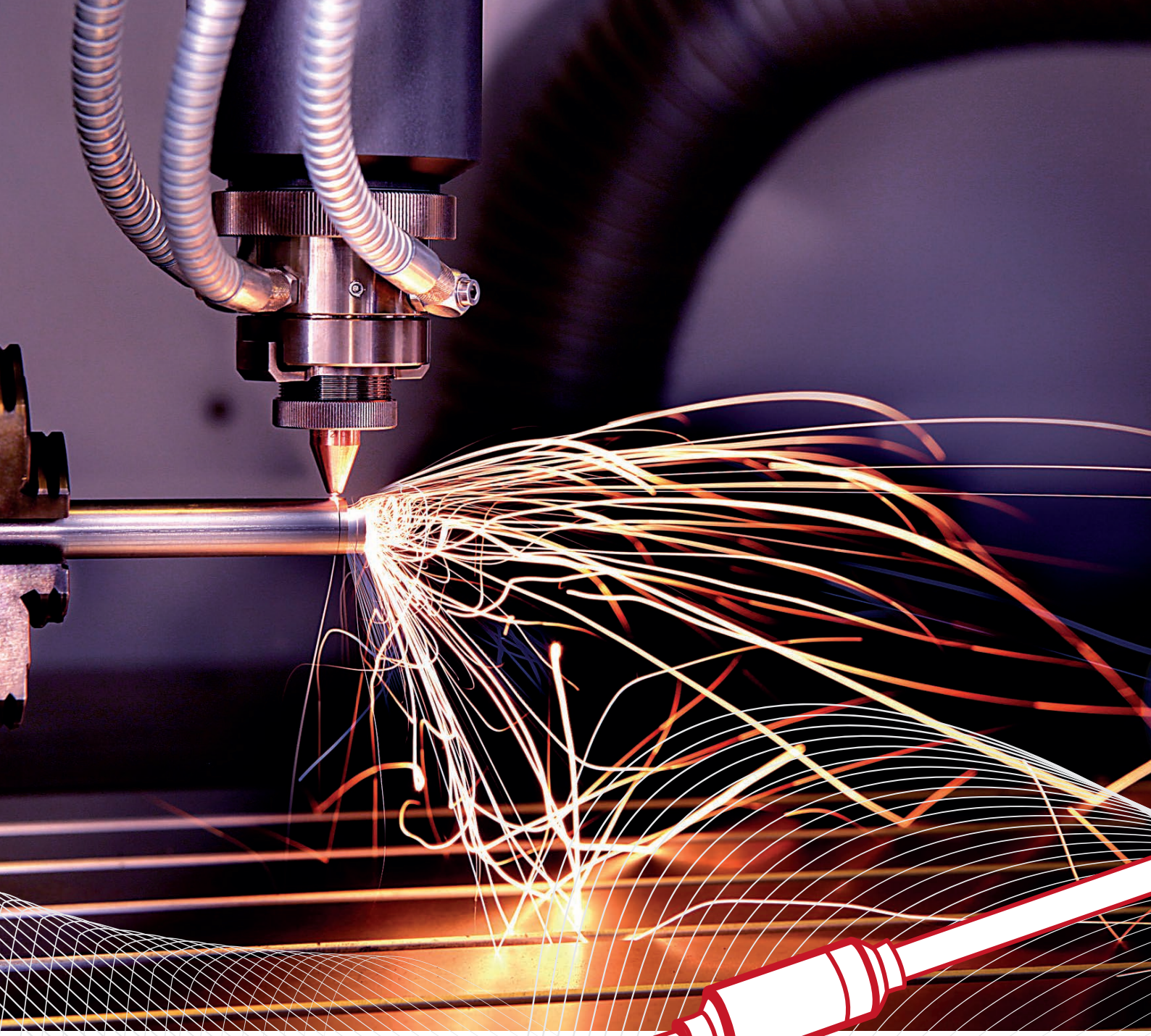


Mineral-Insulated Trace Heaters

eltherm®

Content

„Our reliable solutions keep your processes at temperature.“

eltherm in Burbach, Germany

1. Production facility I
2. Administration, application engineering
3. R&D, international sales, eltherm Academy
4. Production facility II

From Process to Product
The eltherm Story

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

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

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

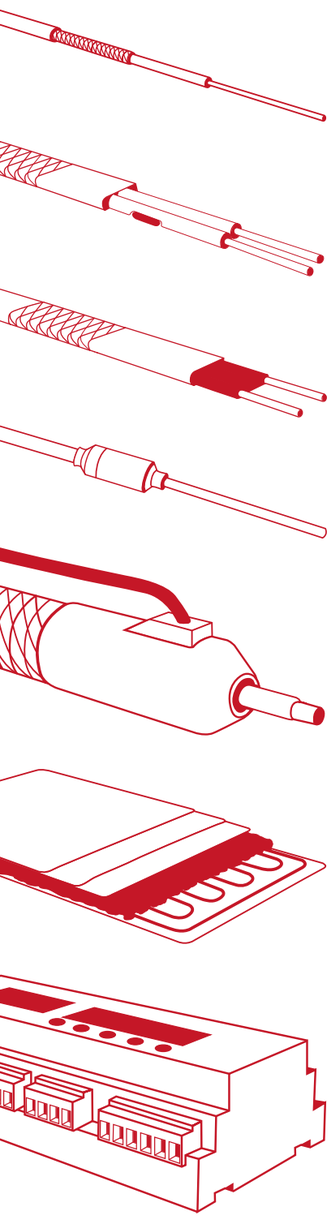
› Portfolio Focus
We provide a comprehensive range of electrical heat tracing products, systems and solutions from A to Z. Your One-Stop-Shop.

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

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

› Global Focus
We are a global engineering company with our own production facilities, serving international markets and projects from 14 locations on 5 continents – and with a staff force of 270.

From A to Z
Your One-Stop-Shop



› Serial Resistance Trace Heaters
for freeze prevention and process temperatures in industrial plants and facilities.

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

› Self-Regulating Trace Heaters
for freeze prevention and temperature maintenance in industry and building & construction.
Applications up to 250 °C.

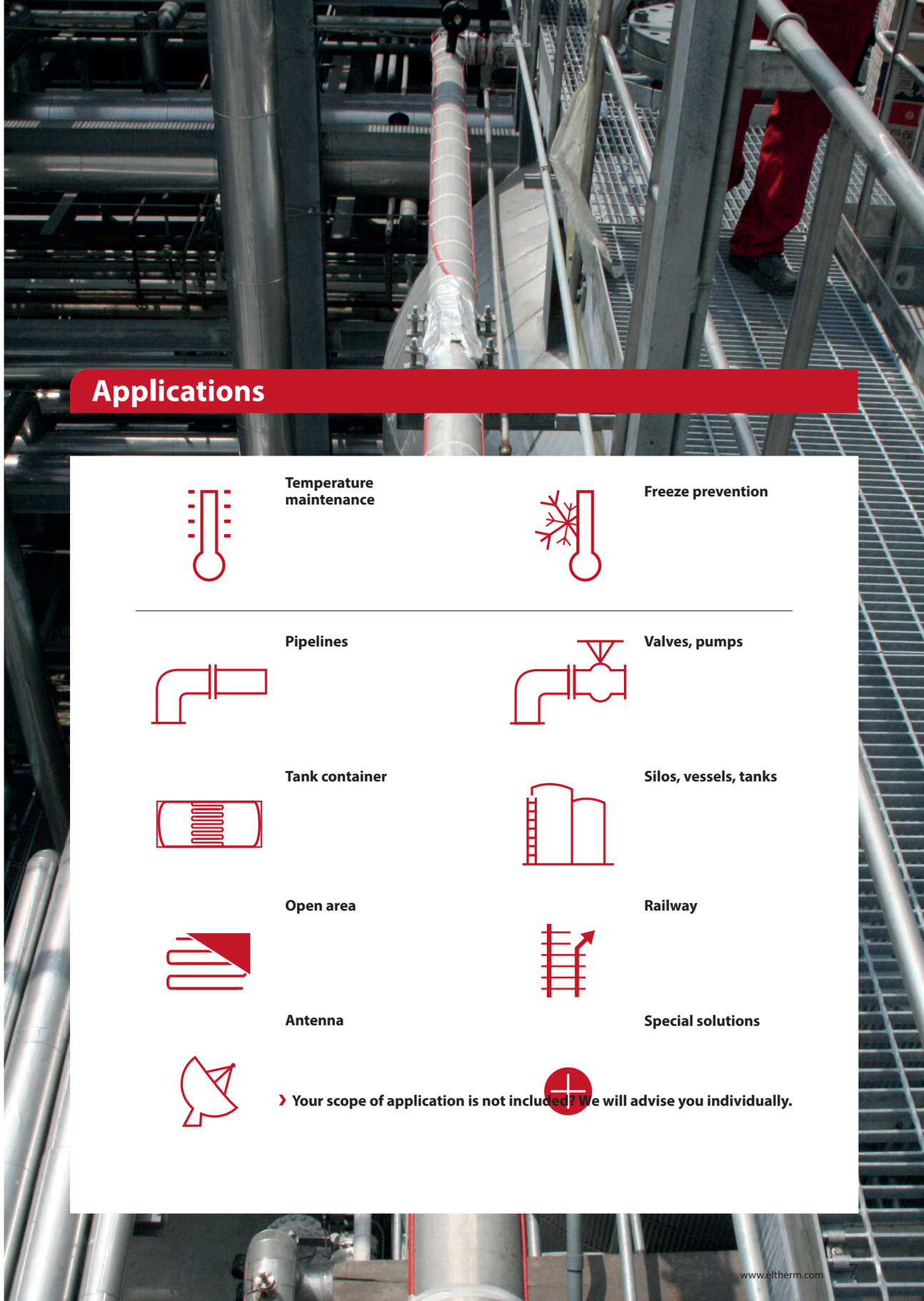
› Mineral-Insulated Trace Heaters
exclusively manufactured and finished from Alloy 825 or high-quality stainless steel. The unique "Clean Laser Seal" Technology (CLS) guarantees a homogenous, 100% stable system and reliable function up to 700 °C.

› Heated Analytic, Pressure and Loading Systems
for reliable and safe transport of pressurised or non-pressurised fluids and gases without temperature loss, up to 450 °C.

› Heating Mats and Jackets
custom-engineered and tailor-made, for heating valves, pumps, drums, barrels, hobbocks and flange covers, up to 450 °C.

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

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



Applications

Temperature maintenance

Freeze prevention

Pipelines

Valves, pumps

Tank container

Silos, vessels, tanks

Open area

Railway

Antenna

Special solutions

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

At a Glance

Benefits

- Reliable functionality
- Rugged and wear-resistant design
- Protection against stress corrosion
- Preassembly with high-precision laser technology
- 100% homogeneous design in premium Alloy 825 or stainless steel 1.4541
- High temperature resistance
- Maximum resistance to chemicals
- High power output
- Single and Twin design
- Resistant against moisture

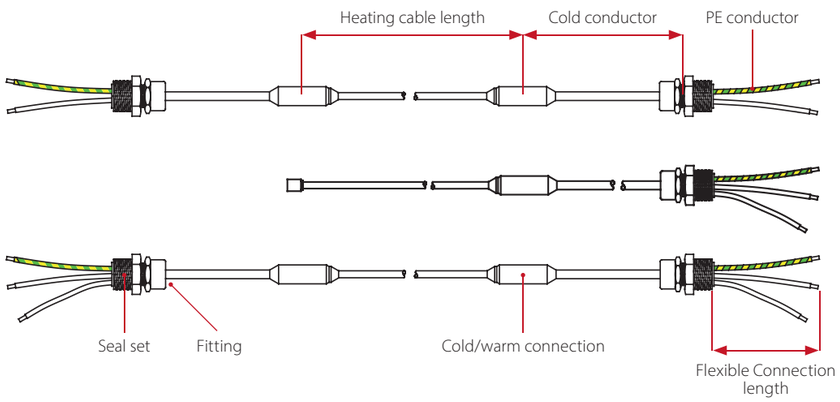
Approvals

Mineral-Insulated Trace Heaters

Manufactured and assembled exclusively from premium nickel/chrome Alloy 825 or stainless steel 1.4541. eltherm's revolutionary Clean Laser Seal technology (CLS) guarantees high output and reliability in all industrial applications. This technology results in a homogeneous, 100% stable system that ensures reliable function for years. CLS furthermore offers the technologically best possible protection against stress corrosion, especially with aggressive chemicals such as leachable chlorides or high sulphur content. MI trace heating consists of one- or two-wire heating cables (single and twin design) and mineral-insulated cold conductor connections (with 2.0, 2.5, 3.3 or 5.0 mm^2 copper conductors) with Clean Laser Seal connection. The free end of the cold conductor is sealed seamlessly and connected with a flexible supply line (diameter corresponding to the cold conductor) plus a 1.5 mm^2 earth connection. The end of every cold conductor has a thrust ring sleeve made of flameproof stainless steel (1.4404 / AISI 316L) with M20x1.5 or M25x1.5 thread.

Advantages of laser welding

- Highly precise, safe and reliable connections
- Consistent quality in every heating cable
- Absolutely steam-tight
- No harmful flux residues
- No impurities due to preassembly in the factory
- Choose between flexible or rigid supply line connection
- Lower maintenance and servicing costs
- High insulation resistance up to 1 TΩ



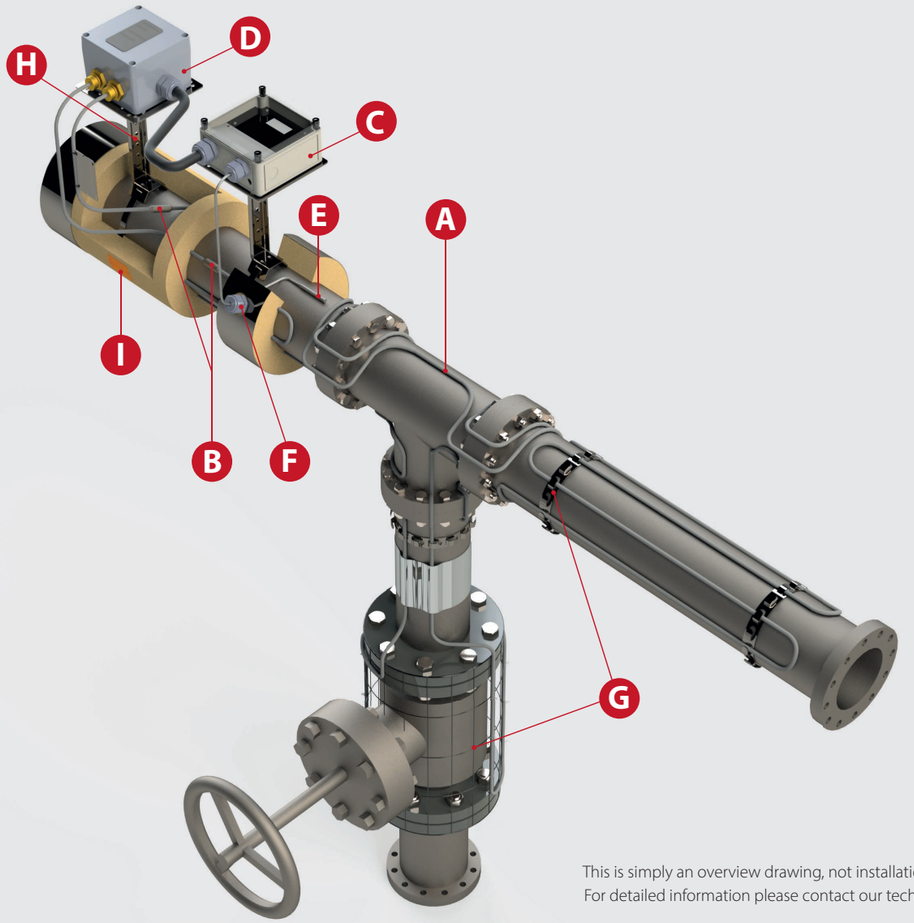
Application

Uses for mineral-insulated trace heaters include chemical and petrochemical applications as well as the oil and gas industry. The moisture-resistant trace heaters can also be used for process heating and temperature maintenance on pipelines, containers, cryogenic storage tanks, power plants, machines and systems. CLS technology also guarantees maximum resistance against chemicals.

Checklist

Mineral-insulated trace heating system

- **A** Trace Heater
- **B** Factory assembly
- **C** Junction Box
- **D** Temperature Controller
- **E** Temperature Sensor
- **F** Insulation Bushing
- **G** Fasteners, Tapes and Foils
- **H** Pipe Mounting Bracket
- **I** Warning Sign



This is simply an overview drawing, not installation instructions.
For detailed information please contact our technicians.

At a Glance

Applications

Temperature maintenance

Silos, vessels, tanks

Pipelines

- Chemistry and Petrochemistry
- Oil and Gas Industry
- Industrial processes
- Mobile processing facilities
- Vacuum processes

Benefits

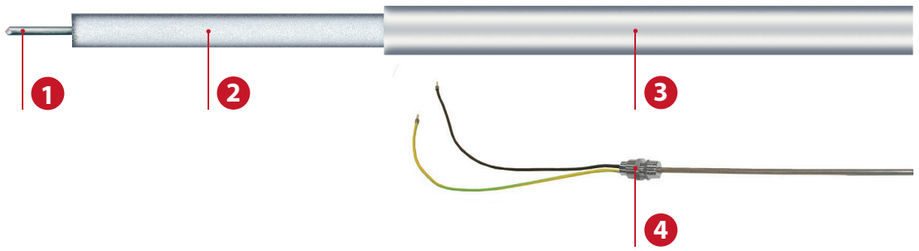
- 100% homogeneous design
- No filling holes
- Single and Twin design
- High temperature resistance
- Maximum resistance to chemicals
- High power output
- Protection against stress corrosion
- Resistant against moisture

Approvals

- Classification
  II 2 G Ex 60079-30-1 db eb IIC Gb
  II 2 D Ex 60079-30-1 tb IIIC Db
- Certification
  FM15ATEX0046X
  FM18US0191X
  FM18CA0089X
  IECEx FME 15.0009X

Type ELK-MI VA

up to 700 °C, single conductor



1	**Bus wire**	Nichrome R, KP, Constantan, Alloy 60 or Copper
2	**Insulation**	Magnesium oxide (MgO) to ASTM E1652 standard
3	**Outer jacket**	Stainless Steel1.4541 (AISI 321)
4	**Cable gland**	Stainless Steel M20 x 1,5 / M25 x 1.5

Checklist ELK-MI VA

Junction Boxes		
ELAK-6-SP	220 x 120 x 90 mm, aluminium, up to 3 heating cables, 6x M20, 1x M25	MDA0002
ELAK-3-SP	122 x 120 x 90 mm, aluminium, up to 1 heating cable, 1x M25, 2x M20	MDA0003
ELAK-3-SP	122 x 120 x 90 mm, aluminium, up to 2 heating cables, 1x M25, 4x M20	MDA0005
Temperature Sensors		
ELTF-PT.61	Pt100, 2-wire, measuring sleeve 3 x 200 mm, 5m PTFE cable, Tmax = 500 °C, IP 65	0650040
ELTF-Te.4	Thermocouple NiCr-Ni (type K), outer jacket material ø 3 x 250 mm, measuring range up to +500 °C, 5m	0670007
ELTF-Te.4	Thermocouple NiCr-Ni (type K); outer jacket material ø 1.5 x 200 mm, measuring range up to +1000 °C, 5 m	0670020
Temperature-resistant power connection line		
	Power connection line VA, SINGLE, 500 V, 2.5 mm², Ø 5.3 mm	20330K0025
	Power connection line VA, SINGLE, 500 V, 6.0 mm², Ø 6.4 mm	20330K0060

› Further accessories on pages 36 - 45.

Technical Information

Operating temperature	up to 700 °C
Ambient temperature	-60 °C to +60 °C
Nominal output	up to 250 W/m *
Nominal voltage	up to 500 V AC
Bending radius, min.	Diameter x 6
Installation temperature, min.	– 60 °C
Protective conductor connection	Protective connection integrated
Protection rating / protection class	IP65 / Protection class I
Power connection line	1/2 x 0.50 m, ø 2.5 mm² / 6 mm²

* Depends on operating temperature and application.

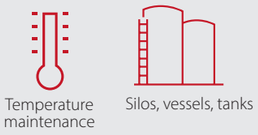
Single Conductor

Ω/m at 20 °C	Outer diameter (mm)	Bending radius (mm)	Part No.
10,000	3,20	19	2033001000
6,300	3,20	19	2033000630
5,200	3,50	21	2033000520
4,000	3,20	19	2033000400
3,300	3,50	21	2033000330
2,500	3,40	21	2033000250
1,600	3,60	22	2033000160
1,000	3,90	24	2033000100
0,630	4,30	26	2033000063
0,400	4,70	28	2033000040
0,250	5,30	32	2033000025
0,160	6,50	39	2033000016

The output and length of the heating cable and the maximum operating temperature depend on the application.
An excerpt from the possible resistances is listed here. Additional cold conductor diameters are also available.
Please feel free to contact us!

At a Glance

Applications



- Chemistry and Petrochemistry
- Oil and Gas Industry
- Industrial processes
- Mobile processing facilities
- Vacuum processes

Benefits

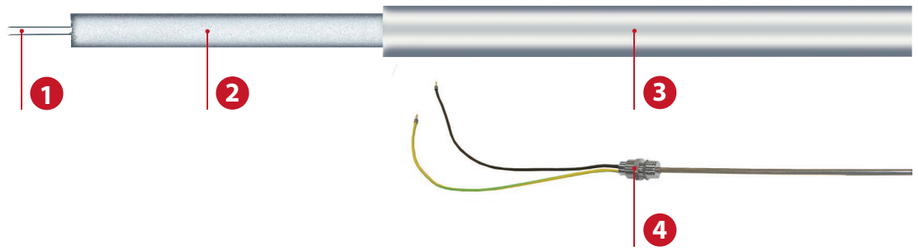
- 100% homogeneous design
- No filling holes
- Single and Twin design
- High temperature resistance
- Maximum resistance to chemicals
- High power output
- Protection against stress corrosion
- Resistant against moisture

Approvals

- Classification
  II 2 G Ex 60079-30-1 db eb IIC Gb
  II 2 D Ex 60079-30-1 tb IIIC Db
- Certification
  FM15ATEX0046X
  FM18US0191X
  FM18CA0089X
  IECEx FME 15.0009X

Type ELK-MI VA

up to 700 °C, twin conductor



1	**Bus wire**	Nichrome R, KP, Constantan, Alloy 60 or Copper
2	**Insulation**	Magnesium oxide (MgO) to ASTM E1652 standard
3	**Outer jacket**	Stainless Steel1.4541 (AISI 321)
4	**Cable gland**	Stainless Steel M20 x 1,5 / M25 x 1.5

Technical Information

Operating temperature	up to 700 °C
Ambient temperature	-60 °C to +60 °C
Nominal output	up to 250 W/m *
Nominal voltage	up to 500 V AC
Bending radius, min.	Diameter x 6
Installation temperature, min.	– 60 °C
Protective conductor connection	Protective connection integrated
Protection rating / protection class	IP65 / Protection class I
Power connection line	1/2 x 0.50 m, ø 2.5 mm² / 6 mm²

* Depends on operating temperature and application.

Checklist ELK-MI VA

Junction Boxes		
ELAK-6-SP	220 x 120 x 90 mm, aluminium, up to 3 heating cables, 6x M20, 1x M25	MDA0002
ELAK-3-SP	122 x 120 x 90 mm, aluminium, up to 1 heating cable, 1x M25, 2x M20	MDA0003
ELAK-3-SP	122 x 120 x 90 mm, aluminium, up to 2 heating cables, 1x M25, 4x M20	MDA0005
Temperature Sensors		
ELTF-PT.61	Pt100, 2-wire, measuring sleeve 3 x 200 mm, 5m PTFE cable, Tmax = 500 °C, IP 65	0650040
ELTF-Te.4	Thermocouple NiCr-Ni (type K), outer jacket material ø 3 x 250 mm, measuring range up to +500 °C, 5m	0670007
ELTF-Te.4	Thermocouple NiCr-Ni (type K); outer jacket material ø 1.5 x 200 mm, measuring range up to +1000 °C, 5 m	0670020
Temperature-resistant power connection line		
	Power connection line VA, TWIN, 400 V, 2 x 1.5 mm², Ø 7.5 mm	20330K0015

› Further accessories on pages 36 - 45.

Twin Conductor

Ω/m at 20 °C	Outer diameter (mm)	Bending radius (mm)	Part No.
36,000	3,70	22	2033003600
24,600	4,00	24	2033002461
19,680	3,80	23	2033001968
13,120	4,40	26	2033001312
9,840	5,10	31	2033000984
6,600	5,00	30	2033000660
4,600	5,30	32	2033000460
3,200	4,00	24	2033000320
2,460	5,00	30	2033000246
1,600	4,70	28	2033000162
1,000	4,40	26	2033000102
0,750	5,10	37	2033000075
0.330	6,70	40	2033000033

The output and length of the heating cable and the maximum operating temperature depend on the application.
An excerpt from the possible resistances is listed here. Additional cold conductor diameters are also available.
Please feel free to contact us!

At a Glance

Applications

Temperature maintenance

Silos, vessels, tanks

Pipelines

- Chemistry and Petrochemistry
- Oil and Gas Industry
- Industrial processes
- Mobile processing facilities
- Vacuum processes

Benefits

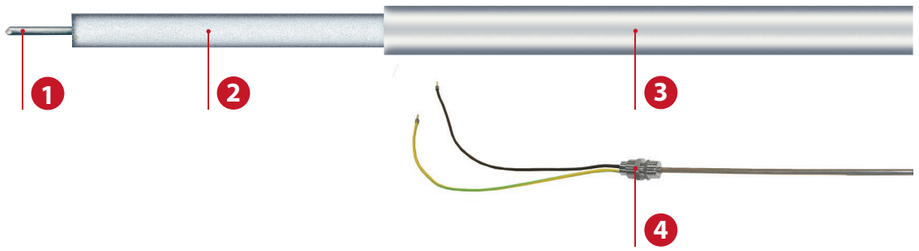
- 100% homogeneous design in premium Alloy 825
- No filling holes
- Single and Twin design
- High temperature resistance
- Maximum resistance to chemicals (chlorides, etc.)
- High power output
- Protection against stress corrosion
- Sea water-resistant, maximum corrosion resistance

Approvals

- Classification
  II 2 G Ex 60079-30-1 db eb IIC Gb
  II 2 D Ex 60079-30-1 tb IIIC Db
- Certification
  FM15ATEX0046X
  FM18US0191X
  FM18CA0089X
  IECEx FME 15.0009X

Type ELK-MI AY 825

up to 700 °C, single conductor



1	**Bus wire**	Nichrome R, KP, Constantan, Alloy 60 or Copper
2	**Insulation**	Magnesium oxide (MgO) to ASTM E1652 standard
3	**Outer jacket**	NiCr 2.4858 (Alloy 825)
4	**Cable gland**	Stainless Steel M20 x 1,5 / M25 x 1.5

Checklist ELK-MI AY 825

Junction Boxes		
ELAK-6-SP	220 x 120 x 90 mm, aluminium, up to 3 heating cables, 6x M20, 1x M25	MDA0002
ELAK-3-SP	122 x 120 x 90 mm, aluminium, up to 1 heating cable, 1x M25, 2x M20	MDA0003
ELAK-3-SP	122 x 120 x 90 mm, aluminium, up to 2 heating cables, 1x M25, 4x M20	MDA0005
Temperature Sensors		
ELTF-PT.61	Pt100, 2-wire, measuring sleeve 3 x 200 mm, 5m PTFE cable, Tmax = 500 °C, IP 65	0650040
ELTF-Te.4	Thermocouple NiCr-Ni (type K), outer jacket material ø 3 x 250 mm, measuring range up to +500 °C, 5m	0670007
ELTF-Te.4	Thermocouple NiCr-Ni (type K); outer jacket material ø 1.5 x 200 mm, measuring range up to +1000 °C, 5 m	0670020
Temperature-resistant power connection line		
	Power connection line Alloy 825, SINGLE, 600 V, 2.08 mm², Ø 5.3 mm	20340K0016
	Power connection line Alloy 825, SINGLE, 600 V, 3.32 mm², Ø 5.7 mm	20340K0033
	Power connection line Alloy 825, SINGLE, 600 V, 5.17 mm², Ø 6.4 mm	20340K0052
	Power connection line Alloy 825, SINGLE, 600 V, 8.30 mm², Ø 7.2 mm	20340K0083

› Further accessories on pages 36 - 45.

Technical Information

Operating temperature	up to 700 °C
Ambient temperature	-60 °C to +60 °C
Nominal output	up to 250 W/m *
Nominal voltage	up to 500 V AC
Bending radius, min.	Diameter x 6
Installation temperature, min.	– 60 °C
Protective conductor connection	Protective connection integrated
Protection rating / protection class	IP65 / Schutzklasse I
Power connection line	1/2 x 0.50 m, ø 2,5 mm² / 6 mm²

* Depends on operating temperature and application.

Single Conductor

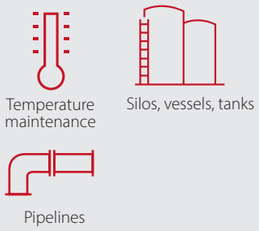
600 V AC

Ω/m at 20 °C	Outer diameter (mm)	Bending radius (mm)	Part No.
6,560	4,30	26	2034000656
5,250	4,30	26	2034000525
4,270	4,30	26	2034000427
3,280	4,30	26	2034000328
2,790	4,30	26	2034000279
2,300	4,30	26	2034000230
1,640	4,30	26	2034000164
1,250	4,30	26	2034000125
0,980	4,30	26	2034000098
0,820	4,30	26	2034000082
0,660	4,40	26	2034000066
0,560	4,60	28	2034000056
0,490	4,30	26	2034000049
0,330	4,30	26	2034000033
0,260	4,30	26	2034000026
0,230	4,30	26	2034000025
0,200	4,30	26	2034000020
0,130	4,40	26	2034000013
0,100	4,70	28	2034000010
0,070	5,10	31	2034000007
0,034	4,30	26	2034000003
0,021	4,60	28	2034000002
0,014	4,80	29	2034000001

The output and length of the heating cable and the maximum operating temperature depend on the application.
An excerpt from the possible resistances is listed here. Additional cold conductor diameters are also available.
Please feel free to contact us!

At a Glance

Applications



- Chemistry and Petrochemistry
- Oil and Gas Industry
- Industrial processes
- Mobile processing facilities
- Vacuum processes

Benefits

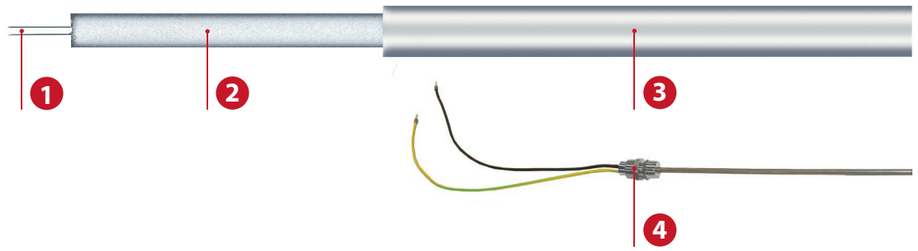
- 100% homogeneous design in premium Alloy 825
- No filling holes
- Single and Twin design
- High temperature resistance
- Maximum resistance to chemicals (chlorides, etc.)
- High power output
- Protection against stress corrosion
- Sea water-resistant, maximum corrosion resistance

Approvals

- Classification
  II 2 G Ex 60079-30-1 db eb IIC Gb
  II 2 D Ex 60079-30-1 tb IIIC Db
- Certification
  FM15ATEX0046X
  FM18US0191X
  FM18CA0089X
  IECEx FME 15.0009X

Type ELK-MI AY 825

up to 700 °C, twin conductor



1	**Bus wire**	Nichrome R, KP, Constantan, Alloy 60 or Copper
2	**Insulation**	Magnesium oxide (MgO) to ASTM E1652 standard
3	**Outer jacket**	NiCr 2.4858 (Alloy 825)
4	**Cable gland**	Stainless Steel M20 x 1,5 / M25 x 1.5

Checklist ELK-MI AY 825

Junction Boxes		
ELAK-6-SP	220 x 120 x 90 mm, aluminium, up to 3 heating cables, 6x M20, 1x M25	MDA0002
ELAK-3-SP	122 x 120 x 90 mm, aluminium, up to 1 heating cable, 1x M25, 2x M20	MDA0003
ELAK-3-SP	122 x 120 x 90 mm, aluminium, up to 2 heating cables, 1x M25, 4x M20	MDA0005
Temperature Sensors		
ELTF-PT.61	Pt100, 2-wire, measuring sleeve 3 x 200 mm, 5m PTFE cable, Tmax = 500 °C, IP 65	0650040
ELTF-Te.4	Thermocouple NiCr-Ni (type K), outer jacket material ø 3 x 250 mm, measuring range up to +500 °C, 5m	0670007
ELTF-Te.4	Thermocouple NiCr-Ni (type K); outer jacket material ø 1.5 x 200 mm, measuring range up to +1000 °C, 5 m	0670020
Temperature-resistant power connection line		
	Power connection line Alloy 825, TWIN, 600 V, 2.08 mm², Ø 8.9 mm	20340K0027
	Power connection line Alloy 825, TWIN, 600 V, 3.32 mm², Ø 9.7 mm	20340K0042
	Power connection line Alloy 825, TWIN, 600 V, 5.17 mm², Ø 11.0 mm	20340K0062
	Power connection line Alloy 825, TWIN, 300 V, 2.08 mm², Ø 7.1 mm	20340K0026
	Power connection line Alloy 825, TWIN, 300 V, 3.32 mm², Ø 8.0 mm	20340K0041

› Further accessories on pages 36 - 45.

Technical Information

Operating temperature	up to 700 °C
Ambient temperature	-60 °C to +60 °C
Nominal output	up to 250 W/m *
Nominal voltage	up to 500 V AC
Bending radius, min.	Diameter x 6
Installation temperature, min.	– 60 °C
Protective conductor connection	Protective connection integrated
Protection rating / protection class	IP65 / Schutzklasse I
Power connection line	1/2 x 0.50 m, ø 2,5 mm² / 6 mm²

* Depends on operating temperature and application.

Twin Conductor

300 V AC				600 V AC			
Ω/m at 20 °C	**Outer diameter (mm)**	**Bending radius (mm)**	**Part No.**	**Ω/m at 20 °C**	**Outer diameter (mm)**	**Bending radius (mm)**	**Part No.**
36,100	4,10	25	2034003601	36,100	5,60	34	2034003600
29,500	4,10	25	2034002952	29,500	5,70	34	2034002951
24,600	4,10	25	2034002462	19,700	5,80	35	2034001968
19,700	4,10	25	2034001969	13,100	6,10	37	2034001312
16,400	4,10	25	2034001641	6,530	6,50	39	2034000656
13,100	4,10	25	2034001311	3,280	6,50	39	2034000329
10,500	4,10	25	2034001001	2,300	6,70	40	2034000231
8,860	4,10	25	2034000886	1,640	7,10	43	2034000162
8,200	4,10	25	2034000820	0,980	7,60	46	2034000099
6,560	4,10	25	2034000657	0,660	6,50	39	2034000065
5,580	4,10	25	2034000558	0,490	6,70	40	2034000050
4,590	4,10	25	2034000461	0,330	7,10	43	2034000034
3,280	4,20	25	2034000330	0,230	7,50	45	2034000023
2,300	4,60	28	2034000232	0,160	7,90	47	2034000016
1,640	4,80	29	2034000166	0,130	8,30	50	2034000014
0,980	4,30	26	2034000101	0,098	8,80	53	2034000009
0,820	4,30	26	2034000083	0,066	6,90	41	2034000006
0,660	4,33	26	2034000068	0,052	7,10	43	2034000005
0,490	4,40	26	2034000051	0,043	7,40	44	2034000004
0,330	4,80	29	2034000035	0,033	7,60	46	2034000000
0,230	5,20	31	2034000027				
0,160	5,70	34	2034000017				

The output and length of the heating cable and the maximum operating temperature depend on the application.
An excerpt from the possible resistances is listed here. Additional cold conductor diameters are also available.
Please feel free to contact us!

Accessories
Mineral-Insulated Trace Heaters

B – Factory assembly

	Type	suitable for	Ex	Description	Part No.
	ELVB-MI-VA-S-2,5mm²	all	●	Factory assembly, laser-welded, single wire 2.5 mm²	MAG0000
	ELVB-MI-VA-S-6,0mm²	all	●	Factory assembly, laser-welded, single wire 6.0 mm²	MAG0001
	ELVB-MI-VA-S-2,5mm²-Ex	all	●	Factory assembly, laser-welded, single wire 2.5 mm²	MAG0002
	ELVB-MI-VA-T-1,5mm²	all	●	Factory assembly, laser-welded, two wire 1.5 mm²	MAG0005
	ELVB-MI-AY825-S-2,08mm²	all	●	Factory assembly, laser-welded, single wire 2.08 mm²	MAG0006
	ELVB-MI-AY825-T-2,08mm²	all	●	Factory assembly, laser-welded, two wire 2.08 mm²	MAG007

C – Junction Boxes

	Type	suitable for	Ex	Description	Part No.
	ELAK-6-SP	all		220 x 120 x 90 mm, aluminium, up to 3 heating cables, boreholes 6x M20, 1x M25	MDA0002
	ELAK-3-SP	all		122 x 120 x 90 mm, aluminium, up to 1 heating cable, screw connection 1x M25, boreholes 2x M20	MDA0003
	ELAK-3-SP	all		122 x 120 x 90 mm, aluminium, up to 2 heating cables, screw connection v1x M25, boreholes 4x M20	MDA0005
	ELAK-Ex-2.00	all	●	110 x 75 x 57 mm, polyester, IP66, 1 heating cable, 1 supply line	0X85200
	ELAK-Ex-4.21	all	●	122 x 120 x 90 mm, polyester, IP66, 1 heating cable, 1 supply line	0X85421
	ELAK-Ex-4.22	all	●	122 x 120 x 90 mm, polyester, IP66, 2 heating cables, 1 supply line	0X85422
	ELAK-Ex-4.23	all	●	122 x 120 x 90 mm, polyester, IP66, 3 heating cables, 1 supply line	0X85423

D – Temperature Controllers

	Type	suitable for	Ex	Description	Setting range	Part No.
	ELTC-14	all		Electronic temperature controller with display	0 °C to +390 °C	0620000
	ELTC-15	alle		Electronic temperature controller with display and ramp mode	0 °C to +950 °C	0621500
	Ex-Box REG/DIS	all	●	Electronic temperature controller with display	-30 °C to +60 °C	0X60020
	Ex-Box REG/LED	all	●	Electronic temperature controller with LED	-30 °C to +60 °C	0X60021
	Ex-Box LIM/LED	all	●	Electronic temperature limiter with LED	-30 °C to +60 °C	0X60023
	Ex-Box LIM/DIS	all	●	Electronic temperature limiter with display	-30 °C to +60 °C	0X60024
	Ex-TC/A-W	all	●	Temperature Controller with Alarm Function, wall mounting	-45 °C bis +50 °C	0X60103
	Ex-TC/AL-W	all	●	Temperature Controller and Limiter with Alarm Function, wall mounting	-45 °C bis +50 °C	0X60123
	Ex-TC/M-W	all	●	Temperature Controller with Modbus communication, wall mounting	-45 °C bis +50 °C	0X60133
	Ex-TC/A-10	all	●	Temperature Controller with Alarm Function, wall mounting	-45 °C bis +50 °C	0X6010X
	Ex-TC/AL-10	all	● ●	Temperature Controller and Limiter with Alarm Function, wall mounting	-45 °C bis +50 °C	0X6012X
	Ex-TC/M-10	all		Temperature Controller with Modbus communication, wall mounting	-45 °C bis +50 °C	0X6013X

Accessories
Mineral-Insulated Trace Heaters

E – Temperature Sensors

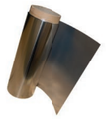
	Type	suitable for	Ex	Description	Part No.
	ELTF-PT.61	**all**		Pt100, 2-wire, measuring sleeve 3 x 200 mm, 5 m PTFE cable, Tmax = 500 °C, IP 65	0650040
	ELTF-Te.4	**all**		Thermocouple NiCr-Ni (type K), outer jacket material diameter 3 x 250 mm, measuring range up to +500 °C, 5m	0670007
	ELTF-Te.4	**all**		Thermocouple NiCr-Ni (type K); outer jacket material diameter 1.5 x 200 mm, measuring range up to +1000 °C, 5 m	0670020
	ELTF-PTEx.2	**all**	●	Pt100, 4-wire, 3 m PTFE cable	0X70002
	ELTF-PTEx.4	**all**	●	2x Pt100, 3-wire, 3 m connection	0X70030
	ELTF-PT.15	**Ex-TC**		Pt100, 3-Leiter, 5x50 mm, PTFE 3,0 m, IP67	0650070
	ELTF-PT.2	**Ex-TC**		Doppel-Pt100, 3-Leiter, 5x50 mm, PFA 3,0 m, IP65	0650072
		**all**		Miniature wire plug TYPE K (Ni-CrNi), plug and socket (set)	0670028

F – Insulation Bushing

	Type	suitable for	Ex	Description	Part No.
	ELISD-1.12	**all temperature semsors**	●	Cover plate aluminium, 70 x 70 mm, Ø seal area 3.5 - 7 mm, 1 x M12 x 1,5	0921011
	ELISD-1.16	**all temperature semsors**	●	Cover plate aluminium, 70 x 70 mm, Ø seal area 4.5 - 10 mm, 1 x M16	0921015
	ELISD-1.20	**all connections**	●	Cover plate aluminium, 70 x 70 mm, Ø seal area 7 - 13 mm, 1 x M20	0921019
	ELISD-1.25	**all connections**	●	Cover plate aluminium, 70 x 70 mm, Ø seal area 9 - 17 mm, 1 x M25	0921023
	ELISD-2.12	**all connections**	●	Cover plate aluminium, 100 x 40 mm, Ø seal area 3.5 to 7 mm, 2 x M12 x 1.5	0921069
	ELISD-2.16	**all connections**	●	Cover plate aluminium, 100 x 40 mm, Ø seal area 4.5 to 10 mm, 2 x M16 x 1.5	0921071
	ELISD-3.12	**all connections**	●	Cover plate aluminium, 100 x 40 mm, Ø seal area 3.5 to 7 mm, 3 x M12 x 1.5	0921067
	ELISD-3.16	**all connections**	●	Cover plate aluminium, 100 x 40 mm, Ø seal area 4.5 to 10 mm, 3 x M16 x 1.5	0921070

Accessories
Mineral-Insulated Trace Heaters

G – Fasteners, Tapes and Foils

	Type	suitable for	Ex	Description	Part No.
	ELB-07A	all	●	Stainless steel foil, 0.1 x 500 m, 40 m, mat.: 1.4301 (AISI 304),	2701900513
	ELB-07B	all	●	Stainless steel foil, 0.08 x 620 mm, 40 m, mat.: 1.4301 (AISI 304)	2701900506
	ELB-09	all	●	Metal gauze tape, 50 mm x 10 m, mat.: 1.4301 (AISI 304),	2793000050
	ELB-12	all	●	Lashing tape, grid 25 mm mat.: 1.4301 (SS 304)	2723001005
	ELB-17.03	all	●	Tension spring Ø1.0 x Ø11.0; Lo = 55 mm, mat.: 1.4310 (AISI 301)	2793000004
	ELB-17.04	all	●	Stainless steel V2A, Ø1 mm, mat.: 1.4301 (SS 304)	2790300024
	ELB-17.05	all	●	Wire closure, 0.8/100 mm, mat.: 1.4301 (SS 304)	2723002001
	ELB-17.20	all	●	Wire mesh, mesh size 20 x 20 mm, 25 m x 1 m Mat.: 1.4301 (SS 304)	2793000019
	ELB-25.01	all	●	Cable tie VA, mat.: 1.4401 (AISI 316), Length = 100 mm, up to DN 25, VE = 10 pieces	0942301
	ELB-25.02	all	●	Cable tie VA, mat.: 1.4401 (AISI 316), Length = 360 mm, up to DN 100, VE = 10 pieces	0942302
	ELB-25.03	all	●	Cable tie VA, mat.: 1.4401 (AISI 316), Length = 680 mm, up to DN 175, VE = 10 pieces	0942303
	ELB-25.04	all	●	Cable tie VA, mat.: 1.4401 (AISI 316), Length = 1400 mm, up to DN 400, VE = 10 pieces	0942304

H – Pipe Mounting Bracket

	Type	suitable for	Ex	Description	Part No.
	ELMW-CT		●	Mounting bracket 175 x 130 mm, mat. 1.4301	0941025
	ELMW-15	ELAK-6-SP	●	Mounting bracket 260 x 160 mm, mat. 1.4301	0941015
	ELMW-74 Set	ELAK-3-SP	●	Mounting bracket, 140 x 140 x 1.5 mm, Mat. 1.4301	0941074
	ELMW-75 Set	ELAK-6-SP, ELAK-3-SP	●	Mounting bracket, 272 x 140 x1.5 mm, mat. 1.4301	0941075
	EL-VSB 300	ELAK-3-SP	●	Variable mounting bracket Adjustable height from 180 to 300 mm, mat. 1.4301	0941085
	EL-VSB 400	ELAK-3-SP	●	Variable mounting bracket Adjustable height from 280 to 400 mm, mat. 1.4301	0941086
	ELB-13V1	all	●	Thread strapping tape, 11 mm, 30 m, Mat. 1.4301	2723001010
	ELB-13V2	all	●	Turnbuckle 1.4301 (VE = 10 pieces), Mat. 1.4301	0930042
	ELB-15.04	all	●	Hose clamp, 25 - 40 mm, Mat. 1.4301	2723001025
	ELB-15.09	all	●	Hose clamp 40-90 mm (DN 25-65), Mat. 1.4301	2723040090
	ELB-15.11	all	●	Hose clamp, 50 - 110 mm, Mat. 1.4301	2723050110
	ELB-15.288	all	●	Hose clamp, 60 - 288 mm, Mat. 1.4301	2723060288
	ELB-15.650	all	●	Hose clamp, 60 - 650 mm, Mat. 1.4301	2723060650

Accessories
Mineral-Insulated Trace Heaters

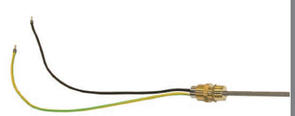
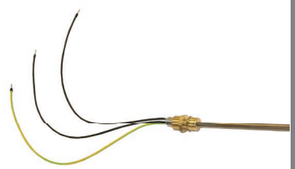
I – Warning Signs

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

Covers

	Type	suitable for	Ex	Description	max. Operating temperature	Part No.
	ELWZ 5	**alle**	●	Heat-conducting cement, 18.3 kg/pail	1.000 °C	2979002951
	ELWZ 5	**alle**	●	Heat-conducting cement, 9.8 kg/ pail	1.000 °C	2979002952

Temperature-resistant power connection line

	suitable for	Ex	Description	Part No.
	**ELK-MI VA**	●	Power connection line VA, SINGLE, 500 V, 2.5 mm^2, Ø 5.3 mm	20330K0025
	ELK-MI VA	●	Power connection line VA, SINGLE, 500 V, 6.0 mm^2, Ø 6.4 mm	20330K0060
	ELK-MI AY 825	●	Power connection line Alloy 825, SINGLE, 600 V, 2.08 mm^2, Ø 5.3 mm	20340K0016
	ELK-MI AY 825	●	Power connection line Alloy 825, SINGLE, 600 V, 3.32 mm^2, Ø 5.7 mm	20340K0033
	ELK-MI AY 825	●	Power connection line Alloy 825, SINGLE, 600 V, 5.17 mm^2, Ø 6.4 mm	20340K0052
	ELK-MI AY 825	●	Power connection line Alloy 825, SINGLE, 600 V, 8.30 mm^2, Ø 7.2 mm	20340K0083
	**ELK-MI VA**	●	Power connection line VA, TWIN, 400 V, 2 x 1.5 mm^2, Ø 7.5 mm	20330K0015
	ELK-MI AY 825	●	Power connection line Alloy 825, TWIN, 600 V, 2.08 mm^2, Ø 8.9 mm	20340K0027
	ELK-MI AY 825	●	Power connection line Alloy 825, TWIN, 600 V, 3.32 mm^2, Ø 9.7 mm	20340K0042
	ELK-MI AY 825	●	Power connection line Alloy 825, TWIN, 600 V, 5.17 mm^2, Ø 11.0 mm	20340K0062
	ELK-MI AY 825	●	Power connection line Alloy 825, TWIN, 300 V, 2.08 mm^2, Ø 7.1 mm	20340K0026
	ELK-MI AY 825	●	Power connection line Alloy 825, TWIN, 300 V, 3.32 mm^2, Ø 8.0 mm	20340K0041

80.000 km

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

50 km

Mineral-insulated trace heaters in Chile that help make it possible to supply electricity to 100,000 households.

5 Continents
13 Locations

300 Staff Members

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

2.777 Football Fields

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

Eight Engineering Hubs

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

Twenty-three Nations

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

550 °C

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

eltherm®

project ecology

A contribution to sustainability and climate protection: The eltherm fleet operation was rated carbon-neutral in 2018. To achieve this objective, 143 t CO_2 emissions were compensated by supporting global climate protection projects.

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