Marathon
Temp Sens

ENGINEERED SOLUTIONS
FOR HEATING & SENSING

ISO 9001-2015 CE IEC SA VDE Ex UL Underwriters Laboratories

HEAT TRACING SOLUTIONS

MARATHON HEATER (I) PVT. LTD.

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ENGINEERED SOLUTIONS
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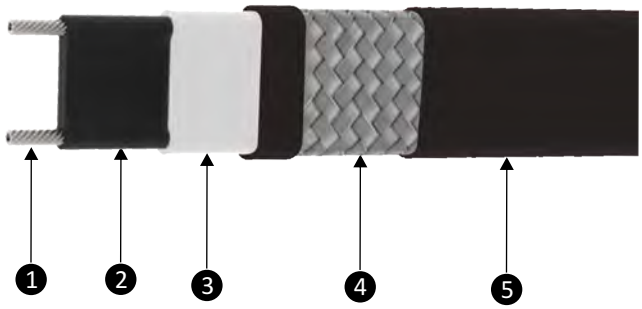
SELF REGULATING HEATING CABLE

Construction

LTSRH



1. Bus wires
2. Semi-conductive self regulating matrix
3. Inner Jacket
4. Copper /Nickle plated copper
5. Outer Jacket

Introduction

Marathon Heaters self regulating heating cable provide the most versatility in heat trace design and applications. Constructed of a Semi-conductive heater matrix extruded between parallel bus wires, a self regulating cable adjusts its output to independently respond to ambient temperatures all along its length. As temperatures increase, the heater's resistance increase which lower the output wattage. Conversely, as the temperature decrease, the resistance decreases and the cable produces more heat. So it is no need thermostat in some applications. It will never overheat or burnout even when wrapped by itself(overlapped). It can be cut to any length. So it is a convenient ,easy use and energy saving product.

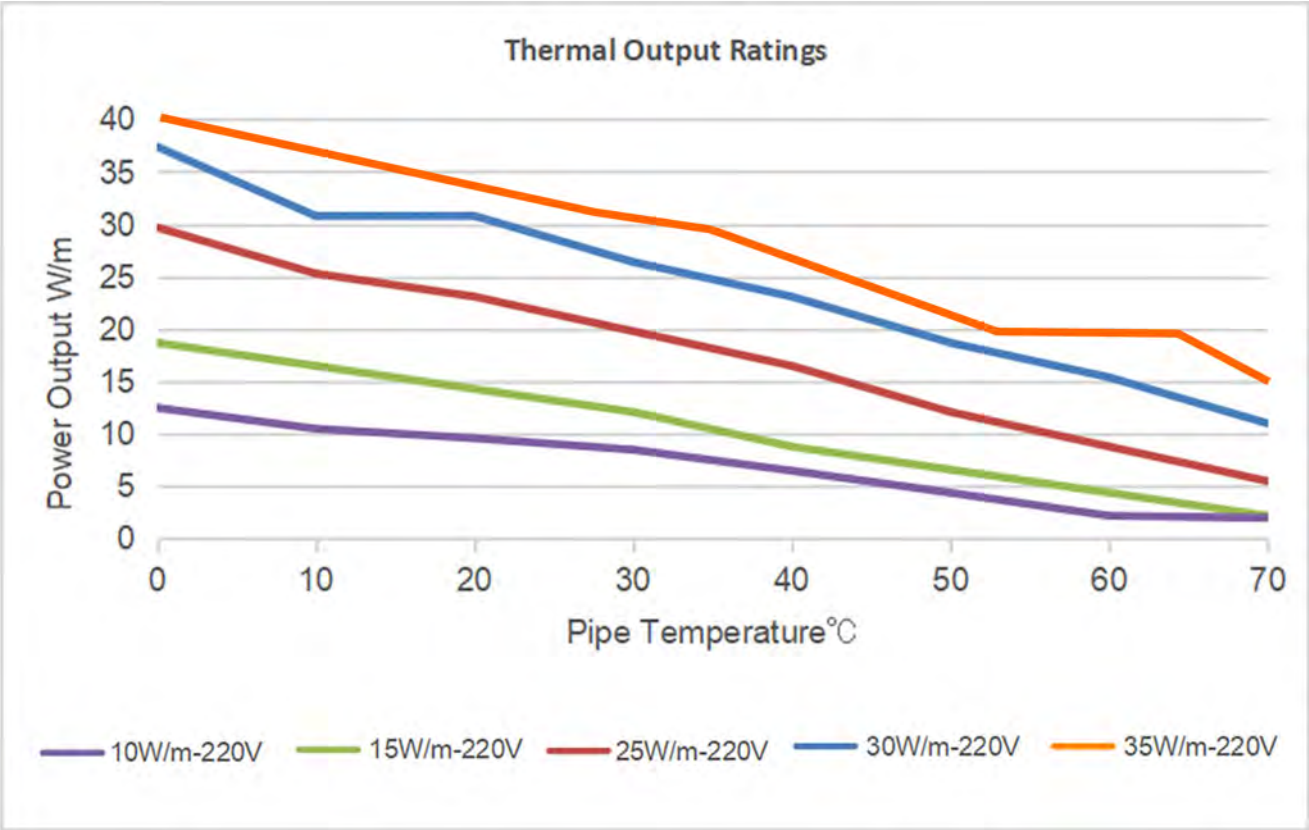
Construction Data

Buswire size	0.9 mm^2 /1.3mm^2 tinned copper/ NPC
Heating elements	PTC
Insulation	Polyolefin

Cable Specifications

Output wattage at 10°C	10, 15, 25, 30, 35 W/M
Braiding covering area	Over 85%
Max. maintain temp @ 10°C	65°C
Max. exposure temp.	105°C
Min.installation temp.	-40°C
Bending radius	5 times*cable thickness
Voltage	208-277 V
Insulation color	Black
Regular size to insulation	10*4mm (Width*Thickness)

Graph of LTSRH



Max length(m)vs circuit breaker size

AC220V		Max circuit length(m) vs CB size		
Model	Start-up temp.°C	16A	20A	32A
LTSRH	10	78	90	118
	0	56	65	82
	-20	45	50	59
	-40	30	33	41

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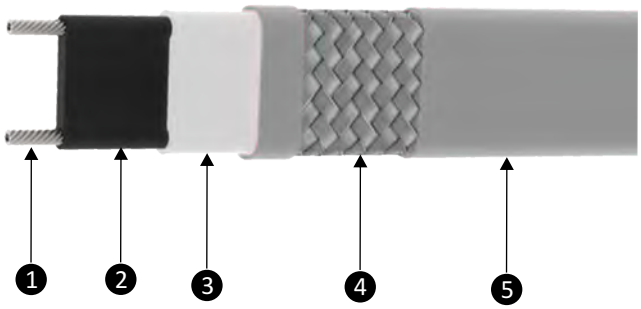
SELF REGULATING HEATING CABLE

Construction

MTSRH



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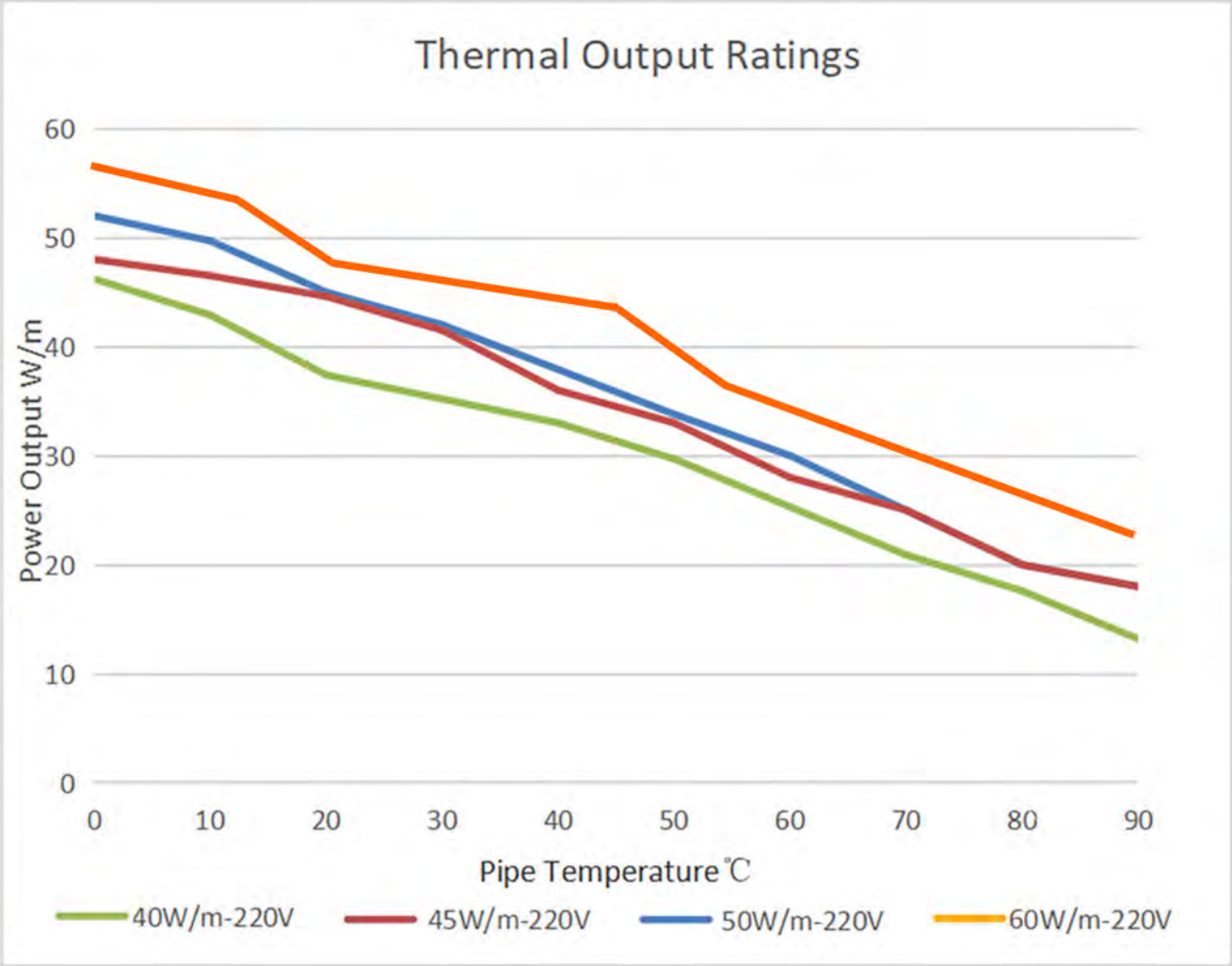
Construction Data

Buswire size	1.3mm^2 tinned copper
Heating elements	PTC
Insulation	Polyolefin or Fluoropolymer

Cable Specifications

Output wattage at 10°C	40, 45, 50, 60 W/M
Braiding covering area	Over 85%
Max. maintain temp @ 10°C	105°C
Max. exposure temp.	135°C
Min.installation temp.	-40°C
Bending radius	10 times*cable thickness
Voltage	208-277 V
Insulation color	Grey
Regular size to insulation	11.8*3.4mm-polyolefin insulation 11.6*3.2 Fluoropolymer insulation (Width*Thickness)

Graph of MTSRH



Max length(m)vs circuit breaker size

AC220V		Max circuit length(m) vs CB size		
Model	Start-up temp.°C	25A	32A	40A
MTSRH	10	53	69	86
	0	46	61	74
	-20	41	53	66
	-40	36	48	60

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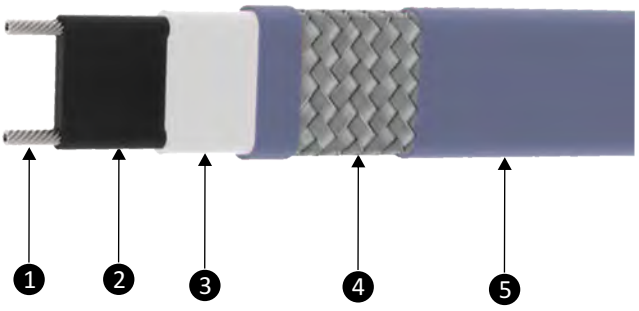
SELF REGULATING HEATING CABLE

Construction

HTSRH



1. Bus wires
2. Semi-conductive self regulating matrix
3. Inner Jacket
4. Copper /Nickle plated copper
5. Outer Jacket

Introduction

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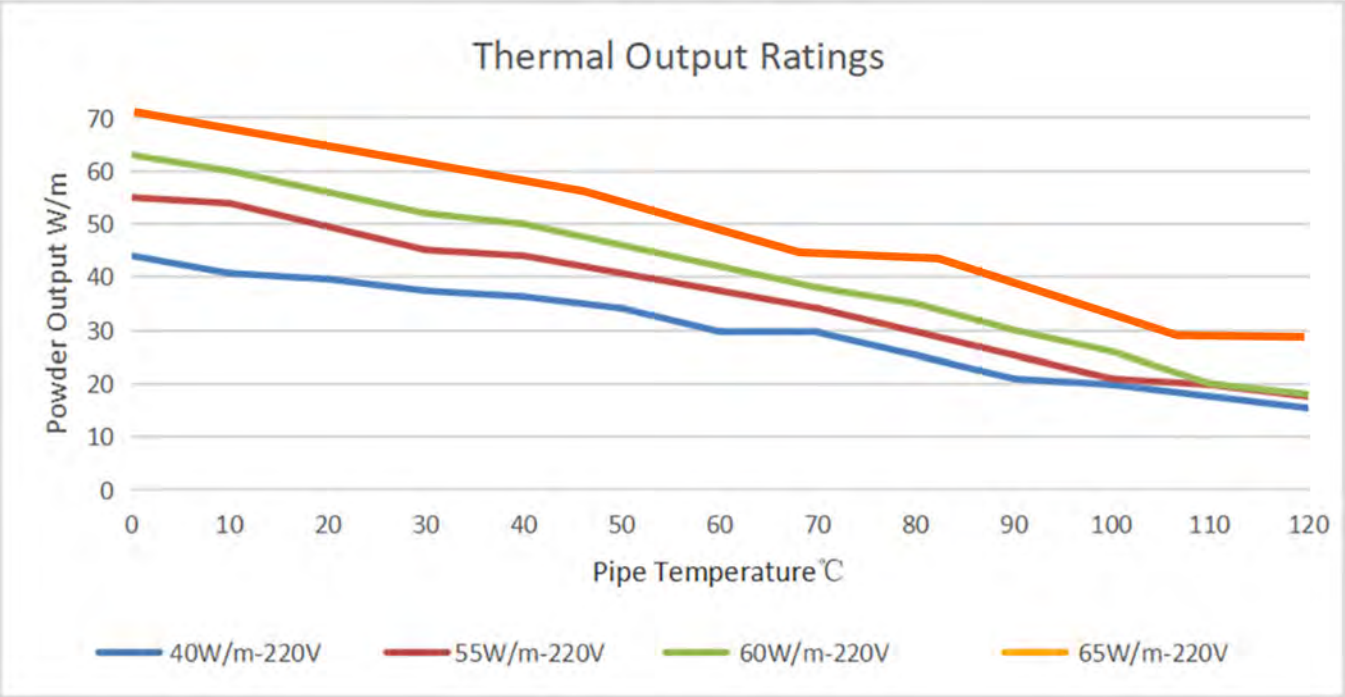
Construction Data

Buswire size	1.5mm^2 nickel copper
Heating elements	Fluoropolymer heating mixture
Insulation	Fluoropolymer/FEP
Braiding	Tinned copper
Outjacket	Fluoropolymer/FEP

Cable Specifications

Output wattage at 10°C	40, 55, 60, 65 W/M
Braiding covering area	Over 85%
Max. maintain temp @ 10°C	135°C
Max. exposure temp.	205°C
Min.installation temp.	-40°C
Bending radius	10 times*cable thickness
Voltage	110-120/208-277 V
Insulation color	Dark Grey
Regular size to insulation	9.8*3.3 mm (Width*Thickness)

Graph of HTSRH



Max length(m)vs circuit breaker size

AC220V		Max circuit length(m) vs CB size	
Model	Start-up temp°C	32A	40A
HTSRH	10	53	66
	0	48	60
	-20	44	55
	-40	39	49

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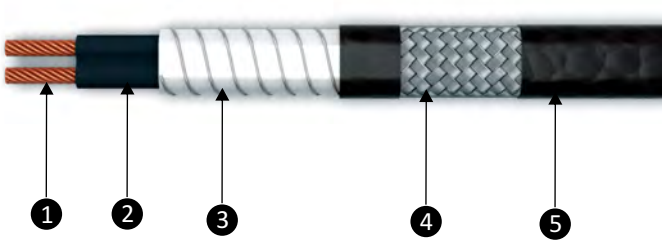
CONSTANT WATTAGE PARALLEL HEAT TRACE

CWPHT

Construction



1. Bus wires
2. Bus Wire Insulation
3. Heating wire
4. Braiding
5. Outer Jacket

Introduction

Parallel circuit Heating cables are constant watt arrangement designed to put out a certain amount of wattage per linear foot of cable. These are generally constructed of two #12AWG polymer insulated parallel bus wires with a nickel alloy heating element wire wrapped alternatively along the insulated bus wires. These connections are made at the 'NODE' point where the nickel-alloy heating element is either welded or connected by rivets. The entire element assembly is then dielectrically insulated with an additional polymer jacket. The power output per unit length is constant, regardless of the overall length of the heating unit. The parallel arrangement preserves systems integrity i.e. if any section of cable should fail, the rest of the heater will continue to operate. Ideally suited for applications where a particular watt density is required at all times such as freeze protection and many other low temperature process control applications

Construction Data

Buswire size	2X AWG 18 to AWG 15 Stranded Nickel Plated Copper
Buss Wires Insulation	PTFE
Heating Wire	Nichrome
Braiding	Nickel Plated copper Braided
Outer Jacket	PTFE

Cable Specifications

Output wattage at 10°C	20, 30, 40, 50, 60 W/M
Braiding covering area	Over 85%
Surface Temperature	200°C
Max. exposure temperature	230°C
Cut to Length	Yes
Min Bending radius	25 mm
Voltage	230 V / Customise
Insulation	Dark Brown

Maximum Circuit Length(M)

Voltage - 230 VAC			
Model	Nominal output W/m	Circuit Load	Max. Circuit Length (Meter)
CWPHT	20	0.086956522	184
	30	0.130434783	123
	40	0.173913043	115
	50	0.217391304	92
	60	0.260869565	77

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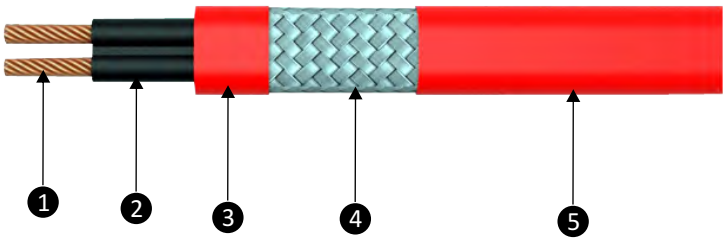
CONSTANT WATTAGE SERIES HEAT TRACE

CWSHT

Construction



1. Heating element
2. Heating element Insulation
3. Inner Jacket
4. Braiding
5. Outer Jacket

Introduction

Series resistance-type heater cables use single or multiple resistive conductors to create a heating circuit. Power output of these cables is relatively constant and as voltage is applied, the power output is determined by a combination of the length of the cable and the overall resistance of the conductor. heating cable's current and resistance is equal to all length heating cable, so the heating value of each unit is equally, not result in the power of terminal end is lower than beginning end with the increasing length of heating cable, so it is suit for long line pipes and large diameter pipe's heat tracing or temp. maintenance, the cable can NOT cut to be length.

Construction Data

Heating element	Nichrome / Copper Nickel
Heating element Insulation	PTFE
Inner Jacket	PTFE
Braiding	Tinne Copper Braid
Outer Jacket	PTFE

Cable Specifications

Output wattage at 10°C	Customize W/M
Braiding covering area	Over 85%
Surface Temperature	200°C
Max. exposure temperature	230°C
Maximum Circuit Length	3 KM
Min Bending radius	45 mm
Voltage	230 V / Customise
Insulation	Red

Maximum Circuit Length(M)

Voltage - 230 VAC			
Model	Wattage	Conductor Size (mm)2	Resistance 20°C Ohms/m
CWSHT	40	1.3	0.01492
	50	2.1	0.009449
	60	3.3	0.005945
	70	5.3	0.003478

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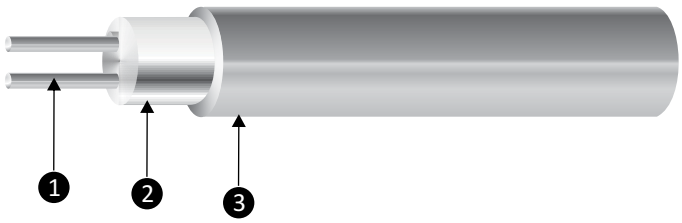
MINERAL INSULATED HEAT TRACE

Construction

MIHT



1. Conductor
2. Insulation Material
3. Sheath Material

Introduction

A mineral Insulated (MI) cable essentially consists of one or two conductors of copper or alloy embedded in dielectric magnesium oxide insulation and surrounded by an Incoloy 825 sheath. These cables are recognized for their high temperature service and excellent protection against corrosion. Suitable for high temperature and harsh environments. Long circuit lengths and Uniform power along the entire length

Construction Data

Sheath Material	Alloy 825 / SS of 300X range / Customise
Number of Conductors	1, 2 & 4
Conductor Material	Nichrome80/20, Copper, Copper-Nickel resistance alloy / Customise
Insulation Material	MGO

Cable Specifications

Output wattage at 10°C	Customise W/M
Surface Temperature	800°C
Max. exposure temperature	955°C
Min Bending radius	3D (D - pipe OD)
Voltage	230 V / Customise

Maximum Circuit Length(M)

Voltage - 230 VAC		
Model	Diameter (mm)	Max. Circuit Length (meter)
MIHT	2	300
	3	200
	4	120
	6	60
	8	30
	10	18

Dual Side Welded Cold Region MI Cable

Welded Cold Region MI Cable

Extended Cold Region (ECR) MI Cable

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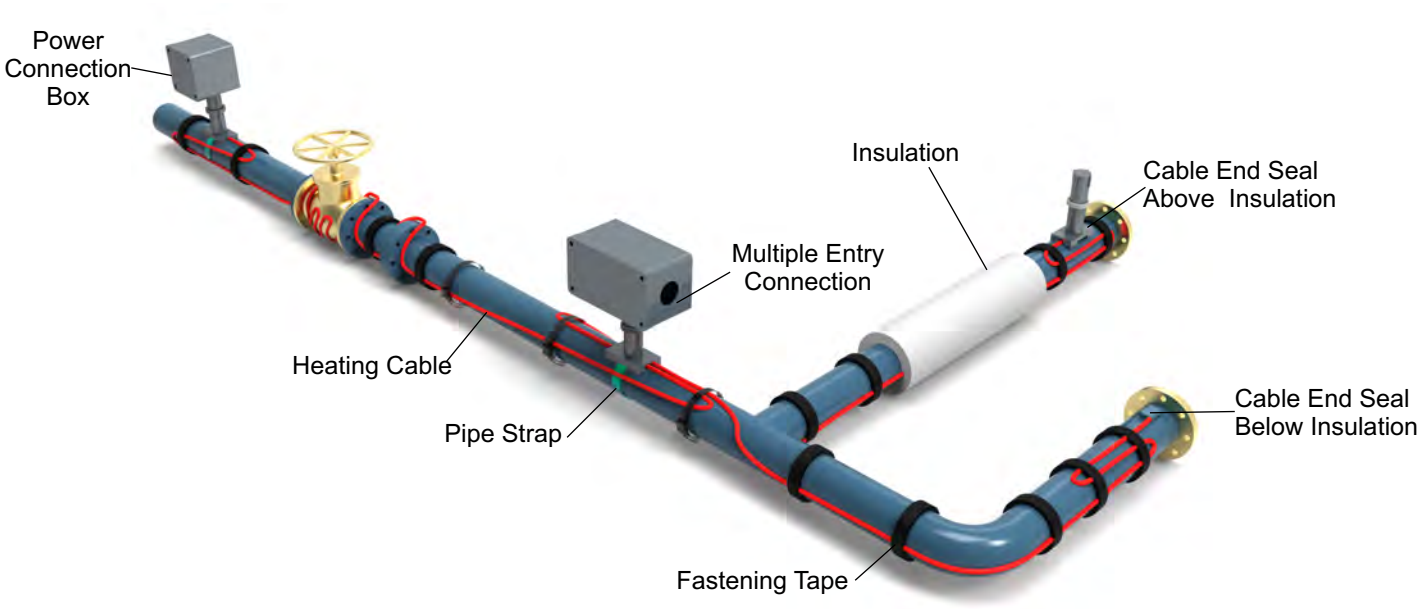
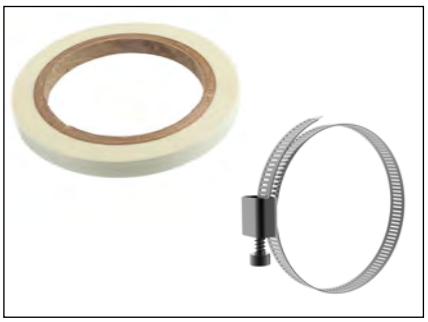
ACCESSORIES FOR HEATING CABLES

EHT System Accessories





Fastening Tapes & Clamp

Fastening Tape & Clamp for fixing the heating cable, and for mounting the bracket

Insulation entry kits

Bushings protect against mechanical damage to the heating cable and capillary of the thermostat

Junction Boxes

Junction boxes for connecting heating cable - used for power, connecting and branching of heating cables.

Termination kits

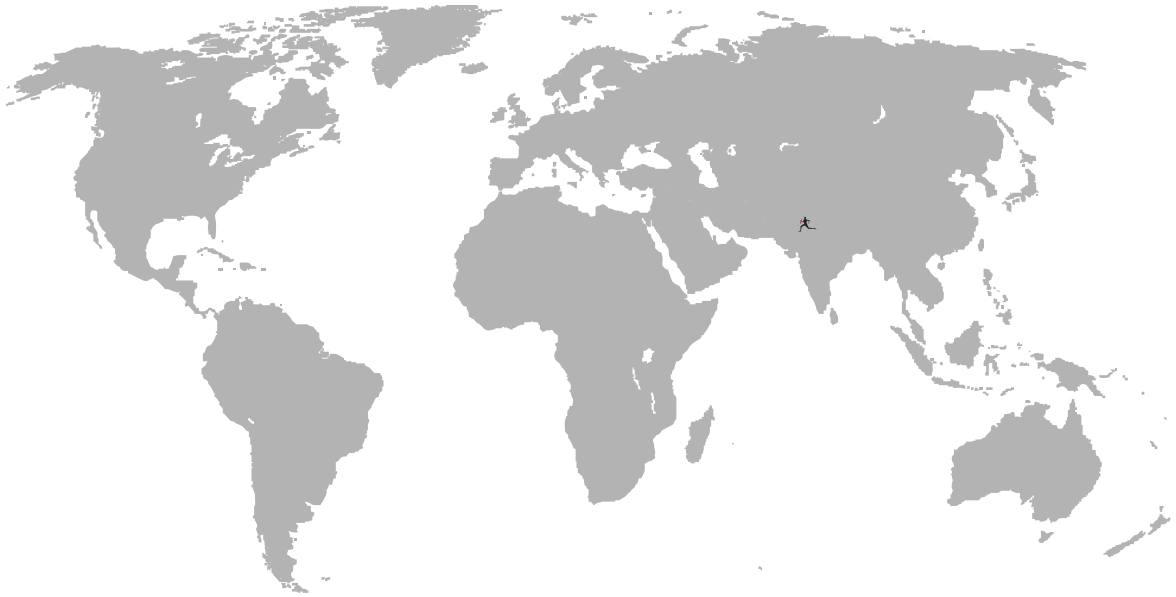
The termination kit contains everything needed for the completion of the cable at both powered and unpowered side.

Control Panel

Control panel are complete control solutions for heat trace applications and provides temperature control, monitoring and power management.

Warning Labels

Warning labels on the insulation indicating presence of an electric heater.



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