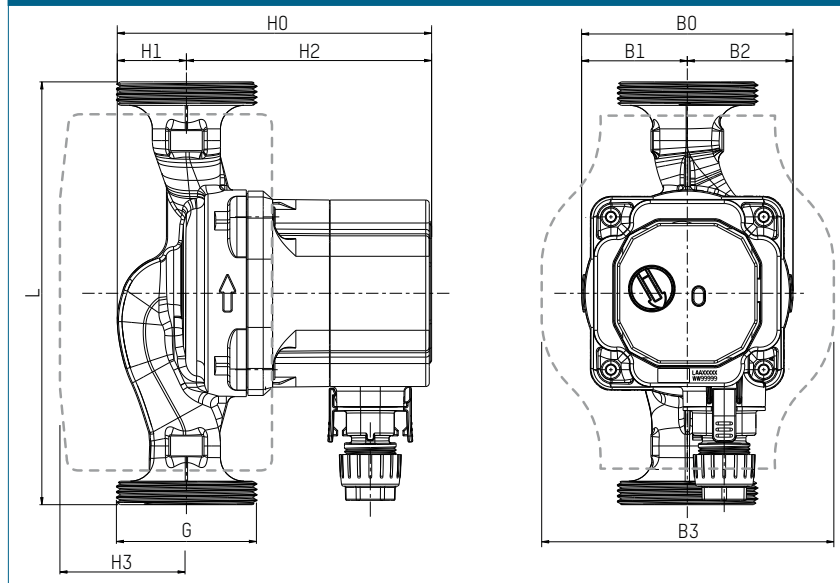
## TECHNICAL DATA (CONTINUED)

### Fluids

- Heating water (VDI 2035; SWKI BT 102-01; ÖNORM H 5195-1)
- Water and proprietary additives used against corrosion and freezing up to 30 %

Order no.	Designation	Connection	Centre distance	Weight
302.2232.000	ADAPT 15-60/130	G 1"	130 mm	1,67 kg
302.4232.000	ADAPT 25-60/130	G 1 ½"	130 mm	1,81 kg
302.5232.000	ADAPT 25-60/180	G 1 ½"	180 mm	1,96 kg
302.6232.000	ADAPT 32-60/180	G 2"	180 mm	2,10 kg

## DIMENSIONAL DRAWING



## MEASUREMENT TABLE

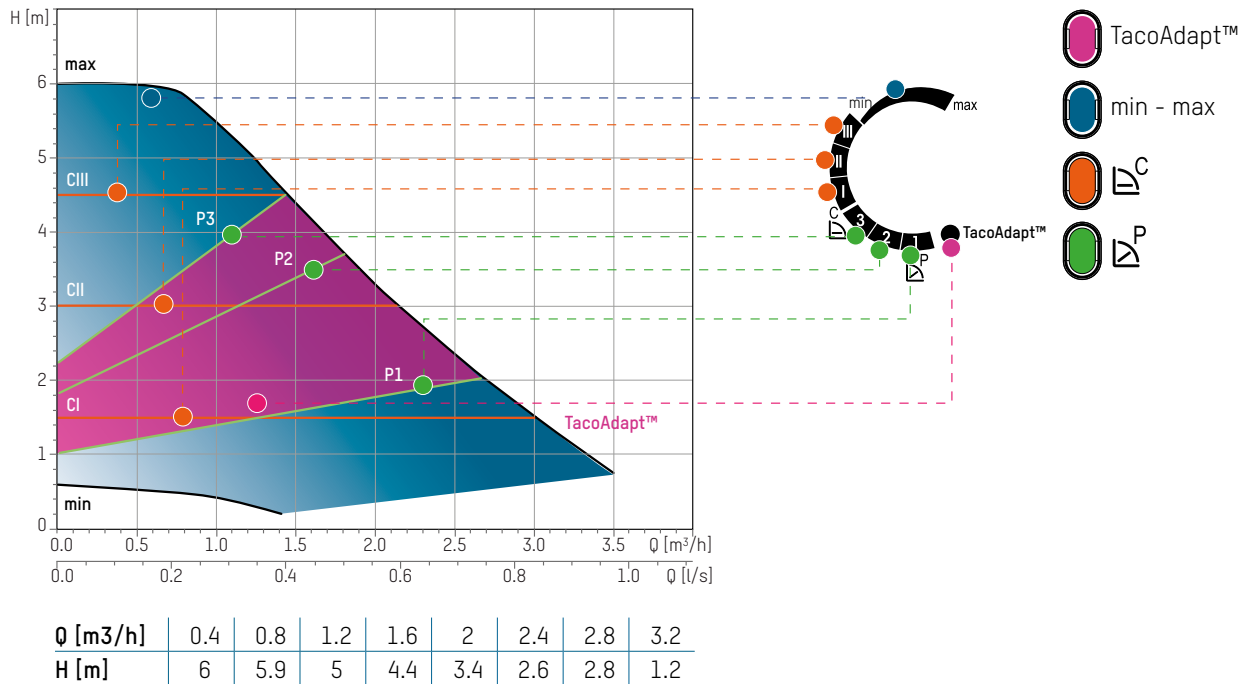
Order no.	L	B0	B1	B2	B3	H0	H1	H2	H3
302.2232.000	130	90	45	45	124	133,8	29,4	104,4	49
302.4232.000	130	90	45	45	124	133,8	29,4	104,4	49
302.5232.000	180	90	45	45	124	133,8	29,4	104,4	49
302.6232.000	180	90	45	45	124	133,8	29,4	104,4	49

## ENERGY EFFICIENCY INDEX

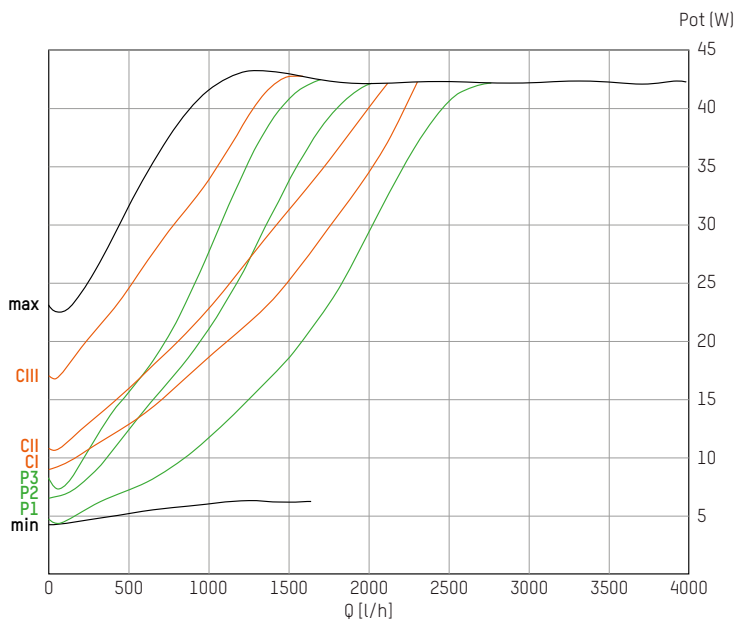
### EEI ≤ 0,20 - Part 2

Reference value for the most efficient circulation pump is EEI ≤ 0.20

# PERFORMANCE CURVES



# POWER CONSUMPTION CURVES





## SPECIFICATION TEXT

See [www.taconova.com](http://www.taconova.com)

## TECHNICAL DATA

### Pump

- Ambient temperature:  
+0 °C to +40 °C
- Permissible temperature range\*:  
+2 °C to +110 °C
- Permissible temperature ranges  
at max. ambient temperature:
  - at 30 °C: +30 °C to +110 °C
  - at 35 °C: +35 °C to +90 °C
  - at 40 °C: +40 °C to +70 °C
- Static pressure:  
Max. 1.0 MPa - 10 bar
- Minimum pressure at suction port:
  - 0.03 MPa (0.3 bar) at 50 °C
  - 0.10 MPa (1.0 bar) at 95 °C
  - 0.15 MPa (1.5 bar) at 110 °C
- Max. relative humidity: ≤ 95%
- Sound pressure level: <43 dB (A)
- Low Voltage Directive (2006/95/EC): Standards applied: EN 62233, EN 60335-1 and EN 60335-2-51
- EMC Directive (2004/108/EC); Standards applied: EN 61000-3-2, EN 61000-3-3, EN 55014-1 and EN 55014-2
- Ecodesign Directive (2009/125/EC); Standards applied: EN 16297-1 and EN 16297-2

### Material

- Pump body: Cast iron, CDP-coated (EN-GJL-200)
- Impeller: Composite plastic
- Shaft: Ceramic
- Bearing: Graphite
- Axial thrust bearing: Ceramic
- Can: Composite plastic

\* To prevent condensate in the motor and on the control electronics, the temperature of the pumped medium must always be higher than the ambient temperature.

## TECHNICAL DATA (CONTINUED)

### Motor and electronics

- Supply voltage: 1x230 V (±10%); frequency: 50/60 Hz
- Pump power plug
- Power rating (P1):  
Min. 3 W, max. 56 W
- Rated current (I1):  
Min. 0.03 A, max. 0.44 A
- Insulation class: H
- Protection rating: IP 44
- Safety category: II

## TYPE OVERVIEW

TacoFlow2 ADAPT | Heating circuit pumps

Cast iron high efficiency pump with plug connection and TacoAdapt™ function. Standard thermal insulation shell.

Pump head: 7 m

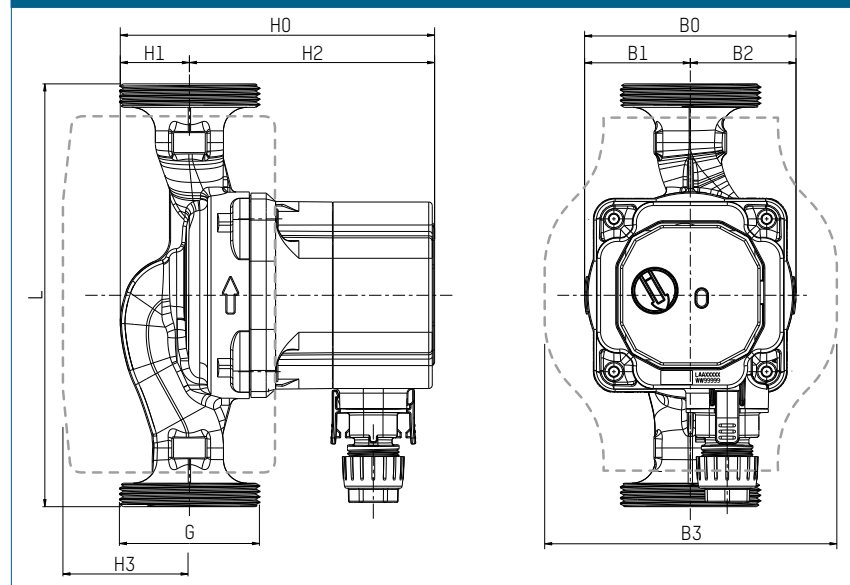
## TECHNICAL DATA (CONTINUED)

### Fluids

- Heating water (VDI 2035; SWKI BT 102-01; ÖNORM H 5195-1)
- Water and proprietary additives used against corrosion and freezing up to 30 %

Order no.	Designation	Connection	Centre distance	Weight
302.2242.000	ADAPT 15-70/130	G 1"	130 mm	1,91 kg
302.4242.000	ADAPT 25-70/130	G 1 ½"	130 mm	2,05 kg
302.5242.000	ADAPT 25-70/180	G 1 ½"	180 mm	2,20 kg
302.6242.000	ADAPT 32-70/180	G 2"	180 mm	2,34 kg

## DIMENSIONAL DRAWING



## MEASUREMENT TABLE

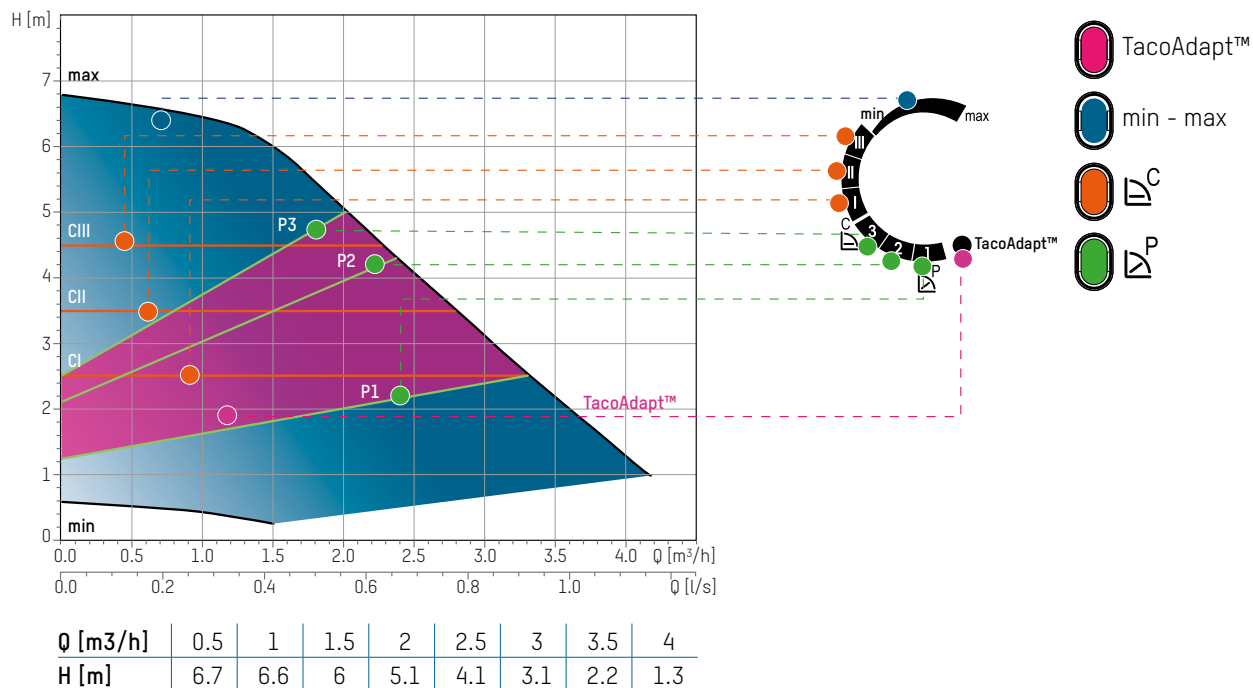
Order no.	L	B0	B1	B2	B3	H0	H1	H2	H3
302.2242.000	130	90	45	45	124	143,8	29,4	114,4	49
302.4242.000	130	90	45	45	124	143,8	29,4	114,4	49
302.5242.000	180	90	45	45	124	143,8	29,4	114,4	49
302.6242.000	180	90	45	45	124	143,8	29,4	114,4	49

## ENERGY EFFICIENCY INDEX

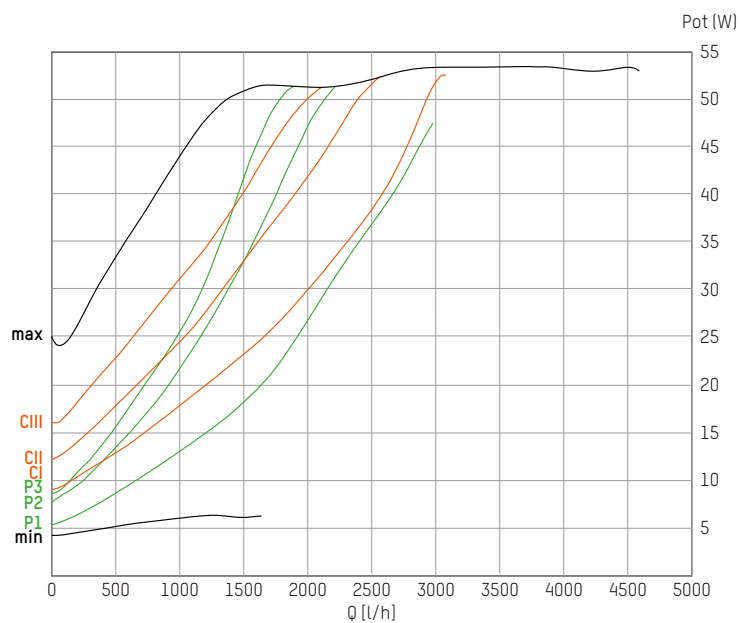
### EEI ≤ 0,21 - Part 2

Reference value for the most efficient circulation pump is  
EEI ≤ 0.20

# PERFORMANCE CURVES



# POWER CONSUMPTION CURVES



# TACOFLOW2 ELINK

## HEATING CIRCUIT PUMPS



Glandless circulation pumps for hot water heating systems in residential and commercial buildings.

### DESCRIPTION

The TacoFlow2 eLink is driven by permanent-magnet synchronous motors.

These innovative motors achieve a high efficiency at low operating costs.

They are maintenance-free and do not need replacement of seals and gaskets.

### INSTALLATION POSITION

The pump can be installed both horizontally or vertically.

The arrow indicating the medium's flow direction must be observed.

### ADVANTAGES

- eLink: Wireless communication between circulation pump and smartphone/tablet
- Additional, finer adjustment options
- Technical information shown on the display
- Efficient output setting through TacoAdapt™ function, variable  $\Delta p$ -v proportional pressure curve, constant pressure curve  $\Delta p$ -c or fixed min./max. speed
- Insulation shell supplied as standard
- A colour LED indicates the current operating state

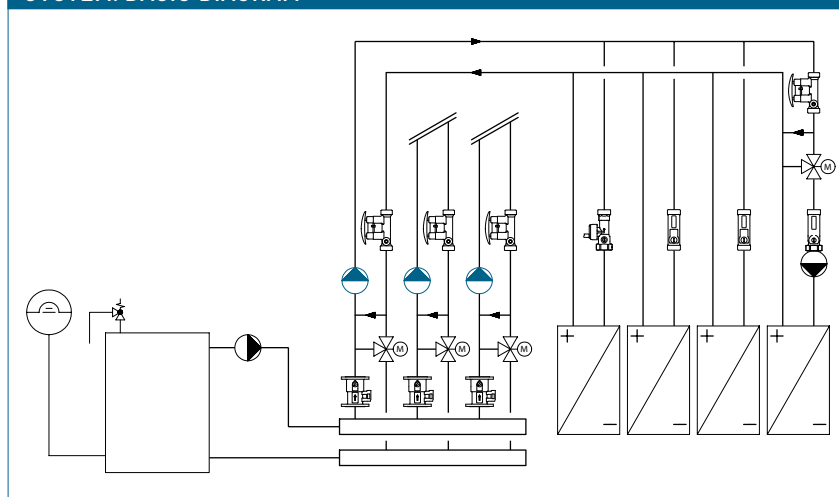
### OPERATION

The circulation pump are of a glandless design, since the rotating parts of the motor run inside the pumped medium. This provides lubrication for the motor and the rotating parts. The circulation pump is equipped with anti-blocking protection, since the high efficiency pumps no longer have a pump head screw for manual unblocking. They also feature an automatic venting function, which detects and indicates any air in the pump.

### BUILDING CATEGORIES

- Apartment blocks, single family dwellings, housing estates, multiple dwelling units
- Smaller public buildings
- Hotels and restaurants, industrial kitchens
- School buildings and sports facilities
- Office, commercial and industrial buildings
- Facilities with partial use, such as barracks, camping sites

### SYSTEM/BASIC DIAGRAM



## SPECIFICATION TEXT

See [www.taconova.com](http://www.taconova.com)

## TECHNICAL DATA

### Pump

- Ambient temperature:  
+0 °C to +40 °C
- Permissible temperature range\*:  
+2 °C to +110 °C
- Permissible temperature ranges  
at max. ambient temperature:
  - at 30 °C: +30 °C to +110 °C
  - at 35 °C: +35 °C to +90 °C
  - at 40 °C: +40 °C to +70 °C
- Static pressure:  
Max. 1.0 MPa - 10 bar
- Minimum pressure at suction port:
  - 0.03 MPa (0.3 bar) at 50 °C
  - 0.10 MPa (1.0 bar) at 95 °C
  - 0.15 MPa (1.5 bar) at 110 °C
- Max. relative humidity: ≤ 95%
- Sound pressure level: <43 dB (A)
- Low Voltage Directive (2006/95/EC): Standards applied: EN 62233, EN 60335-1 and EN 60335-2-51
- EMC Directive (2004/108/EC); Standards applied: EN 61000-3-2, EN 61000-3-3, EN 55014-1 and EN 55014-2
- Ecodesign Directive (2009/125/EC); Standards applied: EN 16297-1 and EN 16297-2

### Material

- Pump body: Cast iron, CDP-coated (EN-GJL-200)
- Impeller: Composite plastic
- Shaft: Ceramic
- Bearing: Graphite
- Axial thrust bearing: Ceramic
- Can: Composite plastic

\* To prevent condensate in the motor and on the control electronics, the temperature of the pumped medium must always be higher than the ambient temperature.

## TECHNICAL DATA (CONTINUED)

### Motor and electronics

- Supply voltage: 1x230 V (±10%); frequency: 50/60 Hz
- Pump power plug
- Power rating (P1):  
Min. 3 W, max. 42 W
- Rated current (I1):  
Min. 0.03 A, max. 0.33 A
- Insulation class: H
- Protection rating: IP 44
- Safety category: II

## TYPE OVERVIEW

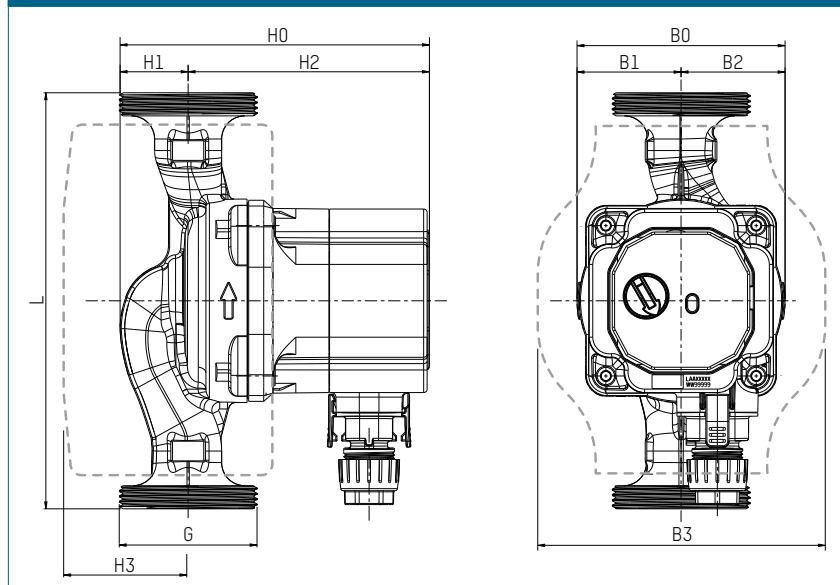
TacoFlow2 eLink | Heating circuit pumps

Cast iron high efficiency pump with plug connection, TacoAdapt™ and eLink function. Standard thermal insulation shell.

Pump head: 6 m

Order no.	Designation	Connection	Centre distance	Weight
302.4233.000	eLink 25-60/130	G 1 1/2"	130 mm	1,81 kg
302.5233.000	eLink 25-60/180	G 1 1/2"	180 mm	1,96 kg
302.6233.000	eLink 32-60/180	G 2"	180 mm	2,10 kg

## DIMENSIONAL DRAWING



## MEASUREMENT TABLE

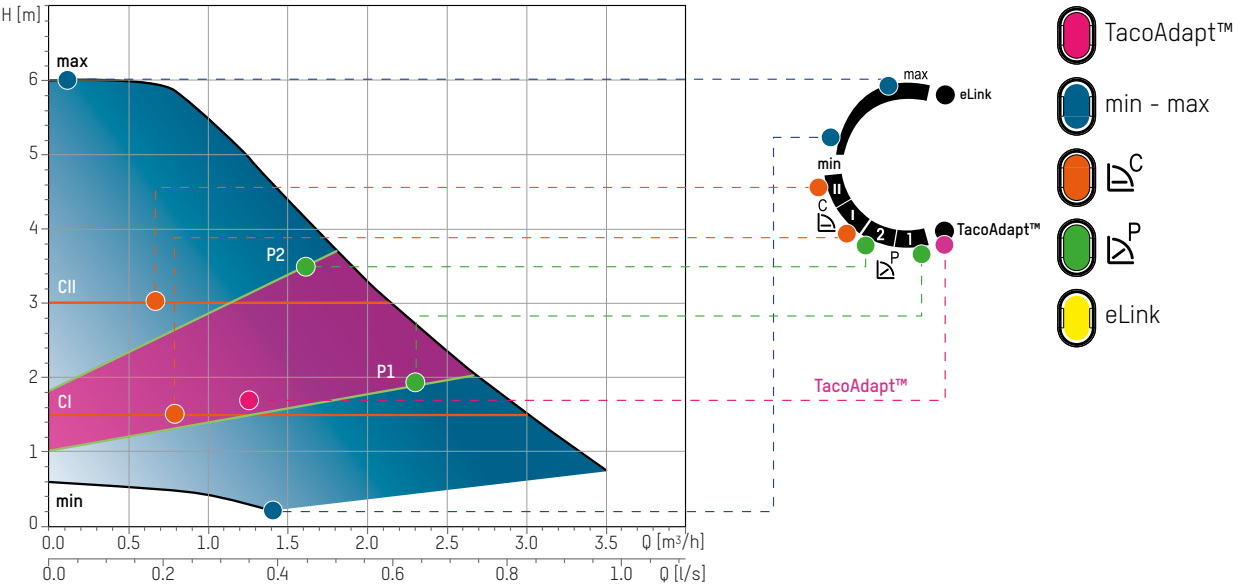
Order no.	L	B0	B1	B2	B3	H0	H1	H2	H3
302.4233.000	130	90	45	45	124	133,8	29,4	104,4	49
302.5233.000	180	90	45	45	124	133,8	29,4	104,4	49
302.6233.000	180	90	45	45	124	133,8	29,4	104,4	49

## ENERGY EFFICIENCY INDEX

### EEI ≤ 0,20 - Part 2

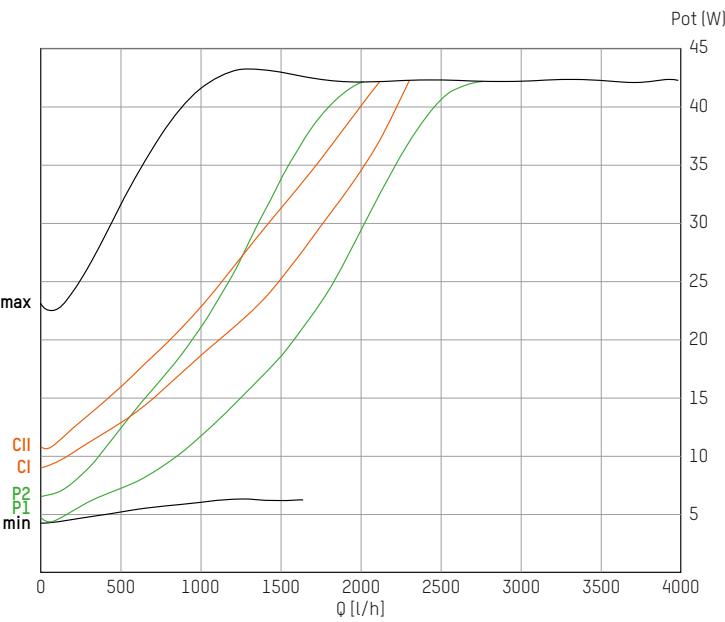
Reference value for the most efficient circulation pump is  
EEI ≤ 0.20

# PERFORMANCE CURVES



$Q$ [m³/h]	0.4	0.8	1.2	1.6	2	2.4	2.8	3.2
$H$ [m]	6	5.9	5	4.4	3.4	2.6	2.8	1.2

# POWER CONSUMPTION CURVES



# TACOFLOW3 GENS

HEATING CIRCUIT PUMPS (OEM VERSION)



Glandless circulation pumps for hot water heating systems in residential and commercial buildings.

## DESCRIPTION

The TacoFlow3 GenS is driven by permanent-magnet synchronous motors.

These innovative motors achieve a high efficiency at low operating costs.

They are maintenance-free and do not need replacement of seals and gaskets.

## INSTALLATION POSITION

The pump can be installed both horizontally or vertically.

The arrow indicating the medium's flow direction must be observed.

## ADVANTAGES

- Various versions for heating application available
- Controlled by an external PWM signal with profile "heating" or "solar", with feedback
- Manual unlock function
- Small and compact design
- TacoSmart plug with connected 1.2 m voltage and signal cable

## OPERATION

The circulation pump are of a glandless design, since the rotating parts of the motor run inside the pumped medium. This provides lubrication for the motor and the rotating parts.

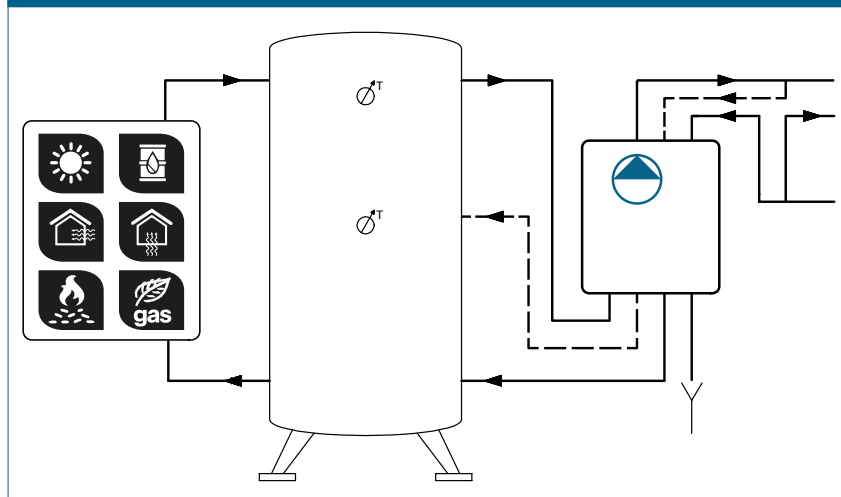
The circulation pump is equipped with anti-blocking protection which automatically unblocks the pump in the event of a blockage.

The circulation pumps are controlled via an external PWM signal (heating or solar).

## BUILDING CATEGORIES

- Apartment blocks, single family dwellings, housing estates, multiple dwelling units
- Smaller public buildings
- Hotels and restaurants, industrial kitchens
- School buildings and sports facilities
- Office, commercial and industrial buildings
- Facilities with partial use, such as barracks, camping sites

## SYSTEM/BASIC DIAGRAM



## TECHNICAL DATA

### Heating circuit pump

- Ambient temperature:  
+0 °C to +55 °C
- Permissible temperature range\*:  
+2 °C to +95 °C (briefly: 110 °C)
- Static pressure:  
Max. 0.6 MPa – 6 bar
- Minimum pressure at suction port:
  - 0.005 MPa (0.05 bar) at 75 °C
  - 0.025 MPa (0.25 bar) at 85 °C
  - 0.055 MPa (0.55 bar) at 95 °C
- Max. relative humidity: ≤ 95%
- Sound pressure level: <33 dB (A)
- Low Voltage directive (2014/30/EC): Standards applied: EN 62233, EN 60335-1 and EN 60335-2-51
- EMC directive (2014/35/EC); Standards applied: EN 61000-3-2, EN 61000-3-3, EN 55014-1 and EN 55014-2
- Ecodesign directive (2009/125/EC); Standards applied: EN 16297-1 and EN 16297-2
- Approval and label: VDE, CE, GS

### Material

- Pump body:
  - Cast iron (CDP-coated (EN-GJL-200))
  - Composite plastic
- Rotor / Impeller: Graphite, Ceramic, Composite plastic PPS, Ferrite, EPDM
- Rotor housing: Composite plastic PA6T
- Motor: Composite plastic PA66, steel, copper

### Motor and electronics

- Supply voltage:  
1x230 V (+10% / -15%)
- Pump power plug TacoSmart with installed 1.2 m cable (to be ordered separately)
- Power rating (P1):  
Min. 3 W, Max. 63 W
- Rated current (I1):  
Min. 0.05 A, Max. 0.53 A
- Insulation class: H
- Protection rating: IPX4D
- Safety category: II
- Starting current: <3 A

### Fluids

- Heating water (VDI 2035; SWKI BT 102-01; ÖNORM H 5195-1)
- Water and proprietary additives used against corrosion and freezing up to 40 %

\* To prevent condensate in the motor and on the control electronics, the temperature of the pumped medium must always be higher than the ambient temperature.

## TYPE OVERVIEW

TacoFlow3 GenS | Heating circuit pumps

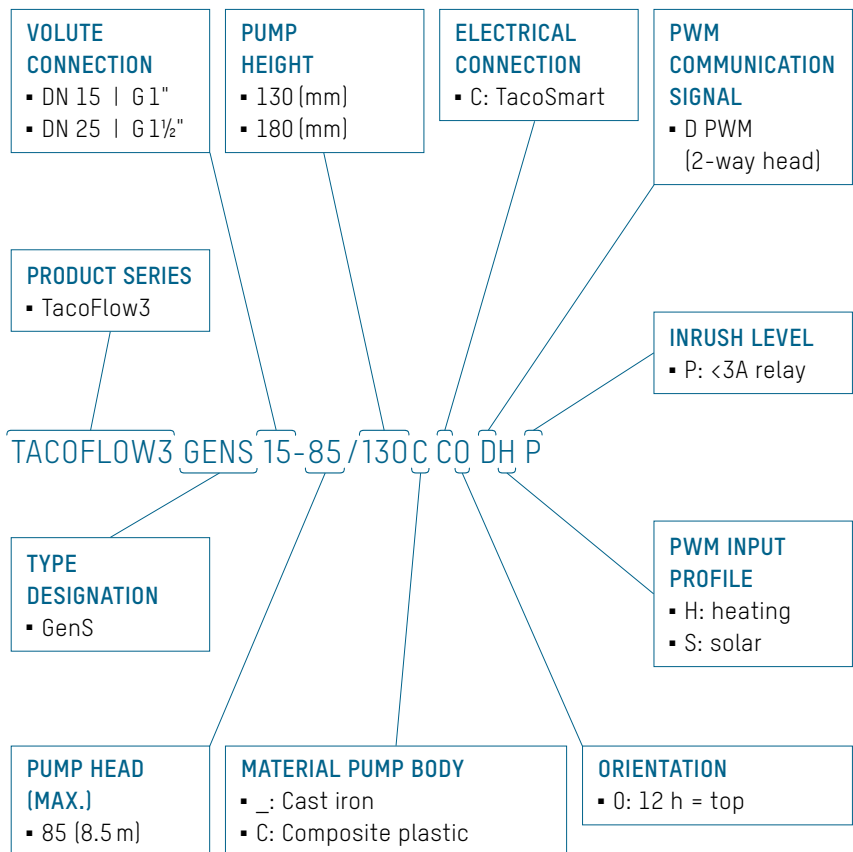
High efficiency pump made of cast iron and composite plastic (heating only) with plug connection.

Pump head: 8.5 m

Order no.	Designation	Connec- tion	Centre distance	Weight
301.2151.029*	GenS 15-85/130C C0 DH P	G 1"	130 mm	1.2 kg
301.2155.029**	GenS 15-85/130C C0 DS P	G 1"	130 mm	1.2 kg
301.2251.029*	GenS 15-85/130 C0 DH P	G 1"	130 mm	1.7 kg
301.2255.029**	GenS 15-85/130 C0 DS P	G 1"	130 mm	1.7 kg
301.4251.029*	GenS 25-85/130 C0 DH P	G 1 ½"	130 mm	1.85 kg
301.4255.029**	GenS 25-85/130 C0 DS P	G 1 ½"	130 mm	1.85 kg
301.5251.029*	GenS 25-85/180 C0 DH P	G 1 ½"	180 mm	2.0 kg
301.5255.029**	GenS 25-85/180 C0 DS P	G 1 ½"	180 mm	2.0 kg

\* PWM protocol: heating | \*\* PWM protocol: solar

## TYPE KEY



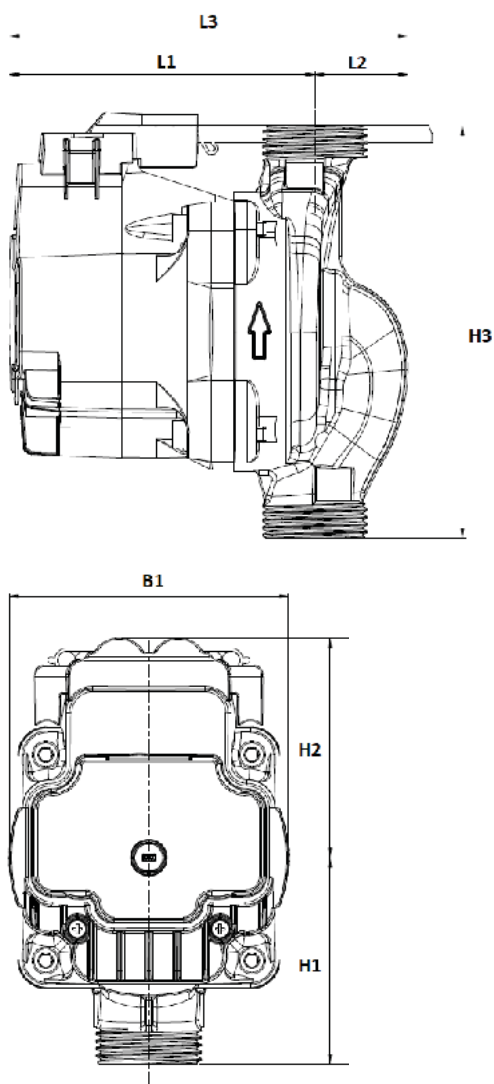
## ENERGY EFFICIENCY INDEX

EEI ≤ 0,20 - Part 2

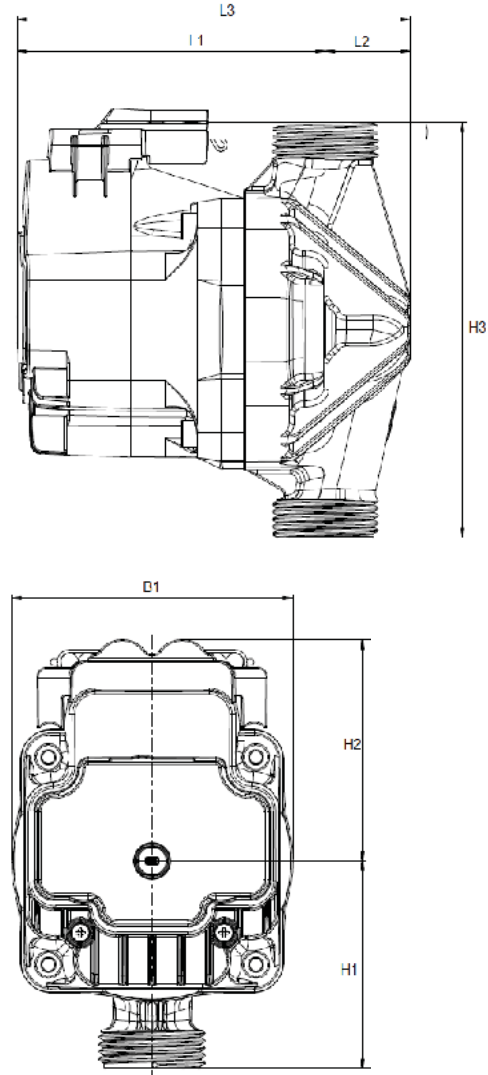
Reference value for the most efficient circulation pump is EEI ≤ 0.20

## DIMENSIONAL DRAWING

Pump body: Cast iron



Pump body: Composite plastic



## MEASUREMENT TABLE

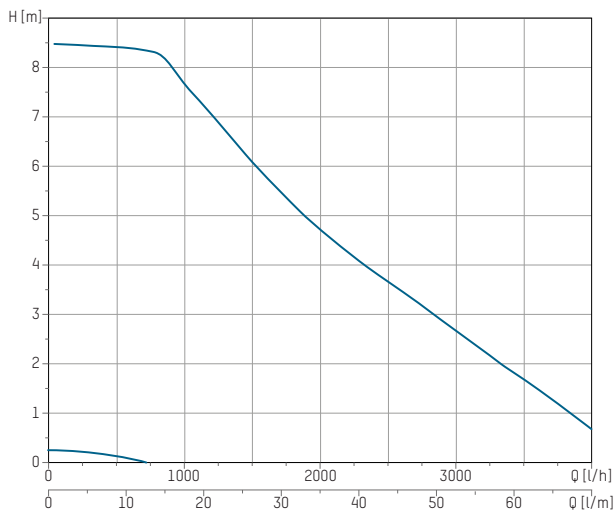
Order no.	L1	L2	L3	B1	H1	H2	H3
301.2251.029	98	30	128	88	65	70	130
301.2255.029							
301.4251.029							
301.4255.029					90		180
301.5251.029							
301.5255.029							

Order no.	L1	L2	L3	B1	H1	H2	H3
301.2151.029	98	27	125	88	65	70	130
301.2155.029							

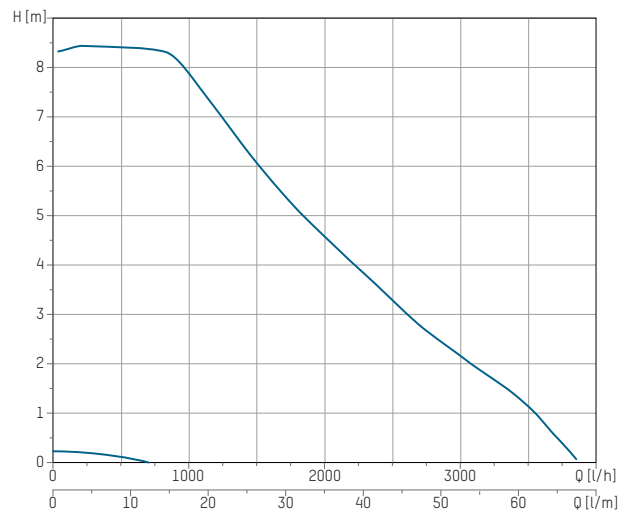


## PERFORMANCE CURVES

Pump body: Cast iron

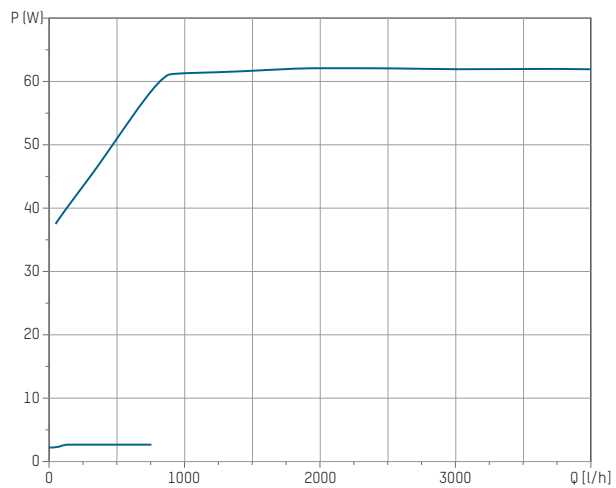


Pump body: Composite plastic

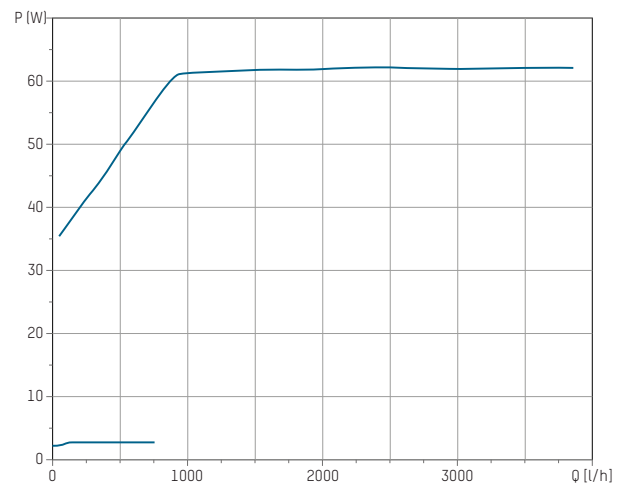


## POWER CONSUMPTION CURVES

Pump body: Cast iron



Pump body: Composite plastic



## EXPLANATION PWM CONTROL SIGNALS

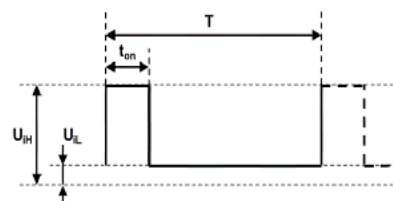
### Control signals

The TacoFlow3 GenS platform can communicate with heat generators (boiler or other device) via pulse width modulation (PWM).

The pump is controlled by an external controller, but can also send information back to it.

### Communication

The PWM communication is standardized in accordance with VDMA 24224 «Wet runner circulating pumps - Specification of PWM control signals». Customer-specific versions can also be developed on request.



d = duty cycle [%]

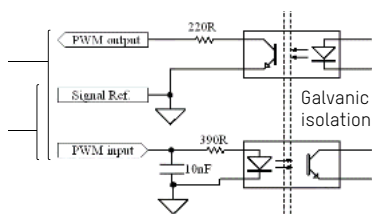
T = period [s]

U<sub>H</sub>=Input voltage higher value

U<sub>L</sub>=Input voltage lower value

### Input protocol

The PWM interface can be 1-way or 2-way and is galvanically isolated to ensure that the user does not come into contact with high voltage.



### PWM interface electrical specification

PWM input frequency	100 - 4000 Hz
Input Voltage upper value U <sub>IH</sub>	4 - 24 V
Input Voltage lower value U <sub>IL</sub>	<1 V
Input current at U <sub>IH</sub>	<15 mA
PWM input operating range	0-100 %
PWM output frequency	75Hz ±5%
Accuracy of output signal	±2 %
Output duty cycle	0 - 100%
Output transistor collector voltage	<70 V
Output transistor collector current	<25 mA
Power dissipation on output resistor	<250 mW
Insulation voltage	3750 V
Sensitive to polarity change	Coded connector

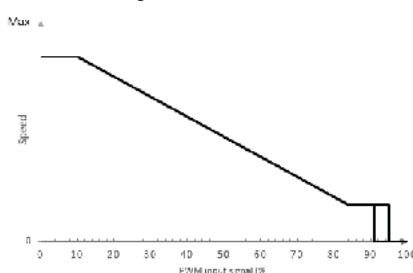
### Input protocol

According to the VDMA 24224 the input signal can have a "heating" profile or a "solar" profile.

#### "Heating" profile

In the "heating" profile in case of cable breakage in a gas boiler system, the circulator continues to work at maximum speed to guarantee the transfer heat to the primary exchanger.

#### PWM Heating Profile

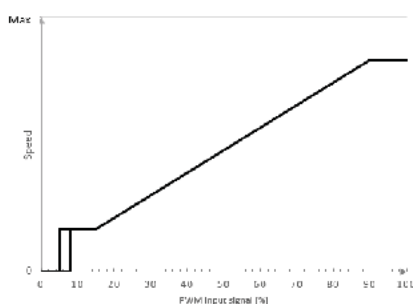


Pump status	PWM input signal
Maximum Speed (Max)	≤10 %
Variable Speed (Min-Max)	>10 ... ≤84 %
Minimum Speed (Min)	>84 ... ≤91 %
Hysteresis area (On/Off)	>91 ... ≤95 %
Standby mode (Off)	>95 ... ≤100 %

#### "Solar" profile

In the "solar" profile in case of cable breakage the circulator stops to avoid overheating of the solar thermal system.

#### PWM Solar Profile



Pump status	PWM input signal
Standby mode (Off)	≤5 %
Hysteresis area (On/Off)	>5 ... ≤8 %
Minimum Speed (Min)	>8 ... ≤15 %
Variable Speed (Min-Max)	>15 ... ≤90 %
Maximum Speed (Max)	>90 ... ≤100 %

# TACOFLOW3 MAX

## HEATING AND COOLING CIRCUIT PUMPS



Glandless circulation pumps for hot water heating systems in residential and commercial buildings.

### DESCRIPTION

The TacoFlow3 MAX is driven by permanent-magnet synchronous motors. These innovative motors achieve a high efficiency at low operating costs.

They are maintenance-free and do not need replacement of seals and gaskets.

### INSTALLATION POSITION

The pump can be installed both horizontally or vertically. The arrow indicating the medium's flow direction must be observed.

### ADVANTAGES

- TacoAdapt™ function: Automatic adaptation of the pump rate to the specific requirements of the system
- Efficient output setting with variable  $\Delta p$ -v proportional pressure curve, constant pressure curves  $\Delta p$ -c, fixed min./max. speed and 0-10 V or PWM control
- Media temperature range from  $-10^{\circ}\text{C}$  to  $+110^{\circ}\text{C}$
- Insulation shell supplied as standard
- A colour LED indicates the current operating state

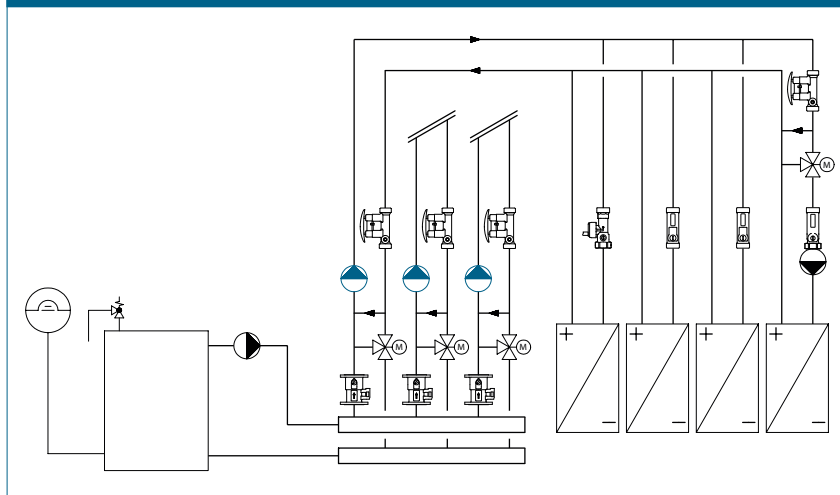
### OPERATION

The circulation pump are of a glandless design, since the rotating parts of the motor run inside the pumped medium. This provides lubrication for the motor and the rotating parts. The circulation pump is equipped with anti-blocking protection, since the high efficiency pumps no longer have a pump head screw for manual unblocking. They also feature an automatic venting function, which detects and indicates any air in the pump.

### BUILDING CATEGORIES

- Apartment blocks, multiple dwelling units
- Public buildings
- Hotels and restaurants, industrial kitchens
- School buildings and sports facilities
- Office, commercial and industrial buildings
- Facilities with partial use, such as barracks, camping sites

### SYSTEM/BASIC DIAGRAM



## SPECIFICATION TEXT

See [www.taconova.com](http://www.taconova.com)

## TECHNICAL DATA

### Pump

- Ambient temperature:  
+0 °C to +40 °C
- Permissible temperature range:  
-10 °C to +110 °C
- Permissible temperature ranges  
at max. ambient temperature:
  - at 30 °C: +30 °C to +100 °C
  - at 40 °C: +40 °C to +70 °C
- Static pressure:  
Max. 1.0 MPa - 10 bar
- Minimum pressure at suction port:
  - 0.05 MPa (0.5 bar) at 80 °C
  - 0.15 MPa (1.5 bar) at 95 °C
- Max. relative humidity: ≤ 80%
- Sound pressure level: < 43 dB (A)
- Low Voltage Directive (2006/95/EC):  
Standards applied: EN 60335-1 and  
EN 60335-2-51
- EMC Directive (2004/108/EC);  
Standards applied: EN 61000-3-2,  
EN 61000-3-3
- Ecodesign Directive (2009/125/EC);  
Standards applied: EN 16297-1,  
EN 16297-2
- Inputs/outputs: PWM, 0-10 VDC

### Material

- Pump body: Cast iron, CDP-coated  
(EN-GJL-200)
- Impeller: Brass / Composite plastic
- Shaft: Ceramic
- Bearing: Graphite / Ceramic
- Rotor housing: Composite plastic

## TECHNICAL DATA (CONTINUED)

### Motor and electronics

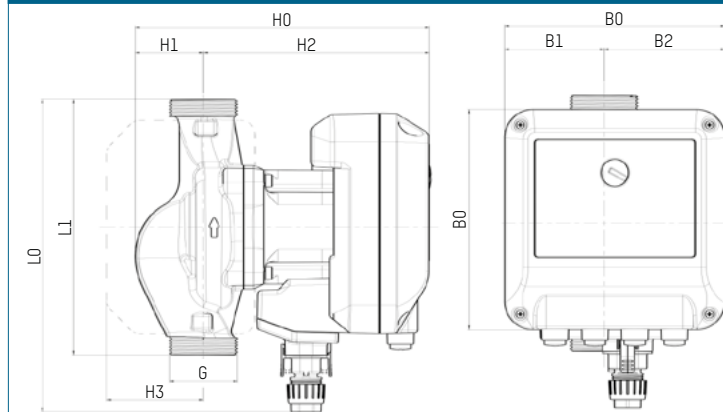
- Supply voltage:  
1x230 V (±10%), PE  
frequency: 50/60 Hz
- Power rating (P1):  
Min. 16 W, max. 88 W
- Rated current (I1):  
Min. 0.2 A, max. 0.6 A
- Insulation class: F
- Protection rating: IP 44
- Temperature class: TF 110

## TYPE OVERVIEW

TacoFlow3 MAX | Heating and cooling circuit pumps  
Cast iron high efficiency pump with threaded and plug connection.  
Standard thermal insulation shell.  
Pump head: 6 m

Order no.	Designation	G	Centre distance	Weight
302.5238.000	MAX 25-60/180	1 1/2"	180 mm	3.5 kg
302.6238.000	MAX 32-60/180	2"	180 mm	3.5 kg

## DIMENSIONAL DRAWING



## MEASUREMENT TABLE

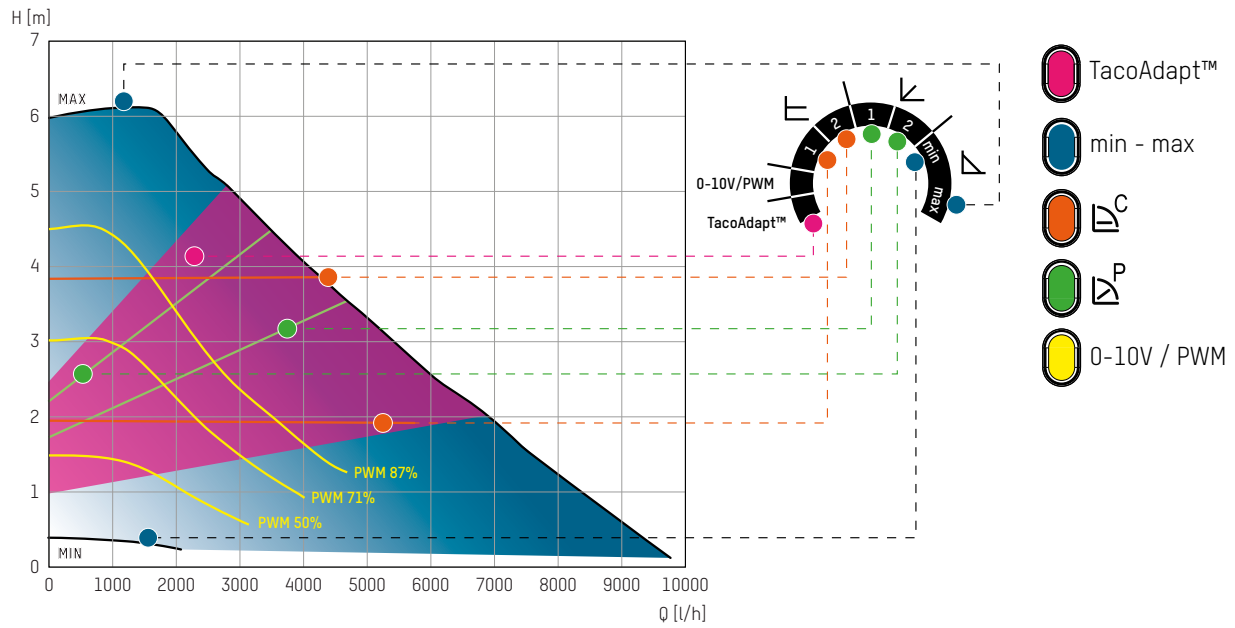
Order no.	L0	L1	B0	B1	B2	H0	H1	H2	H3
302.5238.000	220	180	155	70	85	207	48	159	68
302.6238.000	220	180	155	70	85	207	48	159	68

## ENERGY EFFICIENCY INDEX

### EEI ≤ 0,22 - Part 2

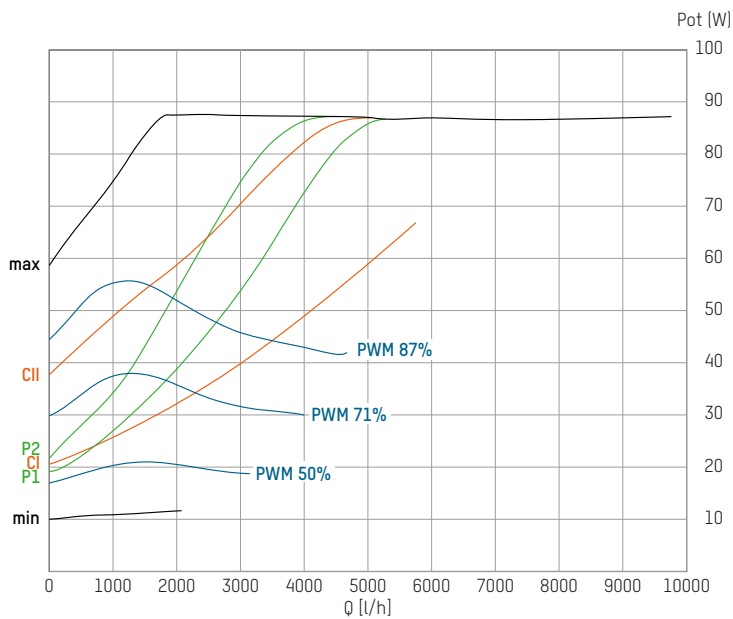
Reference value for the most  
efficient circulation pump is  
EEI ≤ 0.20

# PERFORMANCE CURVES



Q [m <sup>3</sup> /h]	1.2	2.4	3.6	4.8	6	7.2	8.4	9.6
H [m]	6.2	5.4	4.3	3.4	2.6	1.7	0.9	0.3

# POWER CONSUMPTION CURVES



## SPECIFICATION TEXT

See [www.taconova.com](http://www.taconova.com)

## TECHNICAL DATA

### Pump

- Ambient temperature:  
+0 °C to +40 °C
- Permissible temperature range:  
-10 °C to +110 °C
- Permissible temperature ranges  
at max. ambient temperature:
  - at 30 °C: +30 °C to +100 °C
  - at 40 °C: +40 °C to +70 °C
- Static pressure:  
Max. 1.0 MPa - 10 bar
- Minimum pressure at suction port:
  - 0.05 MPa (0.5 bar) at 80 °C
  - 0.15 MPa (1.5 bar) at 95 °C
- Max. relative humidity: ≤ 80%
- Sound pressure level: < 43 dB (A)
- Low Voltage Directive (2006/95/EC):  
Standards applied: EN 60335-1 and  
EN 60335-2-51
- EMC Directive (2004/108/EC):  
Standards applied: EN 61000-3-2,  
EN 61000-3-3
- Ecodesign Directive (2009/125/EC):  
Standards applied: EN 16297-1 and  
EN 16297-2
- Inputs/outputs: PWM, 0-10 VDC

### Material

- Pump body: Cast iron, CDP-coated  
(EN-GJL-200)
- Impeller: Brass / Composite plastic
- Shaft: Ceramic
- Bearing: Graphite / Ceramic
- Rotor housing: Composite plastic

## TECHNICAL DATA (CONTINUED)

### Motor and electronics

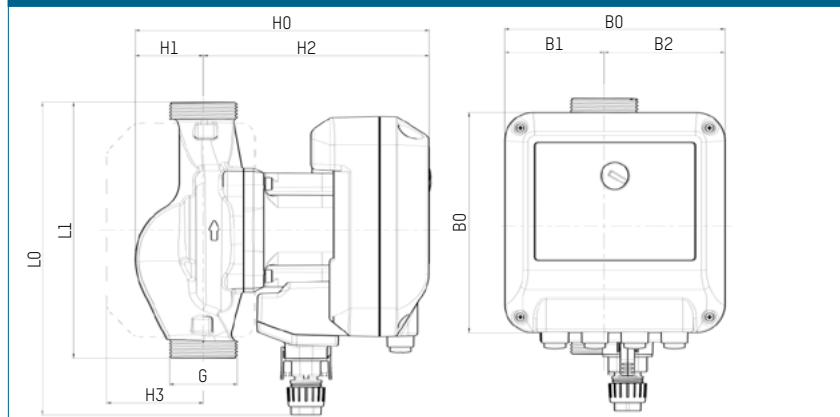
- Supply voltage:  
1x230 V (±10%), PE  
frequency: 50/60 Hz
- Power rating (P1):  
Min. 16 W, max. 122 W
- Rated current (I1):  
Min. 0.2 A, max. 0.8 A
- Insulation class: F
- Protection rating: IP 44
- Temperature class: TF 110

## TYPE OVERVIEW

TacoFlow3 MAX | Heating and cooling circuit pumps  
Cast iron high efficiency pump with threaded and plug connection.  
Standard thermal insulation shell.  
Pump head: 8 m

Order no.	Designation	G	Centre distance	Weight
302.5258.000	MAX 25-80/180	1 1/2"	180 mm	3.5 kg
302.6258.000	MAX 32-80/180	2"	180 mm	3.5 kg

## DIMENSIONAL DRAWING



## MEASUREMENT TABLE

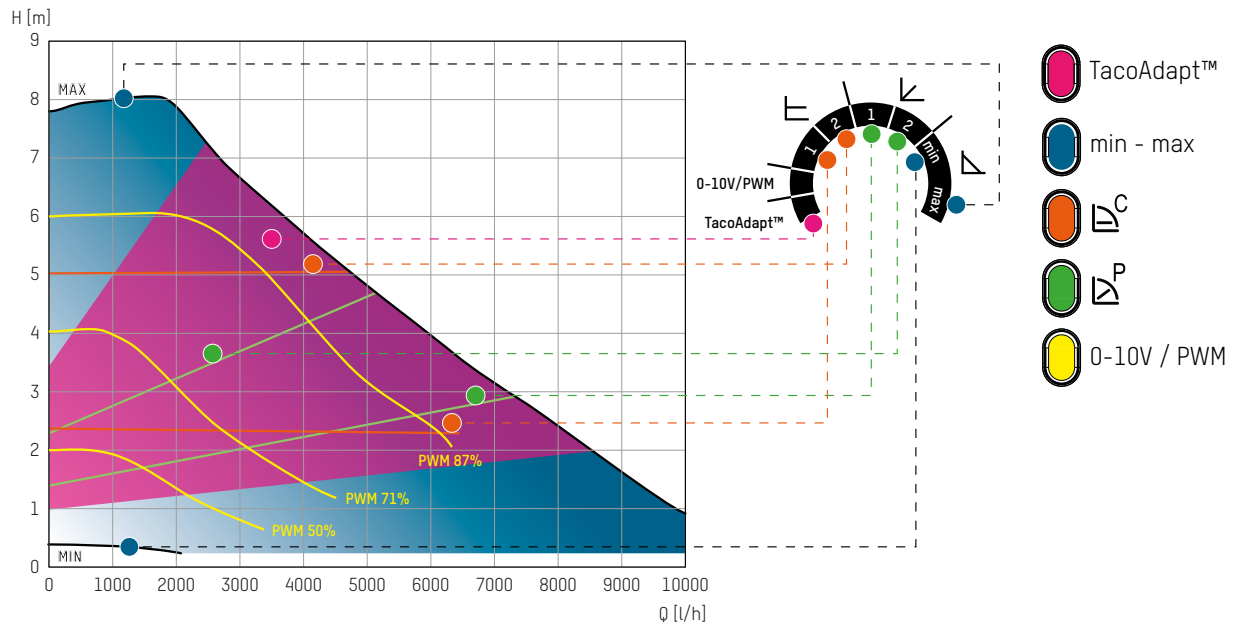
Order no.	L0	L1	B0	B1	B2	H0	H1	H2	H3
302.5258.000	220	180	155	70	85	207	48	159	68
302.6258.000	220	180	155	70	85	207	48	159	68

## ENERGY EFFICIENCY INDEX

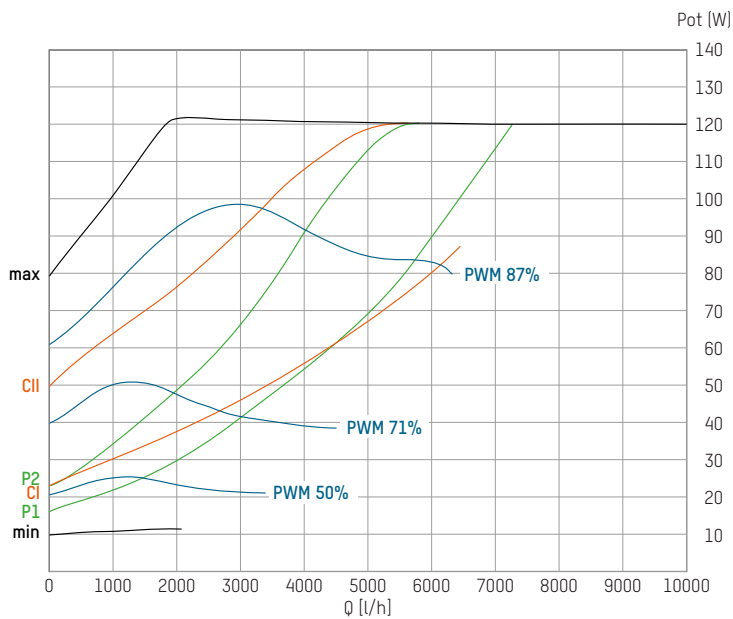
### EEI ≤ 0,22 - Part 2

Reference value for the most  
efficient circulation pump is  
EEI ≤ 0.20

# PERFORMANCE CURVES



# POWER CONSUMPTION CURVES



## SPECIFICATION TEXT

See [www.taconova.com](http://www.taconova.com)

## TECHNICAL DATA

### Pump

- Ambient temperature:  
+0 °C to +40 °C
- Permissible temperature range:  
-10 °C to +110 °C
- Permissible temperature ranges  
at max. ambient temperature:
  - at 30 °C: +30 °C to +100 °C
  - at 40 °C: +40 °C to +70 °C
- Static pressure:  
Max. 1.0 MPa - 10 bar
- Minimum pressure at suction port:
  - 0.05 MPa (0.5 bar) at 80 °C
  - 0.15 MPa (1.5 bar) at 95 °C
- Max. relative humidity: ≤ 80%
- Sound pressure level: < 43 dB (A)
- Low Voltage Directive (2006/95/EC):  
Standards applied: EN 60335-1 and  
EN 60335-2-51
- EMC Directive (2004/108/EC):  
Standards applied: EN 61000-3-2,  
EN 61000-3-3
- Ecodesign Directive (2009/125/EC):  
Standards applied: EN 16297-1 and  
EN 16297-2
- Inputs/outputs: PWM, 0-10 VDC

### Material

- Pump body: Cast iron, CDP-coated  
(EN-GJL-200)
- Impeller: Brass / Composite plastic
- Shaft: Ceramic
- Bearing: Graphite / Ceramic
- Rotor housing: Composite plastic

## TECHNICAL DATA (CONTINUED)

### Motor and electronics

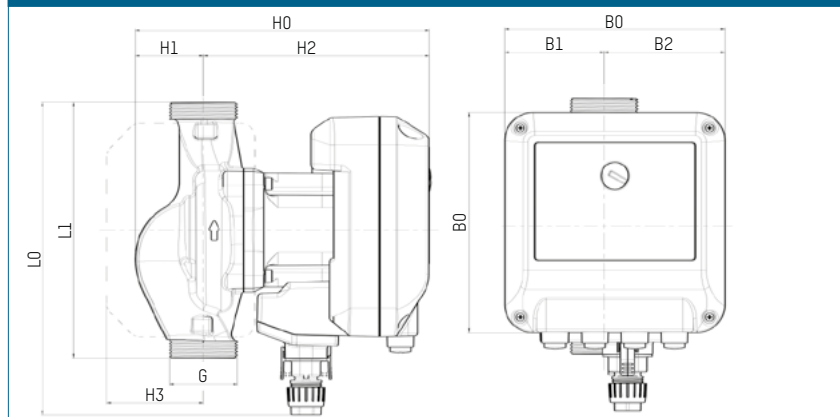
- Supply voltage:  
1x230 V (±10%), PE  
frequency: 50/60 Hz
- Power rating (P1):  
Min. 16 W, max. 175 W
- Rated current (I1):  
Min. 0.2 A, max. 0.9 A
- Insulation class: F
- Protection rating: IP 44
- Temperature class: TF 110

## TYPE OVERVIEW

TacoFlow3 MAX | Heating and cooling circuit pumps  
Cast iron high efficiency pump with threaded and plug connection.  
Standard thermal insulation shell.  
Pump head: 10 m

Order no.	Designation	G	Centre distance	Weight
302.5268.000	MAX 25-100/180	1 1/2"	180 mm	3.5 kg
302.6268.000	MAX 32-100/180	2"	180 mm	3.5 kg

## DIMENSIONAL DRAWING



## MEASUREMENT TABLE

Order no.	L0	L1	B0	B1	B2	H0	H1	H2	H3
302.5268.000	220	180	155	70	85	207	48	159	68
302.6268.000	220	180	155	70	85	207	48	159	68

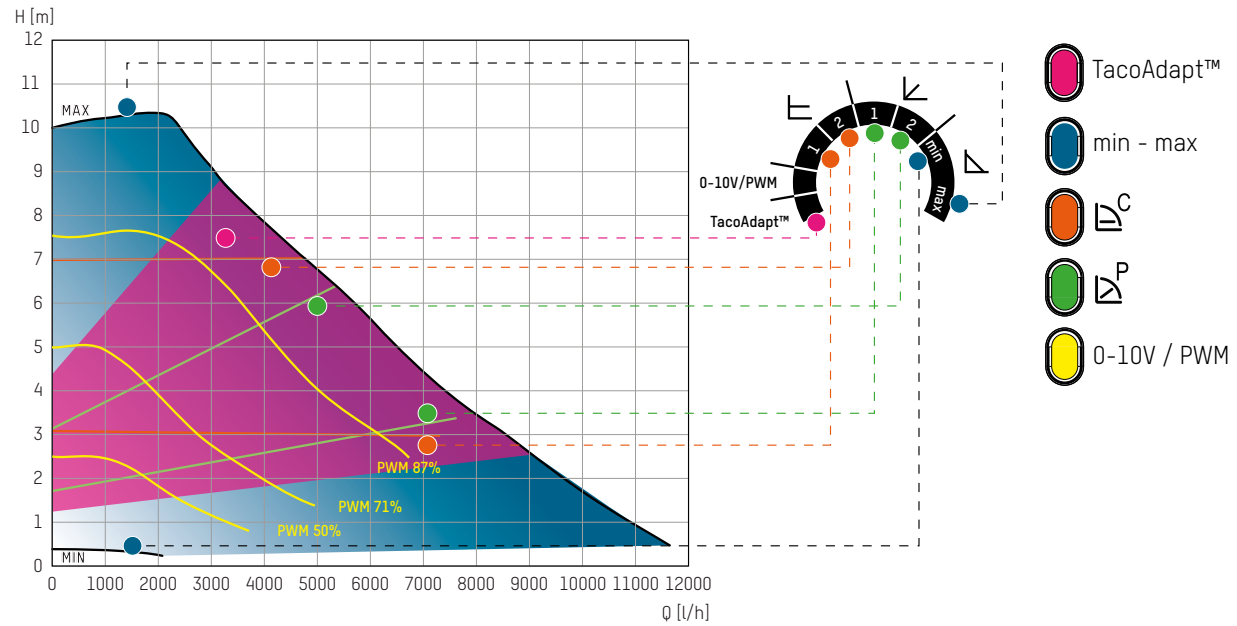
## ENERGY EFFICIENCY INDEX

### EEI ≤ 0,22 - Part 2

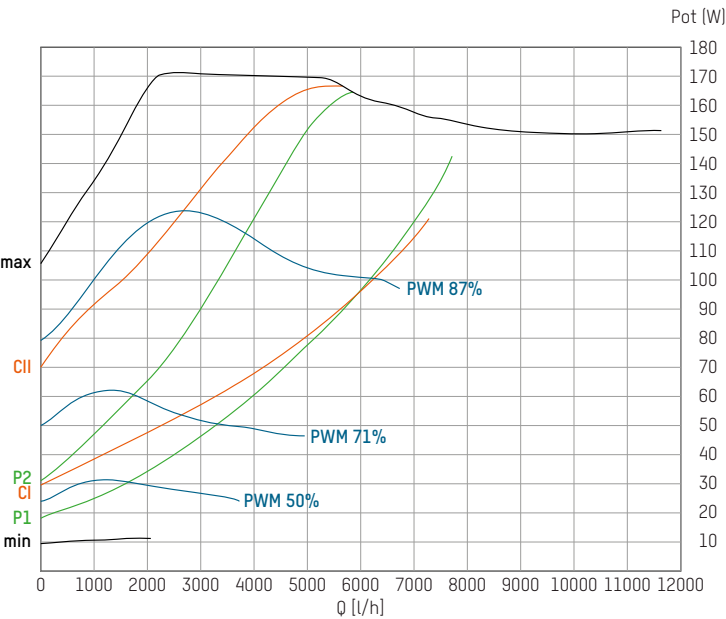
Reference value for the most  
efficient circulation pump is  
EEI ≤ 0.20



### PERFORMANCE CURVES



### POWER CONSUMPTION CURVES



# TACOFLOW3 MAX PRO

HEATING AND COOLING CIRCUIT PUMPS



Glandless circulation pumps for hot water heating, air conditioning, cooling, geothermal and solar thermal systems in residential and commercial buildings.

## DESCRIPTION

The TacoFlow3 MAX PRO is driven by permanent-magnet synchronous motors.

These innovative motors achieve a high efficiency at low operating costs.

They are maintenance-free and do not need replacement of seals and gaskets.

## INSTALLATION POSITION

The pump can be installed both horizontally or vertically.

The arrow indicating the medium's flow direction must be observed.

## ADVANTAGES

- Simple setting of the output curves by means of pushbuttons
- With TacoAdapt™, variable  $\Delta p$ -v proportional pressure curves, constant pressure curves  $\Delta p$ -c, fixed min. - max. speed and 0-10 V or PWM control
- Night setback function
- Holiday function
- Media temperature range from -10 °C to +110 °C
- Thermal insulation shell supplied as standard
- Screen for displaying technical information

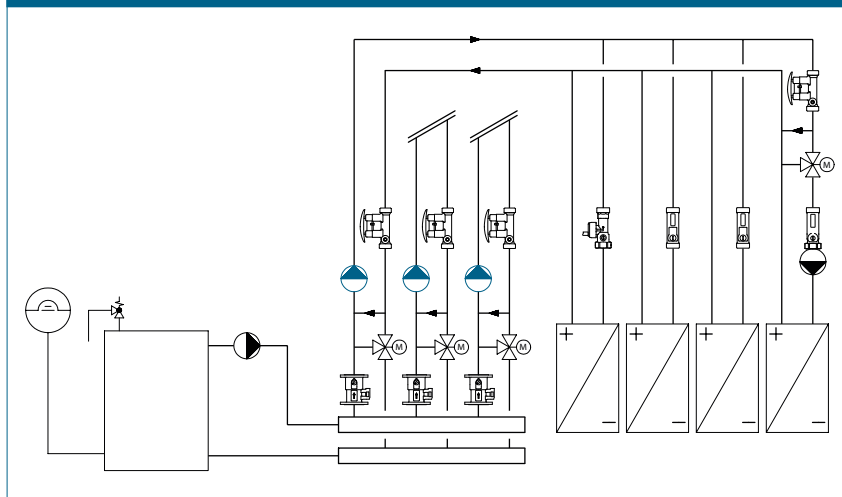
## OPERATION

The circulation pump are of a glandless design, since the rotating parts of the motor run inside the pumped medium. This provides lubrication for the motor and the rotating parts. The circulation pump is equipped with anti-blocking protection, since the high efficiency pumps no longer have a pump head screw for manual unblocking. They also feature an automatic venting function, which detects and indicates any air in the pump.

## BUILDING CATEGORIES

- Apartment blocks
- Public buildings
- Hotels and restaurants, industrial kitchens
- School buildings and sports facilities
- Office, commercial and industrial buildings
- Facilities with partial use, such as barracks, camping sites

## SYSTEM/BASIC DIAGRAM



## SPECIFICATION TEXT

See [www.taconova.com](http://www.taconova.com)

## TECHNICAL DATA

### Pump

- Ambient temperature:  
+0 °C to +40 °C
- Permissible temperature range:  
-10 °C to +110 °C
- Permissible temperature ranges  
at max. ambient temperature:
  - at 30 °C: +30 °C to +100 °C
  - at 40 °C: +40 °C to +70 °C
- Static pressure:  
Max. 1.0 MPa - 10 bar
- Minimum pressure at suction port:
  - 0.05 MPa (0.5 bar) at 80 °C
  - 0.15 MPa (1.5 bar) at 95 °C
- Max. relative humidity: ≤ 80%
- Sound pressure level: < 43 dB (A)
- Low Voltage Directive (2006/95/EC):  
Standards applied: EN 60335-1 and  
EN 60335-2-51
- EMC Directive (2004/108/EC);  
Standards applied: EN 61000-3-2,  
EN 61000-3-3
- Ecodesign Directive (2009/125/EC);  
Standards applied: EN 16297-1 and  
EN 16297-2
- Inputs/outputs: PWM, 0-10 V DC

### Material

- Pump body: Cast iron, CDP-coated  
(EN-GJL-200)
- Impeller: Brass / Composite plastic
- Shaft: Ceramic
- Bearing: Graphite / Ceramic
- Rotor housing: Composite plastic

## TECHNICAL DATA (CONTINUED)

### Motor and electronics

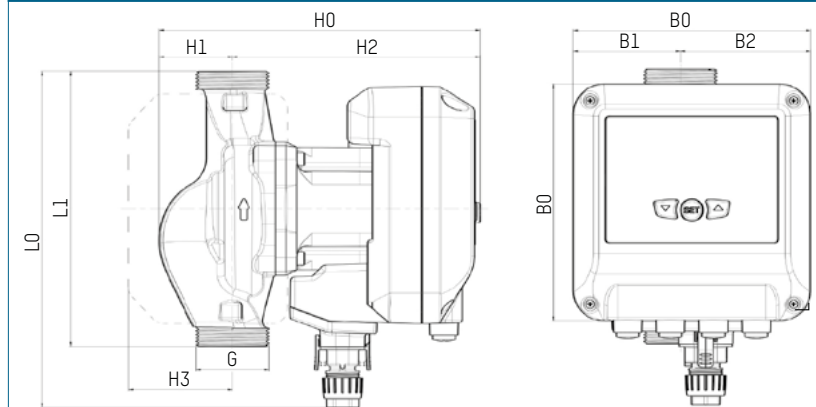
- Supply voltage:  
1x230 V (±10%), PE  
frequency: 50/60 Hz
- Power rating (P<sub>1</sub>):  
Min. 16 W, max. 88 W
- Rated current (I<sub>1</sub>):  
Min. 0.2 A, max. 0.6 A
- Insulation class: F
- Protection rating: IP 44
- Temperature class: TF 110

## TYPE OVERVIEW

TacoFlow3 MAX PRO | Heating and cooling circuit pumps  
Cast iron high efficiency pump with threaded and plug connection.  
Standard thermal insulation shell.  
Pump head: 6 m

Order no.	Designation	G	Centre distance	Weight
302.5239.000	MAX PRO 25-60/180	1 1/2"	180 mm	3.5 kg
302.6239.000	MAX PRO 32-60/180	2"	180 mm	3.5 kg

## DIMENSIONAL DRAWING



## MEASUREMENT TABLE

Order no.	L0	L1	B0	B1	B2	H0	H1	H2	H3
302.5239.000	220	180	155	70	85	207	48	159	68
302.6239.000	220	180	155	70	85	207	48	159	68

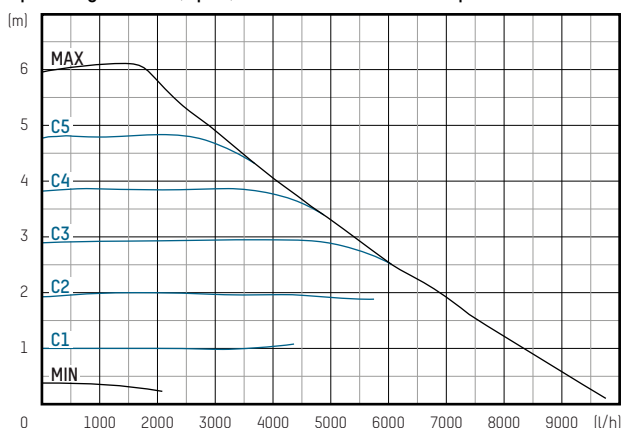
## ENERGY EFFICIENCY INDEX

### EEI ≤ 0,22 - Part 2

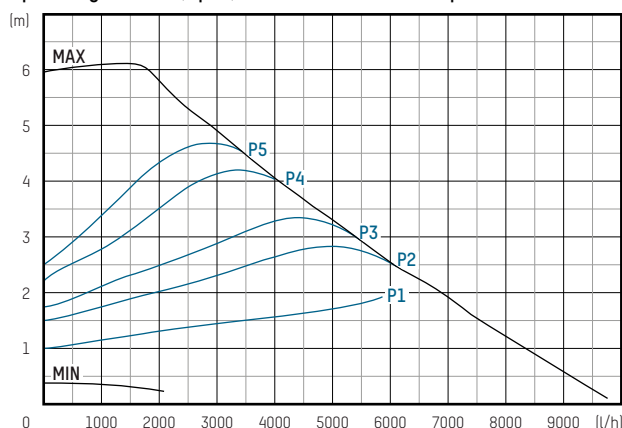
Reference value for the most  
efficient circulation pump is  
EEI ≤ 0.20

# PERFORMANCE CURVES

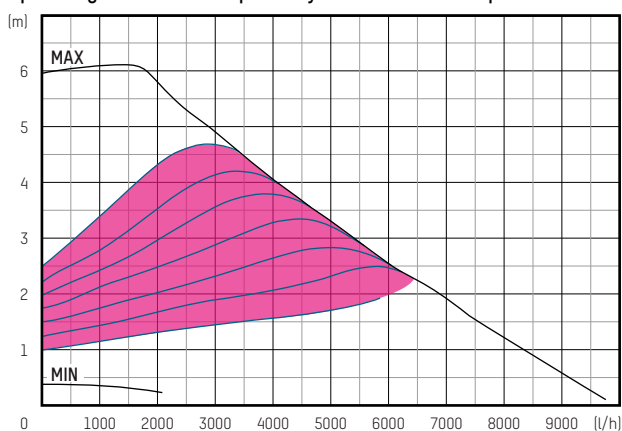
Operating mode C ( $\Delta p$ -c) – constant differential pressure



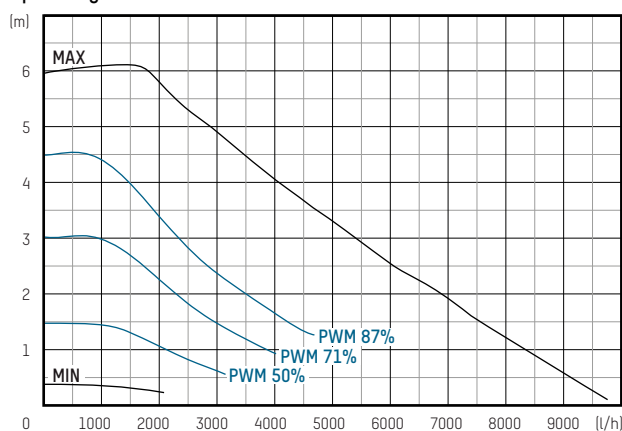
Operating mode P ( $\Delta p$ -v) – variable differential pressure



Operating mode TacoAdapt™ – dynamic differential pressure

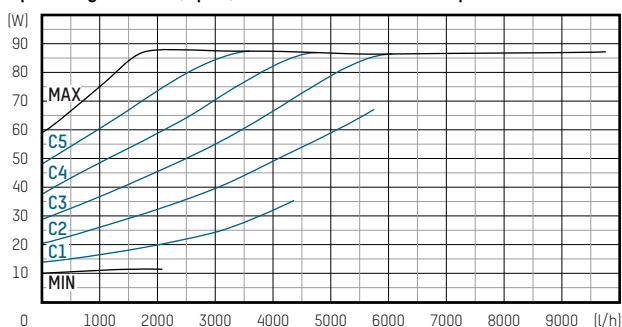


Operating mode 0 – 10 V

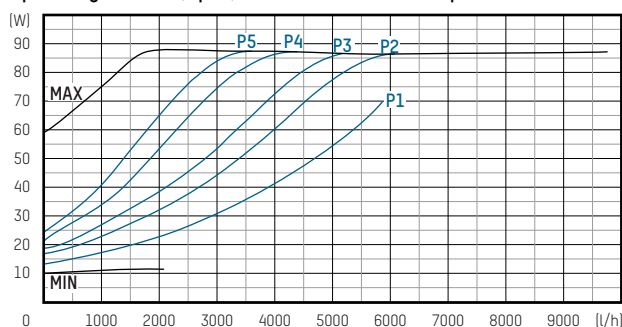


# POWER CONSUMPTION CURVES

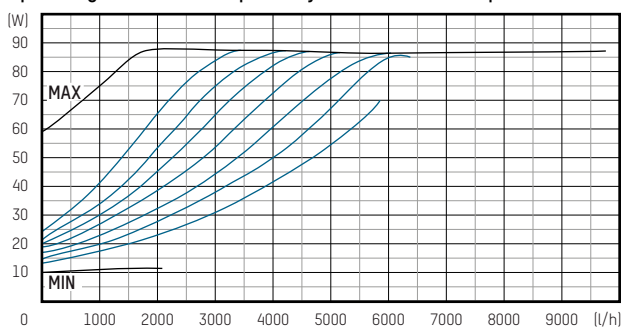
Operating mode C ( $\Delta p$ -c) – constant differential pressure



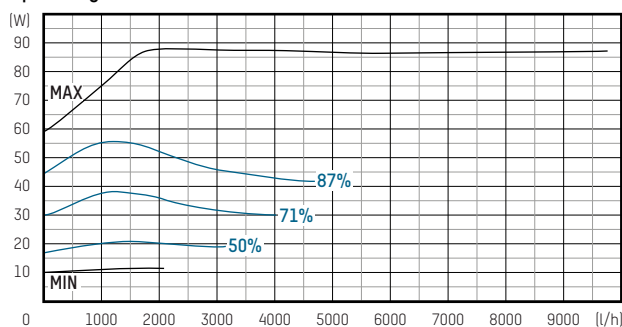
Operating mode P ( $\Delta p$ -v) – variable differential pressure



Operating mode TacoAdapt™ – dynamic differential pressure



Operating mode 0 – 10 V



## SPECIFICATION TEXT

See [www.taconova.com](http://www.taconova.com)

## TECHNICAL DATA

### Pump

- Ambient temperature:  
+0 °C to +40 °C
- Permissible temperature range:  
-10 °C to +110 °C
- Permissible temperature ranges  
at max. ambient temperature:
  - at 30 °C: +30 °C to +100 °C
  - at 40 °C: +40 °C to +70 °C
- Static pressure:  
Max. 1.0 MPa - 10 bar
- Minimum pressure at suction port:
  - 0.05 MPa (0.5 bar) at 80 °C
  - 0.15 MPa (1.5 bar) at 95 °C
- Max. relative humidity: ≤ 80%
- Sound pressure level: < 43 dB (A)
- Low Voltage Directive (2006/95/EC):  
Standards applied: EN 60335-1 and  
EN 60335-2-51
- EMC Directive (2004/108/EC);  
Standards applied: EN 61000-3-2,  
EN 61000-3-3
- Ecodesign Directive (2009/125/EC);  
Standards applied: EN 16297-1 and  
EN 16297-2
- Inputs/outputs: PWM, 0-10 V DC

### Material

- Pump body: Cast iron, CDP-coated  
(EN-GJL-200)
- Impeller: Brass / Composite plastic
- Shaft: Ceramic
- Bearing: Graphite / Ceramic
- Rotor housing: Composite plastic

## TECHNICAL DATA (CONTINUED)

### Motor and electronics

- Supply voltage:  
1x230 V (±10%), PE  
frequency: 50/60 Hz
- Power rating (P<sub>1</sub>):  
Min. 16 W, max. 122 W
- Rated current (I<sub>1</sub>):  
Min. 0.2 A, max. 0.8 A
- Insulation class: F
- Protection rating: IP 44
- Temperature class: TF 110

## TECHNICAL DATA (CONTINUED)

### Fluids

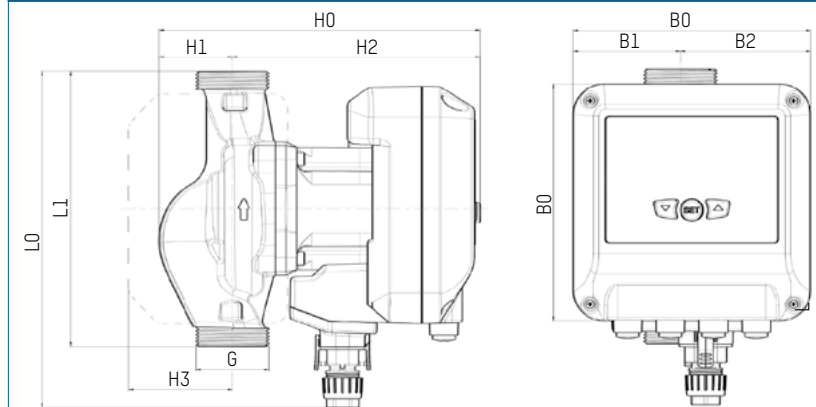
- Heating water (VDI 2035;  
SWKI BT 102-01; ÖNORM H 5195-1)
- Water and proprietary additives  
used against corrosion and freezing  
up to 30 %

## TYPE OVERVIEW

TacoFlow3 MAX PRO | Heating and cooling circuit pumps  
Cast iron high efficiency pump with threaded and plug connection.  
Standard thermal insulation shell.  
Pump head: 8 m

Order no.	Designation	G	Centre distance	Weight
302.5259.000	MAX PRO 25-80/180	1 1/2"	180 mm	3.5 kg
302.6259.000	MAX PRO 32-80/180	2"	180 mm	3.5 kg

## DIMENSIONAL DRAWING



## MEASUREMENT TABLE

Order no.	L0	L1	B0	B1	B2	H0	H1	H2	H3
302.5259.000	220	180	155	70	85	207	48	159	68
302.6259.000	220	180	155	70	85	207	48	159	68

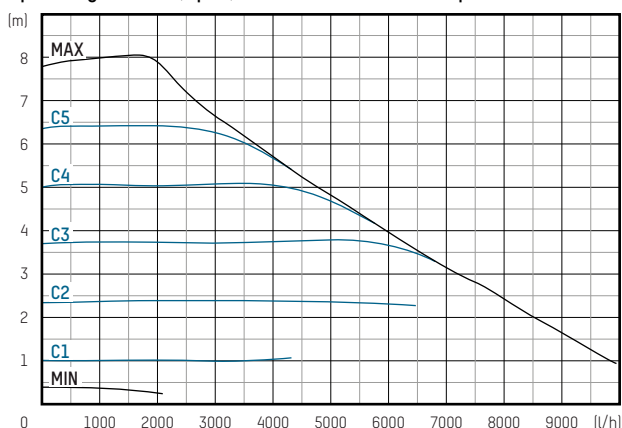
## ENERGY EFFICIENCY INDEX

### EEI ≤ 0,22 - Part 2

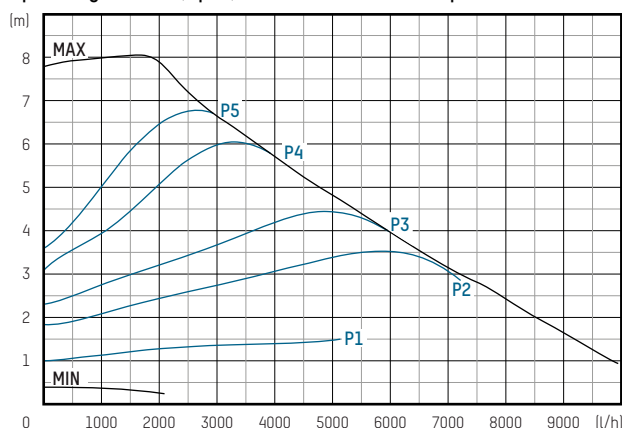
Reference value for the most  
efficient circulation pump is  
EEI ≤ 0.20

# PERFORMANCE CURVES

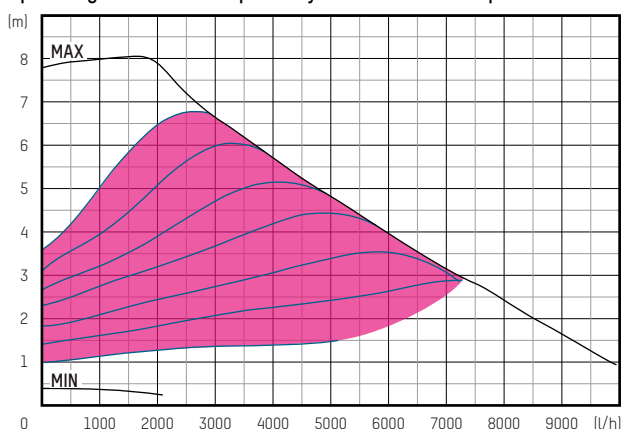
Operating mode C ( $\Delta p$ -c) – constant differential pressure



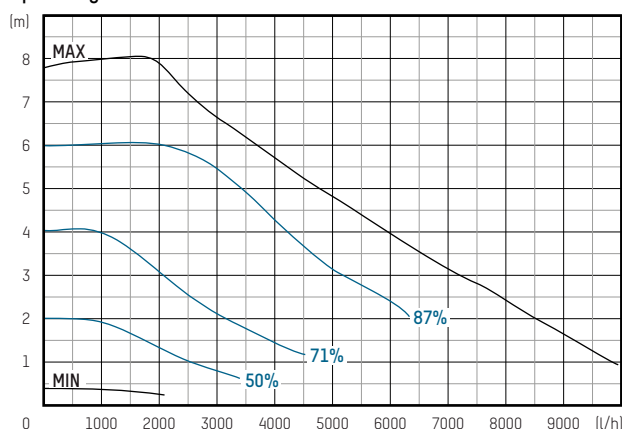
Operating mode P ( $\Delta p$ -v) – variable differential pressure



Operating mode TacoAdapt™ – dynamic differential pressure

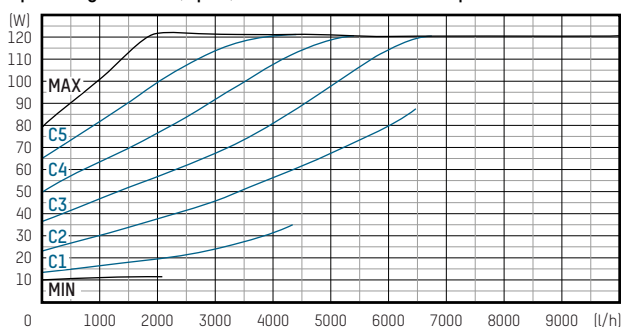


Operating mode 0 – 10 V

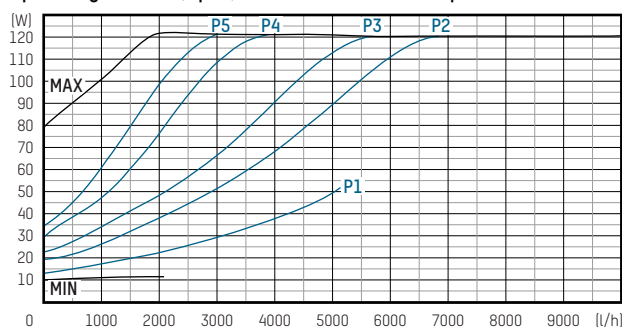


# POWER CONSUMPTION CURVES

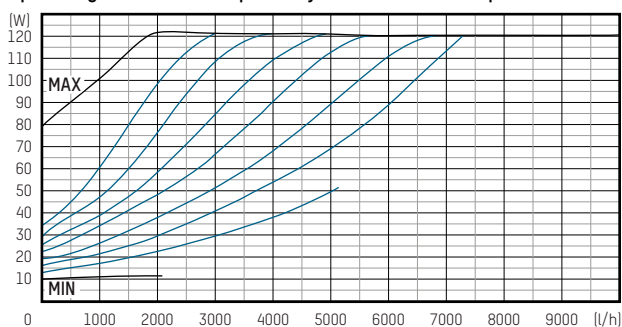
Operating mode C ( $\Delta p$ -c) – constant differential pressure



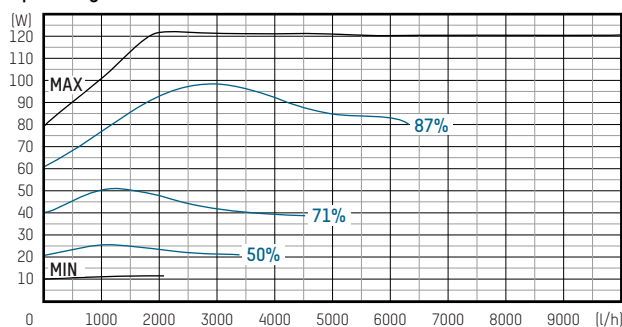
Operating mode P ( $\Delta p$ -v) – variable differential pressure



Operating mode TacoAdapt™ – dynamic differential pressure



Operating mode 0 – 10 V



## SPECIFICATION TEXT

See [www.taconova.com](http://www.taconova.com)

### TECHNICAL DATA

#### Pump

- Ambient temperature:  
+0 °C to +40 °C
- Permissible temperature range:  
-10 °C to +110 °C
- Permissible temperature ranges  
at max. ambient temperature:
  - at 30 °C: +30 °C to +100 °C
  - at 40 °C: +40 °C to +70 °C
- Static pressure:  
Max. 1.0 MPa - 10 bar
- Minimum pressure at suction port:
  - 0.05 MPa (0.5 bar) at 80 °C
  - 0.15 MPa (1.5 bar) at 95 °C
- Max. relative humidity: ≤ 80%
- Sound pressure level: < 43 dB (A)
- Low Voltage Directive (2006/95/EC):  
Standards applied: EN 60335-1 and  
EN 60335-2-51
- EMC Directive (2004/108/EC);  
Standards applied: EN 61000-3-2,  
EN 61000-3-3
- Ecodesign Directive (2009/125/EC);  
Standards applied: EN 16297-1 and  
EN 16297-2
- Inputs/outputs: PWM, 0-10 V DC

#### Material

- Pump body: Cast iron, CDP-coated  
(EN-GJL-200)
- Impeller: Brass / Composite plastic
- Shaft: Ceramic
- Bearing: Graphite / Ceramic
- Rotor housing: Composite plastic

### TECHNICAL DATA (CONTINUED)

#### Motor and electronics

- Supply voltage:  
1x230 V (±10%), PE  
frequency: 50/60 Hz
- Power rating (P1):  
Min. 16 W, max. 175 W
- Rated current (I1):  
Min. 0.2 A, max. 0.9 A
- Insulation class: F
- Protection rating: IP 44
- Temperature class: TF 110

### TECHNICAL DATA (CONTINUED)

#### Fluids

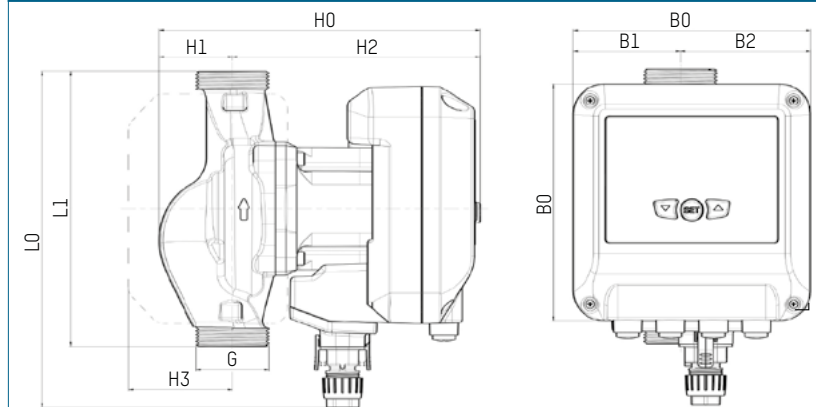
- Heating water (VDI 2035;  
SWKI BT 102-01; ÖNORM H 5195-1)
- Water and proprietary additives  
used against corrosion and freezing  
up to 30 %

### TYPE OVERVIEW

TacoFlow3 MAX PRO | Heating and cooling circuit pumps  
Cast iron high efficiency pump with threaded and plug connection.  
Standard thermal insulation shell.  
Pump head: 10 m

Order no.	Designation	G	Centre distance	Weight
302.5269.000	MAX PRO 25-100/180	1 1/2"	180 mm	3.5 kg
302.6269.000	MAX PRO 32-100/180	2"	180 mm	3.5 kg

### DIMENSIONAL DRAWING



### MEASUREMENT TABLE

Order no.	L0	L1	B0	B1	B2	H0	H1	H2	H3
302.5269.000	220	180	155	70	85	207	48	159	68
302.6269.000	220	180	155	70	85	207	48	159	68

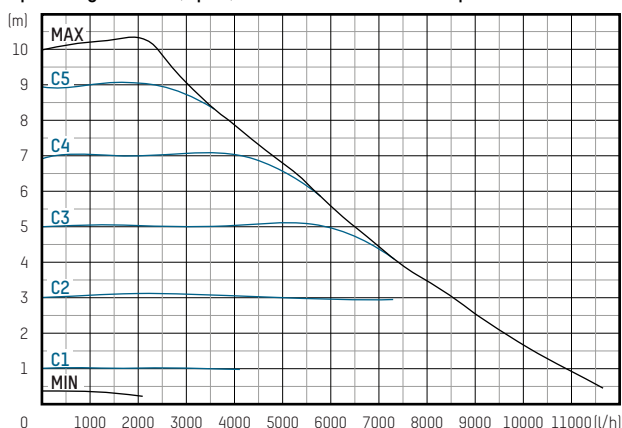
### ENERGY EFFICIENCY INDEX

#### EEI ≤ 0,22 - Part 2

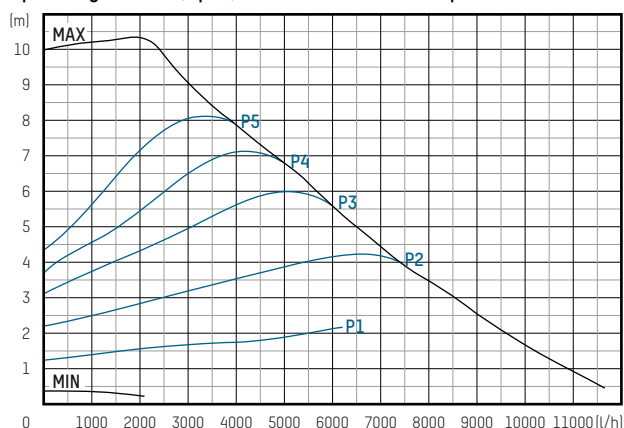
Reference value for the most  
efficient circulation pump is  
EEI ≤ 0.20

# PERFORMANCE CURVES

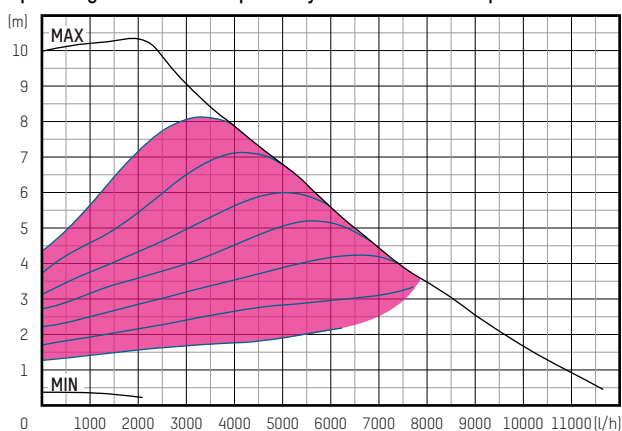
Operating mode C ( $\Delta p$ -c) – constant differential pressure



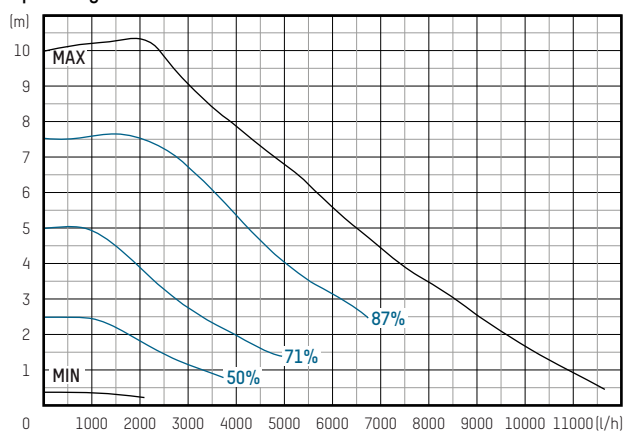
Operating mode P ( $\Delta p$ -v) – variable differential pressure



Operating mode TacoAdapt™ – dynamic differential pressure

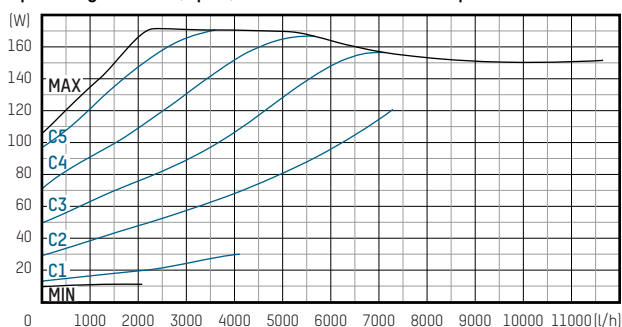


Operating mode 0 – 10 V

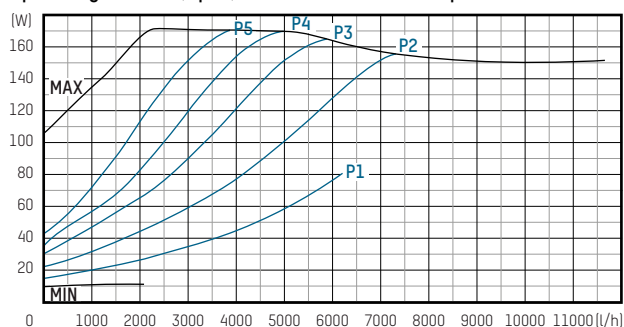


# POWER CONSUMPTION CURVES

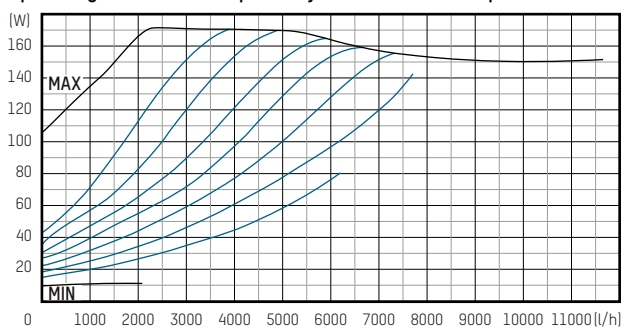
Operating mode C ( $\Delta p$ -c) – constant differential pressure



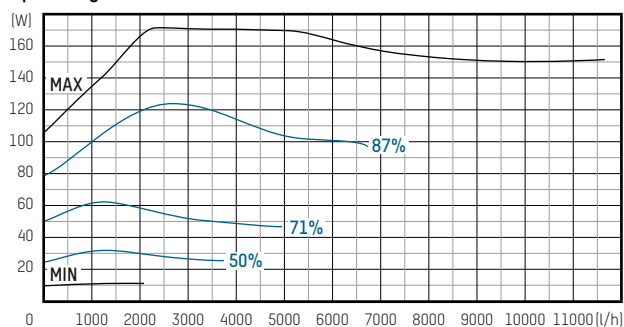
Operating mode P ( $\Delta p$ -v) – variable differential pressure



Operating mode TacoAdapt™ – dynamic differential pressure



Operating mode 0 – 10 V





# TACOFLOW2 SOLAR

## CIRCULATION PUMPS FOR SOLAR THERMAL SYSTEMS



Glandless circulation pumps for solar thermal systems in residential and commercial buildings.

### DESCRIPTION

The TacoFlow2 SOLAR is driven by permanent-magnet synchronous motors.

These innovative motors achieve a high efficiency at low operating costs.

They are maintenance-free and do not need replacement of seals and gaskets.

### INSTALLATION POSITION

The pump can be installed both horizontally or vertically.

The arrow indicating the medium's flow direction must be observed.

### ADVANTAGES

- Efficient throughput setting with variable  $\Delta p-v$  proportional pressure curves or fixed Min-Max speed
- Media temperature range from +2 °C to +110 °C
- A colour LED indicates the current operating state

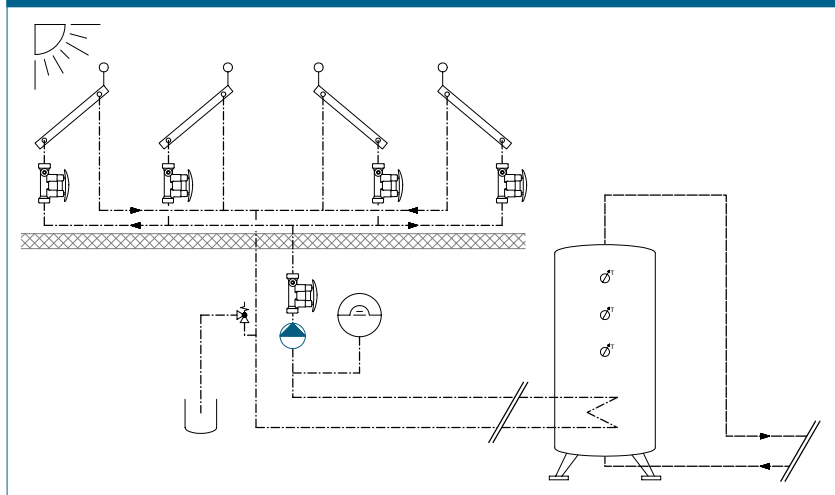
### OPERATION

The circulation pump are of a glandless design, since the rotating parts of the motor run inside the pumped medium. This provides lubrication for the motor and the rotating parts. The circulation pump is equipped with anti-blocking protection, since the high efficiency pumps no longer have a pump head screw for manual unblocking. They also feature an automatic venting function, which detects and indicates any air in the pump.

### BUILDING CATEGORIES

- Apartment blocks, single family dwellings, housing estates, multiple dwelling units
- Smaller public buildings
- Office, commercial and industrial buildings
- Facilities with partial use, such as barracks, camping sites

### SYSTEM/BASIC DIAGRAM



## SPECIFICATION TEXT

See [www.taconova.com](http://www.taconova.com)

## TECHNICAL DATA

### Pump

- Ambient temperature:  
+0 °C to +40 °C
- Permissible temperature range\*:  
+2 °C to +110 °C
- Permissible temperature ranges  
at max. ambient temperature:
  - at 30 °C: +30 °C to +110 °C
  - at 35 °C: +35 °C to +90 °C
  - at 40 °C: +40 °C to +70 °C
- Static pressure:  
Max. 1.0 MPa - 10 bar
- Minimum pressure at suction port:
  - 0.03 MPa (0.3 bar) at 50 °C
  - 0.10 MPa (1.0 bar) at 95 °C
  - 0.15 MPa (1.5 bar) at 110 °C
- Max. relative humidity: ≤ 95%
- Sound pressure level: <43 dB (A)
- Low Voltage Directive (2006/95/EC): Standards applied: EN 62233, EN 60335-1 and EN 60335-2-51
- EMC Directive (2004/108/EC); Standards applied: EN 61000-3-2, EN 61000-3-3, EN 55014-1 and EN 55014-2
- Ecodesign Directive (2009/125/EC); Standards applied: EN 16297-1 and EN 16297-2

### Material

- Pump body: Cast iron, CDP-coated (EN-GJL-200)
- Impeller: Composite plastic
- Shaft: Ceramic
- Bearing: Graphite
- Axial thrust bearing: Ceramic
- Can: Composite plastic

\* To prevent condensate in the motor and on the control electronics, the temperature of the pumped medium must always be higher than the ambient temperature.

## TECHNICAL DATA (CONTINUED)

### Motor and electronics

- Supply voltage: 1x230 V (±10%); frequency: 50/60 Hz
- Pump power plug
- Power rating (P<sub>1</sub>):  
Min. 3 W, max. 42 W
- Rated current (I<sub>1</sub>):  
Min. 0.03 A, max. 0.33 A
- Insulation class: H
- Protection rating: IP 44
- Safety category: II

## TYPE OVERVIEW

TacoFlow2 SOLAR | Circulation pumps for solar thermal systems

Cast iron high efficiency pump with plug connection.

Also suitable for heating systems.

Pump head: 6 m

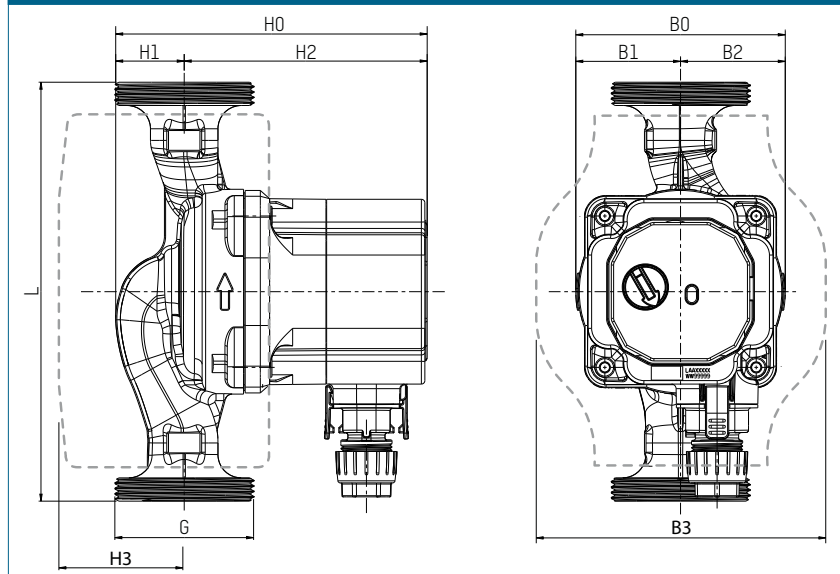
## TECHNICAL DATA (CONTINUED)

### Fluids

- Heating water (VDI 2035; SWKI BT 102-01; ÖNORM H 5195-1)
- Water and proprietary additives used against corrosion and freezing up to 30 %

Order no.	Designation	Connection	Centre distance	Weight
302.2235.000	SOLAR 15-60/130	G 1"	130 mm	1,67 kg
302.4235.000	SOLAR 25-60/130	G 1 ½"	130 mm	1,81 kg
302.5235.000	SOLAR 25-60/180	G 1 ½"	180 mm	1,96 kg

## DIMENSIONAL DRAWING



## MEASUREMENT TABLE

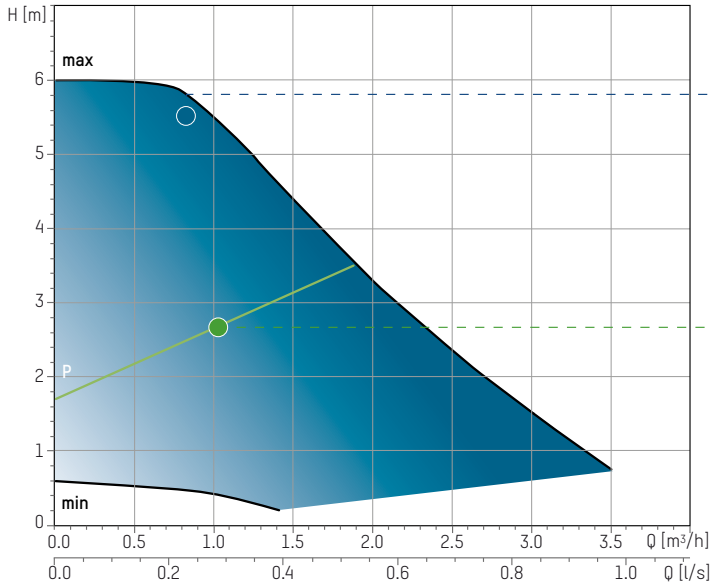
Order no.	L	B0	B1	B2	B3	H0	H1	H2	H3
302.2235.000	130	90	45	45	124	133,8	29,4	104,4	49
302.4235.000	130	90	45	45	124	133,8	29,4	104,4	49
302.5235.000	180	90	45	45	124	133,8	29,4	104,4	49

## ENERGY EFFICIENCY INDEX

### EEI ≤ 0,20 - Part 2

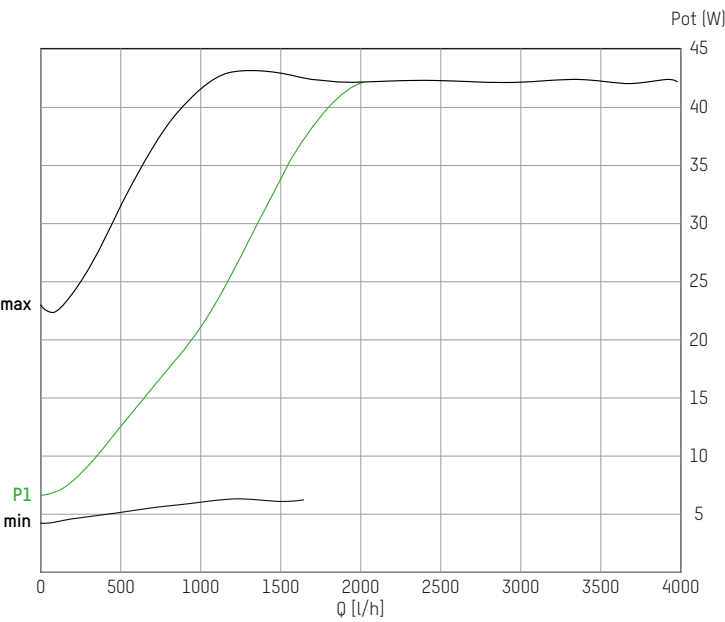
Reference value for the most efficient circulation pump is  
EEI ≤ 0.20

### PERFORMANCE CURVES



$Q$ [m³/h]	0.4	0.8	1.2	1.6	2	2.4	2.8	3.2
$H$ [m]	6	5.9	5	4.4	3.4	2.6	2.8	1.2

### POWER CONSUMPTION CURVES



## SPECIFICATION TEXT

See [www.taconova.com](http://www.taconova.com)

## TECHNICAL DATA

### Pump

- Ambient temperature:  
+0 °C to +40 °C
- Permissible temperature range\*:  
+2 °C to +110 °C
- Permissible temperature ranges  
at max. ambient temperature:
  - at 30 °C: +30 °C to +110 °C
  - at 35 °C: +35 °C to +90 °C
  - at 40 °C: +40 °C to +70 °C
- Static pressure:  
Max. 1.0 MPa - 10 bar
- Minimum pressure at suction port:
  - 0.03 MPa (0.3 bar) at 50 °C
  - 0.10 MPa (1.0 bar) at 95 °C
  - 0.15 MPa (1.5 bar) at 110 °C
- Max. relative humidity: ≤ 95%
- Sound pressure level: <43 dB (A)
- Low Voltage Directive (2006/95/EC): Standards applied: EN 62233, EN 60335-1 and EN 60335-2-51
- EMC Directive (2004/108/EC); Standards applied: EN 61000-3-2, EN 61000-3-3, EN 55014-1 and EN 55014-2
- Ecodesign Directive (2009/125/EC); Standards applied: EN 16297-1 and EN 16297-2

### Material

- Pump body: Cast iron, CDP-coated (EN-GJL-200)
- Impeller: Composite plastic
- Shaft: Ceramic
- Bearing: Graphite
- Axial thrust bearing: Ceramic
- Can: Composite plastic

\* To prevent condensate in the motor and on the control electronics, the temperature of the pumped medium must always be higher than the ambient temperature.

## TECHNICAL DATA (CONTINUED)

### Motor and electronics

- Supply voltage: 1x230 V (±10%); frequency: 50/60 Hz
- Pump power plug
- Power rating (P<sub>1</sub>):  
Min. 3 W, max. 56 W
- Rated current (I<sub>1</sub>):  
Min. 0.03 A, max. 0.44 A
- Insulation class: H
- Protection rating: IP 44
- Safety category: II

## TYPE OVERVIEW

TacoFlow2 SOLAR | Circulation pumps for solar thermal systems

Cast iron high efficiency pump with plug connection.

Also suitable for heating systems.

Pump head: 7 m

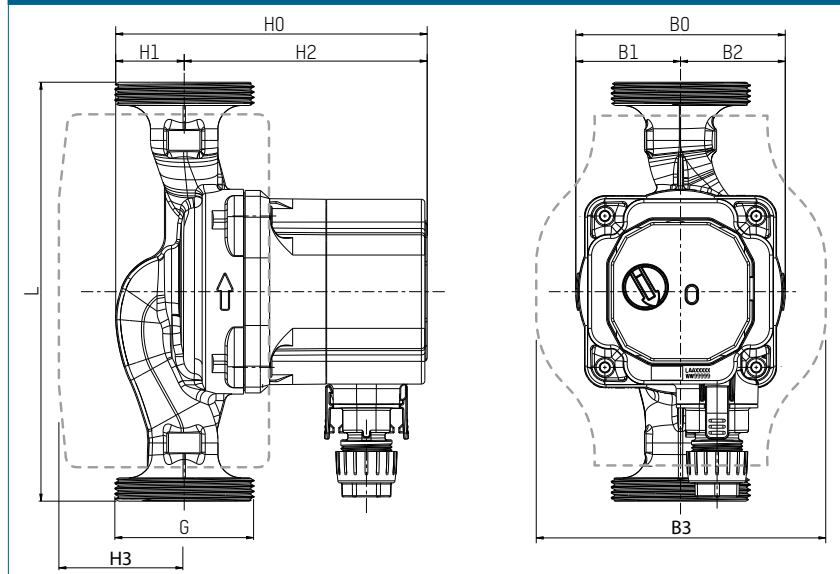
## TECHNICAL DATA (CONTINUED)

### Fluids

- Heating water (VDI 2035; SWKI BT 102-01; ÖNORM H 5195-1)
- Water and proprietary additives used against corrosion and freezing up to 30 %

Order no.	Designation	Connection	Centre distance	Weight
302.2245.000	SOLAR 15-70/130	G 1"	130 mm	1,91 kg
302.4245.000	SOLAR 25-70/130	G 1 ½"	130 mm	2,05 kg
302.5245.000	SOLAR 25-70/180	G 1 ½"	180 mm	2,20 kg

## DIMENSIONAL DRAWING



## MEASUREMENT TABLE

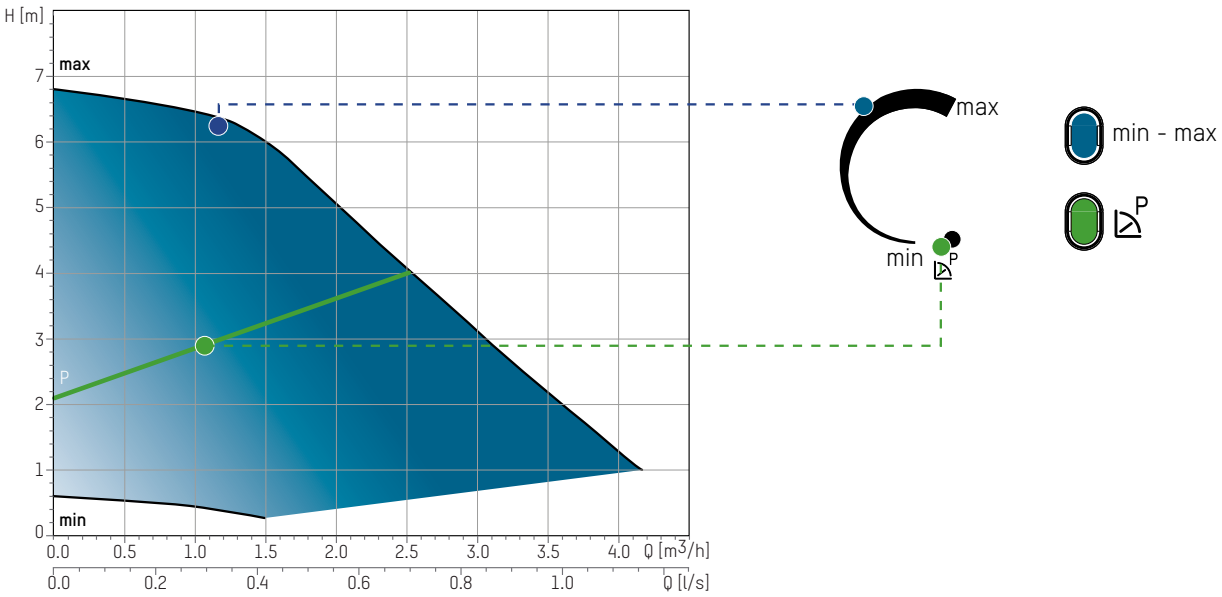
Order no.	L	B0	B1	B2	B3	H0	H1	H2	H3
302.2245.000	130	90	45	45	124	143,8	29,4	114,4	49
302.4245.000	130	90	45	45	124	143,8	29,4	114,4	49
302.5245.000	180	90	45	45	124	143,8	29,4	114,4	49

## ENERGY EFFICIENCY INDEX

### EEI ≤ 0,21 - Part 2

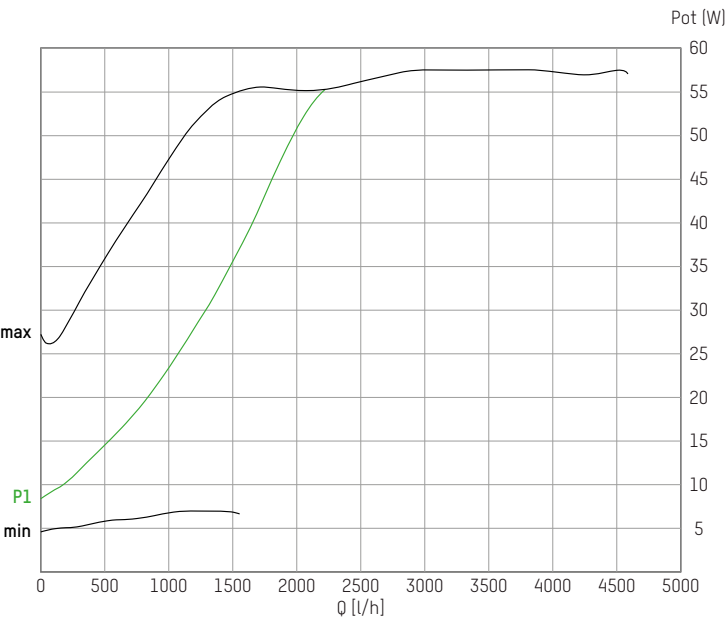
Reference value for the most efficient circulation pump is  
EEI ≤ 0.20

### PERFORMANCE CURVES



Q [m³/h]	0.5	1	1.5	2	2.5	3	3.5	4
H [m]	6.7	6.6	6	5.1	4.1	3.1	2.2	1.3

### POWER CONSUMPTION CURVES



# TACOFLOW3 GENS SOLAR

CIRCULATION PUMPS FOR SOLAR THERMAL SYSTEMS (OEM VERSION)



Glandless circulation pumps for solar thermal systems in residential and commercial buildings.

## DESCRIPTION

The TacoFlow3 GenS is driven by permanent-magnet synchronous motors.

These innovative motors achieve a high efficiency at low operating costs.

They are maintenance-free and do not need replacement of seals and gaskets.

## INSTALLATION POSITION

The pump can be installed both horizontally or vertically.

The arrow indicating the medium's flow direction must be observed.

## ADVANTAGES

- Various versions for solar application available
- Controlled by an external PWM signal with profile "solar", with feedback
- Automatic unlock function
- Small and compact design
- TacoSmart plug with connected 1.2 m voltage and signal cable

## OPERATION

The circulation pump are of a glandless design, since the rotating parts of the motor run inside the pumped medium. This provides lubrication for the motor and the rotating parts.

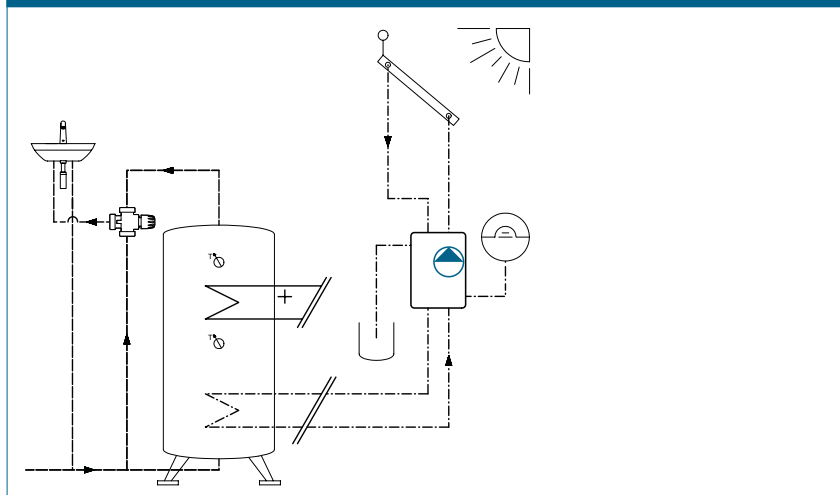
The circulation pump is equipped with anti-blocking protection which automatically unblocks the pump in the event of a blockage.

The circulation pumps are controlled via an external PWM signal (solar).

## BUILDING CATEGORIES

- Apartment blocks, single family dwellings, housing estates, multiple dwelling units
- Smaller public buildings
- Hotels and restaurants, industrial kitchens
- School buildings and sports facilities
- Office, commercial and industrial buildings
- Facilities with partial use, such as barracks, camping sites

## SYSTEM/BASIC DIAGRAM



## TECHNICAL DATA

### Solar circuit pump

- Ambient temperature:  
+0 °C to +40 °C
- Permissible temperature range\*:  
+2 °C to +110 °C (briefly: 130 °C)
- Static pressure:  
Max. 1 MPa – 10 bar
- Minimum pressure at suction port:
  - 0.005 MPa (0.05 bar) at 75 °C
  - 0.025 MPa (0.25 bar) at 85 °C
  - 0.055 MPa (0.55 bar) at 95 °C
- Max. relative humidity: ≤ 95%
- Sound pressure level: <33 dB (A)
- Low Voltage directive (2014/30/EC): Standards applied: EN 62233, EN 60335-1 and EN 60335-2-51
- EMC directive (2014/35/EC); Standards applied: EN 61000-3-2, EN 61000-3-3, EN 55014-1 and EN 55014-2
- Ecodesign directive (2009/125/EC); Standards applied: EN 16297-1 and EN 16297-2

### Material

- Pump body: Cast iron (CDP-coated (EN-GJL-200))
- Rotor / Impeller: Graphite, Ceramic, Composite plastic PPS, Ferrite, EPDM
- Rotor housing: Composite plastic PA6T
- Bearing: Graphite
- Axial thrust bearing: Ceramic
- Can: Composite plastic

### Motor and electronics

- Supply voltage:  
1x230 V (+10% / -15%)
- Pump power plug (TacoSmart with installed 1.2 m cable, can be ordered separately)
- Power rating (P1): 2,6 – 51,2 W
- Rated current (I1):  
Min. 0.03 A, Max. 0.45 A
- Insulation class: H
- Protection rating: IPX4D
- Safety category: II
- Starting current: <9 A

### Fluids

- Heating water (VDI 2035; SWKI BT 102-01; ÖNORM H 5195-1)
- Water and proprietary additives used against corrosion and freezing up to 40 %

\* To prevent condensate in the motor and on the control electronics, the temperature of the pumped medium must always be higher than the ambient temperature.

## TYPE OVERVIEW

TacoFlow3 GenS Solar | Solar circuit pumps

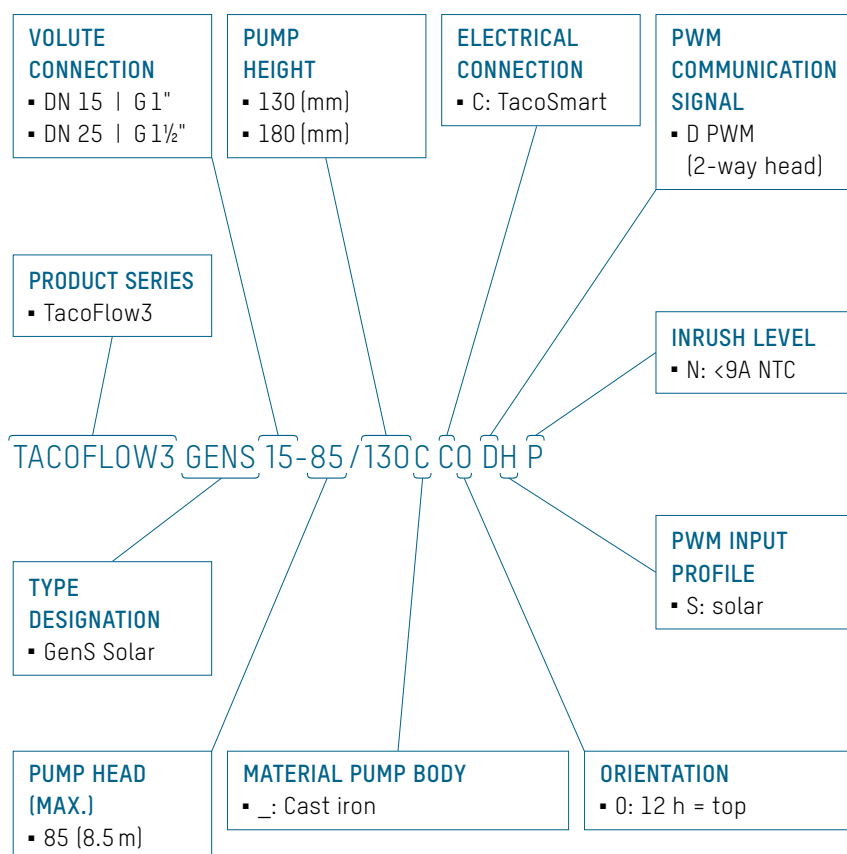
High efficiency pump made of cast iron with plug connection.

PWM protocol: Solar

Pump head: 8.5 m

Order no.	Designation	Connec- tion	Centre distance	Weight
303.2255.029	GenS Solar 15-85/130 C0 AS N	G 1"	130 mm	1.85 kg
303.4255.029	GenS Solar 25-85/130 C0 AS N	G 1½"	130 mm	2.00 kg
303.5255.029	GenS Solar 25-85/180 C0 AS N	G 1½"	180 mm	2.00 kg

## TYPE KEY

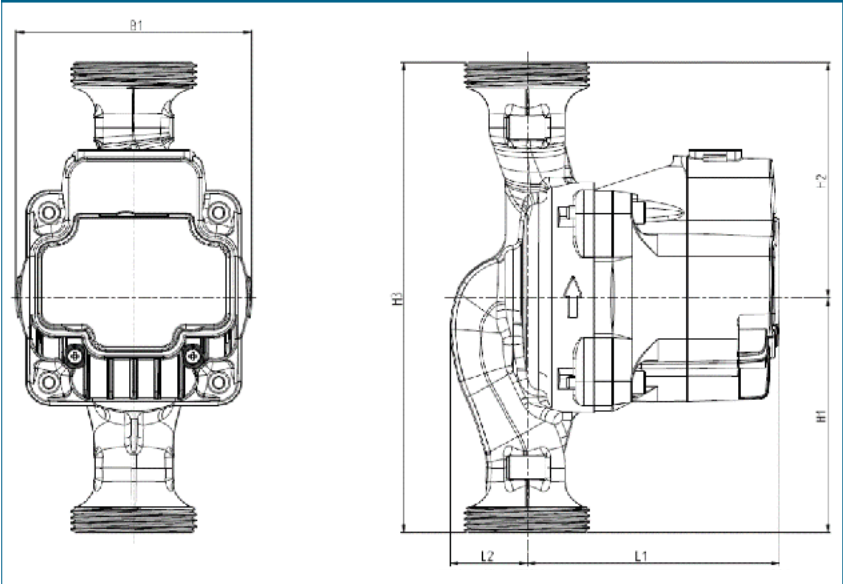


## ENERGY EFFICIENCY INDEX

EEI ≤ 0,20 - Part 2

Reference value for the most efficient circulation pump is EEI ≤ 0.20

### DIMENSIONAL DRAWING

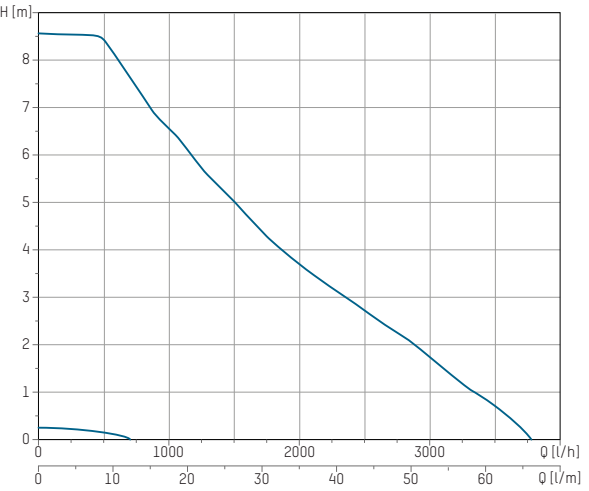


### MEASUREMENT TABLE

Order no.	L	L2	B1	H1	H2	H3
303.2255.029	98	30	88	65 / 90	65 / 90	130 / 180
303.4255.029						
303.5255.029						

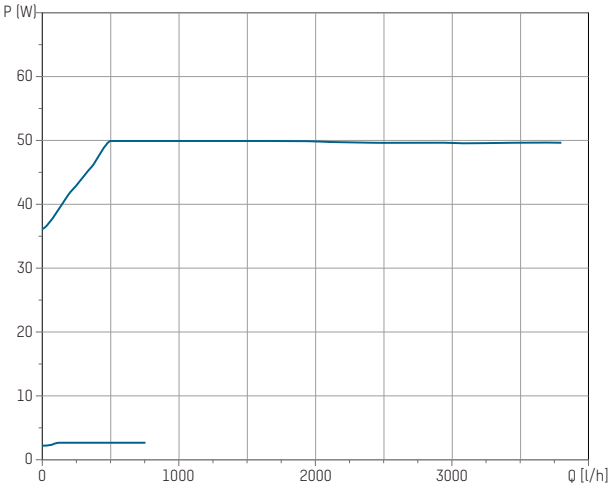
### PERFORMANCE CURVES

Pump body: Cast iron



### POWER CONSUMPTION CURVES

Pump body: Cast iron





## EXPLANATION PWM CONTROL SIGNALS

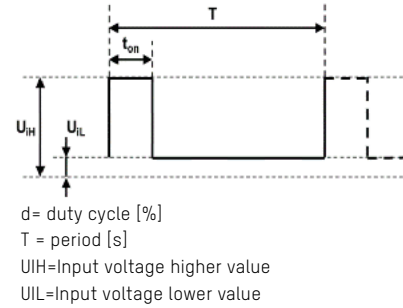
## Control signals

The TacoFlow3 GenS platform can communicate with heat generators (boiler or other devices) via pulse width modulation (PWM).

The pump is controlled by an external controller, but can also send information back to it.

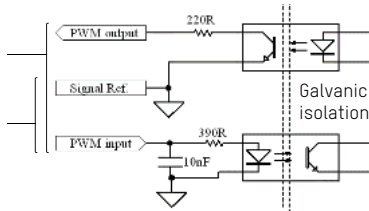
## Communication

The PWM communication is standardized in accordance with VDMA 24224 «Wet runner circulating pumps - Specification of PWM control signals». Customer-specific versions can also be developed on request.



## Input protocol

The PWM interface can be 1-way or 2-way and is galvanically isolated to ensure that the user does not come into contact with high voltage.



## PWM interface electrical specification

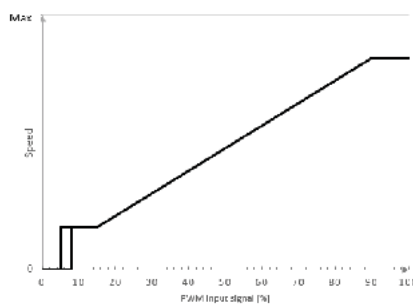
PWM input frequency	100 – 4000 Hz
Input Voltage upper value $U_{iH}$	4 – 24 V
Input Voltage lower value $U_{iL}$	<1 V
Input current at $U_{iH}$	<15 mA
PWM input operating range	0-100 %
PWM output frequency	75Hz $\pm 5\%$
Accuracy of output signal	$\pm 2\%$
Output duty cycle	0 – 100%
Output transistor collector voltage	<70 V
Output transistor collector current	<25 mA
Power dissipation on output resistor	<250 mW
Insulation voltage	3750 V
Sensitive to polarity change	Coded connector

## Input protocol according to the VDMA 24224

## "Solar" profile

In the "solar" profile in case of cable breakage the circulator stops to avoid overheating of the solar thermal system.

## PWM Solar Profile



Pump status	PWM input signal
Standby mode (Off)	$\leq 5\%$
Hysteresis area (On/Off)	$>5\% \dots \leq 8\%$
Minimum Speed (Min)	$>8\% \dots \leq 15\%$
Variable Speed (Min-Max)	$>15\% \dots \leq 90\%$
Maximum Speed (Max)	$>90\% \dots \leq 100\%$

# TACOFLOW2 PURE C

DHW CIRCULATION PUMPS FOR POTABLE WATER SYSTEMS



DHW circulation pumps for domestic hot water systems in residential and commercial buildings.

## DESCRIPTION

The TacoFlow2 PURE C (Composite) is driven by permanent-magnet synchronous motors.

These innovative motors achieve a high efficiency at low operating costs.

They are maintenance-free and do not need replacement of seals and gaskets.

## INSTALLATION POSITION

The pump can be installed both horizontally or vertically.

The arrow indicating the medium's flow direction must be observed.

## ADVANTAGES

- Efficient throughput setting with fixed Min-Max speed
- Media temperature range from +2 °C to +95 °C
- A colour LED indicates the current operating state
- Suitable for use in domestic hot water systems

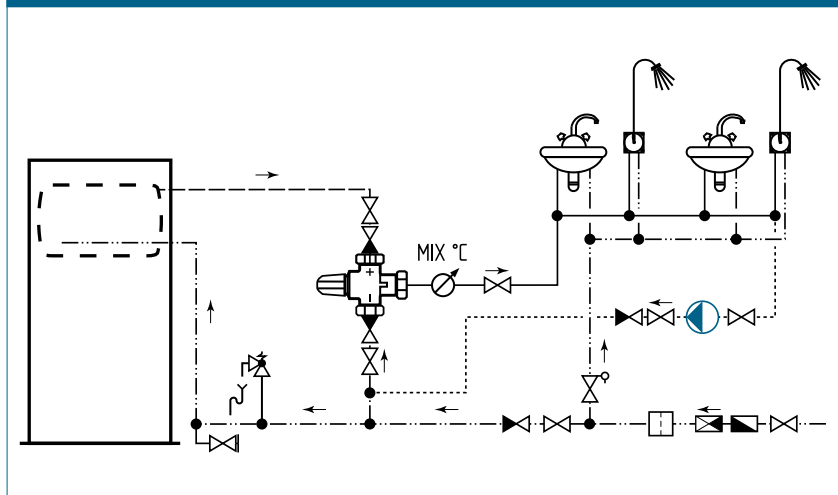
## OPERATION

The circulation pump are of a gland-less design, since the rotating parts of the motor run inside the pumped medium. This provides lubrication for the motor and the rotating parts. The circulation pump is equipped with anti-blocking protection, since the high efficiency pumps no longer have a pump head screw for manual unblocking. They also feature an automatic venting function, which detects and indicates any air in the pump.

## BUILDING CATEGORIES

- Apartment blocks, single family dwellings, housing estates, multiple dwelling units
- Smaller public buildings
- Facilities with partial use, such as barracks, camping sites

## SYSTEM/BASIC DIAGRAM



## SPECIFICATION TEXT

See [www.taconova.com](http://www.taconova.com)

## TECHNICAL DATA

### Pump

- Ambient temperature:  
+0 °C to +40 °C
- Permissible temperature range\*:  
+2 °C to +95 °C
- Permissible temperature ranges  
at max. ambient temperature:
  - at 30 °C: +30 °C to +95 °C
  - at 35 °C: +35 °C to +90 °C
  - at 40 °C: +40 °C to +70 °C
- Static pressure:  
Max. 1.0 MPa - 10 bar
- Minimum pressure at suction port:
  - 0.03 MPa (0.3 bar) at 50 °C
  - 0.10 MPa (1.0 bar) at 95 °C
- Max. relative humidity: ≤ 95%
- Sound pressure level: <43 dB (A)
- Low Voltage Directive (2006/95/EC): Standards applied: EN 62233, EN 60335-1 and EN 60335-2-51
- EMC Directive (2004/108/EC); Standards applied: EN 61000-3-2, EN 61000-3-3, EN 55014-1 and EN 55014-2
- Hydraulic unit certifications: ICIM (IT), KTW (DE), DVGW W270 (DE), ACS (FR), WRAS (GB)

### Material

- Pump body: Composite plastic PA 6T/6I GF
- Impeller: Composite plastic
- Shaft: Ceramic
- Bearing: Graphite
- Axial thrust bearing: Ceramic
- Can: Composite plastic

\* To prevent condensate in the motor and on the control electronics, the temperature of the pumped medium must always be higher than the ambient temperature.

## TECHNICAL DATA (CONTINUED)

### Motor and electronics

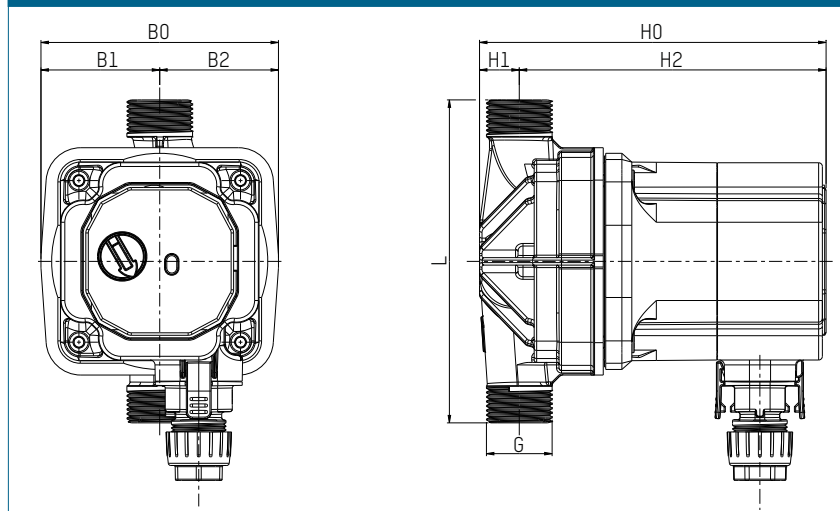
- Supply voltage: 1x230 V (±10%); frequency: 50/60 Hz
- Pump power plug
- Power rating (P1):  
Min. 4.3 W, max. 40 W
- Rated current (I1):  
Min. 0.03 A, max. 0.32 A
- Insulation class: H
- Protection rating: IP 44
- Safety category: II

## TYPE OVERVIEW

TacoFlow2 PURE C | DHW circulation pumps for potable water systems  
High efficiency electronic DHW circulation pump made of composite plastic, glandless design with permanent magnet synchronous motor, inverter control and plug connection.  
Pump head: 4 m

Order no.	Designation	G	Centre distance	Weight
302.1126.000	PURE C 10-40/130	3/4"	130 mm	1,47 kg
302.2126.000	PURE C 15-40/130	1"	130 mm	1,47 kg

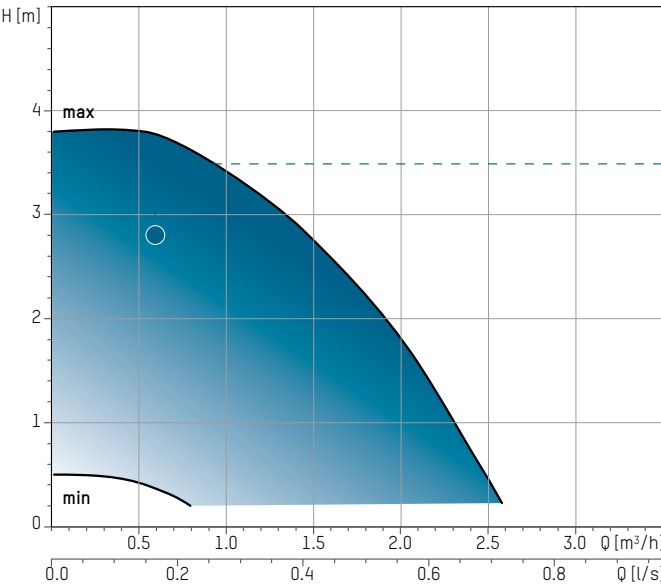
## DIMENSIONAL DRAWING



## MEASUREMENT TABLE

Order no.	L	B0	B1	B2	H0	H1	H2
302.1126.000	130	95,6	47,8	47,8	139	16	123
302.2126.000	130	95,6	47,8	47,8	139	16	123

# PERFORMANCE CURVES



$Q$ [m³/h]	0.3	0.6	0.9	1.2	1.5	1.8	2.1	2.4
H [m]	3.8	3.7	3.6	3.2	2.7	2.2	1.6	0.5

min - max

# TACOFLOW2 PURE (PLUS)

DHW CIRCULATION PUMPS FOR POTABLE WATER SYSTEMS



DHW circulation pumps for domestic hot water systems in residential and commercial buildings.

## DESCRIPTION

The TacoFlow2 PURE (PLUS) circulation pumps are virtually maintenance-free. You can reduce power consumption by up to 80% compared to a standard circulation pump, whilst maintaining the same hydraulic output.

## INSTALLATION POSITION

The pump can be installed both horizontally or vertically. The arrow indicating the medium's flow direction must be observed.

## ADVANTAGES

- Highly efficient circulation pump
- Efficient output setting with three constant-pressure curves
- Ceramic shaft
- Contact sensor for temperature control (PLUS version)
- Integrated timer for individual seven-day programming (PLUS version)
- LCD (PLUS version)
- Media temperature range from +5 °C to +65 °C
- Suitable for use in domestic hot water systems

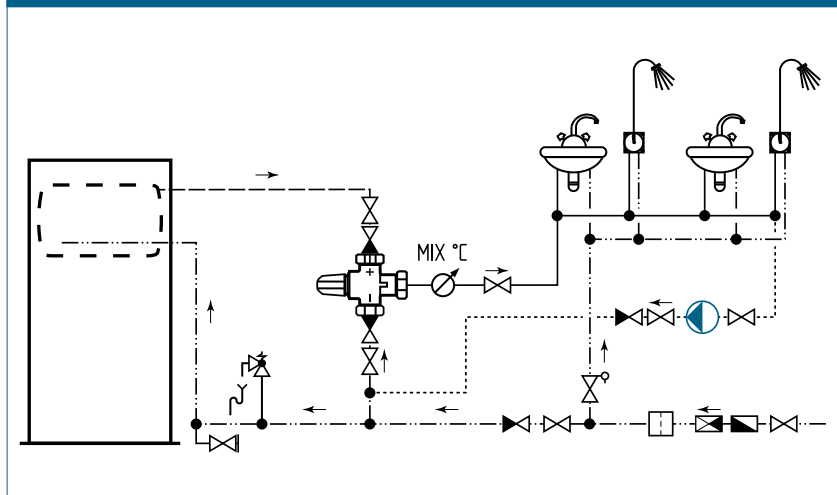
## OPERATION

The rotating parts of the motor run inside the pumped medium. This ensures the lubrication of the motor and the rotating parts. The circulation pump is equipped with anti-blocking protection. The pump can be optimally adapted to the system by selecting the most appropriate of the three available curves.

## BUILDING CATEGORIES

- Apartment blocks, single family dwellings, housing estates, multiple dwelling units
- Smaller public buildings
- Facilities with partial use, such as barracks, camping sites

## SYSTEM/BASIC DIAGRAM



## SPECIFICATION TEXT

See [www.taconova.com](http://www.taconova.com)

## TECHNICAL DATA

### Pump

- Ambient temperature: +0 °C to +40 °C
- Permissible temperature range: +5 °C to +65 °C
- Static pressure: Max. 1.0 MPa - 10 bar
- Maximum flow rate: 650 l/h
- Control: 3 constant characteristic curves
- Anti-blocking protection

### Material

- Pump body: brass

### Motor and electronics

- Supply voltage: 1x230 V; frequency: 50 Hz
- No external motor protection required
- Protection rating: IP 44
- Power: 2,5 - 7,0 W

### Fluids

- Drinking water < 20° dH

## TYPE OVERVIEW

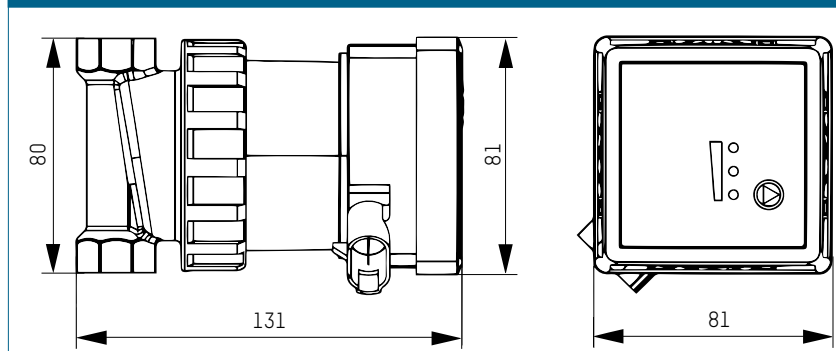
TacoFlow2 PURE | DHW circulation pumps for potable water systems

High-efficiency DHW circulation pump in glandless design with brass housing, insulation shell and plug connection.

Pump head: 1.4 m.

Order no.	Designation	Rp	Centre distance	Weight
302.2416.000	PURE 15-14/80	½"	80 mm	1,210 kg

## DIMENSIONAL DRAWING



TacoFlow2 PURE PLUS | DHW circulation pumps for potable water systems

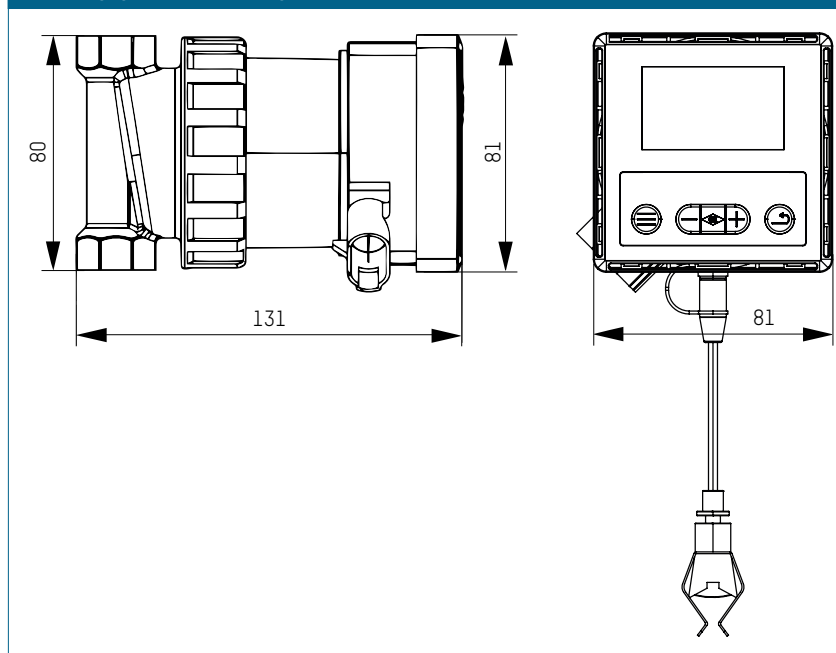
High-efficiency DHW circulation pump in glandless design with brass housing, insulation shell and plug connection.

LCD display, integrated timer for setting individual weekly programmes and contact sensor for monitoring the temperature.

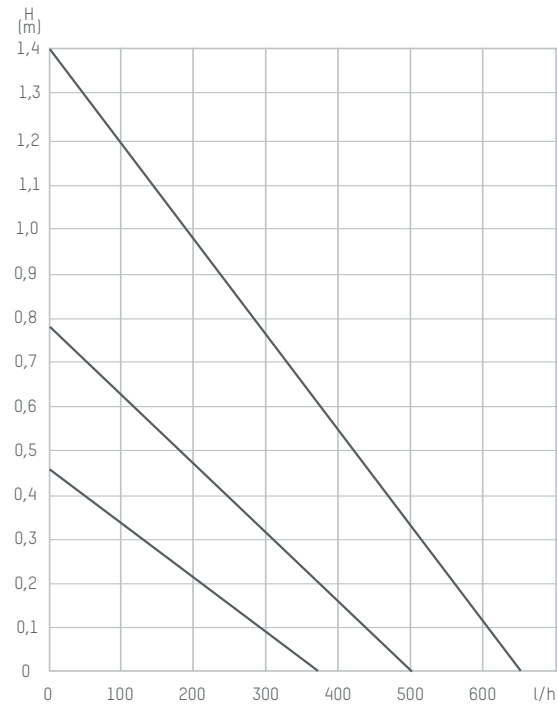
Pump head: 1.4 m.

Order no.	Designation	Rp	Centre distance	Weight
302.2417.000	PURE PLUS 15-14/80	½"	80 mm	1,280 kg

## DIMENSIONAL DRAWING



### PERFORMANCE CURVES



### ACCESSORIES

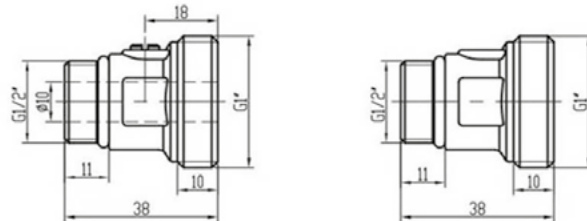


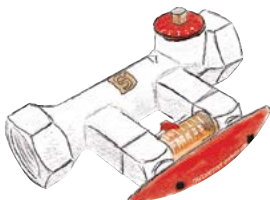
### BALL-VALVE & GRAVITY-BRAKE PLUGS

2-piece set consisting of a ball valve plug and a gravity brake plug.  
The set is suitable for both the PURE 15-14/80 and PURE PLUS 15-14/80 .  
The plugs extend the pump (before: 80 mm / after: approx. 136 mm).

Order no.	Connections	Length	Total weight
231.5000.000	G 1/2" / G 1"	38 mm each	0,19 kg

### DIMENSIONAL DRAWING

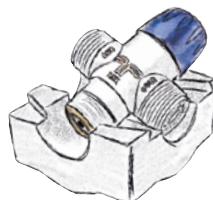




## HYDRONIC BALANCING

### Increased energy efficiency

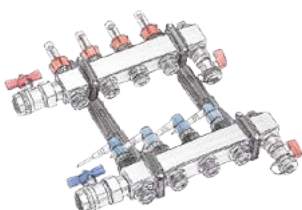
Heat distribution for any system, matched to demand.



## VALVES AND ACCESSORIES

### Compact aids

For safety, greater effectiveness and convenience.



## AREA HEATING SYSTEMS

### Perfect interaction

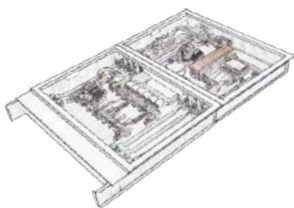
For a pleasant, individual room climate.



## PUMP TECHNOLOGY

### Upwardly efficient

For low operating costs and greater energy efficiency.



## SYSTEM TECHNOLOGY

### Intelligent units

For reliable operation, reduced maintenance and optimised energy costs.



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