



Electrical Heat Tracing in Hazardous Areas

innovations in heat tracing

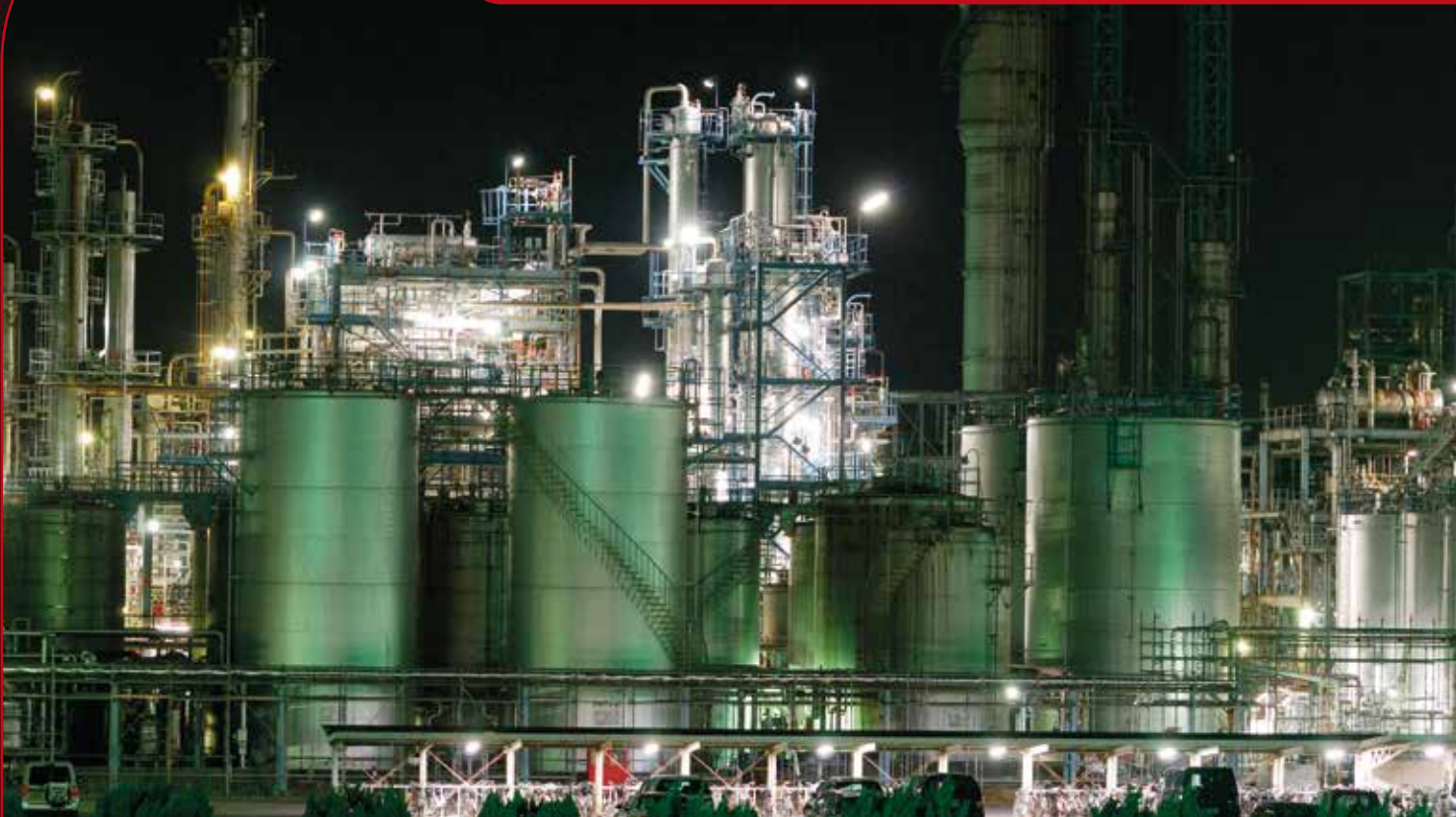




































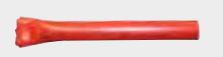



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Electrical Heat Tracing in Hazardous Locations

eltherm, as an ATEX and IECEx-certified company, fulfills the increased safety standards according to the latest Ex-guidelines. Whether it is heating cables, measurement and control appliances or ancillaries – for all its products eltherm has approved equivalents for Heat Tracing Systems in Hazardous Locations.

Because of our worldwide operation and because our electrical heating systems are used in a very wide range of applications, our products are checked and approved in accordance with many international directives and norms for an extremely wide range of areas of application.

eltherm participates in international committees which define the worldwide standards of Electrical Heat Tracing:

- IEC 60079-30-1 (international):
Explosive atmospheres – Part 30-1: Electrical resistance trace heating – General and testing requirements
- IEC 60079-30-2 (international):
Explosive atmospheres – Part 30-2: Electrical resistance trace heating – Application guide for design, installation and maintenance
- IEC 62395-1 (international):
Electrical resistance trace heating systems for industrial and commercial applications
- IEEE 515 (US):
IEEE Standard for the Testing, Design, Installation, and Maintenance of Electrical Resistance Heat Tracing for Industrial Applications

Heating Cable

Self-regulating



The versatile self-regulating heating cable ELSR-N is suited for frost protection and temperature maintenance in the low temperature range of industrial applications. Likewise it is approved for use in hazardous areas. The BOT version of this heating cable even withstands aggressive chemicals, oil and fuel and, thanks to this high chemical resistance, stands out for a long lifetime.

Advantages:

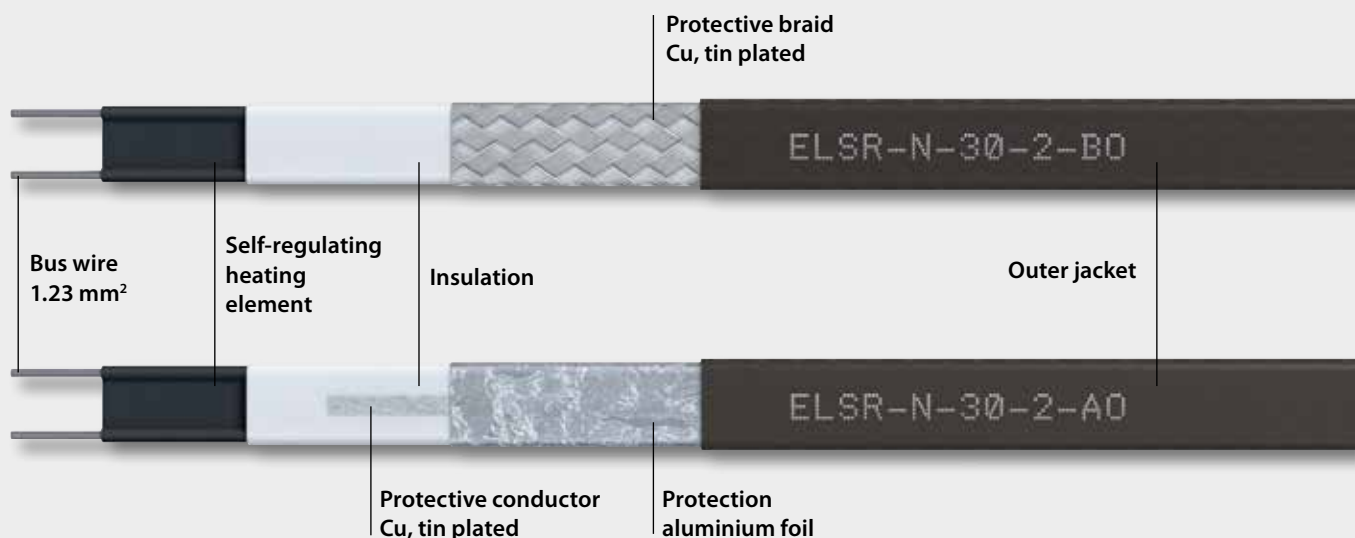
- Self-regulating
- Four nominal outputs
- Can be cut to length off the roll
- Moisture proof
- UV-resistant
- Approved for use in hazardous areas

Applications:

- Frost protection
- Heat tracing on level indicators
- Chemical & petrochemical industries
- Tank bottom heating of LNG storage tanks
- Pipe heat tracing
- Vessels and tanks
- Automotive
- Food processing industry



Type ELSR-N up to 80 °C





Technical Information

Type ELSR-N up to 80 °C

Data

■ Outer jacket	TPE-O
■ Bus wire	Nickel plated copper
■ Maximum maintain temperature, energized	65 °C
■ Maximum maintain temperature, de-energized	80 °C
■ Nominal voltage	230 V
■ Bending radius, min.	25 mm
■ Installation temperature, min.	-45 °C
■ Classification system	IBExU II 2G Ex e IIC T6 Gb II 2D Ex tb IIIC TX Db
■ Classification cable	EPS II 2G Ex e IIC Gb II 2D Ex tb IIIC D
■ Certificates	12ATEX1431U IECEX EPS 12.0006U

Design

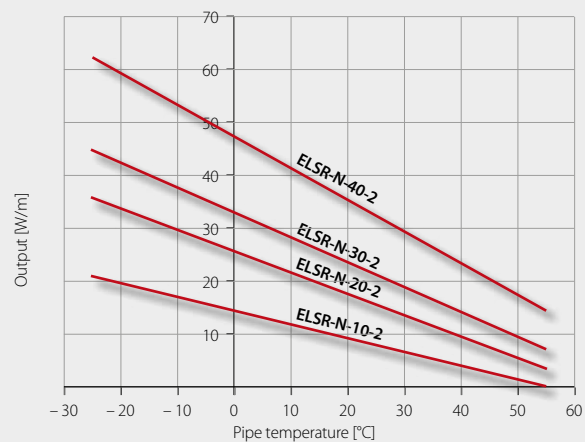
■ BO	Protective braid and a thermoplastic outer jacket
■ AO	Aluminium foil and a thermoplastic outer jacket
■ BOT	Protective braid and a fluoropolymer outer jacket

Heating circuit lengths ELSR-N-...-2 on the following conditions:

- 230 V nominal voltage
- Delayed action circuit breakers (C-characteristic) with 80 % maximum load
- Maximum 10 % line voltage drop on the heating cable bus wire
- Power connection to one (1) heater end

ELSR-N-...-2 output

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



Switch-on temperature	Nominal cutout value (A)	Heating circuit length (m) for			
		ELSR-N-10-2	ELSR-N-20-2	ELSR-N-30-2	ELSR-N-40-2
10	10	128	68	52	36
	16	177	109	83	57
	20	177	129	104	71
	25	177	129	113	89
	32	177	129	113	94
0	10	106	57	45	31
	16	160	92	71	50
	20	160	115	89	62
	25	160	119	105	78
-10	10	90	50	39	28
	16	144	79	63	44
	20	149	99	78	55
	25	149	111	98	69
	32	149	111	98	83
-20	10	78	44	35	25
	16	125	70	56	40
	20	139	87	69	50
	25	139	104	87	62
-40	10	62	35	28	21
	16	99	56	45	33
	20	124	71	57	42
	25	124	88	71	52
	32	124	88	71	66

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

Heating Cable Light 'Super' Self-regulating



The versatile self-regulating heating cable ELSR-LS is our 'light' version for temperatures up to 80 °C. This heating cable is also suited and approved for use in hazardous areas. Since eltherm® self-regulating cables can be cut off the roll to the desired length, the application cable is highly flexible to match our customer's needs. Its long life span guarantees for the efficient use in many industrial sectors.

Advantages:

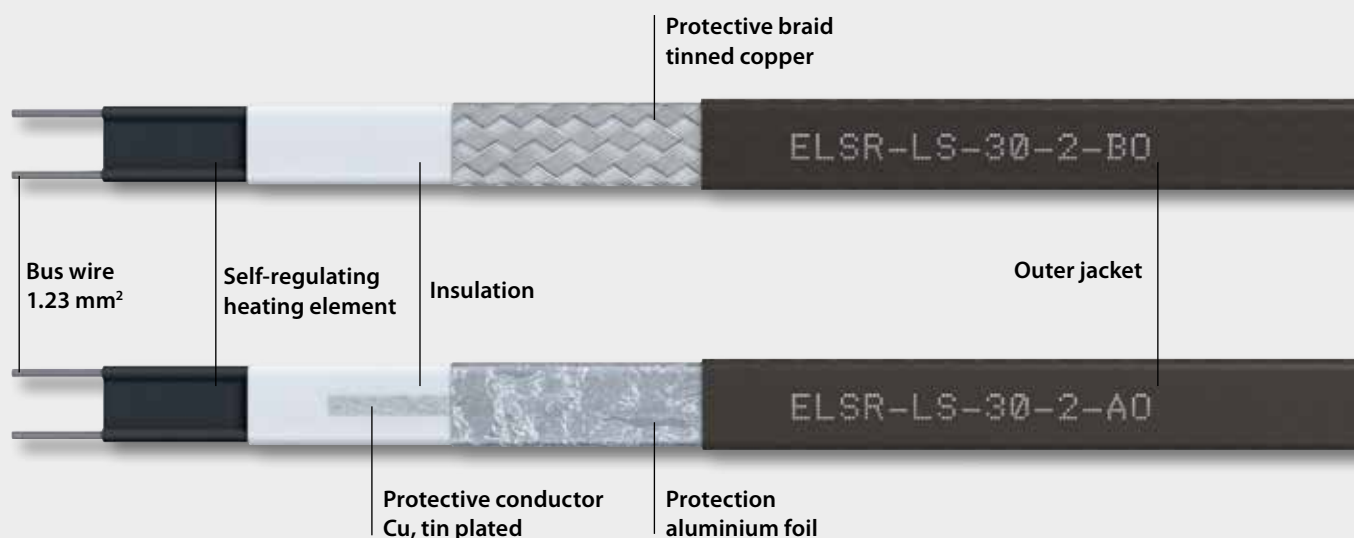
- Self-regulating
- Four nominal outputs
- Can be cut to length off the roll
- Moisture proof
- UV-resistant
- Small dimensions

Applications:

- Pipe heat tracing
- Frost protection for industrial applications
- Temperature maintenance for pipes and vessels
- Chemical & petrochemical industries
- Paints & varnishes
- Automotive
- Food processing industry



Type ELSR- LS up to 80 °C



Technical Information

Type ELSR-LS up to 80 °C

Data

■ Outer jacket	TPE-O
■ Bus wire	1,23 mm ² nickel plated copper
■ Maximum maintain temperature, energized	65 °C
■ Maximum maintain temperature, de-energized	80 °C
■ Nominal voltage	230 V
■ Bending radius, min.	25 mm
■ Installation temperature, min.	-50 °C
■ Classification system	IBExU II 2G Ex e IIC T6 Gb II 2D Ex tb IIIC TX Db
■ Classification cable	EPS II 2G Ex e IIC Gb II 2D Ex tb IIIC Db
■ Certificates	12ATEX1431U IECEX EPS 12.0006U

Design

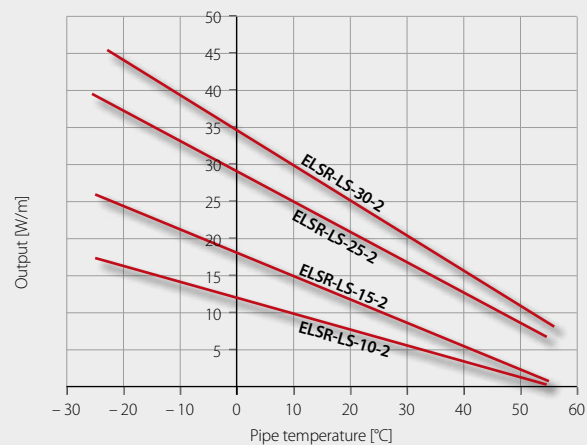
■ BO	Protective braid and a thermoplastic outer jacket
■ AO	Aluminium foil and a thermoplastic outer jacket

Heating circuit lengths ELSR-LS-...-2 on the following conditions

- 230 V nominal voltage
- Delayed action circuit breakers (C-characteristic) with 80 % maximum load
- Maximum 10 % line voltage drop on the heating cable bus wire
- Power connection to one (1) heater end

ELSR-LS-...-2 output

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



Switch-on temperature (°C)	Nominal cutout value (A)	Heating circuit length (m) for			
		ELSR-LS-10-2	ELSR-LS-15-2	ELSR-LS-25-2	ELSR-LS-30-2
10	10	152.0	103.0	64.0	49.0
	16	196.0	160.5	103.0	78.0
	20	196.0	160.5	126.0	97.5
	25	196.0	160.5	126.0	112.5
0	10	141.0	84.0	54.0	44.0
	16	188.5	134.0	87.0	70.0
	20	188.5	145.0	108.0	87.5
	25	188.5	145.0	116.0	104.0
-10	10	119.0	71.0	47.0	38.0
	16	173.5	114.0	75.0	61.0
	20	173.5	133.0	94.0	76.0
	25	173.5	133.0	107.5	95.0
-20	10	103.0	62.0	37.5	33.0
	16	161.0	99.0	60.0	53.0
	20	161.0	124.0	75.0	66.0
	25	161.0	124.0	94.0	83.0

Type	Nominal output	Dimensions approx. (mm)	Weight approx. (g/m)	Art. No.
ELSR-LS-10-2-AO	10 W/m at 10 °C	10.3 x 5.5	78	B0223104
ELSR-LS-10-2-BO	10 W/m at 10 °C	10.8 x 5.6	98	B0223102
ELSR-LS-15-2-AO	15 W/m at 10 °C	10.3 x 5.5	78	B0223154
ELSR-LS-15-2-BO	15 W/m at 10 °C	10.8 x 5.6	98	B0223152
ELSR-LS-25-2-AO	25 W/m at 10 °C	10.3 x 5.5	78	B0223254
ELSR-LS-25-2-BO	25 W/m at 10 °C	10.8 x 5.6	98	B0223252
ELSR-LS-30-2-AO	30 W/m at 10 °C	10.3 x 5.5	78	B0223304
ELSR-LS-30-2-BO	30 W/m at 10 °C	10.8 x 5.6	98	B0223302

Heating Cable High Temp. Self-regulating



The versatile self-regulating heating cable ELSR-H is for high temperatures up to 210 °C in a large number of industrial applications. It is also suited and approved for use in hazardous areas. The BOT version of this heating cable even withstands aggressive chemicals, oil and fuel and, thanks to this high chemical resistance, stands out for a long life span.

Advantages:

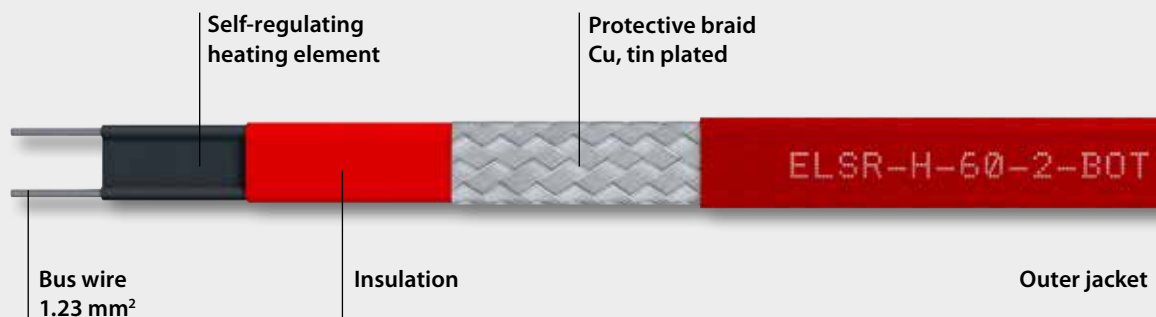
- Up to 120 °C/210 °C
- Self-regulating
- Six nominal outputs
- Can be cut to length off the roll
- Moisture proof
- Resistant to chemicals
- Approved for use in hazardous areas

Applications:

- Chemical & petrochemical industries
- Oil & gas industry
- Power plants
- Ex-areas
- Frost protection
- Water & sanitation utilities
- Temperature maintenance on vessels, pipes & valves



Type ELSR-H up to 210 °C





Technical Information

Type ELSR-H up to 210 °C

Data

■ Outer jacket	Fluoropolymer
■ Bus wire	Nickel plated copper
■ Maximum maintain temperature, energized	120 °C
■ Maximum maintain temperature, de-energized	210 °C
■ Nominal voltage	230 V / (120 V, 277 V)*
■ Bending radius, min.	25 mm
■ Installation temperature, min.	-45 °C
■ Classification system	IBExU II 2G Ex e IIC T3 Gb II 2D Ex tb IIIC TX Db IBExU II 2G Ex e IIC T4..T6 Gb II 2D Ex tb IIIC TX Db (stabilized design)
■ Classification cable	EPS II 2G Ex e IIC Gb II 2D Ex tb IIIC Db
■ Certificates	12ATEX1429U IECEX EPS 12.0004U *upon request

Design

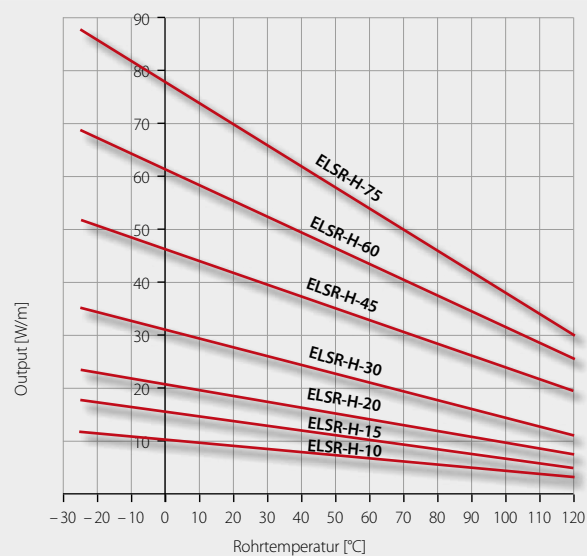
- BOT Protective braid and a fluoropolymer outer jacket

Heating circuit lengths ELSR-H...-2-BOT on the following conditions:

- 230 V nominal voltage
- Delayed action circuit breakers (C-characteristic) with 80 % maximum load
- Maximum 10 % line voltage drop on the heating cable bus wire
- Power connection to one (1) heater end

ELSR-H...-2-BOT output

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



Switch-on temperature	Nominal cutout value (A)	Heating circuit length (m) for ELSR-H-						
		10-2	15-2	20-2	30-2	45-2	60-2	75-2
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	41.5
	25	193.0	158.0	136.0	111.0	85.0	64.0	51.5
	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	37.5
	25	189.0	153.0	132.0	108.0	81.0	61.0	47.0
	32	189.0	153.0	132.0	108.0	88.5	77.0	60.0
-10	16	184.0	146.0	110.0	73.0	50.0	37.0	28.5
	20	184.0	148.5	129.0	92.0	62.0	46.0	35.5
	25	184.0	148.5	129.0	105.5	77.0	58.0	44.5
	32	184.0	148.5	129.0	105.5	86.5	70.0	57.0
-20	16	180.0	139.0	104.0	70.0	47.0	36.0	26.5
	20	180.0	145.0	125.5	87.0	59.0	44.0	33.5
	25	180.0	145.0	125.5	103.0	74.0	56.0	41.5
	32	180.0	145.0	125.5	103.0	84.5	67.0	53.5
-40	16	173.0	126.0	95.0	64.0	43.0	33.0	23.5
	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	36.5
	32	173.0	138.0	120.0	98.0	81.0	61.0	46.5

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

Constant Wattage Heating Cable with Resistance Wire

These parallel heating cables offer tremendous flexibility in use, as they can easily be cut to the required length off the roll, with the assurance of constant power output. There is no need for a connecting cable and input can be unilateral. It is quick and easy to assemble; this saves a lot of time, and reduces costs considerably as a result. Since output of up to 60 W/m is possible for lengths laid to piping, ELP parallel heating cables are particularly suitable for piping with high output requirements such as in industrial process technology. The particularly temperature-resistant outer shell in Fluoropolymer and the high level of chemical resistance of the Fluoropolymer ensure a long useful life.

Advantages:

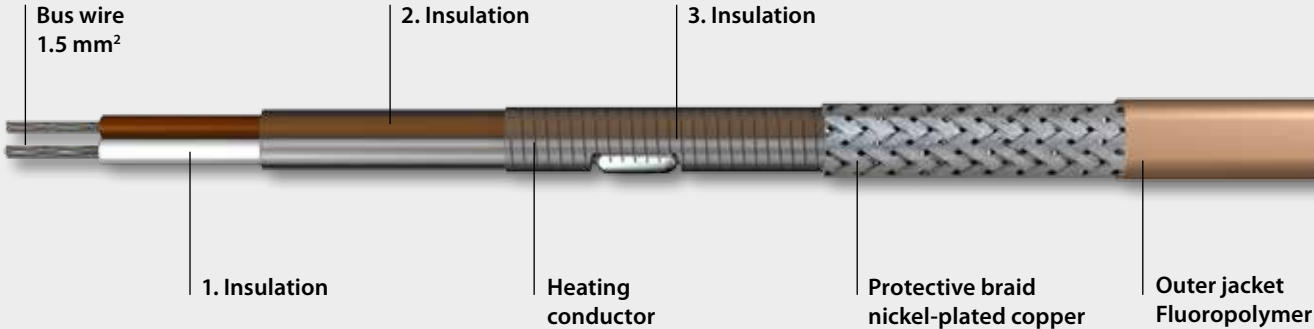
- Single end power input
- Can be cut off the roll
- Constant power output per meter
- Long life cycle
- Laying without exact measuring possible
- High chemical resistance
- UV resistance

Applications:

- Vessels, piping, valves
- Building construction
- Food processing industry
- Paper industry



Type ELP/PFA up to 260 °C





Technical Information

Type ELP/PFA up to 260 °C

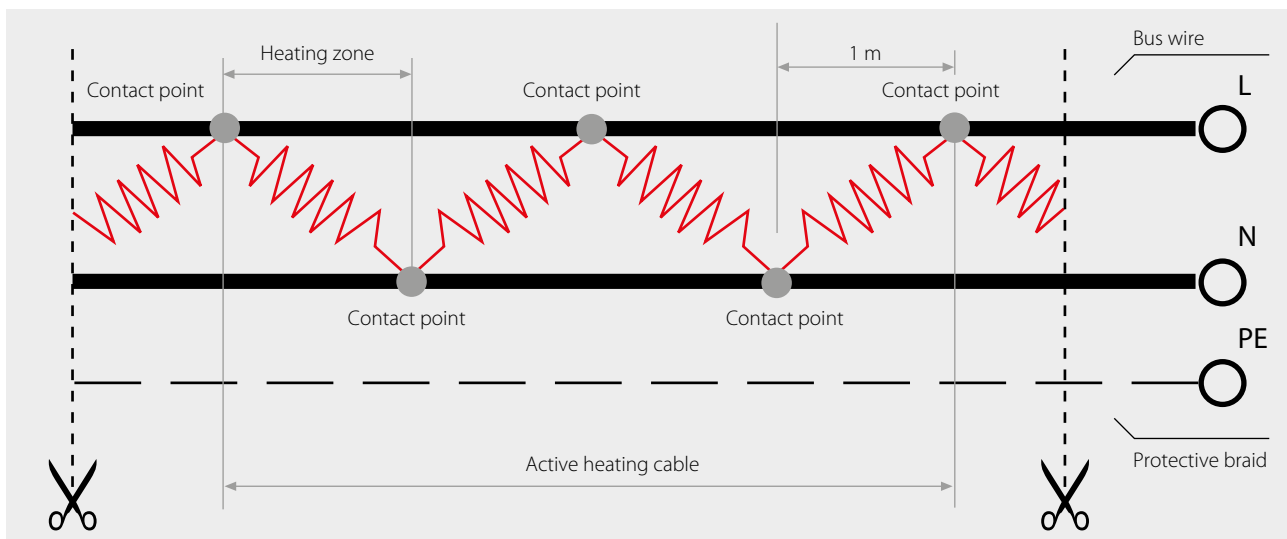
Data

■ Insulations	Fluoropolymer
■ Protective braid	Nickel-plated copper
■ Outer jacket	Fluoropolymer
■ Nominal temperature	260 °C
■ Moisture proof	Yes
■ Bending radius, min.	25 mm
■ Bus wire cross section	2 x 1.5 mm ²
■ Nominal voltage	230 V AC/DC
■ Installation temp., min.	-45 °C
■ Start-up temp., min.	-45 °C

Standards

■ Manufactured according to	DIN VDE 0721-52 EN 62395-1; 2007-05
■ Certificates	12ATEX1438U IECEX EPS 12.0009U
■ Classification	II 2G Ex e IIC Gb II 2D Ex tb IIIC Db

Cables shall neither intersect nor contact.
Provide protection by means of circuit breaker FI 30.
Please observe the standards IEC 62395-2, EN 60519-10.



Type	Nominal output	Working temp. max	Dimensions approx. (mm)	Contact spacing (m)	Art. No.
ELP/PFA 15 BOT	15 W/m	205°C	8.0 x 5.5	1.0	B0332015
ELP/PFA 30 BOT	30 W/m	190°C	8.0 x 5.5	1.0	B0332030
ELP/PFA 45 BOT	45 W/m	175°C	8.0 x 5.5	1.0	B0332045
ELP/PFA 60 BOT	60 W/m	160°C	8.0 x 5.5	1.0	B0332060

Bus wire cross section 2 x 2 mm² upon request.

Maximum heating circuit length

Type	W/m	Length (m) at 50 °C	Length (m) at 150 °C
ELP/PFA 15 BOT	15	161	119
ELP/PFA 30 BOT	30	98	82.5
ELP/PFA 45 BOT	45	65.5	65.5
ELP/PFA 60 BOT	60	50	50

Heating circuit lengths ELP/PFA on the following conditions

- 16 A circuit breaker, 80 % utilisation
- Max. 10 % voltage drop
- Power connection to one (1) heater end

Fluoropolymer-insulated Heating Cable with Protective Braid + Outer Jacket

This versatile heating cable is used for frost protection and temperature maintenance, even under highly corrosive environmental conditions. The heating cable ELKM-AG-N is suited and approved for use in hazardous areas. It is highly flexible permitting its use in many fields of application.

Advantages:

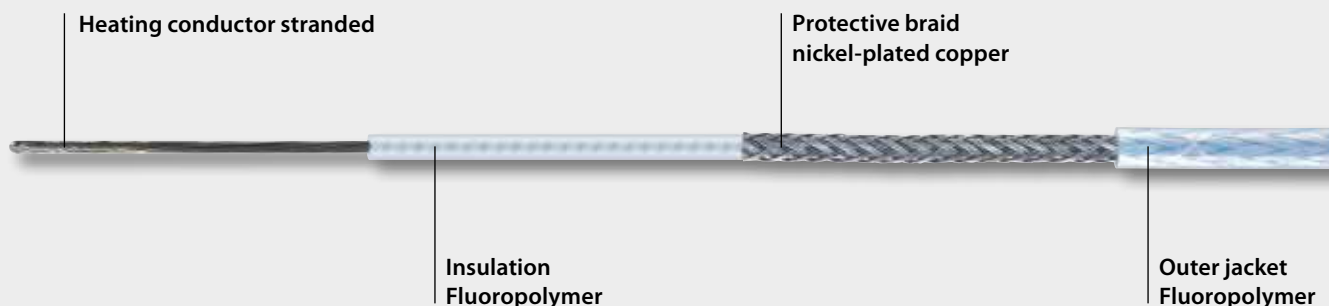
- High chemical and mechanical resistance
- Can be used in all industrial areas
- High operation temperature
- Can be used in liquids
- Easy to install, even on complex shapes
- Highly flexible
- Resistant to steam purging

Applications, especially in hazardous areas: e.g.

- Heat tracing on tanks
- Heat tracing on vessels
- Heat tracing on filters
- Heat tracing on hoppers
- Pipe, valve and pump heating
- Tank containers
- IBC's
- Heating hoods
- Automotive
- Varnishing plants



Type **ELKM-AG-N** up to 260°C





Technical Information

Type ELKM-AG-N up to 260 °C

Data

■ Insulation	Fluoropolymer
■ Protective braid	Nickel plated copper
■ Outer jacket	Fluoropolymer
■ Nominal voltage max.	550 V
■ Output, max.	30 W/m*
■ Operating temp., max.	260 °C
■ Bending radius, min.	2.5 x outer diameter
■ Installation temp., min.	-60 °C
■ Moisture proof	IP68
■ Impact resistance	4 Joule
■ Heat conductor	Stranded

Standards

■ Manufactured according to	DIN VDE 0253, EN 60079-30-1
■ Certificates	EPS 12ATEX1466U
■ Classification	II 2G Ex e IIC Gb II 2D Ex tb IIIC Db

*Note: The output per meter of heating cable and the maximum possible operating temperatures depend on the respective application. For individual cases, we recommend that you contact our engineers – we will be pleased to advise you.

For suitable connection and termination kits please note our considerable accessories catalogue unit.

Nominal resistance (Ω/km)	Outer diameter approx. (mm)	Weight approx. (g/m)	Temperature coefficient (x 10 ⁻³ / K)	Art. No.
1.95 (Cu 10 mm ²)	8.1	166	4.30	01TA002E
2.90 (Cu 6 mm ²)	6.8	119	4.30	01TA003E
4.40 (Cu 4 mm ²)	6.1	96	4.30	01TA004E
7.20 (Cu 2.5 mm ²)	5.1	64	4.30	01TA007E
10.00	4.8	59	4.30	01TA010E
11.70 (Cu 1.5 mm ²)	4.7	57	4.30	01TA011E
15.00	4.5	50	4.30	01TA015E
25.00	4.4	48	3.00	01TA025E
31.50	4.7	56	1.60	01TA031E
50.00	4.4	49	1.60	01TA050E
65.00	4.2	46	1.60	01TA065E
80.00	4.5	42	0.90	01TA080E
100.00	4.4	50	0.90	01TA110E
157.00	4.4	46	0.45	01TA115E
180.00	4.1	42	0.90	01TA118E
200.00	4.2	38	0.45	01TA120E
260.00	4.1	42	0.45	01TA126E

Weight tolerances are possible for manufacturing reasons.
Nominal resistances up to 1,500,000 Ω/km upon request.
Resistance tolerance: +/- 5 %.

Nominal resistance (Ω/km)	Outer diameter approx. (mm)	Weight approx. (g/m)	Temperature coefficient (x 10 ⁻³ / K)	Art. No.
280.00	4.0	39	0.38	01TA128E
328.00	4.1	40.1	0.45	01TA132E
360.00	3.9	40	0.45	01TA136E
430.00	4.1	43	0.18	01TA143E
480.00	4.1	44	0.18	01TA148E
600.00	4.0	40	0.18	01TA160E
800.00	3.9	41	0.18	01TA180E
1000.00	4.0	43	0.04	01TA210E
1470.00	3.8	40	0.04	01TA214E
1750.00	3.8	37	0.04	01TA217E
1900.00	3.5	41	0.40	01TA219E
2900.00	3.9	41	0.40	01TA229E
4000.00	3.8	37	0.40	01TA240E
4700.00	3.8	35	0.15	01TA247E
6000.00	3.8	34	0.20	01TA260E
7000.00	3.8	33	0.15	01TA270E
8000.00	3.8	36	0.15	01TA280E

For applications with fixed external diameter, please contact our engineers first.

Cables shall neither intersect nor contact.

Provide protection by means of circuit breaker FI 30mA.

Please observe the standards EN 60079-30-2, EN 60519-10.

Heating Cable

Highly robust

Factory terminated heating cable, suitable for use in overpressure and vacuum applications. Can be used as radiant heating with high output density. This heating cable is approved for use in hazardous areas. We provide engineering services from initial design up to turnkey project execution. Complete engineering up to commissioning. Laser welding technology enables us to provide high precision, safe and reliable MI connections.

Advantages:

- Factory terminated
- Hermetically sealed metal sheath
- Highly robust and mechanically stable
- Moisture proof
- Higher chemical resistance
- Higher operating temperatures
- Higher output per meter
- High precision, safe and reliable laser welding connections

Applications, especially in hazardous areas: e.g.

- Moisture proof applications at high outputs and temperatures
- Can be immersed in fluids
- Heat tracing on piping
- Chemical & petrochemical industries
- Machinery and plant construction
- Equipment engineering
- Vacuum technology



Type **ELK-MI/VA-Ex** up to 480 °C





Technical Information

Type ELK-MI/VA-Ex up to 480 °C

Data

■ Outer jacket	Stainless steel 1.4541/ AISI 321
■ Operating temp., max.	480 °C
■ Ambient temp. min.	-60 °C
■ Nominal output	Up to 250 W/m
■ Nominal voltage	Up to 500 V AC
■ Impact resistance	7 J
■ Cold lead, length	2 x 0.50 m
■ Cold lead, cross section	2.50 mm ²
■ Cable gland	Brass M20 x 1.5
■ Protective conductor connection	Integrated
■ IP rating	IP 65
■ Protection class	I
■ Min. bending radius	Diameter x 5
■ Moisture proof	Yes

Standards

■ Manufactured according to	EN 60079-30-1
■ Certificates Cable	EPS 13 ATEX 1 627 U IECEX EPS 14.0013U
■ Certificates System	FM15ATEX0046X IECEX FME 15.0009X
■ Classification Cable	II 2G Ex e IIC Gb II 2D Ex tb IIIC Db
■ Classification System	II 2 G Ex db e IIC T6...T1 Ta = -60°C to +60°C Gb II 2 D Ex tb IIIC T85°C...T450°C Ta = -60°C to +60°C Db; IP64



Important: Avoid multiple bends with minimum bending radius (risk of cable damage).

No.	Diameter = mm	Resistance Ω/km
1	3.20	10.000
2	3.20	6.300
3	3.20	4.000
4	3.40	2.500
5	3.60	1.600
6	3.90	1.000
7	4.30	630
8	4.70	400
9	5.30	250
10	6.50	160

***Note:** The output per meter of heating cable and the maximum possible operating temperatures depend on the respective application. For individual cases, we recommend that you contact our engineers – we will be pleased to advise you.

This is just a summary of all available resistances. For further resistances, please contact us.

A table of chemical resistances is available on our website www.eltherm.com.

Other cross sections and lengths of cold leads are available upon request.

Ex-Box Temperature Controller with Display

Ex-Box REG/DIS: Complying with latest Ex-protection directives 94/9/CE (ATEX 95) this electronic temperature controller has been designed and developed especially for its use in hazardous areas. Programming and operation is done via the integrated operating panel with display.

Advantages:

- Rugged enclosure IP 65
- Operation and programming in hazardous area
- Increased safety through fail alarm
- Integrated heating circuit monitoring
- Display

Applications:

- Hazardous areas
- Power plants
- Chemical & petrochemical industries
- Oil & gas industries
- Pharmaceutical industry
- Plastics industry
- Wastewater treatment plants



Type Ex-Box REG/DIS





Technical Information

Type Ex-Box REG/DIS

Data

■ Certificate	IBExU 04 ATEX 1165 X
■ Classification	II 2G Ex emb [ib] IIC T4 Gb II 2D Ex tb IIIC T100°C Db -32°C ≤ Ta ≤ 60°C
■ Dimensions	140 x 140 x 150 mm (w x h x d) (without wall-mounting bracket, excluding glands)
■ Enclosure	Aluminium
■ IP rating	IP 65
■ Ambient temperature	- 32 up to 60 °C
■ Switching capacity	16 A
■ Display	2 x 4 35-segment LED
■ Operating voltage	230 V +/- 10 %
■ Nominal current	Max. 100 mA
■ Load current, max.	16 A (ohm resistive load)
■ Load output	230 V / 16 A, 2-pole
■ Alarm output	Optically separated 100 mA
■ Interface	Intrinsically safe for Ex-Connect (bus connection)
■ Measurement input	Pt100 2/3 wire, intrinsically safe
■ Measurement range	-40 °C up to +300 °C
■ Control characteristics	Dual mode controller
■ Weight	Approx. 3.5 kg

Cable entries

- 1 x M25 for voltage supply
(9 – 13 mm; with add-ons for 11 – 15 mm)
- 1 x exchangeable panel seal 7-10.5 mm
- 1 x M25 for heating line (2-fold 6 mm)
- 1 x M20 for sensor (tension range 3 – 4 mm)
- 1 x vent screw M20

Designation	Art. No.
Ex-Box REG/DIS	0X60020

For suitable temperature sensors and accessories please note our considerable accessories catalogue unit.

Ex-Box Temperature Controller with LED-Display

Ex-Box REG/LED: Complying with latest Ex-protection directives 94/9/CE (ATEX 95) this electronic temperature controller has been designed and developed especially for its use in hazardous areas. Programming and operation is done via external Ex-Control manual control.

Advantages:

- Rugged enclosure IP 65
- Increased safety, tamperproof, no unauthorised adjustments
- Increased safety through fail alarm
- Integrated heating circuit monitoring

Applications:

- Hazardous areas
- Power plants
- Chemical & petrochemical industries
- Oil & gas industries
- Pharmaceutical industry
- Plastics industry
- Wastewater treatment plants



Type Ex-Box REG/LED





Technical Information

Type Ex-Box REG/LED

Data

■ Certificate	IBExU 04 ATEX 1165 X
■ Classification	II 2G Ex emb [ib] IIC T4 Gb II 2D Ex tb IIIC T100°C Db -32°C ≤ Ta ≤ 60°C
■ Dimensions	140 x 140 x 150 mm (w x h x d) without wall-mounting bracket, excluding glands
■ Enclosure	Aluminium
■ IP rating	IP 65
■ Ambient temperature	-32 up to 60 °C
■ Switching capacity	16 A
■ Operating voltage	230 V +/- 10 %
■ Nominal current	Max. 100 mA
■ Load current, max.	16 A (ohm resistive load)
■ Load output	230 V / 16 A, 2-pole
■ Alarm output	Optically separated 100 mA
■ Interface	Intrinsically safe for Ex-Control
■ Measurement input	Pt100 2/3 wire, intrinsically safe
■ Measurement range	-40 °C up to +300 °C
■ Control characteristics	Dual mode controller
■ Load disconnection	2-phase
■ Weight	Approx. 3.5 kg

Cable entries

- 1 x M25 for voltage supply
(9 – 13 mm; with add-ons for 11 – 15 mm)
- 1 x exchangeable panel seal 7-10.5 mm
- 1 x M25 for heating line (2-fold 6 mm)
- 1 x M20 for sensor (tension range 3 – 4 mm)
- 1 x vent screw M20

Features

- Interface for manual control panel Ex-Control
- LED green: OK, no heating
- LED orange: OK, heating on
- LED red blinking: alarm or fault but still ready for operation
- LED red permanent: severe fault, load disconnection

Designation	Art. No.
Ex-Box REG/LED	0X60021

For suitable temperature sensors and accessories please note our considerable accessories catalogue unit.

Ex-Box Limiter with Display

The Ex-Box LIM/DIS is a limiter for switching off heating circuits in case of excess temperature or current overload. Furthermore, output signal values for maximum and minimum temperatures are programmable. Programming and operation is done via the integrated operating panel with display.

Advantages:

- Rugged enclosure IP 65
- Operation and programming in hazardous areas
- Increased safety through fail alarm
- Integrated heating circuit monitoring
- Display

Applications:

- Hazardous areas
- Power plants
- Chemical & petrochemical industries
- Oil & gas industries
- Pharmaceutical industry
- Plastics industry
- Wastewater treatment plants



Type Ex-Box LIM/DIS





Technical Information

Type Ex-Box LIM/DIS

Data

■ Certificate	IBExU 04 ATEX 1165 X
■ Classification	II 2G Ex emb [ib] IIC T4 Gb II 2D Ex tb IIIC T100°C Db -32°C ≤ Ta ≤ 60°C
■ Dimensions	140 x 140 x 150 mm (w x h x d) (without wall-mounting bracket, excluding glands)
■ Enclosure	Aluminium
■ IP rating	IP 65
■ Ambient temperature	-32 up to 60 °C
■ Switching capacity	16 A
■ Operating voltage	230 V +/- 10 %
■ Nominal current	Max. 100 mA
■ Load current, max.	16 A (ohm resistive load)
■ Load output	230 V / 16 A, 2-pole
■ Alarm output	Optically separated 100 mA
■ Interface	Intrinsically safe for Ex-Connect (bus connection)
■ Measurement input	Pt100 2/3 wire, intrinsically safe
■ Measurement range	-40 °C up to +300 °C
■ Control range	+50 °C up to +300 °C
■ Load disconnection	2-phase
■ Weight	Approx. 3.5 kg

Cable entries

- 1 x M25 for voltage supply
(9 – 13 mm; with add-ons for 11 – 15 mm)
- 1 x exchangeable panel seal 7-10.5 mm
- 1 x M25 for heating line (2-fold 6 mm)
- 1 x M20 for sensor (tension range 3 – 4 mm)
- 1 x vent screw M20

Designation	Art. No.
Ex-Box LIM/DIS	0X60024

For suitable temperature sensors and accessories please note our considerable accessories catalogue unit.

Ex-Box Limiter with LED-Display

The Ex-Box LIM/LED is a limiter for switching off connected heating circuits in case of excess temperature or current overload. Furthermore, signal values for maximum and minimum temperatures are programmable. Programming and operation is done via external panel Ex-Control for manual control.

Advantages:

- Rugged enclosure IP 65
- Increased safety against unauthorised changes of rated value
- Increased safety through fail alarm
- Integrated heating circuit monitoring

Applications:

- Hazardous areas
- Power plants
- Chemical & petrochemical industries
- Oil & gas industries
- Pharmaceutical industry
- Plastics industry
- Wastewater treatment plants



Type Ex-Box LIM/LED





Technical Information

Type Ex-Box LIM/LED

Data

■ Certificate	IBExU 04 ATEX 1165 X
■ Classification	II 2G Ex emb [ib] IIC T4 Gb II 2D Ex tb IIIC T100°C Db -32°C ≤ Ta ≤ 60°C
■ Dimensions	140 x 140 x 150 mm (w x h x d) (without wall-mounting bracket, excluding glands)
■ Enclosure	Aluminium
■ IP rating	IP 65
■ Ambient temperature	- 32 up to 60 °C
■ Switching capacity	16 A
■ Operating voltage	230 V +/- 10 %
■ Nominal current	Max. 100 mA
■ Load current, max.	16 A (ohm resistive load)
■ Load output	230 V / 16 A, 2-pole
■ Alarm output	Optically separated 100 mA
■ Interface	Intrinsically safe for Ex-Control
■ Measurement input	Pt100 2/3 wire, intrinsically safe
■ Measurement range	-40 °C up to +300 °C
■ Control range	+50 °C up to +300 °C
■ Load disconnection	2-phase
■ Weight	Approx. 3.5 kg

Cable entries

- 1 x M25 for voltage supply
(9 – 13 mm; with add-ons for 11 - 15 mm)
- 1 x gland 7-10.5 mm
- 1 x M25 for heating line (2-fold 6 mm)
- 1 x M20 for sensor (tension range 3 – 4 mm)
- 1 x vent screw M20

Features

- Interface for manual control panel Ex-Control
- Programmable parameter are identical to Ex-Control
- LED green: normal operation state
- LED red, blinking: alarm
- LED red, permanent: fault

If a fault (excess temperature, overcurrent and internal fault) is indicated, it will not automatically reset. Reset of the fault is done via the Ex-Control.

Designation	Art. No.
Ex-Box LIM/LED	0X60023

For suitable temperature sensors and accessories please note our considerable accessories catalogue unit.

Ex-Control

Hand-held Controller Pad

Intrinsically safe hand held controller pad for use with the Ex-Box REG/LED and LIM/LED. The Ex-Control pad provides additional safety in a potentially explosive atmosphere. Adjustment of settings by unauthorized persons is not possible since the controller can be removed.

Advantages:

- Intrinsically safe controller pad
- Without an independent power supply
- Programming and operation in hazardous areas

Applications:

- Hazardous areas
- Power plants
- Chemical & petrochemical industries
- Oil & gas industries
- Pharmaceutical industry
- Plastics industry
- Wastewater treatment plants



Type Ex-Control





Technical Information

Type Ex-Control

Data

■ Certificate	IBExU 04 ATEX 1165 X
■ Dimensions (enclosure)	135 x 80 x 35 mm (w x h x d)
■ Classification	II 2G Ex ib IIC T4 Gb II 2D Ex tb IIIC T100°C Db -32°C ≤ Ta ≤ 60°C
■ IP rating	IP 65
■ Cable entrance	1.5 m connecting cable with 5-pole plug
■ Display	2 x 4 35-segment LED illuminated
■ Interface	Intrinsically safe for Ex-Box LED/LIM
■ Weight	0.5 kg

Programmable parameters

- Upper set point of adjustable temperature range
- Temperature set point
- Alarm, excess temperature
- Alarm, low temperature
- Load disconnection – excess temperature
- Bus address 1 – 32
- Adjusting point Pt100
- Temperature unit °C and °F

Fault indication

- Sensor short
- Sensor cut
- Excess temperature Pt100
- Low temperature Pt100
- Internal excess temperature
- External bus fault
- Internal bus fault
- Internal hardware fault
- Supply voltage fault

Designation	Art. No.
Ex-Control	0X60026

Ex-Capillary Thermostat

The capillary thermostat EL-CT is approved for use in hazardous areas Zones 1 and 2 for gas and Zones 21 and 22 for dust as a surface thermostat on pipes and vessels. There are different temperature ranges possible. The material of the capillary tube is stainless steel and the rugged enclosure is made of aluminium.

Advantages:

- Robust
- Versatile use

Applications:

- Industrial applications
- Use in hazardous areas
- Heat tracing on pipes, valves and vessels
- Oil & gas industry



Type **EL-CT**





Technical Information

Type EL-CT

Data

■ Ex-Classification	II 2G Ex db IIC T6 Gb II 2D Ex tb IIIC T80°C Db Ta -32°C...+50°C [CT] Ta -50°C...+50°C [CT(2)] (Important: Classification is subject to modification depending on the cable entrances used by the customer!)
■ Certificate	IBExU 03ATEX1130X IECEX IBE 14.0069
■ IP rating	IP 66
■ Ambient temperature	-32 up to +50 °C [CT], -50 °C up to + 50 °C [CT(2)]
■ Switching capacity	16 A at 230 V [CT] / 10 A at 400 V [CT(2) only]
■ Switching differential	1 pol. [CT], 1 pol., changeover contact [CT(2)]
■ Switching contact	1 pole
■ Capillary tube	Stainless steel
■ Length of capillary tube	2 m
■ Enclosure	Lacquer-coated aluminium, dimensions (l x h x d), approx. 120 x 120 x 110 mm
■ Bending radius capillary tube	5 mm
■ Cable entrance	1 x gland M20, clamping range 10-14 mm 1 x thread M 20 x 1.5
■ Salt-water proof	Yes

Designation	Temperature range	Admissible sensor temperature, max.	Art. No.
EL-CT(2) 30	-10 °C up to +30 °C	60 °C	0X63032
EL-CT(2) 65	+5 °C up to +65 °C	100 °C	0X63065
EL-CT(2) 180	0 °C up to +180 °C	220 °C	0X63180
EL-CT(2) 320	+50 °C up to +320 °C	330 °C	0X63320
EL-CT 30	-50 °C up to +30 °C	50 °C	0X63030
EL-CT 50	0 °C up to +50 °C	105 °C	0X63050
EL-CT 200	0 °C up to +200 °C	230 °C	0X63200
EL-CT 500	+20 °C up to +500 °C	575 °C	0X63500

ELTF-PTE_x

Temperature Sensor



This temperature sensor has been designed according to Ex standard 94/9/EG especially for use in explosive gas and dust atmosphere. An emphasis on safety, simple installation and fitting accuracy were the requirements that our development engineers met.

Advantages:

- Impact protection (U-profile) for sensor protection
- Strain relief by hexagon-swaging
- Bend protection
- Decrease of parasitic coupling from surrounding electrical components because of fluoropolymer shielded sensor cable

Applications:

- Hazardous areas
- Power plants
- Chemical and petrochemical plants
- Oil and gas industry
- Varnish and paint
- Heating of instruments, devices and plants
- Pipe, pump and valve heating



Type **ELTF-PTE_x**





Technical Information

Type ELTF-PTEX

Data

■ Classification	II 2G Ex e IIC T2...T6 Gb II 2D Ex tb III C TX Db
■ Certificates	IECEX IBE 12.0002X, ATEX1004X
■ Standards	IEC 60079-0 ed.6, IEC 60079-7 ed.4, IEC 60079-31 ed.1
■ Permissible ambient temp.	-45 °C to +235 °C
■ Max. measuring current	10 mA
■ IP-rating	IP 65
■ Accuracy class	"B" according to IEC 751
■ Installation dimension	12 x 8 x 46cm

Design

■ Sensor cable ELTF-PTEX.2	4 x 0.14 mm ² , Fluoropolymer-insulated, shield Cu nickel plated, outer jacket ø 3.5 mm fluoropolymer
■ Sensor cable ELTF-PTEX.4	6 x 0.14 mm ² , Fluoropolymer-insulated shield Cu nickel plated, outer jacket ø 4.4 mm fluoropolymer
■ Protection tube	Mat. 1.4301, 6 x 6 x 46 mm, with safety bar and mounting eye ø 4.1 mm

Max measuring voltage and operating temperature

Type	Max. measuring voltage	Max operating temperature
T6	1,3V	80 °C
T5	1,3V	95 °C
T4	1,5V	130 °C
T3	1,7V	195 °C
T2	1,7V	235 °C

Type	Temperature sensor	Impact resistance (J)	Length connecting cable (m)	Art.-No.
ELTF-PTEX.2	Pt100 4-conductors	7	3	0X70002
ELTF-PTEX.4	Double - Pt100 3-conductors	7	3	0X70030

Longer connecting cables upon request.

Junction Box, Round, with Mounting Stand On-pipe Mounting in Hazardous Areas



The innovative junction box ELAK-Ex-R with mounting bracket (Ex-it) is suitable for use in potentially explosive atmosphere in accordance with Ex-guidelines 94/9/CE (ATEX 95) and provides a number of advantages. Thanks to the shape of the box, for instance, it is not necessary to strongly bend the inserted cable thereby avoiding cable damage. Due to the incorporated mounting bracket there is no need to provide angle irons. This is especially advantageous to heat tracing on piping because the cable can directly be introduced via the mounting bracket. Furthermore, fastening screws for heating lines and sensors are not required. A safety locking, with appropriate tool included, prevents the cover to move. Additional features permitting the attachment of sign plates facilitate easy identification of heating circuits in complex systems.

Advantages:

- No static charge
- Rapid closing of the cover through snap fit, no tool required
- Increased mechanical safety through round shape
- Permits fixing of customer identification plates
- Up to 3 heating cables can be connected

Applications:

- Hazardous areas
- Chemical & petrochemical industries
- Power stations
- Industrial plants with a need for frost protection or temperature maintenance



Type **Ex-it-R**





Technical Information

Type Ex-it-R

Data

■ Classification ELAK-Ex-R	II 2G Ex e IIC T6 Gb II 2D Ex tb IIIC TX Db
■ Classification Ex-it-R	II 2G Ex e IIC Gb II 2D Ex tb IIIC Db
■ Standards Ex-it-R	IEC 60079-0 ed.6, IEC 60079-7 ed.4, IEC 60079-31 ed.1
■ Ambient temperature	-40°C up to +50°C
■ Enclosure	Polyamide, no static charge
■ Dimensions (approx.):	Dia. 150 mm, 125 x 160 mm
■ Ex-it-R	Height approx. 280 mm total, the junction box is attached to the mounting feet.
■ Impact resistance	7 Joule
■ IP rating	IP 65
■ Terminal blocks, heating cable connection:	max. 6 mm ²
■ Terminal blocks, temperature sensor connection:	max. 1.5 mm ²

Mounting bracket

■ Working temperature	-20°C up to +200°C
■ Enclosure	PPS
■ Insulating thickness, max.	120 mm
■ Pipe outer diameter	≥ 20 mm
■ IP rating	IP 65
■ Classification	II 2G Ex e II 2 D Ex tD A21 IP65
■ Certificate	IBExU09ATEX1023U

Type	Description	Art. No.
Ex-it-R	Junction box, with mounting feet, round, dia. 150 mm, height 125 mm, polyamide enclosure, to connect 3 self-regulating heating cables ELSR-N/-H, 1 connecting cable, 1 sensor cable, 1 double-Pt100, insulating thickness max. 100 mm	0X80070
Ex-it-R-T	T-branch, with mounting feet, round, dia.150 mm, height 125 mm, polyamide enclosure, to connect up to 3 self-regulating heating cables ELSR-N/-H, insulating thickness max.100 mm	0X80082
Ex-it-R-Pt	Junction box, with mounting feet, round, dia. 150 mm, height 125 mm, polyamide enclosure, to connect 1 double-Pt100, 1 sensor cable, insulating thickness max. 100 mm	0X80092

Note: Connection and termination kits are not included in the Ex-it-R system. Please place a separate order for these items which depend on the type of heating cable used.

Junction Box, Round for Hazardous Areas



The innovative junction box ELAK-Ex-R is suitable for use in potentially explosive atmosphere in accordance with Ex-guidelines 94/9/CE (ATEX 95). Thanks to its exceptional shape it provides a number of advantages. Due to the form of the box, for instance, it is not necessary to strongly bend the inserted cable thereby avoiding cable damage.

A safety lock, with appropriate tool included, prevents the cover from moving. Additional features permitting the attachment of sign plates facilitate easy identification of heating circuits in complex systems. Suited for wall-mounting.

Advantages:

- No static charge
- Rapid closing of the cover through snap fit, no tool required
- Increased mechanical safety through round shape
- Permits fixing of customer identification plates
- Up to 3 heating cables can be connected

Applications:

- Hazardous areas
- Chemical & petrochemical industries
- Power stations
- Industrial plants with a need for frost protection or temperature maintenance



Type ELAK-Ex-R



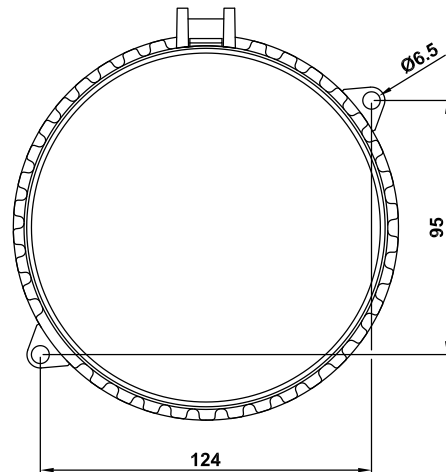


Technical Information

Type ELAK-Ex-R

Data

■ Classification	II 2G Ex e IIC T6 Gb II 2D Ex tb IIIC TX Db
■ Standards	IEC 60079-0 ed.6, IEC 60079-7 ed.4, IEC 60079-31 ed.1
■ Ambient temperature	-40 °C up to +50 °C
■ Nominal current	See type plate, max. 28 A each terminal
■ Nominal voltage	See type plate, max. 550V
■ Terminals heating cable	Max. 6 mm ² (optional 10 mm ²)
■ Terminals temp.sensor (if required)	Max. 1,5 mm ²
■ Enclosure	Polyamide, no static charge
■ Dimensions (approx.)	Ø 150 mm, height 125 mm
■ Impact resistance	7 Joule
■ Cable glands	Polyamide
■ IP rating	IP65
■ Weight	Approx. 0,7 kg
■ Type of mounting	Wall-mounting



Type	Application	Features	Art. No.
ELAK-Ex-R1	Star point for ELK-AG...	3 x M16 (4-9 mm), 1 x threaded plug M20, 1 x threaded plug M25	0X80071
ELAK-Ex-R2	Two-phase heating circuit or as star-supply box for ELK-AG...	2 x M16 (4-9 mm), 1 x M25 (8-17 mm), 1 x threaded plug M16, 1 x threaded plug M20	0X80072
ELAK-Ex-R4	Supply: 1 heating cable ELK-AG... + EL-CT	2 x M16 (4-9 mm), 2 x M25 (8-17 mm)	0X80074
ELAK-Ex-R5	Supply: 1 heating cable ELSR... + EL-CT	dia. 150 mm, height 125 mm, polyamide enclosure, for ELSR + EL-CT, Ex e	0X80075
ELAK-Ex-R7	Supply: 1-3 heating cable ELSR...	1 x M25 (8-17 mm), 2 x threaded plug M25, 1 x Bohrung M25	0X80077
ELAK-Ex-R8	Supply: 1-2 Pt 100, 2-4 conductors + up to 2 sensor lines max. 2.5 mm ²	1 x M25 (8-17 mm), 1 x M16 (4-9 mm), 2 x threaded plug M16, 1 x threaded plug M20	0X80078

Note: Connection and termination kits are not included in the ELAK-Ex-R-system. Please place a separate order for these items which depend on the type of heating cable used.

Junction Box

for Hazardous Areas



This junction box ELAK-Ex-3 in conventional design is suitable for use in potentially explosive atmosphere in accordance with Ex-guidelines 94/9/CE (ATEX 95). Moreover, the unit ELAK-Ex-3 covers a significantly wide range of ambient temperatures as shown on the data sheet. The junction box can be wall-mounted and is also available with stands for mounting on pipes.

Advantages:

- Covers a wide range of temperatures
- Suited for mounting on pipes

Applications:

- Hazardous areas
- Chemical & petrochemical industries
- Power stations
- Industrial plants with a need for frost protection or temperature maintenance



Type **ELAK-Ex-3**

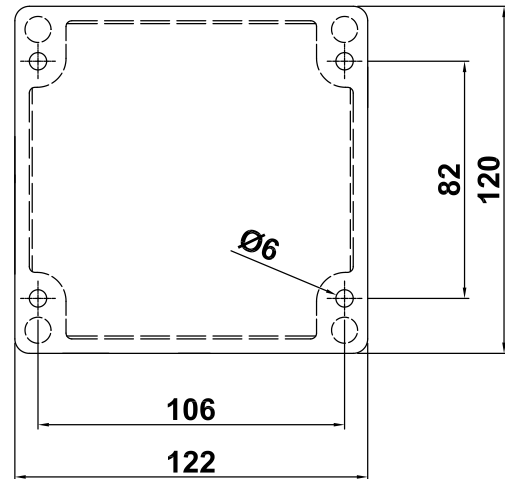


Technical Information

Type ELAK-Ex-3

Data

■ Classification	II 2G Ex e IIC T6...T4 Gb II 2D Ex tb IIIC T80 °C Db
■ Certificate	EPS13 ATEX 1506X, IECEx EPS 13.0002
■ Standards	EN 60079-0:2009, EN 60079-7:2007, EN 60079-31:2009
■ Ambient temperature	-40 °C up to +50 °C (T6, T85 °C) -40 °C up to +55 °C (T5, T100 °C) -40 °C up to +60 °C (T4, T100 °C)
■ Nominal current	See type plate, max. 36 A
■ Nominal voltage	See type plate, max. 550V
■ Terminals	Min. 0,5 mm ² , max. 10 mm ² (except ELAK-Ex-3.8)
■ Enclosure	Polyester
■ Dimensions (approx.)	l x h x d 122 x 120 x 90 mm
■ Impact resistance	7 Joule
■ Cable glands	Polyamide
■ IP rating	IP65 / 66 depending on design
■ Weight	Approx. 1 kg
■ Type of mounting	Wall-mounting



The ELAK-Ex-3 unit fitted with the mounting stand ELMW-9 (122 x 120 – Art. No. 0941009) is also suited for mounting on pipes. The mounting stand is 100 mm high.

Type	Application	Features	Art. No.
ELAK-Ex-3.1	Star point for ELK-AG-...	3 x M12 (3-6 mm), 35 A, 1 x threaded plug M25	0X80051
ELAK-Ex-3.2	Two-phase heating circuit or as star-supply box for ELK-AG-...	1 x M25 (9-17 mm), 2 x M12 (3-6 mm), 1 x sealing plug M12	0X80052
ELAK-Ex-3.4	Supply: 1 heating cable ELK-AG-...+ EL-CTB	2 x M25 (9-17 mm), 2 x M12 (3-6 mm)	0X80054
ELAK-Ex-3.5	Supply: 1 heating cable ELSR-... + EL-CT	122 x 120 x 90 mm, polyester enclosure, for ELSR + EL-CT, Ex e	0X80055
ELAK-Ex-3.7	Supply: 1-3 heating cable ELSR-...	1 x M25 (9-17 mm), 2 x threaded plug M25, 1 x bore hole M25	0X80057
ELAK-Ex-3.8	Supply 1-2 Pt100, 2-4 wire + up to 2 conductors + up to 2 sensor lines max 2.5 mm ²	1 x M25 (9-17 mm), 1 x threaded plug M25, 1 x M12 (3-6 mm), 2 x sealing plug M12	0X80058

Note: Connection and termination kits are not included in the ELAK-Ex-3-system. Please place a separate order for these items which depend on the type of heating cable used.

Ex-Con

Splice Connector Kit



This splice connector kit for eltherm heating cables was developed especially for the application in hazardous areas. The Ex-Con 22/4 provides a special feature as it is applicable in temperature ranges up to -60°C. In doing so, our engineers focused on a high level of safety, simple installation and perfect fit.

Advantages:

- Cold and dry termination
- Simple installation
- No restriction to eltherm branded heating cables

Applications:

- Chemical & petrochemical industry
- Oil & gas industry
- Paints & varnishes
- Heat tracing of apparatus, appliances & plants
- Heat tracing of pipes, pumps & valves



Type Ex-Con





Technical Information

Type Ex-Con

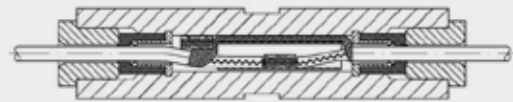
Data

■ Classification	II 2G Ex e IIC T6...T3 Gb II 2D Ex tb IIIC TX Db
■ Certificate	04ATEX1005X, 07ATEX1080X, 07ATEX1023X, IECEx IBE 13.0012 X
■ Standard	EN 60079-0:2009, EN 60079-7:2007, EN 60079-31:2009

Maximum maintenance temperature (Ex-Con-22/4 & -25/7)

Type	up to 10 A	up to 16 A	up to 20 A
T6	60 °C	45 °C	25 °C
T5	75 °C	60 °C	40 °C
T4	110 °C	95 °C	75 °C
T3	170 °C	155 °C	135 °C

Example: assembled unit



Classification for ELKM AG	Cable cross section	Impact resistance (J)	Nominal current (A)	Rated voltage (V)	Diameter (mm)	Length (mm)	Operating temperature (°C)	Art. No.
Ex-Con-22/4-Si	Up to 2.5 mm ²	4	20	550	22 x 120	105	-60 up to 200	0X81140
Ex-Con-25/7	Up to 2.5 mm ²	7	20	550	25	105	-32 up to 200	0X81115
Ex-Con-36/4*	2.5 mm ² up to 35 mm ²	4	145	550	36	175	-32 up to 200	0X81120

* Electric current / operating temperatures: Please refer to separate instruction.

Classification for ELSR	Cable cross section	Impact resistance (J)	Nominal current (A)	Rated voltage (V)	Diameter (mm)	Length (mm)	Operating temperature (°C)	Art. No.
Ex-Con-SR	3 x 1.5 mm ² and 3 x 2.5 mm ²	4	145	240 (550)	36	210	-32 up to 200	0X81125

Connection Kits



for Self-regulating Heating Cables and Constant Wattage Heating Cables

These connection kits for self-regulation heating cables and constant wattage heating cables have been specially developed for use in hazardous areas, Ex e.

Advantages:

- Easy termination
- Time-saving

Applications:

- Pipe heating
- Frost protection for industrial plants
- Hazardous areas
- Chemical and petrochemical plants
- Oil and gas industry
- Container and tanks
- Food industry



ELVB-SR...Ex-... / ELVB-ELPEX-25



ELVB-SREx-25



Technical Information

Data

- Classification III 2G Ex e IIC Gb II 2D Ex tb IIIC Db
II 2G Ex db e IIC Gb II 1D Ex ta IIIC Da
(ELVB.SRA...-Ex-20)
- Directives EN 60079-7, -31; IEC 60079-7, -31;
IEEE 515 + CSA 130-3
EN 60079-7, -31, IEC 60079-7, -31
(ELVB-ELPEx-25)
- Permissible ambient temperature -55 °C up to +70 °C
(in case of protected installation)
-25 °C up to +70 °C (in case of higher
grade of mechanical stress)
ELVB-SRA...-Ex: -60 °C up to +80 °C
ELVB-ELPEx-25: -25 °C up to +70 °C
(in case of higher grade of mechanical stress),
-55 °C up to +70 °C
(in case of protected installation)
- Certificates IBExU07ATEX1022X
ELVB-SRA...-Ex-20: SIRA01ATEX1270X
ELVB-ELPEx-25: IBExU07ATEX1022X

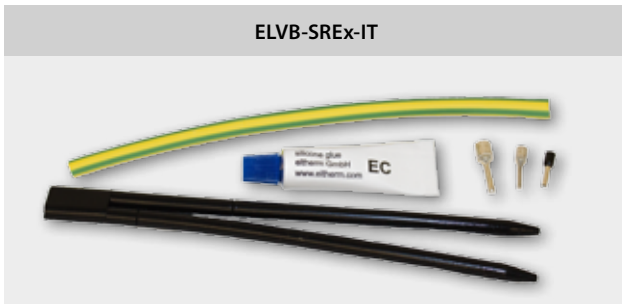
ELVB-SRAN-Ex-20 / ELVB-SRAL-Ex-20



ELVB-SRAH-Ex-20



ELVB-SREx-IT



ELVB-ELPEx-25



Type	Cable glands	Glue	Suitable for	Art.-No.
ELVB-SREx-25	M25 x 1.5 PE gland (black)	Silicone glue „LT“, 5 g tube, blue screw cap, transparent glue	ELSR-N, -LS, -H, -FHP	0X81PA1
ELVB-SREx-IT		Silicone glue „LT“, 5 g tube, blue screw cap, transparent glue	ELSR-N, -H for Mounting post Ex-it-R	091AIT1
ELVB-SRAN-Ex-20	M20, brass	Silicone glue „LT“, 5 g tube, blue screw cap, transparent glue	ELSR-N, -FHP	0X81PND
ELVB-SRAL-Ex-20	M20, brass	Silicone glue „LT“, 5 g tube, blue screw cap, transparent glue	ELSR-LS	0X81PLD
ELVB-SRAH-Ex-20	M20, brass	Silicone glue „HT“, 5 g tube, red screw cap, red glue	ELSR-H	0X81PHD
ELVB-ELPEx-25	M25, PE gland (black)	-	ELP-PFA	0X81EP2

All articles including termination instruction.



End Termination Kits

for Self-regulating Heating Cables and Constant Wattage Heating Cables

These end termination kits for self-regulating heating cables and constant wattage heating cables have specially been developed for use in hazardous areas.

We offer several custom-fit end termination kits for our low temperature and a special kit for our high temperature heating cables, and a kit suitable for our constant wattage heating cable ELP-PFA.

Advantages:

- Easy termination
- Time-saving

Applications:

- Pipe heating
- Frost protection for industrial plants
- Hazardous areas
- Chemical and petrochemical plants
- Oil and gas industry
- Container and tanks
- Food industry



Type **EL-ECN/L/H/P-Ex**





Technical Information

Data

■ Classification	II 2G Ex e IIC Gb II 2D Ex tb IIIC Db
■ Directives	EN 60079-7, -31; IEC 60079-7, -31; IEEE 515 + CSA 130-3
■ Permissible ambient temperature	-45 to 85 °C, EL-ECN-Ex -45 to 85 °C, EL-ECL-Ex -40 to 210 °C, EL-ECH-Ex
■ Certificates	IECEx IBE 12.0001U, 05ATEX1154U

EL-ECN-Ex:



EL-ECH-Ex:



EL-ECL-Ex:



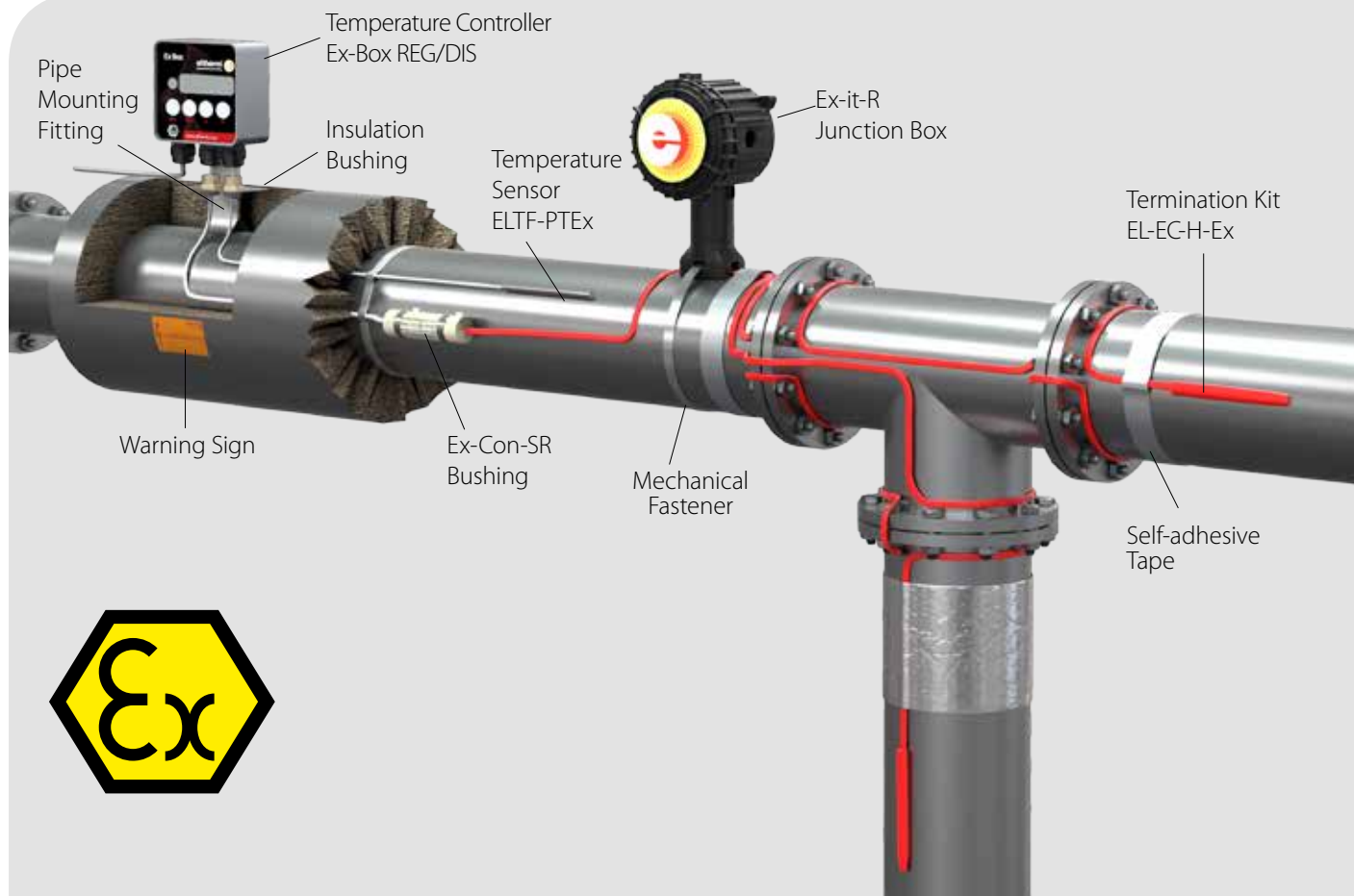
EL-ECP-Ex:



Type	End cap	Glue	Suitable for	Art.-No.
EL-ECN-Ex	Silicone, transparent, with Ex-imprint	Silicone glue „LT“, 5 g tube, blue screw cap, transparent glue	ELSR-N up to 80 °C	0X81EN1
EL-ECL-Ex	Silicone, transparent, with Ex-imprint	Silicone glue „LT“, 5 g tube, blue screw cap, transparent glue	ELSR-LS up to 80 °C	0X81EL1
EL-ECH-Ex	Silicone, red, with Ex-imprint	Silicone glue „HT“, 5 g tube, red screw cap, red glue	ELSR-H up to 210 °C	0X81EH1
EL-ECP-Ex	Silicone, red, with Ex-imprint	Silicone glue „HT“, 5 g tube, red screw cap, red glue	ELP-PFA bis 210 °C	0x81EP1

All articles including termination instruction.

ELSR: Application in Hazardous Areas



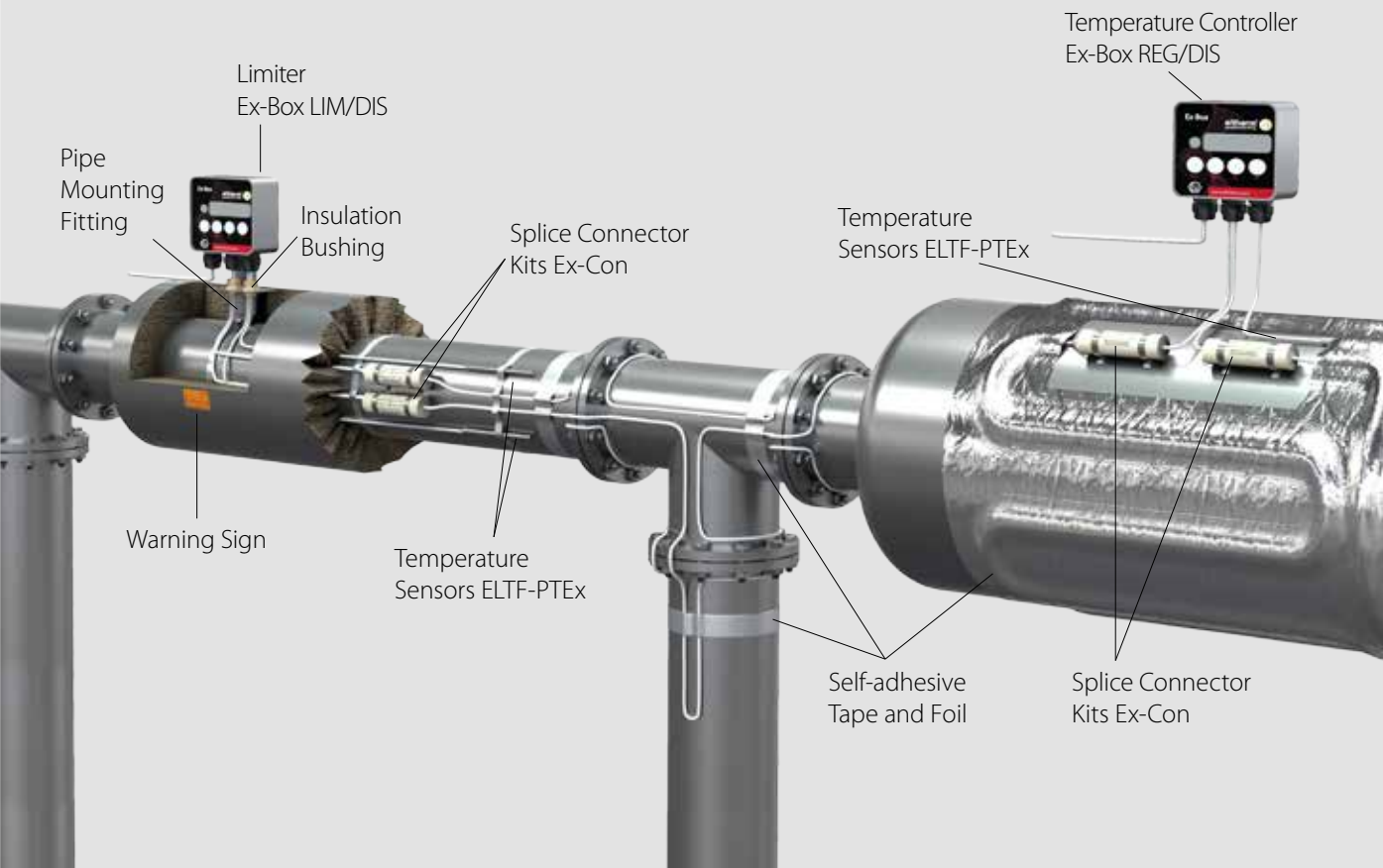
Products:

- Heating Cable ELSR-N, ELSR-LS, ELSR-H
- Measurement and Control, e. g. Ex-Box Temperature Controller
- Temperature Sensor ELTF-PTEx
- Connection Kits, e. g. Ex-Con-SR (or ELVB...Ex...)
- Junction Boxes, e. g. Ex-it-R (or ELAK-Ex...)
- Termination Kits EL-EC...ex
- Insulation Bushings ELISD-...
- Mechanical Fasteners and/or Self-adhesive Tapes and Foil ELB-...
- Pipe Mounting Fittings ELMW-..., ELB-...
- Warning Signs EL-WS...

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



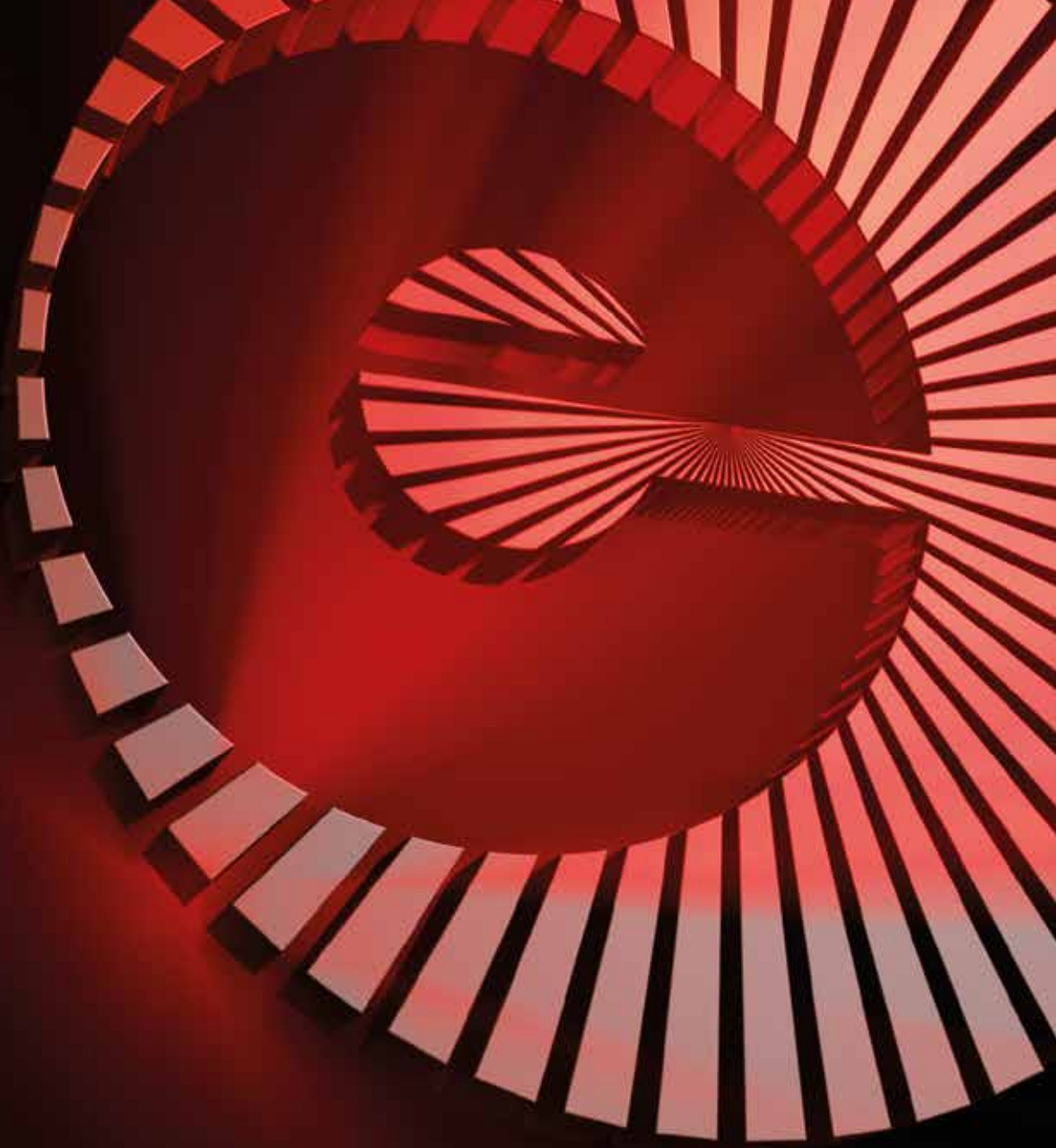
EHT in Hazardous Areas



Products:

- Resistance Heating Cable ELK-...
- Temperature Controller e. g. Ex-Box-REG-DIS
- Limiter, e. g. Ex-Box-LIM -DIS
- Temperature Sensor ELTF-PTEX
- Splice Connector Kits Ex-Con-...
- Insulation Bushings ELISD-...
- Mechanical Fasteners and/or Self-adhesive Tapes and Foil ELB-...
- Pipe Mounting Fittings ELMW-..., ELB-...
- Warning Signs EL-WS...

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



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