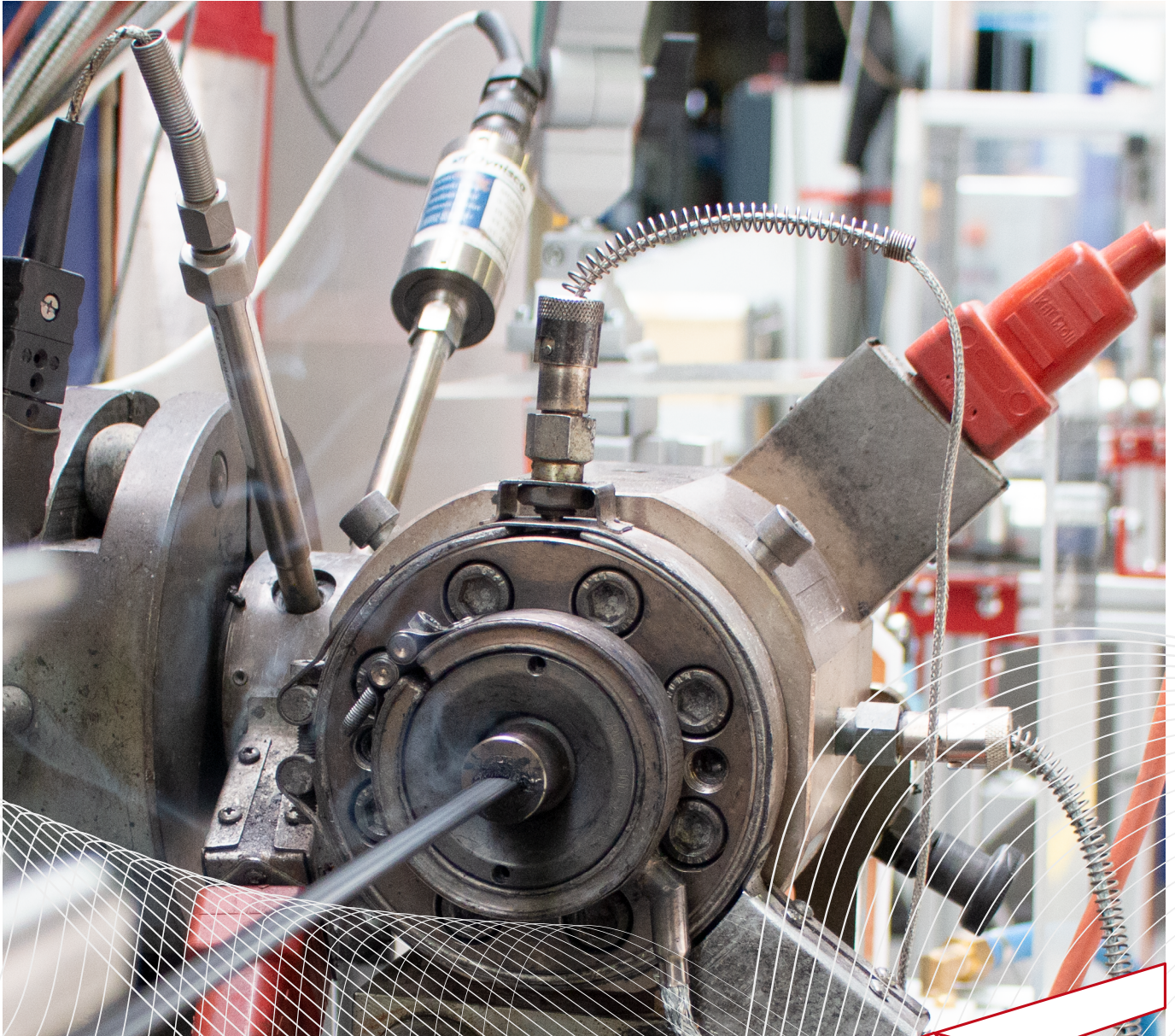


SYSTEM- OVERVIEW



ELP

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Reservation

Subject to technical changes. Changes, errors and misprints do not constitute grounds for claims for damages. For safety components and systems, the assembly instructions as well as the relevant and currently valid standards and regulations must be observed.

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	864301ELP0001 system overview ELP EN			
	Autor:	Detlef Matthes	Datum:	02.08.2023
	Revision: 1	Jonas Schmidt	Datum:	22.04.2026

INTRODUCTION

This system overview is intended to provide a compact overview of the ELP systems and their components - please refer to the respective data sheets for detailed information on the products. The system overview focuses on the products that are absolutely necessary for a functioning heating circuit. Accessories are not dealt with separately - information on these can be found in the accessories data sheets.

ELP (eltherm-Parallel) heating cables offer enormous flexibility in use, as they can be cut from the roll to the desired length as required, while still ensuring constant power output. There is no need for a connection cable and power can be supplied from one side. The quick and easy installation saves a lot of time and thus also considerable costs. As power outputs of up to 60 W/m are possible when laid longitudinally on pipelines, ELP parallel heating cables are particularly suitable for pipelines with high power requirements, e.g. in industrial process technology. The temperature-resistant outer jacket and the high chemical resistance ensure a long service life.

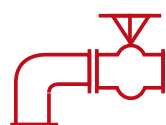
APPLICATIONS



Temperature
maintenance



Frost
prevention



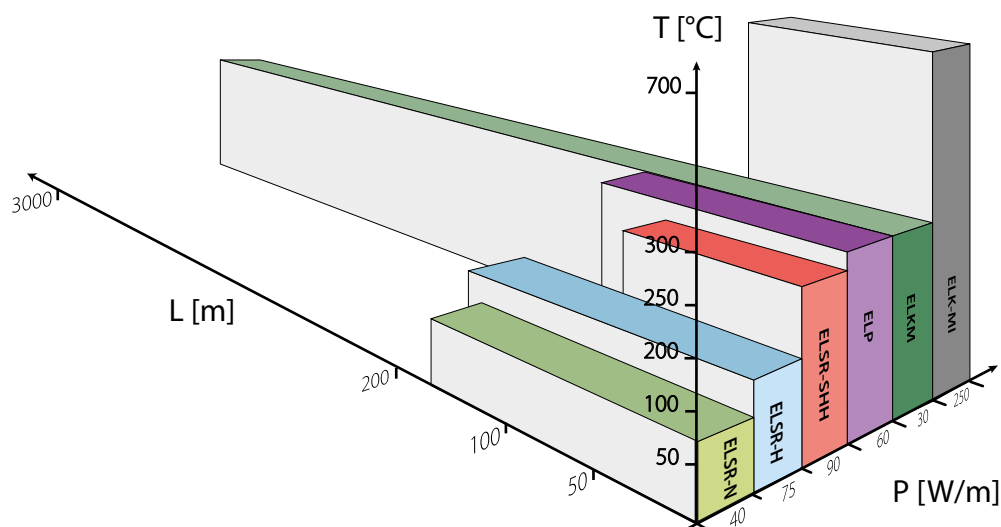
Valves, pumps



Pipelines

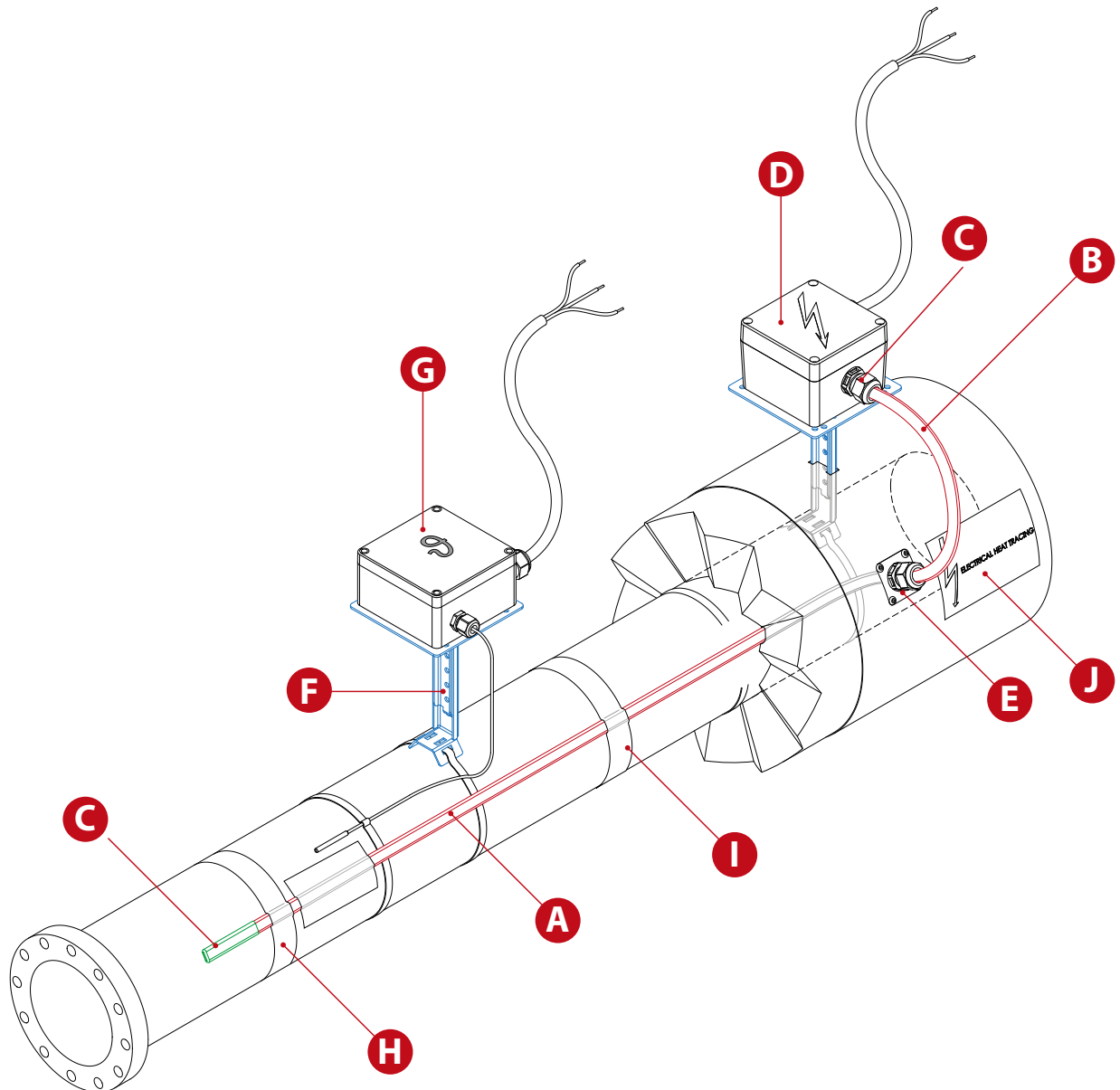


Silos, vessels, tanks



SYSTEM DESIGN

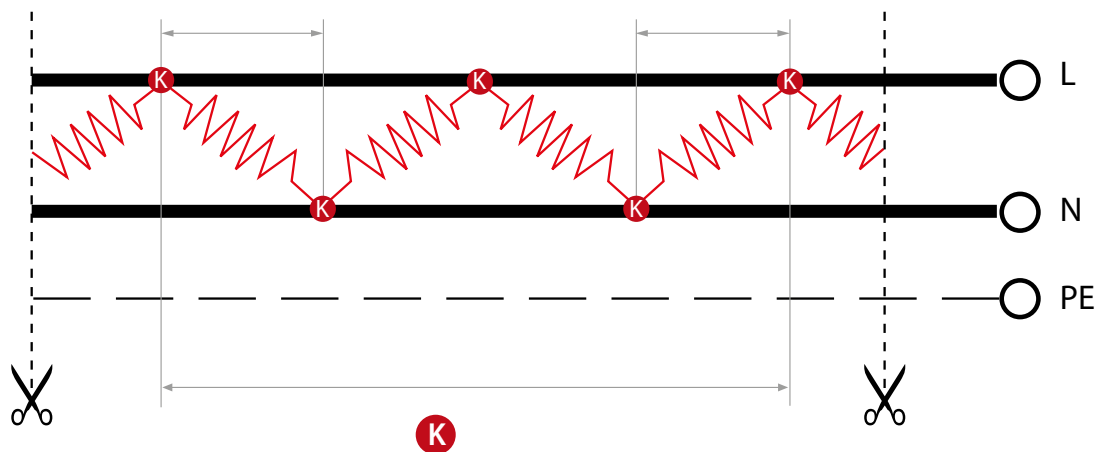
A	Trace heater ELP	Page 5	F	Mounting bracket	Page 12
B	Connection cable	Page 6	G	Temperature controller	see data sheet
C	Connection sets	Page 6 to 8	H	Adhesive tapes	see data sheet
D	Junction box	Page 9 to 11	I	Tension tape	see data sheet
E	Insulation Bushing	Page 12	J	Warning sign	see data sheet



Schematic diagram

(A) TRACE HEATER ELP

Parameter	ELP-Si		ELP-Si-F				ELP-FEP		ELP-PFA	
Type	BO		B		BOT		BO		BOT	
Outer insulation Silicone	✓		✓				✓			
Outer insulation FEP					✓		✓			
Outer insulation PFA									✓	
Nominal temperature	200 °C		200 °C		200 °C		200 °C		260 °C	
Nominal voltage	230 VAC		230 & 400 VAC		230 & 400 VAC		230 VAC		230 & 277 VAC	
min. bending radius	30 mm		25 mm		25 mm		25 mm		25 mm	
min. installation temp.	- 60 °C		- 70 °C		- 70 °C		- 70 °C		- 60 °C	
min. switch on temp.	- 60 °C		- 70 °C		- 70 °C		- 70 °C		- 60 °C	
Cross section bus wire	2 x 1,5 mm ²		2 x 2,0 mm ²		2 x 2,0 mm ²		2 x 1,5 mm ²		2 x 1,5 mm ²	
Nominal power	10 W/m		20 W/m		20 W/m		15 W/m		15 W/m	
	20 W/m		30 W/m		30 W/m		30 W/m		30 W/m	
	30 W/m		40 W/m		40 W/m		45 W/m		45 W/m	
	40 W/m		40 W/m (400VAC)		40 W/m (400VAC)		60 W/m		60 W/m	
max. heating circuit length*	@ +50 °C	@ +150 °C	@ +10 °C	@ +100 °C	@ +10 °C	@ +100 °C	@ +50 °C	@ +150 °C	@ -60 °C	
	198 m	147 m	147 m	141 m	147 m	141 m	161 m	119 m	184 m	
	139 m	102 m	98 m	98 m	98 m	98 m	98 m	82 m	100 m	
	98 m	82 m	73 m	73 m	73 m	73 m	65 m	62 m	66 m	
	73 m	70 m	128 m	128 m	128 m	128 m	50 m	50 m	50 m	
Ex-approved									Ex	



i NOTE

- * Heating circuit lengths on the following conditions
- 16 A circuit breaker, 80 % utilisation, start up temp. +10°C
 - Max. 10% voltage drop
 - Power connection to one heater end
 - Cables shall neither intersect nor contact.
 - Provide protection by means of circuit breaker RCD 30 mA.
 - Please observe the standards: IEC 62395-2, EN 60519-10, EN 62395-2.

(B) - CONNECTION CABLES

There are various options for connecting the ELP to a junction box. Many of the eltherm junction boxes allow a direct connection of the trace heater with corresponding connection sets (marked as direct connection).

Another possibility to connect the ELP to a junction box is to use suitable three-core stranded connection cable (e.g. 3 x 1.5mm² H05VV, or Ölflex) in combination with an appropriate connection technique.

NOTEs for the correct selection can be found in the operating instructions for the connection technology.

(C) - CONNECTION & END TERMINATION SETS

This section provides information on the permissible combinations of the connection sets with the respective ELP types. The ELP types suitable for use with the respective connection sets are marked in colour. The possibility of use in potentially explosive atmospheres is indicated by the Ex symbol. Please be sure to observe the applicable operating instructions and data sheets for the connection sets.

Connection kit for Ex-areas

ELVB-ELPE_x-25

ELP-Si

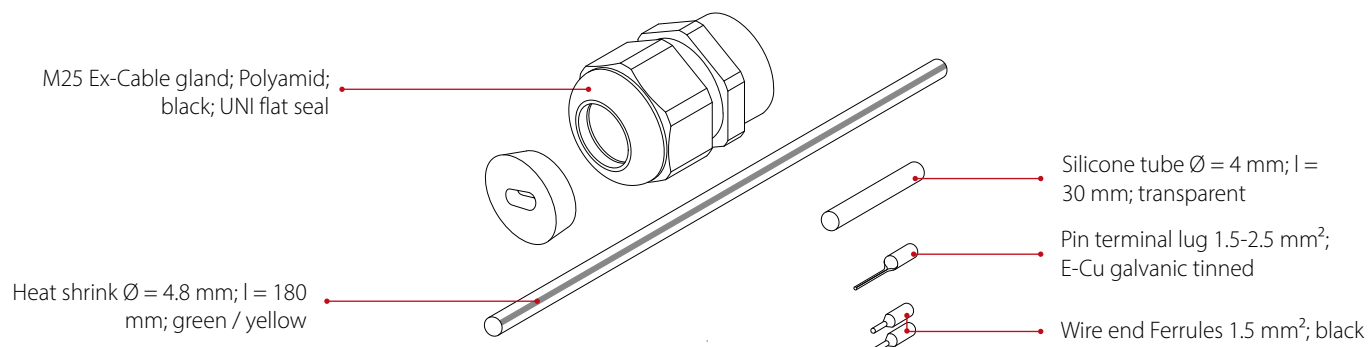
ELP-Si-F

ELP-FEP

ELP-PFA

Article N°: 0X81PA2 - connection kit for ELP trace heater

Connection kit incl. PA cable gland M25 for direct connection to junction boxes.



ELVB-ELPE_x-20

ELP-Si

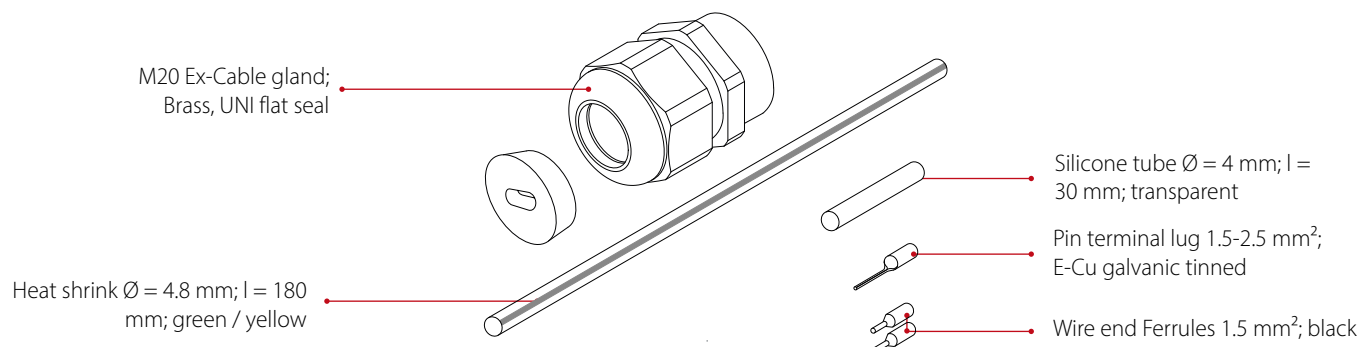
ELP-Si-F

ELP-FEP

ELP-PFA

Article N°: 0X81PA2 - connection kit for ELP trace heater

Connection kits incl. Brass cable gland M20 for direct connection to junction boxes.



End termination kit for Ex-areas

EL-ECP-Ex

ELP-Si

ELP-Si-F

ELP-FEP

ELP-PFA

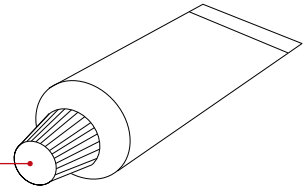
Article N°: 0X81EP1 - End termination kit for ELP trace heater



Termination cap,
Silicone, red; ELP/PFA up to 260 °C



Silicone glue; „ECH“ red, 5 g



Connection sets for non Ex-areas

ELVB-SRV-ELP

ELP-Si

ELP-Si-F

ELP-FEP

ELP-PFA

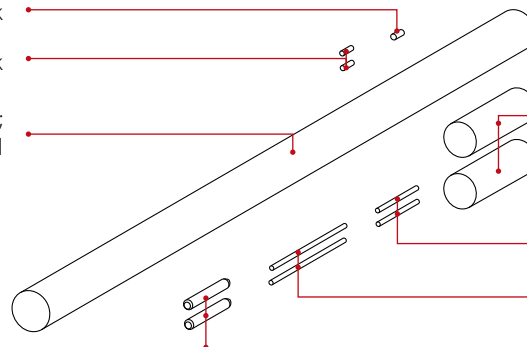
Article N°: 0911118 - connection kit for ELP trace heater

Heat shrink connection and repair kit (Connection cable Silicone e.g. ÖLFLEX® HEAT 180 SiHF or similar)

Nickel-sleeve 4.8 x 0.4 x 9.0 mm; blank

Nickel-sleeve 4.0 x 0.4 x 9.0 mm; blank

Heat shrink PTFE-FEP Ø = 11.4 mm;
l = 200 mm; natural



Heat shrink PTFE-FEP Ø = 8.9 mm; l = 30 mm;
natural

Heat shrink PTFE Ø = 3.2 mm; l = 40 mm; natural

Heat shrink PTFE Ø = 3.2 mm; l = 70 mm; natural

Heat shrink PTFE Ø = 3.2 mm; l = 40 mm; natural

ELVB-ELPA1-25

ELP-Si

ELP-Si-F

ELP-FEP

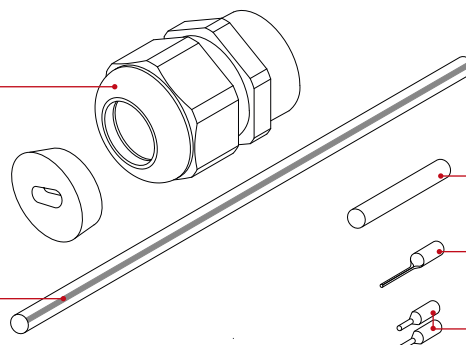
ELP-PFA

Article N°: 091A050 - connection kit for ELP trace heater

Connection kit incl. PA cable gland M25 for direct connection to junction boxes.

Cable gland M25 x 1.5;
Polyamid. grey. UNI flat seal

Heat shrink Ø = 4.8 mm;
180 mm long; gn/ge



Silicone tube Ø = 4 mm;
l = 30 mm; black

Pin terminal lug 1.5-2.5 mm²;
E-Cu galvanic tinned

Wire end Ferrules 1.5 mm²; black

ELVB-ELPA2-25

ELP-Si

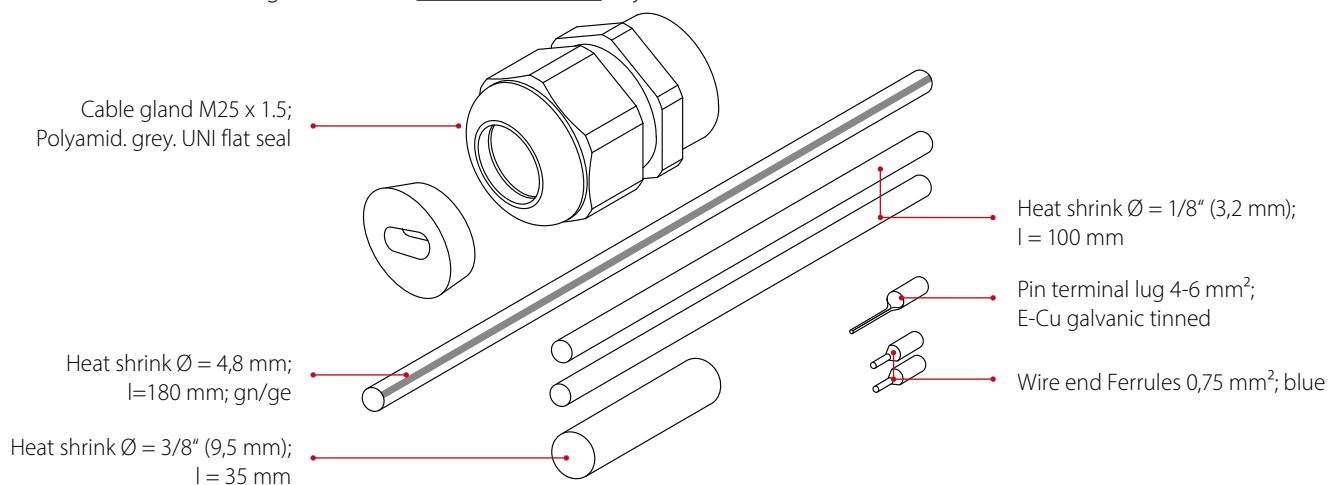
ELP-Si-F

ELP-FEP

ELP-PFA

Article N°: 091A052 - connection kit for ELP trace heater

Connection kit incl. PA cable gland M25 for direct connection to junction boxes.



End termination kits for non Ex-areas

EL-ECP+

ELP-Si

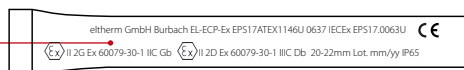
ELP-Si-F

ELP-FEP

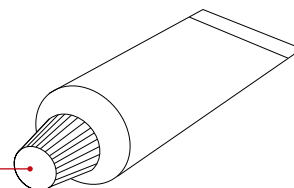
ELP-PFA

Article N°: 09112PP - End termination kit for ELP trace heater

Termination cap, Silicone, red; for ELP/PFA



Silicone glue; „HT“ Red, 5 g.



EL-ECP1

ELP-Si

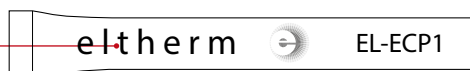
ELP-Si-F

ELP-FEP

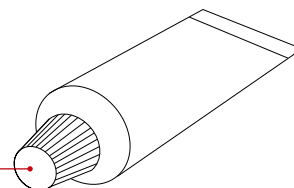
ELP-PFA

Article N°: 09112P1 - End termination kit for ELP trace heater

Termination cap, Silicone, transparent; for ELP/PFA, /FEP



Silicone glue; „EC“ Blue, 5 g.



EL-ECP2

ELP-Si

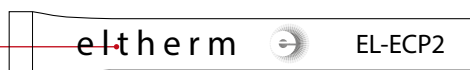
ELP-Si-F

ELP-FEP

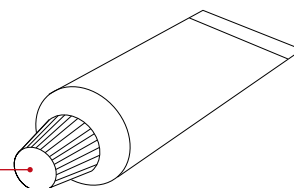
ELP-PFA

Article N°: 09112P3 - End termination kit for ELP trace heater

Termination cap, Silicone, transparent; for ELP/Si, Si-F



Silicone glue; „EC“ Blue, 5 g.



(D) - JUNCTION BOXES

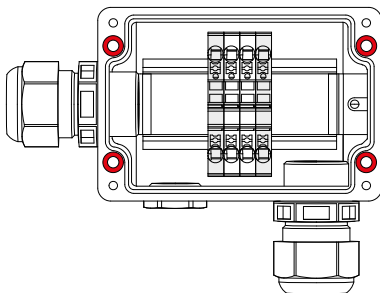
This section is intended to provide an overview of the eltherm junction boxes for use with the ELP Heating cable. For detailed information about the junction boxes, please refer to the respective data sheets.

Junction boxes for Ex-areas

ELAK-Ex-2.00

Ex- Junction box for 1x ELP & 1x connection cable

Dimensions: 110 x 75 x 57 mm (WxHxD), Article N°: 0X85200



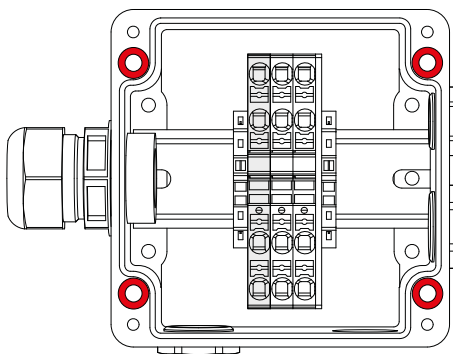
- 1x M20 Blind plug
 - 1x Cable gland M25 1-times
 - 1x Cable gland M25 2-times
 - 1x Reducer M25 to M20*
 - 2x Feed-through terminal
 - 2x Protective conductor terminal block
- *Enclosed, loose

■ Terminal for earthing or electrical protection

ELAK-Ex-4.01

Ex- Junction box for 1-3 ELP & 1x connection cable

Dimensions: 122 x 120 x 90 mm (WxHxD), Article N°: 0X85401



- 2x M25 Blind plug
 - 1x M20 Blind plug
 - 1x Cable gland M25 1-times*
 - 1x Cable gland M32 1-times
 - 1x Reducer M32 to M25*
 - 2x Feed-through terminal PT6-Quattro
 - 1x Protective conductor terminal block PT6-Quattro-PE
- *Enclosed, loose

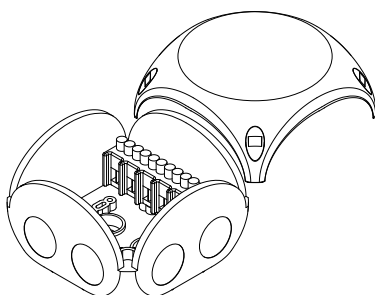
■ Terminal for earthing or electrical protection

Junction boxes for non Ex-areas

ELAK-2

Junction box for 1-2 ELP & 1x connection cable

Dimensions: 104 x 104 x 70 mm (WxHxD); Article N°: 0920030

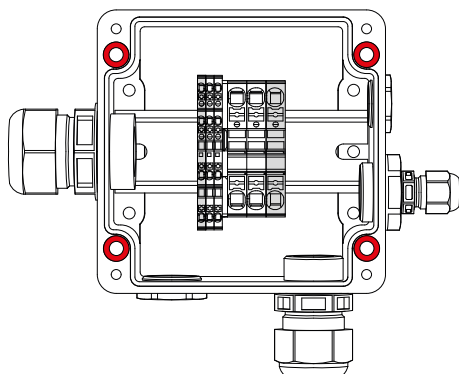


- 7x Pre-stamped M20/M25
 - 2x Cable gland M25 single, Ø 9-17 mm*
 - 2x Lock nut M25*
 - 2x Sealing ring M25*
 - 1x 5-pole terminal, 1,5-4 mm²
- *Enclosed, loose

ELAK- 4.00

Junction box for 1x ELP & 1x Sensor

Dimensions: 122 x 120 x 90 mm (WxHxD), Article N°: 092B400



- 1x M25 Blind plug
- 1x M20 Blind plug
- 1x Reducer M25 to M12
- 1x Cable gland M12 x 1,5
- 1x Cable gland M25 x 1,5
- 1x Cable gland M32 x 1,5
- 2x Feed-through terminal PTTB 1,5-Quattro
- 1x Protective conductor terminal PTTB 1,5-Quattro-PE
- 2x Feed-through terminal PT6
- 1x Protective conductor terminal PT6-PE
- 1x Reducer M32 auf M20*
- 1x Cable gland M20 x 1,5*

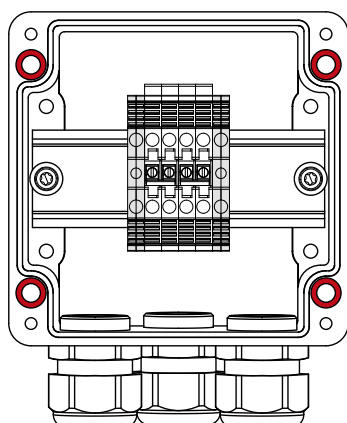
*Enclosed, loose

■ Terminal for earthing or electrical protection

ELAK-5

Junction box for 1-3 ELP & 1x connection cable

Dimensions: 122 x 120 x 90 mm (WxHxD), Article N°: 0920013



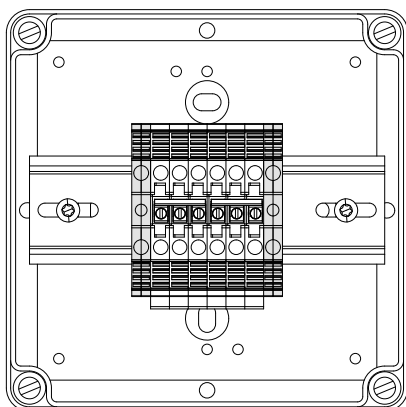
- 3x Cable gland M25, 9-17mm, 1-times
- 2x Protective conductor terminal block WPE4 4,0 mm²
- 4x Feed-through terminal WDU4 4,0 mm²
- 2x cross connector WQV 4/2 4,0 mm²

■ Terminal for earthing or electrical protection

ELAK-5.1

Junction box for 1-3 ELP & 1x connection cable

Dimensions: 130 x 130 x 75 mm (WxHxD), Article N°: 0920002



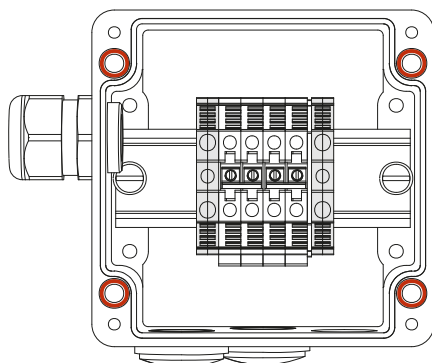
- 2x Protective conductor terminal 4 mm²
- 6x Feed-through terminal 4 mm²
- 2x 3-piece cross connector 1-3, 4-6

■ Terminal for earthing or electrical protection

ELAK-5.7

Junction box for 1-3 ELP & 1x connection cable

Dimensions: 122 x 120 x 90 mm (WxHxD), Article N°: 0920013



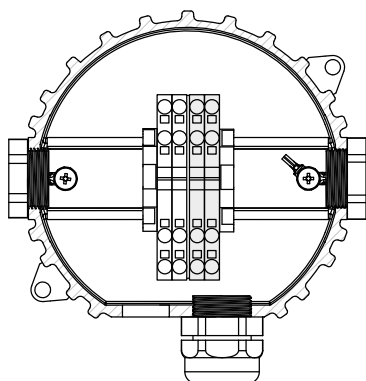
- 2x Protective conductor terminal WPE 6 mm²
- 4x Feed-through terminal WDU 6 mm²
- 1x Cable gland M25, 9-17 mm
- 2x Blind plug M25
- 1x Drilling M25

■ Terminal for earthing or electrical protection

ELAK-R7

Junction box for 1-3 ELP

Dimensions: (ca.) Ø 154,5 mm, Height 125 mm, Article N°: 0920057

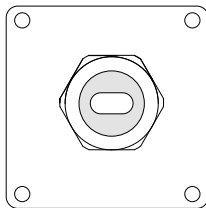


Type	Qty.	Clamp range
Blind plug M25x1,5	2	-
Blind plug M25x1,5	1	-
Drilling M20	1	-
Cable gland M25x1,5	1	9-13/12-17 mm
Protective earth terminal	2	6 mm ²
Feed-through terminal	2	6 mm ²

■ Terminal for earthing or electrical protection

(E) - INSULATION BUSHING

1-time insulation bushing; Dimensions: 70 x 70 mm, plate Aluminium



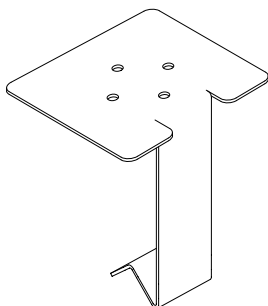
Type	Article-Nº.	Cable gland	suitable for ELP
ELISD-R5	0921101	1x M25	/FEP, /PFA
ELISD-P2	0921031	1x M25	/Si

(F) - MOUNTING BRACKET

ELMW-6

Article N°: **0941006**

Mounting bracket for ELAK-2 junction boxes (max. insulation thickness 80 mm)



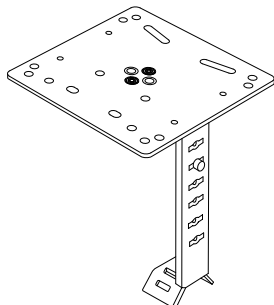
Enclosed every mounting bracket:

Type	Qty.
Cylinder head screw M4x12	2
Nut M4 self-locking	2
Washer Ø 4,3	4

EL-VSB 300

Article N°: **0941085**

Variable mounting bracket for ELAK-Ex-2.00, -4.01 as well as ELAK-4.00, -5, -5.1, -5.7 & -R7 junction boxes (max. insulation thickness 280 mm)



Enclosed every mounting bracket:

Type	Qty.
Cylinder head screw M6x30	4
Cylinder head screw M4x25	4
Nut M6 self-locking	4
Nut M4 self-locking	4

ORDERING INFORMATION

ELP-Type:	Design:	Power	Ex article:	Order quantity:
Art.Nº.:	Description:	Suitable for use:	Ex article:	Order quantity:
OX81PA2	ELVB-ELPEX-25 Power connection kit Ex e M25	ELP-PFA	Yes	
OX81PPD	ELVB-ELPEX-20 Power connection kit Ex d M20	ELP-PFA	Yes	
OX81EP1	EL-ECP-Ex End termination kit	ELP-PFA	Yes	
0911118	ELVB-SRV-ELP Connection & repair kit shrink technique	ELP-Si, -Si-F, -FEP, -PFA	No	
091A050	ELVB-ELPA1-25 Power connection kit M25	ELP-FEP, -PFA	No	
091A052	ELVB-ELPA2-25 Power connection kit M25	ELP-Si, -Si-F	No	
09112PP	EL-ECP+ End termination kit	ELP-PFA	No	
09112P1	EL-ECP1 End termination kit	ELP-FEP, -PFA	No	
09112P3	EL-ECP2 End termination kit	ELP-Si, -Si-F	No	
OX85200	ELAK-Ex-2.00 Junction box Ex e	1x Supply line 1x ELP-PFA	Yes	
OX85401	ELAK-Ex-4.01 Junction box Ex e	1x Supply line 1 to 3x ELP-PFA	Yes	
OX80075	ELAK-Ex-R5 Junction box Ex e	1x ELP-PFA 1x EL-CT	Yes	
0920030	ELAK-2 Junction box	1x Supply line 1 to 2x all ELP	No	
092B400	ELAK-4.00 Junction box	1x Supply line 1x all ELP 1x Sensor	No	
0920013	ELAK-5 Junction box	1x Supply line 1 to 3x all ELP	No	
0920002	ELAK-5.1 Junction box	1x Supply line 1 to 3x all ELP	No	
0920013	ELAK-5.7 Junction box	1x Supply line 1 to 3x all ELP	No	
0920057	ELAK-5 Junction box	1x Supply line 1 to 3x all ELP	No	
0921101	ELISD-R5 Insulation bushing	ELP-FEP, -PFA	No	
0921031	ELISD-P1 Insulation bushing	ELP-Si	No	
0941006	ELMW-6 Mounting bracket	ELAK-2	No	
0941085	EL-VSB 300 Variable mounting bracket	ELAK-Ex-2.00, ELAK-Ex-4.01, ELAK-5, ELAK-5.1, ELAK-5.7, ELAK-R7	No	

NOTES



You can also find this document on the eltherm website.
Visit our download area.



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