



Building- & Room Automation  
Energy Monitoring Solutions  
IoT- & Cloud Solutions  
Conventional & Smart Sensors

# PRODUCT CATALOG

from 4.2024



DEOS

We are part of the Regin Group, who we are – Our mission ... our vision, DEOS Information service

Building IoT platform

Energy monitoring and data normalization for building applications

Site networking

Secure networking of buildings and properties, remote access and AlarmApp

Management software

from onboard BMS OPENview to B-AWS OPENweb on-premise or in the cloud

Project planning & commissioning

easy & efficient with central engineering tool and extensive libraries

Controllers

for BACnet-certified intelligence in the building - OPEN.WRX and OPEN EMS

IO modules

modular & flexible in the project - OPEN IO modules, Multi-IO modules, LoRaWAN IO modules...

System integration

for efficient connection of many protocols such as BACnet, Modbus, KNX, M-Bus ...

Operation solutions

for the switch cabinet – Android touch PCs, LED touchscreens + Mini-PCs

Control technology accessories

additional components for the switch cabinet etc. – Power adapters, M-Bus level converters, Network switches ...

LoRaWAN wireless networking

for wireless building automation – LoRaWAN gateway, -IO modules, -sensors, SAM indoor air quality indicator ...

Annex

Index, sales and ordering information ...

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Building automation that inspires

As a manufacturer of building automation products, we have been supplying our global partners and end customers with intelligent products, solutions and services for the automation and digitalization of buildings and facilities for more than 55 years. With our passion for innovation and dedication to quality, our sustainable product portfolio can be used to combine heating, ventilation and air conditioning with the aid of cutting-edge information technology to form an efficient and future-oriented overall system.

Thanks to our products, solutions, and wide range of services and support packages, we were the first company in the building automation sector to receive the award "Germany's Customer Champions 2021" with the "TOP Result". The result is based on a survey of our system partners conducted by an independent German institute. The certificate stands for excellent customer relations and represents an impressive vote of confidence from our partners.

Recognized for excellent customer relations!

DEOS

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Our mission

EVERY DAY  
WE WORK WITH  
PASSION TO CREATE  
INTELLIGENT BUILDING  
AUTOMATION SOLUTIONS.  
THIS IS OUR WAY  
OF ENSURING THE  
GREATEST POSSIBLE  
COMFORT AND OPTIMUM  
ENERGY EFFICIENCY  
IN BUILDINGS.

We are passionate about developing and producing intelligent products, solutions and services for heating, ventilation and air-conditioning control in buildings and systems. We offer practical, customisable measurement and control solutions for the optimum system integration of building services technology and their easy use. Every day, our teams work with system partners, end customers, operators and building owners all over the world. We place great value on personal contact with our customers, offer strong expertise from over 50 years of experience within the industry and foster true partnership. Our drive to innovate ensures the energy-efficient and sustainable operation of buildings and we are proud of our daily contribution to protect the environment.

The best products and solutions for your building.

WE ARE THE  
AUTOMATION AND  
DIGITISATION EXPERT  
FOR BUILDINGS  
AND SYSTEMS. OUR  
PARTNERS AND CUSTOMERS  
ARE FANS OF OUR  
INTEGRATION  
AND OPERATION  
SOLUTIONS FOR  
TECHNICAL BUILDING  
EQUIPMENT.

Our vision

Customers are impressed by our ability to integrate the relevant building services technology, as well as our experience in the field of intelligent building automation. They are true fans of our company, regularly use our solutions and recommend them to others. In our core markets, the excellent specialist knowledge of our employees in the areas of heating, ventilation and air-conditioning technology control is in high demand. Our team continuously provides professional support and has significantly expanded our fan base. The successful automated interaction between the technical building components ensures that a building is always operated at the highest level of energy efficiency and comfort.

For buildings that inspire.

c

Three building specialists  
that complement each  
other

The Regin Group is a European manufacturer of intelligent building automation and management systems and field devices. For more than 75 years, our goal has been to sustainably improve energy efficiency in buildings and facilities through our technical solutions.

Today, the Regin Group consists of three strong brands – Regin (S), DEOS (D) and Industrietechnik (IT). The extensive product range creates new holistic automation solutions for system integrators, building owners and operators as well as OEM customers – the best of three brands.

Our local sales companies and branches are the central point of contact and our employees also have in-depth and long-standing knowledge of the market and support our customers personally in their projects.

Our products and solutions are clearly differentiated by their simplicity, quick installation and commissioning as well as their intuitive operation. Our production in Europe guarantees fast and reliable deliveries.

Regin Group is headquartered in Gothenburg (S), with local sales offices/branches in eleven countries and +500 employees.



For you on site: see page 8

Interested?  
Then contact us! We will be happy to help you.  
✉ info@deos-ag.com  
☎ +49 5971 91133-0

What defines DEOS

In everything we do, we focus on the core needs of our partners. By engaging in direct dialog and close cooperation, we jointly develop the DEOS range of products and solutions for building automation in companies. As a medium-sized company, it is much easier for us to respond flexibly to environmental factors and to make targeted adjustments to our product range. Our top priority here is the simplicity of our systems - from integration to operation. In addition, we actively support our partners with our service offerings and thus help them to achieve the desired high level of flexibility, efficiency and cost-effectiveness in their building projects. To this end, we actively share our expertise and industry knowledge and maintain personal relationships with our partners.

DEOS partners are our  
focus

What drives us

Our greatest motivation for continuous improvement is to inspire our system partners, specialist planners, operators, end customers and employees with our product range and convert them into fans. We make sure of this with our practical solutions and simple system integration, which allow buildings to be operated with optimum energy efficiency. In this way, we are proud to make our contribution to the environment and promote the more conscious and efficient use of energy. Because in today's complex world, we look for the very things that make life easier and our partners more successful.

For a sustainable future

Where we come from

More than 55 years of experience - as an internationally operating manufacturer in the building automation sector, we are constantly growing while continuing to benefit from our flexibility as a medium-sized company. What started out as a one-man business has now grown to become an internationally successful building automation company.

Building automation  
supplier since day one

Satisfied and committed employees are our most important asset

The well-being of our employees is our top priority. This is precisely why we actively work to provide the best possible conditions and a unique working environment for our employees. With the help of the renowned Mainz-based institute 2HMforum., we regularly measure the satisfaction and commitment of our employees. Based on the results of the most recent employee survey, we are proud and delighted to have been awarded the seal of "Germany's Employee Champions 2023".



Our company values

The DEOS company values form the basis for our cooperation and describe the desired attitude and conduct of all employees. They promote the success of our customers and hence also the success of DEOS. The values apply to everyone who works for us. The level in the hierarchy is irrelevant in this context.







Information about DEOS products

- Stay informed
- We offer our system partners various communication channels to receive news from the DEOS world. In this way, we aim to ensure that you are fully informed about our portfolio of products and solutions.
- DEOS Portal
- Want to more? In the DEOS Partner Portal, as a DEOS system partner you will find all relevant documents such as data sheets, software, libraries and video tutorials available for download. The Partner Portal is a key component of our partnership and serves as an exchange platform for documents that make your work easier. Do not delay - register for free at [portal.deos-ag.com](https://portal.deos-ag.com).
- Clearly arranged presentation of documents according to document type, product family, product group, product type, etc.
  - Intuitive sorting options help find documents quickly
  - Full text search: Full text search is a method where contents of even stored documents are searched for matches – this simplifies searching data
  - News area: Technical news offered in the Partner Portal keeps our system partners up to speed. These news are also summarised and mailed as a Technical Newsletter – as it was before
  - Subscription feature: Users can sign up for subscription services of popular documents to receive notification by email of updates for new versions of the document(s) subscribed to
  - My Lists: This is where you can create lists for a collection of documents that can be downloaded as a package (e.g. a collection of all data sheets as one list – this enables you to download in one swoop the latest version of all data sheets)

DEOS

PORTAL

DASHBOARD

DOWNLOAD CENTER

NEWS

SUPPORT

TRAINING

WIKI (TIPS & TRICKS)

HELP

ADMINISTRATION

TESTAPPS

CURRENT DOCUMENTS

DOCUMENT ARCHIVE

SUBSCRIBED DOCUMENTS

BOOKMARK LISTS

DOCUMENTS

ARCHIVE DOCUMENTS

DOWNLOADS

Current documents

Reset

Document type

[No selection]

Document language

[No selection]

Text search

Product family





































































[No selection]

Product group

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Product type

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Document type	Title	Document language	Last Update	Version	Product family / Product group / Product type
   	News: new anything again: technical information (2/2)	english	02.04.2025		Marketing / Advertising material / Technical newsletter
   	Engel-Hite HCU	english	08.05.2024		Compact controllers / Engie / Engie Video
   	16" Embedded Touch-PC (data version 04.04.21)	german	30.03.2019		Control cabinet operating devices + PC / Touch operating device / Android Touch PC
   	Abbildungung OFC 000000	german	19.07.2024		Sales / Abhängigkeiten / Abhängigkeitsverweise
   	Abbildungung ULTIME OFPWeb 16	german	25.07.2024		Sales / Abhängigkeiten / Abhängigkeitsverweise
   	Abbildungung SD Module CDSMS	german	25.07.2024		Sales / Abhängigkeiten / Abhängigkeitsverweise
   	Alarmgeber - Anschlussanleitung unter Android Betriebssystem	german	26.08.2020	1.0	Local solutions / DEOS Secure Network / DEOS Secure Network
   	Alarmgeber - Anschlussanleitung unter Android Betriebssystem	german	16.11.2022	2.1	Sales / Product catalog 2022 / Other
   	Anleitung OFC/FMS Systemanbindung Modem	german	31.08.2016	1.1	Control cabinet operating devices / PC / Touch operating device / Android Touch PC
   	Anleitung OFC/FMS Systemanbindung Modem	german	13.09.2022		Management solutions / Building management (BMS) / Control cabinet 12
   	ANG 20	german	13.06.2023	13.06.2023	Sensors / Pressure measuring devices / Accessories
   	ANG 20	english	01.02.2017	2017-02-08	Sensors / Pressure measuring devices / Accessories
   	Application Tool	english-german	08.05.2024		Compact controllers / Accessories / Config-App
   	Anleitung OFC/FMS Systemanbindung Modem	german	06.10.2017	1.1	Control cabinet operating devices + PC / PC / Mini-PC
   	Auftragformulare Optionen 3D-Module	german	13.08.2017		Sales / Order / Device Codes
   	Auftragformulare Optionen OPEN EME	german	14.08.2017		Sales / Order / Device Codes
   	Auftragformulare Optionen OPEN EME	german	06.10.2017	1.0.2	Sales / Order / Device Codes

Want to know more?

- On our website [www.deos-ag.com](https://www.deos-ag.com), interested parties and DEOS system partners will find information about DEOS and our products.
- In the download area of our website [www.deos-ag.com/downloads](https://www.deos-ag.com/downloads) interested parties and DEOS system partners will find public information about us and our products. In addition to product certificates and press releases, advertising material such as brochures and flyers are also available for download.
- With the DEOS Newsletter, DEOS system partners receive information by e-mail about our product innovations, news in the Partner Portal, trade fairs, events and news about DEOS AG. To experience this added value, simply subscribe to the newsletter when registering in the Partner Section.
- By means of free regional upgrade training and events, we seek to provide opportunities for direct exchange with our system partners. In this way, we stay on top of market trends, customer needs and product developments and can adjust our innovations in line with the resulting requirements. In addition, DEOS experts give presentations on various topics such as product upgrades and offer useful tips and tricks for practical applications.
- Do you need further information or want to participate in a DEOS event? Contact us with your request or visit our website [www.deos-ag.com/en/trade-fair-event-calendar](https://www.deos-ag.com/en/trade-fair-event-calendar)
- We also regularly publish interesting information from the DEOS world via YouTube, XING and LinkedIn. Follow us and stay up to date or share your experiences with us:





Software as a service

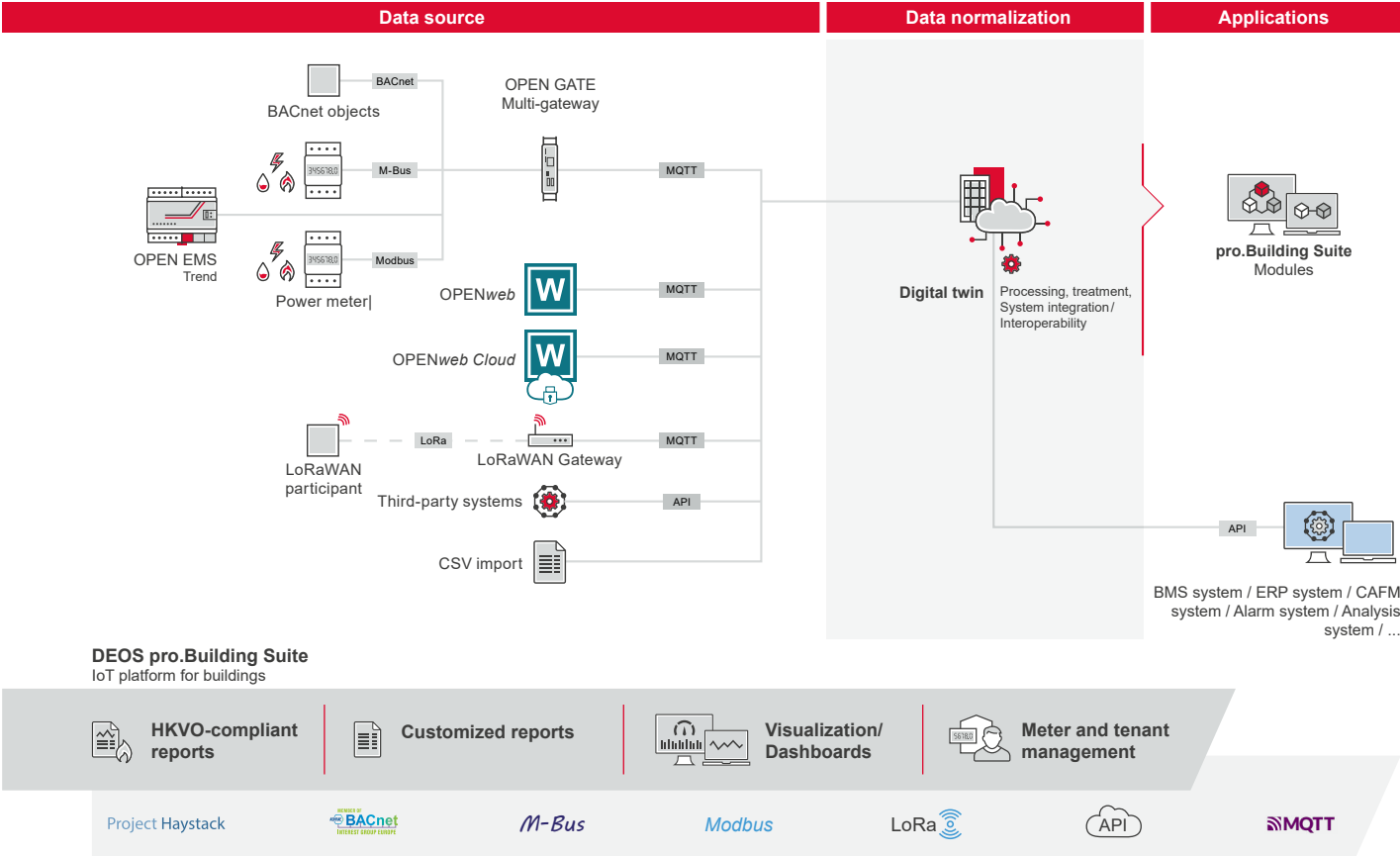
The pro.Building Suite is an IoT platform for the transparent connection, display, and processing of data from building control systems. The data is represented by a digital image of each building control system in a semantic data model - the digital twin.

The pro.Building Suite modules can be used to perform individual visualizations and data inspections. Standardized interfaces (Graph QL API, CSV Export) enable direct interaction between building systems technology and third-party systems such as accounting software, EMS, CAFM, and many more. Thanks to its modular design, the platform can be expanded at any time to meet your requirements.

MADE IN  
GERMANY  
★ ★ ★

Building IoT platform

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2

Highlights at a glance

- ✓ Cloud-based IoT platform as the focal point of relevant building data
- ✓ Create dashboards, reports, and operator cockpits directly in the web browser
- ✓ Systems are hosted in a processing center located in Germany
- ✓ Modular interfacing of system components, manufacturer-independent via BACnet, Modbus or M-Bus, LoRaWAN, etc.
- ✓ Convenient licensing model - attractive even for the smallest systems
- ✓ Ready-made solutions for state-of-the-art energy monitoring, including compliance with the new German Heating Cost Ordinance (HKVO)

Do you have questions or do you need support? Our sales partners would be pleased to help you.

✉ bit@deos-ag.com  
☎ +49 5971 91133-0



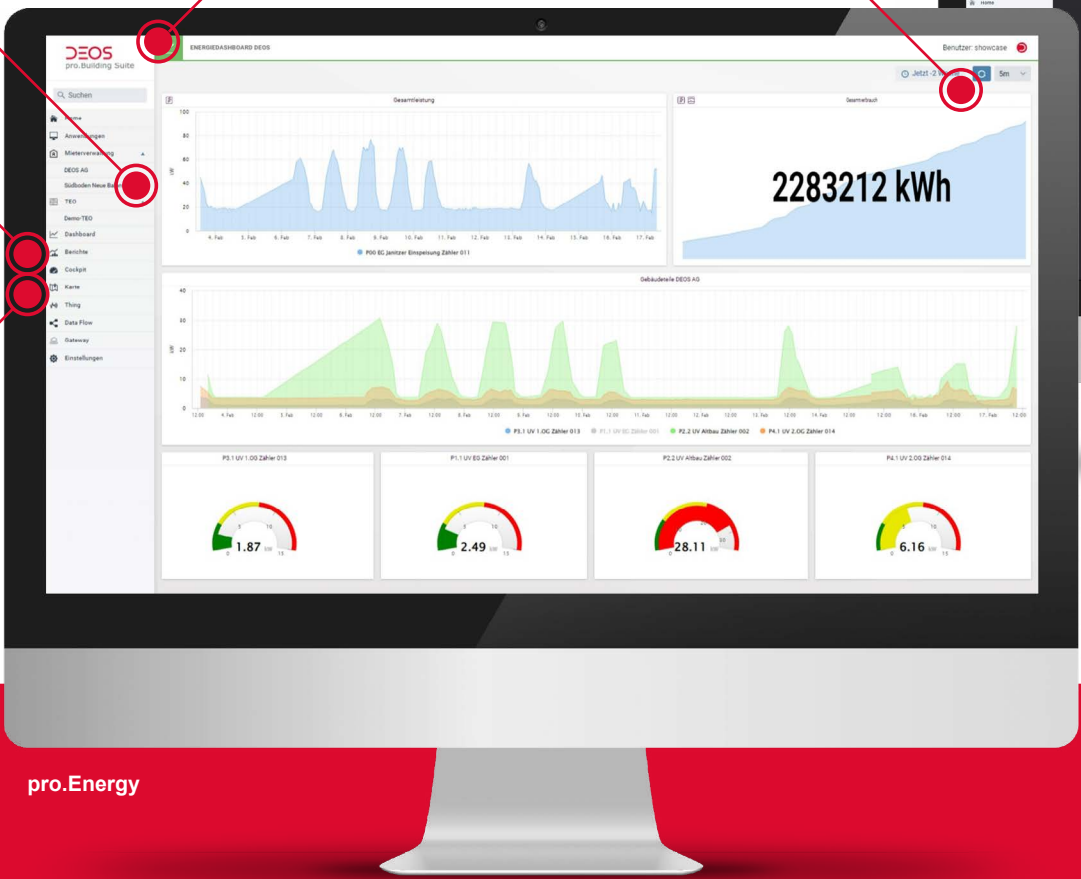
Intuitive  
Operation  
via the navigation tree

Geographical map display  
of your systems

Gateway  
connections  
Configuration of the  
connection options to the  
pro.Building Suite via  
OPEN GATE (BACnet,  
Modbus, M-Bus), Trend  
API, LoRaWAN  
Gateway, and CSV  
Import

Use in  
standard browser  
via HTML5 with no  
software installation

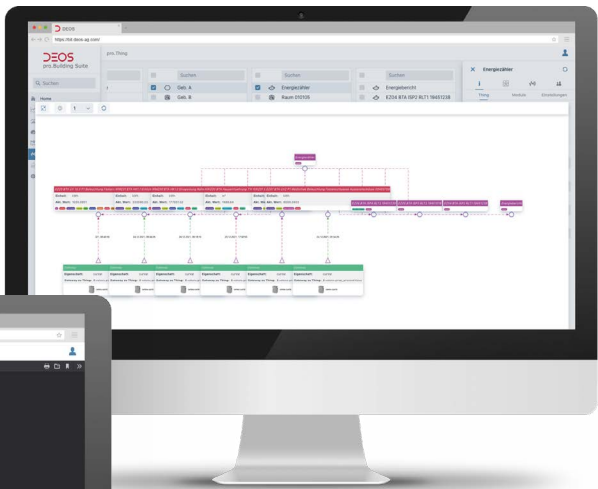
Customer-specific login  
with user rights



pro.Energy

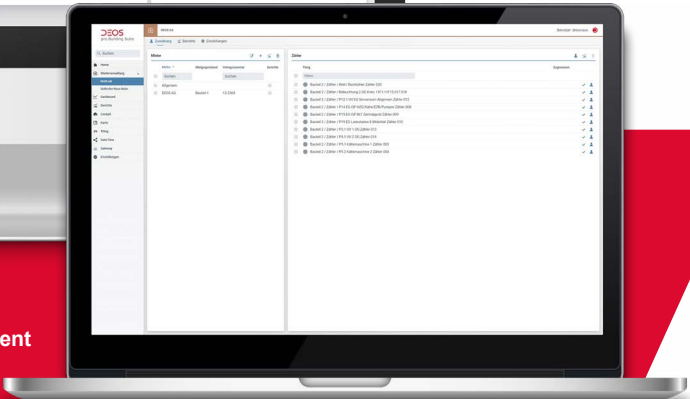
pro.Energy

Digital twin



pro.TEO

pro.Tenant Management



✓ Universal interface for connecting building data in a semantic data model - the digital twin

✓ The digital twin is continuously fed with data, which it provides for use in the modules

✓ Create dashboards and reports directly in the web browser

✓ Exchange data with third-party systems via generic and/or manufacturer-specific API



For buildings of the future

Digital twin: For buildings of the future

Almost no other concept is shaping industry and society around the world as profoundly as digitalization. Along with products, solutions, and services, digitalization has already arrived in the field of building automation and building services equipment. The goal is to digitalize new buildings as well as existing ones, simplify working methods, and fully exploit the efficiency potential of buildings.

In the future, digital twins will be the principle behind the operation and expansion of both new and existing buildings. They are the basis for Industry 4.0, smart buildings or smart cities, and are accelerating megatrends such as IoT, the Internet of Things. Here, smart IoT products serve to link the real world with the digital cosmos. Digital twins not only offer maximum transparency, but also provide further opportunities and benefits such as the networking of products for intelligent communication, cross-system control and regulation, increased efficiency and high analytic potential. The digital twin can also be used to implement new service concepts such as predictive maintenance.

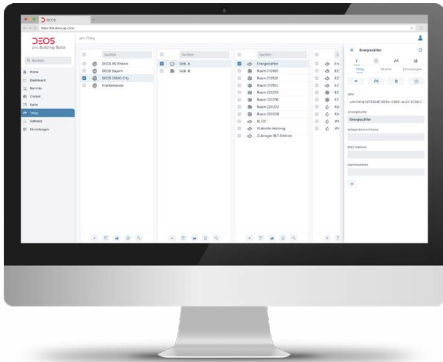
What is a digital twin?

There are many different approaches to the digital twin; however, there is no clear and generally accepted definition. In principle, the digital twin is a digital copy or image of tangible or intangible objects, processes or services. Digital twins use IoT products to collect and visualize data on an IoT or cloud platform. The collected data is presented in a manufacturer-independent, standardized manner and ensures optimum data transparency. Digital twins thus provide the analytic potential for increasing efficiency or unlocking additional services.

How is a digital building twin created?

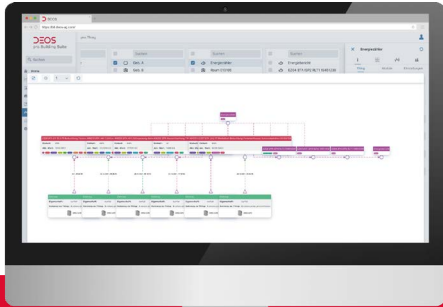
The areas of application of the IoT and the digital twin are so diverse that, at the beginning of a project, the question of "why" should always be answered first.

That is why we always offer interested parties a discussion and demonstration of the DEOS building twin together with experts from DEOSAG. This is where the questions are answered and the goals to be achieved by using a digital twin are defined. Whether for energy reporting to save costs, standardized alarm management of all building services equipment or centralized and automated energy meter evaluation to avoid meter reading errors - the digital twin gives building operators the transparency they need for efficient building operation and the ability to tap unused potential.



Would you like to benefit from your own digital twin?  
We would be happy to advise you personally and help you with implementation:  
✉ bit@deos-ag.com  
☎ +49 5971 91133-0

Digital twin – data points for mapping a building services system



- Highlights at a glance<sup>1)</sup>
- ✓ Digital mapping of the local physical conditions
  - ✓ Virtual navigation through the building structure using graphics
  - ✓ Semantic data model via Project Haystack
  - ✓ Enriched with meta information such as serial number, geographic location, etc.

Your path to the digital twin – step by step

Specify data connection

1

Select functions

2

**How does the building data get into the pro.Building Suite?**  
Select one of the following connectivity options:

- pro.API1, DS-360553
- OPEN GATE multi-gateway, DS-360437
- OPEN GATE virtual multi-gateway, DS-360515
- OPENweb/OPENweb Cloud
- MQTT
- LoRaWAN gateway, DS-360448
- CSV import

**Which functions would you like to use in the pro.Building Suite?**  
Select the functions that are right for you::

☐ **Energy monitoring**  
Define the number of data points to be visualized or listed in reports. The following applies for each data point:  
Account 1x the article DS-pro.Energy1, DS-360552

☐ **Tenant management**  
Define the number of data points from whose meters the current meter reading is to be managed.  
The following applies for each data point:  
Account 1x the article DS-pro.Tenant Management1, DS-360554

☐ **Operation for smart heating thermostat**  
Define the number of heating thermostats (DEOS TEO, DS-L-TEO/MLR003) to be connected for operation.  
The following applies for each smart heating thermostat:  
Account 1x the article DS-pro.TEO1, DS-360551

DEOS pro.Building Suite – services		Type	Art. no.
Special configuration <sup>1)</sup>	Per 15 minutes or part thereof	DS-Service pro.Building Suite	DS-360556
	Individual service package	DS-Service pro.Building Suite	DS-360556

<sup>1</sup> Billing on a time and material basis for special configurations that are not included in the set-up costs. Special configurations are e.g. connecting data points in the digital twin, setting up dashboards, creating reports, creating individual reports, configuring API, supporting tenant management

Energy monitoring and energy reporting

Optimize building operation, reduce operating costs

The ultimate goal is to reduce energy consumption of TBE systems, buildings or entire properties to a minimum. The first priority, therefore, is always the energy analysis. This requires sufficient transparency about energy use in the building. We aim to create this transparency as simply as possible, with no need to have the technical knowledge for a complex and sophisticated energy management system. With our energy monitoring system, we offer a solution that has been proven in practice, is manufacturer-independent and can be used in existing buildings where technical building equipment is already installed (retrofitted), or in new buildings.

Use synergy effects

At the heart of this solution is our IoT platform, pro.Building Suite, where all data are brought together, stored and further processed. The platform can be accessed from any device using a standard web browser. Take advantage of additional synergy effects: In combination with our BACnet BMS OPENweb, we can optimize the energy consumption of your plant and equipment.

Customized energy dashboards and energy reports

The collected energy data is aggregated on the pro.Building Suite IoT platform and visualized on individually configurable energy dashboards. This allows the recorded data to be compared quickly and easily with target data or benchmarks, and to derive possible efficiency measures. It also promotes the responsible use of resources among



the workforce and sensitizes employees to energy efficiency in the building. Energy reports can be generated automatically in the background and displayed, transmitted or printed out regularly if desired. This provides the building operator with a transparent and simple overview of the energy status of the building and allows comparison with the business objectives.

Would you like to benefit from your own digital twin?  
We would be happy to advise you personally and help you with implementation:  
✉ bit@deos-ag.com  
☎ +49 5971 91133-0



pro.Energy – Module for collecting, processing and visualization of energy data

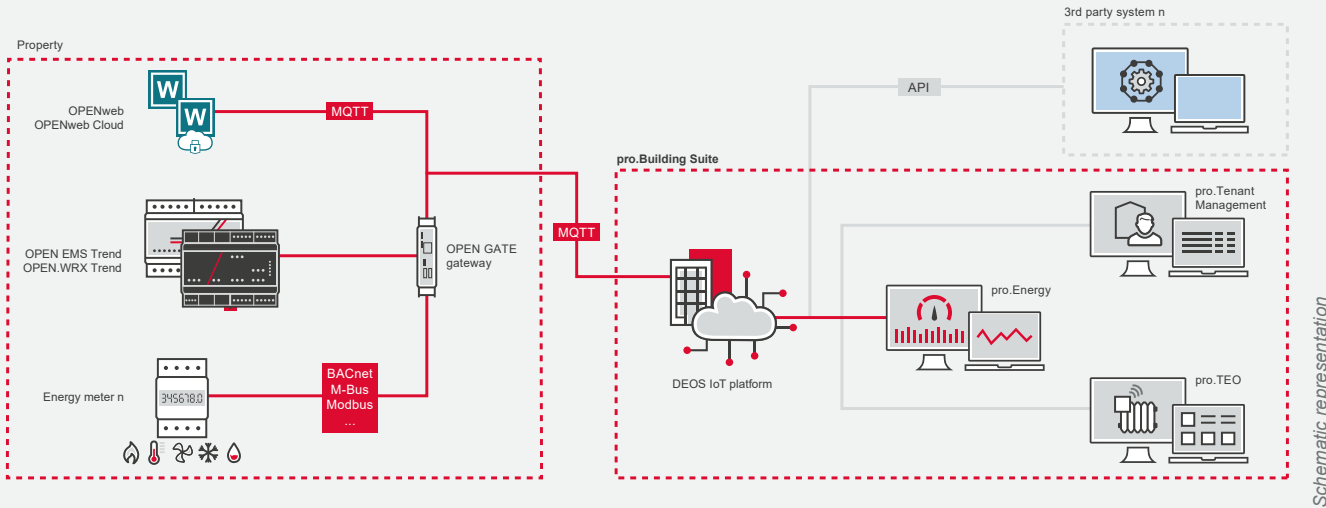


DS-pro.Energy1

- Highlights at a glance<sup>1)</sup>
- ✓ Manufacturer-independent, tried-and-tested practical solution for reducing the energy consumption of TBE systems, buildings or entire properties
  - ✓ Simple and transparent collection, processing and visualization of energy data and individually configurable energy dashboards
  - ✓ Automatic energy reports allowing regular viewing, transmission or printing

- Successor article for
- DS-Energy Monitoring Bundle, DS-360489
  - DS-pro.Dashboard, DS-360481
  - DS-pro.Report, DS-360482

Networking example



pro.Building Suite	Type	Art. no.
pro.Energy	per data point	DS-pro.Energy1
		DS-360552

1 Additional product information is provided in the data sheet (see DEOS Portal at portal.deos-ag.com)  
2 Minimum contract term: 2 years. Settlement occurs in advance. Notice period: 3 months to the end of the contract, automatic12-month extension



Energy reporting with tenant management

Tenant management/  
change with HKVO-  
compliant reports

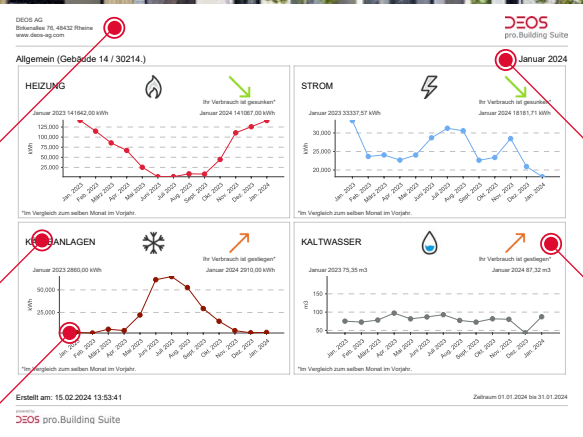
You can now use our special interface for tenant management and tenant change. Here you can manage the entire meter landscape of a property and assign the meters to the corresponding tenants. You won't lose track during accounting periods because you can enter past and upcoming tenant changes. Prepare monthly consumption statements as required by the latest German Heating Cost Ordinance (HKVO). You can use our pro.Building Suite to generate the relevant report. To provide the tenant with the consumption data, use our automatically generated monthly report to send to the stored contact details. In this way, you maximize the transparency of energy consumption.



Individual header  
with logo & address

Energy consumption  
per trade

Energy consumption  
of the last 13 months



Monthly update

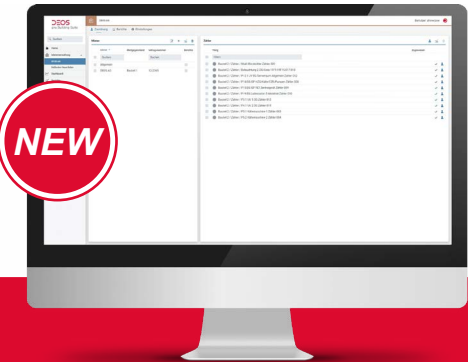
Automatically generated, available  
in the portal or sent by e-mail

Comparison  
with the previous year

Display of additional consumption  
or savings

Would you like to benefit from your own digital twin?  
We would be happy to advise you personally and help you with implementation:  
✉ bit@deos-ag.com  
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pro.Tenant Management – Module for managing  
rental properties



DS-pro.Tenant Management1

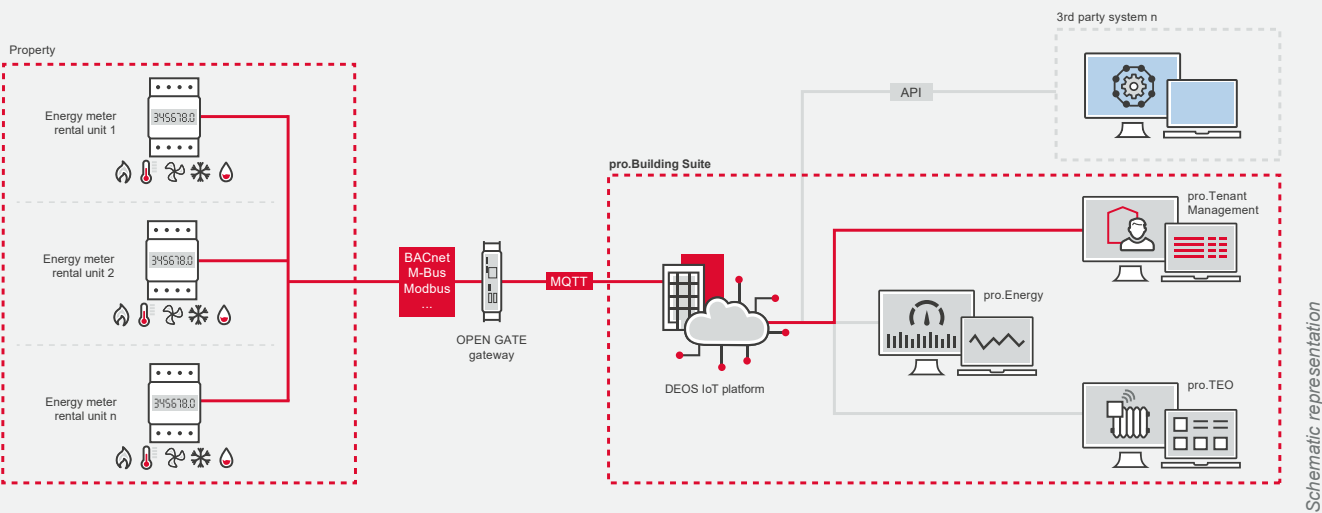
Successor article for

- DS-pro.Tenant Management, DS-360527

Highlights at a glance<sup>1)</sup>

- ✓ State-of-the-art integration via cloud-to-cloud connectivity
- ✓ Import data from third-party systems
- ✓ Transparency about energy use in the building
- ✓ Automatic monthly consumption information according to HKVO requirements
- ✓ Change of meter and tenant at a specific time

Networking example



pro.Building Suite		Type	Art. no.
pro.Tenant Management <sup>2)</sup>	per data point	DS-pro.Tenant Management1	DS-360554

1 Additional product information is provided in the data sheet (see DEOS Portal at portal.deos-ag.com)  
2 Can only be implemented in conjunction with DS-pro.Energy1  
3 Minimum contract term: 2 years. Settlement occurs in advance. Notice period: 3 months to the end of the contract, automatic12-month extension

Operation with smart heating thermostats

Optimization of heating costs

Optimizing heating costs in functional buildings such as schools, offices or hotels offers enormous savings potential, because more than 65 percent of energy consumption in the building operating costs are generated by heating the rooms. Therefore, intelligent motor-driven radiator actuators are indispensable.

Time programs maximize your efficiency

The pro.TEO module of our IoT platform - the pro.Building Suite - can be used to read and change the current room temperature and the operating mode of the thermostat. Customizable time programs or overnight temperature setback allow the temperature for predefined rooms, floors or entire buildings to be controlled centrally and automatically.

And the best part is that the annoying turning up and down of radiator valves is a thing of the past, you enjoy a perfect feel-good climate and reduce your energy costs by up to 40 percent at the same time. Operation is easy using a standard browser on the smartphone, tablet or PC.

Energy-saving masterpiece for buildings

Especially in older existing buildings, heating costs can be significantly reduced through the interaction of DEOS TEO and proTEO, although this is only the first step in turning your existing building into a post-digitalized smart building. Link DEOS TEO with other



LoRaWAN wireless sensors such as presence detectors, door and window contacts or multi-sensors to determine the room temperature: if offices are unoccupied for a lengthy period of time or windows have not been closed, the heating output is automatically reduced. In this way, you tap further energy-saving potential and maximize your energy efficiency. Furthermore, DEOS TEO is manufacturer-independent and can be integrated into existing building automation systems.

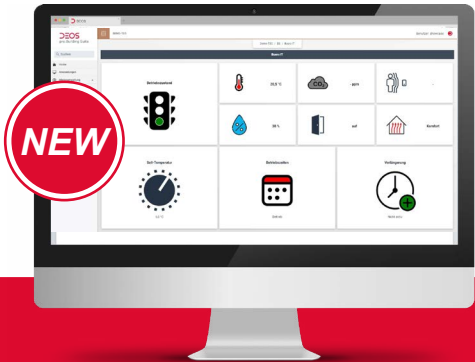
Would you like to benefit from heating cost optimization with pro.TEO?

We would be happy to advise you personally and help you with implementation:

✉ bit@deos-ag.com  
☎ +49 5971 91133-0



pro.TEO – Module for operating the DEOS TEO heating thermostat



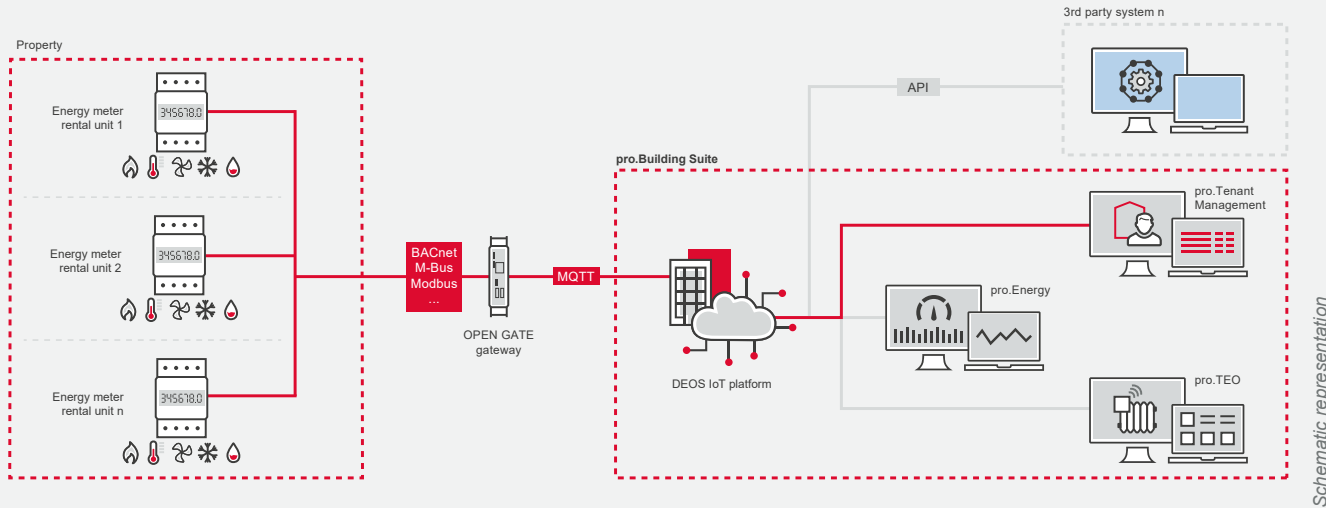
DS-pro.TEO1

- Highlights at a glance<sup>1)</sup>**
- ✓ Access on the go - via web browser
  - ✓ Expandable – with additional sensor functions
  - ✓ Cost-effective wireless network structure
  - ✓ No software installation – setup and operation via web browser
  - ✓ Can be operated at room, floor and building level
  - ✓ Customization of temperature set-points
  - ✓ Presetting of times of use
  - ✓ All room conditions available at a glance
  - ✓ Individual access rights

- Successor article for**
- DS-pro.TEO, DS-360520
  - DS-L-DLIC-1, DS-360517

For detailed information about DEOS TEO, see page 35

Networking example



Schematic representation

pro.Building Suite		Type	Art. no.
pro.TEO	per DEOS TEO	DS-pro.TEO1	DS-360551

1 Additional product information is provided in the data sheet (see DEOS Portal at portal.deos-ag.com)  
2 Minimum contract term: 2 years. Settlement occurs in advance. Notice period: 3 months to the end of the contract, automatic12-month extension



pro.xxx – module for connecting third-party systems to the pro.Building Suite

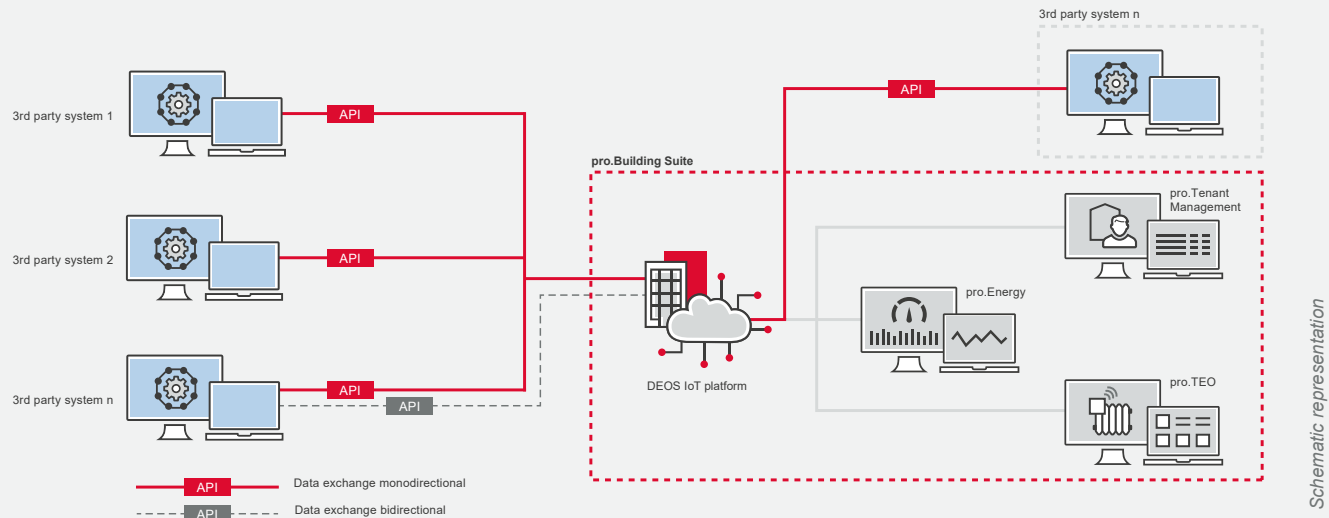


- Highlights at a glance<sup>1)</sup>**
- ✓ State-of-the-art integration via cloud-to-cloud connectivity
  - ✓ Import data from third-party systems
  - ✓ Export data to third-party systems
  - ✓ Standard (GraphQL) interface

Successor article for

- DS-pro.API, DS-360485

Networking example



pro.Building Suite	Type	Art. no.
pro.API	per data point	DS-pro.API1 DS-360553

1 Additional product information is provided in the data sheet (see DEOS Portal at portal.deos-ag.com)  
2 Minimum contract term: 2 years. Settlement occurs in advance. Notice period: 3 months to the end of the contract, automatic 12-month extension. Price scale on request

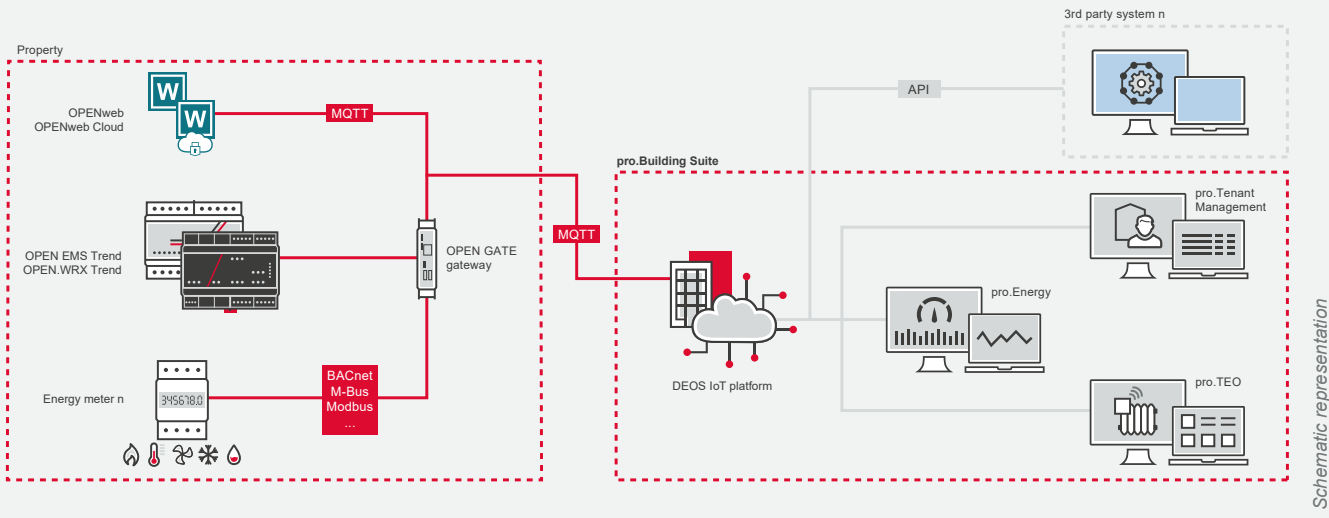


OPEN GATE – for standardized, manufacturer-independent communication with the pro.Building Suite



- Highlights at a glance<sup>1)</sup>**
- ✓ Multi-gateway for connecting systems to the pro.Building Suite via BACnet, Modbus and M-Bus
  - ✓ Manufacturer-independent – suitable for DEOS and third-party systems
  - ✓ Direct connection of the BMS OPENweb
  - ✓ Can be retrofitted into existing HVAC systems
  - ✓ Slim design for retrofit projects

Networking example



pro.Building Suite	Type	Art. no.
Multi-gateway <sup>3)</sup>	DS-OG	DS-360437
OPEN GATE	Virtual multi-gateway	DS-vOG DS-360515

1 Additional product information is provided in the data sheet (see DEOS Portal at portal.deos-ag.com)  
2 Minimum contract term: 2 years. Settlement occurs in advance. Notice period: 3 months to the end of the contract, automatic 12-month extension  
3 An additional power supply (art. no. DS-350179, type DS-PS-24V-0.7A, see page xx) is required for operation

General information on the software

Installation type	Hosting (cloud solution in the data center)
License models	Object/location license
IT security	Certified according to DIN EN ISO/IEC Data center in Germany/Europe
Maximum system size	
Max. number of users	Unlimited
Max. number of data points	Unlimited
Max. number of data sources	Unlimited
Updates	
Software updates included	■
Training & support	
Inhouse training	■
Online training	■
Telephone helpdesk	■
Online support	■
Individual workshops	■
Concept development	■

Transducer

Water meter	
Meters from third-party providers	■
Data transmission via radio	■
Data transmission via M-Bus	■
Data transmission (other)	BACnet, Modbus, LoRaWAN, MQTT
Heat meters	
Meters from third-party providers	■
Data transmission via radio	■
Data transmission via M-Bus	■
Data transmission (other)	BACnet, Modbus, LoRaWAN, MQTT
Electricity meters	
Meters from third-party providers	■
Data transmission via radio	■
Data transmission via M-Bus	■
Data transmission (other)	BACnet, Modbus, LoRaWAN, MQTT
Other meters	Everything with BACnet, Modbus, M-Bus, LoRaWAN, MQTT

Data import sources

Manual import	■
Data connector	
Hardware data connector	with data buffer
Software data connector	with data buffer
Manual data input	■

Data import (hardware data connector)

Interfaces	
to BACnet	■
to Modbus	■
to M-Bus	■
to KNX	■
to others	MQTT, Graph QL API, CSV, LoRaWAN
Internal data buffering	■
Forwarding of alarms	■

Data import (software data connector)

Interfaces	
to building management systemen	OPENweb, others via BACnet, Modbus,KNX, MQTT
to SQL data bases	■
to CSV files	■
to AI-supporting systems	■
to other interfaces	Discovery, pit-FM
Internal data buffering	■
Forwarding of alarms	■

Software functions

Summarization types	Jahr + Monat + Woche + Tag
Operation via browser + integrated help function	■
Help function	
Online	■
Context sensitive	■
Decimal places displayed	wie im Datenpunkt konfiguriert
Backup method in case of power failure	Redundantes System im Rechenzentrum
Tenant management	Zuordnung Zähler–Mieter, automatisierte monatliche Verbrauchsinformation
Graphical display	
Lines	■
Blocks	■
XY representation	■
Area	■
Percentage blocks	■
Speedometer	■
Time shift in the diagram	■
Columns	■
Pie chart	■
Grid chart	■
Linear regression	■
Sankey diagram	■

continue next page



Software functions

Formula package	Air condition library (e.g. dew point, vapor pressure), various key figures, own logic functions
Benchmarking	
Energy for heating	■
Energy for cooling	■
Energy for ventilation	■
Energy for lighting	■
Other	Creation of individual key figures
Alarm monitoring	
Alarm on aggregation	Daily, weekly or monthly consumption
With priority assignment	■
With own alarm definition	■
Other	Own logic function for calculation and alarming
Alarm forwarding	
E-mail	■
Other	AlarmApp, MQTT, BACnet, Modbus, KNX, Signl4
User-creatable unit	
Power	■
COP	■
Work	■
Other	Manual input

Cost calculation

Enter energy tariffs	■
Evaluate own electricity use	■
Assign cost centers	■

Data export

Data export	
to CAFM	■
to Excel	■
to MQTT	■
to CSV	■
to PDF	■
to Web-/Graph QL API	■

Data types

Measurement & counting	
Heat output and work	■
Ventilation volume flow and enthalpy	■
Dust concentration	■
Steam volume flow and condition	■
CO <sub>2</sub> concentration	■
NO <sub>2</sub> concentration	■
Other	All masured and metered values from BACnet, Modbus, M-Bus, KNX, MQTT, LoRaWAN
Detection	
of valve position	■
of tank levels	■
of other	Temperatures, setpoints, operating states
Status messages	
Standby	■
Operating hours	■
Other	Any status messages
Alarms	
User-defined	■
Forwarded from BMS	■
Other	Own logic function for calculation and alarming
Plausibility check	
Counter runs backwards	■
Fault	■
Other	Own logic function for definition
Portal or dashboard display	
Diagram	■
Energy flow diagram (Sankey)	■
Table	■
Free text	■
KPI	■
Geographical map with status information	■



IT solutions for building automation

In addition to the many advantages of BMS in the cloud, site networking site networking, the main focus is on IT security. Thanks to the high security standards such as firewall functions and encrypted communication, your system is optimally protected against cyber attacks. The secure remote access is established via the preconfigured Connect Box - This means you do not need any additional IT expertise for the installations.

Your system is operated and administered via the web-based DEOS Secure Connect portal from almost any internet-enabled device - without any software installation. Access all your data quickly and access all your systems and properties quickly and easily at any time via the portal. All in all, the DEOS Cloud solution offers operators and end customers end customers a wide range of solutions adapted to individual requirements. The flexibly deployable product modules cover the various different needs and requirements at any time.

Building automation has never been so secure and simple!



Site networking

DEOS Secure Connect Portal .....	30
DEOS Secure Connect.....	32
DEOS Secure Alarm Management.....	36

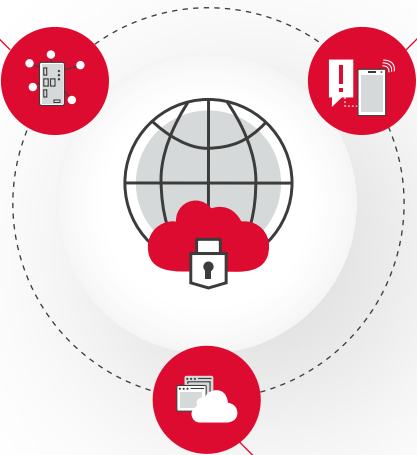


DEOS Secure Connect

Secure site networking with remote access - including SSL encryption and 2-factor authentication

DEOS Secure Alarm Management

Efficient HVAC service via smartphone



OPENweb Cloud

Complete BMS in the cloud, starting from 100 data points

Details about OPENweb Cloud see page 51

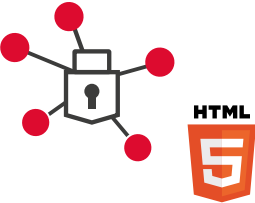
Highlights at a glance

- ✓ Remote access to the technical systems
- ✓ Centralized IT infrastructure
- ✓ Efficient service thanks to direct access to the technical systems
- ✓ High flexibility and individual scalability
- ✓ Complete overview of the entire property
- ✓ Maximum IT security thanks to regular updates

Do you have questions or do you need support? Our sales partners would be pleased to help you.

✉ bit@deos-ag.com  
☎ +49 5971 91133-0

DEOS Secure Connect Portal – web-based operation of your systems in combination with a Connect Box for secure remote access



Use in the standard browser

Via HTML5 - including SSL encryption and 2-factor authentication

Integrated search function

For fast location of the equipment

Integrated search function

Individual user and access management

Modular structure

Quickly add more systems

Additional information

Store information such as contact details or generate documentation with all the key information about a location

View  
Navigation of the systems displayed in tile design or as a list

List Tiles



✓ Fully preconfigured solution - without software installation

✓ Secure access to your system via the DEOS Secure Connect portal as a cloud service from DEOS AG

Your path to secure site networking - step by step

Using site networking

- 1 Would you like to use the DEOS Secure Connect portal, to securely access the technical system?  
Secure remote access is established via the Connect Box. The following applies to every system:  
Account 1x the article DS-N-Connect, DS-360499 <sup>1)</sup> (see page 33)

Define equipment and functions

- 2 Does the system operator need more than three user licenses to operate the system via DEOS Secure Connect portal?  
With each license extension you receive 3 additional user licenses for the system operator.  
The following applies to every connect box:  
Account 1x the article DS-N-Lic, DS-360423 (see page 34)

- 3 Is the system operator's network available via an Ethernet interface?

☐ YES ☐ NO

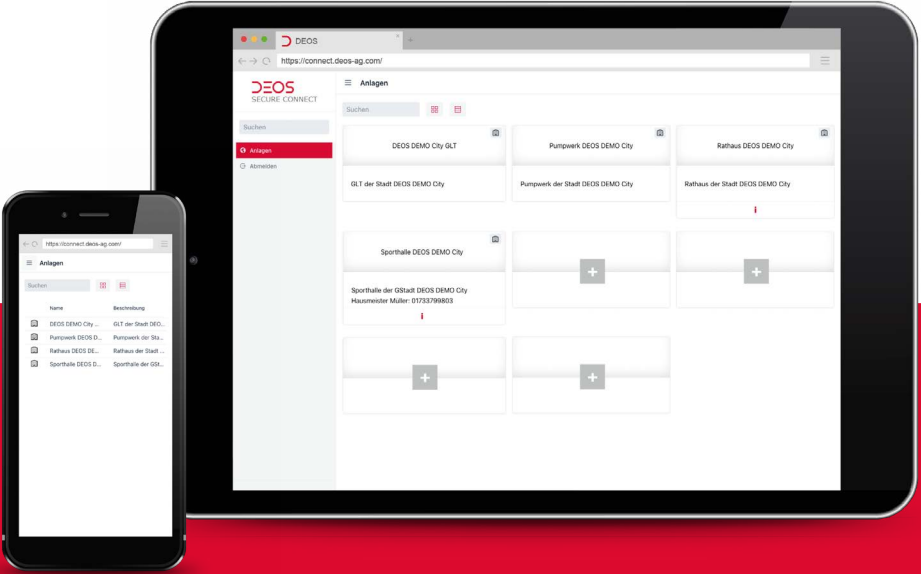
- 4 Do you use a public wireless network (LTE) for the connection?

☐ LTE

Choose a SIM card that matches the required data volume  
The following applies to every connect box:  
Account 1x SIM card, e.g. DS-SIM-M, DS-360417 (see page 34)

- 5 Möchten Sie die LTE-Geschwindigkeit optimal ausnutzen?  
We provide you with antennas to amplify the radio signal.  
The following applies to every radio connection:  
Account antenna(s), z.B. DS-N-ANT3, DS-360422 (see page 35)

- 6 Would you like to send fault messages by e-mail?  
We provide you with an e-mail server (SMTP server) for sending fault messages from the OPENweb event server or from automation stations in the OPEN EMS and OPEN.WRX series as e-mails.  
The following applies to every system:  
Account 1x the article DS-N-Mail, DS-360183 (see page 34)



✓ Immediately ready for use through plug & play

✓ Transparent documentation of network specifications

<sup>1)</sup> Technische Mitarbeiter unserer Systempartner können ab sofort kostenfrei – ohne eigene Lizenz – auf das DSN zugreifen.



DEOS Connect Box - secure site networking with remote access

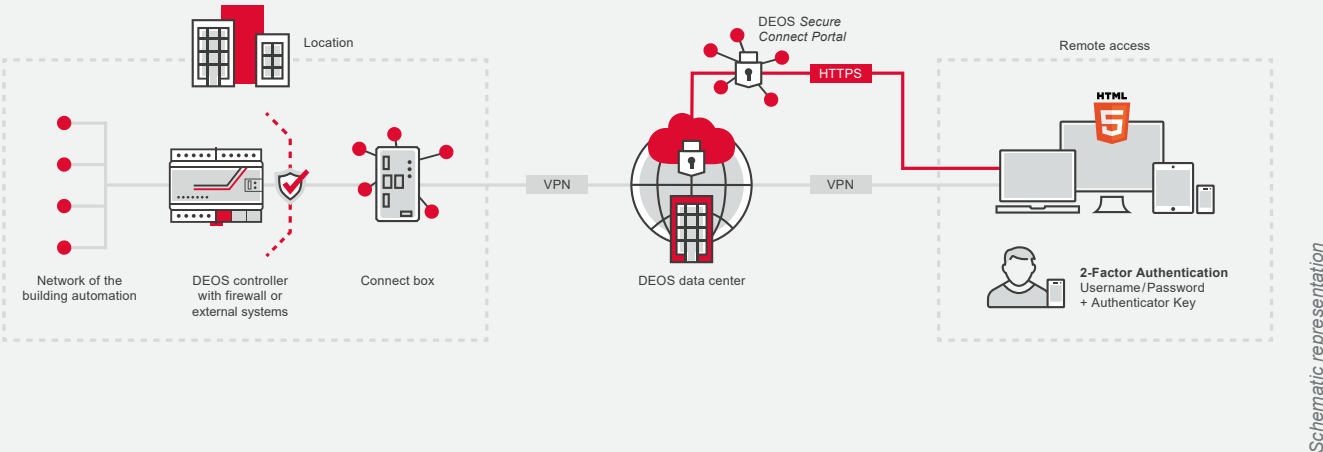


DS-N-Connect

Highlights at a glance

- ✓ Maximum IT security thanks to an SSL-encrypted VPN connection
- ✓ Integrated cellular line via LTE
- ✓ Automatic security updates included
- ✓ Fast setup thanks to the DEOS Connect Box, which is fully configured on delivery
- ✓ Scalable – from a small system to a large overall network
- ✓ DEOS Secure Connect Portal included – secure remote operation of the equipment via browser with no software installation

Networking example



Networked right from the start

- The remote connections are made via the Connect Box. This means that secure remote access via LTE can be established as early as the MSR installation phase when DSL access is not yet available

Practical tip

- Use the Connect Box as a mobile solution for commissioning on site, and forget the travel!

Security is the top priority

- Our highest priority is the IT security of our cloud solutions. Consequently, in times of cyber criminality we rely on high security standards for our DEOS Connect Box. The Connect Box is delivered pre-configured and thus provides your systems with optimal protection against cyber-attacks

DEOS Connect Boxes

The basic element of our Secure Network solution

Are you responsible for the construction, the management or the operation of real estate, as a single building or property? And do you have such management responsibility regionally or also distributed throughout Germany?

- Due to the scarcity of specialists and the heterogeneous growing structures of operational systems, operating expenses continue to increase year-by-year. Operating expenses have a significant impact on profitability and customer satisfaction; this is why efficient operation of these buildings is crucial.
- Consequently, with DEOS Secure Connect we have developed a solution, consisting of the DEOS Connect Boxes, for secure remote access and profitable site networking and the DEOS Secure Connect Portal for convenient operation of your equipment and your buildings.

DEOS Connect Box

The basic element of our Secure Network solution

Are you responsible for the construction, the management or the operation of real estate, as a single building or property? And do you have such management responsibility regionally or also distributed throughout Germany?

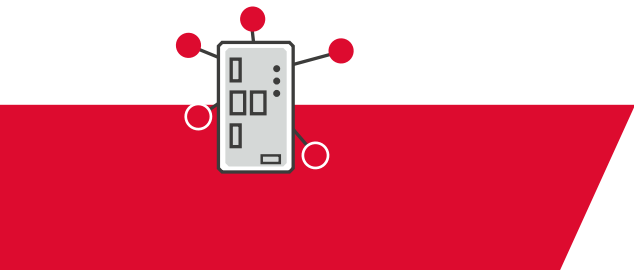
- Due to the scarcity of specialists and the heterogeneous growing structures of operational systems, operating expenses continue to increase year-by-year. Operating expenses have a significant impact on profitability and customer satisfaction; this is why efficient operation of these buildings is crucial.
- Consequently, with DEOS Secure Connect we have developed a solution, consisting of the DEOS Connect Box, for secure remote access and profitable site networking and the DEOS Secure Connect Portal for convenient operation of your equipment and your buildings.

Hardware equipment & Technical data <sup>1)</sup>		DS-N-Connect
Assembly	on standard mounting rail 35 mm	
Wireless technology	2G, 3G, 4G, WiFi	
1 to 1 NAT <sup>2)</sup>	yes	
WAN port	1x 10/100 Mbit/s	
LAN port	3x 10/100 Mbit/s	
WLAN	802.11b/g/n	
Power supply	9 ... 30 V DC, reverse polarity protection; overvoltage protection max. 31 V DC	
Power consumption	max. 2 W (idle), max. 7 W	
Temperature range	-40 ... 75°C	
Dimensions (HxWxT)	50 mm x 110 mm x 100 mm	
Approval	CE/RED, FCC and more	

DEOS Secure Connect – site networking		Type	Art. no.
Connect Box in combination with 3 user licenses for the DEOS Secure Connect Portal	One-time <sup>3)</sup>	DS-N-Connect	DS-360499
	monthly <sup>4), 5)</sup>		

**Note:**  
DSN access is now available to technical employees of our system partners, without separate licenses and free of charge.  
<sup>1</sup> Additional product information is provided in the data sheet (see DEOS Portal at portal.deos-ag.com)  
<sup>2</sup> Translation of the network address; existing IP addressing can remain intact. Project-dependent clarification required.  
<sup>3</sup> Plus monthly costs for the use of the DEOS Secure Connect Portal  
<sup>4</sup> Minimum contract term: 2 years. Settlement occurs in advance. Notice period: 3 months to the end of the contract, automatic 12-month extension  
<sup>5</sup> Plus one-time costs for DS-N-Connect

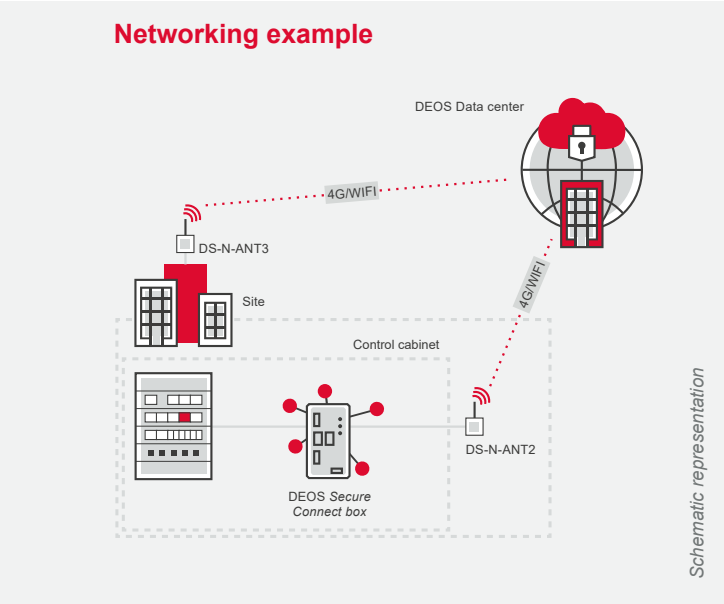
DEOS Secure Connect – licenses & services



DEOS Secure Connect – licenses & services		Type	Art. no.
<b>License extension (pack of 3)</b> <ul style="list-style-type: none"><li>3 user licenses</li><li>Operation via DEOS Secure Connect portal in the web browser</li><li>Licensing per connect box</li></ul>	One-time <sup>2)</sup>	DS-N-LIC	DS-360423
	monthly <sup>1), 3)</sup>		
<b>E-mail service</b> <ul style="list-style-type: none"><li>Provision of an e-mail server (SMTP server) for fault signal transmission with OPENweb event server or via OPEN EMS</li><li>Sending of any number of e-mails included</li></ul>	One-time <sup>2)</sup>	DS-N-Mail	DS-360183
	monthly <sup>1), 3)</sup>		
<b>SIM card</b> <sup>4)</sup> <ul style="list-style-type: none"><li>Data volume flat</li><li>D1-network (T-Mobile)</li></ul>	One-time <sup>2)</sup>	DS-N-SIM-S	DS-360416
	Monthly <sup>3)</sup>		
	One-time <sup>2)</sup>	DS-N-SIM-M	DS-360417
	Monthly <sup>3)</sup>		
	One-time <sup>2)</sup>	DS-N-SIM-L	DS-360418
	Monthly <sup>3)</sup>		
<b>Service IT technician</b>	Per 15 minutes or part thereof	DS-N-Service	DS-360190
	Individual service package	DS-N-Service	DS-360190

1 Minimum contract term: 2 years. Settlement occurs in advance. Notice period: 3 months to the end of the contract, automatic12-month extension  
2 Plus monthly costs  
3 Plus one-time costs  
4 For use in Germany only. Blocked for roaming, speed-up, and third-party providers.

DEOS Secure Connect – Accessories for boosting the wireless signal



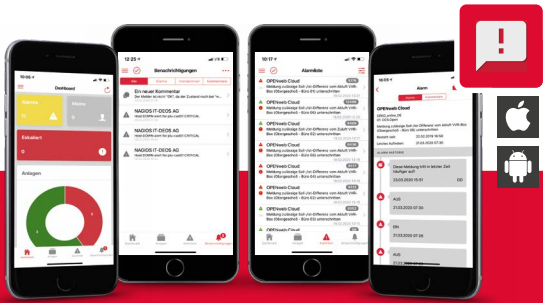
Hardware equipment & technical data <sup>1)</sup>	DS-N-ANTx	
	3	2
Type of mounting	Wall mounting bracket with U-bolt	Magnetic base
Standard	3G / 4G / WiFi	2G / 3G / 4G
Frequency range	A 700 ... 960 MHz B 1700 ... 2700 MHz	A 698 ... 960 MHz B 1710 ... 2170 MHz C 2500 ... 2700 MHz
Power gain	A ~ 3 dBi B ~ 7 dBi	A 2.0 dBi B 3.9 dBi C 3.5 dBi
Voltage Standing Wave Ratio (VSWR)	A ~ 3.2:1 B ~ 3.2:1	A ~ 2.1:1 B ~ 1.6:1 C ~ 1.5:1
Dimensions (LxWxH Ø)	360 x 74 x 74 mm	54 x 80 mm
Impedance	50 ohm	50 ohm
Temperature range	-30 ... 70°C	-40 ... 85°C
Polarization	Vertical	Linear
Wind load	120 km/h	
Connection	N female x2	SMA male
Cable type	RG58	LMR100
Cable length	10 m	3 m

■ Standard  
□ Optional expandability  
– Cannot be expanded

DEOS Secure Connect – Accessories		Type	Art. no.
Double outdoor antenna with wall mount and 10 m connection cable <sup>2)</sup>		DS-N-ANT3	DS-360422
Antenna with magnetic base <sup>3)</sup>		DS-N-ANT2	DS-360378
Extension cable for antenna	Length: 5 m	DS-N-AK5	DS-360379
	Length: 10 m	DS-N-AK10	DS-360380

1 Additional product information is provided in the data sheet (see DEOS Portal at portal.deos-ag.com)  
2 For optimal utilization of LTE speed, 1 antenna is necessary.  
3 For optimal utilization of LTE speed, 2 antennas are necessary.

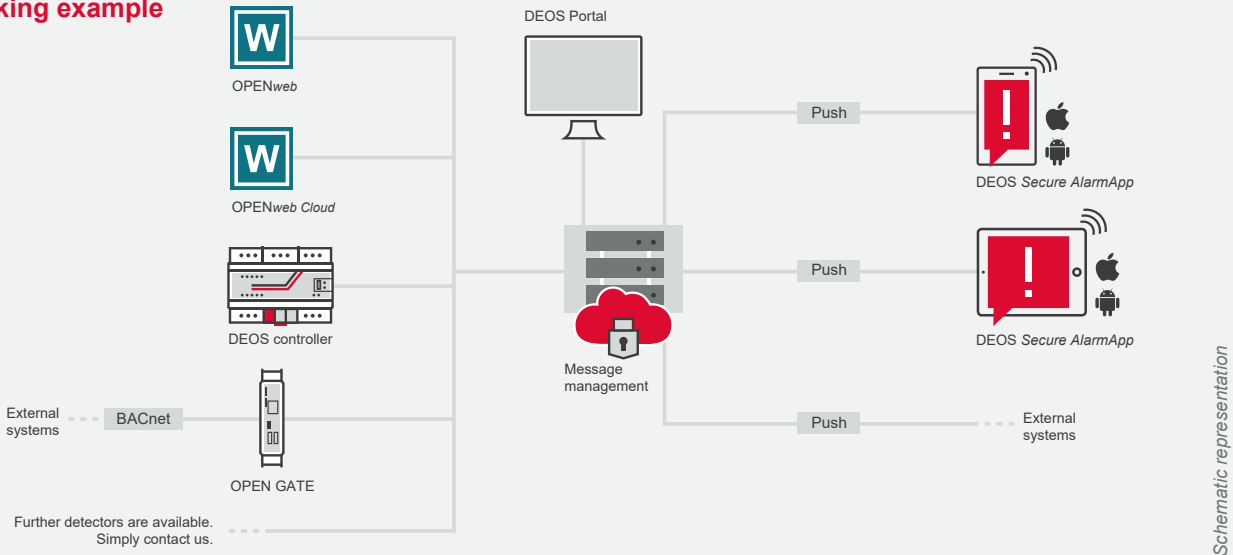
DEOS Secure AlarmApp – efficient HVAC service via smartphone



Highlights at a glance

- ✓ Always informed – direct push notification to your smartphone
- ✓ Efficient team management – only assigned service staff & teams receive alarm messages
- ✓ Transparent task distribution – immediately see who is dealing with event logs
- ✓ Simple exchange with the team – alarm commenting visible for all
- ✓ Flexible user management – effortlessly manage team changes or absences in the DEOS Portal
- ✓ Fast coordination – one click to route planning

Networking example



Efficient teamwork

- User management and assignment of user rights for the DEOS Secure AlarmApp occur online in the DEOS Portal
- Put service teams together
  - Assign individual equipment units to service employees
  - Appoint coordinators for efficient distribution of the incoming event logs and tasks in case of escalation
- Freely adapt team management to meet your individual desires

Uniform integration of external systems

- Manage systems from third-party manufacturers with the AlarmApp
- Uniform presentation & intuitive operation of all incoming event logs and alarms of a wide variety of manufacturers

OPEN GATE – standardized, manufacturer-independent alarm management for each HVAC system

- OPEN GATE collects equipment messages via BACnet – for up to 1500 BACnet error messages
- Per object max. 10000 messages per year (data retention period: 6 years)
- Freely expandable with DEOS or third-party components
- Uniform alarm management for every HVAC system
- Easy coordination and alarm management via AlarmApp
- Can be retrofitted into existing HVAC systems
- Manufacturer-independent alarm management



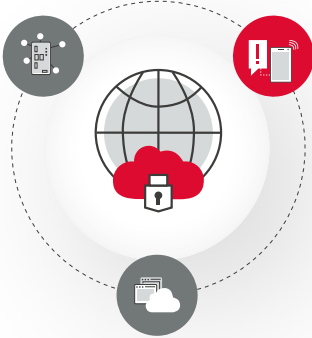
DS-OG

more on pages  
25 & 37

Simple and intuitive operation

App functions simplify your daily service routine

- The DEOS Secure AlarmApp offers diverse views of your equipment and its alarms. With the app, event logs can be easily and clearly prioritized; event logs can also be assigned and escalated to you yourself or to other technicians of the team. Track live which technician is assigned for what fault and always maintain a complete overview.
- The openness of the system makes the AlarmApp so special. Thanks to universal interfaces, non-SAP systems can be integrated as alarm reporters and uniformly output in the AlarmApp. Likewise, provision of alarms for external systems is also possible.
- The AlarmApp can be easily and intuitively operated. The dashboard provides a fast overview of your equipment units and their queued alarms. Easily navigate to the respective alarm with just a few clicks, and quickly eliminate the cause of the alarm.



DEOS Secure AlarmApp – gateways		Type	Art. no.
OPEN GATE	Multi-gateway <sup>1)</sup>	DS-OG	DS-360437
	Virtual multi-gateway	DS-vOG	DS-360515



DEOS Secure AlarmApp – licenses for reporting authority		Type	Art. no.
AlarmApp Reporter	OPEN controllers <sup>2)</sup> , one-time	DS-N-Reporter AS	DS-360438
	OPENweb <sup>3)</sup> , one-time	DS-N-Reporter OWB	DS-360411
	Subscription <sup>2)</sup> , <sup>3)</sup> , monthly	DS-N-Reporter ABO	DS-360446

DEOS Secure AlarmApp – licenses		Type	Art. no.
DEOS Secure AlarmApp <sup>2)</sup> , <sup>3)</sup> , <sup>4)</sup>		DS-N-Alarm	DS-360410
AlarmApp user package <sup>5)</sup> , <sup>6)</sup>	5 users	DS-N-USER5	DS-360412
	25 users	DS-N-USER25	DS-360413
	50 users	DS-N-USER50	DS-360414

<sup>1)</sup> An additional power supply (art. no. DS-350179, type DS-PS-24V-0.7A) is required for operation  
<sup>2)</sup> Minimum prerequisite OPEN EMS firmware version 1.064, OPEN.WRX firmware version 3.0.0  
<sup>3)</sup> Minimum prerequisite OPENweb version 9.4.3, expansion module event server  
<sup>4)</sup> End customers need at least one user package (DS-360412, DS-360413, DS-360414) to be able to use the DEOS Secure AlarmApp, as well as a license for the reporting authority. For employees of DEOS system partners no costs are incurred for the user packages.  
<sup>5)</sup> Minimum contract term: 1 year. Settlement occurs in advance. Notice period: 1 month to the end of the contract, automatic12-month extension.  
<sup>6)</sup> The user packages can be combined as required to achieve the desired number of users



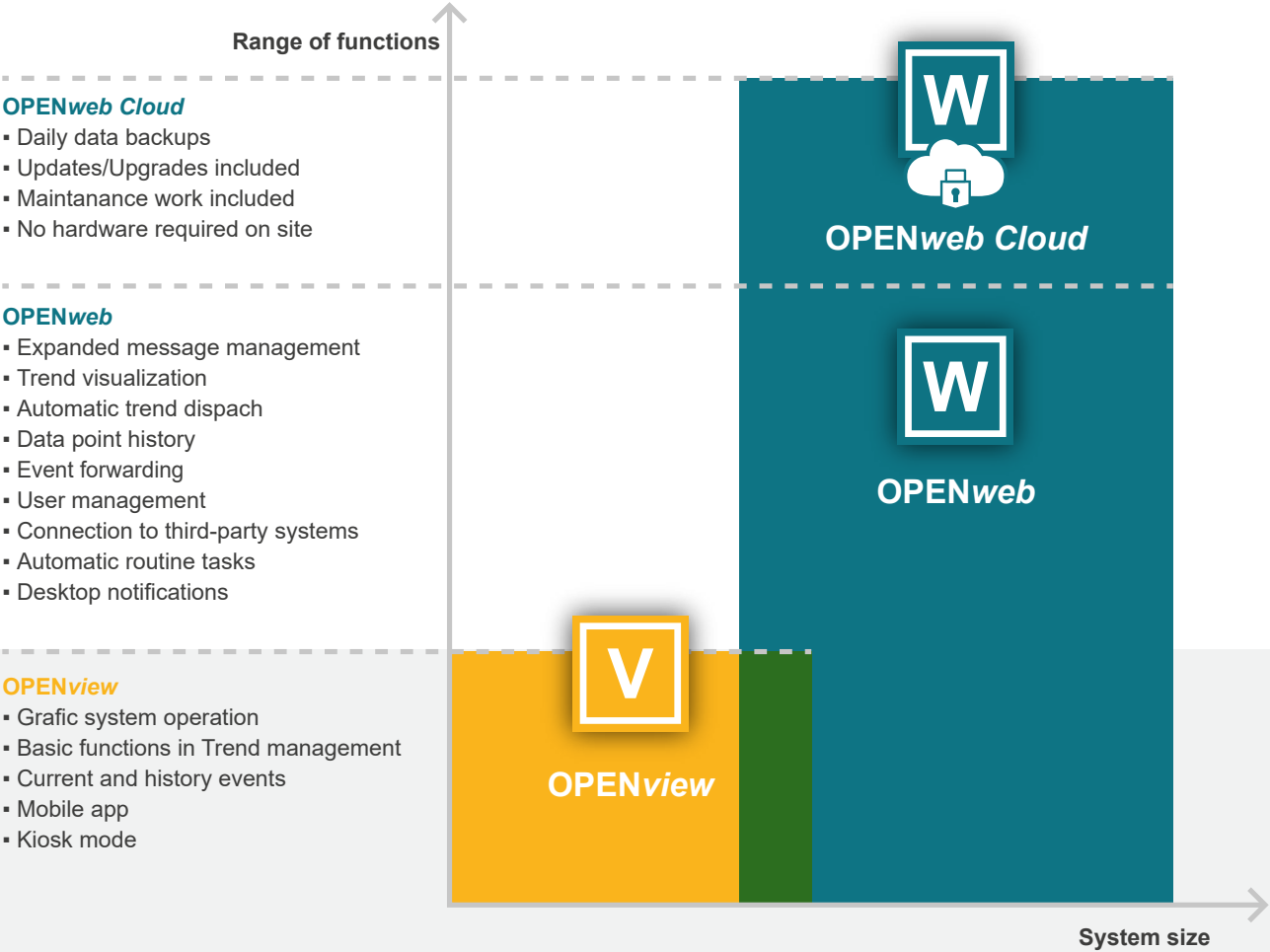
Energy-efficient monitoring & control

DEOS AG building management software is specially developed for monitoring and control of HVAC systems as well as zone control and room control in buildings. Solutions with different features are available depending on the application area. These solutions are characterized by fast and flexible operating possibilities on-site and via mobile apps. For micro-projects involving a simple building structure, onboard BMS OPENview is the ideal choice with its extensive graphic control options and easy-to-operate basic functions. For larger buildings and properties, the portfolio is supplemented with the powerful B-AWS OPENweb solution, which can be operated locally as well as in the cloud. In addition to innovative trend management and message management, OPENweb also offers easy integration of external systems through standardized protocols and interfaces.

MADE IN  
GERMANY  
★ ★ ★

Management software

System management .....	40
OPENview .....	40
OPENview App .....	40
Building Management.....	44
OPENweb On-Premise.....	44
OPENweb App.....	44
OPENweb upgrades .....	48
BMS central computer & accessories.....	49
OPENweb Cloud.....	50



Do you have questions or do you need support? Our sales partners would be pleased to help you.

✉ info@deos-ag.com  
☎ +49 5971 91133-0



**OPENview** – facility management software designed as onboard BMS to operate monitor, parameterize, and optimize measurement and control equipment



- Highlights at a glance**
- ✓ Easy and cost-effective onboard BMS for micro-projects
  - ✓ Available on all DEOS AG controllers
  - ✓ Uniform system graphics – whether Android, Windows or MAC, on tablet, smartphone, laptop or PC
  - ✓ Basic trend management and message management functions
  - ✓ Visualization of system graphics with graphic objects for presentation of target data, actual data, and event data as images, sliders, columns, text, lines, color objects, etc.
  - ✓ User-friendly, text-based operation or graphic operation
  - ✓ Always informed – mobile BA monitoring on HTML5 technology
  - ✓ Secure access to MCR technology
  - ✓ Includes the BACnet browser (BACnet DataCenter)

**OPENview – the onboard BMS for micro-projects**

*Energy-efficient monitoring & control*

OPENview is the powerful HTML5 web server from DEOS AG that is available on all controllers of the OPEN family. Graphic visualization and operation with OPENview is extremely user-friendly and simple. There are no limits to your flexibility – use the OPENview web server from a PC, tablet or smartphone, network, WLAN or the Internet. You can proactively keep an eye on your systems and specifically control them to reduce energy consumption – whenever you want, from wherever you want.

*Range of functions*

OPENview enables you to visualize and access the parameters for heating, ventilation and air-conditioning technology as well as light, shading and temperature in room control. The OPENview function range is comparable to that of a small BMS. For example, the features include a trend display and parametrization, an export function, and display of fault messages and event log messages.

*Wide range of applications*

Whether in offices, hotels, childcare facilities, schools, universities or museums – the range of functions of the HTML5 OPENview web server can meet the requirements for simple or singular building structures. If these requirements increase during the course of a project, you can upgrade with total flexibility to the OPENweb BMS software and enjoy all the features of a comprehensive BMS.

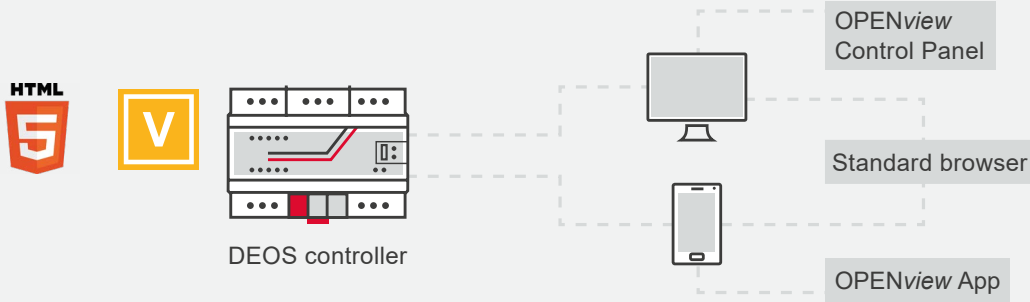
*Onboard BMS for a total overview, even on the go*

The OPENview App is available for all popular Android operating devices <sup>1)</sup> for graphic operation of the building technology system. For a total overview of your onboard BMS, even on the go. In addition, DEOS AG offers various switch cabinet devices and room control units with the OPENview App already pre-installed (see chapter "Operation solutions" on page 100).



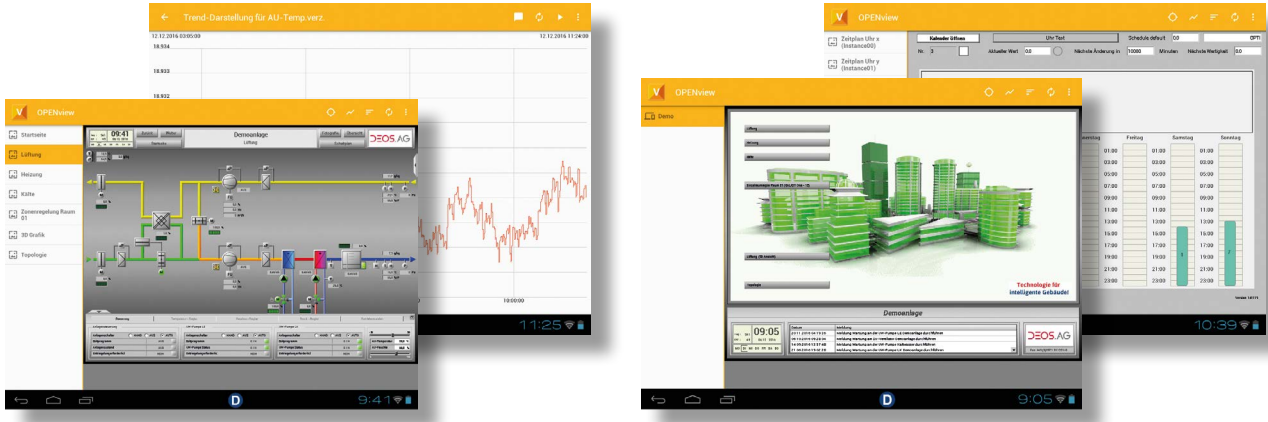
<sup>1</sup> System requirements: min. SDK: 14 (Android 4); target SDK: 29 (Android 10)  
Compatibility and Support: DEOS AG only guarantees compatibility / offers support for devices with pre-installed OPENview app that have been approved and delivered by DEOS AG.

**Networking example**



**Operating concept**

- |  |  |  |
|--|--|--|
| <b>Desktop client – OPENview ControlPanel</b> <ul style="list-style-type: none"><li>▪ Comprehensive (graphic) operation</li><li>▪ Access to all HVAC and lighting technology parameters</li><li>▪ BACnet DataCenter as browser for local BACnet networks</li></ul> | <b>HTML5 web client</b> <ul style="list-style-type: none"><li>▪ Platform-independent access to the onboard BMS</li><li>▪ Save time and money: No need to install additional software on access-authorized computers</li><li>▪ Intuitive user interface design</li><li>▪ Access to all HVAC and lighting technology parameters</li><li>▪ Access to the Service &amp; Security Center (SSC) for configuration of security settings</li><li>▪ Automatic routine tasks</li></ul> | <b>Mobile app – OPENview App</b> <ul style="list-style-type: none"><li>▪ Mobile control and monitoring of the onboard BMS</li><li>▪ Access to the most important system parameters</li><li>▪ Optimized for Android smartphones and tablets</li><li>▪ Pre-installed on DEOS control units <sup>1)</sup></li></ul> |
|--|--|--|



<sup>1</sup> System requirements: min. SDK: 14 (Android 4); target SDK: 29 (Android 10)  
Compatibility and Support: DEOS AG only guarantees compatibility / offers support for devices with pre-installed OPENview app that have been approved and delivered by DEOS AG.

Function modules

Graphic visualization – OPENview graphics

- Presents the system graphics with graphic objects for display of target data, actual data as images, sliders, columns, texts, color objects, etc.
- Supports vector graphics in WMF and SVG format
- Automatic size adaptation of all objects to the current window size (autozoom)
- Process-dependent size adaptation, flashing, turning, positioning of the objects

Trend management

- Parameterization of up to 250 trend data points
- Graphic presentation of trend curves
- Manual or automatic export of trend data as CSV file

Alarm management

- Overview of all actual events, and the last 100 historic events

Service & Security Center

- Easy-to-use professional IT protection
- Security through firewall, certificates and HTTPS and log data
- Import and export of configuration files, certificates, and log files

Equipment & functions <sup>1)</sup>	DS-OVx		
	WebClient	Android app	ControlPanel
OPENview text	■	■	■
OPENview graphics <sup>2)</sup>	□	□	□
Trend management	■	■	■
Alarm management	■	■	■
Service & Security Center	■	–	–
BACnet DataCenter	–	–	■
Pre-installed on			
Mini-PC <sup>3)</sup>	■	■	■
Android touch PC <sup>3)</sup>	–	■	–

■ Standard

□ Optional expandability

– Cannot be expanded

BACnet DataCenter

- Browser for local BACnet networks
- Simple operation – in-depth BACnet know-how is not required
- Mass parametrization that saves time and money
- Commissioning support

Onboard BMS OPENview		Type	Art. no.
Expansion modules OPENview graphics	for OPEN.WRX variants	DS-OV.WRX	DS-371200
	for OPEN .../0 EMS variants	DS-OV0	DS-371210
	for OPEN .../5 EMS variants	DS-OV5	DS-371187
	for OPEN .../12 EMS variants	DS-OV12	DS-371188
	for OPEN .../32 EMS variants	DS-OV32	DS-371189
	for OPEN ... EMS C1 variants	DS-OVC1	DS-371190
	for OPEN ... EMS C2 variants	DS-OVC2	DS-371191

Operating options for Android app		Type	Art. no.
OPENview App	from Android version 4.x	DS-OV App	DS-371249

Already pre-installed and licensed on DEOS operating devices, see page 100f

OPENview upgrade licenses	License level	Type	Art. no.
OPENview x/0	from 0 to 5	DS-UPOV0-5	DS-360300
	from 0 to 12	DS-UPOV0-12	DS-360301
	from 0 to 32	DS-UPOV0-32	DS-360302
OPENview x/5	from 5 to 12	DS-UPOV5-12	DS-360303
	from 5 to 32	DS-UPOV5-32	DS-360304
OPENview x/12	from 12 to 32	DS-UPOV12-32	DS-360305

1 Additional product information is provided in the data sheet (see DEOS Portal at portal.deos-ag.com)  
2 Activated 180 days from commissioning  
3 See chapter "Operation solutions" on page 100

V

OPENview

Simple and inexpensive starter package for micro-projects with reduced range of functions.

✓ From 1 data point

✓ OPENview on DEOS controllers

Range of functions

✓ Basic functions for trend management

✓ Overview of the actual Event history

Service

✓ Optional: Provision of updates and upgrades

✓ Manual data backup

Costs

✓ One-time costs for controller and activation of the graphic interface, if required

W

OPENweb Cloud

The comprehensive worry-free package for modern building automation projects in the cloud with high demands on service, flexibility and security.

✓ From 500 data points

✓ OPENweb as a service in the DEOS Cloud

Range of functions

✓ Full trend management

✓ Full message management

✓ Connection to the DEOS pro.Building Suite

Service

✓ Provision of updates and upgrades

✓ Daily automatic Data backup

✓ Regular maintenance by DEOS IT experts

✓ 99.7% availability of the of the server is guaranteed

Costs

✓ Predictable monthly costs

W

OPENweb

The classic BMS for building automation projects as local solutions.

✓ From 250 data points

✓ OPENweb on local server PC

Range of functions

✓ Full trend management

✓ Basic message management functions (extensions available on a modular basis)/

✓ Optional: Trend & Event APIs for the connection to third party systems

Service

✓ Optional: Provision of updates

✓ Manual data backup

✓ Manual server maintenance

✓ Server availability is the customer's responsibility

Costs

✓ Investment in server hardware and ongoing operating costs

Free of charge: Upgrade from OPENweb on-Premise to the latest OPENweb Cloud version

OPENview, OPENweb or OPENweb Cloud?

We would be happy to advise you so that you too can find the right monitoring system for your individual project. Feel free to contact us! Together we will work out a solution for you. Simply contact us!

✉ info@deos-ag.com  
☎ +49 5971 91133-0

**OPENweb** – building management software (BMS) certified as **BACnet Advanced Operator WorkStation (B-AWS)**



**Highlights at a glance**

- ✓ Graphic operation on all end devices
- ✓ Uniform system graphics – whether Android, Windows or MAC, on tablet, smartphone, laptop or PC
- ✓ Intuitive operating concept
- ✓ Innovative message management and trend management
- ✓ Multi-protocol event forwarding
- ✓ Expandable with modules and freely scalable
- ✓ Optional: Networking of individual sites via local OPENweb installations
- ✓ Networking that meets the highest standards: Access to individual locations via VPN tunnel
- ✓ Connection to third party systems via APIs
- ✓ Applicable as BACnet/SC participant and router einsetzbar

**BACnet building management system OPENweb**

*Energy-efficient monitoring & control*

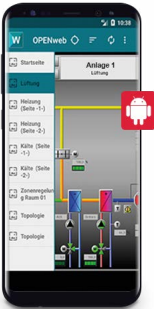
The web-based, B-AWS certified building management system (BMS) OPENweb is specially developed for monitoring and control of HVAC systems as well as zone and room control in buildings. With graphic visualization, you can always keep an eye on your buildings and in addition also ensure operation at the point of optimum energy efficiency, with our intelligent control strategy. System faults and alarms are visualized directly via the internal Event Control Center (ECC) and they can be forwarded to recipients via various protocols, e.g. the DEOS Secure AlarmApp. Thus you can act quickly and efficiently. From secure remote maintenance and simple system integration to economical site networking of your properties – OPENweb is the right BMS for your individual projects and requirements. You decide whether to use OPENweb locally on your computer or as a modern cloud solution.

*Graphic operation on all end devices*

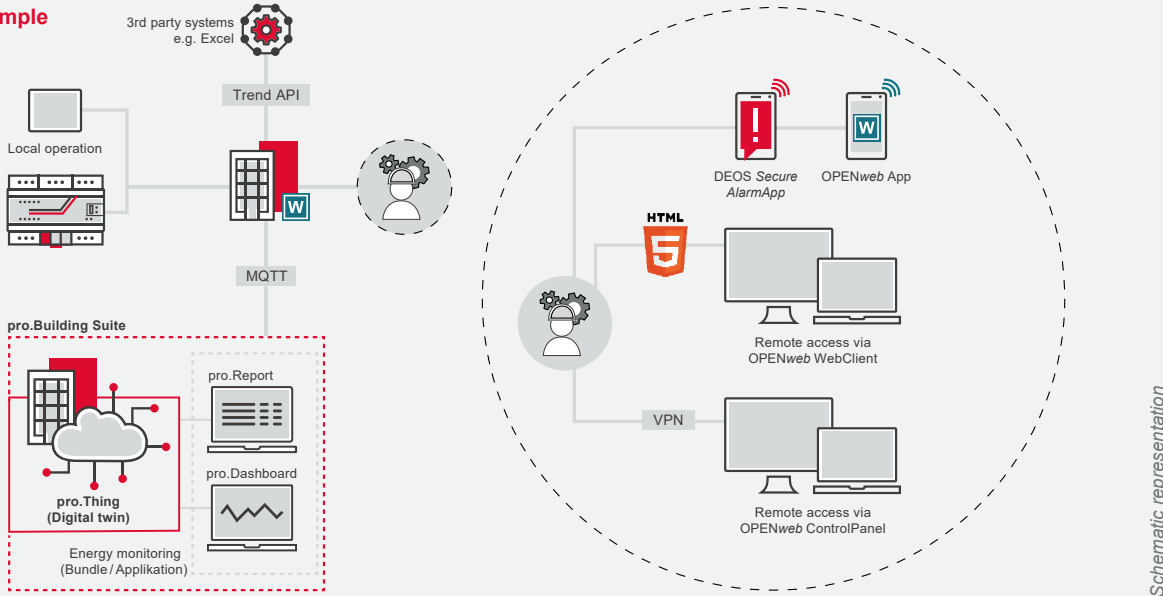
One aspect of the graphic operating concept of our BMS stands out above all others: its simplicity! Whether with PC, smartphone or tablet – operating OPENweb is as flexible as you desire. Due to the uniform graphical representation of the systems, employees can also monitor and adjust room and system parameters without prior knowledge.

*Keep an eye on your BMS - even on the go*

The OPENweb app is available on all popular Android operating devices <sup>1)</sup> for graphic operation of the building management system. So you can always keep an eye on your BMS - even on the go. In addition, DEOS AG offers various switch cabinet devices and room control devices with the OPENweb App already pre-installed (see chapter "Operation solutions" on page 100).



**Networking example**



Schematic representation

**Operating concept**

**Desktop Client – OPENweb ControlPanel**

- Comprehensive (graphic) operation
- Access to all parameters of the HVAC technology, as well as shading and lighting technology
- Configuration options, such as
  - User management
  - Workspace management and server management
  - Event configuration and forwarding
  - Trend data acquisition
  - Trend configuration
  - Navigation trees and graphic pages

**HTML5 web client**

- Platform-independent access to the BMS by HTML5 browser
- Save time and money: No need to install additional software on access-authorized computers
- Includes system operation, Event Control Center (ECC), and trend visualization
- Intuitive user interface design

**Mobile app – OPENweb app**

- Mobile control and monitoring of the BMS
- Access to the most important system parameters
- For Android smartphones and tablets
- Pre-installed and licensed on DEOS operating devices <sup>1)</sup>

*Order information see page 134, DEOS operating devices see page 100f*

Equipment & functions <sup>1)</sup>	DS-OWBx – On-Premise		
	ControlPanel	WebClient	Android app
Graphic process visualization & operation	■	■	■
Tree editor	■	–	–
Graphic editor	■	–	–
Trend management	■	■	■
Event Control Center	■	■	■
BACnet browser	□	–	–
BACnet viewer	□	–	–
Event server	□	–	–
ECC configuration	□	–	–
Trend authorization	□	□	□
Configuration	■	–	–

Operating devices	DS-OWBx – On-Premise		
	ControlPanel	WebClient	Android app
Pre-installed on			
Mini-PC <sup>3)</sup>	■	■	■
Android touch PC <sup>3)</sup>	–	–	■

■ Standard  
□ Optional expandability  
– Cannot be expanded

<sup>1)</sup> System requirements: min. SDK: 14 (Android 4); target SDK: 29 (Android 10)  
Compatibility and Support: DEOS AG only guarantees compatibility / offers support for devices with pre-installed OPENweb app that have been approved and delivered by DEOS AG.

<sup>1)</sup> System requirements: min. SDK: 14 (Android 4); target SDK: 29 (Android 10)  
Compatibility and Support: DEOS AG only guarantees compatibility / offers support for devices with pre-installed OPENweb app that have been approved and delivered by DEOS AG.  
<sup>2)</sup> Not required for the use of OPENweb as BACnet/SC Node  
<sup>3)</sup> See chapter "Operation solutions" on page 100



Basic package

OPENweb On-Premise – physical data points		Type	Art. no.
Physical data points	250 physical data points	DS-OWB2	DS-371150
	500 physical data points	DS-OWB5	DS-371151
	1000 physical data points	DS-OWB10	DS-371152
	2000 physical data points	DS-OWB20	DS-371153
	3000 physical data points	DS-OWB30	DS-371221
	4000 physical data points	DS-OWB40	DS-371222
	5000 physical data points	DS-OWB50	DS-371154
	7500 physical data points	DS-OWB75	DS-371223
	10000 physical data points	DS-OWB100	DS-371214
	20000 physical data points	DS-OWB200	DS-371215
OPENweb On-Premise – operating options Android app		Type	Art. no.
OPENweb App	From Android version 4.x	DS-OW App	DS-371250
OPENweb On-Premise – software activation		Type	Art. no.
Software license	Renewed activation	DS-OWB.Y	DS-371225

Expansion modules – function modules

Expansion module event server

- Event forwarding
- System status information 24/7
- Different communication services, e.g push notifications, SMS, email, ESPA-X and many more
- Management of different message destinations (individual persons, groups of persons)
- Prioritization of message destinations
- Logging of all forwarded system messages with date, time, and status

Expansion module ECC configuration

- Management, forwarding, and processing of system messages (alarms, events)
- User-specific views with individual event filters can be configured (unlimited number)

Expansion module trend authorization

- Summary of controllers and BACnet devices in the authorization groups <sup>1)</sup>
- Optional expansion to up to 50 groups (> 50 groups on request)
- Users assigned to an authorization group only obtain access to the trend data of the controllers and BACnet devices of this group

OPENweb On-Premise – function modules		Type	Art. no.
Function modules	Event server	DS-OWB.E	DS-371158
	ECC configuration	DS-OWB.A	DS-371205
	Trend authorization <sup>1)</sup>	5 groups	DS-OWB.G5
		10 groups	DS-OWB.G10
		20 groups	DS-OWB.G20
		30 groups	DS-OWB.G30
		40 groups	DS-OWB.G40
		50 groups	DS-OWB.G50
		>50 groups	DS-OWB.G00

1 3 groups included in the OPENweb basic package as standard

Expansion modules – system integration

Expansion module BACnet/SC Hub <sup>2)</sup>

- OPENweb applicable as BACnet/SC Primary Hub or BACnet/SC Failover Hub

For more information on the benefits of BACnet/SC, see page 90

Expansion modules BACnet

- Connection of BACnet server and client objects
- Network protocols/data link layer:
  - BACnet/IP
  - BACnet/IP foreign device registration
- Networking option: BACnet Broadcast Management Device (BBMD)
- Integrated BACnet viewer and BACnet browser
- BACnet driver integrated in BMS

Expansion module Event API / Trend API

- API for connecting third-party systems to OPENweb such as ERP systems, energy monitoring systems and Microsoft Excel

Expansion module SQL

- Bi-directional data exchange with non-SAP systems via integrated SQL server
- Data is exchanged via the ODBC interface
- Data points can be freely selected from different projects
- Update interval can be set individually for each data point

Expansion module FIAS

- Connection (via BACnet in accordance with ISO 16484-5) of the Fidelio hotel booking system
- Provision of room occupancy information (check-in, check-out, etc.) as BACnet objects
- One BACnet object (multistate) is used per room

OPENweb On-Premise – system integration		Type	Art. no.
System integration	SQL	DS-OWB.S	DS-371160
	FIAS <sup>2)</sup>	DS-OWB.BAC.F	DS-371196
	BACnet/SC Hub	DS-OWB.BACnet/SC Hub	DS-371100
	BACnet, 250 BACnet objects	DS-OWB.BAC2	DS-371163
	BACnet, 500 BACnet objects	DS-OWB.BAC5	DS-371164
	BACnet, 1000 BACnet objects	DS-OWB.BAC10	DS-371165
	BACnet, 2000 BACnet objects	DS-OWB.BAC20	DS-371166
	BACnet, 3000 BACnet objects	DS-OWB.BAC30	DS-371235
	BACnet, 4000 BACnet objects	DS-OWB.BAC40	DS-371236
	BACnet, 5000 BACnet objects	DS-OWB.BAC50	DS-371167
	BACnet, 7500 BACnet objects	DS-OWB.BAC75	DS-371237
	BACnet, 10000 BACnet objects	DS-OWB.BAC100	DS-371238
	BACnet, 20000 BACnet objects	DS-OWB.BAC200	DS-371239
	Event API	DS-OWB.EventAPI	DS-371301
	Trend API	DS-OWB.TrendAPI	DS-371323

Expansion modules – Energy monitoring

Expansion module connection energy monitoring

- BAFA certified energy monitoring in the Cloud with the connection of OPENweb and DEOS pro.Building Suite
- Billing is based on the number of data points used in the p.BS

For more information about the pro.Building Suite see page 12

OPENweb On-Premise – energy monitoring		Type	Art. no.
Connection OPENweb – DEOS pro.Building Suite <sup>3)</sup>		DS-OWB.pBS	DS-371156

1 Incl. the three groups already contained in the basic package  
2 In addition, an expansion module for at least 250 BACnet objects is mandatory  
3 Billing is based on the number of data points used in the p.BS

**OPENweb upgrades** to the most recent OPENweb major version published

Calculation basis

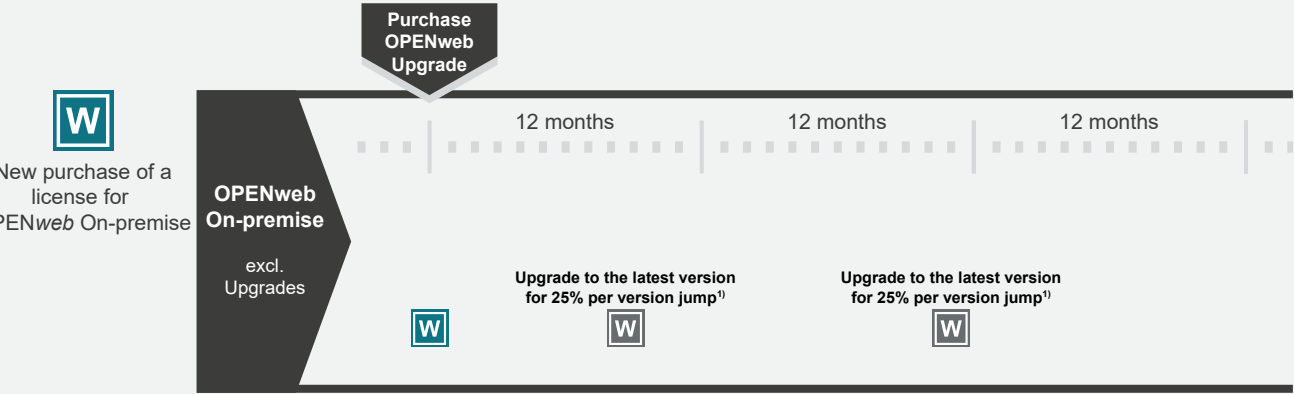
- The calculation basis for the upgrade costs is the OPENweb major version number
- The upgrade costs are determined based on the current valid price list for the respective OPENweb used, including expansions
- 25% of the last valid list price per version number for the last published major version is due and payable

Calculation example

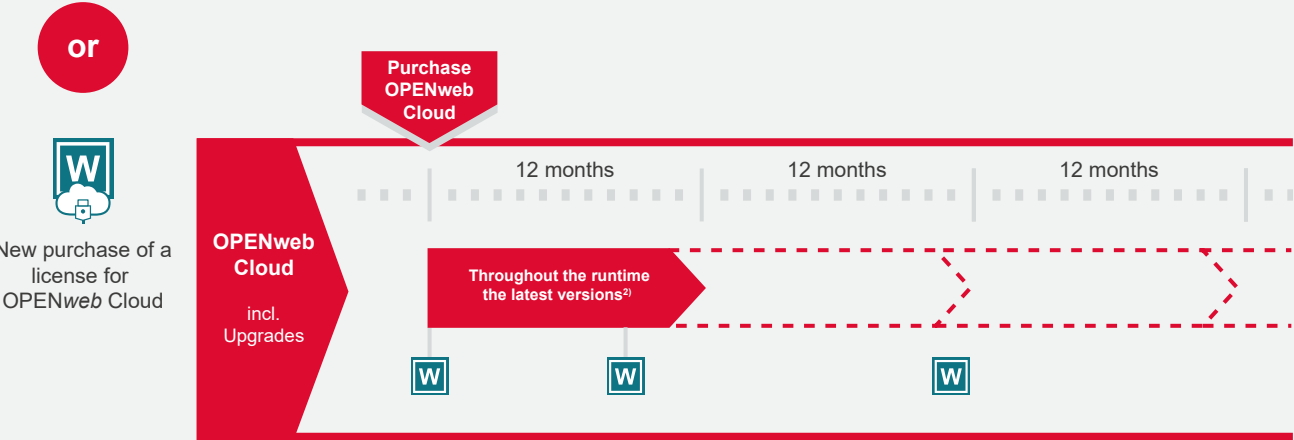
**Upgrade from OPENweb 10 to OPENweb 12:**  
500 data points, expansion modules event server and SQL

	List price	Versions	Upgrade price	
	100 %	OWB 10 → 12 2 versions	25% / list price per upgrade step	Σ
Article				
DS-OWB5		2 ×		=
DS-OWB.E		2 ×		=
DS-OWB.S		2 ×		=
			Upgrade price	=

Comparison of upgrade processes



1) see above: calculation basis and calculation example



2) Minimum contract term: 2 years. Settlement occurs in advance. Notice period: 3 months to the end of the contract, automatic 12-month extension

Free of charge: Upgrade from OPENweb On-Premise to latest OPENweb Cloud version

BMS software upgrades	Type	Art. no.
Upgrade	to the most recent full version	DS-OWB.UP DS-371208

BMS central computer	BMS central computer M	BMS central computer L	Operator notebook	Technician notebook
Type	DS-GLTPC-M	DS-GLTPC-L	DS-BedienerNB	DS-TechnikerNB
Art. no.	DS-360427	DS-360428	DS-360429	DS-360430
PG	PG5	PG5	PG5	PG5
€				
max. no. of recommended data points	1000	2000	–	–
Suitable for continuous operation (24/7)	yes	yes	No	No
CPU	Intel Core i5 or comparable	Intel Core i7 or comparable	Intel Core i3 or comparable	Intel Core i7 or comparable
RAM	8 GB	16 GB	8 GB	16 GB
Memory	2x 240 GB SSD	2x 480 GB SSD	240 GB SSD	480 GB SSD
Memory redundancy	RAID 1 (mirrored)	RAID 1 (mirrored)	–	–
Dimensions (HxWxT)	approx. 44 x 19 x 44 cm	approx. 44 x 19 x 44 cm	–	–
Display size	–	–	15"	15"
Temperature range in operation	5 ... 35°C	5 ... 35°C	–	–
Operating system	Windows 10/11 Pro	Windows 10/11 Pro	Windows 10/11 Pro	Windows 10/11 Pro
Manufacturer guarantee	36 months bring-in	36 months bring-in	12 months bring-in	12 months bring-in
Provided accessories	Mouse, keyboard	Mouse, keyboard	Power adapter	Power adapter
OPENweb (without licence)	Pre-installed	Pre-installed	–	–
OPENweb ControlPanel	–	–	Pre-installed	Pre-installed
Printer driver	Pre-installed	Pre-installed	–	–

Accessories	Type	Art. no.
<b>Antivirus package <sup>1)</sup> consisting of:</b> <ul style="list-style-type: none"><li>▪ G Data Antivirus for 1 device</li><li>▪ Term of the license: 3 years</li><li>▪ Installed ready for operation</li></ul>	DS-Antivirus	DS-360431
<b>Backup package <sup>1)</sup> for BMS central computer, consisting of:</b> <ul style="list-style-type: none"><li>▪ RDX drive USB</li><li>▪ 2x 500 GB RDX</li><li>▪ Backup software</li><li>▪ Installed ready for operation</li></ul> <p><b>Note:</b> After commissioning, correct setup and function of the backup must be monitored and tested regularly.</p>	DS-Backup	DS-360432
<b>BMS screen LED 24-inch</b> <ul style="list-style-type: none"><li>▪ Screen diagonal 23.6"</li><li>▪ Resolution 1920 x 1080 pixels (full-HD)</li><li>▪ Aspect ratio 16:9</li><li>▪ Manufacturer guarantee 36 months (on-site replacement)</li><li>▪ Including connection cable</li></ul>	DS-TFT24	DS-360433
<b>BMS printer L</b> Inkjet printer DIN A4 color <ul style="list-style-type: none"><li>▪ Max. recommended print volume: 800 pages/month</li><li>▪ Connections USB, LAN, WiFi</li><li>▪ Manufacturer guarantee 12 months (bring-in)</li></ul>	DS-Drucker-L	DS-360434
<b>BMS printer XL</b> Laser printer DIN A4 color <ul style="list-style-type: none"><li>▪ Max. recommended print volume: 2800 pages/month</li><li>▪ Connections USB, LAN</li><li>▪ Manufacturer guarantee 24 months (bring-in)</li></ul>	DS-Drucker-XL	DS-360435
<b>Service by IT technicians</b> We charge per 15 minutes or part thereof <ul style="list-style-type: none"><li>▪ Support at commissioning</li><li>▪ Warranty processing</li><li>▪ Special configurations</li><li>▪ Hotline</li></ul>	DS-N-Service	DS-360190

The guarantee processing of the products on this page preferably occurs by the manufacturer. There is no preliminary exchange or similar arrangement on the part of DEOS AG. We would be pleased to handle the processing for you – please understand that we will bill for this service.

<sup>1</sup> When ordering, the end customer data (name, address, contact person, telephone, email) must be specified for activation. Otherwise the customer must activate the software. The license term begins the day the license is activated by DEOS AG.



**OPENweb Cloud** – building management software (BMS) designed as a cloud solution for networking individual locations

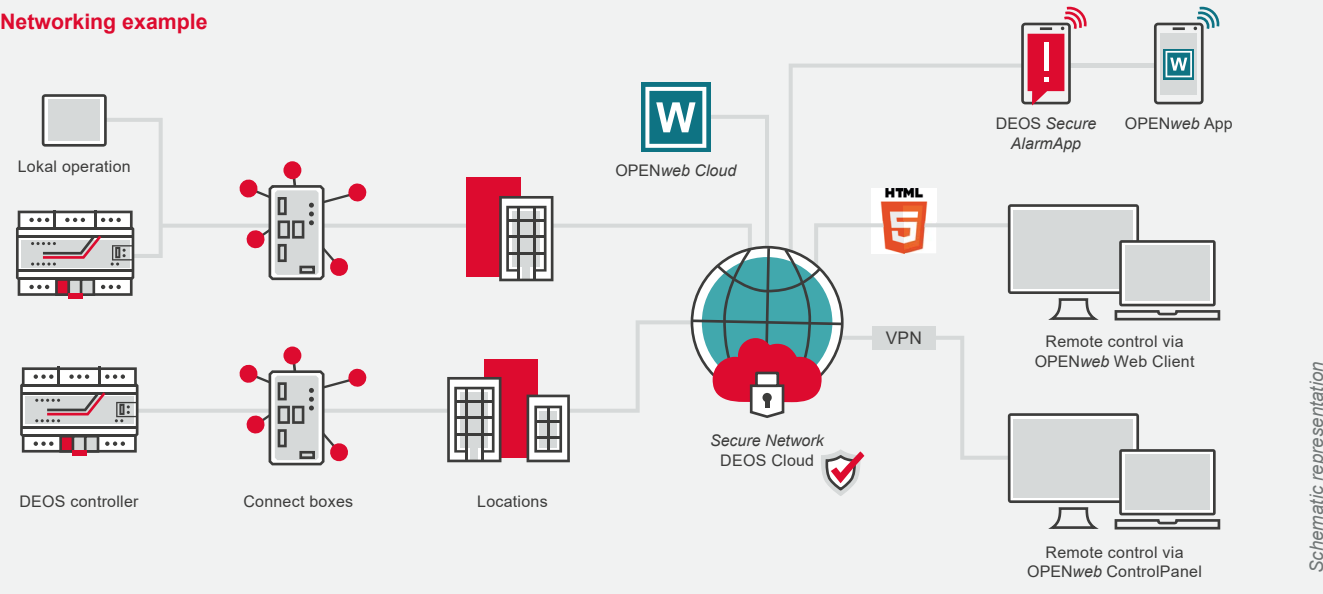


**Highlights at a glance**

- ✓ Networking of individual locations via a central OPENweb installation – either on high-performance servers in the DEOS Cloud or in your own cloud
- ✓ Highest security standards, such as 2-factor authentication, SSL encryption, etc.
- ✓ Additional IT know-how is not required: DEOS IT experts take over the service
- ✓ Customer loyalty and satisfaction through modern, uncomplicated maintenance and service offers
- ✓ Expandable with modules and freely scalable

Free of charge: Upgrade from OPENweb on-Premise to the latest OPENweb Cloud version

**Networking example**



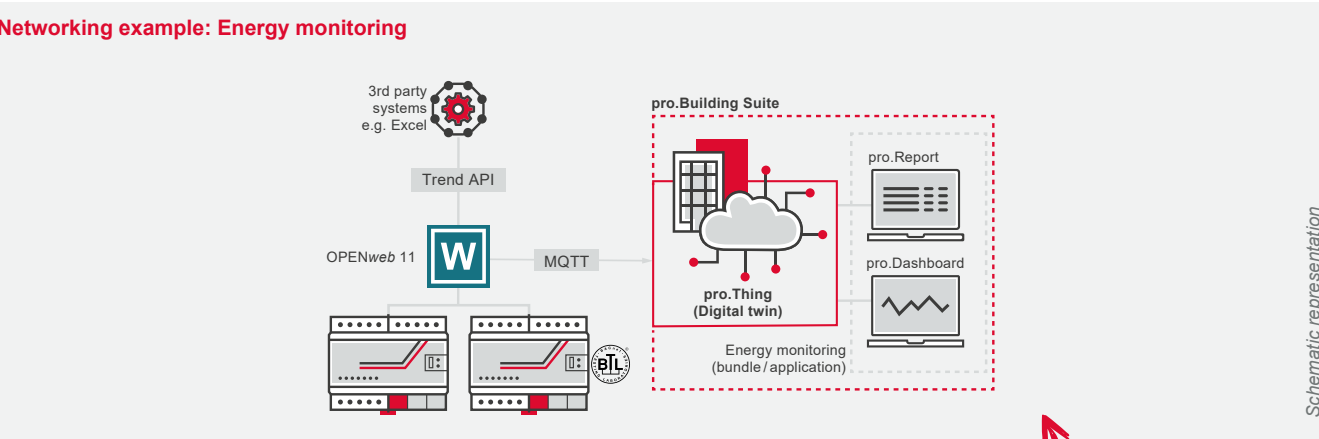
**Advantages compared to OPENweb On-Premise**

- No IT hardware required on site: Provision of software on a virtual machine (VM) in the secure computing center, backup included
- Flexibility through licensing based on data points – whether BACnet, proprietary or an appropriate combination
- Range of functions: Logbook, trend recording, event server and ECC included
- Guaranteed availability of the platform
- Connection of the location via DEOS Secure Connect Box (mandatory, surcharge)
- Operation for up to 10 concurrent users
- Maximum of 400 display points per graphic page
- 2-factor authentication (optional)
- Access/operation is distributed, either through VPN dial-in or with HTML5 web client
- Service performances during the term of the contract:
  - Daily data backups (7 day squeeze time)
  - Provision of memory space for 500 million trend data records
  - Provision of upgrades (major releases)
  - Installation of updates

OPENweb Cloud – basic package		Type	Art. no.
OPENweb Cloud <sup>1)</sup>	500 physical / BACnet data points <sup>2)</sup>	DS-N-OWB5	DS-360402
	1000 physical / BACnet data points <sup>2)</sup>	DS-N-OWB10	DS-360403
	2000 physical / BACnet data points <sup>2)</sup>	DS-N-OWB20	DS-360404
	3000 physical / BACnet data points <sup>2)</sup>	DS-N-OWB30	DS-360405
	4000 physical / BACnet data points <sup>2)</sup>	DS-N-OWB40	DS-360406
	5000 physical / BACnet data points <sup>2)</sup>	DS-N-OWB50	DS-360407
	7500 physical / BACnet data points <sup>2)</sup>	DS-N-OWB75	DS-360491
	10000 physical / BACnet data points <sup>2)</sup>	DS-N-OWB100	DS-360492
	> 10000 physical / BACnet data points <sup>2)</sup>	DS-N-OWBxx0	DS-360536

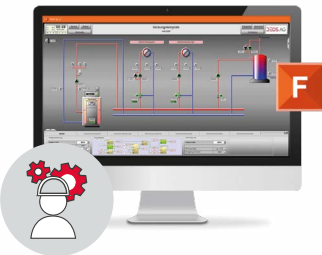
OPENweb Cloud – expansion modules		Type	Art. no.
Expansion modules <sup>1)</sup>	SQL <sup>3)</sup>	DS-N-OWB.S	DS-360408
	FIAS <sup>3)</sup>	DS-N-OWB.BAC.F	DS-360409
	Event API <sup>3)</sup>	DS-N-OWB.EventAPI	DS-360535
	Trend API <sup>3)</sup>	DS-N-OWB.TrendAPI	DS-360534

**Networking example: Energy monitoring**



OPENweb Cloud – energy monitoring		Type	Art. no.
Connection OPENweb – DEOS pro.Building Suite <sup>5)</sup>		DS-OWB.pBS	DS-371156

<sup>1)</sup> Minimum contract term: 2 years. Settlement occurs in advance. Notice period: 3 months to the end of the contract, automatic12-month extension  
<sup>2)</sup> Physical data points or BACnet objects or an appropriate combination  
<sup>3)</sup> Details are provided in section "OPENweb On-Premise – system integration" on page 47  
<sup>4)</sup> One-time costs  
<sup>5)</sup> Billing is based on the number of data points used in the p.BS



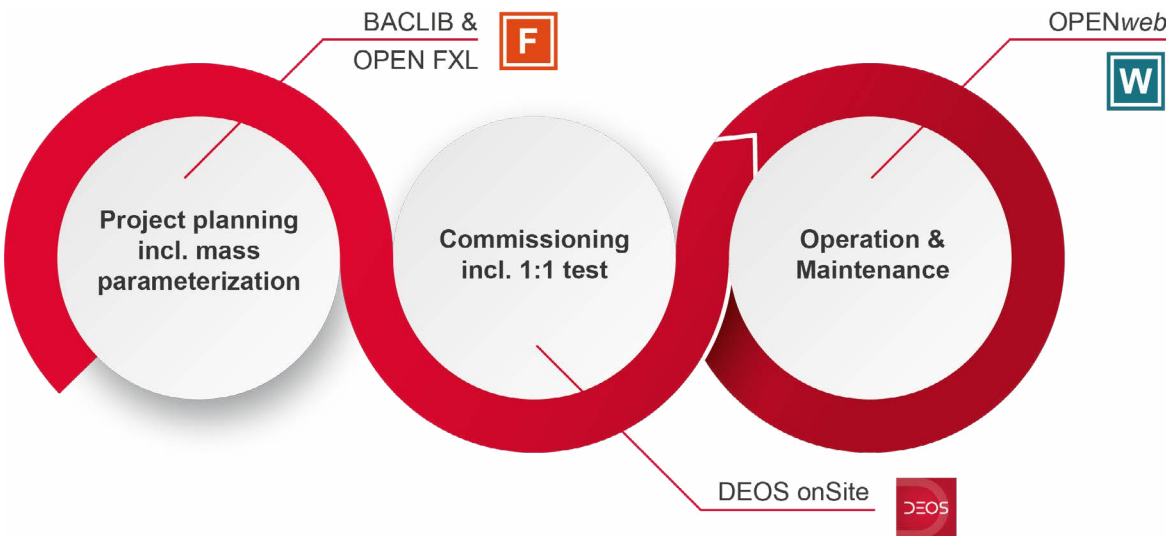
Central tools for all programming tasks

OPEN FXL is the central tool for complete and time-saving system programming. With the graphic programming tool, you program your systems freely in accordance with your individual project requirements. This provides maximum flexibility as well as the high-powered foundation for convenient, fast and reliable system programming. Your time is valuable – consequently we place high priority on functions that reduce your efforts and facilitate your daily work. For example, you can simultaneously load ready-made control programs on a number of controllers or into firmware, and you can even do this when the system is in operation via an online session. Moreover, program simulation makes it possible to test functions and helps with troubleshooting. In addition, you can save even more time by programming on the basis of the DEOS libraries; this can reduce your efforts by as much as 90%.



Project planning & commissioning

OPEN FXL .....	54
Libraries .....	55
BACnet macro library (BACLIB) .....	55
BACnet template library (BACTPL) .....	55
Engineering kit .....	56
DEOS onSite commissioning solution.....	58



Highlights at a glance

- ✓ Including tried-and-tested and energy-optimizing control algorithms
- ✓ Free programming of DEOS controllers and the BMS in a single step
- ✓ Full system integration of many protocols, such as BACnet, M-Bus, MODBUS, KNX, etc.
- ✓ AMEV-compliant BACet macro and template libraries from the heating, ventilation and air conditioning sectors
- ✓ Consistent graphic visualization of the equipment from DDC to BMS
- ✓ Commissioning support through 1:1 test including test protocol with DEOS onSite

Do you have questions or do you need support? Our sales partners would be pleased to help you.

✉ info@deos-ag.com  
☎ +49 5971 91133-0

OPEN FXL – central engineering tool



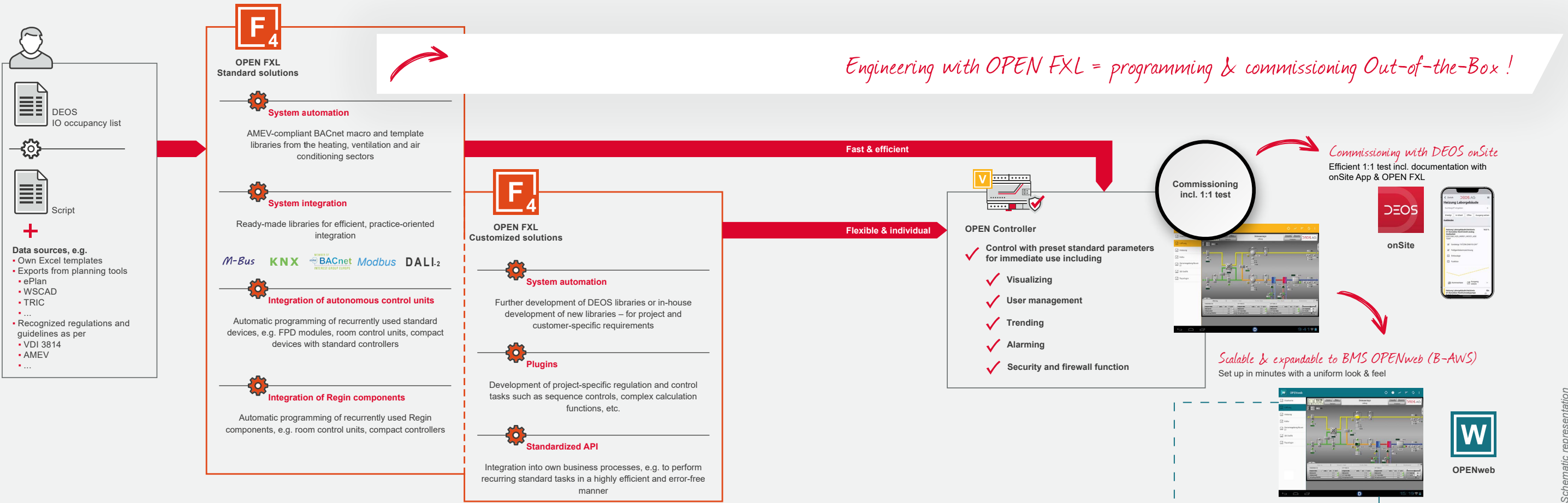
- Highlights at a glance**
- ✓ System integration – comprehensive and fast
  - ✓ Automated programming through import of planning documents
  - ✓ Maximum flexibility through free programming, e.g. programming of special applications and your own macros
  - ✓ API for customer-specific tools
  - ✓ Project administration and project management
  - ✓ Mass parameterization of BACnet information – even during operation



Libraries – ready-made HVAC equipment blocks and graphics for efficient project planning and programming



- Highlights at a glance**
- ✓ Templates are seamlessly integrated into the OPEN FXL engineering tool
  - ✓ Save time by reducing programming efforts by as much as 90%
  - ✓ Maximize programming quality
  - ✓ With macro management or template management, individual equipment blocks are easy to reproduce
  - ✓ Integrated graphic library for visualization of equipment components and entire systems
  - ✓ Complete online documentation facilitates preparation of the project documentation
  - ✓ Dynamic and graphic visualization of system macros and templates in a uniform graphic style



Engineering kit – 1 licence for OPEN FXL and OPENweb



Highlights at a glance

✓

Includes all licenses for professional use of OPEN FXL and OPENweb

✓

Comes standard with the macro library and the template library

✓

Use up to 3 devices simultaneously

✓

1 login for all products

✓

Offline session valid for 30 days – automatic extension after subsequent establishment of an Internet connection

3 scenarios – 3 solutions

**Scenario 1**  
Technician creates and edits the project on his own computer

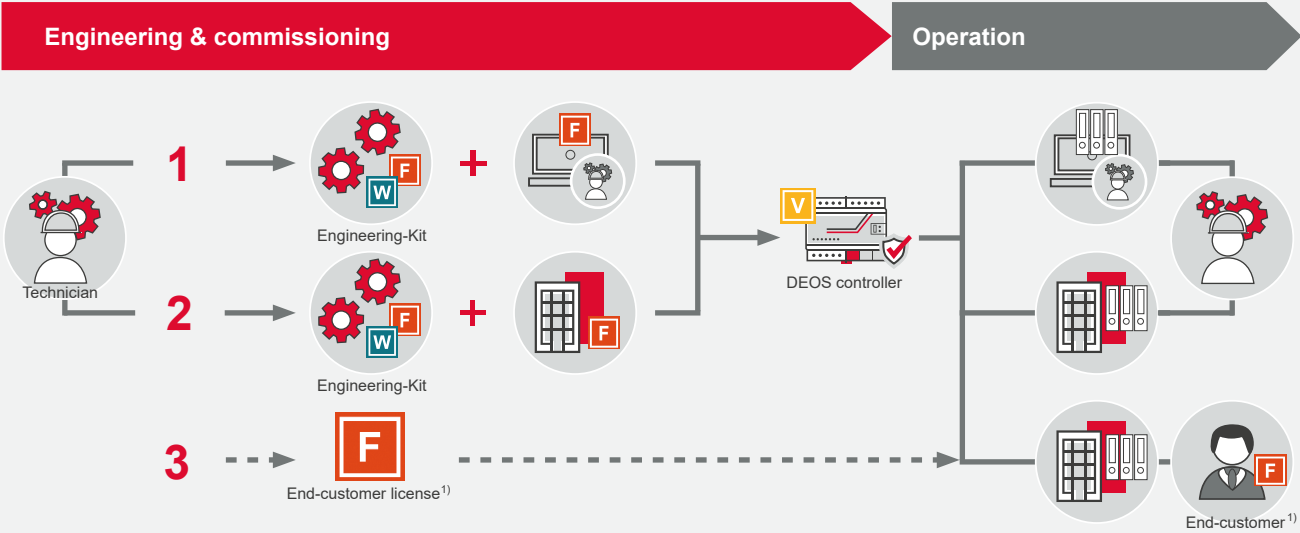
- Editing of the project on the go, on the technician's computer
- Manage and archive the project locally
- Required licence:**  
Engineering kit, DS-371310

**Scenario 2**  
Technician creates and edits the project on the end customer's server

- Editing the project online, directly on the server
- Manage and archive the project on the server
- Required licence:**  
Engineering kit, DS-371310

**Scenario 3**  
Like scenario 2, however with the following extension

- The end customer receives a licence <sup>1)</sup> and thus also receives the authorizations to manage and archive the project on his own responsibility
- Required licence:**  
OPEN FXL ECL, DS-371311



Engineering tools <sup>2)</sup>	Type	Art. no.
Engineering kit <sup>3), 4)</sup>	DS-Engineering-Kit	DS-371310
Engineering kit BACnet expansion <sup>3), 4)</sup>	DS-Engineering.BAC	DS-371324
OPEN FXL 4 end customer license <sup>1)</sup>	DS-OFXL4_ECL	DS-371311
OPENweb commissioning license <sup>1), 5)</sup>	DS-OWB.C	DS-371309

1 The support authorization remains reserved for the system partners  
2 Additional product information is provided in the data sheet (see DEOS Portal at portal.deos-ag.com)  
3 The prerequisite for purchase of the engineering kit is participation in the DEOS basic training course  
4 The engineering kit must not be used as BMS or remain at the customer site  
5 180 days runtime from license activation



DEOS onSite – efficient commissioning with 1:1 test and IO matching with onSite App & OPEN FXL

**Test progress**

Visual representation of test progress per data point

**Additional costs**

Documentation of additional costs for subsequent billing

**Test criteria**

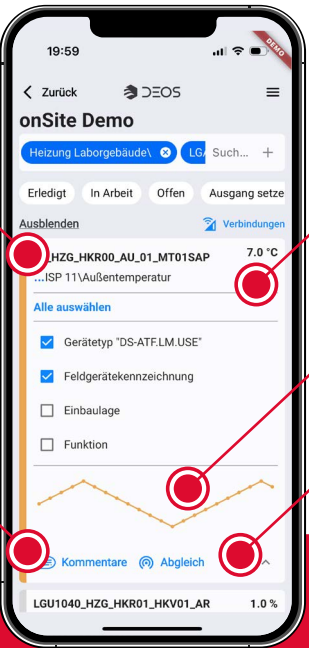
Orientation and standardization through predefined test criteria

**Trend curve**

Updating every second

**IO matching**

with automatic offset calculation and documentation



*Cross-project commissioning*

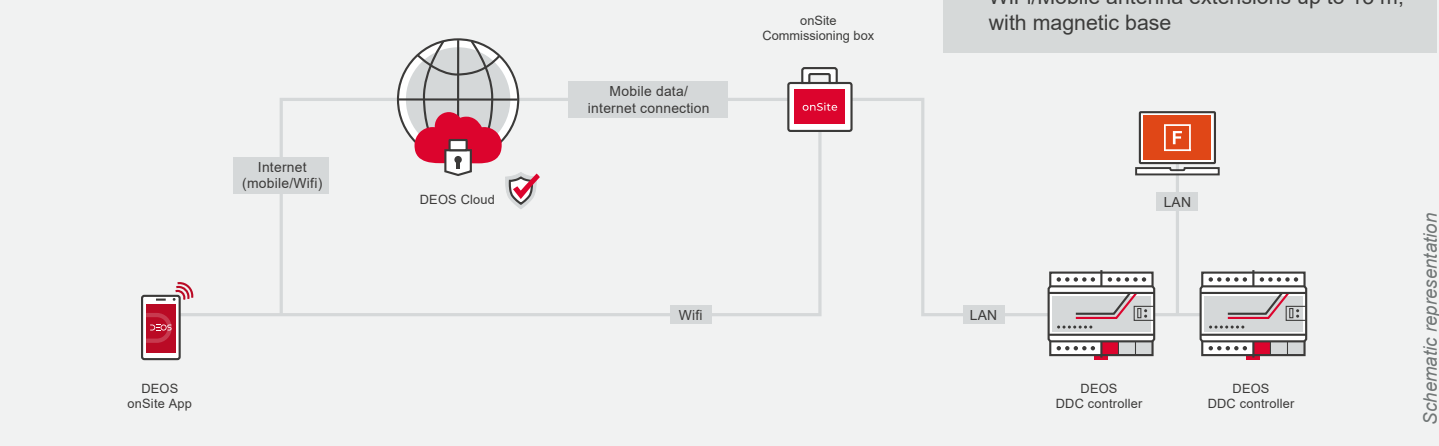


Test execution ...

... mobile	... stationary
<b>DEOS onSite box</b> <ul style="list-style-type: none"><li>Intended purpose: cross-project</li><li>Project phase: commissioning</li><li>Connection types: mobile data <sup>1)</sup> &amp; WLAN</li></ul>	<b>OPEN FXL</b> <ul style="list-style-type: none"><li>Intended purpose: cross-project</li><li>Project phase: project planning &amp; commissioning</li><li>Connection types: local (ethernet)</li></ul>



- Equipment <sup>2)</sup>**
- 2x Ethernet (LAN) 10/100 Mbit/s
  - 1x WiFi (WLAN IEEE 802.11b/g/n), access point (AP), station (STA), for up to 100 simultaneous connections
  - 1x Mobile (LTE 4G, 3G, 2G)
  - WiFi/Mobile antenna extensions up to 13 m, with magnetic base



**Time savings**

Approx. 30-40 % time saving per data point (1:1 test & IO matching)

**Automatic test protocol**

Maximum depth of information with minimum effort

**Supplementary work management**

Transparent documentation of all additional expenses for clean invoicing

**Internal process optimisation**

Optimisation of the commissioning phase through data transparency

**Variable personnel planning**

through teamwork function incl. documentation with comments/pictures

**Additional turnover**

Use of freed-up technicians in other projects

**Competitiveness**

Reduction of calculated costs/data points

DEOS onSite	Type	Art. no.
<b>DEOS onSite data points quota <sup>3)</sup></b>	Starter package 1000 data points <sup>4)</sup>	DS-onSite.free DS-371370
	Basic price per data points	DS-onSite.dp DS-371371
	<b>Price scale consumption/year</b>	
	under 1000 data points	
	as of 1000 data points	
	as of 2000 data points	
	as of 5000 data points	
	as of 10000 data points	
<b>DEOS onSite-Box</b>	DS-onSite.box	DS-371372

<sup>1</sup> SIM cards see page 34  
<sup>2</sup> Dimensions (WxHxD): 420 mm x 325 mm x 180 mm; Weight: 4.7 kg; Protection class: IP67 (when closed); Input voltage: 100 ... 240V / 50 ... 60Hz; Input current: 1.5A  
<sup>3</sup> onSite data points are required both for the onSite app and for testing and creating the test protocol. Tested data points are deducted from the quota when synchronising. A data point is only deducted for the first test, multiple testing does not debit the quota. The quota is available to all users whose DEOS ID is assigned to their company. No onSite use is possible without a quota. Invoices are issued at the end of the year.  
<sup>4</sup> The first 1000 onSite data points are activated free of charge when you purchase the DS-onSite.free starter package.





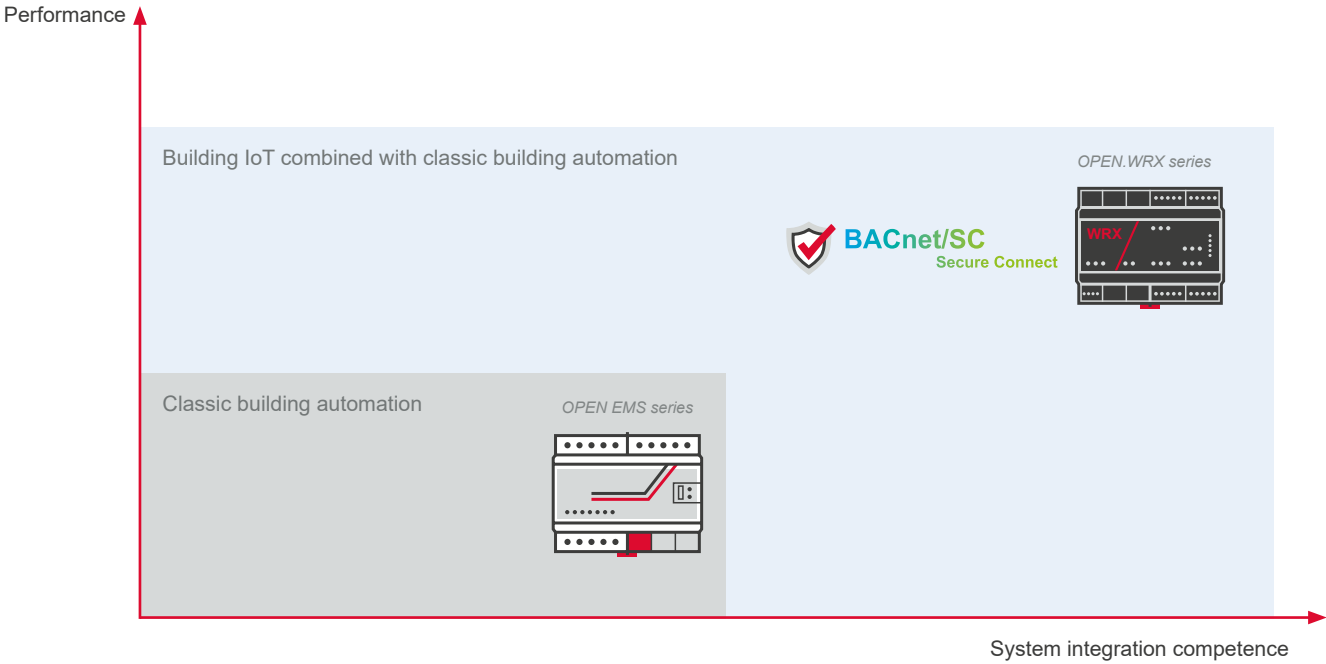
Central intelligence in the building

As cloud-ready controllers, the OPEN EMS (DDC controllers) are the central intelligence in your building. They are used for holistic building automation and room automation and are specially designed for HVAC applications. The main tasks of the automation stations are controlling, regulating, and monitoring your technical building equipment in optimum energy-efficiency. The OPEN EMS platform enables you to reduce energy costs in the building, while simultaneously increasing comfort for building users. To ensure IT security in the building, our DDC controllers are equipped with an innovative firewall that complies with the most rigorous security standards (Service & Security Center). In addition, equipment graphics can be directly called up on the controller via integrated Onboard OPENview. From affordable compact controllers to the powerful native BACnet Building Controllers (B-BC) with redundancy solution, the DEOS portfolio offers the optimum DDC controller for your project.



Controllers

OPEN.WRX series .....	62
OPEN 4100 EMS series .....	68
OPEN 810 EMS series .....	70
OPEN 600 EMS series .....	72
OPEN 600 EMS with manual control level .....	72
OPEN 600 EMS without manual control level .....	72
License upgrades OPEN EMS series .....	74



Highlights at a glance

- ✓

Programming is up to 60% faster via DEOS programming tool OPEN FXL
- ✓

Including full HD graphic HTML5 web server with BMS functions
- ✓

BACnet variants BTL listed (B-BC profile) as well as existing AMEV test certificates (profile B) – compatible with BACnet/SC
- ✓

Security by design, including web server with encrypted communication
- ✓

Ideal for existing buildings and properties as well as new construction projects
- ✓

System integration of all common BA protocols



Do you have questions or do you need support? Our sales partners would be pleased to help you.

✉ info@deos-ag.com  
 ☎ +49 5971 91133-0

THE controller for efficient system integration

Building IoT ...



Network security

4 Ethernet interfaces individually (de)activatable, IT/OT separation

BACnet Secure Connect (B-SCHUB)

Controller can be used as BACnet/SC Node, BACnet/SC Primary Hub or BACnet/SC Failover Hub

Cyber security in focus

Crypto chip FIPS certified, audit trail of controller configurations



... combined with classic building automation



Increased operational reliability and performance

Secure operation and increased performance for fieldbus integration thanks to dedicated power supply

More interfaces

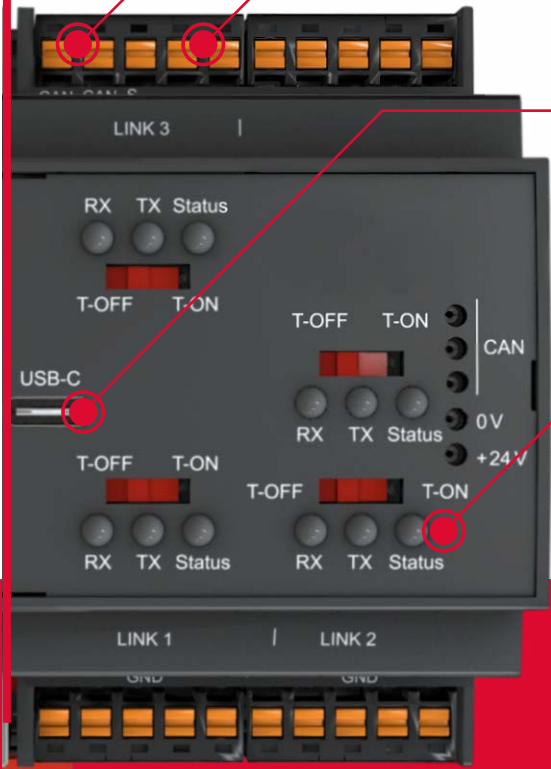
Up to 4 integrated interfaces for fast and uncomplicated fieldbus integration

Fast and uncomplicated access

Secure access for all tasks throughout the project with no need for time-consuming network configuration

Rapid diagnosis in the field

Via status LEDs or detailed view in the controller dashboard



✓ OPEN.WRX as new OPEN series ready for future Building IoT applications

✓ Migration of projects from OPEN EMS series possible

✓ Programmable with OPEN FXL 4 and compatible from OPENweb 10

✓ Compatible with DEOS libraries

OPEN.WRX series is certified as freely programmable **BACnet Building Controllers (B-BC)** and BACnet/SC



- Highlights at a glance**
- ✓ Designed for control and regulation of building services systems with a focus on efficient and flexible system integration
  - ✓ 50% faster charging via USB-C compared to OPEN EMS series
  - ✓ Can be used as BACnet/SC participant and router
  - ✓ High system integration competence due to 4 integrated serial and 4 integrated IP interfaces
  - ✓ Global data point licenses ensure flexible project planning for system integration
  - ✓ Onboard MBE OPENview
  - ✓ Onboard Service & Security Center (SSC) for maximum IT security incl. configuration options and dashboards for analyzing operational data and system connections
  - ✓ Extensive libraries for efficient engineering

Software equipment & system integration <sup>1)</sup>	DS-OPEN.WRX AS/x		
	4E210	4E201	4E300
OPENview text	■	■	■
OPENview graphics <sup>2)</sup>	□	□	□
Service & Security Center	■	■	■
Alarm management	□	□	□
BACnet/SC			
Participants & Routing	■	■	■
Hub	□	□	□
System boundaries			
CAN IO modules			
via bridge bus connector	5 <sup>3)</sup> / 64 <sup>4)</sup>	5 <sup>3)</sup> / 64 <sup>4)</sup>	5 <sup>3)</sup> / 64 <sup>4)</sup>
via Link module	–	32	–
IO7			
via bridge bus connector	5 <sup>3)</sup> / 64 <sup>4)</sup>	5 <sup>3)</sup> / 64 <sup>4)</sup>	5 <sup>3)</sup> / 64 <sup>4)</sup>
via Link module	–	32	–
BACnet objects (server)	5000 <sup>6)</sup>		
Global datapoints <sup>5)</sup>	25 / 1500 <sup>7)</sup> . Thereby applies:		
	≤ 1000 BACnet client objects		
	≤ 250 M-Bus counter		
	≤ 1000 KNX datapoints		
	≤ 1500 active Modbus Master datapoints		

- Standard  
 □ Optional expandability  
 – Cannot be expanded

see calculation example on page 67

1 Additional product information is provided in the data sheet (see DEOS Portal at portal.deos-ag.com)  
 2 Activated 180 days from commissioning  
 3 Without separate power supply for the CAN bus line  
 4 Maximum expansion (optional, surcharge: DS-371361, DS-UPWRX/32-64). With separate power supply for the CAN bus line  
 5 Applies to data points that are connected via bus protocols (BACnet client, Modbus Master, KNX, M-Bus).  
 6 Valid for devices delivered after 2023-10-25. For devices delivered before this date: 2000 BACnet objects (server).  
 7 Maximum expansion (optional, surcharge). The following applies to DS-OPEN.WRX GD/1500: Cannot be used simultaneously with DS-UPWRX/32-64 on one automation station.  
 8 Onboard interface, connection via bridge bus connector



OPEN.WRX	RS485	RS232	CAN	Type	Art. no.
with 3 link modules designed for the following interfaces and an additional CAN interface each (onboard)	2x	1x	–	DS-OPEN.WRX AS/4E210	DS-360501
	2x	–	1x	DS-OPEN.WRX AS/4E201	DS-360502
	3x	–	–	DS-OPEN.WRX AS/4E300	DS-360503

Expansion modules – functions		Type	Art. no.
Upgrade licenses	OPENview graphics <sup>1)</sup>	DS-OV.WRX	DS-371200
	expansion from 32 to 64 IO modules	DS-UPWRX/32-64	DS-371361
Network separation	for setting up 2 logical Ethernet networks <sup>2)</sup>	DS-OPEN.2ETH	DS-371362
Alarm management	DEOS Secure AlarmApp <sup>3), 4)</sup>	DS-N-Alarm	DS-360410
	AlarmApp Reporter controllers <sup>4)</sup>	DS-N-Reporter AS	DS-360438
	AlarmApp user package 5 <sup>5), 6)</sup>	DS-N-USER5	DS-360412
	AlarmApp user package 25 <sup>5), 6)</sup>	DS-N-USER25	DS-360413
	AlarmApp user package 50 <sup>5), 6)</sup>	DS-N-USER50	DS-360414

Expansion modules – system integration		Type	Art. no.
Global datapoints Expansion to ...	50 global datapoints	DS-OPEN.WRX GD/50	DS-371330
	100 global datapoints	DS-OPEN.WRX GD/100	DS-371331
	150 global datapoints	DS-OPEN.WRX GD/150	DS-371332
	200 global datapoints	DS-OPEN.WRX GD/200	DS-371333
	300 global datapoints	DS-OPEN.WRX GD/300	DS-371334
	500 global datapoints	DS-OPEN.WRX GD/500	DS-371335
	750 global datapoints	DS-OPEN.WRX GD/750	DS-371336
	1000 global datapoints	DS-OPEN.WRX GD/1000	DS-371337
	1500 global datapoints <sup>2)</sup>	DS-OPEN.WRX GD/1500	DS-371360
BACnet/SC Hub		DS-BACnet/SC Hub	DS-371192
Modbus Slave		DS-MOD SL	DS-371169

1 For up to 96 CAN IO modules  
 2 Minimum prerequisite OPEN.WRX firmware version 3.2.3  
 3 End customers need at least a user package (DS-360412, DS-360413, DS-360414) to be able to use the DEOS Secure AlarmApp. The use of the DEOS Secure AlarmApp is free of charge for employees of DEOS system partners.  
 4 Minimum prerequisite OPEN.WRX firmware version 3.0.0  
 5 Minimum contract term: 1 year. Settlement occurs in advance. Notice period: 1 month to the end of the contract, automatic12-month extension.  
 6 The user packages can be combined as required to achieve the desired number of users



Calculation example for the  
 number of global data points

Calculation example 1 – project planning is within the system boundary

- Assumptions:
- Activation of 100 global data points (Art. no. DS-371331, DS-OPEN.WRX GD/100) → system boundaries
  - Project engineering of 25 M-Bus, KNX, Modbus Master as well as 20 BACnet Client objects
  - Provision of all *configured* data points as BACnet server objects. 5 BACnet server objects are created per *configured* data point (DP) <sup>1)</sup>.

OPEN.WRX AS/4E210 plus expansion module OPEN.WRX GD/100		
Conditions	Global datapoints	BACnet server objects
<b>System integration</b> 25 M-Bus counter	→ 25 DP	
25 KNX datapoints	→ 25 DP	
25 aktive Modbus Master datapoints	→ 25 DP	
20 BACnet Client objects	→ 20 DP	
<b>Subtotal capacity</b>	→ <b>95 DP</b>	
Provision of all <i>configured</i> datapoints as BACnet server objects		→ 5 x 95 objects
<b>Total capacity</b>	→ <b>95 DP</b>	→ <b>475 objects</b>
Free datapoints up to capacity of the available licenses	→ 5 DP	→ 4525 objects
✓ Project planning is within the system boundaries.		

Calculation example 2 – project planning is not within the system boundary

- Assumptions:
- Activation of 750 global data points (Art. no. DS-371336, DS-OPEN.WRX GD/750)
  - Project engineering of 200 M-Bus, KNX, Modbus Master and 200 BACnet Client objects each
  - Provision of all *configured* data points as BACnet server objects. 5 BACnet server objects are created per *configured* data point (DP) <sup>1)</sup>.

OPEN.WRX AS/4E210 plus expansion module OPEN.WRX GD/1500		
Conditions	Global datapoints	BACnet server objects
<b>System integration</b> 200 M-Bus counter	→ 200 DP	
200 KNX datapoints	→ 200 DP	
200 aktive Modbus Master datapoints	→ 200 DP	
200 BACnet Client objects	→ 200 DP	
<b>Subtotal capacity</b>	→ <b>800 DP</b>	
Provision of all <i>configured</i> datapoints as BACnet server objects		→ 5 x 800 objects
<b>Total capacity</b>	→ <b>800 DP</b>	→ <b>4000 objects</b>
Free datapoints up to capacity of the available licenses	→ -50 DP	→ 1000 objects
✗ Project planning is not within the system boundaries.		

1 The number of BACnet server objects per *configured* data point depends on the project.

- Select controller

1

Which OPEN.WRX variant would you like to use?

Choose the variant that suits you:

  - DS-OPEN.WRX AS/4E210, DS-360501
  - DS-OPEN.WRX AS/4E201, DS-360502
  - DS-OPEN.WRX AS/4E300, DS-360503
- Unlock graphical operation

2

Would you like to use the graphical operation of OPENview?

Select the extension module for OPENview graphics for up to 96 IO modules:

  - DS-OV.WRX, DS-371200
- Use alarm management

3

Would you like to use OPEN.WRX for your alarm management?

Choose the combination that suits you:

  - DS-N-Alarm, DS-360410
  - DS-N-Reporter AS, DS-360438
  - DS-N-USER5, DS-360412
  - DS-N-USER25, DS-360413
  - DS-N-USER50, DS-360414
- Define global data points

4

How many global data points do you want to use in the system?

Select the required number of global data points to suit your project:

  - DS-OPEN.WRX GD/50, DS-371330
  - DS-OPEN.WRX GD/100, DS-371331
  - DS-OPEN.WRX GD/150, DS-371332
  - DS-OPEN.WRX GD/200, DS-371333
  - DS-OPEN.WRX GD/300, DS-371334
  - DS-OPEN.WRX GD/500, DS-371335
  - DS-OPEN.WRX GD/750, DS-371336
  - DS-OPEN.WRX GD/1000, DS-371337
  - DS-OPEN.WRX GD/1500, DS-371360
- Expand application areas

5

Would you like to use your controller as a BACnet/SC Hub or Modbus Slave?

Add one of the following options:

  - DS-BACnet/SC Hub, DS-371192
  - DS-MOD SL, DS-371169

Would you like to benefit from your own digital twin?  
 We would be happy to advise you personally and help you with implementation:  
 ✉ it@deos-ag.com  
 ☎ +49 5971 91133-0



OPEN 4100 EMS series is certified as freely programmable **BACnet Building Controllers (B-BC)**



DS-OPEN 4100 EMS Cx



Variants with 2 CAN interfaces

- CAN-HSB safety ring bus is a further development of the CAN-Bus, proven throughout the world
- Fast activation and configuration via the OPEN EMS web server
- Easy expandability – DEOS IO modules at the field level are networked via a CAN-bus ring topology
- Advantage:** If the ring is interrupted, the connected field devices can still be controlled from the other ring side

Highlights at a glance

- ✓ Designed for control and regulation of larger equipment systems, where a high fail-safe level must be ensured
- ✓ Fail-safe through functions such as redundancy and High Safety Bus (HSB)
- ✓ Integrated Onboard BMS OPENview
- ✓ Alarm management – DEOS Secure AlarmApp (optional)
- ✓ Trend recording and trend export
- ✓ Service & Security Center (SSC) for IT security
- ✓ Expandable with modules
- ✓ Maintenance-free
- ✓ Extensive libraries, incl. graphics for efficient engineering

Variants with redundancy (Hot Standby Controller)

- A redundant system can be implemented
- Automatic cyclical mirroring of all variables from the primary controller onto the secondary controller
- Automatic switching in case of a fault; the secondary controller is virtually available in "hot standby"
- Operation of both controllers on one CAN-bus
- The operating state of the system technology is output during the switching phase

Software equipment & system integration <sup>1)</sup>	DS-OPEN 4100/x EMS	
	C1x	C2x
OPENview text	■	■
OPENview graphics <sup>2)</sup>	□	□
Service & Security Center	■	■
Alarm management	□	□
CAN-HSB	–	■
Redundancy	■ <sup>3)</sup>	■ <sup>3)</sup>
BACnet objects	4000	4000
M-Bus meters		
External level converters	250 <sup>4)</sup>	250 <sup>4)</sup>
KNX data points	0   1000 <sup>5)</sup>	0   1000 <sup>5)</sup>
Modbus data points		
Modbus slave	□	□
Modbus master	0   1000 <sup>5)</sup>	0   1000 <sup>5)</sup>
DALI addresses	–	–
CAN devices		
IO modules, actuators <sup>6)</sup>	99	198
IO7, CORA, CODI	96	192
Total	99	198
Physical data points	4000	4000

1 Additional product information is provided in the data sheet (see DEOS Portal at portal.deos-ag.com)

2 Activated 180 days from commissioning

3 Can only be used for variants with redundancy DS-OPEN 4100 EMS C1/R and DS-OPEN 4100 EMS C2/R

4 Standard activation; number of M-Bus meters depends on the type of the M-Bus level converter (see page 95 as well as page 109)

5 Maximum expansion (optional, surcharge)

6 Only globe valve actuators, rotary actuators and air damper actuators

OPEN 4100 EMS	Type	Art. no.
With 1 CAN interface	DS-OPEN 4100 EMS C1	DS-360093
With 2 CAN interfaces, CAN-HSB	DS-OPEN 4100 EMS C2	DS-360094
With 1 CAN interface, redundancy	DS-OPEN 4100 EMS C1/R	DS-360095
With 2 CAN interfaces, CAN-HSB redundancy	DS-OPEN 4100 EMS C2/R	DS-360096

Practical tip – redundancy

- See networking examples with Hot Standby Controller and CAN High Safety Bus on page 75

Expansion modules – functions		Type	Art. no.
OPENview graphics	For OPEN ... EMS C1	DS-OVC1	DS-371190
	For OPEN ... EMS C2	DS-OVC2	DS-371191
Alarm management	DEOS Secure AlarmApp <sup>1), 2)</sup>	DS-N-Alarm	DS-360410
	AlarmApp Reporter OPEN EMS <sup>2)</sup>	DS-N-Reporter AS	DS-360438
	AlarmApp user package 5 <sup>3), 4)</sup>	DS-N-USER5	DS-360412
	AlarmApp user package 25 <sup>3), 4)</sup>	DS-N-USER25	DS-360413
	AlarmApp user package 50 <sup>3), 4)</sup>	DS-N-USER50	DS-360414

Expansion modules – system integration		Type	Art. no.
KNX	50 KNX data points	DS-KNX50	DS-371198
	100 KNX data points	DS-KNX100	DS-371193
	250 KNX data points	DS-KNX250	DS-371121
	500 KNX data points	DS-KNX500	DS-371197
	1000 KNX data points	DS-KNX1000	DS-371123
Modbus master	25 Modbus data points	DS-MOD MA25	DS-371220
	50 Modbus data points	DS-MOD MA50	DS-371170
	100 Modbus data points	DS-MOD MA100	DS-371264
	250 Modbus data points	DS-MOD MA250	DS-371171
	500 Modbus data points	DS-MOD MA500	DS-371194
Modbus slave	1000 Modbus data points	DS-MOD MA1000	DS-371195
		DS-MOD SL	DS-371169
ebm-papst <sup>5), 7)</sup>	7 ebm-papst data points (= 1 fan)	DS-EBM-PST	DS-371206
Grundfos <sup>6), 7)</sup>	7 Grundfos data points (= 1 pump)	DS-GR-PU	DS-371207

more system integration from page 88

1 End customers need at least a user package (DS-360412, DS-360413, DS-360414) to be able to use the DEOS Secure AlarmApp. The use of the DEOS Secure AlarmApp is free of charge for employees of DEOS system partners.

2 Minimum prerequisite OPEN EMS firmware version 1,064

3 Minimum contract term: 1 year. Settlement occurs in advance. Notice period: 1 month to the end of the contract, automatic12-month extension.

4 The user packages can be combined as required to achieve the desired number of users

5 Up to 128 fans can be connected via RS485

6 Up to 31 pumps can be connected via RS485

7 DS-EBM-PST and DS-GR-PU cannot be used simultaneously on one controller

OPEN 810 EMS series is certified as freely programmable **BACnet Building Controllers (B-BC)**



DS-OPEN 810/x EMS  
 (Basic)



Highlights at a glance

- ✓ Designed for control and regulation of large and medium-size systems, where a high level of system integration competence as well as scalability are required
- ✓ Compact design
- ✓ Integrated Onboard BMS OPENview
- ✓ Alarm management – DEOS Secure AlarmApp (optional)
- ✓ Trend recording and trend export
- ✓ Service & Security Center (SSC) for IT security
- ✓ Expandable with modules
- ✓ Maintenance-free
- ✓ Extensive libraries, incl. graphics for efficient engineering

Software equipment & system integration <sup>1)</sup>	DS-OPEN 810/x EMS			
	Basic			
OPENview text	■			
OPENview graphics <sup>2)</sup>	□			
Service & Security Center	■			
Alarm management	□			
CAN-HSB	–			
Redundancy	–			
BACnet objects	1000   2000 <sup>3)</sup>			
M-Bus meters				
External level converters	250 <sup>4)</sup>			
KNX data points	0   1000 <sup>3)</sup>			
Modbus data points				
Modbus slave	□			
Modbus master	0   1000 <sup>3)</sup>			
CAN devices	.../0	.../5	.../12	.../32
IO modules, actuators <sup>5)</sup>	0   32 <sup>3)</sup>	5   32 <sup>3)</sup>	12   32 <sup>3)</sup>	32
IO7, CORA, CODI	5	5	12	32
Total	5   32 <sup>3)</sup>	10   37 <sup>3)</sup>	24   44 <sup>3)</sup>	50
Physical data points	0	80	192	512

Hardware equipment & Technical data <sup>1)</sup>	DS-OPEN 810/x EMS			
	Basic			
Fast Ethernet	2x 10/100 BaseT			
CAN-bus	1x CAN 2.0B			
RS232	1x RS232			
RS485	1x RS485			
USB	1x USB 2.0			
Assembly	on standard mounting rail 35 mm			
Dimensions (WxDxH)	106 mm x 60 mm x 90 (98) mm			
Material	Plastic			
Protection standard	IP 20			
Cooling	no fan; by convection			
Ambient temperature	0 ... 50°C			
Ambient humidity	5 ... 90% without condensation			
Installation position	Freely selectable			
Input voltage	24 V DC (19 ... 30 V DC)			
Input current	170 mA			
Power consumption	4.1 W			
max. back-up fuse	2 A			
Connection	Pull-off spring-loaded terminals			

- Standard
- Optional expandability
- Cannot be expanded

1 Additional product information is provided in the data sheet (see DEOS Portal at portal.deos-ag.com)  
 2 Activated 180 days from commissioning  
 3 Maximum expansion (optional, surcharge). For KNX and Modbus Master applies: 1000 KNX datapoints and 1000 active Modbus Master datapoints cannot be used simultaneously on one controller  
 4 Standard activation; number of M-Bus meters depends on the type of the M-Bus level converter (see page 95 as well as page 109)  
 5 Only globe valve actuators, rotary actuators and air damper actuators

OPEN 810 EMS	Type	Art. no.
Basic	DS-OPEN 810/0 EMS	DS-360139
	DS-OPEN 810/5 EMS	DS-360099
	DS-OPEN 810/12 EMS	DS-360100
	DS-OPEN 810/32 EMS	DS-360101

Expansion modules – functions		Type	Art. no.
OPENview graphics	For OPEN .../0 EMS	DS-OV0	DS-371210
	For OPEN .../5 EMS	DS-OV5	DS-371187
	For OPEN .../12 EMS	DS-OV12	DS-371188
	For OPEN .../32 EMS	DS-OV32	DS-371189
Alarm management	DEOS Secure AlarmApp <sup>1), 2)</sup>	DS-N-Alarm	DS-360410
	AlarmApp Reporter OPEN EMS <sup>2)</sup>	DS-N-Reporter AS	DS-360438
	AlarmApp user package 5 <sup>3), 4)</sup>	DS-N-USER5	DS-360412
	AlarmApp user package 25 <sup>3), 4)</sup>	DS-N-USER25	DS-360413
	AlarmApp user package 50 <sup>3), 4)</sup>	DS-N-USER50	DS-360414

more system integration from page 88

Expansion modules – system integration		Type	Art. no.
BACnet	1250 BACnet objects	DS-OPEN BAC 12	DS-371266
	1500 BACnet objects	DS-OPEN BAC15	DS-371267
	2000 BACnet objects	DS-OPEN BAC20	DS-371268
KNX	50 KNX data points	DS-KNX50	DS-371198
	100 KNX data points	DS-KNX100	DS-371193
	250 KNX data points	DS-KNX250	DS-371121
	500 KNX data points	DS-KNX500	DS-371197
Modbus master	1000 KNX data points	DS-KNX1000	DS-371123
	25 Modbus data points	DS-MOD MA25	DS-371220
	50 Modbus data points	DS-MOD MA50	DS-371170
	100 Modbus data points	DS-MOD MA100	DS-371264
	250 Modbus data points	DS-MOD MA250	DS-371171
	500 Modbus data points	DS-MOD MA500	DS-371194
Modbus slave	1000 Modbus data points	DS-MOD MA1000	DS-371195
		DS-MOD SL	DS-371169
ebm-papst <sup>5), 7)</sup>	7 ebm-papst data points (= 1 fan)	DS-EBM-PST	DS-371206
Grundfos <sup>6), 7)</sup>	7 Grundfos data points (= 1 pump)	DS-GR-PU	DS-371207

1 End customers need at least a user package (DS-360412, DS-360413, DS-360414) to be able to use the DEOS Secure AlarmApp. The use of the DEOS Secure AlarmApp is free of charge for employees of DEOS system partners.  
 2 Minimum prerequisite OPEN EMS firmware version 1,064  
 3 Minimum contract term: 1 year. Settlement occurs in advance. Notice period: 1 month to the end of the contract, automatic12-month extension.  
 4 The user packages can be combined as required to achieve the desired number of users  
 5 Up to 128 fans can be connected via RS485  
 6 Up to 31 pumps can be connected via RS485  
 7 DS-EBM-PST and DS-GR-PU cannot be used simultaneously on one controller

OPEN 600 EMS series is certified as freely programmable **BACnet Building Controllers (B-BC)**



Variants with LM-enabled IOs

- Digital inputs: Signal inputs/numeric inputs, 24 V DC, each opto-decoupled with display LED
- Digital outputs: Transistor outputs, 24 V DC, can be loaded to max. 80 mA per output
- Analog inputs: For sensor types Pt1000, Ni1000 <sup>1)</sup>, 10 mV/K, 0-10 V, 0(4)-20 mA <sup>2)</sup> as well as potentiometers
- Analog outputs: 0-10 V DC, can be loaded to max. 8 mA per output

Variants with NTC-enabled IOs

- Digital inputs: Such as LM variants
- Digital outputs: Such as LM variants
- Analog inputs: For sensor types 0-10 V, 0(4)-20 mA <sup>2)</sup>, NTC <sup>1)</sup>, KTY <sup>1)</sup> as well as potentiometers
- Analog outputs: Like LM variants

Variants with manual control level

- 1x push button per analog output for changing between 3 operating modes (manual ON, manual OFF, and automatic)
- 1x push button per digital output for changing between 2 operating modes (MANUAL, automatic) and for adjusting the output values ± 10% (± 1 V)
- Fulfill the functions for local override

Highlights at a glance

- ✓ Designed for the control and regulation of medium-sized systems and smaller systems
- ✓ Integrated Onboard BMS OPENview
- ✓ Integrated inputs and outputs – can be parameterized – each with 1x LED as visual signal transmitter with status display
- ✓ Alarm management – DEOS Secure AlarmApp (optional)
- ✓ Trend recording and trend export
- ✓ Service & Security Center (SSC) for IT security
- ✓ Expandable with modules
- ✓ Maintenance-free
- ✓ Extensive libraries, incl. graphics for efficient engineering

Software equipment & system integration <sup>3)</sup>	DS-OPEN 600X/x EMS/x		
	/0	/5	basic24
OPENview text	■	■	■
OPENview graphics <sup>4)</sup>	□	□	■
Service & Security Center	■	■	■
Alarm management	□	□	□
CAN-HSB	–	–	–
Redundancy	–	–	–
BACnet objects	250   500 <sup>6)</sup>	250   500 <sup>6)</sup>	250
M-Bus meters			
External level converters	10 <sup>5)</sup>	10 <sup>5)</sup>	10 <sup>5)</sup>
KNX data points	0   100 <sup>6)</sup>	0   100 <sup>6)</sup>	0   100 <sup>6)</sup>
Modbus data points			
Modbus slave	□	□	□
Modbus master	0   100 <sup>6)</sup>	0   100 <sup>6)</sup>	0   100 <sup>6)</sup>
DALI addresses	–	–	–
CAN devices			
IO modules, actuators <sup>7)</sup>	0   5 <sup>6)</sup>	5	0
IO7, CORA, CODI	5	5	5
Total	5   10 <sup>6)</sup>	10	5
Physical data points	32	112	24

Hardware equipment & technical data <sup>3)</sup>	DS-OPEN 600X/x EMS/x		
	/0	/5	basic24
Fast Ethernet	2x 10/100 BaseT		
CAN-bus	1x CAN 2.0B		
RS232	1x RS232		
RS485	1x RS485		
USB	–	–	–
DALI interface	–	–	–
Assembly	on standard mounting rail 35 mm		
Dimensions (WxDxH)	160 mm x 60 mm x 90 (98) mm		
Material	Plastic		
Protection standard	IP 20		
Cooling	no fan; by convection		
Ambient temperature	0 ... 50°C		
Ambient humidity	5 ... 90% without condensation		
Installation position	Freely selectable		
Input voltage	24 V DC (19 ... 30 V DC)		
Input current	190 mA		
Power consumption	4.6 W		
max. back-up fuse	2 A		
Connection	Pull-off spring-loaded terminals		

- Standard
- Optional expandability
- Cannot be expanded

1 Various measuring elements

2 At 0(4)-20 mA: External load resistor 500 ohm required (not available from DEOS AG)

3 Additional product information is provided in the data sheet (see DEOS Portal at portal.deos-ag.com)

4 Activated 180 days from commissioning

5 Standard activation; number of M-Bus meters depends on the type of the M-Bus level converter (see page 95 as well as page 109)

6 Maximum expansion (optional, surcharge)

7 Only globe valve actuators, rotary actuators and air damper actuators

OPEN 600 EMS	NTC-enabled	Type	Art. no.
With 32 integrated IOs ▪ 8 AI, 4 AO, 8 DI, 12 DO	–	DS-OPEN 600/0 EMS	DS-360077
	–	DS-OPEN 600/5 EMS	DS-360075
	■	DS-OPEN 600/0 EMS/N	DS-360266
	■	DS-OPEN 600/5 EMS/N	DS-360267
With 32 integrated IOs and manual control level ▪ 8 AI, 4 AO, 8 DI, 12 DO	–	DS-OPEN 600H/0 EMS	DS-360079
	–	DS-OPEN 600H/5 EMS	DS-360078
	■	DS-OPEN 600H/0 EMS/N	DS-360268
	■	DS-OPEN 600H/5 EMS/N	DS-360269
With 24 integrated IOs ▪ 8 AI, 4 AO, 8 DI, 4 DO	–	DS-OPEN 600 EMS basic24	DS-360160
	■	DS-OPEN 600 EMS basic24/N	DS-360274

- NTC-enabled
- Not NTC-enabled

Expansion modules – functions		Type	Art. no.
OPENview graphics	For OPEN .../0 EMS	DS-OV0	DS-371210
	For OPEN .../5 EMS	DS-OV5	DS-371187
Alarm management	DEOS Secure AlarmApp <sup>1), 2)</sup>	DS-N-Alarm	DS-360410
	AlarmApp Reporter OPEN EMS <sup>2)</sup>	DS-N-Reporter AS	DS-360438
	AlarmApp user package 5 <sup>3), 4)</sup>	DS-N-USER5	DS-360412
	AlarmApp user package 25 <sup>3), 4)</sup>	DS-N-USER25	DS-360413
	AlarmApp user package 50 <sup>3), 4)</sup>	DS-N-USER50	DS-360414

Expansion modules – system integration		Type	Art. no.
BACnet	500 BACnet objects	DS-OPEN BAC5	DS-371265
KNX	50 KNX data points	DS-KNX50	DS-371198
	100 KNX data points	DS-KNX100	DS-371193
Modbus master	25 Modbus data points	DS-MOD MA25	DS-371220
	50 Modbus data points	DS-MOD MA50	DS-371170
	100 Modbus data points	DS-MOD MA100	DS-371264
Modbus slave		DS-MOD SL	DS-371169
ebm-papst <sup>5), 7)</sup>	7 ebm-papst data points (= 1 fan)	DS-EBM-PST	DS-371206
Grundfos <sup>6), 7)</sup>	7 Grundfos data points (= 1 pump)	DS-GR-PU	DS-371207

more system integration from page 88

1 End customers need at least a user package (DS-360412, DS-360413, DS-360414) to be able to use the DEOS Secure AlarmApp. The use of the DEOS Secure AlarmApp is free of charge for employees of DEOS system partners.

2 Minimum prerequisite OPEN EMS firmware version 1,064

3 Minimum contract term: 1 year. Settlement occurs in advance. Notice period: 1 month to the end of the contract, automatic12-month extension.

4 The user packages can be combined as required to achieve the desired number of users

5 Up to 128 fans can be connected via RS485

6 Up to 31 pumps can be connected via RS485

7 DS-EBM-PST and DS-GR-PU cannot be used simultaneously on one controller

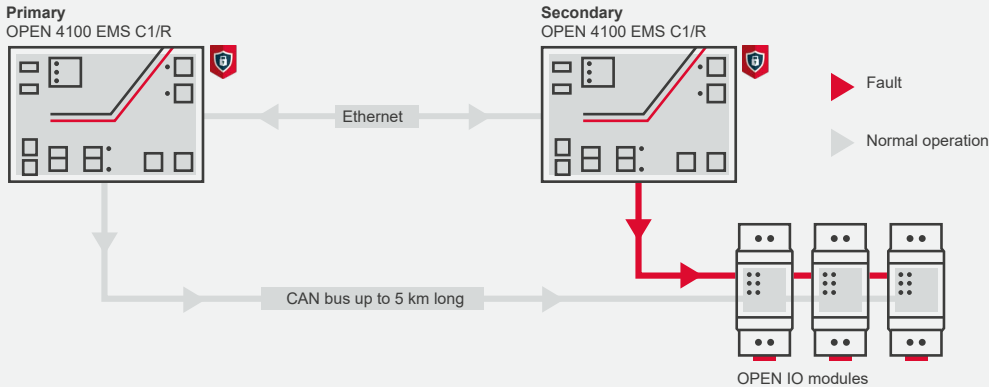
Upgrade licenses OPEN EMS <sup>1), 2)</sup>	License level	Type	Art. no.
OPEN 600/0 EMS(/N)	from 0 to 5	DS-UP600/0-5	DS-360202
OPEN 600/0H EMS(/N)	from 0 to 5	DS-UP600H/0-5	DS-360203
OPEN 810/0 EMS	from 0 to 5	DS-UP810/0-5	DS-360210
	from 0 to 12	DS-UP810/0-12	DS-360211
	from 0 to 32	DS-UP810/0-32	DS-360212
OPEN 810/5 EMS	from 5 to 12	DS-UP810/5-12	DS-360213
	from 5 to 32	DS-UP810/5-32	DS-360214
OPEN 810/12 EMS	from 12 to 32	DS-UP810/12-32	DS-360215

Upgrade licenses OPENview	License level	Type	Art. no.
OPENview x/0	from 0 to 5	DS-UPOV0-5	DS-360300
	from 0 to 12	DS-UPOV0-12	DS-360301
	from 0 to 32	DS-UPOV0-32	DS-360302
OPENview x/5	from 5 to 12	DS-UPOV5-12	DS-360303
	from 5 to 32	DS-UPOV5-32	DS-360304
OPENview x/12	from 12 to 32	DS-UPOV12-32	DS-360305

1 Minimum prerequisite: firmware version 1.054q  
 2 If the graphic operation option of OPENview has been activated on an controller, the corresponding upgrade license for OPENview must also be ordered.

Networking example redundancy Hot Standby Controller OPEN 4100 EMS/R

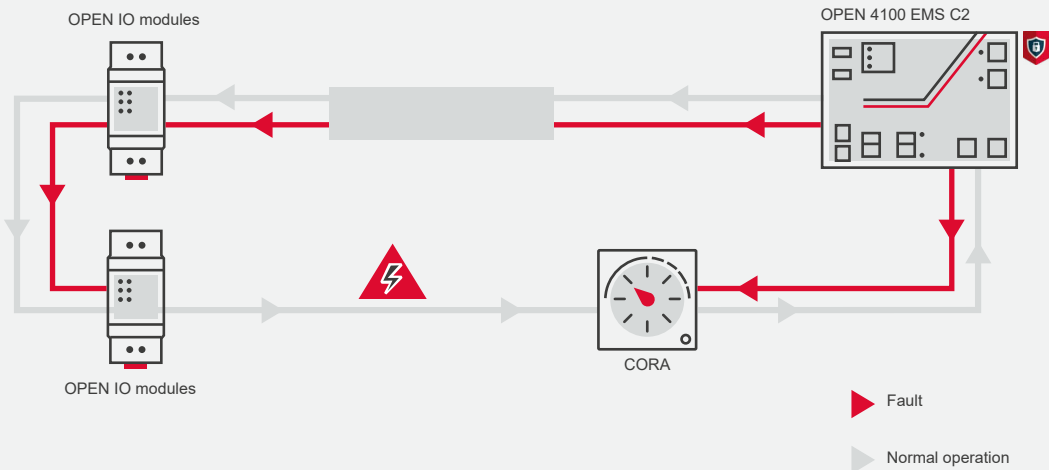
- Two redundant OPEN EMS controllers are available to increase operational safety
- The first (primary) controller is normally used for the control tasks
- A second controller (secondary) is in standby mode
- If the primary controller fails, the secondary controller performs the control functions fully automatically



Schematic representation

Networking example redundancy with CAN High Safety Bus (CAN-HSB) & OPEN 4100 EMC C2

- CAN-HSB (high safety ring bus) is a further CAN-bus development proven throughout the world
- DEOS IO modules at the field level are networked via a CAN-bus ring topology
- Advantage:** If the ring is interrupted, the connected field devices can still be controlled from the other ring side



Schematic representation





Equipment & optional expansion modules OPEN EMS series

OPEN EMS series		Type	Art. no.	OPENview text	OPENview graphics <sup>2)</sup>	Service & Security Center	Integrated IOs – LM-enabled	Integrated IOs – NTC-enabled	max. CAN devices – Group A <sup>3), 5)</sup>	max. CAN devices – Group B <sup>4), 5)</sup>	Total Group A + Group B	CAN-HSB	Redundancy	Physical data points	BACnet objects	M-Bus meters – external level converter	KNX data points	Modbus master	Modbus slave	ebm-papst fans	Grundfos pumps	External serial interfaces
OPEN 4100 EMS series	With 1 CAN interface	DS-OPEN 4100 EMS C1	DS-360093	■	□	■	–	–	99	96	99	–	–	4000	4000	250	□	□	□	□	□	□
	With 2 CAN interfaces, CAN-HSB <sup>1)</sup>	DS-OPEN 4100 EMS C2	DS-360094	■	□	■	–	–	198	192	198	■	–	4000	4000	250	□	□	□	□	□	□
	With 1 CAN interface, redundancy	DS-OPEN 4100 EMS C1/R	DS-360095	■	□	■	–	–	99	96	99	–	■	4000	4000	250	□	□	□	□	□	□
	With 2 CAN interfaces, CAN-HSB <sup>1)</sup> , redundancy	DS-OPEN 4100 EMS C2/R	DS-360096	■	□	■	–	–	198	192	198	■	■	4000	4000	250	□	□	□	□	□	□
OPEN 810 EMS series	Basic	DS-OPEN 810/0 EMS	DS-360139	■	□	■	–	–	0	5	5	–	–	0	1000 <sup>5)</sup>	250	□	□	□	□	□	□
		DS-OPEN 810/5 EMS	DS-360099	■	□	■	–	–	5	5	10	–	–	80	1000 <sup>5)</sup>	250	□	□	□	□	□	□
		DS-OPEN 810/12 EMS	DS-360100	■	□	■	–	–	12	12	24	–	–	192	1000 <sup>5)</sup>	250	□	□	□	□	□	□
		DS-OPEN 810/32 EMS	DS-360101	■	□	■	–	–	32	32	50	–	–	512	1000 <sup>5)</sup>	250	□	□	□	□	□	□
OPEN 600 EMS series	With 32 integrated IOs	DS-OPEN 600/0 EMS	DS-360077	■	□	■	■	–	0	5	5	–	–	32	250 <sup>6)</sup>	10	□	□	□	□	□	□
		DS-OPEN 600/5 EMS	DS-360075	■	□	■	■	–	5	5	10	–	–	112	250 <sup>6)</sup>	10	□	□	□	□	□	□
		DS-OPEN 600/0 EMS/N	DS-360266	■	□	■	–	■	0	5	5	–	–	32	250 <sup>6)</sup>	10	□	□	□	□	□	□
		DS-OPEN 600/5 EMS/N	DS-360267	■	□	■	–	■	5	5	10	–	–	112	250 <sup>6)</sup>	10	□	□	□	□	□	□
	With 32 integrated IOs and manual control level	DS-OPEN 600H/0 EMS	DS-360079	■	□	■	■	–	0	5	5	–	–	32	250 <sup>6)</sup>	10	□	□	□	□	□	□
		DS-OPEN 600H/5 EMS	DS-360078	■	□	■	■	–	5	5	10	–	–	112	250 <sup>6)</sup>	10	□	□	□	□	□	□
		DS-OPEN 600H/0 EMS/N	DS-360268	■	□	■	–	■	0	5	5	–	–	32	250 <sup>6)</sup>	10	□	□	□	□	□	□
		DS-OPEN 600H/5 EMS/N	DS-360269	■	□	■	–	■	5	5	10	–	–	112	250 <sup>6)</sup>	10	□	□	□	□	□	□
	With 24 integrated IOs	DS-OPEN 600 EMS basic24	DS-360160	■	■	■	■	–	0	5	5	–	–	24	250	10	□	□	□	□	□	□
		DS-OPEN 600 EMS basic24/N	DS-360274	■	■	■	–	■	0	5	5	–	–	24	250	10	□	□	□	□	□	□

■ Standard  
 □ Optional expandability  
 – Cannot be expanded

1 CAN High Safety Bus

2 Activated 180 days from commissioning

3 Group A = IO modules, globe valve actuators, rotary actuators and air damper actuators

4 Group B = DS-IO7x, DS-CORAx, and DS-CODI

5 Optional extensibility

6 Standard activation; number of M-Bus meters depends on the type of the M-Bus level converter (see page 95 as well as page 109)



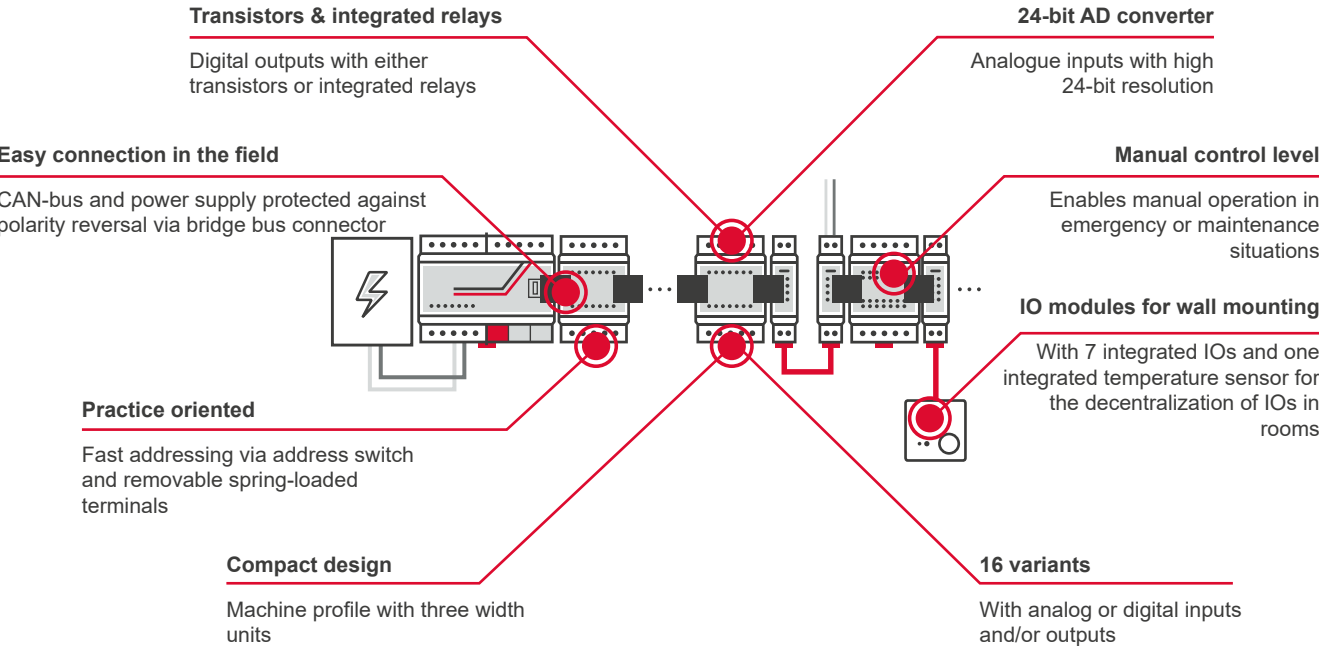
Greater project flexibility

The OPEN IO modules, with a modular design and powerful communication properties, are ideally suited for all controller applications for technical building automation. They are compact, easy to install and can be universally implemented with various measuring elements. A total of 16 variants of the OPEN IO module are available. Whether as analog or digital module, IO combination module or pure input and output module – you will find the right module for your specific project! WSCAD macros and E-Plan macros offer additional support for your specific project. The DEOS IO modules are connected to the OPEN EMS controller via the extremely durable and stable CAN-bus (Controller Area Network) – the most common bus system for networking control units. Per line, this bus system can accommodate up to 99 DEOS IO modules, this ensures high flexibility for subsequent extensions. The bus speed depends on the distance of the IO modules to the controller and can be as high as 1 Mbit/s, depending on bus quality.



IO modules

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Highlights at a glance

- ✓ Counter function – digital inputs can be used as counters
- ✓ Flexible - can be used in retrofit as well as new construction projects
- ✓ Integrated self check function – ensures error-free operation of the modules
- ✓ Top hat rail mounting – designed for DIN-rail mounting
- ✓ Powerful communication – CAN-bus communication with up to 1 Mbit/s and a length of up to 5 km
- ✓ Analog inputs - universally compatible with a wide range of sensor types and characteristics

Do you have questions or do you need support? Our sales partners would be pleased to help you.

✉ info@deos-ag.com  
☎ +49 5971 91133-0

**OPEN IO modules** designed for detecting signals / input values of the field level (sensors) and for controlling technical building equipment via output values



*!-compatible with previous version*

- Highlights at a glance**
- ✓ Suitable for installation in distribution cabinets and sub-distributions
  - ✓ Fast configuration of the IO modules via the OPEN EMS controller
  - ✓ Error-free connection of the IO modules via bridge bus connectors
  - ✓ Easy set up of an additional line – modules in the switch cabinet can be deployed remotely via a PKM module
  - ✓ IO modules with a manual control level (button) – manual control reset is possible via software
  - ✓ LEDs for display of operating status and bus status
  - ✓ Extensive libraries, incl. graphics for efficient engineering



Variants with digital IOs

- Digital inputs: Signal inputs/numeric inputs, 24 V DC, each opto-decoupled with display LED
- Digital outputs:
  - Transistor outputs: 24 V DC, load capacity to max. 80 mA per output
  - Relay outputs: For use category AC1 can be loaded to max. 3 A, see data sheet for additional use categories

Variants with analog IOs

- Analog inputs:
  - For LM-capable IO modules: sensor types Pt1000, Ni1000 <sup>1)</sup>, 10 mV/K, 0-10 V, 0(4)-20 mA <sup>2)</sup> as well as potentiometers
  - For NTC-enabled IO modules: Sensor types 0-10 V, 0(4)-20 mA <sup>2)</sup>, NTC <sup>1)</sup>, KTY <sup>1)</sup> as well as potentiometers
- Analog outputs: 0-10 V DC, can be loaded to max. 8 mA per output

Variants with manual control level

- 1x button per analog output for changing between 2 operating modes (MANUAL, automatic) and for adjusting the output values ± 10% (± 1 V)
- 1x button per digital output (except DS-DO8RH/S) for changing between 3 operating modes (manual ON, manual OFF, and automatic)
- 1x switch (only DS-DO8RH/S) per digital output for changing between 3 operating modes (manual ON, manual OFF, and automatic)
- Fulfill the functions for local override

Hardware equipment & technical data <sup>3)</sup>	Digital IO modules DS-C-x							
	DI16	DI16/G	DI8DO8T	DO8T	DO8TH	DO8R	DO8RH	DO8RH/S
CAN-bus	1x CAN 2.0B, connection via bridge bus connector <sup>4)</sup>							
Transmission rate	0 kbit/s ... 250 kbit/s							
Digital inputs (DI)	16	16	8	–	–	–	–	–
Digital outputs (DO)	–	–	8 (transistor)	8 (transistor)	8 (transistor)	8 (relay)	8 (relay)	8 (relay)
Manual control level	–	–	–	–	8 (button)	–	8 (button)	8 (switch)
Assembly	on standard mounting rail 35 mm							
Dimensions (WxDxH)	54 mm x 60 mm x 90 (98) mm							
Material	Plastic							
Protection standard	IP 20							
Cooling	no fan; by convection							
Ambient temperature	0 ... 50°C							
Ambient humidity	5 ... 90% without condensation							
Installation position	Freely selectable							
Input voltage	24 V DC (19 ... 30 V DC)							
Input current	50 mA	50 mA	50 mA	50 mA	50 mA	100 mA	100 mA	100 mA
Power consumption	< 1.2 W	< 1.2 W	< 1.2 W	< 1.2 W	< 1.2 W	< 2.4 W	< 2.4 W	< 2.4 W
Total power loss	< 1.2 W	< 1.2 W	< 3.5 W	< 3.5 W	< 3.5 W	< 2.4 W	< 2.4 W	< 2.4 W
max. back-up fuse	2 A (slow) for max. 15 IO modules (to be provided externally)							
Connection	Pull-off spring-loaded terminals							

– Cannot be expanded

<sup>1)</sup> Various measuring elements  
<sup>2)</sup> At 0(4)-20 mA: External load resistor 500 ohm required (not available from DEOS AG)  
<sup>3)</sup> Additional product information is provided in the data sheet (see DEOS Portal at portal.deos-ag.com)  
<sup>4)</sup> Up to 15 consecutive modules can be connected via the bridge bus connector. Furthermore, another external power supply must be fed in.



IO modules		Type	Art. no.
With 16 DI	without manual control level	DS-C-DI16	DS-390036
With 16 inverted DI	without manual control level	DS-C-DI16/G	DS-390059
With 8 DI, 8 DO	without manual control level	DS-C-DI8DO8T	DS-390035
With 8 DO (transistor)	without manual control level	DS-C-DO8T	DS-390041
	with manual control level (button)	DS-C-DO8TH	DS-390042
With 8 DO (relays)	without manual control level	DS-C-DO8R	DS-390038
	with manual control level (button)	DS-C-DO8RH	DS-390039
	with manual control level (switch)	DS-C-DO8RH/S	DS-390040

IO modules		NTC-enabled	Type	Art. no.
With 8 AI	without manual control level	–	DS-C-AI8	DS-390037
		■	DS-C-AI8/N	DS-390053
With 8 AI, 4 AO	without manual control level	–	DS-C-AI8AO4	DS-390045
		■	DS-C-AI8AO4/N	DS-390054
	with manual control level (button)	–	DS-C-AI8AO4H	DS-390046
		■	DS-C-AI8AO4H/N	DS-390055
With 4 AO	without manual control level	–	DS-C-AO4	DS-390043
	with manual control level	–	DS-C-AO4H	DS-390044

■ NTC-enabled  
– Not NTC-enabled

*Networking examples see page 86*

Hardware equipment & technical data <sup>1)</sup>	Analog IO modules DS-C-x							
	AI8	AI8/N	AI8AO4	AI8AO4/N	AI8AO4H	AI8AO4H/N	AO4	AO4H
CAN-bus	1x CAN 2.0B, connection via bridge bus connector <sup>2)</sup>							
Transmission rate	0 kbit/s ... 250 kbit/s							
Analog inputs	8 (LM)	8 (NTC)	8 (LM)	8 (NTC)	8 (LM)	8 (NTC)	–	–
Analog outputs	–	–	4	4	4	4	4	4
Manual control level	–	–	–	–	4 (button)	4 (button)	–	4 (button)
Assembly	on standard mounting rail 35 mm							
Dimensions (WxDxH)	54 mm x 60 mm x 90 (98) mm							
Material	Plastic							
Protection standard	IP 20							
Cooling	no fan; by convection							
Ambient temperature	0 ... 50°C							
Ambient humidity	5 ... 90% without condensation							
Installation position	Freely selectable							
Input voltage	24 V DC (19 ... 30 V DC)							
Input current	70 mA	70 mA	110 mA	110 mA	110 mA	110 mA	110 mA	100 mA
Power consumption	< 1.7 W	< 1.7 W	< 2.7 W	< 2.7 W	< 2.7 W	< 2.7 W	< 2.7 W	< 2.7 W
Total power loss	< 1.7 W	< 1.7 W	< 2.7 W	< 2.7 W	< 2.7 W	< 2.7 W	< 2.7 W	< 2.7 W
max. back-up fuse	2 A (slow) for max. 15 IO modules (to be provided externally)							
Connection	Pull-off spring-loaded terminals							

– Cannot be expanded

<sup>1)</sup> Additional product information is provided in the data sheet (see DEOS Portal at portal.deos-ag.com)  
<sup>2)</sup> Up to 15 consecutive modules can be connected via the bridge bus connector. Furthermore, another external power supply must be fed in.

IO modules with 7 integrated IOs and an integrated temperature sensor



- Highlights at a glance**
- ✓ Compact design
  - ✓ Suitable for installation in a standard switch box
  - ✓ Configuration of UOs via simple jumper settings
  - ✓ Efficient configuration and commissioning – set the address and parameterize via finished modules
  - ✓ Integrated temperature sensor
  - ✓ LED, button, and potentiometer for free use (e.g. LED for display of operating states)
  - ✓ Electronic switch contacts ensure noiseless switching of actuators

Variant without manual operation

- Designed for distribution of IOs in rooms, distributor cabinets and sub-distributions
- Additional hardware equipment for integration in the control program
  - Integrated temperature sensor as virtual AI

Variant with manual operation

- Designed for distribution of IOs in rooms, distributor cabinets and sub-distributions
- Additional hardware equipment for integration in the control program
  - Integrated temperature sensor as virtual AI
  - Button as virtual DI
  - Potentiometer as virtual AI
  - LED as virtual DO

Hardware equipment & technical data <sup>1)</sup>	DS-x	
	IO7	IO7-B
CAN-bus	1x CAN 2.0B	
Transmission rate	50 kBit/s	
Temperature sensor integrated	■ <sup>2)</sup>	■ <sup>2)</sup>
Temperature range	0 ... 50 °C	
LED	–	■ <sup>2)</sup>
Manual control level		
Button	–	1x <sup>2)</sup>
Potentiometer	–	■ <sup>2)</sup>
Universal outputs	2x selectable via jumper: 2 ... 10 V, 24 V or 24 V PWM	
Digital inputs	3x 24 V AC/DC	
Analog inputs	1x temperature sensor 10 mV/K (0 ... 50 °C)	
Analog outputs	1x 0 ... 10 V DC	

Hardware equipment & technical data <sup>1)</sup>	DS-x	
	IO7	IO7-B
Assembly	Surface mounting, wall mounting, or in a deep installation box	
Dimensions (WxDxH)	84 mm x 28 mm x 84 mm	
Material	Plastic	
Protection standard	IP 20	
Cooling	no fan; by convection	
Ambient temperature	0 ... 50 °C	
Ambient humidity	5 ... 90% without condensation	
Input voltage	24 V AC/DC	
Input current	approx. 50 mA <sup>3)</sup>	
Power consumption	1.2 W	
max. back-up fuse	2 A	
Connection	Screw-type terminals	

- Standard
- Cannot be expanded

Multi-IO modules	Type	Art. no.
With internal control	without manual operation	DS-IO7 DS-390013
	with manual operation	DS-IO7-B DS-390012

<sup>1)</sup> Additional product information is provided in the data sheet (see DEOS Portal at portal.deos-ag.com)  
<sup>2)</sup> After connection to the controller, the LED as DO, the button as DI, the potentiometer as AI, and the internal sensor as AI can be incorporated in the programming.  
<sup>3)</sup> Plus current consumption of the connected consumers  
<sup>4)</sup> Quantity-dependent special prices on request

LoRaWAN IO module

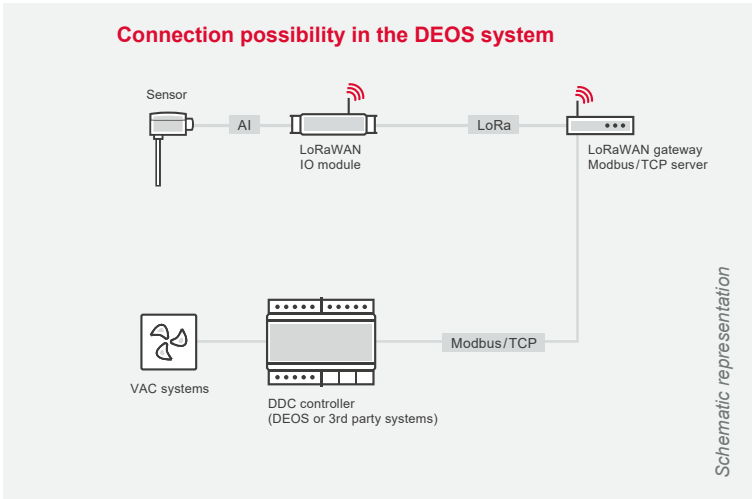


- Highlights at a glance**
- ✓ LoRaWAN IO module for data acquisition from sensors
  - ✓ Variety of I/O interfaces such as analog and/or digital IOs, serial interfaces as well as relay outputs
  - ✓ Easy integration of conventional sensors into the IoT world
  - ✓ Industrial design in metal housing

more on the subject of LoRaWAN from page 120

LoRaWAN IO modules

- Easy connection with multiple wired sensors for recording error messages
- Integration of wired Modbus devices via serial interface possible
- Transmission up to a line of sight of 10 km
- Multiple trigger conditions and actions
- Integrated watchdog for work stability
- Delivery incl. plug-in power supply unit



Hardware equipment & Technical data <sup>1)</sup>	DS-L-300
Frequency range	EU 868
Surrounding area	Indoors
Digital inputs (DI)	4x
Digital outputs (DO)	2x
Analog inputs (AI)	each 2x 4 ... 20 mA, 0 ... 10 V, PT100 RTD
RS232	1x (Transparent)
RS482	1x (Modbus RTU)
USB	1x USB-C
LEDs	1x system, 1x ACT
other	Watchdog, Timer
Dimensions (WxDxH)	70 mm x 22 mm x 93 mm
Protection standard	IP 30
Input voltage	5 ... 24 V DC
Ambient temperature	-20 ... 60 °C
Ambient humidity	0 ... 95 % RH, non-condensing at 25 °C

LoRaWAN	Type	Art. no.
LoRaWAN IO module <sup>2)</sup>	4x DI, 2x DO, 2x AI	DS-L-UC300 DS-360530

<sup>1)</sup> Additional product information is provided in the data sheet (see DEOS Portal at portal.deos-ag.com)  
<sup>2)</sup> Battery not included  
<sup>3)</sup> License for LoRaWAN Gateway DS-L-GWLIC-1, DS-360454 (see page 130) included in price



**Coupler module** for infeed of the supply voltage and the CAN-bus in IO modules



*!-compatible with previous version*

**Coupler module DS-PKM**

- Coupler module for infeed of the supply voltage and the CAN-bus in IO modules <sup>1)</sup> at the start of the CAN-bus
- For tapping the supply voltage and the CAN-bus at the end of the CAN-bus to open a new row of modules
- End of line resistor can be switched on/off via switch
- Connection to IO modules via bridge bus connector

Hardware equipment & technical data <sup>2)</sup>		DS-PKM
CAN-bus		1x CAN 2.0B
Assembly		on standard mounting rail 35 mm
Dimensions (WxDxH)		17.5 mm x 60 mm x 90 (98) mm
Material		Plastic
Protection standard		IP 20
Cooling		no fan; by convection
Ambient temperature		0 ... 50°C
Ambient humidity		5 ... 90% without condensation
Installation position		Freely selectable
End of line resistor		120 Ω
Input voltage		24 V DC (19 ... 30 V DC)
Input current		1.65 A at max. 15 IO modules
Power loss		0.15 W with a max. of 15 IO modules
max. back-up fuse		2 A
Connection		Pull-off spring-loaded terminals

IO modules – accessories	PU	Type	Art. no.
Coupler module	1x	DS-PKM	DS-390024
	2x	DS-PKM -2x-	DS-390022

**I/U converter** for converting 0(4)-20 mA signals to 0-10 V signals



**I/U converter**

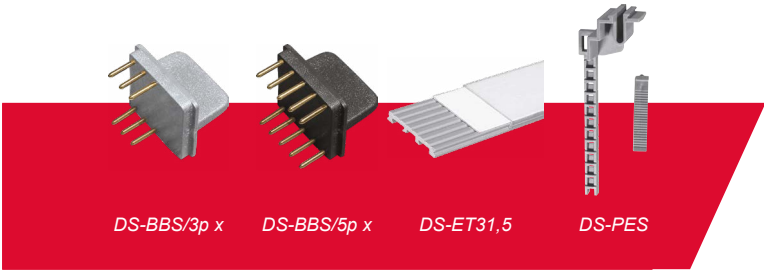
- Neat solution to connect probes/sensors with current giving signal to the DEOS system
- Compatible with all analog inputs of the OPEN system
- 2-channel for parallel conversion of 2 measuring signals
- Connection to IO modules via bridge bus connector

Hardware equipment & technical data <sup>1)</sup>		DS-C-I/U-Converter
Assembly		on standard mounting rail 35 mm
Dimensions (WxDxH)		17.5 mm x 60 mm x 90 (98) mm
Material		Plastic
Protection standard		IP 20
Cooling		no fan; by convection
Ambient temperature		0 ... 50 °C
Ambient humidity		5 ... 90%, non-condensing
Installation position		Freely selectable
Permis. voltage		≤ 30 V DC
Permis. amperage		≤ 2 A
max. main fuse		2 A (slow blow)
Connection		Pull-off spring-loaded terminals

IO modules – accessories	Type	Art. no.
I/U converter	DS-C-I/U-Converter	DS-390060

<sup>1</sup> Up to 15 consecutive modules can be connected via the bridge bus connector. Furthermore, another external power supply must be fed in.  
<sup>2</sup> Additional product information is provided in the data sheet (see DEOS Portal at portal.deos-ag.com)

**Accessories – power supply and more**



**Networking with bridge bus connector**

- For connecting the CAN-bus and/or power supply (see networking examples page 29)
- Increased operational reliability due to the combination of 3- and 5-pin bridge bus connectors – protection against damage to the controller in the event of a short circuit on the IO modules (external short circuit)
- Save space and reduce costs – only a single coupler module (PKM) is required - less than when using exclusively 5-pin bridge bus connectors

Technical data DS-ET315	
Assembly	either with mounting base DS-PES with adhesive tape
Dimensions (LxDxH)	1000 mm x 5.6 mm x 31.5 mm
max. label width	29 mm
Material	Plastic
Base	hard PVC, gray (RAL 7030)
Cover	hard PVC, transparent

**Label carriers – labelling of the IO modules**

- For labelling the IO modules with Zweckform labels no. 3657 or no. 4780
- For bonding on mounting base DS-PES

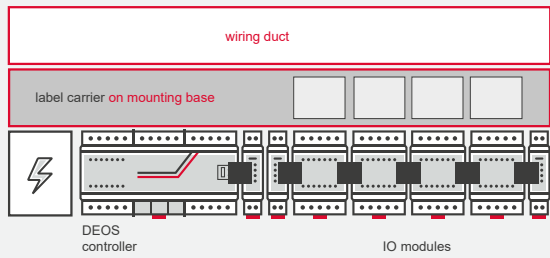
**Mounting base**

- For label carrier DS-ET315
- For mounting on wiring ducts
- Packing unit 25 pieces

**Mounting examples**

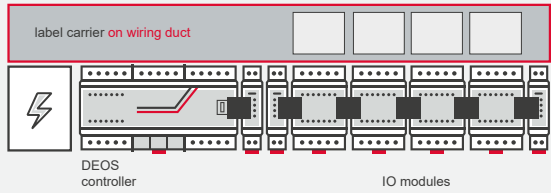
**Mounting with**

- Label carrier DE-ET315
- Mounting base DS-PES



**Mounting with**

- Label carrier DE-ET315
- Adhesive tape



Schematic representation

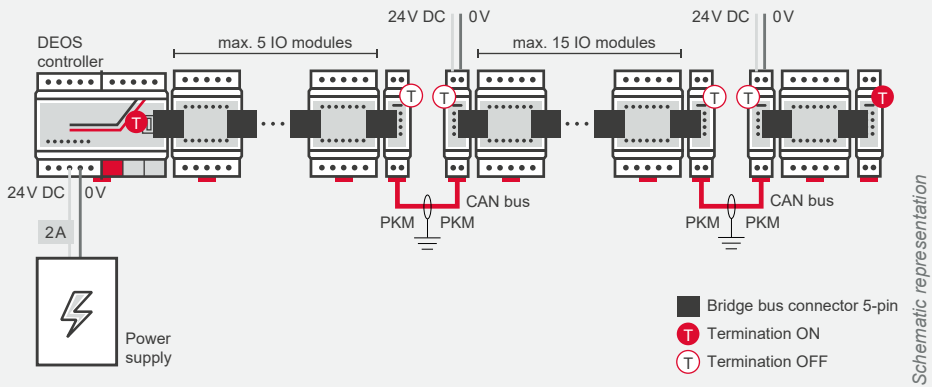
IO modules – accessories		Type	Art. no.
Bridge bus connector	3-pin, PH=10 pcs.	DS-BBS/3p 10	DS-390028
	3-pin, PH=100 pcs.	DS-BBS/3p 100	DS-390029
	5-pin, PH=10 pcs.	DS-BBS/5p 10	DS-390019
	5-pin, PH=100 pcs.	DS-BBS/5p 100	DS-390020
Label carrier	Price per running meter	DS-ET315	DS-350045
Mounting base	for DS-ET315, PH 25 pcs.	DS-PES	DS-350046

Networking example - CAN-bus

Controller at the start of the CAN-bus

Practical tip

- Enable termination at both ends
- Stub cable < 1 m

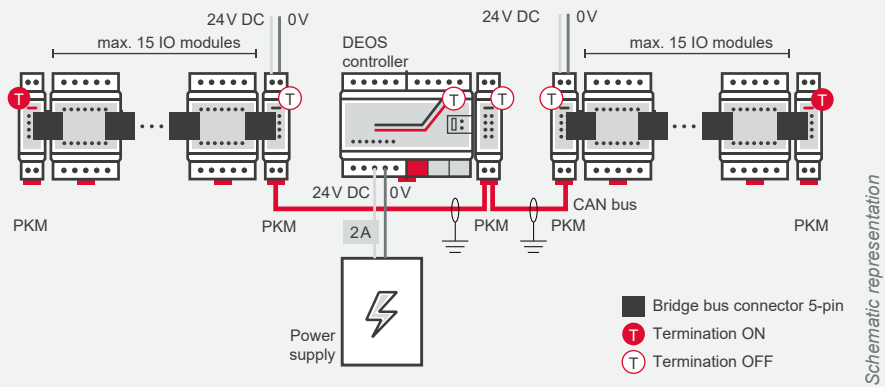


Networking example - CAN-bus

Controller in the middle of the CAN-bus

Practical tip

- Enable termination at both ends
- The following applies to the screen:
  - Avoid potential shift / displacement
  - Connect screens or ground on 1 side

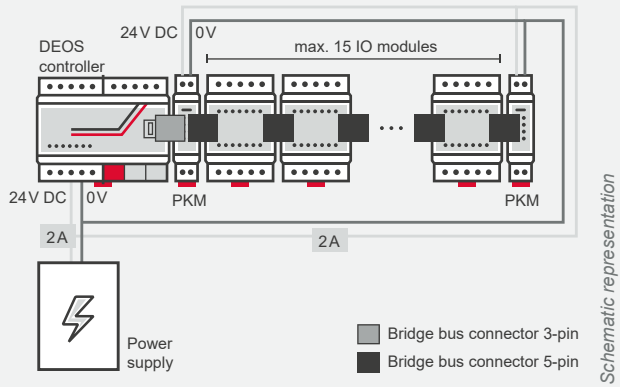


Networking example – Hot swapping

Replace IO modules during operation

Practical tip

- When one of the IO modules is removed, the power supply of all remaining modules remains intact\*



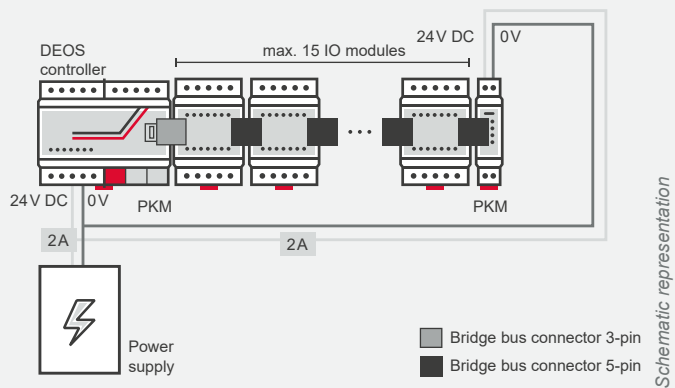
\* The DEOS IO modules technically permit 2-stream infeed of the 24 V DC, as long as the same power supply is used.

Networking example – Bridge bus connector

Combine 3- and 5-pin bridge bus connectors

Practical tip

- Increased operational reliability due to the combination of 3- and 5-pin bridge bus connectors – protection against damage to the controller in the event of a short circuit on the IO modules (external short circuit)\*
- Save space and reduce costs - you save 2 coupler modules (PKM), one bridge bus connector, and the wiring of the CAN bus



You create your circuit diagrams with EPLAN or WSCAD?  
We make your work easier and provide you with updated part libraries for our controllers and IO modules!

EPLAN

- In cooperation with EPLAN we provide the article data of our automation stations and IO modules with the corresponding electrotechnical information.



- Updates macros for EPLAN Electric P8 (software version 1.9) are provided in the DEOS Portal.



Your benefits

- The macros reflect our many years of experience in plant engineering and our know-how in building management systems.
- Continuity from export / import

WSCAD

- In cooperation with WSCAD we provide the article data of our automation stations and IO modules with the corresponding electrotechnical information.
- The starting point is the WSCAD automation schematics, e.g. from a control cabinet wiring for a ventilation system. After planning is completed, the counted data points are displayed collectively in WSCAD. In this way, the correct DEOS DDC and IO modules can be easily and quickly selected from the DEOS portfolio and created in WSCAD.



Your benefits

- Automatically set and assign inputs and outputs
- WSCAD export function – export I/O lists from WSCAD and import them into OPEN FXL

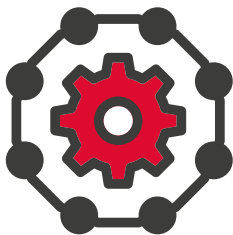
The article libraries contain article data for the following controllers and IO modules

Controllers

- OPEN.WRX series
- OPEN 4100 EMS series
- OPEN 3100 EMS series
- OPEN 810 EMS series
- OPEN 710 EMS series
- OPEN 600 EMS series
- OPEN 500 EMS series

IO modules

- Digital IO modules
  - C-DIx series
  - C-DOx series
- Analog IO modules
  - C-AIx series
  - C-AOx series

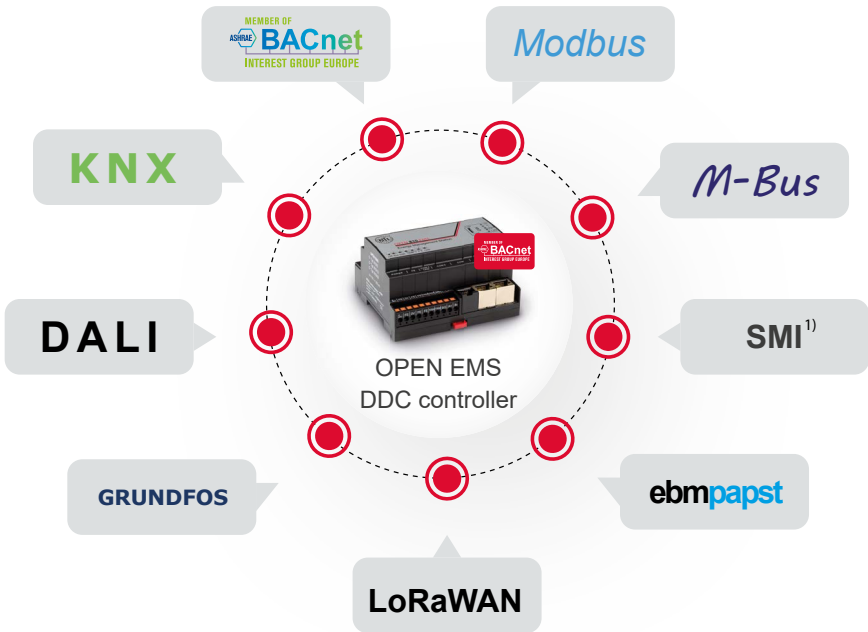


Conformity & open for many protocols

OPEN EMS is a high-performance, freely programmable automation system. For communication with various devices the DEOS controllers simultaneously process up to 12 different protocols. Including:

- BACnet
- M-Bus
- KNX
- Modbus, and many more

The processing power is dynamically adapted to the respective, user-dependent configuration. This allows the simultaneous use of a large number of different possible functions, either exclusively or proportionately. The actual system load results from the combination of all bus protocols used, functions in the respective parameterization and the very different system configurations.



1 Connection via an SMI on KNX gateway can be resolved. Please get in touch with your sales contact for more information.

System integration

BACnet Secure Connect.....	90
BACnet .....	92
Modbus .....	93
KNX.....	94
M-Bus .....	95
DALI .....	96
LoRaWAN.....	97
Other protocols .....	98
ebm-pabst.....	98
Grundfos .....	98

Highlights at a glance

- ✓

Extensive libraries, specifically for system integration and efficient engineering
- ✓

Configuration of protocols live on the controller without reloading
- ✓

Professional graphics for configuration of standard BA protocols
- ✓

Concurrent use of multiple protocols on one controller
- ✓

Finished FUP modules – ideal for creating your own, product-specific libraries
- ✓

Dynamic adaptation of processing power to the respective user-dependent configuration

Simply contact us if you encounter non-standardized communication interfaces in your project. We are happy to help you with the connection or successful implementation in this case as well.

✉ info@deos-ag.com  
☎ +49 5971 91133-0

BACnet Secure Connect

- What is BACnet/SC?

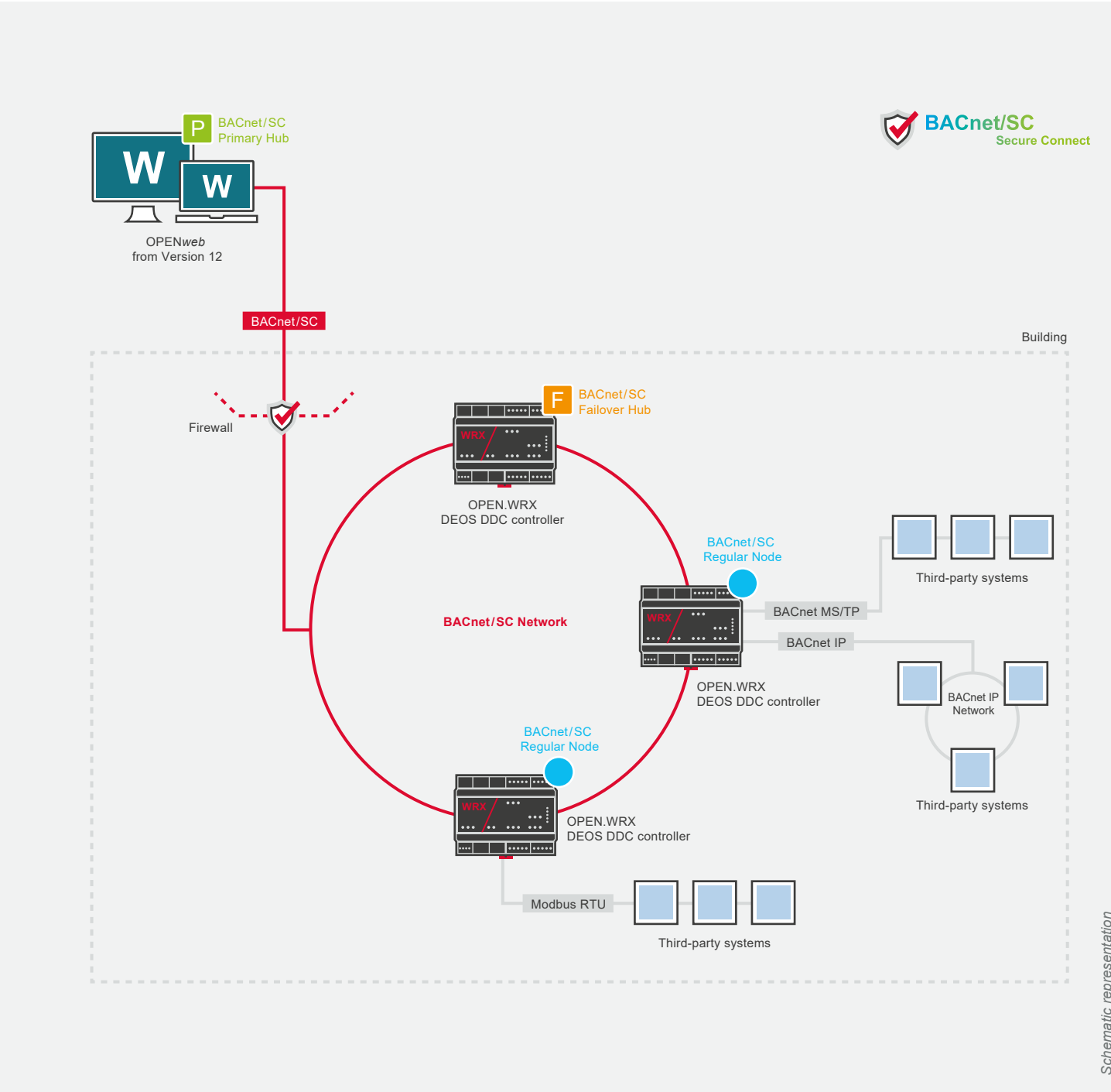
The new communication via BACnet/SC extends the existing BACnet standard and delivers the well-established interoperability across manufacturers. Independent laboratories test BACnet/SC-compatible devices, which are subsequently certified by BACnet-International. This ensures a high level of quality, independent of the manufacturer. To ensure interoperability with the specific management functions in the new BACnet/SC communication standard, compatible devices must also be certified with the new BACnet profile B-SCHUB (BACnet Secure Connect Hub).
- How does BACnet/SC work?

Hub-and-spoke topology is used for communication between BACnet/SC devices. One of the BACnet/SC devices is configured as the hub (Primary Hub) and manages the communication and data transmission of the encrypted BACnet objects. All other BACnet/SC network nodes are configured as simple nodes and communicate to the Primary Hub. There may only be one Primary Hub in the entire BACnet Secure Connect network. In contrast, the number of simple nodes is unlimited. To guarantee a high level of reliability, in addition to the Primary Hub, BACnet/SC offers the special feature of configuring a further reserve hub (Failover Hub). If the Primary Hub fails, the Failover Hub automatically takes over communication management in the BACnet Secure Connect network. The configuration of a Failover Hub is optional.
- High network flexibility through hub-and-spoke topology

The hub-and-spoke topology also offers you a high degree of network flexibility when setting up and expanding the network. New BACnet/SC participants can be integrated quickly and easily by providing them with the corresponding network number and the address (IP address or host name) of the device configured as a hub. A complex BBMD (BACnet Broadcast Management Device) configuration is no longer necessary. In addition, it is now possible to address network subscribers using dynamic IP addresses, which provides significantly increased flexibility for network setup, network configuration and change management during operation.
- Modern security mechanism: TLS 1.3 standard

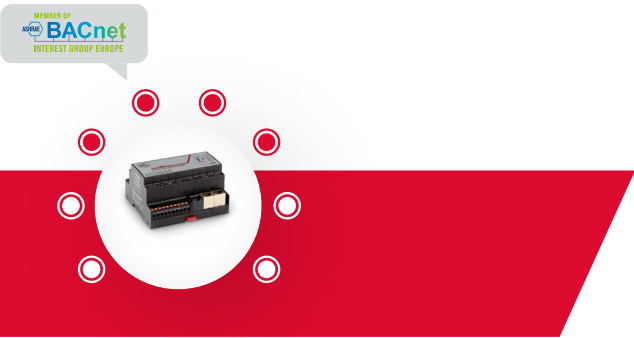
To ensure secure, encrypted communication, BACnet/SC makes use of modern security mechanisms such as the current TLS 1.3 standard. This offers 256-bit encryption and uses the public key infrastructure. To allow BACnet/SC devices to communicate with each other in encrypted form, certain certificates must be exchanged. Certificates are exchanged in order to authenticate the participants among themselves, thereby uniquely identifying them and ensuring that communication is authorized. This certificate exchange is the key element in the new BACnet standard. Each BACnet/SC participant requires a "private key" and a "public key", which is exchanged as a signed "operational certificate" during communication. These two keys are used to encrypt and decrypt messages. To guarantee a high level of security in the long term, the certificates must be replaced on a regular basis.

Would you like to realize a project with BACnet/SC?  
Simply contact us! Together we will work out a solution for you:  
✉ info@deos-ag.com  
☎ +49 5971 91133-0

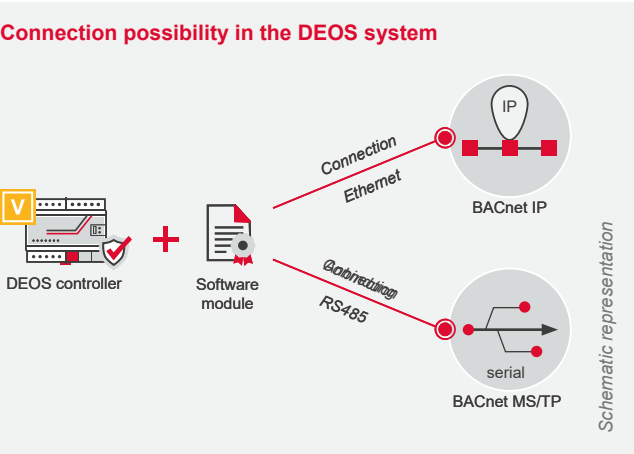


Connection of BACnet Secure Connect		OPEN.WRX	OPEN EMS	OPENweb On-premise	OPENweb Cloud	Type	Art. no.
BACnet/SC Hub	for DEOS hardware	■				DS-BACnet/SC Hub	DS-371192
	for DEOS software			■	■	DS-OWB.BACnet/SC Hub	DS-371100





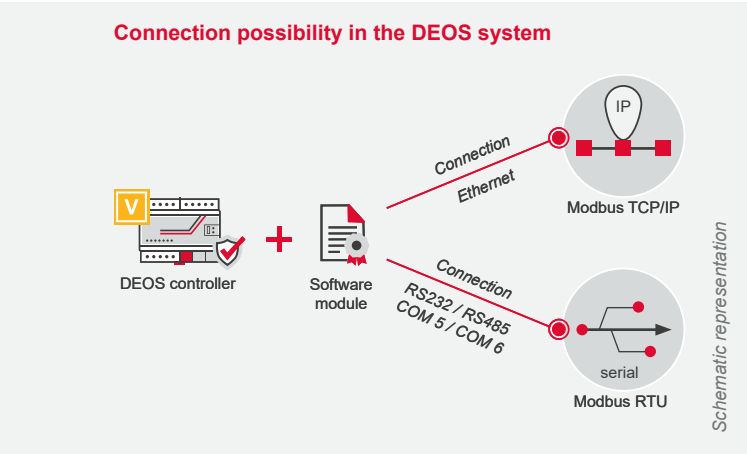
- Highlights at a glance**
- ✓ Support of BACnet/IP and BACnet MS/TP
  - ✓ Controller certified in accordance with B-BC profile
  - ✓ Implementation in accordance with AMEV guidelines and the AMEV AS-B profile



Connection of BACnet objects		OPEN.WRX	OPEN 4100 EMS	OPEN 3100 EMS	OPEN 810 EMS	OPEN 710 EMS	OPEN 600 EMS	OPEN 500 EMS	Type	Art. no.
Extension to	500 BACnet objects						■		DS-OPEN BAC5	DS-371265
	1250 BACnet objects				■				DS-OPEN BAC 12	DS-371266
	1500 BACnet objects				■				DS-OPEN BAC15	DS-371267
	2000 BACnet objects				■				DS-OPEN BAC20	DS-371268



- Highlights at a glance**
- ✓ Support of Modbus master and Modbus slave
  - ✓ Support of Modbus TCP and Modbus RTU
  - ✓ Modbus RTU connection via RS485, RS232 or virtual COM ports (e.g., COM 5 and COM 6)
  - ✓ Efficient engineering through Modbus macros and Modbus FUP modules



Hardware equipment & technical data <sup>1)</sup>		DS-MOD GW
Display and control elements		2x LED (1x RS485 Tx, 1x RS485 Rx)
Connections		
RS485		1x screw-type terminal block
Ethernet		1x RJ45, 10/100 Mbps
Assembly		on standard mounting rail 35 mm
Width units (WU)		1 WU (18 mm)
Protection standard		IP 20
Ambient temperature		0 ... 55°C
Ambient humidity		0 ... 95% RH, non-condensing
Input voltage		9 ... 26 V DC

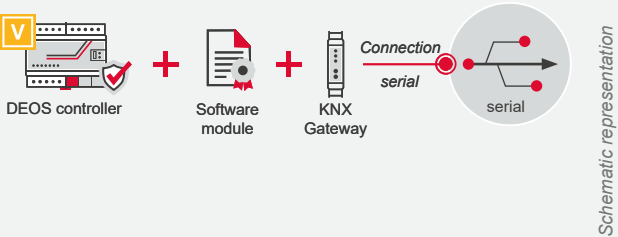
Connection of Modbus data points		OPEN 4100 EMS	OPEN 3100 EMS	OPEN 810 EMS	OPEN 710 EMS	OPEN 600 EMS	OPEN 500 EMS	Type	Art. no.
Modbus master	25 Modbus data points	■	■	■	■	■	■	DS-MOD MA25	DS-371220
	50 Modbus data points	■	■	■	■	■	■	DS-MOD MA50	DS-371170
	100 Modbus data points	■	■	■	■	■	■	DS-MOD MA100	DS-371264
	250 Modbus data points	■	■	■	■			DS-MOD MA250	DS-371171
	500 Modbus data points	■	■	■	■			DS-MOD MA500	DS-371194
	1000 Modbus data points	■	■	■	■			DS-MOD MA1000	DS-371195
Modbus slave		■	■	■	■	■	■	DS-MOD SL	DS-371169

Modbus – accessories		Type	Art. no.
Interface converters Modbus TCP/IP – Modbus RTU		DS-MOD GW	DS-3500168



- Highlights at a glance**
- ✓ Support of KNX/IP
  - ✓ Efficient engineering through KNX macros and KNX FUP modules

Connection possibility in the DEOS system



Hardware equipment & technical data <sup>1)</sup> DS-KNX IP IF731

<b>Display and control elements</b>	
Button	2x diagnostics
LED	3x (multicolor)
Programming button KNX	1x with LED (red)
<b>Connections</b>	
LAN	RJ45
Ethernet	10Base-T
KNX	Terminal
<b>Assembly</b>	
on standard mounting rail 35 mm	
<b>Width units (WU)</b>	1 WU (18 mm)
<b>Material</b>	Plastic (PC)
<b>Protection standard</b>	IP 20
<b>Ambient temperature</b>	-5 ... 45°C
<b>Ambient humidity</b>	5 ... 93%, non-condensing
<b>Input current</b>	Via KNX bus, approx. 15 mA

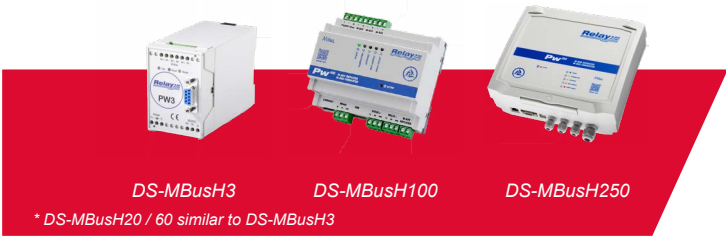
■ Compatible

Connection of KNX data points	OPEN 4100 EMS	OPEN 3100 EMS	OPEN 810 EMS	OPEN 710 EMS	OPEN 600 EMS	OPEN 500 EMS	Type	Art. no.
50 KNX data points	■	■	■	■	■	■	DS-KNX50	DS-371198
100 KNX data points	■	■	■	■	■	■	DS-KNX100	DS-371193
250 KNX data points	■	■	■	■			DS-KNX250	DS-371121
500 KNX data points	■	■	■	■			DS-KNX500	DS-371197
1000 KNX data points	■	■	■	■			DS-KNX1000	DS-371123

KNX – accessories	Type	Art. no.
Interface converters/gateway KNX IP – KNX TP	DS-KNX IP IF731	DS-360010



**M-Bus level converter** for connection of the M-Bus protocol (IP or serial)



Variants DS-MBusHx – M-Bus level converters

- Serial M-Bus level converter
- Supports operation of up to 3, 20, 60 or 250 M-Bus counters (standard loads)
- Variants with additional interfaces like RS485, Ethernet and USB

Hardware equipment & Technical data <sup>1)</sup>	DS-MBusx				
	H3	H20	H60	H100	H250
<b>max. standard loads</b>	3	20	60	100	250
<b>Connections</b>					
M-Bus	■	■	■	■	■
RS232 (SUB-D 9-pin)	1x	1x	1x	–	1x
RS232 (screw-type terminal)	1x	1x	1x	2x	1x
RS485	–	–	1x	1x	1x
Ethernet	–	–	–	1x	1x
USB	–	–	–	1x	1x
<b>Assembly</b>					
on standard mounting rail 35 mm					
<b>Protection standard</b>	IP 20	IP 20	IP 20	IP 30	IP 52
<b>Ambient temperature</b>	0 ... 55 °C	0 ... 55 °C	0 ... 55 °C	0 ... 50 °C	0 ... 45 °C
<b>Input voltage</b>	10 ... 27 V AC	10 ... 27 V AC	20 ... 30 V AC	42 ... 43,5 V DC	110 ... 240 V AC
<b>Power consumption</b>	10,5 ... 28 V DC	10,5 ... 28 V DC	20 ... 45 V DC		
	6 W bei AC	6 W bei AC	15 W bei AC	15 W	100 W
<b>Power consumption</b>	4 W bei DC	4 W bei DC	15 W bei DC		
<b>Connection</b>	Screw-type terminals				

■ Standard  
– Not available

M-Bus accessories	Type	Art. no.
<b>M-Bus level converters RS232</b>	≤ 3 standard loads	DS-MBusH3 DS-024086
	≤ 20 standard loads <sup>1)</sup>	DS-MBusH20 DS-024087
	≤ 60 standard loads <sup>1)</sup>	DS-MBusH60 DS-024088
	≤ 100 standard loads <sup>1), 2)</sup>	DS-MBusH100 DS-024103
	≤ 250 standard loads <sup>1)</sup>	DS-MBusH250 DS-024089
<b>Power supply</b>	for DS-MBusH100	DS-PSMBus-NT016 DS-024104
<b>RS232 interface cables</b>	OPEN EMS – data end device <sup>3)</sup>	DS-RJ45DK9DE DS-024081
	OPEN EMS – 3 core ends <sup>4)</sup>	DS-RJ45AE3 DS-350203

<sup>1)</sup> Maximum 10 M-Bus counters can be used for OPEN 500 EMS and OPEN 600 EMS  
<sup>2)</sup> 1x power unit DS-PSMBus-NT016 is required per device  
<sup>3)</sup> For M-Bus level converter DS-MBusH3, DS-MBusH20 and DS-MBusH60; 1x required per device  
<sup>4)</sup> For M-Bus level converter DS-MBusH100 and DS-MBusH250; 1x required per device

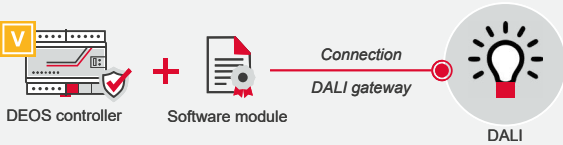
DALI-2



Highlights at a glance

- ✓ Digital Addressable Lighting Interface (DALI)
- ✓ Implementation conforms to DALI Standard 2.0
- ✓ Each DALI device can be assigned its own address, which enables the individual devices to be controlled digitally
- ✓ DALI devices programmable for operation in groups
- ✓ Allows 2-way communication between devices and so can report faults or answer queries about its status or provide other information
- ✓ Different lighting functions and moods can be set in different rooms or areas of a building

Connection possibility in the DEOS system



Schematic representation

Would you like to realize a project with DALI?  
Simply contact us! Together we will work out a solution for you:  
✉ info@deos-ag.com  
☎ +49 5971 91133-0

LoRaWAN Gateway – with integrated Modbus interface for building automation



DS-LoRaGateway

Highlights at a glance<sup>1)</sup>

- ✓ Our data collector – exchanges building data with the DEOS pro.building Suite through the Internet
- ✓ Data provision for further use to the local control system via Modbus/TCP
- ✓ Accessories to strengthen the radio signal for indoor and outdoor use
  - ✓ Antennas
  - ✓ Antenna extension cables
- ✓ Expandable with LoRaWAN enabled DEOS or third-party components

more on the subject of LoRaWAN from page 120

Equipment & functions <sup>1)</sup> DS-LoRaGateway		Equipment & functions <sup>1)</sup> DS-LoRaGateway	
Frequency band	EU 868	CPU	QuadCore 1,5 GHz 64-bit ARM Cortex-A53
LoRaWAN	Antenna (external)	RAM memory	512 MB DDR4 RAM
Channels	8x	Flash memory	8 GB eMMC
Output power	max. 27 dBm	Assembly	Table-, wall- or pole mounting
WiFi	Antenna (internal) fully integrated	Dimensions (BxTxH)	180 mm x 56,5 mm x 110 mm
LTE <sup>2)</sup>	–	Material	Plastic
Ethernet		Protection standard	IP 65
Ports	1x RJ45 (PoE PD)	Ambient temperature	-40 ... 70 °C
Transmission rate	10/100/1000 Mbps (Base-T)	Ambient humidity	0 ... 95 % rH, non-condensing at 25 °C
USB	1x type C	Input voltage	optionally 9 ...24 V DC
Reset button	1x		PoE in acc. IEEE-Standard 802.3af
LEDs	1x each Power, Status, LoRa, WiFi, LTE, Ethernet	Power consumption	≤ 4,2 W
	– optional		

LoRaWAN		Type	Art. no.
LoRaWAN Gateway <sup>3)</sup>	Incl. plug-in power supply	DS-LoRaGateway	DS-360448
	License <sup>4)</sup>	DS-L-GWLIC-1	DS-360454
Antenna	Wall or pole mounting, for outdoor use	DS-L-ANT1 LoRaGateway	DS-360471
	Magnetic base, for indoor use	DS-L-ANT2 LoRaGateway	DS-360472
Extension cable antenna <sup>5)</sup>	Length: 5 m	DS-N-AK5	DS-360379
	Length: 10 m	DS-N-AK10	DS-360380

LoRaWAN – services		Type	Art. no.
Special configuration <sup>6)</sup>	Per 15 minutes or part thereof	DS-L-Service TEO/LoRa	DS-360555
	Individual service package	DS-L-Service TEO/LoRa	DS-360555

<sup>1)</sup> Additional product information is provided in the data sheet (see DEOS Portal at portal.deos-ag.com)  
<sup>2)</sup> Devices with LTE connection on request  
<sup>3)</sup> In addition, a license is required to connect Modbus data points on the OPEN EMS, see page 93  
<sup>4)</sup> Only required for third-party LoRaWAN subscribers not sourced through DEOS AG  
<sup>5)</sup> Extension cables reduce the output power of the radio transmission  
<sup>6)</sup> Billing on a time and material basis for special configurations. Special configurations are e.g. support during commissioning, pre-configure rooms, assign LoRa devices to rooms, individual project support



## Highlights at a glance

- ✓ Up to 128 software modules can be connected via RS485
- ✓ Connection is also possible via virtual COM ports (for example, COM 5 and COM 6)
- ✓ Efficient engineering through ebm-papst FUP modules
- ✓ 1 software module = 1 ebm-papst fan

- Compatible

							■ Compatible	
Connection of ebm-papst data points	OPEN 4100 EMS	OPEN 3100 EMS	OPEN 810 EMS	OPEN 710 EMS	OPEN 600 EMS	OPEN 500 EMS	Type	Art. no.
7 ebm-papst data points (= 1 fan) <sup>1)</sup>	■	■	■	■	■	■	DS-EBM-PST	DS-371206



## Highlights at a glance

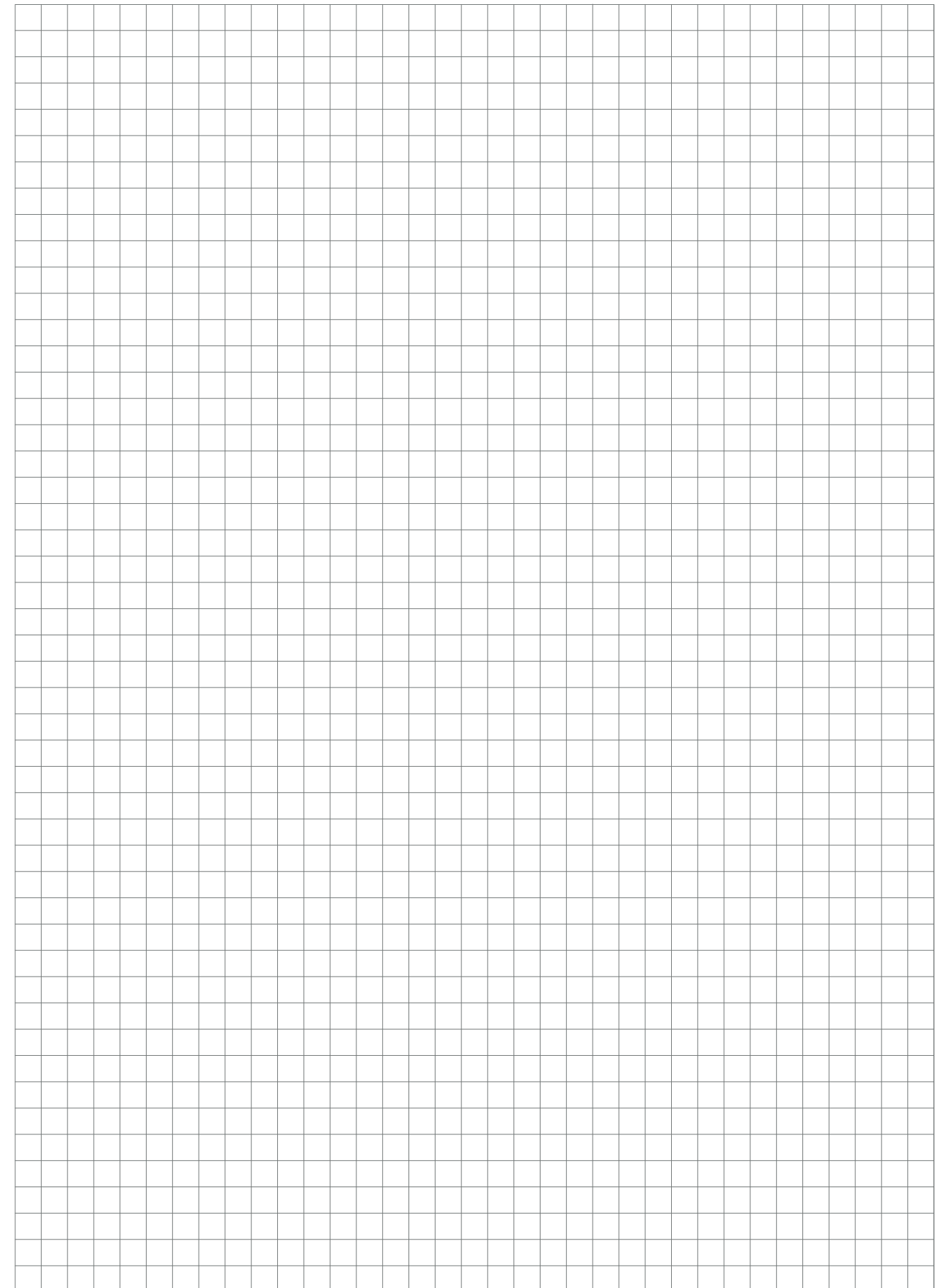
- ✓ Up to 31 software modules can be connected via RS485
- ✓ Connection is also possible via virtual COM ports (for example, COM 5 and COM 6)
- ✓ Efficient engineering through Grundfos macros and Grundfos FUP modules
- ✓ 1 software module = 1 Grundfos pump

- Compatible

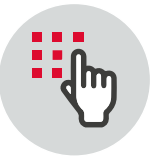
Connection of Grundfos data points	OPEN 4100 EMS	OPEN 3100 EMS	OPEN 810 EMS	OPEN 710 EMS	OPEN 600 EMS	OPEN 500 EMS	Type	Art. no.
	■	■	■	■	■	■		
7 Grundfos data points (= 1 pump) <sup>1)</sup>	■	■	■	■	■	■	DS-GR-PU	DS-371207

- Compatible

1 DS-EBM-PST and DS-GR-PU cannot be used simultaneously on one controller







Optimal integration in the overall system

The DEOS portfolio of control units enables seamless integration in the overall DEOS system and offers broad functionality.

The perfect interaction, arising from the combination of the client versions of Onboard BMS OPENview on the controller or BMS OPENweb and the full graphic touch operation solution from DEOS, is scalable and thus suitable for micro-projects as well as large projects and everything in between. All of our systems are factory-equipped and preconfigured with the necessary licenses and applications.

The portfolio is supplemented with interesting bundles that make your life easier: For the LED touchscreens we bundle the mini PC for the BMS server installation as a built-in device for the switch cabinet.



Android Touch-PC

- Preconfigured and licensed with the OPENweb App and OPENview App for direct implementation
- 3 sizes are available
- Consistent full graphic operation of the DEOS systems as remote client solution



LED touch-screen monitor incl. mini PC

- Package including mini PC with pre-configured DEOS OPENweb/OPENview applications
- Compact server/client BMS for small and medium-sized systems
- LED touch available in 3 sizes
- Consistent full graphic operation of the DEOS systems



Operation solutions

Android Touch PCs .....	103
Touch screens & mini PCs .....	104
Mini PCs .....	104

Highlights at a glance

- ✓

Touch operating solutions for consistent graphic operation from DDC to BMS
- ✓

Fast and practice-oriented installation
- ✓

Touch operating solutions are delivered pre-configured as plug & play solutions for immediate use
- ✓

Factory-equipped and preconfigured with the necessary licenses and applications
- ✓

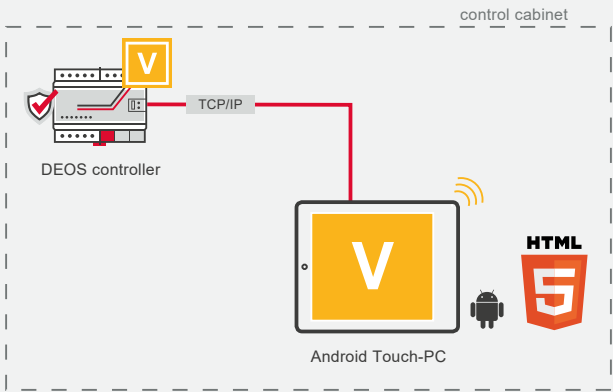
All touch operating solutions fully IP-enabled
- ✓

Available in different sizes

Do you have questions or do you need support? Our Sales Partners would be pleased to help you.

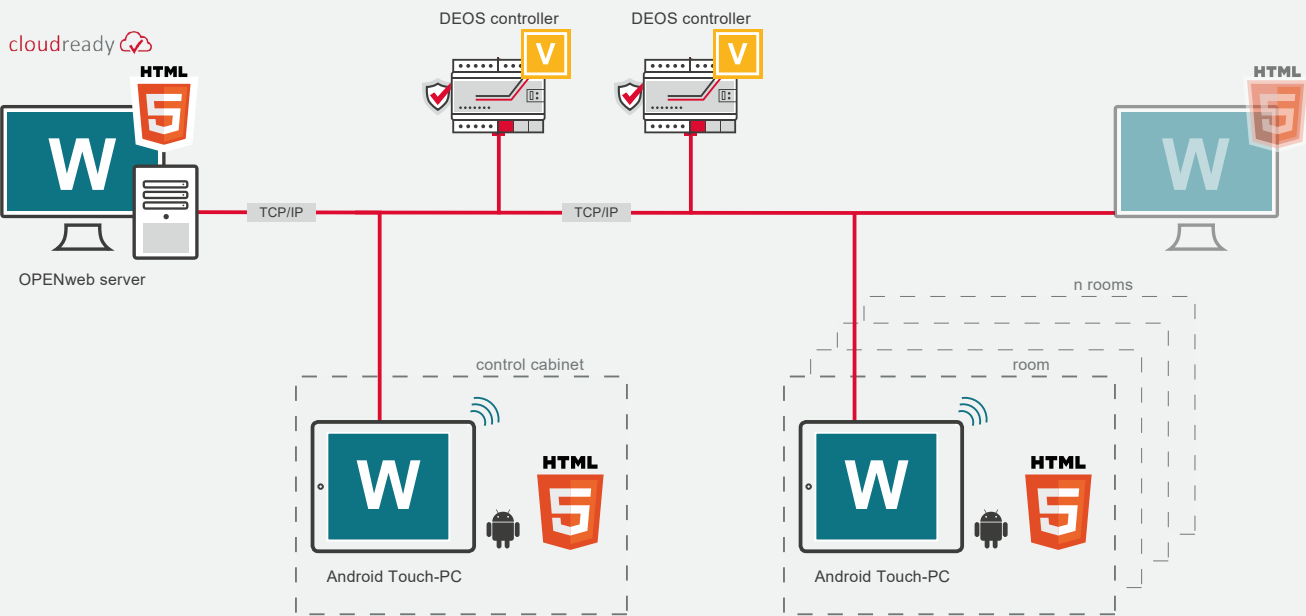
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Networking example DEOS controller with Onboard BMS – Android Touch-PC



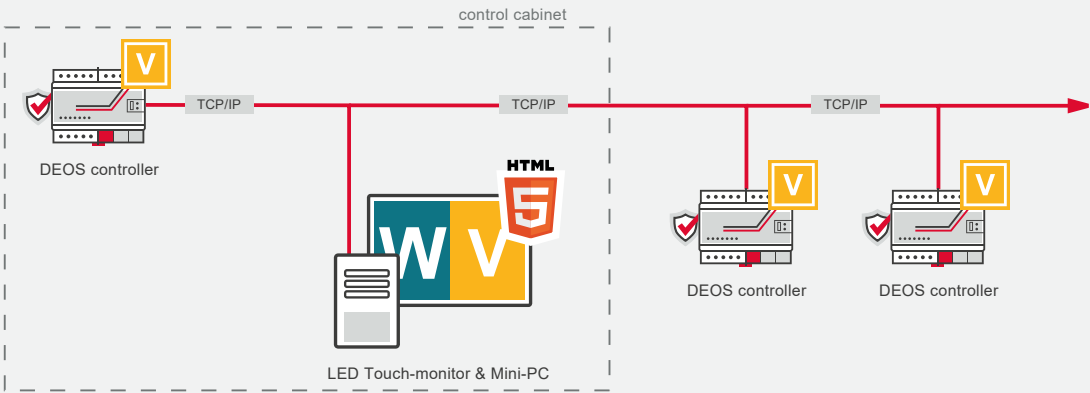
Schematic representation

Networking example DEOS BMS OPENweb – Android Touch-PC



Schematic representation

Networking example DEOS controller – LED touchscreen & mini PC



Schematic representation



Android Touch-PC for operation of DEOS systems directly on the switch cabinet



- Highlights at a glance**
- ✓ Industry-oriented Android control unit for 24/7 operation
  - ✓ For installation in switch cabinet doors or control panels
  - ✓ Immediately ready for use with OPENview App and OPENweb App licensed and pre-installed
  - ✓ Consistent DEOS operating concept from DDC to BMS
  - ✓ In conjunction with OPENview in small projects without server on site (visualization directly on the controller)

**Android Touch-PC series**

The Android Touch-PC series from DEOS is designed for installation in the switch cabinet door or control panel and has all necessary applications already pre-installed and licensed. With OPENview App and OPENweb App onboard, the customary full graphic operation and navigation via DEOS graphics from the macro and template libraries, can be implemented in no time at all. Direct connection to the controller or to the OPENweb Server makes no difference in the graphic visualization and you always navigate as usual in the familiar intuitive environment. Thus you can always keep an eye on your equipment from anywhere in the world and can directly intervene locally in normal operation or for service/maintenance.

- Delivery incl.**
- Plug-in power supply 12 V
  - WLAN antenna
  - Mounting set switch cabinet door

Hardware equipment & technical data <sup>2)</sup>	DS-Touch Android x		
	10.1"	15.6"	21.5"
Capacitive touchscreen	10.1 inches	15.6 inches	21.5 inches
Phys. resolution (pixels)	1280 x 800	1920 x 1080	
Max. usable resolution (pixels)	1280 x 800	1600 x 900	
Operating system	Android 6.0		
Processor	Allwinner® V40 QuadCore		
Memory	2 GB DDR3		
Network	10M/100M network; WLAN		
Assembly	Switch cabinet door, control panels, etc.		
Dimensions (WxDxH)	10.1"	278.0 mm x 203.6 mm x 33.3 mm	
	15.6"	389.3 mm x 246.8 mm x 33.3 mm	
	21.5"	532.0 mm x 331.0 mm x 46.0 mm	
Protection standard	IP65 (front housing), IP40 (rear housing)		
Power supply	12 V		
Power consumption	11 W	13 W	23 W
DEOS Android Apps			
OPENview App	Pre-installed, licensed		
OPENweb App	Pre-installed, licensed		

Switch cabinet operating devices	Type	Art. no.
Android Touch-PC <sup>1)</sup>	10.1"	DS-Touch Android 10.1 DS-360321
	15.6"	DS-Touch Android 15.6 DS-360325
	21.5"	DS-Touch Android 21.5 DS-360327

Spare parts for switch cabinet operating devices	Type	Art. no.
Power adapter, 12 V	2 A, for 10.1"	DS-PS-PC 12V-2.0A DS-360255
	5 A, for 15.6", 21.5"	DS-PS-PC 12V-5.0A DS-360254
Mounting set switch cabinet door	4 clamps, for 10.1", 15.6"	DS-mounting set-4H DS-360252
	6 clamps, for 21.5"	DS-mounting set-6H DS-360253
	Retaining clip <sup>3)</sup>	DS-mounting set 10.1 DS-360256

<sup>1)</sup> The graphical OPENview option on the respective OPEN EMS is necessary for the graphical operation.  
<sup>2)</sup> Additional product information is provided in the data sheet (see DEOS Portal at portal.deos-ag.com)  
<sup>3)</sup> Optional for DS-Touch PC 10.1" (DS-360250) as well as DS-360257 (predecessor version)

**Touch screens** for visualization of all OPEN EMS with OPENweb App / OPENview App – in conjunction with mini PCs in small systems as needed



- Highlights at a glance**
- ✓ For installation in switch cabinet doors
  - ✓ In the bundle with the mini PC for small to medium-sized projects with operating possibility and server in one unit
  - ✓ 3 different display sizes, 2 variants of the mini PC
  - ✓ Preconfigured system with all necessary installation kits
  - ✓ Pre-installed OPENweb and OPENview desktop clients for fast commissioning and direct connection to the DEOS system
  - ✓ Complete switch cabinet door installation – additional space for an BMS server is not required

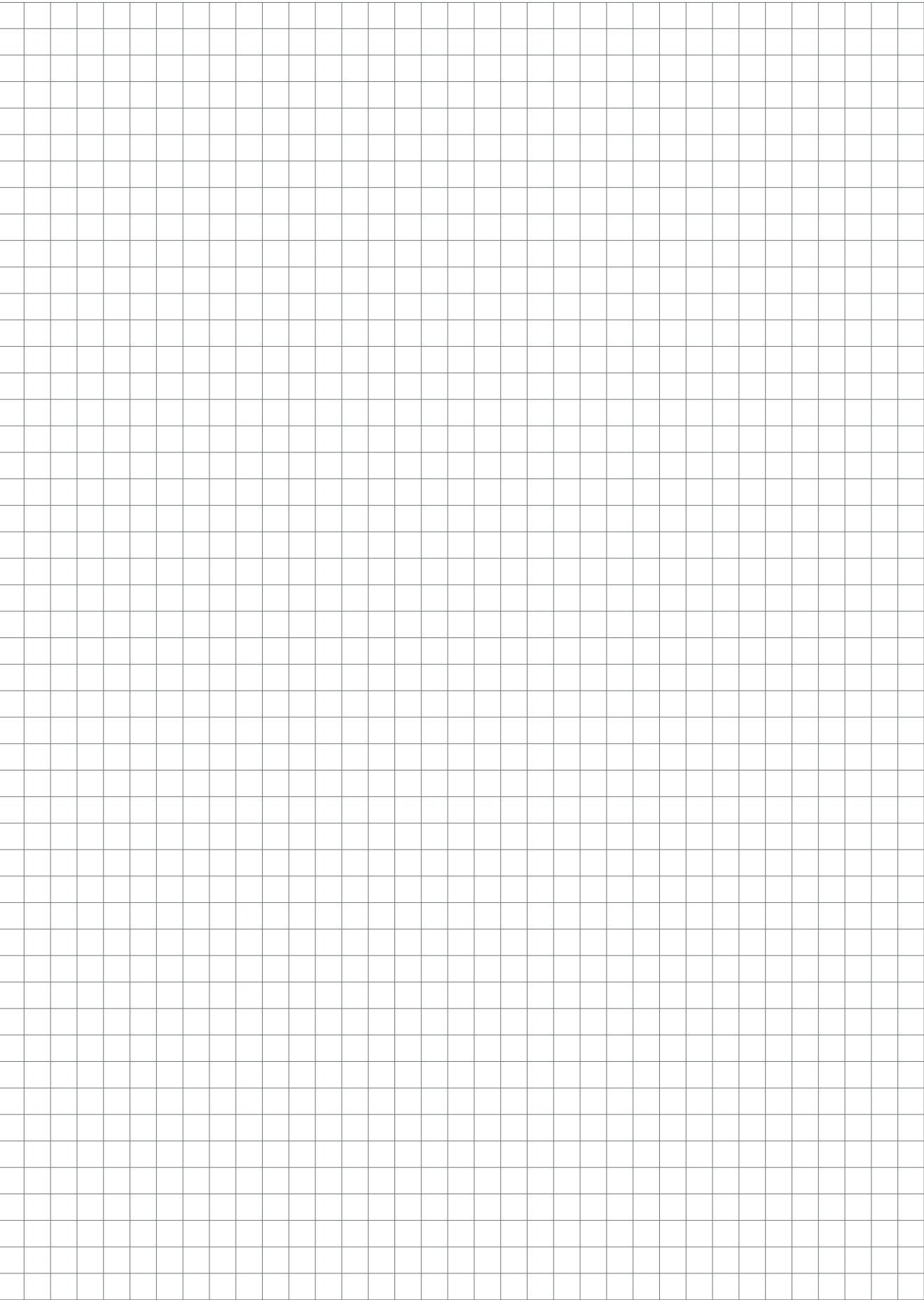
Hardware equipment & technical data <sup>1)</sup>	DS-Touchx		
	15.6"	17.3"	21.5"
Capacitive touchscreen	15.6"	17.3"	21.5"
Resolution (pixels)	1920 x 1080 (FullHD) 16:9		
Interfaces	Inputs/outputs		
VGA	■	■	■
DVI	■	■	■
HDMI	■	■	■
DP	■	■	■
Audio out	■	■	■
USB	■	■	■
Mounting	Switch cabinet door		
Dimensions (WxDxH)			
15.6"	374 mm x 236 mm x 29,2 mm		
17.3"	415 mm x 262 mm x 29,55 mm		
21.5"	506,46 mm x 303,06 mm x 38,1 mm		
Operating voltage	12 V DC		
Power consumption	<8 W	<8 W	<21 W
	■ Standard		

Hardware equipment & technical data <sup>1)</sup>	DS-MiniPC-x	
	B	Ad
Application area	Small systems	
Operating system	Windows	
Processor	Intel Pentium	Intel Core i3
SSD	120 GB	250 GB
RAM	4 GB	8 GB
DEOS PC Apps		
OPENview ControlPanel	Pre-installed	
OPENweb ControlPanel	Pre-installed	

- Delivery incl.**
- Plug-in power supply
  - Mounting material
  - Adapter cable: USB A to USB B

Touch screens & mini PCs		Type	Art. no.
NEW Touch screens	15.6"	DS-Touch15.6	DS-360330
	17.3"	DS-Touch17.3	DS-360331
	21.5"	DS-Touch21.5	DS-360332
Mini PC <sup>2)</sup>	Basic	DS-MiniPC-B	DS-360167
	Advanced	DS-MiniPC-Ad	DS-360168

<sup>1</sup> Additional product information is provided in the data sheet (see DEOS Portal at portal.deos-ag.com)  
<sup>2</sup> The graphical OPENview option on the respective OPEN EMS is necessary for the graphical operation.





Power adapters, cables + more

With our extensive line of accessories we offer additional components for construction and design of switch cabinets!

Your advantages:

- One-stop shop – a single source for all components
- Continuity
- Service & consulting for the design of your project



Control technology accessories

Power supplies .....	108
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Other accessories .....	118
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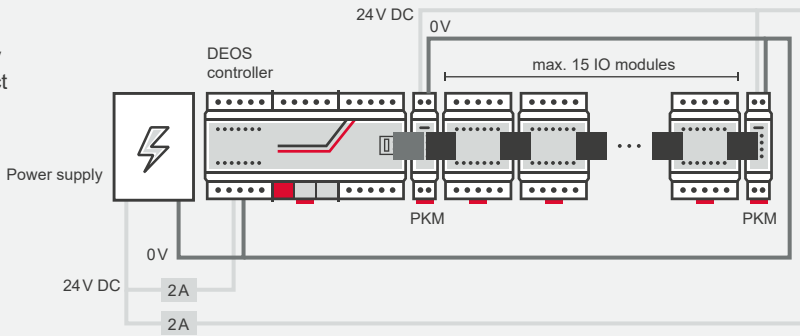
Power supply units with regulated output voltage, continuous short-circuit protection



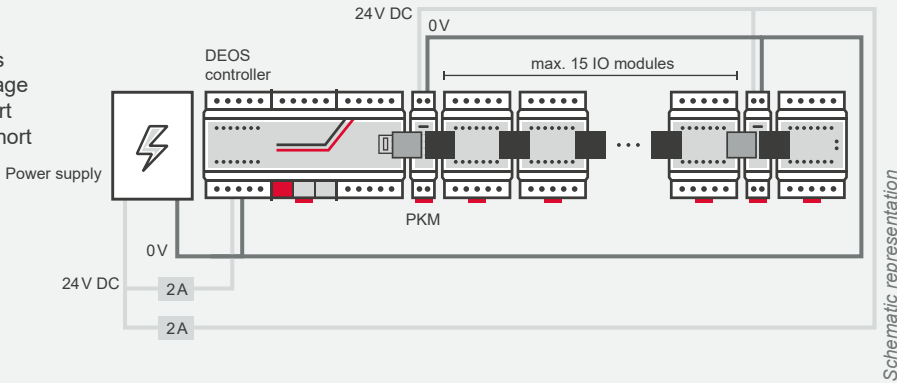
Hardware equipment & technical data <sup>1)</sup>	DS-PS 24V-x			
	0.7 A	1.3 A	2.5 A	4.0 A
Operating voltage LED	■	■	■	■
Assembly	on standard mounting rail 35 mm			
Dimensions	B	22.5 mm	54 mm	72 mm
	DxH	60 mm x 90.5 mm		
Material	Plastic, shockproof			
Protection standard	IP 20			
Operating temperature	-25 ... 70°C			
Installation position	Horizontal <sup>2)</sup>			
Input voltage	85 ... 264 V AC (95 ... 370 V DC)			
Output voltage	24 V DC ± 1%			
Output current <sup>3)</sup>	0.7 A	1.3 A	2.5 A	4.0 A
Recommended back-up fuse	2 A			
Connection	Spring-type clamps			

Networking examples <sup>4)</sup>

✓ **Hot Swapping** – When one of the IO modules is removed, the power supply of all remaining modules remains intact



✓ **Higher operational reliability** when combining 3-pin and 5-pin bridge bus connectors - protection against damage to the controller in the event of a short circuit on the IO modules (external short circuit)\*



Accessories	Type	Art. no.
Power supply	Output current 0.7 A	DS-PS 24V-0.7A DS-350179
	Output current 1.3 A	DS-PS 24V-1.3A DS-350180
	Output current 2.5 A	DS-PS 24V-2.5A DS-350181
	Output current 4.0 A	DS-PS 24V-4.0A DS-350182

<sup>1</sup> Additional product information is provided in the data sheet (see DEOS Portal at portal.deos-ag.com)  
<sup>2</sup> Top and bottom 50 mm distance for free air supply, 10 mm distance to adjacent assemblies, direct side-by-side installation at 90% rated load active assemblies at full load, 5 mm for passive adjacent assemblies, direct side-by-side  
<sup>3</sup> Urated, at 55 °C  
<sup>4</sup> The DEOS IO modules technically permit 2-stream infeed of the 24 V DC, as long as the same power supply unit is used.

M-Bus level converter for connection of the M-Bus protocol (IP or serial)



Variants DS-MBusHx – M-Bus level converters

- Serial M-Bus level converter
- Supports operation of up to 3, 20, 60 or 250 M-Bus counters (standard loads)
- Variants with additional interfaces like RS485, Ethernet and USB

Hardware equipment & Technical data <sup>1)</sup>		DS-MBusx			
	H3	H20	H60	H100	H250
max. standard loads	3	20	60	100	250
Connections					
M-Bus	■	■	■	■	■
RS232 (SUB-D 9-pin)	1x	1x	1x	–	1x
RS232 (screw-type terminal)	1x	1x	1x	2x	1x
RS485	–	–	1x	1x	1x
Ethernet	–	–	–	1x	1x
USB	–	–	–	1x	1x
Assembly	on standard mounting rail 35 mm				
Protection standard	IP 20	IP 20	IP 20	IP 30	IP 52
Ambient temperature	0 ... 55 °C	0 ... 55 °C	0 ... 55 °C	0 ... 50 °C	0 ... 45 °C
Input voltage	10 ... 27 V AC	10 ... 27 V AC	20 ... 30 V AC	42 ... 43,5 V DC	110 ... 240 V AC
	10,5 ... 28 V DC	10,5 ... 28 V DC	20 ... 45 V DC		
Power consumption	6 W bei AC	6 W bei AC	15 W bei AC	15 W	100 W
	4 W bei DC	4 W bei DC	15 W bei DC		
Connection	Screw-type terminals				

■ Standard  
– Not available

M-Bus accessories	Type	Art. no.
M-Bus level converters RS232	≤ 3 standard loads	DS-MBusH3 DS-024086
	≤ 20 standard loads <sup>1)</sup>	DS-MBusH20 DS-024087
	≤ 60 standard loads <sup>1)</sup>	DS-MBusH60 DS-024088
	≤ 100 standard loads <sup>1), 2)</sup>	DS-MBusH100 DS-024103
	≤ 250 standard loads <sup>1)</sup>	DS-MBusH250 DS-024089
Power supply	for DS-MBusH100	DS-PSMBus-NT016 DS-024104
RS232 interface cables	OPEN EMS – data end device <sup>3)</sup>	DS-RJ45DK9DE DS-024081
	OPEN EMS – 3 core ends <sup>4)</sup>	DS-RJ45AE3 DS-350203

<sup>1</sup> Maximum 10 M-Bus counters can be used for OPEN 500 EMS and OPEN 600 EMS  
<sup>2</sup> 1x power unit DS-PSMBus-NT016 is required per device  
<sup>3</sup> For M-Bus level converter DS-MBusH3, DS-MBusH20 and DS-MBusH60; 1x required per device  
<sup>4</sup> For M-Bus level converter DS-MBusH100 and DS-MBusH250; 1x required per device

Network switches

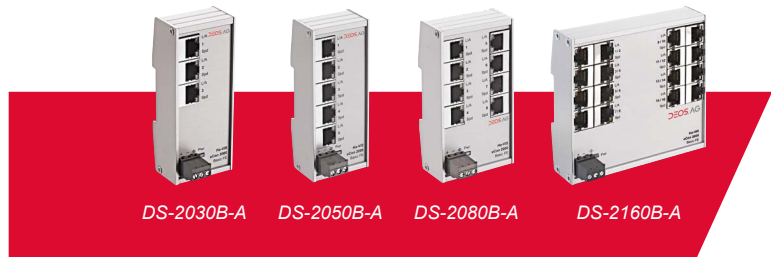


- Delivery incl.
- 1x network switch
  - 1x user manual
  - 1x external plug-in power supply

Hardware equipment & technical data <sup>1)</sup>	DS-SWx	
	5	8-230
Fast Ethernet Ports	5x RJ45	8x RJ45
Transmission rate	10/100 Mbit/s	
Transmission standard	10BASE-T, 100BASE-TX	
Dimensions		
BxT	121 mm x 75 mm	155 mm x 85 mm
H	25 mm	
Housing material	Metal	
Operating temperature	0 ... 40°C	0 ... 55°C
Humidity in operation	10 ... 90% RH, non-condensing	
Input voltage	5 V	
Input current	6 A	

Accessories		Type	Art. no.
Network switch	Number of Fast Ethernet Ports: 5	DS-SW5	DS-360005
	Number of Fast Ethernet Ports: 8	DS-SW8-230	DS-360059

Network switches for mounting in the switch cabinet



- Delivery incl.
- 1x pluggable screw contact for the supply voltage
  - 1x user manual

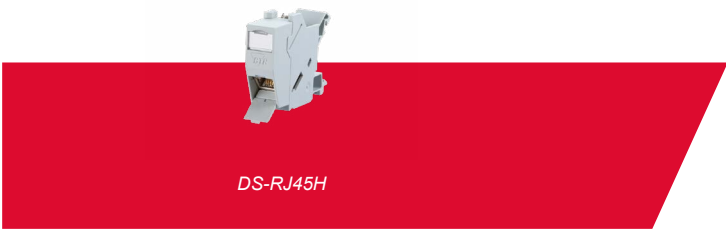
Hardware equipment & technical data <sup>1)</sup>	DS-2xx0-B-A			
	03	05	08	16
Fast Ethernet Ports	3x RJ45	5x RJ45	8x RJ45	16x RJ45
Transmission rate	10/100 Mbit/s			
Transmission standard	10BASE-T <sub>e</sub> , 100BASE-TX EEE			
Assembly				
on standard mounting rail 35 mm				
Dimensions				
B	46.5 mm	60 mm	60 mm	120 mm
DxH	113.5 mm x 27.3 mm			
Housing material	Aluminum (anodized)			
Protection standard	IP 30 in plugged-in status			
Operating temperature	0 ... 55°C			
Humidity in operation	0 ... 95% RH, non-condensing			
Input voltage	24 / 48 V DC (9 ... 60 V DC)			
Input current <sup>2)</sup>	2.8 A	2.8 A	2.8 A	1.6 A
Power consumption <sup>2)</sup>	<0.77 W	<1.01 W	1.39 W	2.23 W

Accessories		Type	Art. no.
Network switch	Number of Fast Ethernet Ports: 3	DS-2030B-A	DS-360020
	Number of Fast Ethernet Ports: 5	DS-2050B-A	DS-360021
	Number of Fast Ethernet Ports: 8	DS-2080B-A	DS-360022
	Number of Fast Ethernet Ports: 16	DS-2160B-A	DS-360023

<sup>1</sup> Additional product information is provided in the data sheet (see DEOS Portal at portal.deos-ag.com)

<sup>2</sup> At 24 V DC

Single module RJ45 – E-DAT, populated



- Suitable for
- 10 GBit Ethernet
  - Remote Powering (PoE, PoE plus, UPoE, and 4PPoE)
  - Suitable for HDBaseT

Hardware equipment & technical data <sup>1)</sup>		DS-RJ45H
Connections	1x RJ45 (populated), 1x IDC (8 contacts)	
Assembly	on standard mounting rail 35 mm	
Width units (WU)	1 WU	
Operating temperature	-40 ... 70 °C	
Input voltage	9 ... 26 V DC	
Load capacity:	max. 1 A	
Contact resistance	max. 20 mOhm	
Insulation resistance	max. 500 MOhm	
Withstand voltage (conductors)	min. 1000 V DC	

Accessories		Type	Art. no.
Single module RJ45 – E-DAT, populated		DS-RJ45H	DS-360019

Network cable



Technical data <sup>1)</sup>		DS-Patchx
Plug design	2x RJ45 with pointed strain-relief ferrule	
Shielding per pair		
Braided overall shield	4x2 AWG 26/7, 100 ohm	
Aluminum foil shielding	4x2 AWG 26/7, 100 ohm	
Length	See Article overview	
Color	Gray	

- Practical tip
- Fitting on the crossover adapter makes every CAT6 network cable an Ethernet straight through cable.

Accessories		Type	Art. no.
S/FTP patch cable	Length: 0.5 m	DS-Patch50	DS-350061
	Length: 1 m	DS-Patch100	DS-350060
	Length: 2 m	DS-Patch200	DS-350002
	Length: 3 m	DS-Patch300	DS-350003
	Length: 5 m	DS-Patch500	DS-350004
	Length: 7.5 m	DS-Patch750	DS-350079
	Length: 10 m	DS-Patch1000	DS-350005
	Length: 15 m	DS-Patch1500	DS-350080
Crossover adapter UTP	RJ45: plug – socket	DS-CR-ADP	DS-350102

<sup>1</sup> Additional product information is provided in the data sheet (see DEOS Portal at portal.deos-ag.com)

RS232 interface cables



Hardware equipment & technical data <sup>1)</sup>	DS-RJ45x			
	DK9DE	DK9PC	AE3	RS232
Connections				
Plug design 1	RJ45	RJ45	RJ45	–
Plug design 2	SUB-D 9-pin <sup>2)</sup>	–	–	–
Socket design	–	SUB-D 9-pin <sup>2)</sup>	–	RJ45
Length	1,5 m	1,5 m	1,5 m	0,30 m
Housing for standard mounting rail	–	–	–	■

Technical data <sup>1)</sup>	DS-RS232mf1:1
Connections	
Plug design	SUB-D 9-pin <sup>2)</sup>
Socket design	SUB-D 9-pin <sup>2)</sup>
Length	1.8 m

Accessories		Type	Art. no.
RS232 interface cables	OPEN controller – data end device <sup>3)</sup>	DS-RJ45DK9DE	DS-024081
	OPEN controller – PC	DS-RJ45DK9PC	DS-024082
	OPEN controller – 3 core ends <sup>4)</sup>	DS-RJ45AE3	DS-350203
	RJ45 socket (RS232) – 3 core ends	DS-RJ45/RS232	DS-026511
	Extension 1:1	DS-RS232mf1:1	DS-024022

Interface converter USB-A – x



Hardware equipment & technical data <sup>1)</sup>	DS-USB-x	
	RS232	A/C
Connections		
Plug design 1	USB A 1.1, 1.0	USB A 3.0
Plug design 2	serial/RS232/COM/ DB 9-pin	USB C 3.1
Übertragungsrate	<115 kBit/s	<10 GBit/s
Power supply	via USB	–
Length	0,45 m	2,00 m
Driver	included	included <sup>5)</sup>

Accessories		Type	Art. no.
Interface converters	USB-A – RS232	DS-USB-RS232	DS-024061
	Data cable USB-A – USB-C	DS-USB-A/C	DS-026510

<sup>1)</sup> Additional product information is provided in the data sheet (see DEOS Portal at portal.deos-ag.com)

<sup>2)</sup> With screws

<sup>3)</sup> For M-Bus level converter DS-MBusH3

<sup>4)</sup> For M-Bus level converters DS-MBus-PS6, DS-MBus-PS32, DS-MBus-PS125, as well as DS-MBus-PS250

<sup>5)</sup> Included in OPEN FXL as of november 2022

CAN repeater



Hardware equipment & technical data <sup>1)</sup>	DS-CAN-Repeater-Y-Opto
CAN interface	3x CAN
Connection (with screws)	2x SUB-D 9-pin 1x SUB-D 9-pin (galvanically isolated) 2x UEGM 3-pin (power supply)
Transmission rate	max. 1 Mbit/s
Dimensions (WxDxH):	25 mm x 83 mm x 85 mm
Ambient temperature	0 ... 50 °C
Ambient humidity	max. 90% non-condensing
Input voltage	24 V DC (8 ... 30 V)
Input current	60 mA at 24 V and 20 °C
End of line resistor	2x 120 ohm

Application area / function

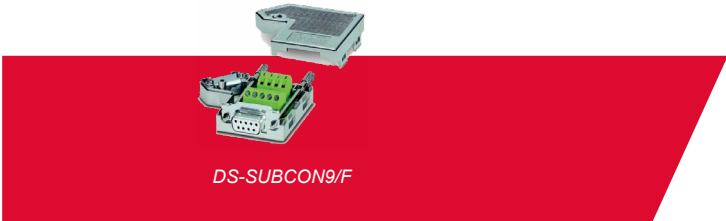
- Improving signal quality and the robustness of the CAN-bus

Successor model for

- DS-CANRepO, DS-350040

Accessories	Type	Art. no.
CAN repeater	DS-CAN-Repeater-Y-Opto	DS-350052

SUB panel connector



Hardware equipment & technical data <sup>1)</sup>	DS-SUBCON 9/F
Socket design	1x -D 9-pin, with screws
Material	ABS, metallized
Protection standard	IP 20
Operating temperature	-20 ... 75 °C
Operating voltage	max. 50 V
Rated current	100 mA

Application area / function

- Aid for connecting external devices with 9-pin SUB-D connectors

Accessories	Type	Art. no.
SUB-D panel connectors	DS-SUBCON9/F	DS-024023

<sup>1)</sup> Additional product information is provided in the data sheet (see DEOS Portal at portal.deos-ag.com)

TCP/IP controller for extension of additional COM ports



Application area

- Extends the OPEN EMS controller (depending on the model used) with additional COM ports 5 – 6 or 5 – 8
- The TCP/IP controller can be operated as an external COM port directly on the PC

Variants as industrial models

- Alarm signal per contact
- Internal buzzer and e-mail
- Watchdog timer (reboot trigger)
- Configuration directly via web interface
- Configuration software is not required for operation on an OPEN EMS

Practical tip

- We recommend use of the galvanically decoupled RS485 interface to reduce parasitic induction in system operation

Ordering information

- The serial connection cables must be ordered separately and in accordance with the intended purpose
- The COP port mapping tools must only be installed for PC operation
- The TCP/IP controller cannot be used for BACnet® MS/TP

Hardware equipment & technical data <sup>1)</sup>	DS-SSUx		
	IA5150 V1.3	IA5150I	NPort-5110
Industrial models	■	■	–
RS485 galvanically isolated	–	■	–
Ethernet interface			
10/100 auto MDI/MDIX RJ45	2x <sup>2)</sup>	2x <sup>2)</sup>	–
10/100BaseT(X) Ports RJ45	–	–	1x
Windows drivers	for virtual COM ports		
Win7 x86/x64	■	■	■
Server 2008	■	■	–
XP	–	–	■
Vista	–	–	■
2003	–	–	■
2008 x86 / x64	–	–	■
Power supply redundant	Possible	Possible	–
LED diagnostics	■	2x <sup>2)</sup>	–
Assembly	on standard mounting rail 35 mm		
Input voltage			
24 V DC	12 ... 48 V DC	12 ... 48 V DC	12 ... 48 V DC
Input current	195 mA	195 mA	128 mA at 12 V DC
Supply voltage connection diagrams			
Screw-type terminals	■	■	–
Socket	–	–	■
Plug-in power supply	–	–	■

■ Standard  
– Cannot be expanded

Delivery incl.

- 1x TCP/IP controller
- 1x support CD
- 1x user manual
- 1x null-modem adapter
- 1x external plug-in power supply (only for DS-350184)

Accessories		Type	Art. no.
TCP/IP controllers	RS232 / RS485 – Ethernet	DS-SSU IA5150 V1.3	DS-350100
	RS232 / RS485 <sup>3)</sup> – Ethernet	DS-SSU IA5150I	DS-350167
	RS232 / RS485 – Ethernet (replacement) <sup>4)</sup>	DS-SSU NPort-5110	DS-350184

<sup>1)</sup> Additional product information is provided in the data sheet (see DEOS Portal at portal.deos-ag.com)

<sup>2)</sup> Integrated switch

<sup>3)</sup> Galvanically decoupled

<sup>4)</sup> Connection-compatible replacement device for articles DS-SSU TCP/IP2, DS-SSU TCP/IP3 and DS-SSU DE311 V3.0

Interface converters Modbus TCP/IP – Modbus RTU



DS-MOD GW

Hardware equipment & technical data <sup>1)</sup>	DS-MOD GW	
	Display and control elements	2x LED (1x RS485 Tx, 1x RS485 Rx)
Connections	RS485	1x screw-type terminal block
	Ethernet	1x RJ45, 10/100 Mbps
	Assembly	on standard mounting rail 35 mm
Width units (WU)	1 WU (18 mm)	
Protection standard	IP 20	
Ambient temperature	0 ... 55°C	
Ambient humidity	0 ... 95% RH, non-condensing	
Input voltage	9 ... 26 V DC	

Modbus – accessories		Type	Art. no.
Interface converters	Modbus TCP/IP – Modbus RTU	DS-MOD GW	DS-3500168

Interface converter/gateway KNX IP – KNX TP



DS-KNX IP IF731

Hardware equipment & technical data <sup>1)</sup>	DS-KNX IP IF731	
	Display and control elements	Button 2x diagnostics LED 3x (multicolor) Programming button KNX 1x with LED (red)
Connections	LAN	RJ45
	Ethernet	10Base-T
	KNX	Terminal
Assembly	on standard mounting rail 35 mm	
Width units (WU)	1 WU (18 mm)	
Material	Plastic (PC)	
Protection standard	IP 20	
Ambient temperature	-5 ... 45°C	
Ambient humidity	5 ... 93%, non-condensing	
Input current	via KNX bus, approx. 15 mA	

KNX – accessories		Type	Art. no.
Interface converter/gateway	KNX IP – KNX TP	DS-KNX IP IF731	DS-360010

<sup>1)</sup> Additional product information is provided in the data sheet (see DEOS Portal at portal.deos-ag.com)



Interface converters RS232 – x



Variant DS-SSURS232RS485

- Interface cable DS-RJ45DK9DE, article DS-024081 included

Hardware equipment & technical data <sup>1)</sup>	DS-SSUx	
	RS232/TTY	RS232RS485
Interface	1x RS232 – 20 mA Current loop TTY: active or passive	1x RS232 – RS485
Connections	Galvanically isolated	
RS232	1x SUB-D 9-pin 1x pluggable screw connection (Line cross section 0.2 mm² ... 2.5 mm²)	
TTY / RS485	1x pluggable screw connection (Line cross section 0.2 mm² ... 2.5 mm²)	
Transmission length	15 m	1200 m
Assembly	on standard mounting rail 35 mm	
Dimensions (WxDxH):	25 mm x 83 mm x 85 mm	
Material	PA green	
Operating temperature	0 ... 55°C	
Ambient humidity	10 ... 95%, without condensation	
Input voltage	24 V AC/DC ± 20%	
Input current	50 mA at 24 V and 20 °C	
Output current	2x 20 mA ± 10	

Accessories		Type	Art. no.
Interface converters <sup>1)</sup>	RS232 – 20mA (TTY)	DS-SSURS232/TTY	DS-140410
	RS232 – RS485	DS-SSURS232RS485	DS-360069

Empty housings for closing gaps in mounting racks, switch cabinet doors, etc.



Technical data <sup>1)</sup>	DS-LGx			
	17.5	54	106	160
Components <sup>2)</sup>	Housings (without terminals), floor, covers, clamping springs			
Assembly	on standard mounting rail 35 mm			
Dimensions				
B	17.5 mm	54 mm	106 mm	160 mm
DxH	60 mm x 90 (98) mm			
Material	Plastic			

Accessories		Type	Art. no.
Empty housing <sup>1)</sup>	Width 17.5 mm	DS-LG17.5	DS-390049
	Width 54 mm	DS-LG54	DS-390050
	Width 106 mm	DS-LG106	DS-390051
	Width 160 mm	DS-LG160	DS-390052

<sup>1)</sup> Additional product information is provided in the data sheet (see DEOS Portal at portal.deos-ag.com)  
<sup>2)</sup> Without imprint

LoRaWAN Gateway – with integrated Modbus interface for building automation



Highlights at a glance <sup>1)</sup>

- ✓ Our data collector – exchanges building data with the DEOS pro.building Suite through the Internet
- ✓ Data provision for further use to the local control system via Modbus/TCP
- ✓ Accessories to strengthen the radio signal for indoor and outdoor use
  - ✓ Antennas
  - ✓ Antenna extension cables
- ✓ Expandable with LoRaWAN enabled DEOS or third-party components

more on the subject of LoRaWAN from page 120

Equipment & functions <sup>1)</sup>	DS-LoRaGateway
Frequency band	EU 868
LoRaWAN	Antenna (external)
Channels	8x
Output power	max. 27 dBm
WiFi	Antenna (internal) fully integrated
LTE <sup>2)</sup>	–
Ethernet	
Ports	1x RJ45 (PoE PD)
Transmission rate	10/100/1000 Mbps (Base-T)
USB	1x type C
Reset button	1x
LEDs	1x each
	Power, Status, LoRa, WiFi, LTE, Ethernet
	– optional

Equipment & functions <sup>1)</sup>	DS-LoRaGateway
CPU	QuadCore 1,5 GHz 64-bit ARM Cortex-A53
RAM memory	512 MB DDR4 RAM
Flash memory	8 GB eMMC
Assembly	Table-, wall- or pole mounting
Dimensions (BxTxH)	180 mm x 56,5 mm x 110 mm
Material	Plastic
Protection standard	IP 65
Ambient temperature	-40 ... 70 °C
Ambient humidity	0 ... 95 % rH, non-condensing at 25 °C
Input voltage	optionally 9 ...24 V DC PoE in acc. IEEE-Standard 802.3af
Power consumption	≤ 4,2 W

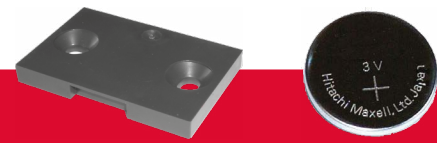
LoRaWAN		Type	Art. no.
LoRaWAN Gateway <sup>3)</sup>	Incl. plug-in power supply	DS-LoRaGateway	DS-360448
	License <sup>4)</sup>	DS-L-GWLIC-1	DS-360454
Antenna	Wall or pole mounting, for outdoor use	DS-L-ANT1 LoRaGateway	DS-360471
	Magnetic base, for indoor use	DS-L-ANT2 LoRaGateway	DS-360472
Extension cable antenna <sup>5)</sup>	Length: 5 m	DS-N-AK5	DS-360379
	Length: 10 m	DS-N-AK10	DS-360380

LoRaWAN – services		Type	Art. no.
Special configuration <sup>6)</sup>	Per 15 minutes or part thereof	DS-L-Service TEO/LoRa	DS-360555
	Individual service package	DS-L-Service TEO/LoRa	DS-360555

<sup>1)</sup> Additional product information is provided in the data sheet (see DEOS Portal at portal.deos-ag.com)  
<sup>2)</sup> Devices with LTE connection on request  
<sup>3)</sup> In addition, a license is required to connect Modbus data points on the OPEN EMS, see page 93  
<sup>4)</sup> Only required for third-party LoRaWAN subscribers not sourced through DEOS AG  
<sup>5)</sup> Extension cables reduce the output power of the radio transmission  
<sup>6)</sup> Billing on a time and material basis for special configurations. Special configurations are e.g. support during commissioning, pre-configure rooms, assign LoRa devices to rooms, individual project support



## Other accessories



DS-WH

DS-Batx

Technical data <sup>1)</sup>	DS-Batx		
	OPEN EMS	OPEN COS	B
Technology / design	Lithium / button cell, CR 1220		
Dimensions			
Height	2 mm		
Diameter	12.5 mm		
Temperature range	-20 ... 60°C		
Nominal voltage	3 V		
Capacity	30 mAh		

**Technical data <sup>1)</sup>** **DS-WH**

**Dimensions (WxDxH):** 530 mm X 60 mm X 350 mm

Accessories		Type	Art. no.
Wall holders	For modules, width 53 mm	DS-WH	DS-350126
	For modules, width 106 mm		
	For modules, width 160 mm		
Replacement battery	for series OPEN EMS	DS-Bat OPEN EMS	DS-024095
	For series COSMOS OPEN	DS-Bat OPEN COS	DS-024100
	For series COSMOS BASICline	DS-Bat B	DS-024076

1 Additional product information is provided in the data sheet (see DEOS Portal at [portal.deos-ag.com](http://portal.deos-ag.com))

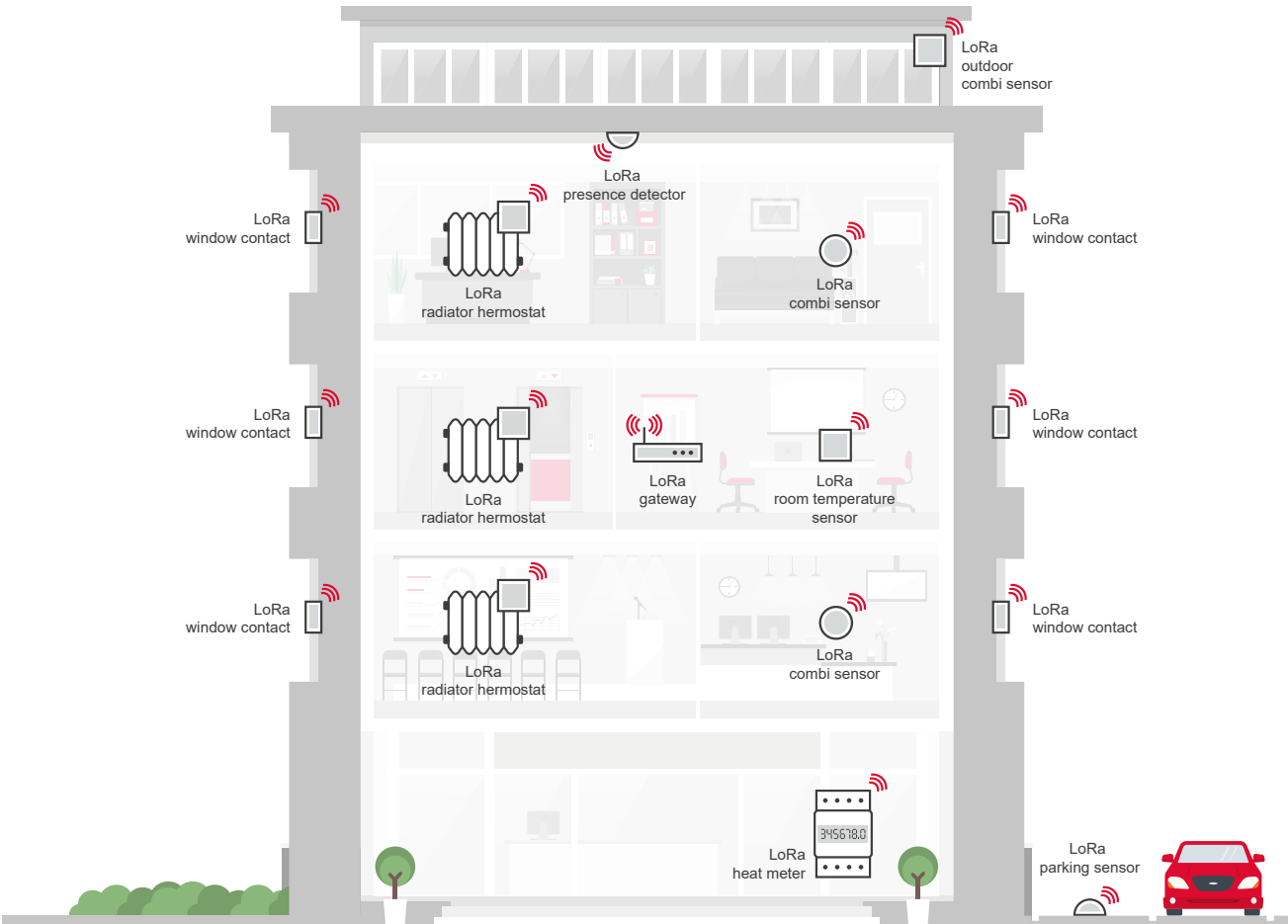
This image shows a full page of blank graph paper. The grid consists of small, uniform squares formed by thin, light gray lines. There are no margins, text, or other markings on the page.



Smart retrofitting projects with LoRaWAN

For retrofitting projects and even for new building projects, integration solutions based on the Long Range Wide Area Network (LoRaWAN) wireless standard continue to gain ground. This type of wireless connection of sensors, meters or control units using LoRaWAN offers several advantages when compared to other wireless technologies.

Combining modern IoT/Cloud-based solutions from DEOS with the flexibility provided by LoRaWAN results in new and efficient possibilities of use. The objectives are to reduce the workload on the technical facility management, lower operating costs, provide for transparent building data and delight building owners with new convenience features.



Wireless networking – LoRaWAN

Highlights at a glance

- ✓ Low provisioning cost of the required infrastructure
- ✓ High security level due to encrypted data transmission
- ✓ Hardly any cabling effort for installation in building
- ✓ Easy and cost-effective integration of products into an existing building
- ✓ Long battery life of up to 10 years (dependent on sensor type)
- ✓ Long range and deep building penetration

Do you have questions or do you need support? Our sales partners would be pleased to help you.

✉ bit@deos-ag.com  
☎ +49 5971 91133-0

Smart retrofitting projects with LoRaWAN

Economical wireless solutions for sensor systems

For retrofitting projects and even for new building projects, integration solutions based on the Long Range Wide Area Network (LoRaWAN) wireless standard continue to gain ground. This type of wireless connection offers several advantages when compared to other wireless technologies for the connection of sensors, meters, control units, etc., such as a high degree of building penetration, economic efficiency, and quick integration at the construction site.

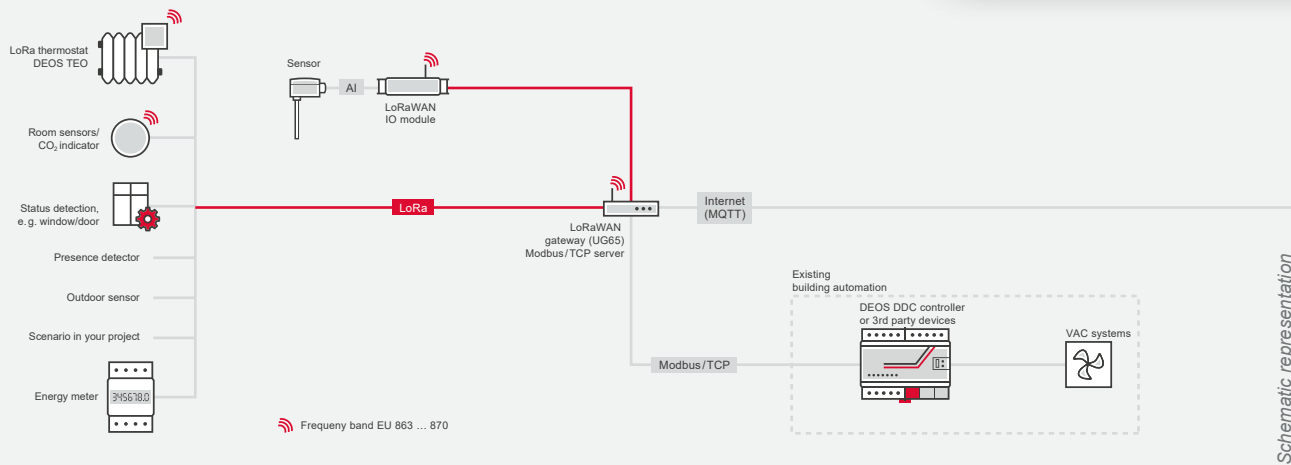
Reducing costs due to LoRaWAN flexibility

Combining modern IoT/Cloud-based solutions from DEOS and classic measurement and control technologies with the flexibility provided by LoRaWAN results in brand-new possibilities of use. The objectives are to reduce the load on the technical facility management, lower costs and inspire building owners with new features.

Cableless bidirectional data transfer

LoRaWAN devices in a building are used for the wireless and bidirectional exchange of data via an on-site BMS control system. Building data is available locally via Modbus/IP and can be stored in the DEOS Cloud through the Internet. The digital building information is then available for the monitoring of energy and indoor air quality as well as building control.

Networking example



LoRaWAN advantages for a building

Wireless networking rather than wired connections

- Wireless
- Battery-operated sensors
- Simple retrofitting
- Low expense
- Can be used anywhere

Portability rather than a permanent installation

- Temporarily installed wireless sensors for system optimisation or analysis projects

Highest level of IT security, not prone to failure

- Extremely robust network
- Immune against interference
- Secure data transmission due to two security levels (AES- and end-2-end-encryption)
- Prevention of electronic eavesdropping

Economical thanks to a long range network

- No repeater infrastructure
- Excellent building penetration and coverage

70 % of energy costs in non-residential buildings are used for space heating. The study by Bitkom Research makes it clear that smart technologies are also increasingly being used for heating. "A third of all companies (31%) use intelligent radiator thermostats, with which the temperature is smartly regulated depending on the time of day, weather or room, for example" (study extract).

Smart technologies increasingly in use

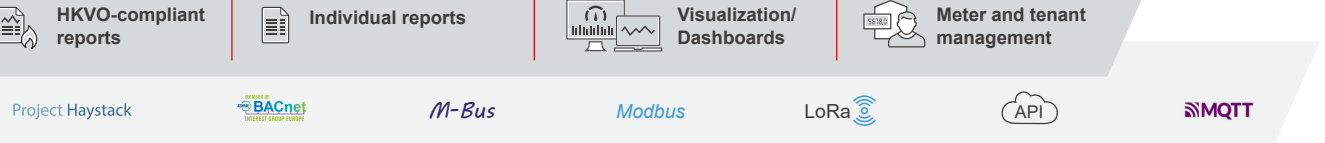
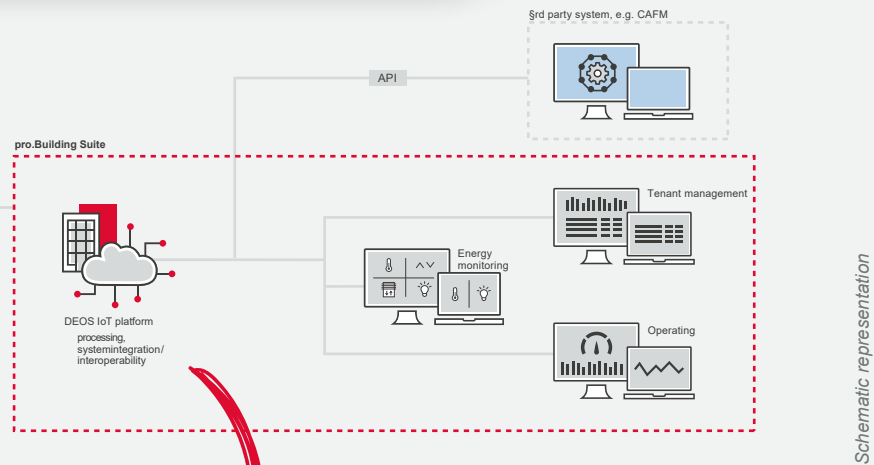
To quickly reduce heating costs in non-residential buildings such as offices, warehouses, schools/daycare centers, etc., wireless radiator thermostats are a good option. These are easy to screw on and can be installed without any technical know-how. From this moment on, up to 40 % heating energy can be saved,

So that building operators can also expand their LoRaWAN network with other sensors such as window/door contacts, temperature sensors or presence detectors to save energy, it is advisable to ensure that the wireless solution is manufacturer-neutral.

Our planning tip

Connection to the pro.Building Suite made easy

You too can benefit from the numerous networking options! Not the right one for you? Feel free to contact us and together we will realize your individual solution.



These LoRaWAN components can also be provided for retrofitting projects or new building constructions.

Please feel free to contact us and together we will realise your individual solution.

✉ bit@deos-ag.com  
☎ +49 5971 91133-0



DEOS TEO – thermostat for energy optimization



Highlights at a glance

- ✓ Wireless energy saving solution - reduction of energy consumption by up to 40%.
- ✓ Self-charging thanks to integrated thermogenerator
- ✓ For post-digitalization of existing buildings through intelligent wireless solution
- ✓ Robust design
- ✓ Conversion during operation
- ✓ Simple installation
- ✓ Made in Germany

For information on operation and networking examples with pro.TEO, see page 23



Your benenfits using DEOS TEO at a glance

- Intuitive display and user interface pro.TEO – centrally via the web browser or smartphone / tablet.
- No installation of a desktop client necessary
- Timer programs and calendar function
- Access rights in self-administration
- System integration via Modbus <sup>1)</sup>
- Creating reports (optional, see page 19)
- Live display and visualization of building data in Dashboards (optional, see page 19)
- German data center hosted in Rheine

Hardware equipment & Technical data <sup>1)</sup>		DS-L-TEO/MLR003
Frequency band	EU 868	
Measuring range	Innenbereich	
Dimensions (WxDxH)		
w/ valve connector	83 mm x 60 mm x 64 mm	
w/o valve connector	63 mm x 60 mm x 64 mm	
Ambient temperature	0 ... +40 °C	
Ambient humidity	max. 70 % rH	
Vorlauftemperatur	max. 75 °C	

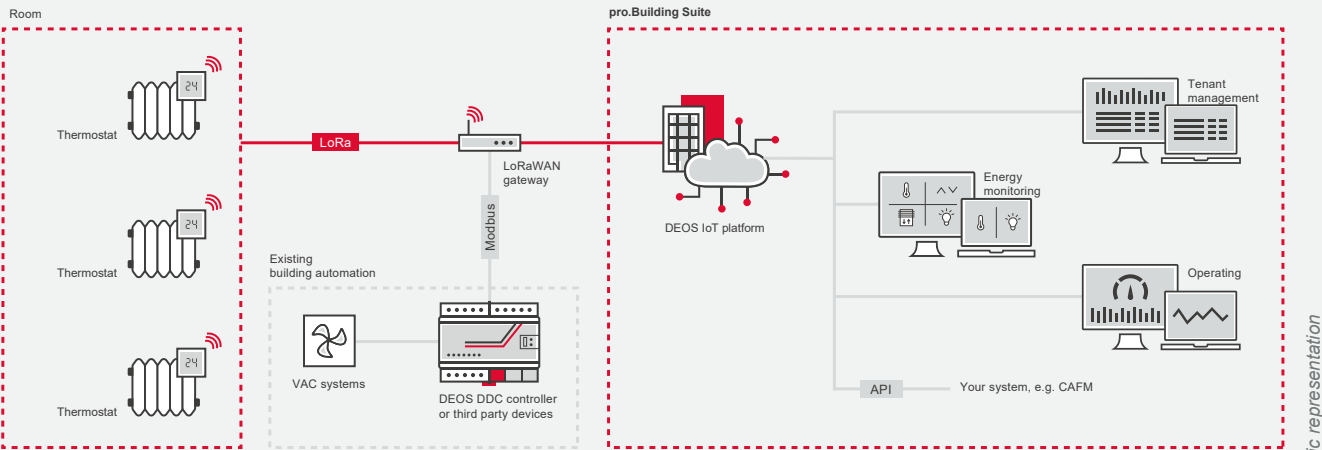
<sup>1)</sup> Software modules for connecting Modbus Slave devices see page 93  
<sup>2)</sup> Additional product information is provided in the data sheet (see DEOS Portal at portal.deos-ag.com)

LoRaWAN	Type	Art. no.
DEOS TEO thermostat for energy optimization	DS-TEO/MLR003	DS-360498
Magnetic tool for (de)activating the DEOS TEO	DS-L-MLR003-KEY	DS-360521
Connection and operation via pro.Building Suite	DS-pro.TEO1	DS-360551

other adapters on request

Accessories for thermostat valve		Type	Art. no.
Danfoss	anti-theft device	DS-DSS	DS-360526
Danfoss	metal adapter Ø (inside) 23 mm	DS-MVA-RA2000	DS-360522
Danfoss	metal adapter Ø (inside) 25,5 mm	DS-MVA-RAVL	DS-360525
Danfoss	metal adapter Ø (inside) 35 mm	DS-MVA-RAV	DS-360528
Markaryd	metal adapter M28 x 1,5	DS-MVA-MARKARYD	DS-360524
Oventrop	metal adapter M30 x 1,0	DS-MVA-OV	DS-360529

Networking example



Schematic representation

Systemintegration <sup>2)</sup>	DS-L-TEO/MLR003			
System boundaries in connection with	OPEN.WRX	OPEN EMS		500/600
		3100/4100 710/810		
Modbus Master data points	max. 1500	max. 1000		max. 100
TEO data points	per TEO min. 10, max. 30	per TEO min. 10, max. 30		per TEO min. 10, max. 30
Quantity DEOS TEO	max. 150	max. 100		max. 10
Technical system boundaries Gateway <sup>3)</sup>	per AS min. 150, max. 50	per AS min. 100, max. 33		per AS min. 10, max. 3
	max. 10	max. 10		max. 3

<sup>1)</sup> Minimum contract term: 1 year. Settlement occurs in advance. Notice period: 1 month to the end of the contract, automatic12-month extension  
<sup>2)</sup> Additional product information is provided in the data sheet (see DEOS Portal at portal.deos-ag.com)  
<sup>3)</sup> Maximum of 30 DEOS TEO per gateway possible

DEOS SAM – Sensor-based Air Quality Measurement



Hardware equipment & Technical data <sup>1)</sup>		DEOS SAM
Frequency band	EU 868	
Measuring range	CO <sub>2</sub> 0 ... 40000 ppm	
	Temperature -20 ... 70 °C	
	Humidity 0 ... 100 % rH	
Mounting	indoors	
Dimensions (ØxH)	Ø 100 mm x , 40 mm	

Constant overview of indoor air quality

- Ventilate selectively and effectively
- In combination with DEOS TEO as a combination sensor for measuring the room temperature
- If the CO<sub>2</sub> limit values are exceeded, the air supply is adapted automatically via the VAC system

LoRaWAN		Type	Art. no.
DEOS SAM	CO <sub>2</sub> indoor air quality indicator	DEOS SAM	DS-360447

LoRaWAN room thermostat – for indoor use



Hardware equipment & Technical data <sup>1)</sup>		DS-L-MLRTPS
Frequency band	EU 868	
Mounting	indoors	
Dimensions (BxTxH)	85 x 34 x 85 mm	
Ambient conditidions	Temperature 0 ... 40 °C	
	Humidity 0 ... 70 % rH	
Motion sensor	Passive infrared sensor (PIR)	
	Recognition area appr. 10 m	

Coming soon: connection to pro.TEO

LoRaWAN sensors

- Transmission of room temperature, room humidity and motion detection by passive infrared sensor (PIR) in one device
- Adjustment of the setpoint on the device in the room
- Neutral fan optics on the setpoint adjuster offers flexible limit values for the setpoint range

LoRaWAN	Batteries <sup>3)</sup>	Type	Art. no.
LoRaWAN room thermostat	1x	DS-L-MLRTPS	DS-360542
Magnetic tool for (de)activating the room thermostat		DS-L-MLR003-KEY	DS-360521
3,6 V AA lithium battery (Li-SOCl <sub>2</sub> )		DS-L-BAT 3,6 AA	DS-360486

<sup>1</sup> Additional product information is provided in the data sheet (see DEOS Portal at portal.deos-ag.com)  
<sup>2</sup> License for LoRaWAN Gateway DS-L-GWLIC-1, DS-360454 (see page 130) included in price  
<sup>3</sup> Required number of batteries not included

LoRaWAN sensors – for indoor use



LoRaWAN sensors

- Elegant surface-mounted housing for wall mounting
- Wireless measurement of the indoor climate
- Configuration via Near Field Communication (NFC)

Hardware equipment & Technical data <sup>1)</sup>		DS-L-x		
		ERS-Lite	ERS	ERS15CO <sub>2</sub>
Frequency band	EU 868			
Dimensions (WxDxH)	76,4 mm x 76,4 mm x 22,5 mm			
Ambient conditions	Temperature 0 ... 50 °C			
	Humidity 0 ... 85 % rH			
	CO <sub>2</sub>	–	–	400 ... 10000 ppm
	Light	–	0 ... 65535 LUX	–
	Motion	–	max. 7,5 m	–
– not available				

other sensors on request

LoRaWAN	°C	rH	CO <sub>2</sub>	Light	Motion	Batteries <sup>3)</sup>	Type	Art. no.
LoRaWAN sensors	■	■	–	–	–	1x	DS-L-ERS2 Lite	DS-360473
	■	■	–	■	■	2x	DS-L-ERS2	DS-360497
	■	■	■	■	■	2x	DS-L-ERS2 CO2	DS-360475
3,6 V AA lithium battery (Li-SOCl <sub>2</sub> )							DS-L-BAT 3,6 AA	DS-360486

LoRaWAN sensors with organic solar cell – for indoor use



DS-L-ERS-ECO  
DS-L-ERS-ECO-CO2

Hardware equipment & Technical data <sup>1)</sup>		DS-L-ERSx	
		ECO	ECO-CO2
Frequency band	EU 868		
Dimensionsn (BxTxH)	66 mm x 17 mm x 66 mm		
Protection standard	IP 20		
Ambient conditions	Temperature 0 ... 50 °C		
	Humidity 0 ... 85 % rH		
	CO <sub>2</sub>	–	400 ... 10000 ppm
	Light	0 ... 4000 LUX	–
– not available			

other sensors on request

LoRaWAN	°C	rH	CO <sub>2</sub>	LUX	Type	Art. no.
LoRaWAN sensors	■	■	–	■	DS-L-ECO	DS-360532
	■	■	■	■	DS-L-ECO-CO2	DS-360533

<sup>1</sup> Additional product information is provided in the data sheet (see DEOS Portal at portal.deos-ag.com)  
<sup>2</sup> License for LoRaWAN Gateway DS-L-GWLIC-1, DS-360454 (see page 130) included in price  
<sup>3</sup> Required number of batteries not included

LoRaWAN Sensoren – for indoor & outdoor use



Hardware equipment & Technical data <sup>1)</sup>		DS-L-EMS
Frequency band	EU 868	
Measuring range		
Temperature	-30 ... 70 °C	
Humidity	0 ... 100 % rH	
Mounting	indoors, outdoors	
Dimensions (BxTxH)	85,3 mm x 27 mm x	
Protection standard	IP 67	
Ambient temperature	-30 ... 70 °C	
Ambient humidity	0 ... 100 % rH, non-condensing	

- LoRaWAN sensors
- With integrated temperature and humidity sensors

LoRaWAN	Batteries <sup>3)</sup>	Type	Art. no.
LoRaWAN sensors	1x incl.	DS-L-EM300-TH	DS-360450
3.6 V AA Lithium battery (Li-SOCl <sub>2</sub> )		DS-L-BAT 3,6 AA	DS-360486

LoRaWAN magnetic window and door contact



Hardware equipment & Technical data <sup>1)</sup>		DS-L-EMS Door
Frequency band	EU 868	
Mounting	indoors	
Dimensions (BxTxH)	~ 75 x 21 x 22 mm	
Ambient temperature	0 ... 50 °C	
Ambient humidity	0 ... 85 % rH, non-condensing	

- Door status and automatic closing
- Transmitting the open/closed condition
  - Energy saving by adjusting the set temperature when the window is opened: window open, heating off
  - Climate control is being optimised simultaneously

LoRaWAN	Batteries <sup>3)</sup>	Type	Art. no.
LoRaWAN magnetic window and door contact	1x	DS-L-EMS Door <sup>2)</sup>	DS-360474
3.6 V AA Lithium battery (Li-SOCl <sub>2</sub> )		DS-L-BAT 3,6 AA	DS-360486

<sup>1)</sup> Additional product information is provided in the data sheet (see DEOS Portal at portal.deos-ag.com)  
<sup>2)</sup> License for LoRaWAN Gateway DS-L-GWLIC-1, DS-360454 (see page 130) included in price  
<sup>3)</sup> Required number of batteries not included  
<sup>4)</sup> RS482 (Modbus RTU) is not supported via LoRa toolkit

LoRaWAN window contact



Hardware equipment & Technical data <sup>1)</sup>		DS-L-MCS
Frequency band	EU 868	
Measuring range		
State	2 Reed contacts + magnets	
Mounting	indoors, outdoors	
Dimensions (BxTxH)	21 mm x 142 mm x 15 mm	
Protection standard	IP 20	
Ambient temperature	-20 ... 60 °C	
Ambient humidity	0 ... 85 % rH, non-condensing	

- LoRaWAN window contact
- Delivery incl. adhesive foil for fastening

LoRaWAN	Batteries	Type	Art. no.
LoRaWAN window contact	1x incl.	DS-L-MCS-State	DS-360558
1.5 V AAA Lithium battery		DS-L-BAT 1,5 AAA	DS-360559

LoRaWAN IO module



Hardware equipment & Technical data <sup>1)</sup>		DS-L-300
Frequency range	EU 868, transmission up to a line of sight of 10 km	
Surrounding area	Indoors	
Digital inputs (DI)	4x	
Digital outputs (DO)	2x	
Analog inputs (AI)	each 2x 4 ... 20 mA, 0 ... 10 V, PT100 RTD	
USB	1x USB-C	
LEDs	1x system, 1x ACT	
Dimensions (WxDxH)	70 mm x 22 mm x 93 mm	
Protection standard	IP 30	
Input voltage	5 ... 24 V DC	
Ambient temperature	-20 ... 60 °C	
Ambient humidity	0 ... 95 % RH, non-condensing at 25°C	

- LoRaWAN IO modules
- Easy connection with multiple wired sensors for recording error messages
  - Delivery incl. plug-in power supply unit

LoRaWAN	Type	Art. no.
LoRaWAN IO module	4x DI, 2x DO, 2x AI	DS-L-UC300
		DS-360530

<sup>1)</sup> Additional product information is provided in the data sheet (see DEOS Portal at portal.deos-ag.com)  
<sup>2)</sup> License for LoRaWAN Gateway DS-L-GWLIC-1, DS-360454 (see page 130) included in price

**LoRaWAN Gateway** – with integrated Modbus interface for building automation



DS-LoRaGateway

## Highlights at a glance <sup>1)</sup>

- ✓ Our data collector – exchanges building data with the DEOS pro.building Suite through the Internet
- ✓ Data provision for further use to the local control system via Modbus/TCP
- ✓ Accessories to strengthen the radio signal for indoor and outdoor use
  - ✓ Antennas
  - ✓ Antenna extension cables
- ✓ Expandable with LoRaWAN enabled DEOS or third-party components

### Equipment & functions <sup>1)</sup> DS-LoRaGateway

<b>Frequency band</b>	EU 868
<b>LoRaWAN</b>	Antenna (external)
Channels	8x
Output power	max. 27 dBm
<b>WiFi</b>	Antenna (internal) fully integrated
<b>LTE</b> <sup>2)</sup>	–
<b>Ethernet</b>	
Ports	1x RJ45 (PoE PD)
Transmission rate	10/100/1000 Mbps (Base-T)
<b>USB</b>	1x type C
<b>Reset button</b>	1x
<b>LEDs</b>	1x each
	Power, Status, LoRa, WiFi, LTE, Ethernet
	– optional

## Equipment & functions <sup>1)</sup> DS-LoRaGateway

<b>CPU</b>	QuadCore 1,5 GHz 64-bit ARM Cortex-A53
<b>RAM memory</b>	512 MB DDR4 RAM
<b>Flash memory</b>	8 GB eMMC
<b>Assembly</b>	Table-, wall- or pole mounting
<b>Dimensions (BxTxH)</b>	180 mm x 56,5 mm x 110 mm
<b>Material</b>	Plastic
<b>Protection standard</b>	IP 65
<b>Ambient temperature</b>	-40 ... 70 °C
<b>Ambient humidity</b>	0 ... 95 % rH, non-condensing at 25 °C
<b>Input voltage</b>	optionally 9 ...24 V DC PoE in acc. IEEE-Standard 802.3af
<b>Power consumption</b>	≤ 4,2 W

LoRaWAN		Type	Art. no.
LoRaWAN Gateway <sup>3)</sup>	Incl. plug-in power supply	DS-LoRaGateway	DS-360448
	License <sup>4)</sup>	DS-L-GWLIC-1	DS-360454
Antenna	Wall or pole mounting, for outdoor use	DS-L-ANT1 LoRaGateway	DS-360471
	Magnetic base, for indoor use	DS-L-ANT2 LoRaGateway	DS-360472
Extension cable antenna <sup>5)</sup>	Length: 5 m	DS-N-AK5	DS-360379
	Length: 10 m	DS-N-AK10	DS-360380

LoRaWAN – services		Type	Art. no.
Special configuration <sup>6)</sup>	Per 15 minutes or part thereof	DS-L-Service TEO/LoRa	DS-360555
	Individual service package	DS-L-Service TEO/LoRa	DS-360555

1 Additional product information is provided in the data sheet (see DEOS Portal at [portal.deos-ag.com](http://portal.deos-ag.com))

2 Devices with LTE connecion on request

3 In addition, a license is required to connect Modbus data points on the OPEN EMS, see page 93

4 Only required for third-party LoRaWAN subscribers not sourced through DEOS AG

5 Extension cables reduce the output power of the radio transmission

6 Billing on a time and material basis for special configurations. Special configurations are e.g. support during commissioning, pre-configure rooms, assign LoRa devices to rooms, individual project support

This image shows a full page of blank graph paper. The grid consists of small, equal-sized squares formed by thin gray lines. There are 20 columns and 20 rows of squares, creating a total of 400 square units. The grid covers the entire area of the page, leaving no margins or other markings.





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Sales & order information

Orders

Order by phone, e-mail or fax

We are pleased to receive your orders by phone, mail or fax stating the Typee according to this product catalog. For technical support or problem solving concerning specific fields of control technology, we are naturally at your disposal.

Returns

Returns made simple

Whenever goods are returned - irrespective of whether this is based on a statutory claim of the purchaser or not - the original invoice, the original delivery note and the reason for return must be sent to us.

Returns which are not based on a statutory claim are only permitted if they concern unused products in our product catalogue, with the exception of cut-to-size goods (e.g. cables), special programming and non-stocked articles. The net value of the returned goods must be at least 250.00 Euro. The goods must be in their original packaging, the packaging seal must be undamaged and the period between return of goods and delivery must not exceed 2 months.

The return requires our prior written consent. In the case of a return approved by us, the buyer bears the cost of the return.

Furthermore, we deduct a 20 percent processing fee from the value of the goods from the credit note to be issued. We reserve the right to deduct any further costs, e.g. for damaged packaging.

General terms and conditions

GTC

General terms of business apply basically.

You can review our current general terms and conditions in our office or in the footer of our website [www.deos-ag.com](http://www.deos-ag.com). We can also send you the document, please do not hesitate to contact us!



System performance

The OPEN EMS is a high-performance, freely programmable automation system that is capable of using up to 12 different bus protocols simultaneously.

Protocol diversidade

The processing power is dynamically adapted to the respective, user-dependent configuration. This allows the simultaneous use of a large number of different possible functions, either exclusively or proportionately.

Dynamic processing power

The system limits of an OPEN EMS are contingent on a variety of different factors. This is why, depending on the configuration and system design of the OPEN EMS, exceeding the system limits cannot be ruled out. Factors affecting the system load may be independent of a certain number of data points, including the different communication speeds between IP and RS485 in conjunction with the rate of change of data points or the programmed rate of rotation of the individual FUP pages.

System limits

The actual system load results from the combination of all bus protocols used, functions in the respective parameterization and the very different system configurations.

System load results from system configuration

Please contact us. We will be pleased to advise you regarding your individual project.

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## Reliable partner as a manufacturer in building automation

DEOS is a German solution manufacturer for the automation and digitalisation of buildings, with over 55 years of industry experience. We constantly pursue our goal: the development of intuitive energy efficiency solutions for sustainable buildings. Our regional project business, including our own HVAC and maintenance services, rounds off the spectrum.

As a subsidiary of the Swedish Regin Group, we are your central point of contact for the entire Group portfolio in Germany, Austria and Switzerland. Thanks to the long-standing DEOS presence in these markets, we offer solutions that are customised to the needs of our integrators, building owners and operators. We offer holistic solutions that combine the best of all Regin Group brands – DEOS, Regin and Industrietechnik.

These solutions are clearly differentiated by their simplicity, faster installation and commissioning, and intuitive operation. Our employees and experts offer their personal support to ensure that our customers become more successful and that building energy efficiency increases.

**For buildings that inspire.**

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