



industrial heating systems

















Table of contents

Company			5
Self-regu	lating heating cables		
	working temperatures up to 65°C	SelfTec®PROi LT	9
		SelfTec®PROi LT F	11
	working temperatures up to 110°C	SelfTec®PROi MT	13
		SelfTec®PROi MT F	15
	working temperatures up to 150°C	SelfTec®PROi HT F	17
Connecti	on and end seal kits		
	cold applied kits	CACM25-PROi	19
		CAE-PROi	20
	hot applied kits	HAC-PROi	21
		HAE-PROi	22
Junction	boxes		
	for hazardous areas	MBP 161690	23
		MBP 121290	25
	for non-hazardous areas	EBP 1313-PROi	27
		EBP 0606-PROi	29
Temperat	ture controllers		
	electromechanical controller	exTHERM-AT	31
	advanced electronic controller	exTHERM-DR	34
	electronic controllers	iTRON DR100	37
		TDR 4022 PT100-PROi	40
		ETI 1221-PROi	42
Temperat	ture sensors		
	for hazardous areas	RTD Ex Ch.P 903525/50	44
	for non-hazardous areas	RTD 902150/10	46
	on accessories	1112 302 130/10	10
	support brackets	BM16-PROi	47
	support bluckets	BM 13-PROi	48
		BM 08-PROi	49
	factoning strans	BMC-PROi	50
	fastening straps additional accessories	EK-PRO	51
	additional accessories		52
	installation tancs	RM25/16	
	installation tapes		53









ELEKTRA leading brand

Headquarters

For more than 35 years ELEKTRA has been specialising in the development and manufacturing of electric heating systems. This experience let us solidify our market position in the areas of industrial and commercial applications. The company was established in 1985 and has been the largest and most renown manufacturer of heating cable systems in Central Europe.





www.elektra.eu



Quality guaranteed

Since the very start, ELEKTRA has taken on the product quality as the key mark of its business activities. According to company policy, well known and trusted cable industry suppliers provide ELEKTRA with highest quality raw materials confirmed by the profound and multi-stage in-company control. The team of engineers has been taking care of the thorough monitoring of the cable construction, design and installation standards, as well as the high level of technical documentation. Only in this way it has become possible to achieve full satisfaction of Clients and consequently the leading market position.













Innovative solutions

Additionally, the cooperation of the entire ELEKTRA team has been focused on the development of new products, introducing innovative solutions and immediate response to market requirements. Such approach allows to continually enrich and widen the range of products, while Clients receive complete system solutions, as well as professional and fast assistance.









ELEKTRA Heating Cables

ELEKTRA SelfTec®PROi LT self-regulating heating cables have been designed for commercial and industrial applications, such as protection of pipes against frost and maintaining required process temperatures up to +65°C. These products are dedicated for both types of installations, in hazardous and non-hazardous areas. Optimal chemical properties and high

UV resistance of HFFR outer sheath allow a wide range of

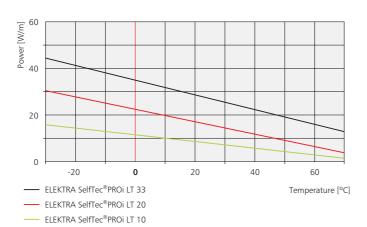
SelfTec®PROi LT (Ex)



ELEKTRA SelfTec®PROi LT

applications.

Function of the heating power vs. insulated steel pipe temperature



This package contains:

• ELEKTRA SelfTec®PROi LT heating cable on a spool.



- Tin-coated multi-wire copper conductor
- Self-regulating conductive core
- Modified polyolefin insulation
- Tinned copper braiding
- 5 HFFR outer sheath









Technical data:

Heating cable construction:

- tin-coated multi-wire copper conductor:

1.11 mm² (10, 20 W/m) 1.37 mm² (33 W/m)

self-regulating conductive coremodified polyolefin insulationtinned copper braiding

- HFFR outer sheath

Shape: flat

Dimensions: $11.3 \pm 0.2 \times 6.7 \pm 0.2 \text{ mm } (10, 20 \text{ W/m})$

13.4 $\pm 0.2~x$ 6.7 $\pm 0.2~mm$ (33 W/m)

Resistance range: variable, temperature depending Power output (nominal): 10, 20, 33 W/m (+10°C)

Power output (nominal): 10, 20, 33 Max. working temperature: $+65^{\circ}$ C

Max. exposure temperature: $+85^{\circ}$ C (power supply off)

Min. installation temperature: -40°C
Min. cable bending radius: 25 mm
Power supply: 230 V AC
Insulation test voltage: 2500 V

Standards: EN 62395-1, EN 60079-30-1, EN 60079-0

Approvals: ATEX KDB 18ATEX0014U

⑤ II 2G Ex 60079-30-1 IIC T6 Gb⑥ II 2D Ex 60079-30-1 IIIC T85°C Db

IECEX KDB 18.0001U Ex 60079-30-1 IIC T6 Gb Ex 60079-30-1 IIIC T85°C Db

Product marking: Ex, CE, EAC
Temperature class: T6

















CTART LIR	1.7	Tec®PRO 10 W/m			SelfTec® 20	PROi LT W/m		SelfTec®PROi LT 33 W/m						
START-UP TEMPERATURE	CIRCUIT-BREAKER, C-TYPE													
	10A	16A	20A	10A	16A	20A	32A	16A	20A	32A	40A			
				MAX. C	ABLE LE	NGTH P	ER CIRC	UIT [m]						
-20°C	85	125	180	45	65	90	120	50	65	85	100			
0°C	115	170	205	60	90	120	135	60	75	95	110			
+10°C	130	205	205	80	110	135	135	70	80	110	120			



ELEKTRA Heating Cables

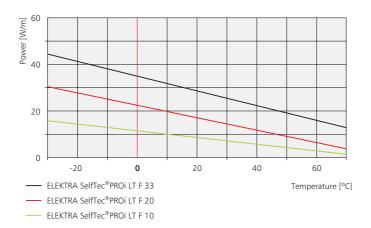
SelfTec®PROi LT F ⟨Ex⟩

ELEKTRA SelfTec®PROi LT F self-regulating heating cables have been designed for commercial and industrial applications, such as protection of pipes against frost and maintaining required process temperatures up to +65°C. These products are dedicated for both types of installations, in hazardous and non-hazardous areas. High chemical properties of fluoropolymer outer sheath allow a wide range of applications.



ELEKTRA SelfTec®PROi LT F

Function of the heating power vs. insulated steel pipe temperature



This package contains:

 ELEKTRA SelfTec®PROi LT F heating cable on a spool.



- Tin-coated multi-wire copper conductor
- Self-regulating conductive core
- Modified polyolefin insulation
- Tinned copper braiding
- 5 Fluoropolymer outer sheath







Technical data:

Heating cable construction:

- tin-coated multi-wire copper conductor:

1.11 mm² (10, 20 W/m) 1.37 mm² (33 W/m)

self-regulating conductive coremodified polyolefin insulationtinned copper braiding

- fluoropolymer outer sheath

Shape: flat

Dimensions: $10.7 \pm 0.2 \text{ x } 6.1 \pm 0.2 \text{ mm } (10, 20 \text{ W/m})$

 $12.8 \pm 0.2 \times 6.1 \pm 0.2 \text{ mm} (33 \text{ W/m})$

Resistance range: variable, temperature depending

Power output (nominal): $10, 20, 33 \text{ W/m } (+10^{\circ}\text{C})$

Max. working temperature: $+65^{\circ}$ C

Max. exposure temperature: $+85^{\circ}$ C (power supply off)

Min. installation temperature: -40°C
Min. cable bending radius: 25 mm
Power supply: 230 V AC
Insulation test voltage: 2500 V

Standards: EN 62395-1, EN 60079-30-1, EN 60079-0

Approvals: ATEX KDB 18ATEX0014U

⑤ II 2G Ex 60079-30-1 IIC T6 Gb⑥ II 2D Ex 60079-30-1 IIIC T85°C Db

IECEX KDB 18.0001U Ex 60079-30-1 IIC T6 Gb Ex 60079-30-1 IIIC T85°C Db

Product marking: Ex, CE, EAC

Temperature class: T6

















START-UP		ec®PROi 10 W/m		5	SelfTec®P 20	ROi LT W/m	F	SelfTec®PROi LT F 33 W/m						
TEMPERATURE	CIRCUIT-BREAKER, C-TYPE													
	10A	16A	20A	10A	16A	20A	32A	16A	20A	32A	40A			
				MAX. C	ABLE LE	NGTH P	ER CIRC	UIT [m]						
-20°C	85	125	180	45	65	90	120	50	65	85	100			
0°C	115	170	205	60	90	120	135	60	75	95	110			
+10°C	130	205	205	80	110	135	135	70	80	110	120			



ELEKTRA Heating Cables

ELEKTRA SelfTec®PROi MT self-regulating heating cables have been designed for commercial and industrial applications, such as protection of pipes against frost and maintaining required process temperatures up to +110°C. These products are dedicated for both types of installations, in hazardous and

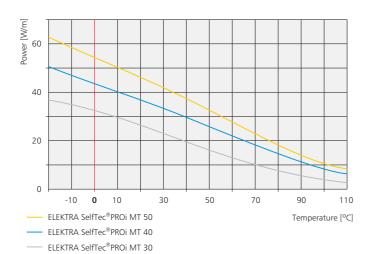
non-hazardous areas. HFFR outer sheath provides high UV resistance and optimal chemical and temperature properties.

SelfTec®PROi MT (Ex)



ELEKTRA SelfTec®PROi MT

Function of the heating power vs. insulated steel pipe temperature



This package contains:

 ELEKTRA SelfTec®PROi MT heating cable on a spool.



- Nickel-coated multi-wire copper conductor
- Self-regulating conductive core
- S XLEVA insulation
- Tinned copper braiding
- 5 HFFR outer sheath







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Technical data:

Heating cable construction:

- nickel-coated multi-wire copper conductor:

1.11 mm² (30, 40 W/m) 1.21 mm² (50 W/m)

- self-regulating conductive core

XLEVA insulationtinned copper braidingHFFR outer sheath

Shape: flat

Dimensions: $13.9 \pm 0.2 \times 6.3 \pm 0.2 \text{ mm } (30, 40 \text{ W/m})$

 $15.1 \pm 0.2 \times 6.3 \pm 0.2 \text{ mm } (50 \text{ W/m})$

Resistance range: variable, temperature depending Power output (nominal): 30, 40, 50 W/m $(+10^{\circ}\text{C})$

Max. working temperature: +110°C

Max. exposure temperature: +135°C (power supply off)

Min. installation temperature: -50°C
Min. cable bending radius: 25 mm
Power supply: 230 V AC
Insulation test voltage: 2500 V

Standards: EN 62395-1, EN 60079-30-1, EN 60079-0

Approvals: ATEX KDB 18ATEX0014U

⊚ II 2G Ex 60079-30-1 IIC T4 Gb⊚ II 2D Ex 60079-30-1 IIIC T135°C Db

IECEx KDB 18.0001U Ex 60079-30-1 IIC T4 Gb Ex 60079-30-1 IIIC T135°C Db

Product marking: Ex, CE, EAC
Temperature class: T4



















CTART UR			ec®PRC 0 W/r			SelfTec®PROi MT 40 W/m					SelfTec®PROi MT 50 W/m				
START-UP TEMPERATURE		CIRCUIT-BREAKER, C-TYPE													
	16A	20A	32A	40A	50A	16A	20A	32A	40A	50A	16A	20A	32A	40A	50A
					MAX	. САВ	LE LEI	NGTH	PER C	IRCUI	T [m]				
-20°C	130	130	130	130	130	71	94	118	118	118	40	54	81	108	114
0°C	135	135	135	135	135	78	104	122	122	122	44	58	88	114	116
+10°C	138	138	138	138	138	83	110	126	126	126	46	61	92	117	117



ELEKTRA Heating Cables

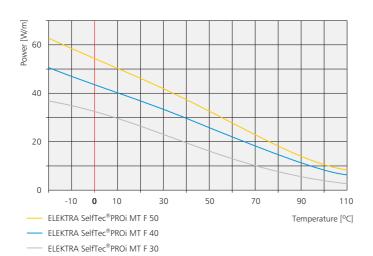
ELEKTRA SelfTec®PROi MT F self-regulating heating cables have been designed for commercial and industrial applications, such as protection of pipes against frost and maintaining required process temperatures up to +110°C. These products are dedicated for both types of installations, in hazardous and non-hazardous areas. High chemical properties of fluoropolymer outer sheath allow a wide range of applications.

SelfTec®PROi MT F (Ex)



ELEKTRA SelfTec®PROi MT F

Function of the heating power vs. insulated steel pipe temperature



This package contains:

• ELEKTRA SelfTec®PROi MT F heating cable on a spool.



- Nickel-coated multi-wire copper conductor
- Self-regulating conductive core
- S XLEVA insulation
- Tinned copper braiding
- Fluoropolymer outer sheath







>|

Technical data:

Heating cable construction:

- nickel-coated multi-wire copper conductor:

1.11 mm² (30, 40 W/m) 1.21 mm² (50 W/m)

- self-regulating conductive core

XLEVA insulation tinned copper braiding fluoropolymer outer sheath

Shape: flat

Dimensions: 13.3 $\pm 0.2 \times 5.7 \pm 0.2 \text{ mm}$ (30, 40 W/m)

 $14.5 \pm 0.2 \times 5.7 \pm 0.2 \text{ mm } (50 \text{ W/m})$

Resistance range: variable, temperature depending Power output (nominal): 30, 40, 50 W/m $(+10^{\circ}\text{C})$

Max. working temperature: +110°C

Max. exposure temperature: +135°C (power supply off)

Min. installation temperature: -50°C
Min. cable bending radius: 25 mm
Power supply: 230 V AC
Insulation test voltage: 2500 V

Standards: EN 62395-1, EN 60079-30-1, EN 60079-0

Approvals: ATEX KDB 18ATEX0014U

⑤ II 2G Ex 60079-30-1 IIC T4 Gb⑥ II 2D Ex 60079-30-1 IIIC T135°C Db

IECEx KDB 18.0001U Ex 60079-30-1 IIC T4 Gb Ex 60079-30-1 IIIC T135°C Db

Product marking: Ex, CE, EAC
Temperature class: T4



















CTART UR			c®PROi 0 W/r		-	SelfTec®PROi MT F 40 W/m					SelfTec®PROi MT F 50 W/m					
START-UP TEMPERATURE		CIRCUIT-BREAKER, C-TYPE														
121111 2111 11 0112	16A	20A	32A	40A	50A	16A	20A	32A	40A	50A	16A	20A	32A	40A	50A	
					MAX	. CAB	LE LEN	NGTH	PER C	IRCUIT	[m]					
-20°C	130	130	130	130	130	71	94	118	118	118	40	54	81	108	114	
0°C	135	135	135	135	135	78	104	122	122	122	44	58	88	114	116	
+10°C	138	138	138	138	138	83	110	126	126	126	46	61	92	117	117	



ELEKTRA Heating Cables

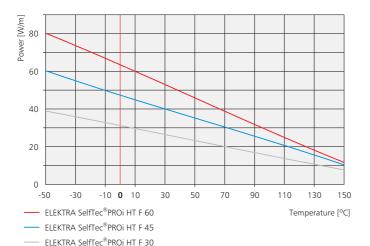
ELEKTRA SelfTec®PROi HT F self-regulating heating cables have been designed for industrial applications, such as protection of pipes against frost and maintaining required process temperatures up to +150°C. These products are dedicated for both types of installations, in hazardous and non-hazardous areas. Fluoropolymer outer sheath provides a high chemical and temperature resistance.





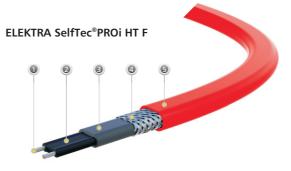
ELEKTRA SelfTec®PROi HT F

Function of the heating power vs. insulated steel pipe temperature



This package contains:

 ELEKTRA SelfTec®PROi HT F heating cable on a spool.



- Nickel-coated multi-wire copper conductor
- Self-regulating conductive core
- Fluoropolymer insulation
- Tinned copper braiding
- 5 Fluoropolymer outer sheath







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Technical data:

Heating cable construction:

- nickel-coated multi-wire copper conductor

1.11 mm² (30, 45 W/m) 1.21 mm² (60 W/m)

self-regulating conductive corefluoropolymer insulationtinned copper braiding

- fluoropolymer outer sheath

Shape: flat

Dimensions: $10.5 \pm 0.2 \text{ x } 5.0 \pm 0.2 \text{ mm}$

Resistance range: variable, temperature depending

Power output (nominal): 30, 45, 60 W/m ($+10^{\circ}$ C)

Max. working temperature: +150°C

Max. exposure temperature: +190°C (power supply off)

Min. installation temperature: -50°C
Min. cable bending radius: 20 mm
Power supply: 230 V AC
Insulation test voltage: 2500 V

Standards: EN 62395-1, EN 60079-30-1, EN 60079-0

Approvals: ATEX KDB 18ATEX0014U

⊚ II 2G Ex 60079-30-1 IIC T3 Gb⊚ II 2D Ex 60079-30-1 IIIC T200°C Db

IECEX KDB 18.0001U EX 60079-30-1 IIC T3 Gb EX 60079-30-1 IIIC T200°C Db

Product marking: Ex, CE, EAC

Temperature class: T3





















CTART UR	SelfTec®PROi HT F 30 W/m						SelfTec®PROi HT F 45 W/m					SelfTec®PROi HT F 60 W/m				
START-UP TEMPERATURE		CIRCUIT-BREAKER, C-TYPE														
	16A	20A	32A	40A	50A	16A	20A	32A	40A	50A	16A	20A	32A	40A	50A	
					MAX	CAB	LE LEN	NGTH	PER C	IRCUIT	Γ [m]					
-20°C	44	70	88	112	112	31	50	63	94	94	25	39	49	79	84	
0°C	46	74	92	114	114	33	53	66	97	97	26	42	52	83	86	
+10°C	48	77	97	117	117	35	56	69	99	99	27	43	54	87	88	



ELEKTRA Connection Kits

CACM25-PROi (Ex)

ELEKTRA CACM25-PROi connection kit is dedicated to connecting ELEKTRA SelfTec®PROi LT/LT F, SelfTec®PROi MT/MT F and SelfTec®PROi HT F heating cables to junction boxes, without compromising the continuity of electrical insulation of the heating cable wires or the heating cables' cores.

The kit is certified for applications in hazardous areas. The components can be mounted without the necessity of applying heat guns or torches, due to this feature no permission for operation with heat sources in hazardous areas is required.

Cable glands are made of polyamide, which ensures high thermal durability and mechanical resistance. Silicone rubber gasket included in the kit helps to execute the optimal sealing of the gland with the heating cable, regardless of the current external conditions.

Application:

Cold-apllied connection kit dedicated to SelfTec®PROi LT/LT F, SelfTec®PROi MT/MT F and SelfTec®PROi HT F heating cables.



The kit contains:

- gland,
- gasket,
- · locknut,
- · insulating jacket for core sealing,
- · insulating jacket yellow/green,
- · auxiliary tubes,
- · installation manual.

Technical data:

Area classification: Hazardouds areas: zones 1 and 2 (for gases and vapours)

and zones 21 and 22 (for electrically conductive dust)

Non-hazadous areas

Approvals: ATEX KBD 19ATEX0003U

⑤ II 2G Ex eb IIC Gb
⑥ II 2D Ex tb IIIC Db
IECEX KDB 19.0001U
Ex eb IIC Gb
Ex tb IIIC Db

Type: Cold applied installation

Thread type: M25 x 1.5 Min. ambient temperature: -40° C Max. exposure temperature (gland): $+110^{\circ}$ C





CAE-PROi (Ex)



The kit contains:

- · stainless steel cover top,
- · stainless steel cover bottom,
- · end seal,
- · silicone rubber,
- plain washers,
- spring washers,
- screws,
- installation manual.

ELEKTRA End Seal Kits

This ELEKTRA CAE-PROi end seal kit is dedicated to terminate ELEKTRA SelfTec®PROi LT/LT F, SelfTec®PROi MT/MT F and SelfTec®PROi HT F heating cables.

The kit is certified for applications in hazardous areas. The unique design of the CAE-PROi suits the demanding requirements of the industrial environment. It can be used in applications with temperature range from -50°C to +240°C. It provides both excellent electrical insulation and ultimate mechanical protection, as it is an ideal combination between molded silicone rubber end seal and stainless steel cover.

The components of the kit can be mounted without the necessity of applying heat guns or torches, due to this feature no permission for operation with heat sources in hazardous areas is required.

Application:

Cold-applied end seal kit dedicated to SelfTec®PROi LT/LT F, SelfTec®PROi MT/MT F and SelfTec®PROi HT F heating cables.

Technical data:

Area classification: Hazardouds areas: zones 1 and 2

(for gases and vapours)

and zones 21 and 22 (for electrically

conductive dust)
Non-hazadous areas

Approvals: ATEX KBD 19ATEX0003U

© II 2G Ex 60079-30-1 IIC Gb © II 2D Ex 60079-30-1 IIIC Db

IECEx KDB 19.0001U Ex 60079-30-1 IIC Gb Ex 60079-30-1 IIIC Db

Type: cold applied installation

Material: stainless steel, silicone rubber

Protection: IP 66
Min. ambient temperature: -50° C
Max. exposure temperature: $+240^{\circ}$ C







ELEKTRA Connection Kits

HAC-PROi (Ex)

ELEKTRA HAC-PROi connection kit is dedicated to connecting power supply to ELEKTRA SelfTec®PROi LT/LT F and SelfTec®PROi MT/MT F without compromising the continuity of electrical insulation of the heating cable wires or the heating cables' cores.

The kit is certified for applications in hazardous areas.

Connection between the heating cable wires and the screen is executed with pre-insulated butt terminals. To seal the connection and protect against moisture penetration, heatshrink tubes with glue are applied and mastic.

Application:

Connection kit for SelfTec®PROi LT/LT F, SelfTec®PROi MT/MT F heating cables.



The kit contains:

- heat-shrink tubes with glue,
- · pre-insulated butt terminals,
- · mastic,
- · installation manual.

Technical data:

Approvals: ATEX KBD 19ATEX0003U

IECEX KDB 19.0001U Ex 60079-30-1 IIC Gb Ex 60079-30-1 IIIC Db

Min. ambient temperature: -55°C Max. exposure temperature: $+110^{\circ}\text{C}$ Dielectric strength: 18 kV/mmResistivity: $10^{14} \Omega \cdot \text{cm}$

Dimensions: length approx. 150 mm

Power supply cables: 3 x 1.0 mm², 3 x 1.5 mm² or

 $3 \times 2.5 \text{ mm}^2$





HAE-PROi $\langle E_x \rangle$



The kit contains:

- · heat-shrink tubes with glue,
- installation manual.

ELEKTRA
End Seal Kits

ELEKTRA HAE-PROi end seal kit is dedicated to the purposes of terminating ELEKTRA SelfTec®PROi LT/LT F and SelfTec®PROi MT/MT F heating cables without compromising the continuity of electrical insulation of the heating cable wires or the heating cables' cores.

The kit is certified for applications in hazardous areas. The kit contains heat-shrink tubes with glue, which efficiently seals the cables against moisture penetration, after installation.

Application:

End seal kit for ELEKTRA SelfTec®PROi LT/LT F and SelfTec®PROi MT/MTFheating cables.

Technical data:

Approvals: ATEX KBD 19ATEX0003U

© II 2G Ex 60079-30-1 IIC Gb
© II 2D Ex 60079-30-1 IIIC Db
IECEX KDB 19.0001U

Ex 60079-30-1 IIC Gb Ex 60079-30-1 IIIC Db

Min. ambient temperature: -55° C

Max. exposure temperature: $+110^{\circ}$ C

Dielectric strength: 18 kV/mmResistivity: $10^{14} \Omega \cdot \text{cm}$

Dimensions: length approx. 130 mm







ELEKTRA Junction Boxes

ELEKTRA MBP 161690 junction box is dedicated to power supply, cable extension and branching of ELEKTRA SelfTec®PROi LT/LT F, SelfTec®PROi MT/MT F and SelfTec®PROi HT F heating cables. The box enables power supply of max. 3 heating circuits or branching of a single heating circuit in max. 3 directions.

The box's enclosure is designed for operation in hazardous areas and fulfills all requirements valid for zones 1 and 2, as well as 21 and 22.

Glass reinforced polyester enclosure is durable and UV-resistant, therefore allows applications in uncovered outdoor systems, is highly mechanically resistant and allows operation in chemically aggressive environment. Spring-cage terminals facilitate installation of single-wire cables, as well as the crimp-terminated cables, with no necessity of application of tools, and later safe and reliable operation. The box has got four sealed M25 entries and can host one, two or three heating circuits. Due to the dimensions and number of entries, the box enables easy branching of heating systems. To lead in the heating cables, additional connection sets CACM25-PROi with the M25 gland are recommended. The box can be mounted on pipelines using ELEKTRA BM16-PROi support brackets, on mounting components of cable trays or on-surface.

MBP 161690 (Ex)



This package contains:

- ELEKTRA MBP 161690 junction box,
- Ex power supply cable gland,
- · Ex plugs for heating cable entries,
- instruction manual.





Technical data:

Operating temperature: max. +85°C

min. -55°C

Protection: IP 66

Entries: 4 x M25
Cable cross-section: 1-6 mm²
Max. operation voltage: 690 V
Max. current rating: 50 A

Construction materials:

enclosure: glass reinforced polyester, halogen-free cover: glass reinforced polyester, halogen-free

cover seal: silicone rubber cover screws: stainless steel V2

Approvals: IBExU 12 ATEX 1181

⑤ II 2G Ex e IIC T* Gb⑥ II 2D Ex tb IIIC T* DbIECEX IBE 14.0019Ex e IIC T* GbEx tb IIIC T* Db

* For T-rating, see heating cable

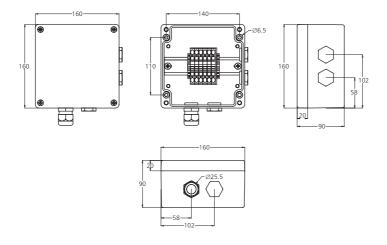
Product marking: CE, Ex

Dimiensions:

 width:
 160 mm

 length:
 160 mm

 depth:
 90 mm



Accessories:

Connection set for cold applied

installation: CACM25-PROi Insulation entry kit: EK-PRO

Reducer Ex e M25/M16

with cable gland Ex e M16 x 1.5 mm²: RM25/16 Support bracket: BM16-PROi



ELEKTRA Junction Boxes

MBP 121290



ELEKTRA MBP 121290 junction box is dedicated to power supply and cable extension of ELEKTRA SelfTec®PROi LT/LT F, SelfTec®PROi MT/MT F and SelfTec®PROi HT F heating cables. The box enables power supply of one heating circuit or extension of a single heating circuit.

The box's enclosure is designed for operation in hazardous areas and fulfils all requirements valid for zones 1 and 2, as well as 21 and 22.

Glass reinforced polyester enclosure is durable and UV-resistant, therefore allows applications in uncovered outdoor systems, is highly mechanically resistant and allows operation in chemically aggressive environment. Spring-cage terminals facilitate installation of single-wire cables, as well as the crimp-terminated cables, with no necessity of application of tools, and later safe and reliable operation. The box has got two sealed M25 entries and can host one heating circuits. To lead in the heating cables, additional connection kits CACM25-PROi with the M25 gland are recommended. The box can be mounted on pipelines using ELEKTRA BM12-PROi support brackets, on mounting components of cable trays or on-surface.



This package contains:

- ELEKTRA MBP 121290 junction box,
- · Ex power supply cable gland,
- · Ex plugs for heating cable entries,
- instruction manual.





Technical data:

Operating temperature: max. +85°C

min. -55°C

Protection: IP 66

Entries: 2 x M25
Cable cross-section: 1-6 mm²
Max. operation voltage: 690 V
Max. current rating: 50 A

Construction materials:

enclosure: glass reinforced polyester, halogen-free cover: glass reinforced polyester, halogen-free

cover seal: silicone rubber cover screws: stainless steel V2

Approvals: IBExU 12 ATEX 1181

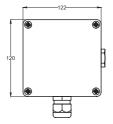
⑤ II 2G Ex e IIC T* Gb⑥ II 2D Ex tb IIIC T* DbIECEX IBE 14.0019Ex e IIC T* GbEx tb IIIC T* Db

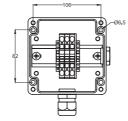
* For T-rating, see heating cable

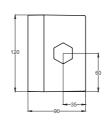
Product marking: CE, Ex

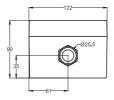
Dimensions:

width:122 mmlength:120 mmdepth:90 mm









Accessories:

Connection set for cold applied

installation: CACM25-PROi Insulation entry kit: EK-PRO

Reducer Ex e M25/M16

with cable gland Ex e M16 x 1.5 mm²: RM25/16 Support bracket: BM12-PROi



ELEKTRA Junction Boxes

ELEKTRA EBP 1313-PROi junction box is dedicated to use in industrial installations in non-hazardous areas. It can be used for power supply, cable extension and branching of ELEKTRA SelfTec®PROi LT/LT F, SelfTec®PROi MT/MT F and SelfTec®PROi HT F heating cables. The box enables power supply of max. 3 heating circuits or branching of a single heating circuit in max. 3 directions.

Glass-fibre reinforced polycarbonate enclosure allows applications in uncovered outdoor systems, is highly mechanically resistant and allows operation in chemically aggressive environment. To lead in the heating cables, additional connection sets CACM25-PROi with the M25 gland should be used.

The box can be mounted on pipelines using ELEKTRA BM 13-PROi support brackets, on mounting components of cable trays or on-surface.

EBP 1313-PROi



This package contains:

- ELEKTRA EBP 1313-PROi junction box,
- · set of screws with plugs,
- · power supply cable gland.





Technical data:

Operating temperature: $max. +80^{\circ}C$

min. -35°C

Protection: IP 66

Entries: 2 x M20, 9 x M20/M25, 1 x M25/32

Cable cross-section: 0.2-10 mm²
Max. operation voltage: 690 V
Max. current rating: 55 A

Construction materials:

enclosure: polycarbonate

cover: polycarbonate, glass-fibre reinforced

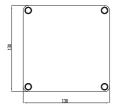
cover seal: polyurethane

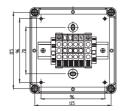
cover screws: polyamide, glass-fibre reinforced

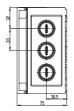
Product marking: CE, c UL us, DNVGL, DLG

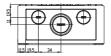
Dimensions:

width: 130 mm length: 130 mm depth: 75 mm









Accessories:

Connection kit for

cold applied installation: CACM25-PROi Support bracket: BM 13-PROi



ELEKTRA Junction Boxes

ELEKTRA EBP 0606-PROi junction box is dedicated to use in industrial installations in non-hazardous areas. It can be used to connect and extend power supply cables of RTD 902150/10, PT100 ESN206081, ETF-622 temperature sensors. Additionally, the box can be used as a housing of sensor for air temperature measurements.

Glass-fibre reinforced polycarbonate enclosure allows applications in uncovered outdoor systems, is highly mechanically resistant and allows operation in chemically aggressive environment. To lead in the connection cables M16 gland should be used.

The box can be mounted on pipelines using ELEKTRA BM 08-PROi support brackets, on mounting components of cable trays or on-surface.

EBP 0606-PROi



This package contains:

- ELEKTRA EBP 0606-PROi junction box,
- · set of screws with plugs,
- 2 power supply cable glands.





www.elektra.eu

Technical data:

Operating temperature: max. +80°C

min. -35°C

Protection: IP 66

Entries: 4 x M16/M20
Cable cross-section: 0.2-4 mm²
Max. operation voltage: 500 V
Max. current rating: 32 A

Construction materials:

enclosure: polycarbonate

cover: polycarbonate, glass-fibre reinforced

cover seal: polyurethane

cover screws: polyamide, glass-fibre reinforced

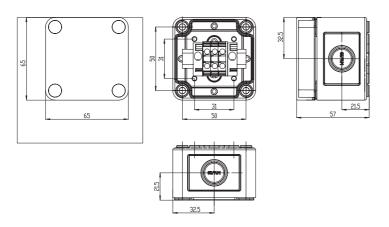
Product marking: CE, c UL us, DNVGL, DLG

Dimensions:

 width:
 65 mm

 length:
 65 mm

 depth:
 57 mm



Accessories:

Support bracket: BM 08-PROi



ELEKTRA Temperature Controllers

exTHERM-AT $\langle Ex \rangle$

exTHERM-AT electromechanical spark-proof controller designed for temperature control and monitoring in hazardous areas. Approved for applications in zones 1 and 2 in gas and vapour atmosphere, also in zones 21 and 22 in the presence of electrically conductive dust. Temperature control range from 0°C to +190°C. Max. connection current: 25A. The controller's principle of operation is based on the phenomenon of the thermal expansion of liquid or gas. The electrical switching element is a pressure-resistant encapsulated thermostat with a snap-action switch. Standard temperature compensation ensures stability of connection at variable ambient temperatures.

Application:

Hazardous area: zones 1 and 2 (for gases and vapours) and zones 21 and 22 (for electrically conductive dust). Non-hazardous areas.



This package contains:

- ELEKTRA exTHERM-AT controller,
- Ex power supply cable gland,
- instruction manual.





www.elektra.eu

> Te

Technical data:

Enclosure:

material: polyester case, glass-fibre reinforced, black

protection: IP 65

operating temperature: $-40^{\circ}\text{C} \div +70^{\circ}\text{C}$ (referring to T4, at 25A max. $+50^{\circ}\text{C}$) cable outlet: Ex M20 x 1.5 cable gland, sealing range 6...13 mm Ex M25 x 1.5 cable gland, sealing range 7...17 mm

Temperature sensor:

type: liquid sensor with a capillary dimensions: capillary 3 m, sensor \emptyset 4 x 87 mm material: stainless steel (CrNi) 1.4571

operating temperature: $-40^{\circ}\text{C} \div +215^{\circ}\text{C}$

min. bending radius: do not bend the sensor, for the capillary: ≥ 5 mm

Switching:

type: single-pole double-throw changeover contact (SPDT)

rated current: 25A at 250 V AC

Settings:

temperature setting: $0^{\circ}\text{C} \div +190^{\circ}\text{C}$ hysteresis: approx. 7%

setting modification: with a screwdriver (after removing the case cover)

Approvals: EPS 11 ATEX 1354

ⓑ II 2D Ex tb IIIC T85°C/T100°C/T130°C Db

IECEx EPS 13.0046 Ex db eb IIC T4/T5/T6 Gb

Ex tb IIIC T85°C/T100°C/T130°C Db

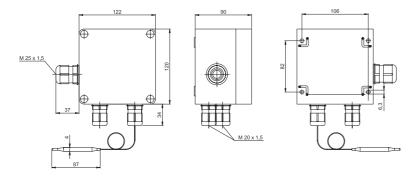
EPS 11 ATEX 1354 (SIL 2) TC RU C-DE.ME92.B.00443

Product marking: CE, Ex

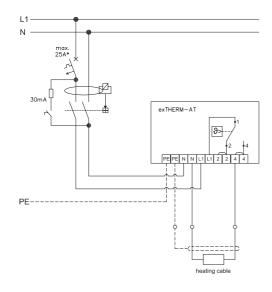


Dimensions:

width:122 mmlength:120 mmdepth:90 mm



Wiring diagram:



* The safety amperage value and characteristics of the circuit breaker depends on the power and type of the heating cable.

Accessories:

Support bracket:

BM 13-PROi

exTHERM-DR $\langle Ex \rangle$



This package contains:

- ELEKTRA exTHERM-DR controller,
- · instruction manual.

ELEKTRA Temperature Controllers

The ELEKTRA exTHERM-DR electronic temperature controller is dedicated to the control of heating systems in hazardous areas, it's especially recommended for frost protection applications and maintenance of the required pipeline temperature. The intrinsically safe Ex[ia] measurement input allows the direct connection of the temperature sensor.

The controller has a control relay output K1 and an alarm relay output K2. The K2 relay output signals when limit values have been exceeded or not achieved. Alternatively, a binary signal of 0/10 V is also available for the controller analog output or the limit value signalling. The current measured value or the setpoint value are available via the standard analog output.

The backlit LCD display shows information about measured value, setpoint value, etc., in an easy-to-read manner. A clearly-structured operation setup enables quick configuration and thereby reduces the startup times. Alternatively, the configuration and parameterization can also take place via a setup program or the standard USB interface.

Application:

Hazardous areas requiring tight temperature control with line sensing control.







Technical data:

Temperature measurement range: $-200^{\circ}\text{C} \div +850^{\circ}\text{C}$ Operating temperature: $0^{\circ}\text{C} \div +55^{\circ}\text{C}$ Storage temperature: $-30^{\circ}\text{C} \div +70^{\circ}\text{C}$ Climate conditions: 85% rel. humidity

without condensation

Power supply voltage: 230 V AC + 10% - 15%, 48-63 Hz

Power consumption: 12 VA

Relay outputs:

control relay K1: single pole double throw relay, rated current 3A alarm relay K2: single pole double throw relay, rated current 3A contact durability K1, K2: min. 30K operations at the resistive load 3A/250 V AC

analog output: 4 to 20 mA, 0 to 20 mA logic output: binary signal 0/10 V

Enclosure:

material: polycarbonate

protection: IP 20 installation: DIN bus operating position: vertical

electrical connection on the front via screw terminals for cables of

max. cross-section 2.5 mm²

Temperature sensor:

type: PT100 sensor, 2- or 3-wire connection circuit (separately available)

hysteresis: 0.5% / 0.1% (2/3-wire connection)

sampling rate: 210 ms

connection type: maximum lead wire resistance in

2-wire circuit: 15 Ω ; 3-wire circuit: 30 Ω

diagnosed alarms:

overrange and underrange: sensor/cable break:

detected and visible in the display detected and visible in the display, relay output controller K1 is inactive

sensor short circuit: detected and visible in the display,

relay output controller K1 is inactive

Approvals: TÜV 15 ATEX 163874 X

⊕ II (1) G [Ex ia Ga] IIC
 ⊕ II (1) D [Ex ia Da] IIIC
 IECEX TUN 16.0022X
 IEX ia Ga] IIC

[Ex ia Da] IIIC

Product marking: CE, Ex

Display and control elements:

Legend: Comment:

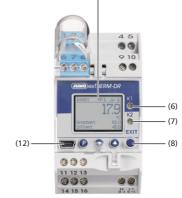
3 - LCD display: black/white with backlight, 96 x 64 pixels

6 - LED K1 (yellow): lights up when the relay output controller K1 is active.
7 - LED K2 (yellow): lights up when the relay output limit value K2 is active.
8 - keys: (can only be operated when the transparent hood

is folded upward)

increase value
decrease value
programming





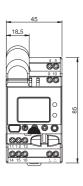
(3)

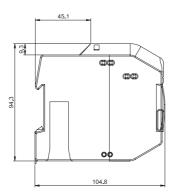
Dimensions:

 width:
 45.0 mm

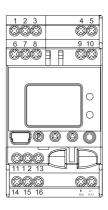
 length:
 85.0 mm

 depth:
 104.8 mm





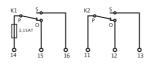
Wiring diagram:







Analog input PT100 sensor 2-wire circuit PT100 sensor 3-wire circuit



Relay outputs K1- control relay - potential free

14-15 NC 14-16 NO

K2 - limit volume relay - potential free

11-12 NC

11-13 NO



Power supply L1 - line wire N - neutral wire

Accessories:

Temperature sensor dedicated for hazardous areas:

RTD Ex Ch.P 903525/50



ELEKTRA Temperature Controllers

iTRON DR 100 electronic temperature controller designed for the control of heating systems, especially recommended for frost protection applications and maintenance of the required pipeline temperature. The temperature values are measured with a surface sensor and displayed on the LCD screen which enables easy readout of the measured and set temperature values, as well as configuration of the device. Entering required operation parameters proceeds in a fast and easy way: the selected values are automatically entered as valid after 2 sec., no additional confirmation is required. The controller is mounted on DIN rails and connected up via screw terminals with a max. conductor cross-section of 2.5 mm². The device can be configured from the level of the front-panel buttons, or optionally from the level of the software.

Application:

For DIN-bus installation in electric switchboards in non-hazardous areas.

iTRON DR100



This package contains:

- ELEKTRA iTRON DR100 controller,
- instruction manual.





www.elektra.eu

Technical data:

Temperature measurement range: $-200^{\circ}\text{C} \div +800^{\circ}\text{C}$ Operating temperature: $0^{\circ}\text{C} \div +55^{\circ}\text{C}$ Storage temperature: $-30^{\circ}\text{C} \div +70^{\circ}\text{C}$

Climate conditions: 75% rel. humidity without condensation

Work indication: LED

Electric data:

power supply voltage: 230 V AC + 10% - 15%, 48-63 Hz

power consumption: 5 VA

relay: two single-pole single-throw (SPST) NO contacts, rated current 3A

contact durability: min. 100K operations at the resistive load 3A/250 V AC

logic output: 0/12 V, 0/20 mA (short circuit protected)

Enclosure:

material: polyamide protection: IP 20 installation: DIN bus operating position: vertical

terminals: screw terminals for cables of max. cross-section 2.5 mm²

Temperature sensor:

type: PT100 sensor, 2- or 3-wire connection sensor (separately available)

circuit break or short circuit detected automatically,

setting the output for the user's selected status: ON or OFF

hysteresis: 0.1%

Product marking: CE, UL, EAC

Approvals: EN 61326-1

UL 61010-1

CSA C22.2 No. 61010-1

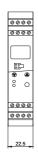


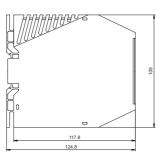
Dimensions:

 width:
 22.5 mm

 length:
 109.0 mm

 depth:
 124.8 mm





Wiring diagram:







Analog input PT100 sensor 2-wire circuit PT100 sensor 3-wire circuit



Relay outputs K1- potencial free NO



Power supply L1 - line wire N - neutral wire

Accessories:

Temperature sensor dedicated for non-hazardous areas:

RTD 902150/10

TDR 4022 PT100-PROi



This package contains:

- TDR 4022 PT100-PROi controller,
- temperature sensor PT100 ESN206081 with 3 m tail, and special end protective spring,
- installation manual.

ELEKTRA Temperature Controllers

The ELEKTRA TDR 4022 PT100-PROi electronic temperature controller is designed for pipe heating systems, including antifrost protection, and maintaining the desired pipeline temperature. The temperature controller has got two freely configurable relays, the digital input, the port for direct RS-485 bus connection, as well as the analog output. The TTL port gives the optional possibility to connect the configuration Unicard with the USB port. The controller cooperates with BMS systems via ModBus or Televis protocols, or in an analog mode via a relay operating in the alarm mode. Produced in accordance with the EN 60730-1 and EN 60730-2-9 standards.



Technical data:

TDR 4022 PT100-PROi

Power supply: $100-240 \text{ V} \sim 50/60 \text{ Hz}$ Max. load: $2 \times 8A, 230 \text{ V} \sim 50/60 \text{ Hz}$ (potential free relays)

Analog output: V: 0...1 V, 0...5 V, 0...10 V,

l: 0...20 mA, 4...20 mA Installation: DIN-rail

Temperature range: $-200^{\circ}\text{C} \div +800^{\circ}\text{C}$ Hysteresis: $0.1 \dots 30 \text{ K}$

Controller protection: IP 20 Work signalization: LED

Operating temperature: $-5^{\circ}\text{C} \div +55^{\circ}\text{C}$ Dimensions (H x W x D): $85 \times 70 \times 61 \text{ mm}$

Modules: 4
Product marking: CE

PT100 ESN206081

Mounting: on pipe
Sensor protection: IP 67
Length: 3 m

Operating temperature: $-30^{\circ}\text{C} \div +200^{\circ}\text{C}$





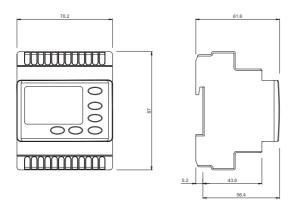


Dimensions:

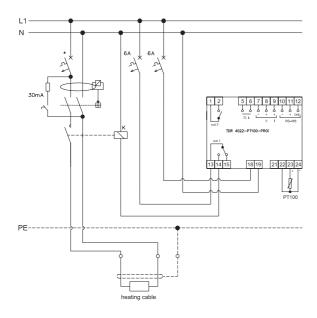
 height:
 87.0 mm

 width:
 70.2 mm

 depth:
 61.6 mm



Wiring diagram:



* The safety amperage value and characteristics of the circuit breaker depends on the power and type of the heating cable.

ETI 1221-PROi



This package contains:

- ETI 1221-PROi controller,
- ETF 622 temperature sensor with 2,5 m tail, and special installation opening,
- instruction manual.

ELEKTRA Temperature Controllers

The electronic temperature controller ELEKTRA ETI 1221-PROi is designed for heating systems, especially tanks, vessels and pipelines. Produced in accordance with EN 60730-1 and EN 60730-2-9.



Technical data:

ETI-1221-PROi

Power supply: 230 V \sim 50/60 Hz

Max. load: 10A Installation: DIN-rail

Temperature range: $+10^{\circ}\text{C} \div +110^{\circ}\text{C}$ Difference/Hysteresis: $0.3 \div 10\text{K}$ Controller protection: IP 20
Signalization: LED

Working temperature: $-20^{\circ}\text{C} \div +50^{\circ}\text{C}$ Dimensions (H x W x D): $86 \times 36 \times 58 \text{ mm}$

Modules: 3
Certificates: EAC
Product mark: CE

ETF-622

Installation: on pipe
Protection: IP 44
Length: 2.5 m

Working temperature: $-40^{\circ}\text{C} \div +120^{\circ}\text{C}$

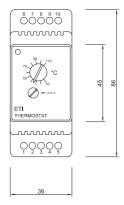






Dimensions:

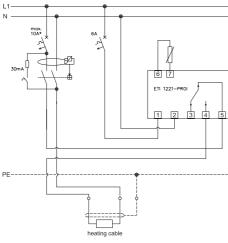
height: 86 mm width: 36 mm depth: 58 mm





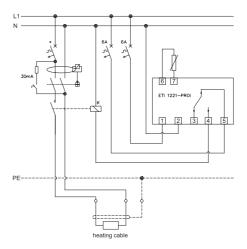
Wiring diagram:

direct connection



* The characteristics of the circuit breaker depends on the power and type of the heating cable.

connection with contactor



* The safety amperage value and characteristics of the circuit breaker depends on the power and type of the heating cable.

RTD Ex Ch.P 903525/50





This package contains:

• RTD Ex Ch.P 903525/50 sensor.

ELEKTRA Temperature Sensors

The push-in RTD Ex Ch.P 903525/50 sensor connected to the junction box, due to its dedicated design optimally matches the demanding requirements of the industrial operating environment. The sensor is certified for applications in hazardous areas. It is dedicated to perform temperature measurements of pipelines or tanks. A 3-wire PT100 temperature sensor is used as a measuring element. The RTD Ex Ch.P 903525/50 sensor can be used for applications in the temperature range from -70°C to +500°C.

Application:

The sensor is dedicated for exTHEMR-DR.

Hazardous areas: zone 1 (for gases and vapours) and zone 20 (for electrically conductive dust).

Non-hazardous areas.







Technical data:

Approvals: CE 0344 © II 2/2 G et 1/1 D

Ex e IIC T510°C-T6/T6 Gb/Gb

Ex ta IIIC T510°C-T85°C/T85°C Da/Da

LCIE 03 ATEX 6088 X IECEx LCIE 13.0060 X

Sensor:

type: PT100 (3-wire) tolerance class: class B

material: connection cable and tip:

stainless steel (CrNi) 1.4404

operating temperature: $-70^{\circ}\text{C} \div +500^{\circ}\text{C}$

length: 2.0 m diameter: 3.0 mm

min. bending radius: connection cable: 20 mm do not bend the sensor connection: tinned cable endings

Enclosure:

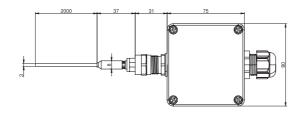
material: polyester case, glass-fibre reinforced

protection: IP66 gland: M16

operating temperature: $-50^{\circ}\text{C} \div +60^{\circ}\text{C}$ cover screws: stainless steel cover seal: silicone rubber

Dimensions:

height: 75 mm width: 80 mm depth: 56 mm





Accessories:

Support bracket: BM 08-PROi

RTD 902150/10



This package contains:

• RTD sensor 902150/10.

ELEKTRA Temperature Sensors

The push-in RTD 902150/10 sensor can be used in electronic control systems which require accurate temperature measurements.

A 2-wire PT100 temperature sensor is used as a measuring element. The RTD 902150/10 sensor can be used for applications in the temperature range from -50° C to $+180^{\circ}$ C.

Application:

The sensor is dedicated for iTRON DR100.

Non-hazardous areas.

Technical data:

Type: PT100 (2-wire)
Tolerance class: class B

Material:

sensor: stainless steel (CrNi) 1.4571

connection cable: silicone

Working temperature $-50^{\circ}\text{C} \div +180^{\circ}\text{C}$

Length: 2.5 m

Diameter:

sensor: 6.0 mm

connection cable: 4.5 mm
Min. bending radius: connection cable: 5 mm

do not bend the sensor

Connection: ferrules







BM16-PROi support bracket for the ELEKTRA MBP 161690 junction box. Support brackets can be used to assist installation of ELEKTRA MBP junction boxes on pipes. Additional pipe stainless steel metal straps are required for installation, to be ordered separately. The brackets include a set of screws, nuts and plain washers required for the installation of one junction box.

BM16-PROi



This package contains:

- stainless steel support bracket,
- · plain washers,
- screws,
- nuts.

Technical data:

Dimensions:

plate: 160 x 160 mm distance pipe-plate: 150 mm

Required number of straps

for installation of one bracket: 2 pcs Max. operating temperature: $+230^{\circ}\text{C}$

Material: stainless steel (CrNi) 1.4301





BM 13-PROi



This package contains:

- · stainless steel support bracket,
- · plain washers,
- screws,
- nuts.

ELEKTRA Installation Accessories

BM13-PROi support bracket for the ELEKTRA EBP 1313-PROi, MBP 121290 junction boxes and exTHERM-AT temperature controller. Support brackets can be used to assist installation of junction boxes or temperature controller on pipes. Additional pipe stainless steel metal straps are required for installation, to be ordered separately. The brackets include a set of screws, nuts and plain washers required for the installation of one junction box.

Technical data:

Dimensions:

plate: distance pipe-plate:

Required number of straps

for installation of one bracket: 2 pcs Max. operating temperature:

Material:

+230°C

150 mm

130 x 130 mm

stainless steel (CrNi) 1.4301

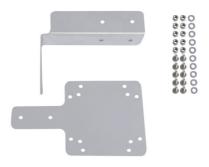






BM 08-PROi support bracket for the ELEKTRA EBP 0606-PROi junction box and RTD Ex Ch.P 903525/50 temperature sensor. Support brackets can be used to assist installation of junction box or temperature sensor on pipes. Additional pipe stainless steel metal straps are required for installation, to be ordered separately. The brackets include a set of screws, nuts and plain washers required for the installation of one junction box or temperature sensor.

BM 08-PROi



This package contains:

- stainless steel support bracket,
- · plain washers,
- screws,
- nuts.

Technical data:

Dimensions:

plate: 80 x 80 mm distance pipe-plate: 105 mm

Required number of straps

for installation of one bracket: 2 pcs Max. operating temperature: $+230^{\circ}\text{C}$

Material: stainless steel (CrNi) 1.4301





BMC-PROi



ELEKTRA Installation Accessories

Stainless steel metal strap assisting the installation of support brackets.

This package contains:

• BMC-PROi strap.

>

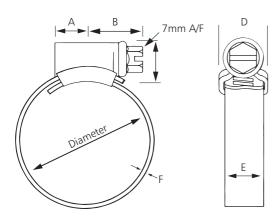
Technical data:

Material:		ainless steel	
Range:			
size	e 30	22-30 mm	(⁷ /8 - 1 ¹ / ₂ inch)
	50	35-50 mm	(1 ³ /8 - 2 inch)
	70	50-70 mm	(2 - 2 ³ / ₄ inch)
	90	70-90 mm	(2 ³ / ₄ - 3 ¹ / ₂ inch)
	120	90-120 mm	(3 ¹ / ₂ - 4 ³ / ₄ inch)
	250 *	150-250 mm	(6 - 10 inch)
	500 *	150-500 mm	(6 - 20 inch)

* Available on request

Size:	Α	В	C	D	Е	F
22-45	8	15	12	15	13	0.9
50+	13	20	13	16	13	0.9

Dimensions in mm:





Under insulation entry kit with M25 gland for self-regulating heating cables. Dedicated to the protection of cables during installation on pipes, when passing through the metal sheet and thermal insulation claddings.

The ELEKTRA EK-PRO optimally matches the installation requirements of the self-regulating heating cables. The kit can be used in both hazardous and non-hazardous areas. The gland and the gasket included in the kit provide efficient protection against moisture penetration as well as ultimate mechanical protection, without compromising the continuity of thermal insulation. The kit contains a stainless steel plate to be screwed to the cladding.

EK-PRO



This package contains:

- · stainless steel plate,
- gland,
- gasket,
- · locknut.

Technical data:

Dimensions: plate 60 x 60 mm Gland: M25 $+110^{\circ}C$ Max. operating temperature: Material: stainless steel





RM25/16 ⟨ξχ⟩



This package contains:

- Ex M25/16 reducer,
- Ex e M16 cable gland.

ELEKTRA Installation Accessories

RM25/16 reducer with a M16 cable gland have been desiged for entering power supply cables into MBP 121290 and MBP 161690 junction boxes. The reducer is dedicated to situations when it is necessary to enter the power supply cable of the diameter smaller than required for the M25 gland typical for MBP junction boxes. Application of the RM25/16 reducer enables to enter the power supply cables of the diameters within the range of 4.5–10mm.

The dedicated design of the reducer and gland enable both to fulfill all requirements valid for hazardous zones 1 and 2, as well as 21 and 22.

Technical data:

Cable gland:M16Reducer:25/16 mmReducer tool size:36mmReducer thread length:15mmProduct marking:CE, Ex







Installation tapes

AL-TAPE-PROi

Aluminium tape for assisting the length-wise installation of the heating cables on pipes, and ensuring even heat distribution.

Max. operating temperature: $+145^{\circ}$ C Length: 50 m



SG-TAPE-PROi

Fiberglass reinforced tape with a silicone self-adhesive system for assisting the fixing of the heating cables on pipes.

Max. operating temperature: $+180^{\circ}$ C Length: 20 m



RG-TAPE-PROi

Fiberglass reinforced tape with a rubber self-adhesive system for assisting the fixing of the heating cables on pipes.

Max. operating temperature: $+130^{\circ}$ C Length: 20 m



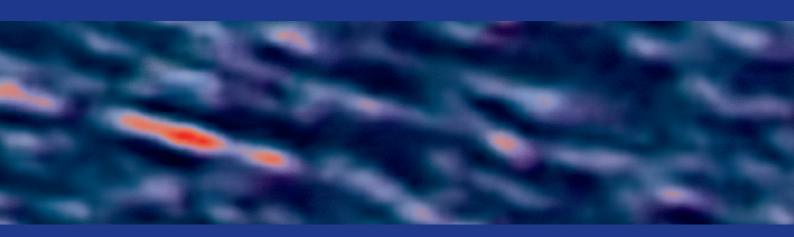
CL-PRO caution label











The technical specifications and data given in the catalogue are subjects to change without notice. Claims for damages resulting from modifications of catalogue information, incorrect data or printing errors will not be acknowledged.

Please note that all domestically applicable standards and safety regulations should be consulted before actual application of catalogue products or solutions, and relevant manuals and instructions should be applied before installation and operation.

Additionally, ELEKTRA reserves the right to implement alterations into processes or materials applied, which will not disagree with any relevant standards or specifications, without prior notification.

ELEKTRA

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