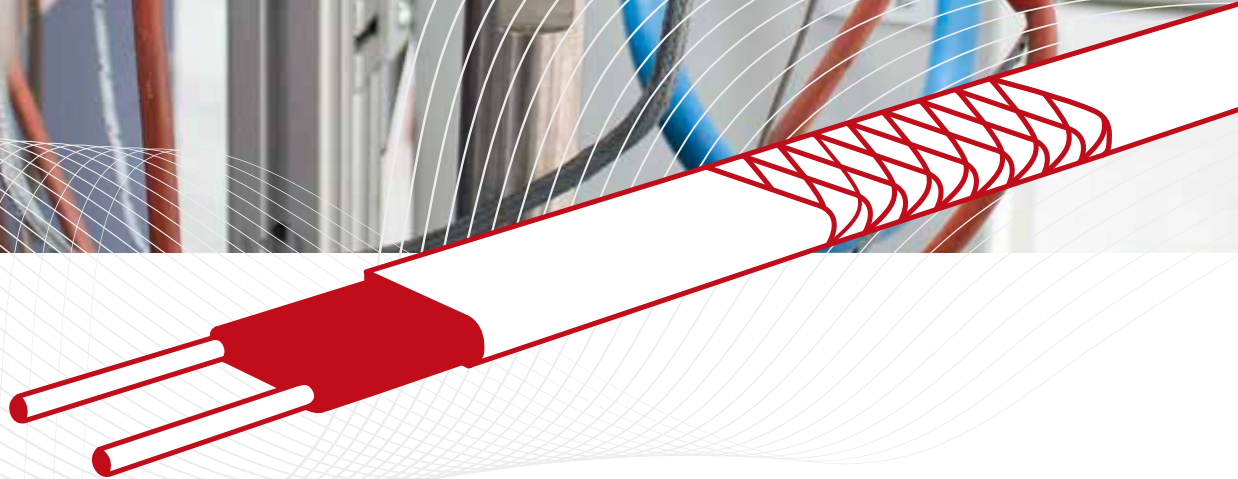
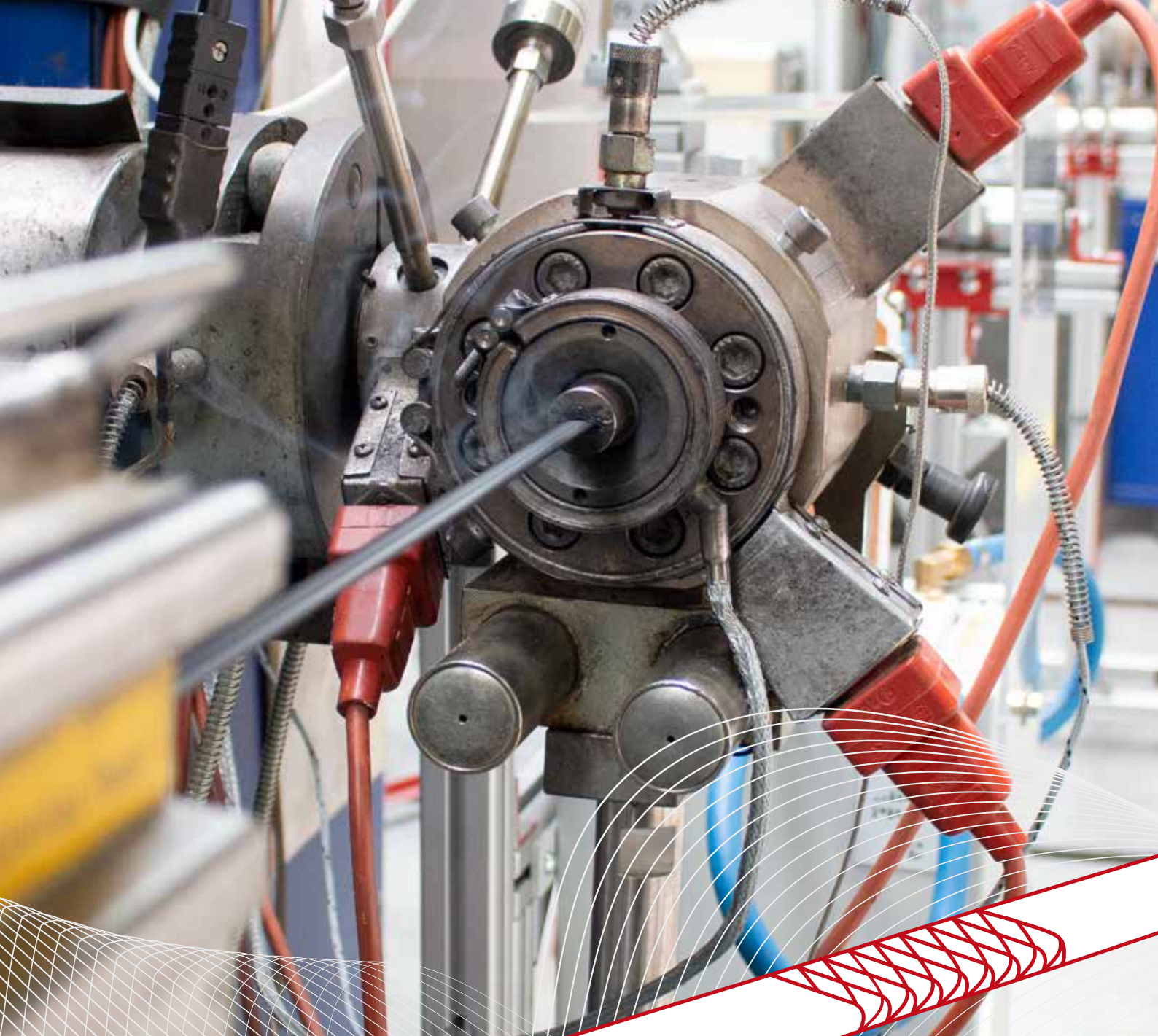




Self-Regulating Trace Heaters

eltherm® 

Content

From Process to Product The eltherm Story	4
From A to Z Your One-Stop-Shop	6
Self-Regulating Trace Heaters	8
Selection Guide Low Temperature	10
Selection Guide Medium Temperature	12
Selection Guide High Temperature	13
Selection Guide High Temperature PREMIUM	14
Datasheets Self-Regulating Trace Heaters	16
Accessories Self-Regulating Trace Heater System	42
Exemplary presentation Self-Regulating Trace Heaters	52
Design Guide Self-Regulating Trace Heater System	54
At Your Service eltherm globally	62

„Understanding the application and finding the most efficient, reliable solution is our daily challenge“





eltherm in Burbach, Germany

- ❶ Production facility I
- ❷ Administration, application engineering
- ❸ R&D, international sales, eltherm Academy
- ❹ Production facility II



From Process to Product

The eltherm Story

Founded in 1991 in Burbach, Germany, eltherm has developed into a global engineering solution provider with own production facilities and a one-stop-shop for electrical heat tracing products and systems. The company has attained worldwide recognition as a turn-key partner for engineering, design, installation and commissioning of electrical heat tracing for complex industrial plants and facilities.

With its own comprehensive production facilities for all types of heating cables and accessories eltherm has built up the engineering expertise to become one of the leading manufacturers of electrical heat tracing systems in the world.

Besides frost protection and temperature maintenance applications up to 900 °C, eltherm is the competent partner for complete system solutions like heating whole chemical or other industrial plants. eltherm proved its potential and expertise in different industries such as oil and gas, power plant, construction, automotive and food.

› Portfolio Focus

We provide a comprehensive range of electrical heat tracing products, systems and solutions from A to Z. Your One-Stop-Shop.

› Customer Focus

Our focus on the benefits to our clients sets us apart from competitors. We understand and solve our clients' needs with technological passion.

› Technical Focus

We specialise in electrical heat tracing. That is our core competence and inspiration.

› Global Focus

We are a global engineering company with our own production facilities, serving international markets and projects from 13 locations on 5 continents – and with a staff force of 300.



From A to Z Your One-Stop-Shop

› Serial Resistance Trace Heaters

for freeze prevention and process temperatures in industrial plants and facilities.

› Parallel Resistance Trace Heaters

Parallel trace heaters with constant wattage output and a single end power input. For applications in hazardous and non-hazardous locations.

› Mineral-Insulated Trace Heaters

exclusively manufactured and finished from Alloy 825 or high-quality stainless steel. The unique "Clean Laser Seal" Technology (CLS) guarantees a homogenous, 100% stable system and reliable function up to 700 °C.

› Self-Regulating Trace Heaters

for freeze prevention and temperature maintenance in industry and building & construction. Applications up to 250 °C.

› Heated Analytic, Pressure and Loading Systems

for reliable and safe transport of pressurised or non-pressurised fluids and gases without temperature loss, up to 450 °C.

› Heating Mats and Jackets

custom-engineered and tailor-made, for heating valves, pumps, drums, barrels, hobbicks and flange covers, up to 450 °C.

› Power and Control Panels

including temperature sensors, display and operating devices, monitoring and controls plus accessories for reliable, safe functioning and complete control panels.

› Accessories

for safe and effective assembly and operation of complete heat tracing systems in facilities from small to large.

Applications



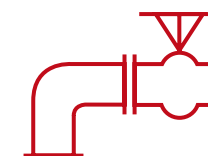
Temperature
maintenance



Freeze prevention



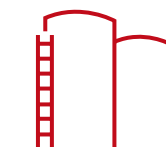
Pipelines



Valves, pumps



Tank container



Silos, vessels, tanks



Open area



Railway



Antenna



Special solutions

› Your scope of application is not included? We will advise you individually.

At a Glance

Benefits

- › Self-regulating with adaptable output
- › Various temperature ranges
- › Demand-orientated output grading
- › High chemical resistance
- › No temperature limitation required (Ex-area)
- › Easy to install
- › Can be cut to length off the roll
- › Fast connection with El-Click

Design



Approvals

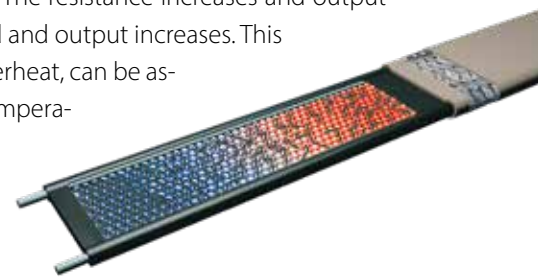


› Approvals for USA / Canada

Find more in our special product brochure

Self-Regulating Trace Heaters

Self-regulating trace heaters consist of two parallel bus wires embedded in a heating matrix doped with carbon particles. When the temperature rises in operation, molecular expansion increases the distance between the carbon particles. The resistance increases and output drops. When temperatures fall, this process is reversed and output increases. This physical property means that the heater will never overheat, can be assembled crosswise and can be operated without a temperature limiter. Moreover, selected ELSR heating cables are approved for use in hazardous areas.



Application

The ELSR (eltherm-self-regulating) trace heater is used for freeze prevention and temperature maintenance on vessels, pipes, valves, etc. It may be immersed in fluids. For use in aggressive environments (e.g. in chemical or petrochemical industry), the trace heater is coated with a special chemically resistant outer jacket (fluoropolymer), option "BOT".

Design

A wide selection of self-regulating heater designs to handle almost any application, including service in harsh conditions and corrosive environments.

- AO** Aluminium foil with a thermoplastic outer jacket. Trace heater for all low-temperature and medium-temperature applications, particularly easy to assemble.
- AHF** Aluminium foil with halogen-free insulation and halogen-free outer jacket. Trace heater for all low-temperature and medium-temperature applications in building services engineering, particularly easy to assemble.
- BO** Protective braid with a thermoplastic outer jacket. Trace heater with protective tin-plated copper braid for all low-temperature and medium-temperature applications.
- BHF** Protective braid with halogen-free insulation and halogen-free outer jacket: with a protective braid made of tin plated copper for all low and medium temperature applications in building services engineering.
- BOT** Protective braid with fluoropolymer outer jacket (Teflon). Trace heater with fluoropolymer outer jacket for use in aggressive chemical, oil and fuel environments*.
- BAF** Protective braid, aluminium foil and outer jacket, approved for food and potable water, designed for freeze prevention in and on potable water pipes.
- BF** Protective braid and outer jacket approved for food and potable water. Special trace heater with robust protective braid for use in mechanically sensitive potable water lines.

› ELSR-N...1... = Nominal voltage 110 V

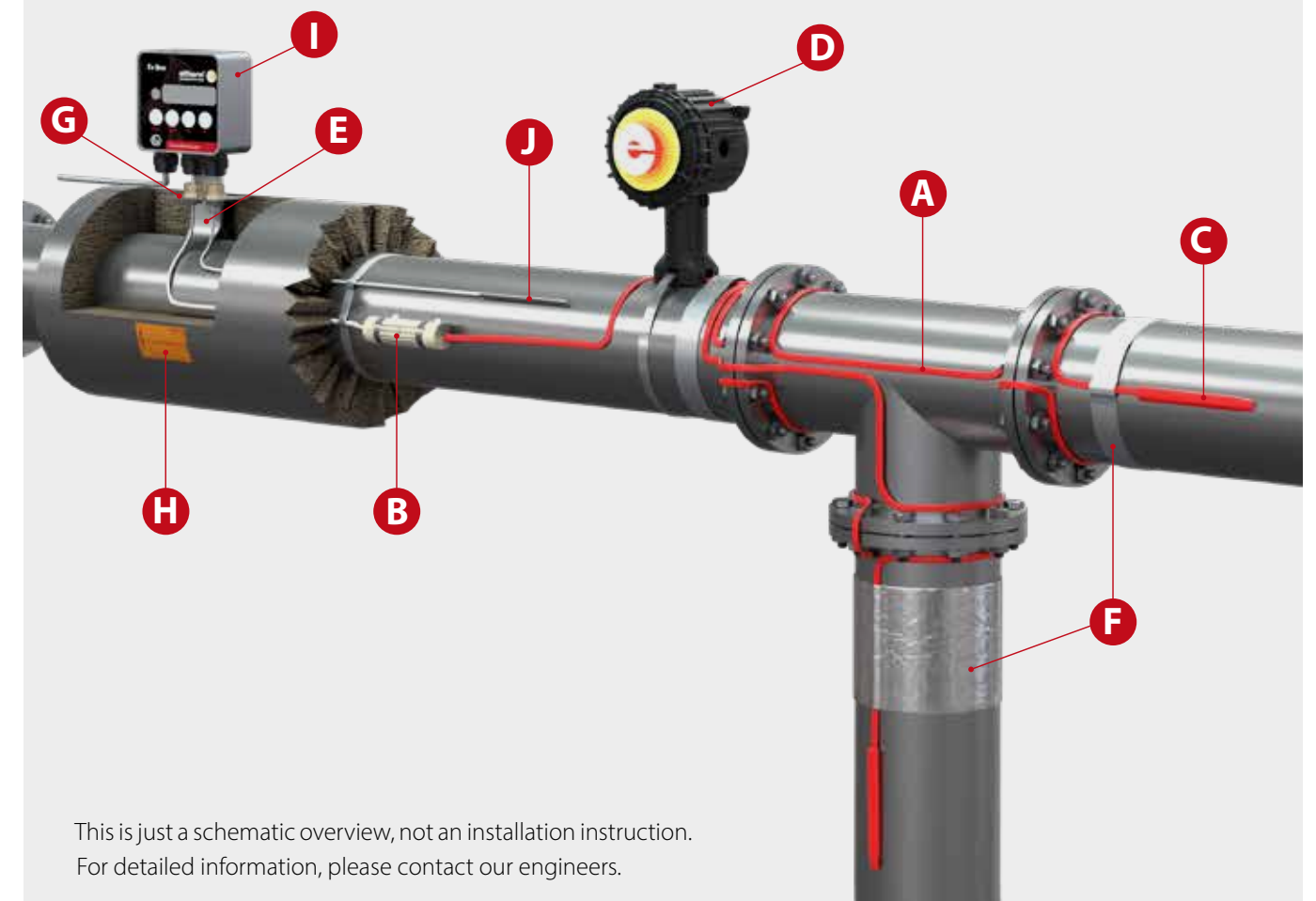
› ELSR-N...2... = Nominal voltage 230 V

We also offer trace heaters with braid only, without outer jacket, upon request.
*A detailed list of chemical resistances is available online.

Checklist

The Self-Regulating Trace Heating System

- | | |
|--------------------------------|---|
| A Trace Heater | F Fasteners and Self-adhesive Tapes, Foils |
| B Power Connection Kit | G Insulation Bushing |
| C End Termination Kit | H Warning Sign |
| D Junction Box | I Temperature Controller |
| E Pipe Mounting Bracket | J Temperature Sensor |



This is just a schematic overview, not an installation instruction.
For detailed information, please contact our engineers.

Selection Guide

Type

Applications

Maximum maintain temperature

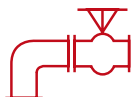
Maximum exposure temperature (de-energized)

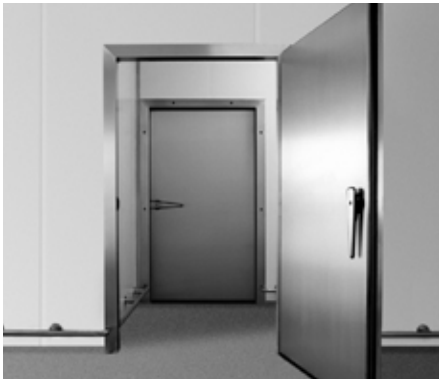
Nominal output at 10°C

Max. Heating circuit length at 10°C, 16 ampere, 230 V

Hazardous Areas

Page

Low Temperature									
ELSR-N				ELSR- N-Halogenfree			ELSR-LS		
									
									
Freeze prevention		Temperature maintenance		Gutters, buildings, downpipes		Pipelines		Valves, pumps	
									
								Silos, vessels, tanks	
Self-regulating trace heaters for freeze prevention and temperature maintenance in lower temperature ranges in industrial applications.									
ELSR-N and -LS are approved for potentially explosive atmospheres. The BOT version of ELSR-N is resistant to aggressive chemicals, fuels and oils. The ELSR-N-halogenfree is used in building services engineering and is self-extinguishing.									
65 °C				65 °C			65 °C		
80 °C				80 °C			80 °C		
10 W/m	20 W/m	30 W/m	40 W/m	10 W/m	20 W/m	30 W/m	10 W/m	15 W/m	25 W/m
177,0 m	109,0 m	83,0 m	57,0 m	196,0 m	160,5 m	103,0 m	196,0 m	160,5 m	103,0 m
●							●		
16				18			20		

Low Temperature					
ELSR-M		ELSR- M-BAF		ELSR-R	
					
					
Freeze prevention	Pipelines	Valves, pumps	Spezial solutions		
ELSR-M: Very flexible and therefore ideal for locations where only small heating dimensions are possible. ELSR-M-BAF: Suited for freeze prevention in pipes and pipelines with seasonal exposure. Typical applications are water supply systems and sanitary facilities on building sites, outdoor events, winter markets etc. ELSR-R: Used where its round geometry facilitates installation in sealing and door profiles. Typical applications are doors and gateways to cold-storage facilities, cold water lines in beverage production and breweries.					
65 °C		65 °C		65 °C	
65 °C		65 °C		65 °C	
10 W/m	15 W/m	10 W/m	15 W/m	19 W/m	27 W/m
126,5 m	105,5 m	89,0 m	89,0 m	102,0 m	32,0 m
22		24		26	

Selection Guide

Type

Applications

Maximum maintain temperature

Maximum exposure temperature (de-energized)

Nominal output at 10°C

Max. Heating circuit length at 10°C, 16 ampere, 230 V

Hazardous Areas

Page

Medium Temperature

ELSR-W




Freeze prevention


Temperature maintenance


Pipelines


Silos, vessels, tanks


Open area

ELSR-Ramp



ELSR-FHP



ELSR-W is employed for temperature maintenance on hot water pipelines and fat disposal lines in canteens or commercial kitchens. It is also used for bacteria and legionella prevention in water lines. ELSR-Ramp for freeze prevention is specially designed for concrete ramps and outdoor surfaces. ELSR-FHP was specially developed for frost heave protection in foundations, for instance in LNG terminals.

80 °C			80 °C		65 °C (ELSR-FHP-23) 80 °C (ELSR-FHP-38)	
100 °C			100 °C		80 °C (ELSR-FHP-23) 110 °C (ELSR-FHP-38)	
water supply lines	fat/oil		50 W/m	110 W/m	23 W/m	38 W/m
9 W/m at 55 °C	13 W/m at 65 °C	22 W/m at 40 °C	at 10 °C	at 5 °C	at 5 °C	at 5 °C
113,0 m	73,5 m		at -10 °C 28,0 m	at -5 °C 48,5 m	at -5 °C 36,5 m	

28

30

32

High Temperature

ELSR-H




Freeze prevention


Temperature maintenance


Valves, pumps


Silos, vessels, tanks

ELSR-SHH



The ELSR-H, -SH and -SHH high-temperature trace heaters are suitable for maintaining temperatures in industrial processes and applications in potentially explosive atmospheres. Thanks to their high chemical resistance, they can also be used in environments with aggressive influences such as chemicals, oils and fuels*.

*A detailed list of chemical resistance is available online.

120 °C				250 °C				
210 °C				250 °C				
10 W/m	15 W/m	20 W/m	30 W/m	15 W/m	30 W/m	45 W/m	60 W/m	75 W/m
45 W/m	60 W/m	75 W/m						
193,0 m	158,0 m	122,0 m	82,0 m	76,0 m	52,0 m	38,0 m	24,0 m	14,0 m
55,0 m	41,0 m	33,0 m		at 10 A				
34				36				

12 Self-Regulating Trace Heaters

www.eltherm.com 13

Type

Applications

Maximum maintain
temperature

Maximum exposure
temperature (de-energized)

Nominal output at 10°C

Max. Heating circuit length
at 10°C, 16 ampere, 230 V

Hazardous Areas

Page

Selection Guide

High Temperature PREMIUM

ELSR-H⁺

ELSR-SH⁺



Freeze
prevention



Temperature
maintenance



Valves, pumps



Silos, vessels,
tanks

These two self-regulating high-temperature heating cables of the next generation are particularly suitable for industrial applications with high temperatures, even in potentially explosive atmospheres. They are characterised by their high robustness and resistance to chemicals, oil and petrol.

165 °C

185 °C

210 °C

250 °C

15 W/m	30 W/m	45 W/m	60 W/m	15 W/m	30 W/m	45 W/m	60 W/m
75 W/m				75 W/m	90 W/m		
156,0 m	69,0 m	63,0 m	34,0 m	150,0 m	84,0 m	58,0 m	44,0 m
26,0 m				31,0 m	20,0 m		

•

•

38

40

The new generation with the PLUS ELSR-H⁺ und ELSR-SH⁺

innovative • inspiring • robust

Thanks to factory calibration, these two self-regulating PREMIUM heating cables in the high-temperature range impress with precisely matched heating circuit lengths. The geometrical adjustment of the heating element width enables the required output level to be set precisely.

The PLUS:

Durability

The two heating cables impress with their low ageing in the standardised cycle test in accordance with DIN EN 60079-30-1.

Sustainability

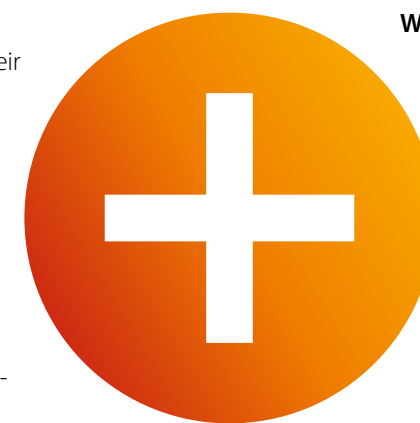
By recycling the process residues, a significant saving of fluoropolymers is achieved in the production process. Up to 10% of the matrix material can be fed back into the production process.

Weight saving

Up to 15% lighter cable drums ensure significantly better handling on the construction site and very simple assembly.

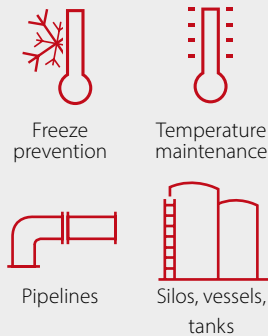
Optimised energy consumption

The option to precisely set the power levels ensures optimised energy consumption and therefore responsible use of resources.



At a Glance

Applications



- › Chemistry and Petrochemistry
- › Maritime and offshore
- › Food Processing Industry
- › Water and sanitation utilities

Benefits

- › Four nominal outputs
- › UV-resistant
- › Moisture proof

Designs

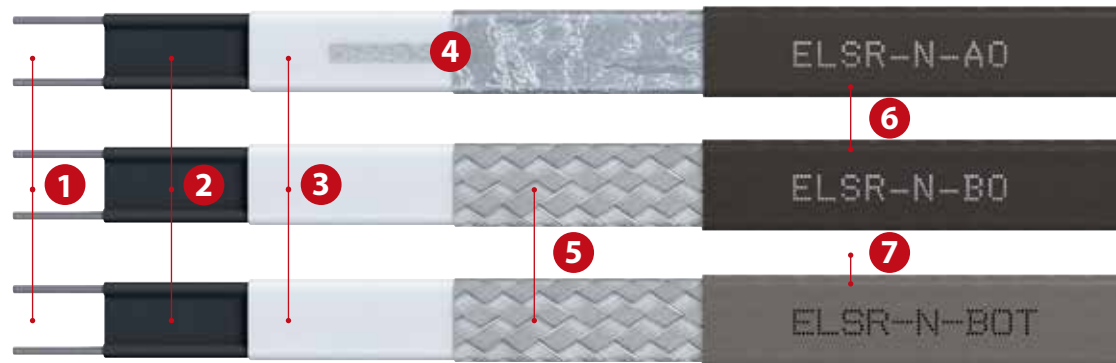
- AO** Aluminium foil, TPE-O outer jacket
- BO** Protective braid, TPE-O outer jacket
- BOT** Protective braid, Fluoropolymer outer jacket

Approvals



- › Trace Heater classification
 - II 2G Ex 60079-30-1 IIC Gb
 - II 2D Ex 60079-30-1 IIIC Db
- › System classification
 - II 2G Ex 60079-30-1 eb IIC T6 Gb
 - II 2D Ex 60079-30-1 tb IIIC T85°C Db
- › Certification
 - IECEx EPS 18.0064 U
 - IECEx EPS 19.007 X
 - EPS 18 ATEX 1133 U
 - EPS 19 ATEX 1014 X
 - CML 21 UKEX 3808 U
 - CML 21 UKEX 3949 X

ELSR-N up to 80 °C



1 Bus wire	Nickel plated copper, 1.23 mm ²
2 Self-regulating heating element	
3 Insulation	
4 Protective conductor connection	see 5 or Cu, tin plated with aluminium foil
5 Protection	Protective braid (Cu, tin plated)
6 Outer jacket	TPE-O
7 Outer jacket	FEP

Checklist

B + C Power Connection & End Termination			
ELVB-SRAN-Ex-20	Power connection, cold assembly, gland M20, brass, Ex d e	0X81PND	
EL-ECN-Ex	Silicone termination cap black, cold assembly, with ex marking	0X81EN1	
ELVB-SREx-25	Power connection, cold assembly, gland M25 x 1,5, PE, Ex e	0X81PA1	
Ex-Con-SR	Ex connection sleeve Ø 36 x 210 mm 4J	0X81125	
ELVB-SREx-IT	Power connection, cold assembly, without gland	091AIT1	
ELVB-SRA-25	Power connection, cold assembly, gland M25 x 1,5, PE	091A010	
EL-ECN	Silicone termination cap, cold assembly, transparent	09112N1	
ELVB-SRV-N-L-W	Splice set, shrink-fit	0911116	
El-Clíc P	Fast connector with 2.5m cold lead H05 SS-F 3 G 1,5	09ClícP	
El-Clíc S	Fast connector T-splice	09ClícS	
D Junction Boxes			
ELAK-Ex-4.01	122 x 120 x 90 mm, polyester, IP66, 1 - 3 Trace heaters, 1 Power cable	0X85401	
Ex-it-R	ø 150 x 125 mm, 3 Trace heaters, 1 Pt100, incl. mounting stand	0X80070	
ELAK-5	122 x 120 x 90 mm, polyester, 3 breakouts M25, IP 66	0920013	
ELAK-RS	150 x 125 mm, twin Pt100, 3 heaters incl. mounting stand, IP 65	0920050	

› Further accessories on pages 42 - 51.

Technical Information

Max. continuous exposure temperature (power on)	65 °C
Max. continuous exposure temperature (de-energized)	80 °C
Nominal voltage*	230 V
Min. Bending radius	25 mm
Min. Installation temperature	- 60 °C

* Further power inputs on request

Heating circuit length

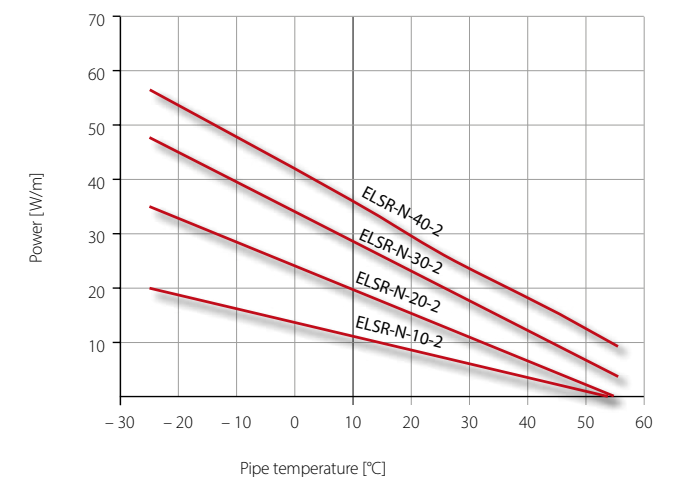
Switch on temperature [°C]	Nominal fuse rating [A]	Heating circuit length*1 [m]			
		ELSR-N-10-2	ELSR-N-20-2	ELSR-N-30-2	ELSR-N-40-2
10	10	128.0	68.0	52.0	48.0
	16	177.0	109.0	83.0	77.0
	20	177.0	129.0	104.0	98.0
	25	177.0	129.0	113.0	102.0
	32	177.0	129.0	113.0	102.0
0	10	106.0	57.0	45.0	40.0
	16	160.0	92.0	71.0	64.0
	20	160.0	115.0	89.0	79.0
	25	160.0	119.0	105.0	102.0
	32	160.0	119.0	105.0	102.0
-10	10	90.0	50.0	39.0	32.0
	16	144.0	79.0	63.0	55.0
	20	149.0	99.0	78.0	68.0
	25	149.0	111.0	98.0	87.0
	32	149.0	111.0	98.0	87.0
-20	10	78.0	44.0	35.0	28.0
	16	125.0	70.0	56.0	47.0
	20	139.0	87.0	69.0	60.0
	25	139.0	104.0	87.0	76.0
	32	139.0	104.0	87.0	76.0
-40	10	62.0	35.0	28.0	25.0
	16	99.0	56.0	45.0	38.0
	20	124.0	71.0	57.0	49.0
	25	124.0	88.0	71.0	61.0
	32	124.0	88.0	71.0	61.0

*1 Heating circuit lengths on the following conditions

- › 230 V nominal voltage
- › Delayed action circuit breakers (C-characteristic) with 80 % max. load
- › Maximum 10 % line voltage drop on heating cable bus wire
- › Power connection to one heater end
- › In certain installation situations, the heating circuit length may vary. Please contact our engineers.

Power output

ELSR-N-xx-2-xx Power
(on insulated metallic pipes in accordance with EN 62395-1)

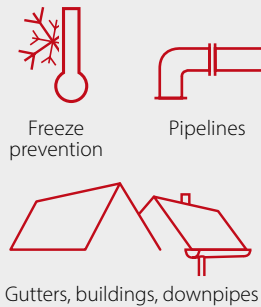


Ordering Information

Type	Nominal output [at 10°C]	WxH approx. [mm]	Weight approx. [g/m]	Article - No.
ELSR-N-10-2-AO	10 W/m	13.6 x 5.5	91	B0200130
ELSR-N-10-2-BO	10 W/m	14.1 x 5.8	108	B0200110
ELSR-N-10-2-BOT	10 W/m	13.8 x 5.6	108	B0200119
ELSR-N-20-2-AO	20 W/m	13.6 x 5.5	91	B0200230
ELSR-N-20-2-BO	20 W/m	14.1 x 5.8	108	B0200210
ELSR-N-20-2-BOT	20 W/m	13.8 x 5.6	108	B0200219
ELSR-N-30-2-AO	30 W/m	13.6 x 5.5	91	B0200330
ELSR-N-30-2-BO	30 W/m	14.1 x 5.8	108	B0200310
ELSR-N-30-2-BOT	30 W/m	13.8 x 5.6	108	B0200319
ELSR-N-40-2-AO	40 W/m	13.6 x 5.5	91	B0200430
ELSR-N-40-2-BO	40 W/m	14.1 x 5.8	108	B0200410
ELSR-N-40-2-BOT	40 W/m	13.8 x 5.6	108	B0200419

At a Glance

Applications



- › Building technology
- › Gutters
- › Downpipes
- › Water and sanitation utilities

Benefits

- › Three nominal outputs
- › UV-resistant
- › Moisture proof
- › Halogen-free
- › Flame retardant

Designs

- AHF** Aluminum foil, halogen-free insulation and outer jacket
- BHF** Protective braid, halogen-free insulation and outer jacket

Approvals



- › In particular tested according to EN 62395-1:
 - › UV resistance
 - › Water resistance
 - › Moisture resistance
 - › Flammability

ELSR-N-Halogen free up to 80 °C



1 Bus wire	Nickel plated copper, 1.23 mm ²
2 Self-regulating heating element	
3 Insulation	Halogen-free Polypropylene
4 Protective conductor connection	see 5 or Cu, tin plated with aluminium foil
5 Protection	Protective braid (Cu, tin plated)
6 Outer jacket	Halogen-free Polypropylene

Checklist

B + C Power Connection & End Termination

ELVB-SREx-IT	Power connection, cold assembly, without gland	091AIT1
ELVB-SRA-25	Power connection, cold assembly, gland M25 x 1,5, PE	091A010
EL-ECN	Silicone termination cap, cold assembly, transparent	09112N1
ELVB-SRV-N-L-W	Splice set, shrink-fit	0911116
El-Clıc P	Fast connector with 2.5m cold lead H05 SS-F 3 G 1,5	09ClıcP
El-Clıc S	Fast connector T-splice	09ClıcS

D Junction Boxes

ELAK-2	104 x 104 x 70 mm, polycarbonate, breakouts 7x M25, IP 66	0920030
ELAK-5	122 x 120 x 90 mm, polyester, 3 breakouts M25, IP 66	0920013
ELAK-RS	150 x 125 mm, twin Pt100, 3 heaters incl. mounting stand, IP 65	0920050

› Further accessories on pages 42 - 51.

Technical Information

Max. continuous exposure temperature (power on)	65 °C
Max. continuous exposure temperature (de-energized)	80 °C
Nominal voltage	230 VAC
Min. Bending radius	25 mm
Min. Installation temperature	- 60 °C

Heating circuit length

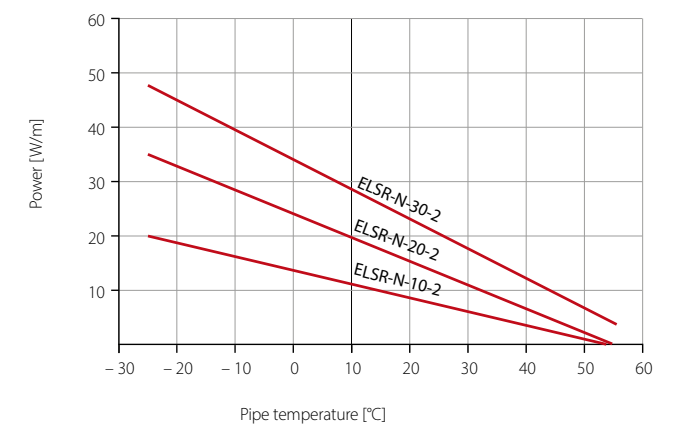
Switch on temperature [°C]	Nominal fuse rating [A]	Heating circuit length*1 [m]		
		ELSR-N-10-2	ELSR-N-20-2	ELSR-N-30-2
10	10	128.0	68.0	52.0
	16	177.0	109.0	83.0
	20	177.0	129.0	104.0
	25	177.0	129.0	113.0
	32	177.0	129.0	113.0
0	10	106.0	57.0	45.0
	16	160.0	92.0	71.0
	20	160.0	115.0	89.0
	25	160.0	119.0	105.0
	32	160.0	119.0	105.0
-10	10	90.0	50.0	39.0
	16	144.0	79.0	63.0
	20	149.0	99.0	78.0
	25	149.0	111.0	98.0
	32	149.0	111.0	98.0
-20	10	78.0	44.0	35.0
	16	125.0	70.0	56.0
	20	139.0	87.0	69.0
	25	139.0	104.0	87.0
	32	139.0	104.0	87.0
-40	10	62.0	35.0	28.0
	16	99.0	56.0	45.0
	20	124.0	71.0	57.0
	25	124.0	88.0	71.0
	32	124.0	88.0	71.0

*1 Heating circuit lengths on the following conditions

- › 230 V nominal voltage
- › Delayed action circuit breakers (C-characteristic) with 80 % max. load
- › Maximum 10 % line voltage drop on heating cable bus wire
- › Power connection to one heater end
- › In certain installation situations, the heating circuit length may vary. Please contact our engineers.

Power output

ELSR-N-xx-2-xHF Power
(on insulated metallic pipes in accordance with EN 62395-1)

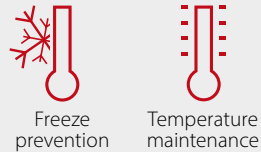


Ordering Information

Type	Nominal output [at 10°C]	WxH approx. [mm]	Weight approx. [g/m]	Article - No.
ELSR-N-10-2-AHF	10 W/m	13.6 x 5.5	91	B0210130
ELSR-N-10-2-BHF	10 W/m	14.1 x 5.8	108	B0210110
ELSR-N-20-2-AHF	20 W/m	13.6 x 5.5	91	B0210230
ELSR-N-20-2-BHF	20 W/m	14.1 x 5.8	108	B0210210
ELSR-N-30-2-AHF	30 W/m	13.6 x 5.5	91	B0210330
ELSR-N-30-2-BHF	30 W/m	14.1 x 5.8	108	B0210310

At a Glance

Applications



- › Chemistry and Petrochemistry
- › Maritime and offshore
- › Food Processing Industry
- › Water and sanitation utilities

Benefits

- › Three nominal outputs
- › UV-resistant
- › Moisture proof
- › Small dimensions

Design

- AO Aluminium foil, TPE-O outer jacket
- BO Protective braid, TPE-O outer jacket

Approvals



- › Trace Heater classification
 - II 2G Ex 60079-30-1 IIC Gb
 - II 2D Ex 60079-30-1 IIIC Db
- › System classification
 - II 2G Ex 60079-30-1 eb IIC T6 Gb
 - II 2D Ex 60079-30-1 tb IIIC T85C Db
- › Certification
 - EPS 19 ATEX 1 215 U
 - EPS 21 ATEX 1070 X
 - CML 21 UKEX 3812 U
 - CML 21 UKEX 3814 X
- › Temperature class T6

Type ELSR-LS up to 80 °C



1 Bus wire	Nickel plated copper
2 Self-regulating heating element	
3 Insulation	
4 Protection	Protective braid (Cu, tin plated)
5 Outer jacket	TPE-O
6 Protective conductor connection	see 4 or Cu, tin plated with aluminium foil

Checklist

B + C Power Connection & End Termination

ELVB-SREx-25	Power connection, cold assembly, gland M25 x 1,5, PE, Ex e	OX81PA1
ELVB-SRAL-Ex-20	Power connection, cold assembly, gland M20, brass, Ex d e	OX81PLD
EL-ECL-ex	Silicone termination cap black, cold assembly, with ex marking	OX81EL1
Ex-Con-SR	Ex connection sleeve Ø 36 x 210 mm 4J	OX81125
ELVB-SRA-25	Power connection, cold assembly, gland M25 x 1,5, PE	091A010
ELVB-SREx-It	Power connection, cold assembly, without gland	091AIT1
ELVB-SRV-N-L-W	Splice set, shrink-fit	0911116
EL-ECL	Silicone termination cap, cold assembly, transparent	09112L1
El-Clc P	Fast connector with 2.5m cold lead H05 SS-F 3 G 1,5	09ClcP
El-Clc S	Fast connector T-splice	09ClcS
Ex-It-L	End of line indicator light incl. mounting pos	OX8ITLG

D Junction Boxes

ELAK-Ex-2.00	110 x 75 x 57 mm, polyester, IP66, 1 Trace heater, 1 Power cable	OX85200
ELAK-Ex-4.01	122 x 120 x 90 mm, polyester, IP66, 1 - 3 Trace heaters, 1 Power cable	OX85401
ELAK-2	104 x 104 x 70 mm, polycarbonate, breakouts 7x M25, IP 66	0920030
ELAK-5	122 x 120 x 90 mm, polyester, 3 breakouts M25, IP 66	0920013
ELAK-5.1	130 x 130 x 75 mm, polycarbonate, breakouts 9x M20/M25, IP 66	0920002
ELAK-RS	150 x 125 mm, twin Pt100, 3 heaters incl. mounting stand, IP 65	0920050

- › Further accessories on pages 42 - 51.

Technical Information

Maximum maintain temperature	65 °C
Maximum exposure temperature (de-energized)	80 °C
Nominal voltage*	230 V
Bending radius, min.	25 mm
Installation temperature, min.	- 60 °C

* Further power inputs on request

Heating circuit length

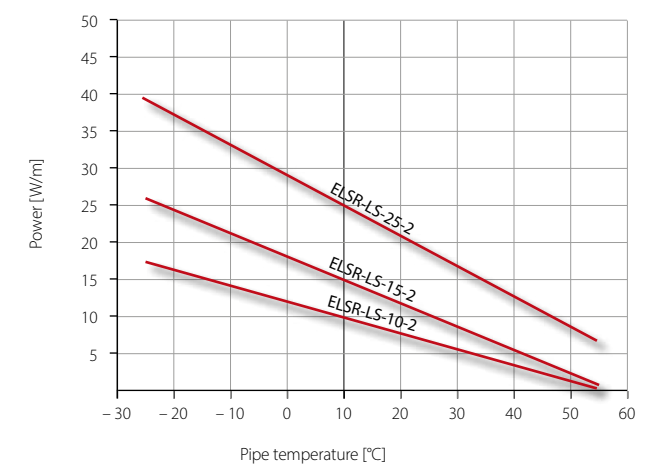
Switch on temperature [°C]	Nominal fuse rating [A]	Heating circuit length*1 [m]		
		ELSR-LS-10-2	ELSR-LS-15-2	ELSR-LS-25-2
10	10	152.0	103.0	64.0
	16	196.0	160.5	103.0
	20	196.0	160.5	126.0
	25	196.0	160.5	126.0
0	10	141.0	84.0	54.0
	16	188.5	134.0	87.0
	20	188.5	145.0	108.0
	25	188.5	145.0	116.0
-10	10	119.0	71.0	47.0
	16	173.5	114.0	75.0
	20	173.5	133.0	94.0
	25	173.5	133.0	107.5
-20	10	103.0	62.0	37.5
	16	161.0	99.0	60.0
	20	161.0	124.0	75.0
	25	161.0	124.0	94.0

*1 Heating circuit lengths on the following conditions

- › 230 V nominal voltage
- › Delayed action circuit breakers (C-characteristic) with 80 % max. load
- › Maximum 10 % line voltage drop on heating cable bus wire
- › Power connection to one heater end
- › In certain installation situations, the heating circuit length may vary. Please contact our engineers.

Power output

ELSR-LS-xx-2-xx Power
(on insulated metallic pipes in accordance with EN 62395-1)

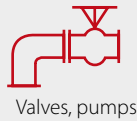
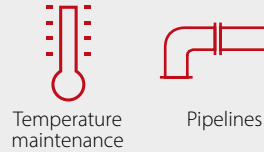


Ordering Information

Type	Nominal output [at 10°C]	WxH approx. [mm]	Weight approx. [g/m]	Article - No.
ELSR-LS-10-2-BO	10 W/m	11,0 x 5,6	98	B0223102
ELSR-LS-10-2-AO	10 W/m	10,3 x 5,3	78	B0223104
ELSR-LS-15-2-BO	15 W/m	11,0 x 5,6	98	B0223152
ELSR-LS-15-2-AO	15 W/m	10,3 x 5,3	78	B0223154
ELSR-LS-25-2-BO	25 W/m	11,0 x 5,6	98	B0223252
ELSR-LS-25-2-AO	25 W/m	10,3 x 5,3	78	B0223254

At a Glance

Applications



- › Food Processing Industry
- › Water and sanitation utilities

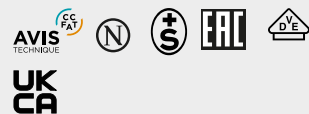
Benefits

- › Two nominal outputs
- › UV-resistant
- › Moisture proof
- › Small dimensions

Design

- AO Aluminium foil, TPE-O outer jacket
- BO Protective braid, TPE-O outer jacket

Approvals



Type ELSR-M up to 65 °C



1 Bus wire	Nickel plated copper
2 Self-regulating heating element	
3 Insulation	
4 Protection	Protective braid (Cu, tin plated)
5 Outer jacket	TPE-O
6 Protective conductor connection	see 4 or Cu, tin plated with aluminium foil

Checklist

B + C Power Connection & End Termination		
ELVB-SRAM-25	Power connection, shrink-fit, Gland M25 x 1,5, PE	091A015
EL-ECM-1	Silicone termination cap, glued, transparent	09112M1
EL-ECM-2	Silicone termination cap, glued, transparent („inside water pipes“)	09112M2
ELVB-SRV-M	Connection set, shrink-fit	0911122
D Junction Boxes		
ELAK-2	104 x 104 x 70 mm, polycarbonate, breakouts 7x M25, IP 66	0920030
ELAK-5	122 x 120 x 90 mm, polyester, 3 breakouts M25, IP 66	0920013
ELAK-5.1	130 x 130 x 75 mm, polycarbonate, breakouts 9x M20/M25, IP 66	0920002

› Further accessories on pages 42 - 51.

Technical Information

Maximum maintain temperature	65 °C
Maximum exposure temperature (de-energized)	65 °C
Nominal voltage	230 V
Bending radius, min.	25 mm
Installation temperature, min.	- 45 °C

* Further power inputs on request

Heating circuit length

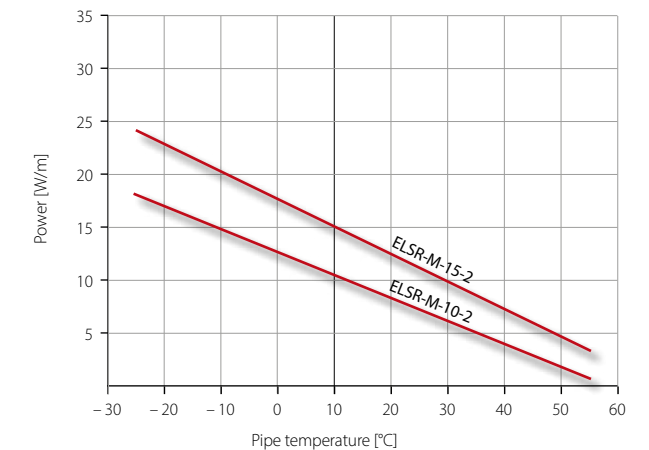
Switch on temperature [°C]	Nominal fuse rating [A]	Heating circuit length*1 [m]	
		ELSR-M-10-2	ELSR-M-15-2
10	10	126.0	98.0
	16	126.0	105.0
	20	126.0	105.0
0	10	115.0	83.0
	16	115.0	97.0
	20	115.0	97.0
-10	10	100.0	72.0
	16	106.0	91.0
	20	106.0	91.0
-20	10	87.0	64.0
	16	99.0	85.0
	20	99.0	85.0
-40	10	69.0	52.0
	16	88.0	77.0
	20	88.0	77.0

*1 Heating circuit lengths on the following conditions

- › 230 V nominal voltage
- › Delayed action circuit breakers (C-characteristic) with 80 % max. load
- › Maximum 10 % line voltage drop on heating cable bus wire
- › Power connection to one heater end
- › In certain installation situations, the heating circuit length may vary. Please contact our engineers.

Power output

ELSR-M-xx-2-xx Power
(on insulated metallic pipes in accordance with EN 62395-1)



Ordering Information

Type	Nominal output [at 10°C]	WxH approx. [mm]	Weight approx. [g/m]	Article - No.
ELSR-M-10-2-AO	10 W/m	8.0 x 5.5	53	B0225110
ELSR-M-10-2-BO	10 W/m	8.5 x 5.8	62	B0225102
ELSR-M-15-2-AO	15 W/m	8.0 x 5.5	53	B0225160
ELSR-M-15-2-BO	15 W/m	8.5 x 5.8	62	B0225152

At a Glance

Applications



Freeze prevention



Pipelines

- › In-pipe trace heating tested for portable water pipes and flexible water tubes

Benefits

- › DVGW tested
- › Can be used in liquids
- › Suitable for drinking water
- › Small dimensions
- › Protective braid for increased mechanical strength

Design

- BAF** Protective Braid, Aluminium foil, TPE-O outer jacket
- BF** Protective Braid, TPE-O outer jacket

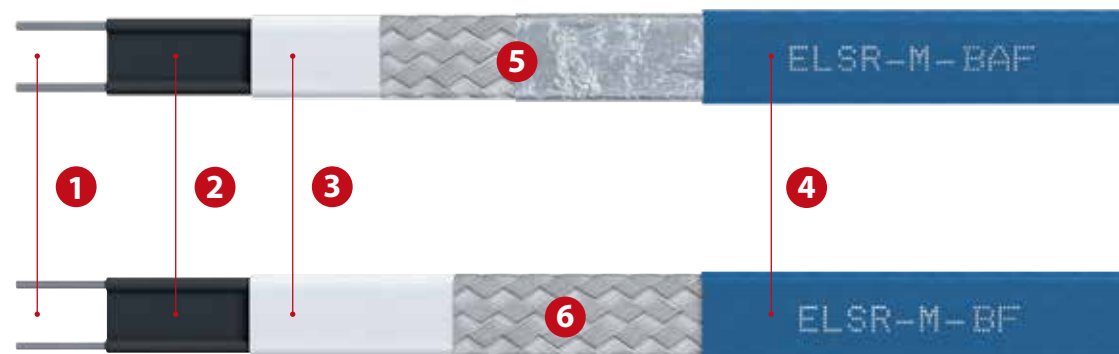
Approvals



Hygiene Institute
Test report K-350842-21*

- › According to the UBA, the mobile/temporary installation must be tested as a technical unit according to KTW-BWGL

ELSR-M-BAF / -BF up to 65 °C



1	Bus wire	Nickel plated copper, 0.62 mm ²
2	Self-regulating heating element	
3	Insulation	
4	Outer jacket	TPE-O
5	Protection	Protective braid (Cu, tin plated) with aluminium foil
6	Protection	Protective braid (Cu, tin plated)

Checklist

B + C Power Connection & End Termination		
ELVB-SRAM-25	Power connection, shrink-fit, Gland M25 x 1,5, PE	091A015
EL-ECMF	Silicone termination cap, glued, transparent, suitable for use in drinking water, max. 10 bar	09112MF
ELVB-SRV-M	Connection set, shrink-fit	0911122
ELVB-70	Cable gland; brass 3/4", for copper / stainless steel pipe	0911703
ELVB-71	Y - entry for ELSR-M; brass, for PE pipe DN32	0911704
D Junction Boxes		
ELAK-2	104 x 104 x 70 mm, polycarbonate, breakouts 7x M25, IP 66	0920030
ELAK-5	122 x 120 x 90 mm, polyester, 3 breakouts M25, IP 66	0920013
ELAK-5.1	130 x 130 x 75 mm, polycarbonate, breakouts 9x M20/M25, IP 66	0920002

- › Further accessories on pages 42 - 51.

Technical Information

Max. continuous exposure temperature (power on)	65 °C
Max. intermittent exposure temperature (de-energized)	65 °C
Nominal voltage	230 V
Min. Bending radius	25 mm
Min. Installation temperature	- 45 °C

Heating circuit length

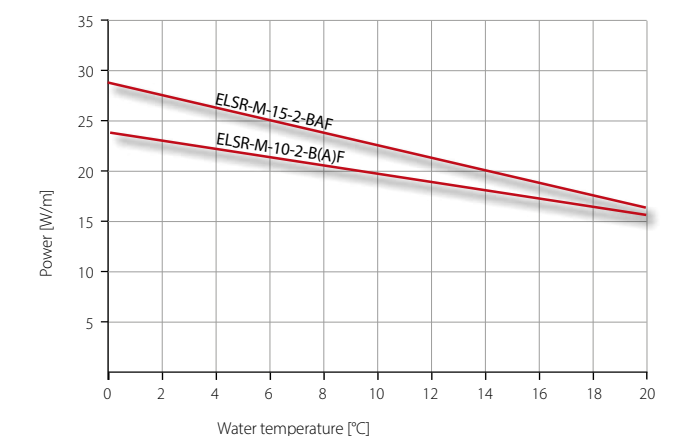
Switch on temperature [°C]	Nominal fuse rating [A]	Heating circuit length* ¹ [m]	
		ELSR-M-10-2-BAF/-BF	ELSR-M-15-2-BAF
10	10	74.0	74.0
	16	89.0	89.0
	20	89.0	89.0
0	10	61.0	58.0
	16	89.0	71.0
	20	89.0	71.0
-10	10	61.0	58.0
	16	89.0	71.0
	20	89.0	71.0

*¹ Heating circuit lengths on the following conditions

- › 230 V nominal voltage
- › Delayed action circuit breakers (C-characteristic) with 80 % max. load
- › Maximum 10 % line voltage drop on heating cable bus wire
- › Power connection to one heater end
- › immersed in water
(the power output in water is higher compared to air, which means that the heating circuit lengths are shorter than in air)
- › In certain installation situations, the heating circuit length may vary.
Please contact our engineers.

Power output

ELSR-M-XX-2-BAF Power output in water



Ordering Information

Type	Nominal output [at 10°C]	WxH approx. [mm]	Weight approx. [g/m]	Article - No.
ELSR-M-10-2-BAF	10 W/m	8.4 x 6.0	65	B0225180
ELSR-M-15-2-BAF	15 W/m	8.4 x 6.0	65	B0225190
ELSR-M-10-2-BF	10 W/m	8.4 x 6.0	62	B0225104

At a Glance

Applications



Freeze prevention



Special solutions

- › Doors and seals of refrigerating chambers
- › Profile Heating
- › Boarding Bridges

Benefits

- › Round design
- › Moisture proof
- › UV-resistant
- › Ideal for profile installation

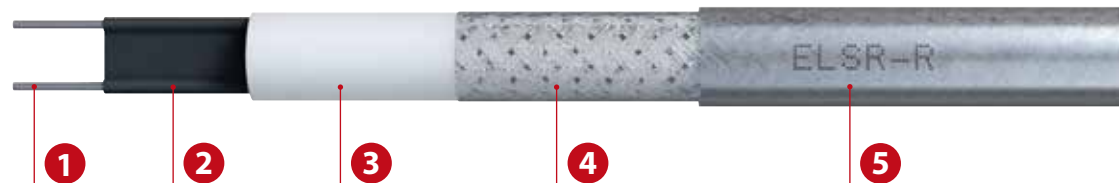
Design

BOT Protective braid, Fluoropolymer outer jacket

Approvals



Type ELSR-R up to 65 °C



1 Bus wire	Nickel plated copper
2 Self-regulating heating element	
3 Insulation	
4 Protection	Protective braid (Cu, tin plated)
5 Outer jacket	Fluoropolymer

Checklist

B + C Power Connection & End Termination

ELVB-SRAR-25	Power connection, shrink-fit, Gland M25 x 1,5, PE	091A020
EL-ECM	Silicone termination cap, glued, transparent	09112M1
ELVB-SRV-M	Connection set, shrink-fit	0911122

D Junction Boxes

ELAK-2	104 x 104 x 70 mm, polycarbonate, breakouts 7x M25, IP 66	0920030
ELAK-5	122 x 120 x 90 mm, polyester, 3 breakouts M25, IP 66	0920013
ELAK-5.1	130 x 130 x 75 mm, polycarbonate, breakouts 9x M20/M25, IP 66	0920002

› Further accessories on pages 42 - 51.

Technical Information

Maximum maintain temperature	65 °C
Maximum exposure temperature (de-energized)	65 °C
Nominal voltage	230 V
Bending radius, min.	30 mm
Installation temperature, min.	- 30 °C

Heating circuit length

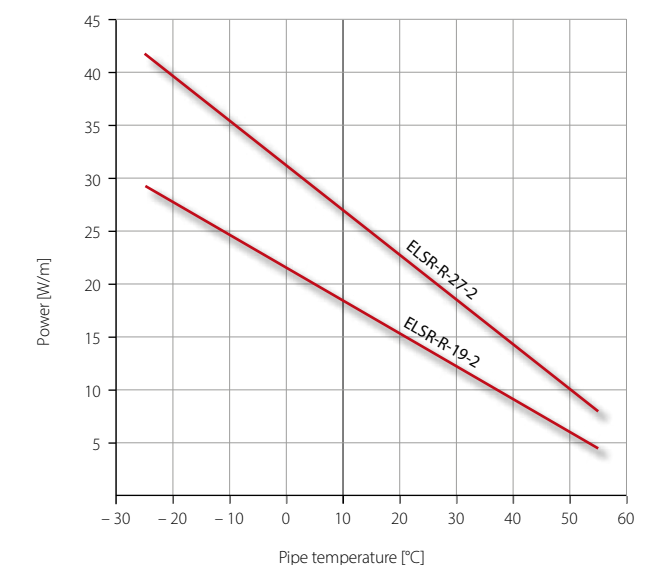
Switch on temperature [°C]	Nominal fuse rating [A]	Heating circuit length*1 [m]	
		ELSR-R-19-2	ELSR-R-27-2
10	10	75.0	20.0
	16	102.0	32.0
	20	102.0	40.0
0	10	62.0	16.0
	16	94.0	26.0
	20	94.0	33.0
-10	10	51.0	13.0
	16	81.0	21.0
	20	88.0	27.0
-20	10	41.0	11.0
	16	65.0	17.0
	20	82.0	22.0
-40	10	30.0	7.0
	16	48.0	12.0
	20	60.0	15.0

*1 Heating circuit lengths on the following conditions

- › 230 V nominal voltage
- › Delayed action circuit breakers (C-characteristic) with 80 % max. load
- › Maximum 10 % line voltage drop on heating cable bus wire
- › Power connection to one heater end
- › In certain installation situations, the heating circuit length may vary. Please contact our engineers.

Power output

ELSR-R-xx-2-xx Power
(on insulated metallic pipes in accordance with EN 62395-1)



Other designs on request.

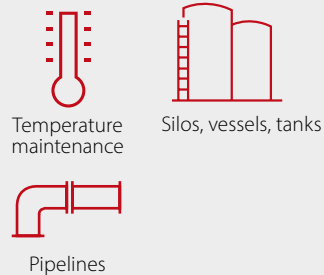
This heating cable has specially been developed for the use with doors of refrigerating chambers. Please contact our engineers for more details on our ELSR-R.

Ordering Information

Type	Nominal output [at 10°C]	WxH approx. [mm]	Weight approx. [g/m]	Article - No.
ELSR-R-19-2-BOT	19 W/m	7.3	77	B0200507
ELSR-R-27-2-BOT	27 W/m	7.3	74	B0200605

At a Glance

Applications



- › Fat-containing wastewater pipes in canteens and large-scale kitchens
- › Legionella prevention on hot water pipes

Benefits

- › Two nominal outputs
- › Moisture proof

Design

- AO Aluminium foil, TPE-O outer jacket
- BO Protective braid, TPE-O outer jacket

Approvals



Type ELSR-W up to 100 °C



1 Bus wire	Nickel plated copper
2 Self-regulating heating element	
3 Insulation	
4 Protection	Protective braid (Cu, tin plated)
5 Outer jacket	TPE-O
6 Protective conductor connection	see 4 or Cu, tin plated with aluminium foil

Checklist

B + C Power Connection & End Termination

ELVB-SRA-25	Power connection, glued, Gland M25 x 1,5, PE	091A010
EL-ECW	Silicone termination cap, glued, transparent	09112W1
ELVB-SRV-N-L-W	Connection set, shrink-fit	0911116
El-Click P	El-Click P Fast connector with 2.5m cold lead H05 SS-F 3 G 1,5	09ClickP
El-Click S	El-Click S Fast connector T-splice	09ClickS

D Junction Boxes

ELAK-2	104 x 104 x 70 mm, polycarbonate, breakouts 7x M25, IP 66	0920030
ELAK-5	122 x 120 x 90 mm, polyester, 3 breakouts M25, IP 66	0920013
ELAK-5.1	130 x 130 x 75 mm, polycarbonate, breakouts 9x M20/M25, IP 66	0920002
ELAK-RS	150 x 125 mm, twin Pt100, 3 heaters incl. mounting stand, IP 65	0920050

› Further accessories on pages 42 - 51.

Technical Information

Maximum maintain temperature	80 °C
Maximum exposure temperature (de-energized)	100 °C
Nominal voltage	230 V
Bending radius, min.	20 mm
Installation temperature, min.	- 20 °C

Heating circuit length

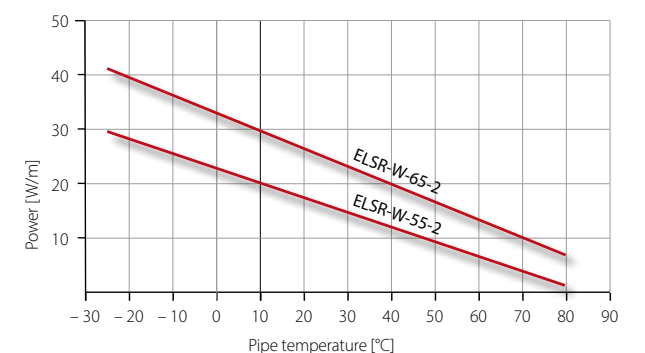
Switch on temperature [°C]	Nominal fuse rating [A]	Heating circuit length*1 [m]	
		ELSR-W-55-2	ELSR-W-65-2
10	10	70.0	45.0
	16	113.0	73.0
	20	131.0	92.0
	25	131.0	106.0
	32	131.0	106.0
0	10	63.0	41.0
	16	101.0	66.0
	20	123.0	83.0
	25	123.0	99.0
	32	123.0	99.0
-10	10	57.0	37.0
	16	91.0	60.0
	20	113.0	75.0
	25	117.0	94.0
	32	117.0	95.0
-20	10	52.0	34.0
	16	83.0	55.0
	20	104.0	69.0
	25	112.0	86.0
	32	112.0	90.0
-40	10	44.0	29.0
	16	70.0	48.0
	20	88.0	59.0
	25	103.0	74.0
	32	103.0	83.0

*1 Heating circuit lengths on the following conditions

- › 230 V nominal voltage
- › Delayed action circuit breakers (C-characteristic) with 80 % max. load
- › Maximum 10 % line voltage drop on heating cable bus wire
- › Power connection to one heater end
- › In certain installation situations, the heating circuit length may vary. Please contact our engineers.

Power output

ELSR-W-xx-2-xx Power
(on insulated metallic pipes in accordance with EN 62395-1)



Ordering Information

Power output on water pipes

Type	Nominal output	WxH approx. [mm]	Weight approx. [g/m]	Article - No.
ELSR-W-55-2-AO	9 W/m @ 55°C	12.9 x 5.0	86	B0200360
ELSR-W-55-2-BO	9 W/m @ 55°C	12.9 x 5.0	105	B0200350
ELSR-W-65-2-AO	13 W/m @ 65°C	12.9 x 5.0	86	B0200455
ELSR-W-65-2-BO	13 W/m @ 65°C	12.9 x 5.0	105	B0200450

Power output on fat- or waste water pipes

Type	Nominal output [at 40°C]	WxH approx. [mm]	Weight approx. [g/m]	Article - No.
ELSR-W-65-2-AO	22 W/m	12.9 x 5.0	86	B0200455
ELSR-W-65-2-BO	22 W/m	12.9 x 5.0	105	B0200450

At a Glance

Applications



Freeze prevention



Open area

- › Parking garages entrances, exits
- › Helicopter landing sites
- › Concrete ramps
- › Stairs and footpaths

Benefits

- › Highly robust
- › Suited for hardest installing conditions
- › Flexible mounting
- › Radially and longitudinally waterproof
- › Outer jacket is strongly grouted with protective braid

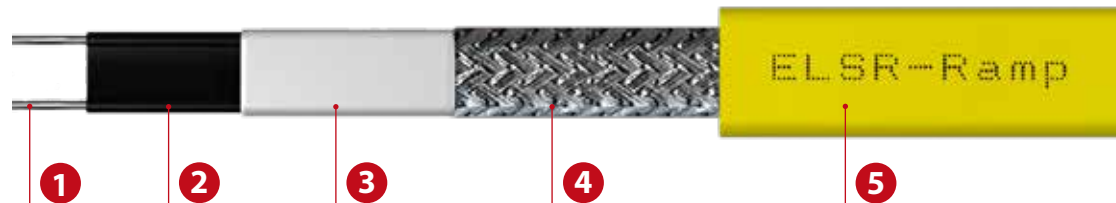
Approvals



Note

- › Not suited for use in asphalt

Type ELSR-Ramp up to 100 °C



1 Bus wire	Nickel plated copper
2 Self-regulating heating element	
3 Insulation	
4 Protection	Protective braid (Cu, tin plated)
5 Outer jacket	TPE pressure-grouted with protective braid

Checklist

B + C Power Connection & End Termination			
ELVB-SRV-Ramp	Connection set, shrink-fit		0911124
EL-ECRA	Silicone termination cap, glued, transparent		09112RA
D Junction Boxes			
ELAK-5	122 x 120 x 90 mm, polyester, 3 breakouts M25, IP 66		0920013
ELAK-5.1	130 x 130 x 75 mm, polycarbonate, breakouts 9x M20/M25, IP 66		0920002

› Further accessories on pages 42 - 51.

Technical Information

Maximum maintain temperature	80 °C
Maximum exposure temperature (de-energized)	100 °C
Nominal voltage	230 V
Bending radius, min.	50 mm
Installation temperature, min.	- 20 °C

Heating circuit length

Switch on temperature [°C]	Nominal fuse rating [A]	Heating circuit length* ¹ [m]
		ELSR-Ramp
-10	10	18.0
	16	28.0
	20	36.0
	25	45.0
	32	55.0

*¹ Heating circuit lengths on the following conditions

- › 230 V nominal voltage
- › Delayed action circuit breakers (C-characteristic) with 80 % max. load
- › Maximum 10 % line voltage drop on heating cable bus wire
- › Power connection to one heater end
- › In certain installation situations, the heating circuit length may vary. Please contact our engineers.

Electrical protection

Power at start-up

- › According to local standards and regulations.
- › To determine the installed power with the electrical system designer, the nominal current of the series connected fuse or the current value at the system start-up temperature must be taken into account (e.g. 32 A for 55 m ELSR-Ramp (-10 °C).
- › Residual current device (RCD) 30 mA required, max. 500 m heating cable per RCD.

Remark

- › For the use of standard control cabinets, the maximum heating circuit length of 55 m at 32 A per heating circuit must not be exceeded.

Ordering Information

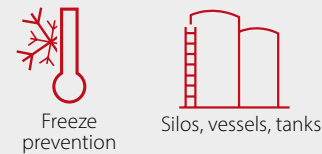
Type	Nominal output [at 10°C]	WxH approx. [mm]	Weight approx. [g/m]	Article - No.
ELSR-Ramp	50 W/m	17,2 x 9,5	253	B02RAMPO

Power output at +5°C in concrete

Type	Nominal output	WxH approx. [mm]	Weight approx. [g/m]	Article - No.
ELSR-Ramp	110 W/m	17,2 x 9,5	253	B02RAMPO

At a Glance

Applications



Cryogenic Storage Tanks

Benefits

- Highly robust
- Suitable for harsh installed environment
- Flexible mounting
- Waterproof

Approvals



Type ELSR-FHP
up to 110 °C



1 Bus wire	Nickel plated copper
2 Self-regulating heating element	
3 Insulation	
4 Protection	Protective braid (Cu, tin plated)
5 Outer jacket	Fluoropolymer

Checklist

B + C Power Connection & End Termination		
EL-ECN	End termination kit for ELSR-FHP	09112N1
ELVB-SRA-25	Power connection, glued, Gland M25 x 1,5, PE	091A010
D Junction Boxes		
ELAK-2	104 x 104 x 70 mm, polycarbonate, breakouts 7x M25, IP 66	0920030
ELAK-5	122 x 120 x 90 mm, polyester, 3 breakouts M25, IP 66	0920013
ELAK-5.1	130 x 130 x 75 mm, polycarbonate, breakouts 9x M20/M25, IP 66	0920002

Further accessories on pages 42 - 51.

Technical Information

Maximum maintain temperature	80 °C (ELSR-FHP-38) 65 °C (ELSR-FHP-23)
Maximum exposure temperature (de-energized)	110 °C (ELSR-FHP-38) 80 °C (ELSR-FHP-23)
Nominal voltage	230 V
Bending radius, min.	50 mm
Installation temperature, min.	– 45 °C

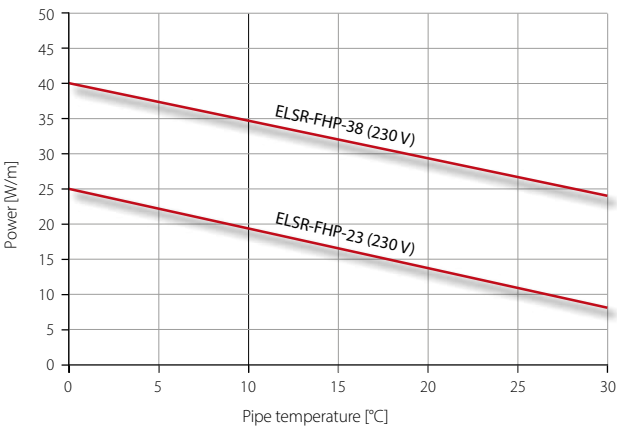
Heating circuit length

Switch on temperature [°C]	Nominal fuse rating [A]	Heating circuit length*1 [m]	
		ELSR-FHP-23	ELSR-FHP-38
-5	10	30.0	23.0
	16	48.0	36.0
	20	60.0	45.0
	25	75.0	72.0
	32	97.0	91.0
	40	121.0	21.0
-15	10	23.0	34.0
	16	37.0	43.0
	20	46.0	54.0
	25	57.0	68.0
	32	74.0	85.0
	40	92.0	85.0

- *1 Heating circuit lengths on the following conditions
- 230 V nominal voltage
 - Delayed action circuit breakers (C-characteristic) with 80 % max. load
 - Maximum 10 % line voltage drop on heating cable bus wire
 - Power connection to one heater end
 - In certain installation situations, the heating circuit length may vary. Please contact our engineers.

Power output

ELSR-FHP-xx-2-xx Power
(on insulated metallic pipes in accordance with EN 62395-1)

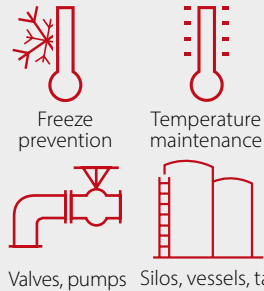


Ordering Information

Type	Nominal output [at 10°C]	WxH approx. [mm]	Weight approx. [g/m]	Article - No.
ELSR-FHP-23	23 W/m	14,0 x 5,5	155	B02FHP23
ELSR-FHP-38	38 W/m	14,0 x 5,5	155	B02FHP38

At a Glance

Applications



- › Chemistry and Petrochemistry
- › Oil and Gas Industry
- › Power plants
- › Water and sanitation utilities

Benefits

- › Seven nominal outputs
- › Moisture proof
- › Resistant to chemicals
- › Use in hazardous areas

Design

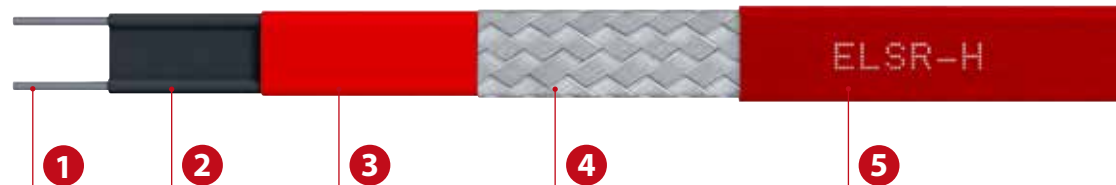
BOT Protective braid,
Fluoropolymer outer jacket

Approvals



- › Trace Heater classification
II 2G Ex 60079-30-1 IIC Gb
II 2D Ex 60079-30-1 IIIC Db
- › System classification
II 2G Ex 60079-30-1 eb IIC T3 Gb
II 2D Ex 60079-30-1 tb IIIC T200°C Db
- › Certification
IECEx EPS 12.0004 U
IECEx EPS 19.0006 X
EPS 12 ATEX 1 429 U
EPS 19 ATEX 1013 X
CML 21 UKEX 3806 U
CML 21 UKEX 3905 X
- › Temperature class T3
- › * Use in Ex areas is permitted up to 180 °C

Type ELSR-H up to 210 °C*



1 Bus wire	Nickel plated copper
2 Self-regulating heating element	
3 Insulation	Fluoropolymer
4 Protection	Protective braid (Cu, tin plated)
5 Outer jacket	Fluoropolymer

Checklist

B + C Power Connection & End Termination

EL-ECSH-Ex	Silicone termination cap, red, glued, with ex marking	0X81EH2
Ex-Con-SR	Ex connection sleeve Ø 36 x 210 mm 4J	0X81125
ELVB-SREx-25	Power connection, glued, Gland M25 x 1,5, PE, Ex e	0X81PA1
ELVB-SREx-IT	Power connection, glued, without gland	091AIT1
ELVB-SRAH-Ex-20	Power connection, glued, Gland M20, brass	0X81PHD
ELVB-SRV-H	Connection set, shrink-fit	0911117
ELVB-SRAH-25	Power connection, glued, Gland M25 x 1,5, PE	091A040

D Junction Boxes

ELAK-Ex-2.00	110 x 75 x 57 mm, polyester, IP66, 1 Trace heater, 1 Power cable	0X85200
ELAK-Ex-4.01	122 x 120 x 90 mm, polyester, IP66, 1 - 3 Trace heaters, 1 Power cable	0X85401
ELAK-5	122 x 120 x 90 mm, polyester, 3 breakouts M25, IP 66	0920013
Ex-it-R	Ø 150 x 125 mm, 3 Trace heaters, 1 Pt100, incl. mounting stand	0X80070

› Further accessories on pages 42 - 51.

Technical Information

Maximum maintain temperature	120 °C
Maximum exposure temperature (de-energized)	210 °C (max. 1000 h)
Nominal voltage*	230 V
Bending radius, min.	25 mm
Installation temperature, min.	- 60 °C

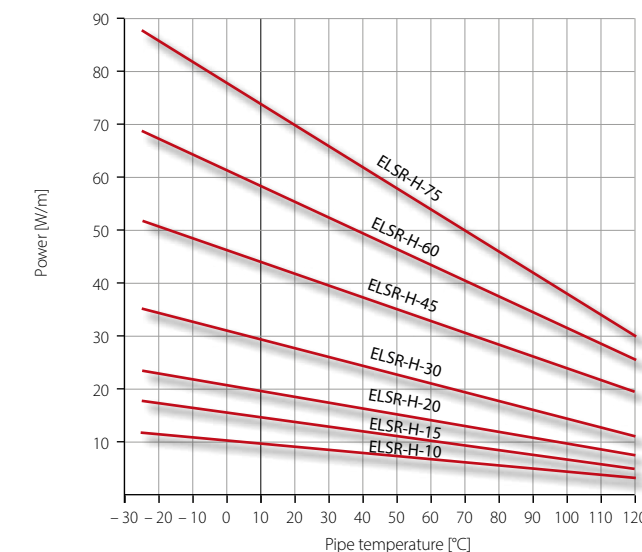
Heating circuit length

* Further power inputs on request

Switch on temperature [°C]	Nominal fuse rating [A]	Heating circuit length*1 [m]						
		ELSR-H-10-2-BOT	ELSR-H-15-2-BOT	ELSR-H-20-2-BOT	ELSR-H-30-2-BOT	ELSR-H-45-2-BOT	ELSR-H-60-2-BOT	ELSR-H-75-2-BOT
10	16	193.0	158.0	122.0	82.0	55.0	41.0	33.0
	20	193.0	158.0	136.0	102.0	68.0	51.0	41.0
	25	193.0	158.0	136.0	111.0	85.0	64.0	51.0
	32	193.0	158.0	136.0	111.0	91.0	79.0	66.0
0	16	189.0	153.0	116.0	77.0	52.0	39.0	30.0
	20	189.0	153.0	132.0	97.0	65.0	49.0	37.0
	25	189.0	153.0	132.0	108.0	81.0	61.0	47.0
	32	189.0	153.0	132.0	108.0	88.0	77.0	60.0
-10	16	184.0	146.0	110.0	73.0	50.0	37.0	28.0
	20	184.0	148.0	129.0	92.0	62.0	46.0	35.0
	25	184.0	148.0	129.0	105.0	77.0	58.0	44.0
	32	184.0	148.0	129.0	105.0	86.0	70.0	57.0
-20	16	180.0	139.0	104.0	70.0	47.0	36.0	26.0
	20	180.0	145.0	125.0	87.0	59.0	44.0	33.0
	25	180.0	145.0	125.0	103.0	74.0	56.0	41.0
	32	180.0	145.0	125.0	103.0	84.0	67.0	53.0
-40	16	173.0	126.0	95.0	64.0	43.0	33.0	23.0
	20	173.0	138.0	119.0	80.0	54.0	41.0	29.0
	25	173.0	138.0	120.0	98.0	68.0	51.0	36.0
	32	173.0	138.0	120.0	98.0	81.0	61.0	46.0

Power output

ELSR-H-xx-2-BOT Power
(on insulated metallic pipes in accordance with EN 62395-1)



*1 Heating circuit lengths on the following conditions

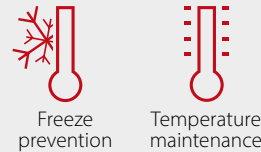
- › 230 V nominal voltage
- › Delayed action circuit breakers (C-characteristic) with 80 % max. load
- › Maximum 10 % line voltage drop on heating cable bus wire
- › Power connection to one heater end

Ordering Information

Type	Nominal output [at 10°C]	WxH approx. [mm]	Weight approx. [g/m]	Article - No.
ELSR-H-10-2-BOT	10 W/m	12.4 x 5.0	120	B0221103
ELSR-H-15-2-BOT	15 W/m	12.4 x 5.0	120	B0221153
ELSR-H-20-2-BOT	20 W/m	12.4 x 5.0	120	B0221203
ELSR-H-30-2-BOT	30 W/m	12.4 x 5.0	120	B0221303
ELSR-H-45-2-BOT	45 W/m	12.4 x 5.0	120	B0221453
ELSR-H-60-2-BOT	60 W/m	12.4 x 5.0	120	B0221603
ELSR-H-75-2-BOT	75 W/m	12.4 x 5.0	120	B0221753

At a Glance

Applications



Freeze prevention Temperature maintenance



Valves, pumps Silos, vessels, tanks

- › Chemistry and Petrochemistry
- › Oil and Gas Industry
- › Power plants

Benefits

- › Temperature classification
- › Five nominal outputs
- › Moisture proof
- › Resistant to chemicals
- › Use in hazardous areas

Design

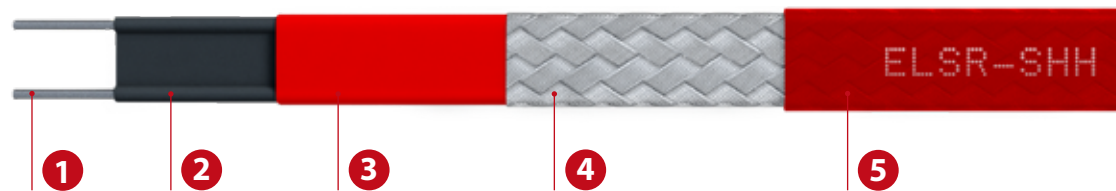
BOT Protective braid, Fluoropolymer outer jacket

Approvals



- › Trace Heater classification
 - II 2G Ex 60079-30-1 IIC Gb
 - II 2D Ex 60079-30-1 IIIC Db
- › System classification
 - II 2G Ex 60079-30-1 eb IIC T3 Gb
 - II 2D Ex 60079-30-1 tb IIIC T200°C Db
- › Certification
 - EPS 17 ATEX 1169 X
 - CML 20 ATEX 3171
 - IECEX EPS 17.0064 X
 - IECEX CML 20.0106
 - CML 21 UKEX 3806 U
 - CML 21 UKEX 3807
- › Temperature class T3

Type ELSR-SHH up to 250 °C



1 Bus wire	Nickel plated copper
2 Self-regulating heating element	
3 Insulation	
4 Protection	Protective braid (Nickel plated copper)
5 Outer jacket	Fluoropolymer

Checklist

B + C Power Connection & End Termination			
ELVB-SREx-25	Power connection, glued, Gland M25 x 1,5, PE, Ex e		OX81PA1
EL-ECSH-Ex	Silicone termination cap, red, glued, with ex marking		OX81EH2
Ex-Con-SR	Ex connection sleeve Ø 36 x 210 mm 4J		OX81125
D Junction Boxes			
ELAK-Ex-2.00	110 x 75 x 57 mm, polyester, IP66, 1 Trace heater, 1 Power cable		OX85200
ELAK-Ex-4.01	122 x 120 x 90 mm, polyester, IP66, 1 - 3 Trace heaters, 1 Power cable		OX85401
ELAK-5	122 x 120 x 90 mm, polyester, 3 breakouts M25, IP 66		0920013
Ex-it-R	ø 150 x 125 mm, 3 Trace heaters, 1 Pt100, incl. mounting stand		OX80070

› Further accessories on pages 42 - 51.

Technical Information

Maximum maintain temperature	250 °C
Maximum exposure temperature (de-energized)	250 °C
Nominal voltage*	230 V
Bending radius, min.	35 mm
Installation temperature, min.	- 40 °C

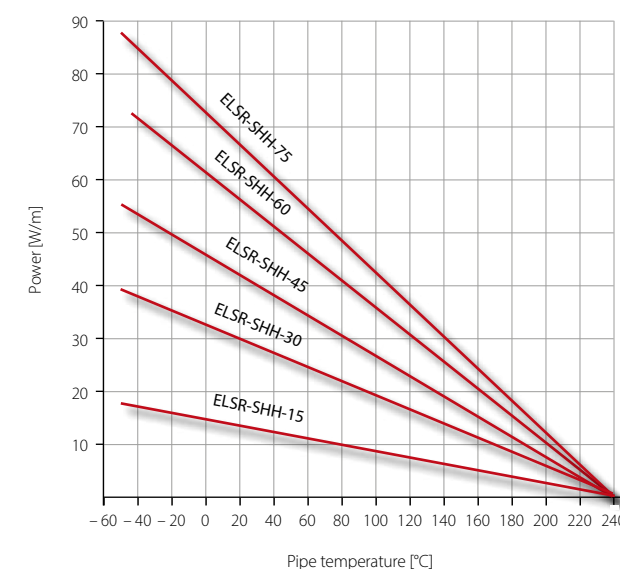
* Further power inputs on request

Heating circuit length

Switch on temperature [°C]	Nominal fuse rating [A]	Heating circuit length*1 [m]				
		ELSR-SHH-15-2	ELSR-SHH-30-2	ELSR-SHH-45-2	ELSR-SHH-60-2	ELSR-SHH-75-2
10	10	76.0	52.0	38.0	24.0	14.0
	16	122.0	82.0	62.0	38.0	24.0
	20	154.0	102.0	76.0	46.0	28.0
	32	154.0	108.0	88.0	76.0	46.0
0	10	70.0	46.0	32.0	18.0	12.0
	16	112.0	74.0	52.0	30.0	18.0
	20	140.0	92.0	66.0	36.0	22.0
	32	146.0	104.0	84.0	58.0	36.0
-20	10	62.0	40.0	24.0	12.0	8.0
	16	98.0	66.0	38.0	20.0	12.0
	20	122.0	82.0	46.0	26.0	16.0
	32	138.0	98.0	76.0	42.0	24.0
-40	10	52.0	30.0	14.0	8.0	4.0
	16	82.0	50.0	24.0	12.0	8.0
	20	102.0	62.0	28.0	16.0	10.0
	32	126.0	88.0	46.0	24.0	14.0

Power output

ELSR-SHH-xx-2-BOT Power
(on insulated metallic pipes in accordance with EN 62395-1)



*1 Heating circuit lengths on the following conditions

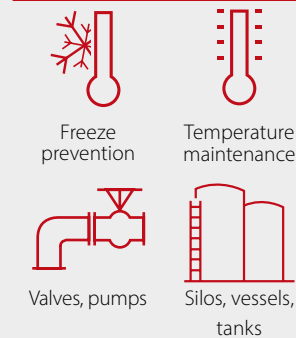
- › 230 V nominal voltage
- › Delayed action circuit breakers (C-characteristic) with 80 % max. load
- › Maximum 10 % line voltage drop on heating cable bus wire
- › Power connection to one heater end
- › In certain installation situations, the heating circuit length may vary. Please contact our engineers.

Ordering Information

Type	Nominal output [at 10°C]	WxH approx. [mm]	Weight approx. [g/m]	Article - No.
ELSR-SHH-15-2-BOT	15 W/m	12,1 x 5,4	146	B0HH1153
ELSR-SHH-30-2-BOT	30 W/m	12,1 x 5,4	146	B0HH1303
ELSR-SHH-45-2-BOT	45 W/m	12,1 x 5,4	146	B0HH1453
ELSR-SHH-60-2-BOT	60 W/m	12,1 x 5,4	146	B0HH1603
ELSR-SHH-75-2-BOT	75 W/m	12,1 x 5,4	146	B0HH1753

At a Glance

Applications



- › Chemistry and Petrochemistry
- › Oil and Gas Industry
- › Power plants
- › Water and sanitation utilities

Benefits

- › Five nominal outputs
- › Moisture proof
- › Resistant to chemicals
- › Use in hazardous areas

Design

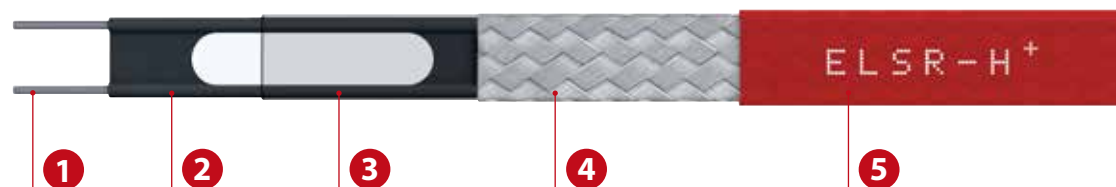
BOT Protective braid,
Fluoropolymer outer jacket

Approvals



- › Trace Heater classification
II 2G Ex 60079-30-1 IIC Gb
II 2D Ex 60079-30-1 IIIC Db
- › Certification
IECEX EPS 12.0004 U
EPS 12 ATEX 1 429 U
IECEX EPS24.0030X
EPS 24 ATEX 1125X
- › Temperature class T3
(T4, T5, T6 by specific design)

ELSR-H⁺ up to 210°C



1 Bus wire	Nickel plated copper, 1.23 mm ²
2 Self-regulating heating element	
3 Insulation	Fluoropolymer
4 Protection	Protective braid (Cu, nickel plated)
5 Outer jacket	Fluoropolymer

Checklist

B + C Power Connection & End Termination

EL-ECSH-Ex	Silicone termination cap, red, cold assembly, with ex marking	0X81EH2
Ex-Con-SR	Ex connection sleeve Ø 36 x 210 mm 4J	0X81125
ELVB-SREx-SH+-20	Power connection, cold assembly, gland M20, brass, Ex d e	0X81SP1
ELVB-SREx-25	Power connection, cold assembly, gland M25 x 1,5, PE, Ex e	0X81PA1
ELVB-SREx-IT	Power connection, cold assembly, without gland	091AIT1
ELVB-SRV-H	Splice set, shrink-fit	0911117
ELVB-SRA-25	Power connection, cold assembly, gland M25 x 1,5, PE	091A010

D Junction Boxes

ELAK-Ex-2.00	110 x 75 x 57 mm, polyester, IP66, 1 Trace heater, 1 power cable	0X85200
ELAK-Ex-4.01	122 x 120 x 90 mm, polyester, IP66, 1 - 3 Trace heaters, 1 power cable	0X85401
ELAK-Ex-R7	Ø 150 x 125 mm, 1 - 3 Trace heaters, 1 power cable	0X80077
ELAK-5	122 x 120 x 90 mm, polyester, 3 breakouts M25, IP 66	0920013
Ex-it-R	Ø 150 x 125 mm, 3 Trace heaters, 1 Pt100, incl. mounting stand	0X80070
Ex-It-R-T	Ø 150 x 125 mm, 3 Trace heaters, splice or T-connection	0X80082
ELAK-RS	Ø 150 x 125 mm, 3 Trace heaters, 1 Pt100, incl. mounting stand	0920050
ELAK-RS-T	Ø 150 x 125 mm, 3 Trace heaters, splice or T-connection	0920059

› Further accessories on pages 42 - 51.

Technical Information

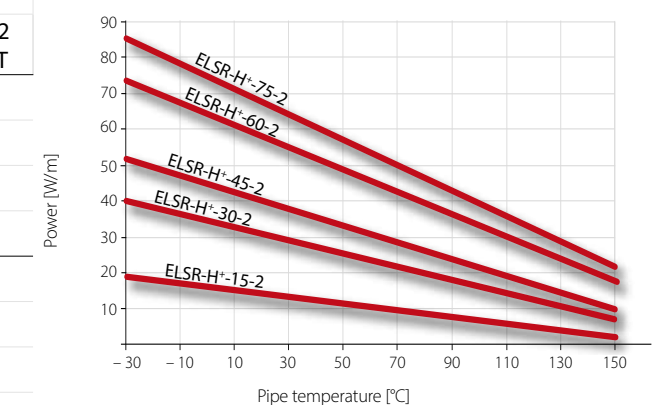
Max. continuous exposure temperature (power on)	165 °C
Max. continuous exposure temperature (power off)	210 °C
Nominal voltage	230 VAC
Min. Bending radius	25 mm
Min. Installation temperature	- 60 °C

Heating Circuit Length

Switch on temperature [°C]	Nominal fuse rating [A]	Heating circuit length*1 ELSR-H ⁺ [m]				
		15-2 BOT	30-2 BOT	45-2 BOT	60-2 BOT	75-2 BOT
10	16	156	69	63	34	26
	20	156	86	79	43	33
	25	156	104	91	54	41
	32	156	104	91	75	53
0	16	149	65	60	33	25
	20	154	82	75	41	31
	25	154	102	90	51	39
	32	154	103	90	66	51
-10	16	133	59	54	29	23
	20	153	74	68	37	29
	25	153	92	85	46	36
	32	153	102	89	59	46
-30	16	127	57	52	29	22
	20	150	70	65	36	28
	25	150	88	81	45	34
	32	150	100	88	58	45

Power Output ELSR-H⁺

(on insulated metallic pipes in accordance with EN 62395-1)



*1 Heating circuit lengths on the following conditions

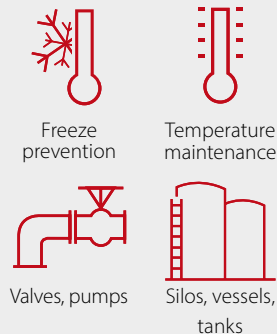
- › 230 V nominal voltage
- › Delayed action circuit breakers (C-characteristic) with 80 % max. load.
- › Maximum 10 % line voltage drop on heating cable bus wire.
- › Power connection to one heater end.

Ordering Information

Type	Nominal output [@10°C / @230V]	WxH approx. [mm]	Weight approx. [g/m]	Article - N°.
ELSR-H+-15-2-BOT	15 W/m	14.0 x 5.5	150	B0300153
ELSR-H+-30-2-BOT	30 W/m	14.0 x 5.5	150	B0300303
ELSR-H+-45-2-BOT	45 W/m	14.0 x 5.5	150	B0300453
ELSR-H+-60-2-BOT	60 W/m	14.0 x 5.5	150	B0300603
ELSR-H+-75-2-BOT	75 W/m	14.0 x 5.5	150	B0300753

At a Glance

Applications



- › Chemistry and Petrochemistry
- › Oil and Gas Industry
- › Power plants
- › Water and sanitation utilities

Benefits

- › Nine nominal outputs
- › Moisture proof
- › Resistant to chemicals
- › Use in hazardous areas

Design

- BOT** Protective braid, Fluoropolymer outer jacket

Approvals



- › Trace Heater classification
II 2G Ex 60079-30-1 db IIC T6...T2 Gb
II 2G Ex 60079-30-1 eb IIC T6...T2 Gb
II 2D Ex 60079-30-1 tb IIIC T85°C...T300°C Db
- › Certification
IECEX FMG24.0009X
FM 24 ATEX 0011X
- › Temperature class T2
(T3, T4, T5, T6 by specific design)

ELSR-SH⁺ up to 250°C



1 Bus wire	Nickel plated copper, 1.23 mm ²
2 Self-regulating heating element	
3 Insulation	Fluoropolymer
4 Protection	Protective braid (Cu, nickel plated)
5 Outer jacket	Fluoropolymer

Checklist

B + C Power Connection & End Termination

EL-ECSE-Ex	Silicone termination cap, red, cold assembly, with ex marking	0X81EH2
Ex-Con-SR	Ex connection sleeve Ø 36 x 210 mm 4J	0X81125
ELVB-SREx-SH+-20	Power connection, cold assembly, gland M20, brass, Ex d e	0X81SP1
ELVB-SREx-25	Power connection, cold assembly, gland M25 x 1,5, PE, Ex e	0X81PA1
ELVB-SREx-IT	Power connection, cold assembly, without gland	091AIT1
ELVB-SRV-H	Splice set, shrink-fit	0911117
ELVB-SRA-25	Power connection, cold assembly, gland M25 x 1,5, PE	091A010

D Junction Boxes

ELAK-Ex-2.00	110 x 75 x 57 mm, polyester, IP66, 1 Trace heater, 1 power cable	0X85200
ELAK-Ex-4.01	122 x 120 x 90 mm, polyester, IP66, 1 - 3 Trace heaters, 1 power cable	0X85401
ELAK-Ex-R7	ø 150 x 125 mm, 1 - 3 Trace heaters, 1 power cable	0X80077
ELAK-5	122 x 120 x 90 mm, polyester, 3 breakouts M25, IP 66	0920013
Ex-it-R	ø 150 x 125 mm, 3 Trace heaters, 1 Pt100, incl. mounting stand	0X80070
Ex-It-R-T	ø 150 x 125 mm, 3 Trace heaters, splice or T-connection	0X80082
ELAK-RS	ø 150 x 125 mm, 3 Trace heaters, 1 Pt100, incl. mounting stand	0920050
ELAK-RS-T	ø 150 x 125 mm, 3 Trace heaters, splice or T-connection	0920059

- › Further accessories on pages 42 - 51.

Technical Information

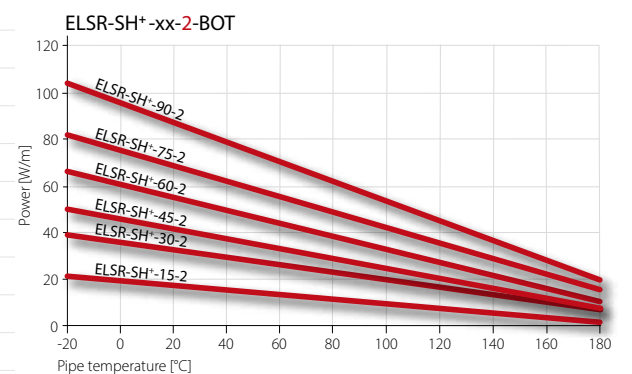
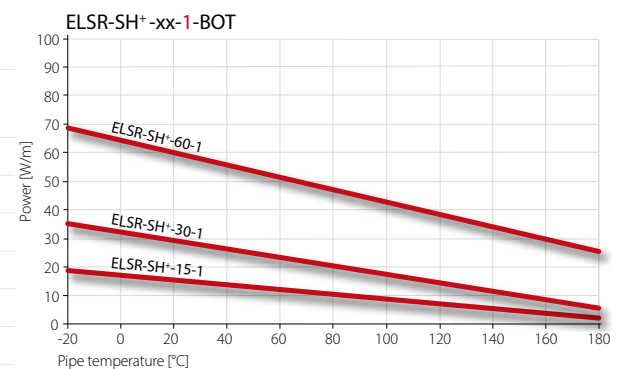
Max. continuous exposure temperature (power on)	185 °C
Max. continuous exposure temperature (power off)	250 °C
Nominal voltage* ¹	230 VAC / 120 VAC
Min. Bending radius	25 mm
Min. Installation temperature	- 60 °C

Heating Circuit Length

Switch on temperature [°C]	Nominal fuse rating [A]	Heating circuit length* ¹ ELSR-SH+-...-...-BOT [m]								
		-15-2-	-30-2-	-45-2-	-60-2-	-75-2-	-90-2-	-15-1-	-30-1-	-60-1-
10	16	150	84	58	44	31	20	72	42	19
	20	150	105	87	56	39	25	72	53	24
	25	150	108	87	70	48	31	72	54	30
	32	150	108	87	78	63	40	72	54	36
0	16	149	80	56	43	30	19	70	40	18
	20	149	100	87	53	38	24	72	51	23
	25	149	107	87	67	48	30	72	54	29
	32	149	107	87	77	61	38	72	54	36
-10	16	148	76	54	40	30	18	67	38	17
	20	148	95	68	51	37	23	71	48	22
	25	148	107	87	64	46	29	71	53	28
	32	148	107	87	77	60	36	71	53	35
-30	16	137	70	51	37	27	16	61	35	16
	20	146	88	63	47	34	21	70	44	20
	25	146	107	87	59	43	26	70	53	26
	32	146	107	87	75	55	33	70	53	33

Power Output ELSR-SH+

(on insulated metallic pipes in accordance with EN 62395-1)



*¹ Heating circuit lengths on the following conditions

- › 230 VAC (Type B0310XX3), 120 VAC (Type B0310XX1)
- › Delayed action circuit breakers (C-characteristic) with 80 % max. load
- › Maximum 10 % line voltage drop on heating cable bus wire
- › Power connection to one heater end

Ordering Information

Type	Nominal output [at 10°C / @120V/230V]	WxH approx. [mm]	Weight approx. [g/m]	Article - N°.
ELSR-SH+-15-1-BOT	15 W/m	14.0 x 5.5	150	B0310151
ELSR-SH+-30-1-BOT	30 W/m	14.0 x 5.5	150	B0310301
ELSR-SH+-60-1-BOT	60 W/m	14.0 x 5.5	150	B0310601
ELSR-SH+-15-2-BOT	15 W/m	14.0 x 5.5	150	B0310153
ELSR-SH+-30-2-BOT	30 W/m	14.0 x 5.5	150	B0310303
ELSR-SH+-45-2-BOT	45 W/m	14.0 x 5.5	150	B0310453
ELSR-SH+-60-2-BOT	60 W/m	14.0 x 5.5	150	B0310603
ELSR-SH+-75-2-BOT	75 W/m	14.0 x 5.5	150	B0310753
ELSR-SH+-90-2-BOT	90 W/m	14.0 x 5.5	150	B0310903

Accessories

Self-Regulating Trace Heater System

B* – Power Connection Kits

	Type	suitable for ELSR		Description	Ambient temperature	Part No.
	EL-Clc P	-N, -LS, -W		Fast connector with integrated cold lead	-40 °C to +100 °C	09ClcP
	EL-Clc S	-N, -LS, -W		Fast connector T-splice	-40 °C to +100 °C	09ClcS
	ELVB-SRA-25	-N, -LS, -W, -FHP, -H ⁺ , -SH ⁺		Power connection, glued, Gland M25 x 1,5, PE	-40 °C to +100 °C	091A010
	ELVB-SRAH-25	-H, -SHH		Power connection, glued, Gland M25 x 1,5, PE	-40 °C to +100 °C	091A040
	ELVB-SRAM-25	-M		Power connection, shrink-fit, Gland M25 x 1,5, PE	-40 °C to +100 °C	091A015
	ELVB-SRAR-25	-R		Power connection, shrink-fit, Gland M25 x 1,5, PE	-40 °C to +100 °C	091A020
	ELVB-SRAN-Ex-20	-N	●	Power connection, glued, Gland M20, brass, Ex d	-60 °C to +180 °C (7 Joule)	0X81PND
	ELVB-SRAL-Ex-20	-LS	●	Power connection, glued, Gland M20, brass	-60 to +180 °C (7 Joule)	0X81PLD
	ELVB-SRAH-Ex-20	-H, -SHH	●	Power connection, glued, Gland M20, brass	-60 to +180 °C (7 Joule)	0X81PHD
	ELVB-SREx-25	-N, -LS, -FHP, -H, -H ⁺ , -SH ⁺	●	Power connection, glued, Gland M25 x 1,5, PE, Ex e	-25 °C to +70 °C (7 Joule) -55 °C to +70 °C (4 Joule)	0X81PA1
	ELVB-SREx-IT	-N, -LS, -H, -SHH, -H ⁺ , -SH ⁺		Power connection, glued, without gland	-60 °C to +70 °C	091AIT1
	ELVB-SRV-N-L-W	-N, -LS, -W		Connection set, shrink-fit	+65 °C	0911116
	ELVB-SRV-M	-M, -R		Connection set, shrink-fit	+65 °C	0911122
	ELVB-SREx-SH+20	-H ⁺ , -SH ⁺	●	Power connection, glued, Gland M20, brass, Ex d e	-60 to +180 °C (7 Joule)	0X81SP1

B* – Power Connection Kits

	Type	suitable for ELSR		Description	Ambient temperature	Part No.
	ELVB-SRV-H	-H, -SHH, -H ⁺ , -SH ⁺		Connection set, shrink-fit	+100 °C	0911117
	ELVB-SRV-Ramp	-Ramp		Connection set, shrink-fit	+100 °C	0911124
	Ex-Con-SR	-N, -LS, -H, -SHH, -H ⁺ , -SH ⁺	●	Ex connection sleeve Ø 36 x 210 mm 4J	-32 °C to +200 °C	0X81125
	ELVB-70	-M-BAF/-BF		Cable gland MS 3/4", brass, approved for drinking water	+65 °C	0911703
	ELVB-71	-M-BAF/-BF		Y-connector 32 mm, brass, approved for drinking water	+65 °C	0911704
	M20	-N, -H	●	Ex-d cable gland, brass, fits Y-connector	-60 to +180 °C (7 Joule)	2572020003

C* – End Termination Kits

	Type	suitable for ELSR		Description	Ambient temperature	Part No.
	EL-ECSH-Ex	-H, -SHH, -H ⁺ , -SH ⁺	●	Silicone termination cap red, glued, with ex marking	-60 °C to +250 °C	0X81EH2
	EL-ECL	-LS		Silicone termination cap transparent, glued	-45 °C to +85 °C	09112L1
	EL-ECL-Ex	-LS	●	Silicone termination cap black, glued, with ex marking	-60 °C to +135 °C	0X81EL1
	EL-ECN-Ex	-N	●	Silicone termination cap black, glued, with ex marking	-60 °C to +135 °C	0X81EN1
	EL-ECN	-N, -FHP		Silicone termination cap transparent, glued	-45 °C to +85 °C	09112N1
	EL-ECM	-M, -R		Silicone termination cap transparent, glued	-45 °C to +85 °C	09112M1

*Category letters refer to the Checklists on p. 9 and the respective datasheet.

Accessories

Self-Regulating Trace Heater System

C* – End Termination Kits

	Type	suitable for ELSR		Description	Ambient temperature	Part No.
	EL-ECMF	-M-BAF/-BF		Silicone termination cap transparent, glued, potable water	-45 °C to +85 °C	09112MF
	EL-ECW	-W		Silicone termination cap transparent, glued	-45 °C to +85 °C	09112W1
	EL-ECRA	-Ramp		Silicone termination cap transparent, glued	-45 °C to +85 °C	09112RA
	Ex-It-S	-N, -LS, -H, -H ⁺ , -SH ⁺	●	Heating circuit extension with blind cap, IP65	-60 °C to +55 °C	0X8ITS0
	Ex-It-L	-N, -LS, -H, -H ⁺ , -SH ⁺	●	Heating circuit termination with LED signal light, IP65	-60 °C to +55 °C	0X8ITLG
	ELHKV-E1-1	all		Heating circuit manifold, 1 circuit		0640001
	ELHKV-E1-2	all		Heating circuit manifold, 2 circuits		0640002
	ELHKV-St-3	all		Heating circuit manifold, 3 circuits		0640003
	ELHKV-St-6	all		Heating circuit manifold, 6 circuits		0640006
	ELHKV-St-9	all		Heating circuit manifold, 9 circuits		0640009
	ELHKV-St-12	all		Heating circuit manifold, 12 circuits		0640012

D* – Junction Boxes

	Type	suitable for ELSR		Description	Ambient temperature	Part No.
	ELAK-2	all		104 x 104 x 70 mm, polycarbonate, IP 66, up to 3 heaters, cable gland 1x M25, stamp 7x M20/M25	-40 °C to +70 °C	0920030
	ELAK-5	all		122 x 120 x 90 mm, polyester, IP 66, up to 2 heaters, cable gland 3x M25	-40 °C to +90 °C	0920013
	ELAK-5.1	all		122 x 120 x 90 mm, polyester, grey, IP 65, up to 3 heaters, cable gland 1x M25, holes 3x M25	-35 °C to +80 °C	0920002

D* – Junction Boxes

	Type	suitable for ELSR		Description	Ambient temperature	Part No.
	ELAK-5.7	all		122 x 120 x 90 mm, polyester, grey, IP 65, up to 3 heaters, cable gland 1x M25, holes 3x M25	-40 °C to +90 °C	0920014
	ELAK-5.8	all Pt100 temperature sensors		122 x 120 x 90 mm, polyester, grey, IP 65, cable gland 2x M25, 1x M16, holes 1x M25	-40 °C to +90 °C	0920015
	ELAK-Ex-2.00	all	●	110 x 75 x 57 mm, polyester, IP66, 1 Trace heater, 1 Power cable	-40 °C to 50/55/60 °C	0X85200
	ELAK-Ex-4.01	all	●	122 x 120 x 90 mm, polyester, IP66, 1 - 3 Trace heaters, 1 Power cable	-40 °C to 50/55/60 °C	0X85401
	ELAK-Ex-3.8	all Pt100 temperature sensors	●	122 x 120 x 90, 1-2 Pt100, max. 2,5 mm ² , IP66, cable gland 1x M25, 2x M12	-40 °C to +60 °C	0X80058
	ELAK-Ex-R5	all	●	ø 150 x 125 mm, 1 heater, IP 65, cable gland 1x M25, 1x M20, holes 1x M25, 1x M16	-40 °C to +60 °C	0X80075
	ELAK-Ex-R7	all	●	ø 150 x 125 mm, 1-3 heaters, power supply lead max. 6 mm ² , IP 65, cable gland 1x M25, holes 3x M25	-40 °C to +50 °C	0X80077
	ELAK-Ex-R8	all Pt100 temperature sensors	●	ø 150 x 125 mm, 1-2 Pt100, max. 2,5 mm ² , IP 65, cable gland 1x M25, 2x M12	-40 °C to +50 °C	0X80078
	Ex-it-R	-N, -LS, -H, -SHH, -H ⁺ , -SH ⁺	●	ø 150 x 125 mm, 3 heaters, 1 Pt100 power supply lead, incl. mounting stand, IP 65, cable gland 1x M25	-20 °C to +50 °C	0X80070
	Ex-it-R-T	-N, -LS, -H, -SHH, -H ⁺ , -SH ⁺	●	ø 150 x 125 mm, 3 heaters, incl. mounting stand, IP 65, cable gland 1x M25	-20 °C to +50 °C	0X80082
	Ex-it-R-ELTF	all Pt100 temperature sensors	●	150 x 125 mm, 1 Pt100, 1 sensor cable, incl. mounting stand, IP 65, cable gland 1x M20	-20 °C to +50 °C	0X80092
	ELAK-RS-T	-N, -LS, -W, -H, -H ⁺ , -SH ⁺		150 x 125 mm, incl. mounting stand, IP 65, cable gland 1x M25, holes 1x M25 1x M20	-45 °C to +50 °C	0920059
	ELAK-RS	-N, -LS, -W, -H, -SHH, -H ⁺ , -SH ⁺		150 x 125 mm, twin Pt100, 3 heaters incl. mounting stand, IP 65, cable gland 1x M25	-45 °C to +50 °C	0920050

*Category letters refer to the Checklists on p. 9 and the respective datasheet.

Accessories

Self-Regulating Trace Heater System

E* – Pipe Mounting Bracket

	Type	suitable for ELSR	Ex	Description	Part No.
	ELB-13V1	all	●	Tightening strap, threaded, 11 mm, 30 m, Mat. 1.4301	2723001010
	ELB-13V2	all	●	Turnbuckle 1.4301 (selling unit 10 pieces), Mat. 1.4301	0930042
	ELB-15.04	all	●	Hose clamp, 25 - 40 mm, Mat. 1.4301	2723001025
	ELB-15.06	all	●	Hose clamp, 40 - 60mm, Mat. 1.4301	2723001040
	ELB-15.09	all	●	Hose clamp 40 - 90 mm (DN 25-65), Mat. 1.4301	2723040090
	ELB-15.11	all	●	Hose clamp, 50 - 110 mm, Mat. 1.4301	2723050110
	ELB-15.325	all	●	Hose clamp, 60 - 325 mm, Mat. 1.4301	2723060325
	ELB-15.650	all	●	Hose clamp, 60 - 650 mm, Mat. 1.4301	2723060650
	ELB-18	all	●	Assembly and fastening plate for gutters, 290 x 30 x 1,5 mm, Mat. 1.4301	0930040
	ELB-20	all	●	Mounting bracket 90° for downpipes, Mat. 1.4301	0930043
	ELB-21	all	●	Mounting profile for gutters, Mat. 1.4301, 290 mm long	0930044
	ELB-22	all	●	PE mounting profile for trace heaters, spacing 25 mm	0942000
	ELMW-6	ELAK-2	●	Support bracket, 85 x 85 mm, Mat. 1.4301	0941006
	ELMW-Ex-Box	Ex-Box REG / Ex-Box-LIM	●	Support bracket, 185 x 185 mm, Mat. 1.4301	0941072

*Category letters refer to the Checklists on p. 9 and the respective datasheet.

E* – Pipe Mounting Bracket

	Type	suitable for ELSR	Ex	Description	Part No.
	ELMW-CT	EL-CT...	●	Support bracket, Mat. 1.4301	0941025
	ELMW-GP1	ELT-GP 1	●	Support bracket 175 x 125 mm, Mat. 1.4301	0941020
	EL-VSB 300	all	●	Variable support bracket, height adjustable from 180 - 300 mm, Mat. 1.4301	0941085
	EL-VSB 400	all	●	Variable support bracket, height adjustable from 280 - 400 mm, Mat. 1.4301	0941086

F* – Fasteners and Self-Adhesive Tapes, Foils

	Type	suitable for ELSR	Ex	Description	max. Operating temperature	Part No.
	ELB-02A	all	●	Adhesive tape, glass silk 30 m x 12 mm	+180 °C	2486800126
	ELB-02B	all	●	Adhesive tape, glass silk 50 m x 12 mm	+180 °C	2486800130
	ELB-06	all	●	Aluminium foil, 50 m x 75 mm, self-adhesive	-40 °C to +140 °C	0942200
	ELB-06D	all	●	Aluminium foil 100 m x 75 mm, self-adhesive	-40 °C to +140 °C	2701900076
	ELB-06C	all	●	Aluminium foil 50 m x 50 mm, reinforcement grid, -40 ... +80 °C	-40 °C to +130 °C	2701900051
	ELB-06E	all	●	Aluminium foil 50 m x 536 mm, self-adhesive	+150 °C	2701900500
	ELB-16.10	all	●	Plastic tightening straps 100 x 2,5 mm, black, UV resistant, selling unit = 100 pcs.	+85 °C	2796000001
	ELB-16.20	all	●	Plastic tightening straps 200 x 3,6 mm, black, UV resistant, selling unit = 100 pcs.	+85 °C	2796000002
	ELB-16.36	all	●	Plastic tightening straps 360 x 4,8 mm, black, UV resistant, selling unit = 100 pcs.	+85 °C	2796000003

Accessories

Self-Regulating Trace Heater System

G* – Insulation Bushing

	Type	suitable for ELSR	Ex	Description	Part No.
	ELISD-1.12	all temperature sensors	●	Cover plate aluminium, 70 x 70 mm, Ø seal area 3,5 - 7 mm, 1 x M12 x 1,5	0921011
	ELISD-1.16	all temperature sensors	●	Cover plate aluminium, 70 x 70 mm, Ø seal area 4,5 - 10 mm, 1 x M16	0921015
	ELISD-1.20	all connections	●	Cover plate aluminium, 70 x 70 mm, Ø seal area 7 - 13 mm, 1 x M20	0921019
	ELISD-1.25	all connections	●	Cover plate aluminium, 70 x 70 mm, Ø seal area 9 - 17 mm, 1 x M25	0921023
	ELISD-R1	-N, -LS, -W, -H ⁺ , -SH ⁺	●	Cover plate aluminium, 70 x 70 mm	0921035
	ELISD-R5	-M, -R	●	Cover plate aluminium, 70 x 70 mm	0921101
	ELISD-R4	-H, -SHH	●	Cover plate aluminium, 70 x 70 mm	0921047

H* – Warning Signs

	Type	suitable for ELSR	Ex	Description	Part No.
	EL-WS01D	all	●	German "Elektrische Begleitheizung"	2986900002
	EL-WS01E	all	●	English "Electrical Heat Tracing"	2986900012
	EL-WS01F	all	●	French "Trçage Electrique"	2986900032
	EL-WS01R	all	●	Russian "Электрообогрев"	2986900013
	EL-WS01I	all	●	Italian "Tracciatura Elettrica Riscaldante"	2986900089

I* – Temperature Controllers

	Type	suitable for ELSR	Ex	Description	Operating temperature	Part No.
	ELTC 05	all		Electronic temperature controller, Frostcontrol, 1 relay	-30 °C to +50 °C	0610002
	ELTC-14	all		Electronic temperature controller with display	-25 °C to +55 °C	0620000
	ELTC-14P	all		Proportional electronic temperature controller with display	-30 °C to +60 °C	0620010
	ELTC-15	all		Electronic temperature controller with display and ramp mode	-25 °C to +55 °C	0621500
	ELTC-21	all		Electronic temperature controller with display, on rail	-25 °C to +55 °C	0610093
	ELTC-22	all		Electronic temperature controller with display, on rail	-25 °C to +55 °C	0610094
	ELTC-24P	all		Proportional electronic temperature controller with display, on rail	-30 °C to +60 °C	0620011
	ELTC-41	all		Micro-processor temperature controller with display, front installation	-25 °C to +55 °C	0620041
	ELTC-42	all		Micro-processor temperature controller with display, front installation	-25 °C to +55 °C	0620042
	ELTC-W	-W		Water Comfort System, power controller	-25 °C to +65 °C	0630000
	ELTC-MV2	all		Electronic temperature controller Moduvise, Top-hat rail	-25 °C to + 55 °C	0611135
	Ex-Box REG/DIS	all	●	Electronic temperature controller with display	-30 °C to +60 °C	0X60020
	Ex-Box REG/LED	all	●	Electronic temperature controller with LED	-30 °C to +60 °C	0X60021
	Ex-Box LIM/LED	all	●	Electronic temperature limiter with LED	-30 °C to +60 °C	0X60023
	Ex-Box LIM/DIS	all	●	Electronic temperature limiter with display	-30 °C to +60 °C	0X60024

*Category letters refer to the Checklists on p. 9 and the respective datasheet.

Accessories

Self-Regulating Trace Heater System

I* – Temperature Controllers

	Type	suitable for ELSR		Description	Operating temperature	Part No.
	ISD-1	all		Ice and snow sensor for gutters, including sensor devices	-10 °C to +50 °C	0620623
	ISD-1.1	all		Ice and snow sensor for gutters, including sensor devices	-10 °C to +50 °C	0620624
	EL-CT 50	all	●	Capillary thermostat	0 °C to +50 °C	0X63050
	EL-CT 30	all	●	Capillary thermostat	-50 °C to +30 °C	0X63030
	Ex-TC/A-It	alle	●	Temperature Controller with Alarm Function, pipe mounting	-40 °C to +50 °C	0X60101
	Ex-TC/A-W	all	●	Temperature Controller with Alarm Function, wall mounting	-40 °C to +50 °C	0X60103
	Ex-TC/AL-It	all	●	Temperature Controller and Limiter with Alarm Function, pipe mounting	-40 °C to +50 °C	0X60121
	Ex-TC/AL-W	all	●	Temperature Controller and Limiter with Alarm Function, wall mounting	-40 °C to +50 °C	0X60123
	Ex-TC/M-It	all	●	Temperature Controller with Mod-bus communication, pipe mounting	-40 °C to +50 °C	0X60131
	Ex-TC/M-W	all	●	Temperature Controller with Mod-bus communication, wall mounting	-40 °C to +50 °C	0X60133

J* – Temperature Sensors

	Type	suitable for ELSR		Description	Operating temperature	Part No.
	ELTF-PT.1	all		Pt100, 5 x 50 mm PVC 5 m	-30 °C to +80 °C	0650001
	ELTF-PT.15	all		Pt100, 3 conductors, 5x50 mm, PTFE 3,0 m, IP67	-50 °C to +260 °C	0650070
	ELTF-PT.2	all		twin Pt100, 3 conductors, 5x50 mm, PFA 3,0 m, IP65	-50 °C to +260 °C	0650072
	ELTF-PT.3	all		Pt100, 2 conductors, 5 x 50 mm, 3 m PTFE cable	-50 °C to +250 °C	0650003
	ELTF-PT.3.1	all		Pt100, 3 conductors, 5 x 50 mm, 3 m PFA cable	-50 °C to +250 °C	0650002
	ELTF-PTEx.2	all	●	Pt100, 4 conductors, 3 m PTFE cable	-45 °C to +235 °C	0X70002
	ELTF-PTEx.4	all	●	2x Pt100, 3 conductors, 3 m cold lead	-45 °C to +235 °C	0X70030
	ISD-STH	all		Temperature- / moisture sensor for gutters	-40 °C to +85 °C	TBC0001

*Category letters refer to the Checklists on p. 9 and the respective datasheet.

Exemplary presentation Self-Regulating Trace Heaters

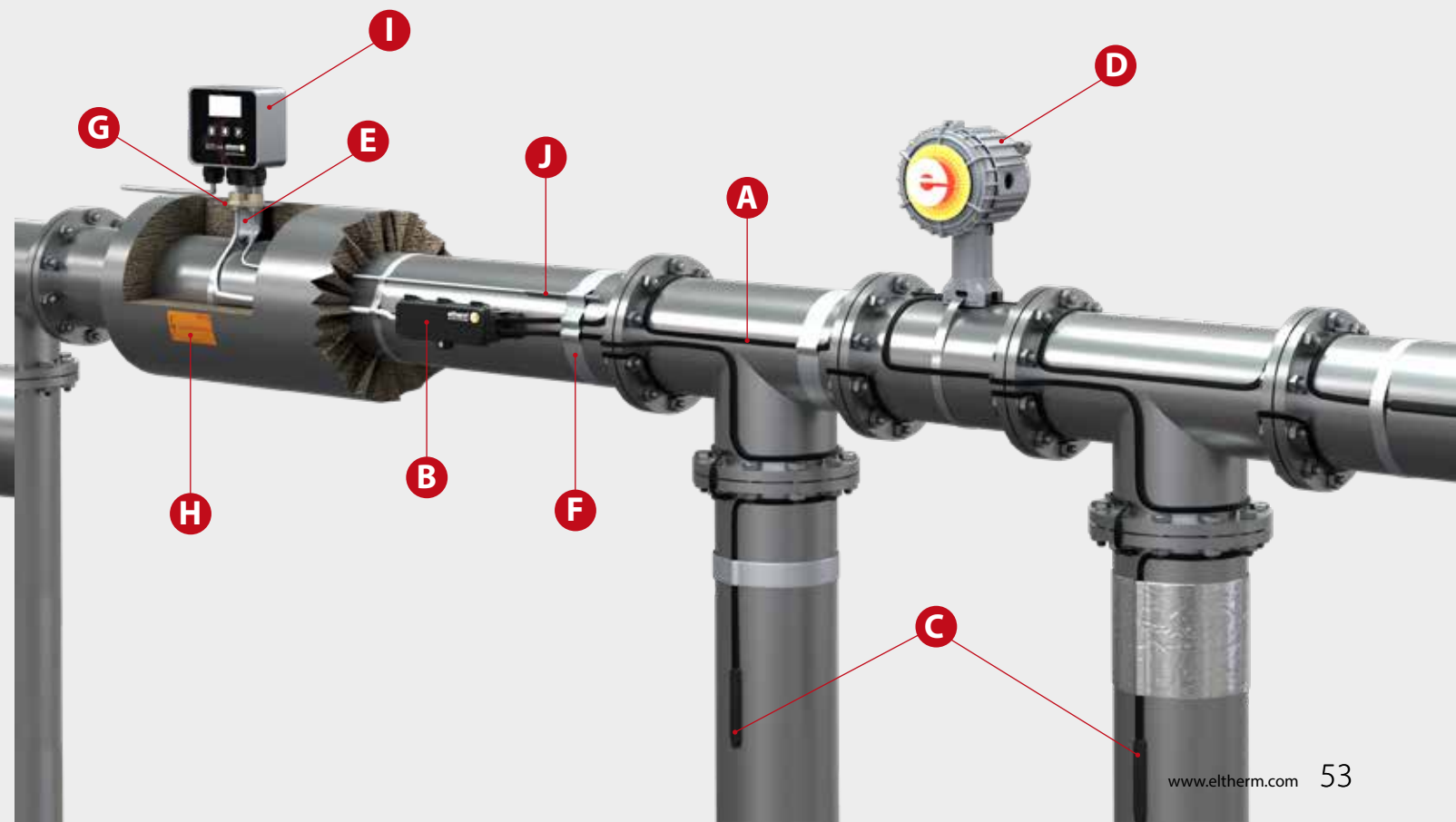
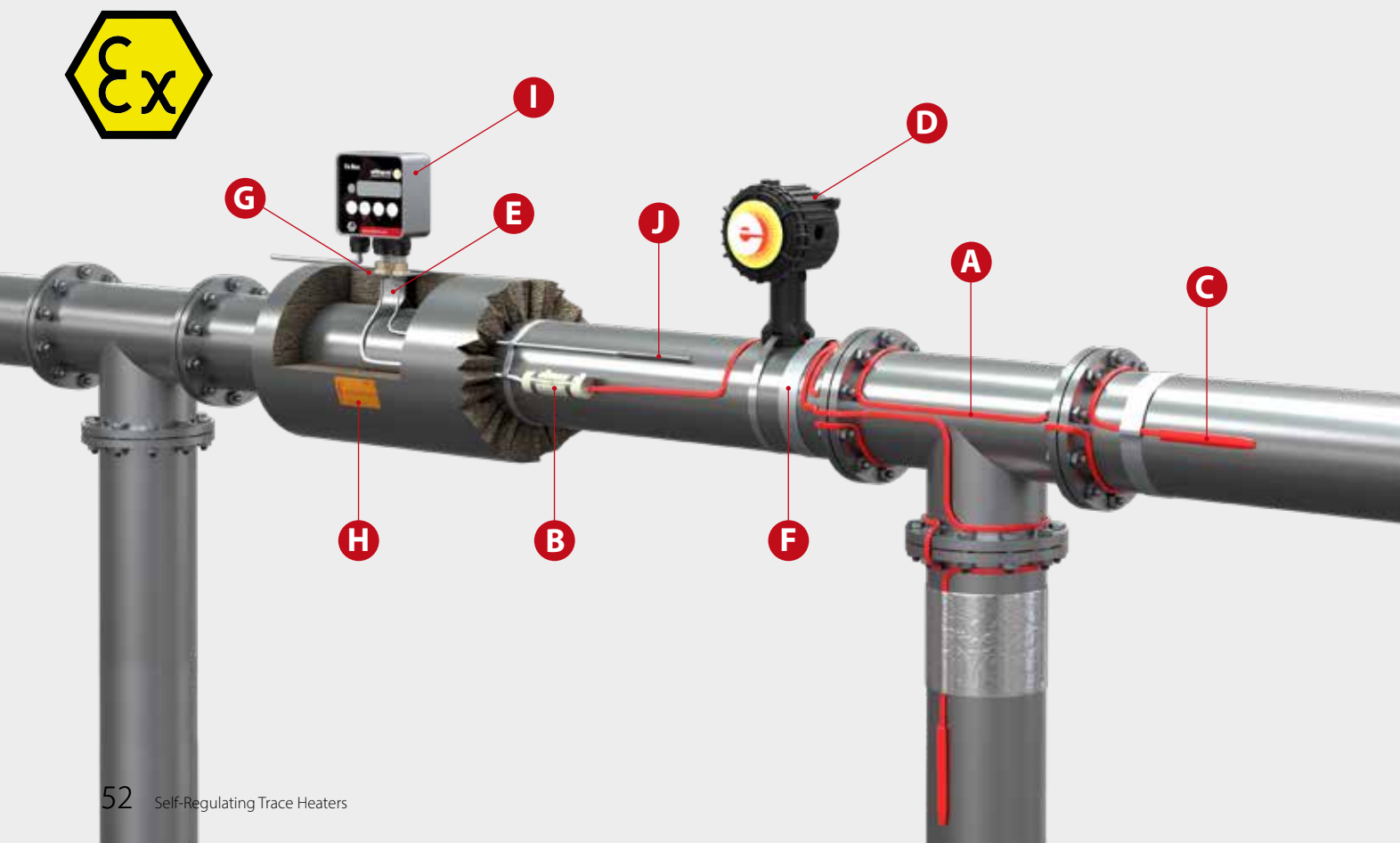
in Hazardous Areas

A Trace Heater	ELSR-N, -LS, -H, -SH, -SHH
B Connection Kit	e. g. Ex-Con-SR (or ELVB...Ex...)
C End Termination Kit	EL-EC...ex
D Junction Box	e. g. Ex-it-R (or ELAK-Ex-...)
E Pipe Mounting Fitting	ELMW-..., ELB-...
F Fasteners and Self-adhesive Tapes, Foils	ELB-...
G Insulation Bushing	ELISD-...
H Warning Sign	EL-WS...
I Temperature Controller	e. g. Ex-Box Temperature Controller
J Temperature Sensor	

in Non-Hazardous Areas

A Trace Heater	ELSR-N, -LS, - M, -M-AF/BF, -R, -W, - Ramp, -FHP, -H, -SH, SHH
B Connection Kit	e. g. El-Clic-P (or ELVB-...)
C End Termination Kit	EL-EC...
D Junction Box	e. g. ELAK-RS
E Pipe Mounting Fitting	ELMW-..., ELB-...
F Fasteners and Self-adhesive Tapes, Foils	ELB-...
G Insulation Bushing	ELISD-...
H Warning Sign	e. g. ELTC-14 Temperature Controller
I Temperature Controller	ELTF-...
J Temperature Sensor	

This is just a schematic overview, not an installation instruction. For detailed information, please contact our engineers.



Design Guide

Self-Regulating Trace Heater System

Table 1: Design guide freeze prevention +5 °C for self-regulating trace heaters, type series ELSR-N-10...40-2-BO(T)																	
Pipe size	Inches: DN	1/2 15	3/4 20	1 25	1 1/4 32	1 1/2 40	2 50	2 1/2 65	3 80	4 100	5 125	6 150	7 175	8 200	9 225	10 250	12 300
Insulation thickness (mm)	Ambient temperature, min. (°C)	Heating cable Type ELSR-N-10...40-2-BO(T)															
10	- 15	10	10	20	20	20	30	30	30	40	2x30	2x30	2x40	2x40	2x40	3x30	3x40
	- 20	10	20	20	20	30	30	40	40	2x30	2x30	2x40	2x40	3x30	3x40	3x40	4x40
	- 25	10	20	20	30	30	40	40	2x30	2x30	2x40	2x40	3x40	3x40	3x40	4x40	4x40
20	- 15	10	10	10	10	10	20	20	20	30	30	30	40	40	40	2x30	2x30
	- 20	10	10	10	10	20	20	20	30	30	30	40	2x30	2x30	2x30	2x30	2x40
	- 25	10	10	20	20	30	30	30	30	40	40	2x30	2x30	2x30	2x30	2x40	2x40
30	- 15	10	10	10	10	10	10	10	20	20	20	20	30	30	30	40	40
	- 20	10	10	10	10	10	20	20	20	20	20	20	30	40	40	40	2x30
	- 25	10	10	10	10	20	20	30	20	30	30	40	40	2x30	2x30	2x30	2x30
40	- 15	10	10	10	10	10	10	10	10	20	20	20	20	20	30	30	30
	- 20	10	10	10	10	10	10	20	20	20	20	20	30	30	30	30	40
	- 25	10	10	10	10	10	20	20	20	20	20	20	30	30	40	40	2x30
50	- 15	10	10	10	10	10	10	10	10	10	20	20	20	20	20	20	30
	- 20	10	10	10	10	10	10	10	10	20	20	20	20	30	30	30	30
	- 25	10	10	10	10	10	10	20	20	20	20	20	30	30	30	30	40
60	- 15	10	10	10	10	10	10	10	10	10	10	20	20	20	20	20	20
	- 20	10	10	10	10	10	10	10	10	10	20	20	20	20	20	30	30
	- 25	10	10	10	10	10	10	10	20	20	20	20	20	30	30	30	30
80	- 15	10	10	10	10	10	10	10	10	10	10	10	20	20	20	20	20
	- 20	10	10	10	10	10	10	10	10	10	10	20	20	20	20	20	20
	- 25	10	10	10	10	10	10	10	10	20	20	20	20	20	20	20	30
100	- 15	10	10	10	10	10	10	10	10	10	10	10	10	10	20	20	20
	- 20	10	10	10	10	10	10	10	10	10	10	10	20	20	20	20	20
	- 25	10	10	10	10	10	10	10	10	10	20	20	20	20	20	20	20

Basis: Thermal conductivity of the insulation 0.04 W/mK; increased factor of safety 20 %

Table 2: Trace heater additions (m) for																	
DN	15	20	25	32	40	50	65	80	100	125	150	175	200	225	1250	300	
Pair of flanges	0.2	0.2	0.2	0.3	0.3	0.3	0.3	0.3	0.6	0.7	0.8	0.8	0.8	0.8	0.8	0.8	
Flanged fitting	0.4	0.4	0.4	0.55	0.55	0.55	0.55	0.55	1.5	2.0	2.4	2.4	2.4	2.4	2.4	2.4	
Pumps	1.5	1.5	1.5	2.0	2.0	2.0	2.0	2.0	5.0	5.0	6.0	6.0	6.0	6.0	6.0	6.0	

For non-insulated pipe supports: Heating pipe allowance = 4 x support width. Per heating pipe connection in the terminal box / thermostat: Heating pipe allowance approx. 0.5 m. Attention: If there is multiple laying of the heating pipes, the allowances above must be correspondingly multiplied.



Table 3: Heat loss of pipelines in W/m at 10 °K temperature difference																	
Pipe size	Inches: DN	1/2 15	3/4 20	1 25	1 1/4 32	1 1/2 40	2 50	2 1/2 65	3 80	4 100	5 125	6 150	7 175	8 200	9 225	10 250	12 300
Insulation thickness (mm)	DELTA T																
10	10	4.4	5.2	6.1	7.8	8.7	10.5	12.9	14.8	18.6	22.3	26.6	30.3	34.1	37.8	41.9	49.3
20	10	2.9	3.3	3.7	4.5	5.0	5.9	7.1	8.1	10.0	11.9	14.1	16	17.8	19.7	21.9	25.6
30	10	2.2	2.6	2.9	3.4	3.7	4.2	5.2	5.8	7.1	8.4	9.8	11.1	12.4	13.7	15.1	17.6
40	10	1.9	2.2	2.5	2.8	3.1	3.5	4.2	4.7	5.7	6.6	7.7	8.7	9.6	10.6	11.7	13.6
50	10	1.7	2.0	2.2	2.5	2.7	3.0	3.6	4.0	4.8	5.6	6.4	7.2	8.0	8.8	9.6	11.2
60	10	1.6	1.8	2.0	2.2	2.4	2.7	3.2	3.6	4.2	4.9	5.6	6.2	6.9	7.5	8.2	9.5
80	10	1.4	1.6	1.7	1.9	2.1	2.3	2.7	3.0	3.4	3.9	4.5	5.0	5.5	6.0	6.5	7.5
100	10	1.3	1.4	1.5	1.7	1.8	2.0	2.4	2.6	3.0	3.4	3.8	4.2	4.6	5.1	5.5	6.3
120	10	1.2	1.3	1.4	1.6	1.7	1.9	2.2	2.3	2.7	3.0	3.4	3.7	4.1	4.4	4.8	5.4

Basis: Thermal conductivity of the insulation 0.04 W/mK; increased factor of safety 20 %.
If there are other thermal conductivity figures, the values must be multiplied by a corresponding factor.

Example:	Thermal conductivity of the insulation 0.045 W/mK	0,045 W/mK	= 1,125
		0,040 W/mK	

Example 1
Task: Frost protection for a DN 100, 25 m long pipeline with 2 pairs of flanges, 1 fitting, 1 pump, 4 supports 0.1 m wide; at an ambient temperature of - 25 °C and with a 50 mm thick heat insulation, 230 V.

Design:	from table 1:	Heating cable type ELSR-N-20-BO, single laying	
		Pipeline length 25 m single laying = m	= 25.0 m
	from table 2:	Pair of flanges 2 x 0,6 m	= 1.2 m
		Fitting 1 off x 1.5 m	= 1.5 m
		Pump 1 off x 5.0 m	= 5.0 m
		Pipe support 4 off x 0.1 m x 4	= 1.6 m
		Connection 1 off x 0.5 m	= 0.5 m
			= 34.8 m = order 35 m ELSR-N-20-2-BO

Example 2:
Task: Temperature maintenance for 15 m DN 50 pipeline at 20 °C (caustic soda solution) at minimum ambient temperatures of -10 °C (total DELTA-T of 30 K) and a 40 mm thick heat insulation. Installations: 2 pairs of flanges, 2 fittings, 230V.

If the heating is designed using type ELSR-N self-regulating heating cables, please proceed as follows to select the correct nominal output: Design (from table 3): DELTA-T 10 K heat loss = 3.5 W/m. As total DELTA-T is 30 K (that is to say is 3x higher than DELTA-T in the table), the value found is multiplied by 3: 3.5 W/m x a factor of 3 = 10.5 W/m.
In the temperature output diagram on the ELSR-N datasheet, the intersection of the two lines heating output W/m = 10.5 and temperature +20 °C is between the curves (ELSR-N-10) and (ELSR-N-20). Select the heating cable with the next highest power output (ELSR-N-20). You can now proceed with the heating pipe allowance for the installations as in Example 1.

Questionnaire

Electrical Trace Heating on Pipes

Customer Data			
Company*		Contact*	
Street, Code/City*		E-Mail*	
Website		Phone*	

Project Details		Process Data	
Application	☐ Freeze prevention	Product **	
	☐ Temperature maintenance	Density **	kg/m³
	☐ Heating up & temperature maintenance	Spec. heat capacity **	kJ/kg*K
		Spec. melting heat **	J/kg
		Phase transition temperature (if applicable) **	°C
Supply voltage*		Switch-on temperature	°C
Maintain temperature*	°C	Initial temperature **	°C
Product temperature	°C	End temperature **	°C
Min. ambient temperature*	°C	Max. operating temperature (energized)	°C
Max. ambient temperature*	°C	Max. temperature (for a short time) e.g. steam-rinsing (de-energized)	°C
Removable Trace heater	☐ Yes (Drawing necessary) ☐ No	Desired heat-up time **	h
Production according to	☐ Provision ☐ Drawing		

Details of the Pipes	
Length	_____ mm
Nominal diameter	_____ mm
Material	_____
Spec. heat capacity (pipe material)	_____ kJ/kg*K
Density (pipe material) **	_____ kg/m ³
Weight per meter (of pipe)	_____ kg/m
Wall thickness **	_____ mm
Quantity of	Valves: _____ Flanges: _____
	Supports: _____ Pumps/filters: _____
	Tee connections: _____
Location	☐ Indoors ☐ Outdoors
Exposure to moisture?	☐ Yes ☐ No

Temperature Control

Control

☐ Provided by customer ☐ Pluggable

☐ Capillary tube thermostat

☐ Complete control cabinet

☐ Electronic temperature controller

Temperature sensor
(Electronic temperature controller)

☐ NiCrNi ☐ FeCuNi ☐ Pt-100

☐ 2-wire ☐ 3-wire ☐ 4-wire

Installation
(Electronic temperature controller)

☐ T-rail ☐ Wall mounting

☐ Door installation

☐ Mounting bracket / Pipe mounting

Thermal Insulation Details	
Material	
Thickness*	mm
Heat conductivity	W/(m·K)
Density	kg/m ³
Max. temperature limit of insulation	°C

Hazardous Area			
Installation in hazardous areas	☐ Yes	☐ No	EX-Zone: _____
Temperature class	☐ T1	☐ T2	☐ T3
	☐ T4	☐ T5	☐ T6
Certification in accordance w.			

Installation information	
Installation by eltherm	☐ Yes ☐ No
Installation location	

*** Please fill in all required fields**

**** Information only required for heating up**

Please enclose technical illustration as attachment!

» Please find the interactive form on our Website!

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Handwriting practice lines on page 58.

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Z

Handwriting practice lines on page 59.

80.000 km

of trace heaters spanning twice the circumference of the globe in the course of a decade are used in a wide range of industries.

500 bar

and process temperatures up to 450 °C is what eltherm's heated pressure hose systems are built for in industrial applications.

5 Continents 13 Locations

300 Staff Members

work for eltherm all over the world. And for you and your heat tracing challenges.

2.777 Football Fields

is the ground space covered by the solar power plant NOOR in Morocco. Electrical heat tracing performs vital functions there.

Eight Engineering Hubs

provide engineering solutions for turnkey projects and EPC requirements all over the world.

Twenty-three Nations

The eltherm team is multinational. We are natives of a total of 23 nationalities.

550 °C

Molten salts must be kept at this temperature to keep them flowable. They store the sun's energy in concentrated solar power plants.



A contribution to sustainability and climate protection: The eltherm fleet operation was rated carbon-neutral in 2018. To achieve this objective, 143 t CO₂ emissions were compensated by supporting global climate protection projects.

At Your Service eltherm globally

Milano/Italy
Shanghai/China
Barcelona/Spain
Singapore
Newbury/United Kingdom
Burlington/Canada
Calgary/Canada
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