ELVARME

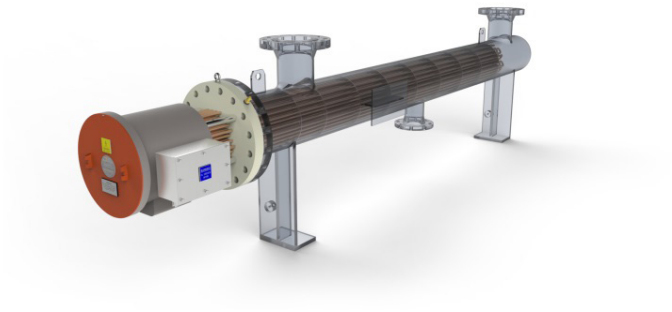
ATEX

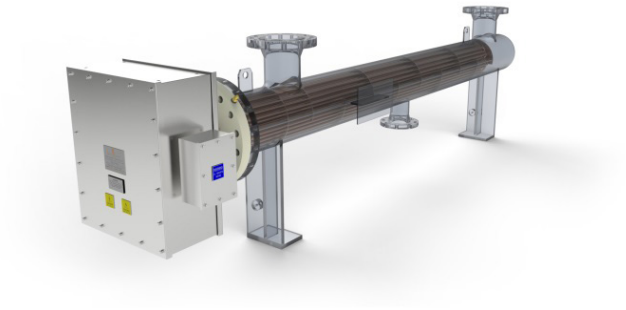
PROCESS HEATERS

NEWTRONIC

PEOH STANDARD OIL LINE HEATERS

The range of standard oil line heaters are designed to offer improved delivery times, ease of maintenance and reduced costs. The design uses thyristor control systems *, ensuring process fluid is heated to the correct temperature. All heaters use elements that are sealed to prevent moisture ingress, and can be individually replaced on site without the need for special tools.





FEATURES

- Certified for Zone 1 hazardous areas or Class I, Div 1 and 2
- Temperature classes T3 to T6
- Available in 6" to 36" vessel sizes
- 2 element sensors per stage as standard
- Spare elements installed as standard
- Designs in accordance with ASME VIII, PD5500, EN13445 or AS1210
- Available with optional ASME U 'Code' Stamp, NORSOK compliance, NACE MR0175 and/or PED

TYPICAL APPLICATIONS

- Heat transfer oils
- Fuel forwarding
- Fuel separation
- Pipelines
- Fuel oils
- Crude oils
- Lubricating oils
- Oil pre-heating

* Used in combination with an EXHEAT thyristor control panel, full control over varying flow and temperature conditions is guaranteed with full accuracy.

Vessel Design Codes	ASME VIII, PD5500, EN13445 or AS1210 Optional ASME U ‘Code’ Stamp, NORSOK Compliance, NACE MR0175 and/or PED
Vessel Materials	Carbon steel Stainless steel
Elements	Alloy 800 Stainless steel 321 Alloy 825 Can be customised to client’s specifications
Internals	Elements are supported in a cut segmental baffle assembly, and are designed and calculated in accordance with TEMA
Element to Tubesheet	Elements are fixed to support plate via stainless steel compression fittings
Voltage	Up to 690V (CSA up to 600V)
Rating	Up to 2500kW
Temperature Capacity	Up to +150°C
Pressure Capacity	40 barg

PEGH GAS LINE HEATERS

The EXHEAT range of pre-engineered gas line heaters provides precise and accurate temperature control for gas applications. When coupled with an EXHEAT thyristor control panel, it is ensured that the process fluid is heated correctly and efficiently across all design conditions.

The heater is specifically designed to offer improved delivery times with reduced costs. Applying EXHEAT expertise to standardisation eliminates project engineering time and ensures materials can be offered from stock.

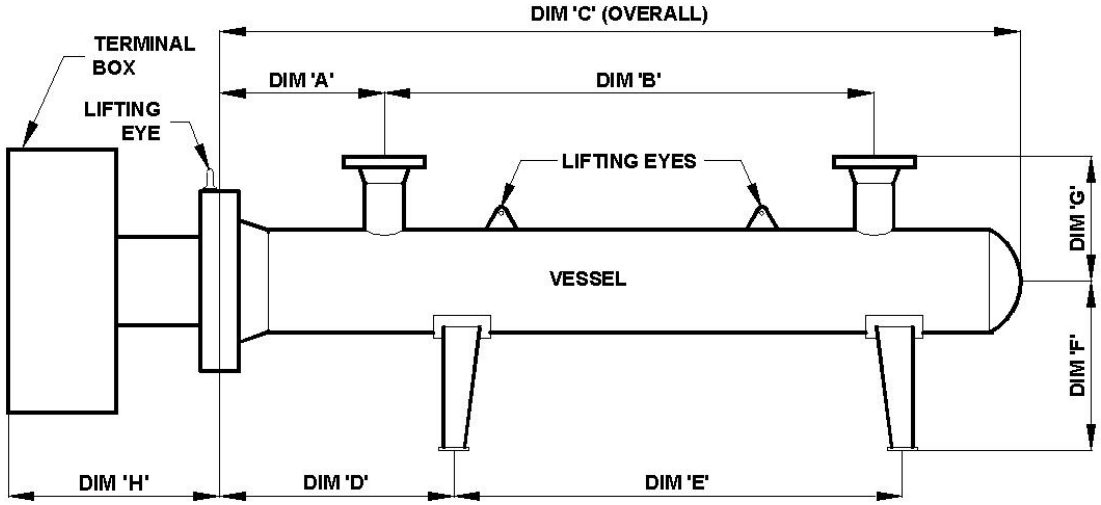
FEATURES

- Certified to ATEX, IECEx or CSA standards
- Terminal box is certified IP66/67 or Type 4/4X
- Temperature classifications T3 to T6
- Up to 1159 kW
- Elements are individually replaceable on site without the need for special tools
- Optional anti-condensation heaters available

TYPICAL APPLICATIONS

- Fuel gas
- Natural gas
- Industrial gases
- Seal gas
- Air
- Biogas

Certifications	ATEX / IECEx Ⓔx II 2 G/D Ex e IIC, T3 to T6 Gb, IP67 Ex d IIC, T3 to T6 Gb, IP66 Ex tb IIIC, T85 to T200°C Db, IP66 CSA Class I, Division 2, Groups A, B, C, D; Temperature coded T3 to T6; Enclosure type 4 or 4X Class I, Division 1, Groups A, B, C, D; Temperature coded T3 to T6, Enclosure type 4 CSA Ex d IIC; T3 to T6 Gb, IP66 Class I, Zone 1, AExd IIC; Temperature coded T3 to T6 Gb, IP66 CU TR (formerly GOST), CNEx, CCOE, Inmetro, KGS
Vessel Design Codes	ASME VIII Div 1
Vessel Materials	Low temperature carbon steel Connections rated Class 150 or 300
Elements	Individual hairpin elements are manufactured from 80/20 NiCr resistance wire embedded within high purity compacted magnesium oxide powder. Element sheaths are corrosion / erosion resistant Incoloy 800 tubes. All elements are sealed using the EXHEAT double-sealing method to prevent moisture ingress
Element to Tubesheet	Elements are sealed into their support plate (tubesheet) by 'Bite' type couplings; the bite couplings provide a 100% seal and are suitable for use in pressures exceeding 500 barg The use of mechanical couplings allows for individual elements to be replaced at site using simple mechanical tooling
Internals	Elements are supported in a segmental or rod type baffle assembly to prevent flow-induced vibration and hot spots, generally complying with TEMA standards Correct baffle selection ensures that element temperature or pressure drop restrictions can be met
Terminal Box	Manufactured from either mild steel or stainless steel, having un-drilled gland plates (Ex e) or metric cable entries (Ex d)
Voltage	Suitable for voltages up to 690V
Documentation	Each EXHEAT PEGH Gas Line Heater will be provided with a full document dossier including: • General Arrangement Drawing • Schematic Diagram • Material Test Certificates for pressure parts to EN10204 Type 3.1 • Design Calculations (strength and thermal) • Hazardous Area Certificates • IOM

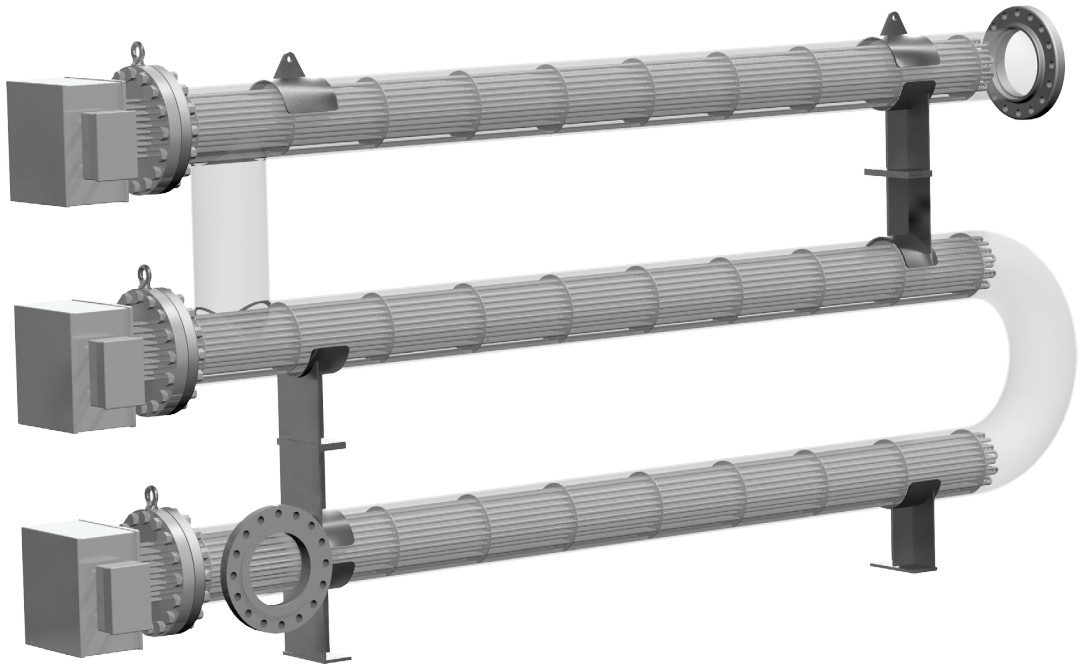


Short Option											
kW	Withdrawal	A	B	C	D	E	F	G	H	Diameter (Ins)	Nozzle Rating
24	2250	181	1569	1981	400	1181	427	250	400	4	150
24	2250	190	1549	1979	400	1174	427	250	400	4	300
95	2250	194	1556	1994	400	1194	477	275	400	6	350
95	2250	204	1535	1993	400	1193	477	275	400	6	300
166	2250	221	1539	2031	400	1231	528	301	400	8	150
166	2250	231	1516	2028	400	1228	528	301	400	8	300
309	2350	234	1537	2055	400	1255	579	327	500	10	150
309	2350	250	1503	2053	400	1253	579	327	500	10	300
451	2350	262	1507	2081	400	1281	630	352	500	12	100
451	2350	262	1488	2062	400	1262	630	352	500	12	300

Long Option											
kW	Withdrawal	A	B	C	D	E	F	G	H	Diameter (Ins)	Nozzle Rating
61	4375	181	3694	4106	400	3306	427	250	400	4	150
61	4375	190	3674	4104	400	3304	427	250	400	4	300
244	4375	194	3681	4119	400	3319	477	275	400	6	150
244	4375	204	3660	4118	400	3318	477	275	400	6	300
427	4375	221	3664	4156	400	3356	528	301	400	8	150
427	4375	231	3641	4153	400	3353	528	301	400	8	300
793	4475	234	3662	4180	400	3380	579	327	500	10	150
793	4475	250	3628	4178	400	3378	579	327	500	10	300
1159	4475	262	3632	4206	400	3406	630	352	500	12	150
1159	4475	262	3613	4187	400	3387	630	352	500	12	300

FP/BFP FLAMEPROOF REMOVABLE CORE HEATERS

The FP/BFP removable core type flameproof electric heaters comprise a large range of process immersion heaters, certified for use in Zone 1 hazardous areas. The heater is designed with removable elements that allow for replacement without the need for drainage of the process vessel.



FEATURES

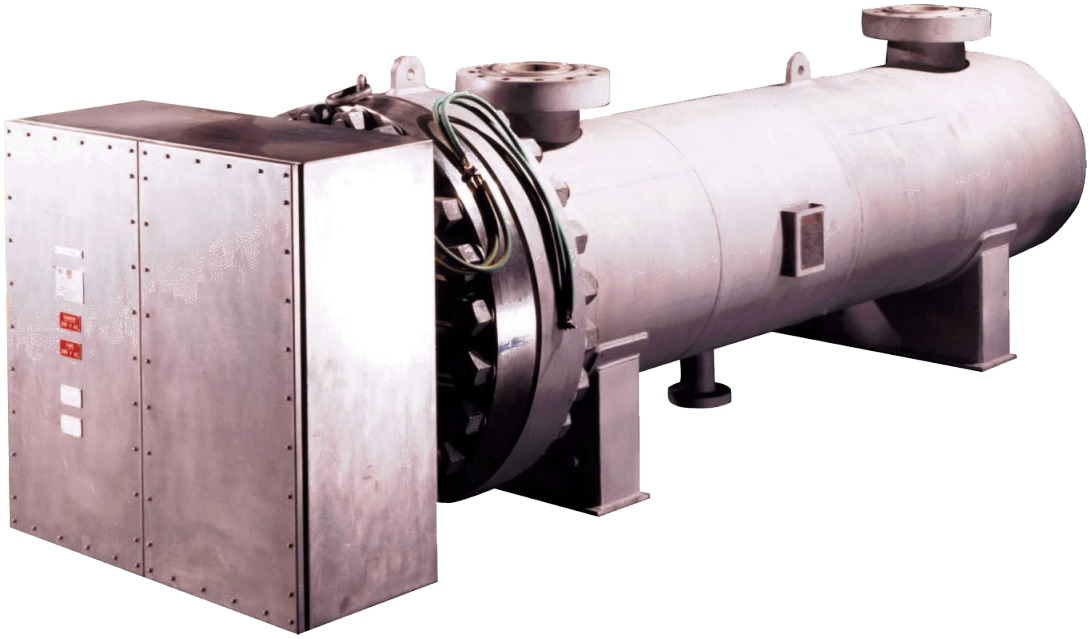
- Up to 1000kw (larger ratings achieved by a combination of enclosures)
- Ceramic core type elements are not subject to problems with moisture ingress
- Removable core type elements to facilitate replacement without draining the vessel (simply open the terminal box)
- Elements are individually replaceable on site without the need for special tools
- Anti-condensation heaters fitted if required
- Suitable and certified for use in high and low ambient temperatures e.g. Middle East and Arctic regions

CERTIFICATIONS

- Certified II 2 G or G and D to the ATEX Equipment Directive
- Certified under EN 60079-0, EN 60079-1, EN 60079-7, EN 60079-31
- Certified Ex d, Zone 1, Gas Groups IIB or IIC
- ATEX or IECEx certified (or CSA certified - FP model only)
- Temperature classifications certified T1 to T6
- Terminal box is certified weatherproof to IP66

ISES RANGE OF HAZARDOUS AREA EX E CERTIFIED ELECTRIC PROCESS HEATERS

The ISES heater comprises a large range of process flow heaters, certified for use in Zone 1 (ATEX and IECEx among others) or Class I, Division 2 (Canada only) hazardous areas, and are custom built to meet client specifications.

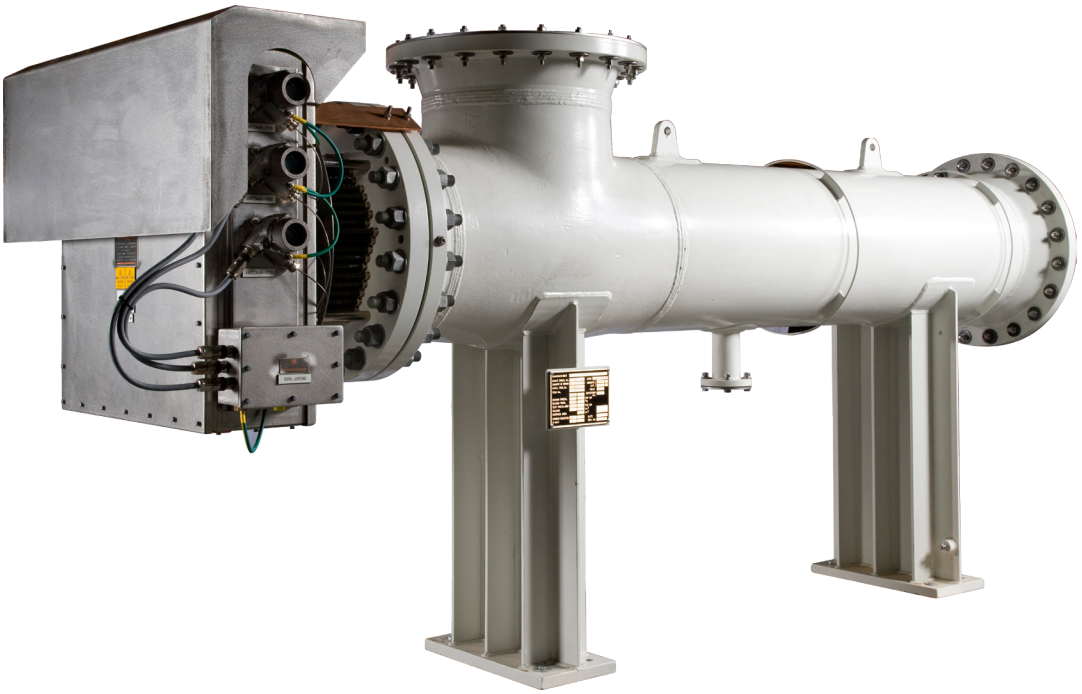


FEATURES

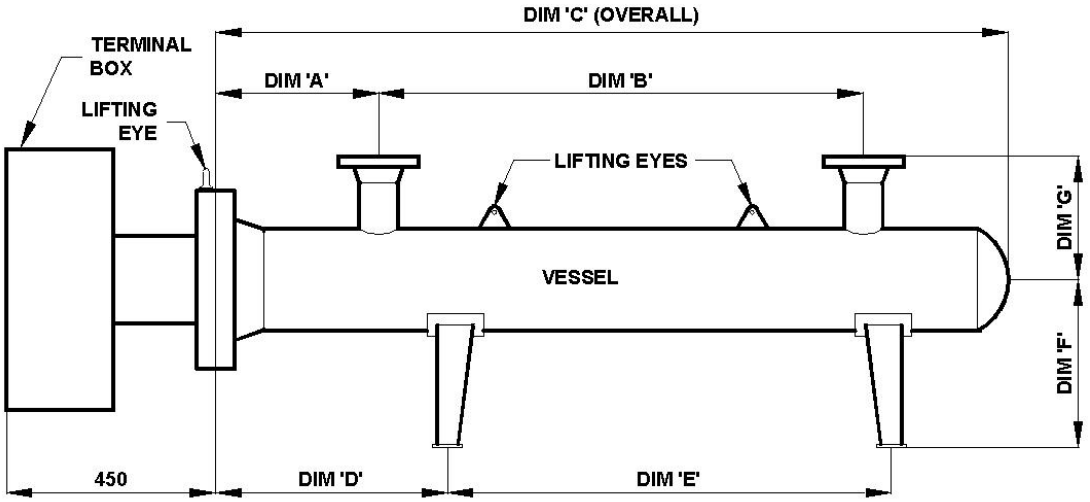
- Certified to ATEX, IECEx or CSA standards
- Terminal box is certified weatherproof to IP67 or Type 4X
- Temperature classifications T1 to T6
- Up to 5000kW
- Elements are specially sealed to prevent moisture ingress
- Elements are individually replaceable on site without the need for special tools
- Suitable and certified for use in high ambient temperatures of -60°C to +60°C
- Anti-condensation heaters fitted, if required

TYPICAL APPLICATIONS

- Fuel gas
- Natural gas
- Molecular sieve regeneration
- Industrial gases
- Heat transfer oils
- Fuel oils
- Water
- Crude oil / hydrocarbons / liquids
- Heating medium



Certification	ATEX / IECEx Ⓔx II 2 G Ex e IIC T1 to T6 Gb IP67 CSA Class I, Div 2, Groups A, B, C, D, T1 to T6, Type 4 or 4x CU TR (formerly GOST), CCOE, CNEx, Inmetro		
Vessel Design Codes	PED Compliant Stoomwezen CODAP	PD 5500 2000 Cat 1 ASME VIII Div 1/2 EN13445	AS 1210 AD Merkblätter
Vessel Materials	Carbon steel Duplex Monel	Low temperature steel Titanium Nickel alloys	Stainless steel Super austenitic
Elements	Manufactured from 80/20 NiCr resistance wire with high purity compacted magnesium oxide powder sheathed within corrosion/erosion resistant tube, eg:		
	Incoloy 800/825 316/316L stainless steel	Inconel 600/625 321 stainless steel	Titanium Monel
	Element sheath available in welded or seamless tube up to 1.6mm thick		
Internals	Elements are supported in a segmental or rod type baffle assembly to prevent flow-induced vibration and hot spots, generally complying with TEMA standards		
Element to Tubesheet	Generally, elements are sealed into the flange by 'Bite' type couplings which provide a 100% seal at pressures up to 400 barg and give the opportunity to replace individual elements on site		
Terminal Box	Manufactured from 316L stainless steel		
Voltage	Suitable for voltages up to 690V		



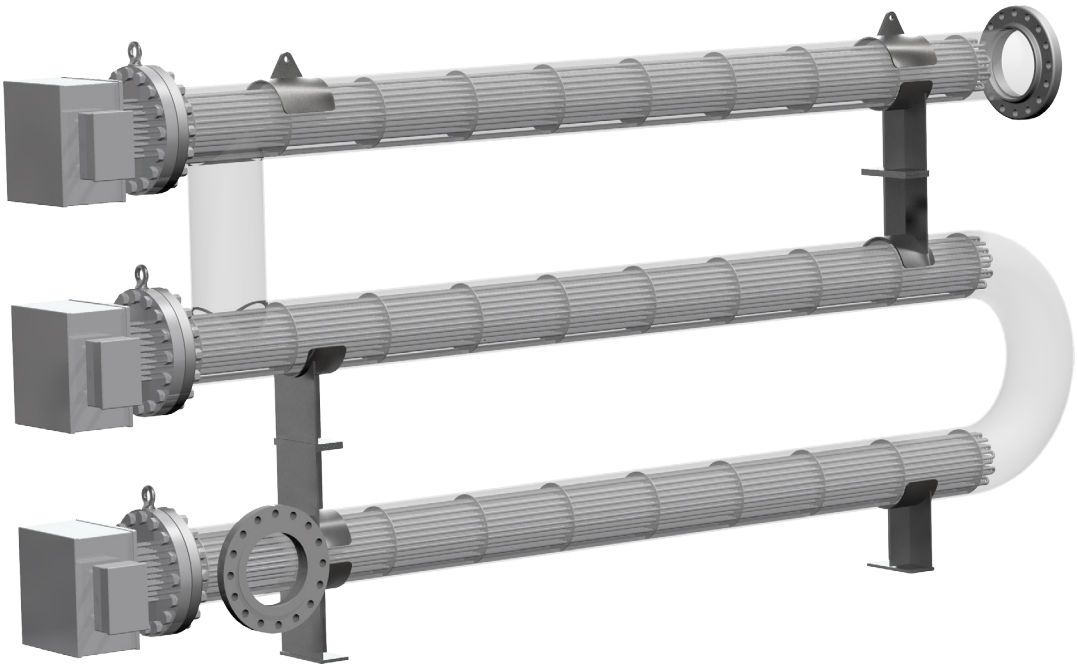
Tables indicate EXHEAT standard designs for hydrocarbon gas heating applications. Dimensions may vary from other mediums on compliance with project specification.

Short Option										
kW	Withdrawal	A	B	C	D	E	F	G	Diameter (Ins)	Diameter (mm)
25	2200	190	1605	1958	215	1555	400	250	4	100
50	2200	240	1555	2035	265	1505	400	275	6	150
75	2200	240	1555	2035	265	1505	400	275	6	150
100	2200	240	1555	2035	265	1505	400	275	6	150
125	2200	290	1520	2100	315	1470	400	300	8	200
150	2200	290	1520	2100	315	1470	400	300	8	200
175	2200	290	1520	2100	315	1470	400	300	8	200
200	2200	333	1500	2166	358	1450	400	325	10	250
225	2200	335	1500	2170	360	1450	400	325	10	250
250	2200	335	1500	2170	360	1450	400	325	10	250
275	2200	335	1500	2170	360	1450	400	325	10	250
300	2200	335	1500	2170	360	1450	400	325	10	250
325	2200	385	2220	2220	410	1400	400	350	12	300
350	2200	385	2220	2220	410	1400	400	350	12	300
375	2200	385	2220	2220	410	1400	400	350	12	300
400	2200	385	2220	2220	410	1400	400	350	12	300

Long Option										
kW	Withdrawal	A	B	C	D	E	F	G	Diameter (Ins)	Diameter (mm)
50	3600	190	3005	3385	215	2955	400	250	4	100
100	3600	240	2955	3435	265	2905	400	275	6	150
150	3600	240	2955	3435	265	2905	400	275	6	150
200	3600	240	2955	3435	265	2905	400	275	6	150
250	3600	290	2920	3500	315	2870	400	300	8	200
300	3600	290	2920	3500	315	2870	400	300	8	200
350	3600	290	2920	3500	315	2870	400	300	8	200
400	3600	335	2900	3570	360	2850	400	325	10	250
450	3600	335	2900	3570	360	2850	400	325	10	250
500	3600	335	2900	3570	360	2850	400	325	10	250
600	3600	335	2900	3570	360	2850	400	325	10	250

HIGH TEMPERATURE APPLICATIONS

EXHEAT's electric process heaters can be designed for high temperature applications in excess of 500°C. Our extensive experience in material selection, thermal design and construction techniques allow us to meet the exacting standards of various process licensors.



FEATURES

- Heaters connected in series of vessels for optimal heat transfer
- Multiple heaters allow for varying heat input across the required load
- Process simulation for optimal design
- Stand-off construction to meet the specification and certification requirements for terminal box temperatures
- Heat shield and insulation discs for terminal box temperature protection
- Use of rod-type baffles to meet heat transfer requirements whilst ensuring a very low system pressure drop
- Direct welding of element sheath to tubesheet utilising automated orbital welding process

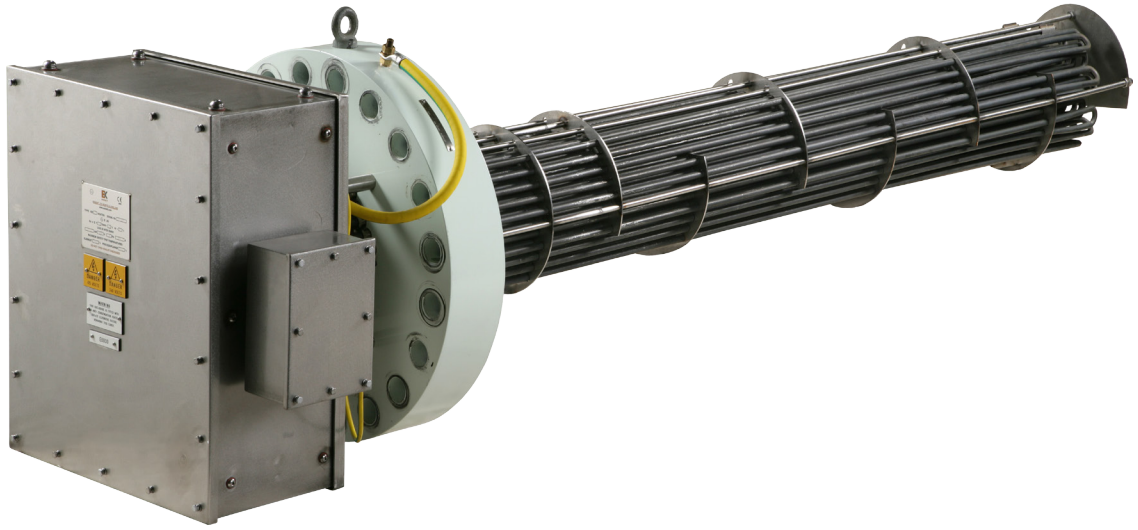
DESIGN CAPABILITIES
Heaters can be designed for up to 5000kW in a single heater bundle and for process temperatures up to 800°C; process guarantees for confirmed temperatures and pressure drops

VESSEL MATERIALS
Stainless steel 321/321H
Stainless steel 316 Ti
Chromoly steel

INTERNAL MATERIALS
Alloy 600
Alloy 800
Alloy 825

ISES RANGE OF HAZARDOUS AREA EX E CERTIFIED IMMERSION HEATERS

The ISES electric heater comprises a large range of process immersion heaters, certified for use in Zone 1 (ATEX and IECEx among others) or Class I, Division 2 (Canada only) hazardous areas, and are custom built to meet client specifications.

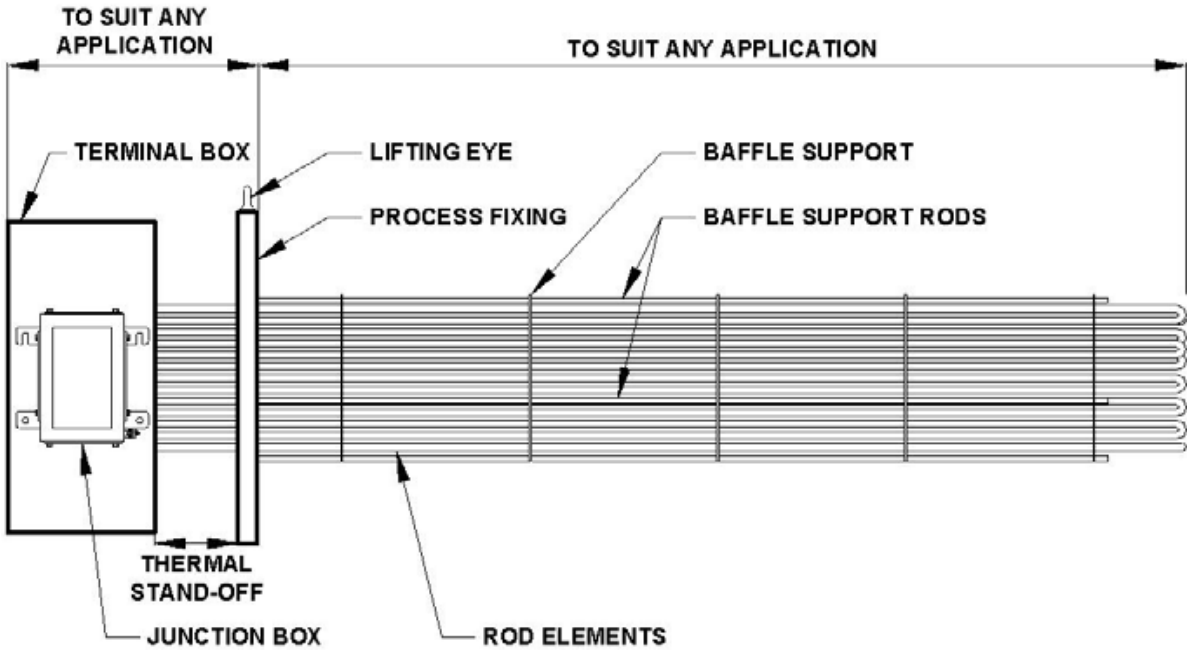


FEATURES

- Certified to ATEX, IECEx or CSA standards
- Terminal box is certified weatherproof to IP67 or Type 4X
- Temperature classifications T1 to T6
- Up to 5000kW
- Anti-condensation heaters fitted, if required
- Elements are specially sealed to prevent moisture ingress, and are individually replaceable on site without the need for special tools
- Withdrawable type elements are available to facilitate replacement without draining the vessel
- Lightweight stainless steel construction terminal box
- Suitable and certified for use in ambient temperatures of –60°C to +60°C

TYPICAL APPLICATIONS

- Butane / propane vaporisers
- Crude oil
- Glycol (TEG & MEG) reboilers
- Molecular sieve regeneration
- Synthetic oils
- Fuel oils
- Fresh water
- Sea water
- Heating medium
- Tank heating
- KO drums



Nominal Flange Size		kW LOAD with Maximum Immersed Length of 3665 mm		
Inch	mm	1 w/sq cm	2.5 w/sq	7.44 w/sq cm
6	150	30	80	200
8	200	60	160	400
10	250	100	260	650
12	300	150	380	950
14	350	180	460	1150
16	400	245	620	1550
18	450	325	800	2000
20	500	400	980	2500
24	600	585	1460	3650
30	750	1110	2780	5000
36	900	1610	4040	n/a
40	1000	1995	5000	n/a

Certification

ATEX / IECEx Ⓔx II 2 G
Ex e IIC T1 to T6 Gb IP67
CSA Class I, Div 2, Groups A, B, C, D, T1 to T6, Type 4 or 4x
CU TR (formerly GOST), CCOE, CNEx, Inmetro

Elements

Manufactured from 80/20 NiCr resistance wire with high purity compacted magnesium oxide powder sheathed within corrosion/erosion resistant tube, eg:

Incoloy 800/825	Inconel 600/625	Titanium
316/316L stainless steel	321 stainless steel	Monel

ISES-L RANGE OF HAZARDOUS AREA IMMERSION HEATERS

The ISES-L series of hazardous area immersion heaters are ideally suited for installation within process tanks, sited in ATEX / IECEx Zone 1 or Zone 2 hazardous areas. The design of the heater provides horizontal mounting of the elements, beneficial for low liquid level applications but allowing vertical installation, which facilitates withdrawal from the vessel top.

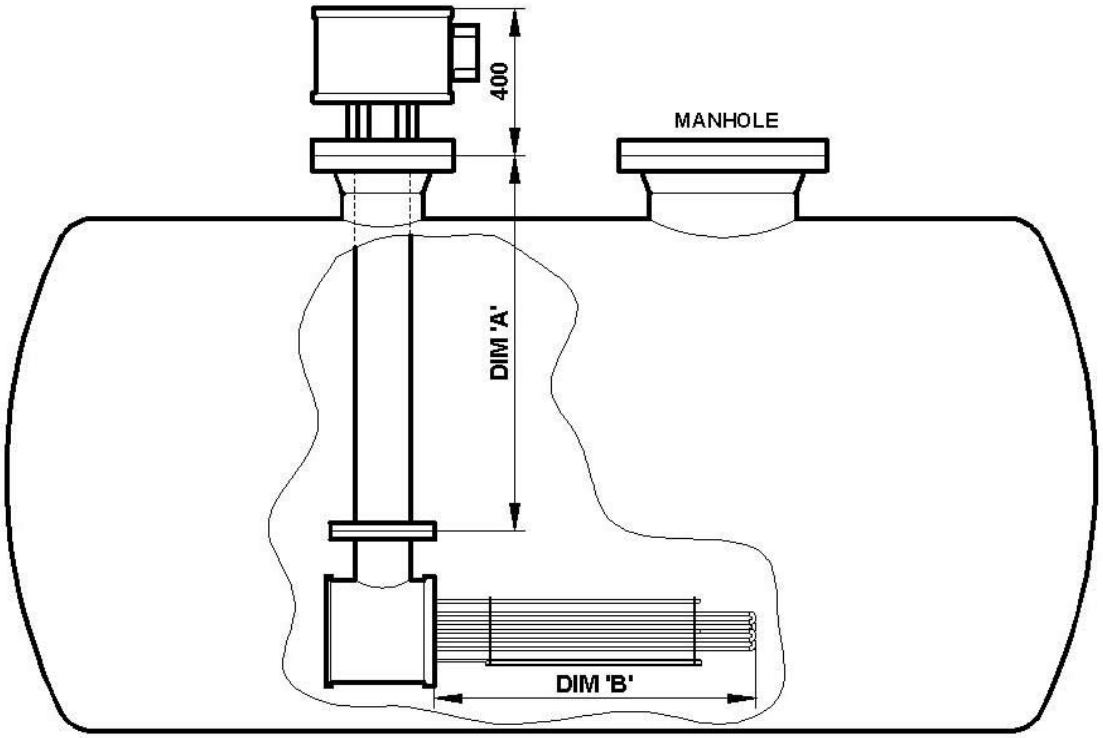
The design of the heater is particularly suited for heating the contents of underground storage tanks.

FEATURES

- Certified to ATEX or IECEx standards
- Terminal box is certified weatherproof to IP66/67 or Type 4x
- Up to 300kW
- Enclosure manufactured from durable stainless steel with removable cable entry gland; cable entries cut to suit incoming cable requirements, external and internal earth stud

TYPICAL APPLICATIONS

- Heating liquids in large tanks or vessels where low levels are commonly experienced
- Heating liquids in underground tanks



DIMENSIONS 'A' & 'B' VARIED TO SUIT CLIENT REQUIREMENTS

Certification	ATEX / IECEx Ⓔx II 2 G Ex e IIC T1 to T6 Gb IP67 EN 60079-0, EN 60079-1, EN 60079-7, EN 60079-31 CU TR (formerly GOST), CCOE, CNEx, Inmetro
Enclosure	Stainless steel enclosure with removable cable entry gland; cable entries cut to suit incoming cable requirements; external and internal earth stud
Elements	Manufactured from 80/20 NiCr resistance wire with high purity compacted magnesium oxide powder sheathed within corrosion/erosion resistant tube, eg:

Incoloy 800/825	Inconel 600/625	Titanium
316/316L stainless steel	321 stainless steel	Monel

Element sheath available in welded or seamless tube upto 1.6mm thick

Internals	Elements are supported in a segmental or rod type baffle assembly to prevent flow induced vibration and hot spots, generally complying with TEMA standards
Element to Tubesheet	Elements are sealed into the flange by welding
Voltage	Suitable for voltages up to 690V

FP RANGE OF EXPLOSIONPROOF / FLAMEPROOF CERTIFIED PROCESS FLOW HEATERS

The FP type flameproof electric heaters comprise a large range of process flow heaters, certified for use in hazardous areas and are custom built to meet client specifications.

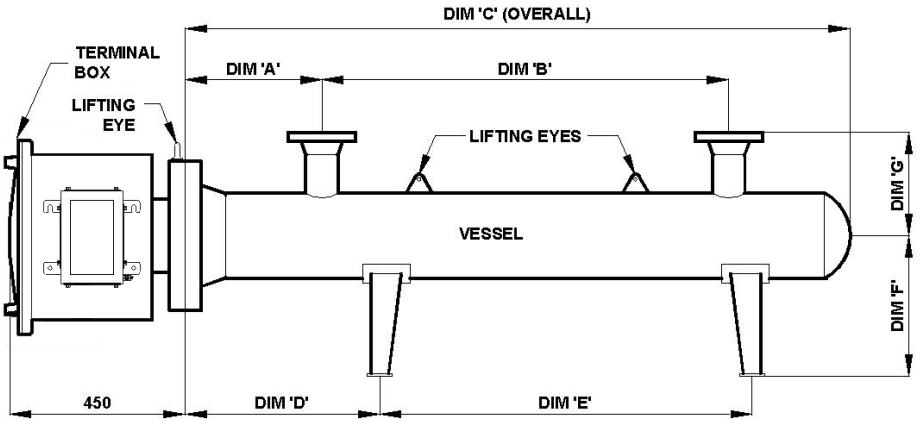
FEATURES

- Certified to ATEX, IECEx or CSA standards
- Terminal box is certified weatherproof to IP66 as well as Type 4 or 4X standards
- Temperature classifications T1 to T6
- Up to 1400kW (larger ratings achieved by a combination of enclosures)
- Elements are individually replaceable on site without the need for special tools
- Anti-condensation heaters fitted, if required

TYPICAL APPLICATIONS

- Fuel gas
- Natural gas
- Industrial gases
- Molecular sieve regeneration
- Heat transfer oils
- Fuel oils
- Water
- Crude oil / hydrocarbons / liquids
- Heating mediums

Certifications	ATEX / IECEx Ⓔx II 2 G/D Ex d IIC T1 to T6 Gb Ex tb IIIC T85 to T450°C Db IP66 EN 60079-0, EN 60079-1, EN 60079-7, EN 60079-31 CSA (CEC/NEC) Class I, Div 1, Groups A, B, C, D; T1 to T6, Enclosure Type 4 or 4X CSA (CEC) Ex d IIC; T1 to T6 Gb, IP66 (CAN) CSA (NEC) Class I, Zone 1, AEx d IIC; T1 to T6 Gb, IP66 (USA) CU TR (formerly GOST), CNEx, CCOE, Inmetro, KGS		
Vessel Design Codes	PED Compliant Stoomwezen CODAP	PD 5500 2000 Cat 1 ASME VIII Div 1/2 EN13445	AS 1210 AD Merkblätter
Vessel Materials	Carbon steel Duplex Monel	Low temperature steel Titanium Nickel alloys	Stainless steel Super austenitic
Elements	Manufactured from 80/20 NiCr resistance wire with high purity compacted magnesium oxide powder sheathed within corrosion / erosion resistant tube, eg:		
	Incoloy 800/825 316/316L stainless steel	Inconel 600/625 321 stainless steel	Titanium Monel
	Element sheath available in welded or seamless tube up to 1.6mm thick		
Internals	Elements are supported in a segmental or rod type baffle assembly to prevent flow-induced vibration and hot spots, generally complying with TEMA standards		
Element to Tubesheet	Generally, elements are sealed into the flange by ‘Bite’ type couplings which provide a 100% seal at pressures up to 400 barg and give the opportunity to replace individual elements on site. Elements can be welded to the tubesheet, in stand-off and non-stand-off configurations		
Terminal Box	Manufactured from either iron or stainless steel		
Voltage	Suitable for voltages up to 690V (600V CAN and USA)		



Tables indicate EXHEAT standard designs for hydrocarbon gas heating applications. Dimensions may vary from other mediums on compliance with project specification.

Short Option

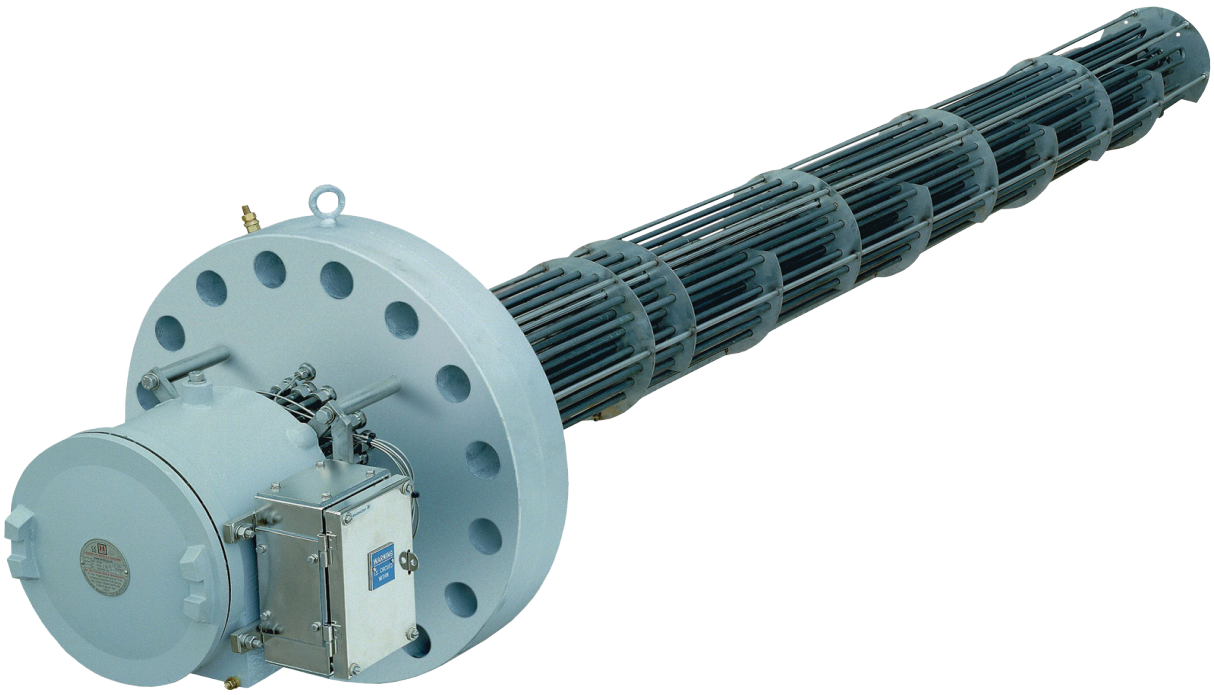
kW	Withdrawal	A	B	C	D	E	F	G	Diameter (Ins)	Diameter (mm)
25	2200	1490	1605	1985	215	1555	400	250	4	100
50	2200	240	1555	2035	265	1505	400	275	6	150
75	2200	240	1555	2035	265	1505	400	275	6	150
100	2200	240	1555	2035	265	1505	400	275	6	150
125	2200	290	1520	2100	315	1470	400	300	8	200
150	2200	290	1520	2100	315	1470	400	300	8	200
175	2200	290	1520	2100	315	1470	400	300	8	200
200	2200	333	1500	2166	358	1450	400	325	10	250
225	2200	335	1500	2170	360	1450	400	325	10	250
250	2200	335	1500	2170	360	1450	400	325	10	250
275	2200	335	1500	2170	360	1450	400	325	10	250
300	2200	335	1500	2170	360	1450	400	325	10	250
325	2200	385	1450	2220	410	1400	400	350	12	300
350	2200	385	1450	2220	410	1400	400	350	12	300
375	2200	385	1450	2220	410	1400	400	350	12	300
400	2200	385	1450	2220	410	1400	400	350	12	300
425	2200	385	1450	2220	410	1400	400	350	12	300
450	2200	385	1450	2220	410	1400	400	350	12	300
475	2200	425	1440	2290	450	1390	400	375	14	350
500	2200	425	1440	2290	450	1390	400	375	14	350
600	2200	450	1410	2310	475	1360	400	400	16	400
700	2200	450	1410	2310	475	1360	400	400	16	400
800	2200	500	1375	2375	525	1325	400	425	18	450
900	2200	500	1375	2375	525	1325	400	425	18	450

Long Option

kW	Withdrawal	A	B	C	D	E	F	G	Diameter (Ins)	Diameter (mm)
50	3600	190	3005	3385	215	2955	400	250	4	100
100	3600	240	2955	3435	265	2905	400	275	6	150
150	3600	240	2955	3435	265	2905	400	275	6	150
200	3600	240	2955	3435	265	2905	400	275	6	150
250	3600	290	2920	3500	315	2870	400	300	8	200
300	3600	290	2920	3500	315	2870	400	300	8	200
350	3600	290	2920	3500	315	2870	400	300	8	200
400	3600	335	2900	3570	360	2850	400	325	10	250
450	3600	335	2900	3570	360	2850	400	325	10	250
500	3600	335	2900	3570	360	2850	400	325	10	250
600	3600	335	2900	3570	360	2850	400	325	10	250
700	3600	385	2850	3620	410	2800	400	350	12	300
800	3600	385	2850	3620	410	2800	400	350	12	300
900	3600	385	2850	3620	410	2800	400	350	12	300

FP RANGE OF HAZARDOUS AREA EX D CERTIFIED IMMERSION HEATERS

The FP electric heater comprises a large range of process immersion heaters, certified for use in hazardous areas and are custom built to meet client specifications.

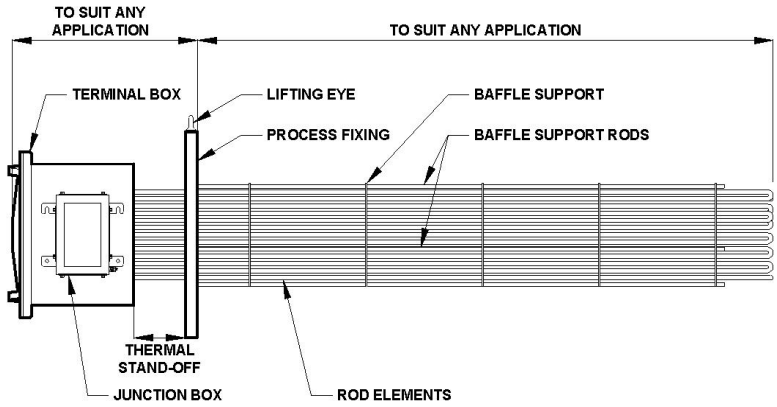


FEATURES

- Certified to ATEX or IECEx standards
- Terminal box is certified weatherproof to IP66 as well as Type 4 or 4X standards
- Temperature classifications T1 to T6
- Up to 1400kW
- Elements are specially sealed to prevent moisture ingress
- Elements are individually replaceable on site without the need for special tools
- Withdrawable type elements are available to facilitate replacement without draining the vessel
- Suitable and certified for use in high ambient temperatures (e.g. Middle East)
- Anti-condensation heaters fitted, if required

TYPICAL APPLICATIONS

- Crude oil / hydrocarbon liquids
- Molecular sieve regeneration
- Glycol (TEG & MEG) reboilers
- Heat transfer oils
- Industrial gases
- Tank heating
- Natural gas
- Heating medium
- Fuel gas
- Water
- Fuel oils



Nominal Flange Size		kW LOAD with Maximum Immersed Length of 3665 mm		
Inch	mm	1 w/sq cm	2.5 w/sq	7.44 w/sq cm
6	150	30	80	200
8	200	60	160	400
10	250	100	260	650
12	300	150	380	950
14	350	180	460	1150
16	400	245	620	1550
18	450	325	800	2000
20	500	400	980	2500
24	600	585	1460	3650
30	750	1110	2780	5000
36	900	1610	4040	n/a
40	1000	1995	5000	n/a

Certification

ATEX / IECEx Ex II 2 G/D
Ex d IIC T1 to T6 Gb
Ex tb IIIC T85 to T450°C Db IP66
EN 60079-0, EN 60079-1, EN 60079-7, EN 60079-31
CSA (CEC/NEC) Class I, Div 1, Groups A, B, C, D; T1 to T6, Enclosure Type 4 or 4X
CSA (CEC) Ex d IIC; T1 to T6 Gb, IP66 (CAN)
CSA (NEC) Class I, Zone 1, AEx d IIC; T1 to T6 Gb, IP66 (USA)
CU TR (formerly GOST), CNEx, CCOE, Inmetro, KGS

Terminal Box

Manufactured from low temperature carbon steel or stainless steel throughout, with screwed-on lid to suit the hazardous environment

Elements

Manufactured from 80/20 NiCr resistance wire with high purity compacted magnesium oxide powder sheathed within corrosion / erosion resistant tube, eg:

Incoloy 800/825	Inconel 600/625	Titanium
316/316L stainless steel	321 stainless steel	Monel

Internals

Elements are supported in a baffle type support assembly to prevent vibration and element deformation

Voltage

Suitable for voltages up to 690V (600V CAN and USA)

FP CAST LINE HEATERS

EXHEAT's range of cast aluminium line heaters provide a compact and efficient heating solution for constant flow liquids or gases. Cast heaters are increasingly being selected over traditional pressure vessel type heaters for the following reasons:

- Suitable for high process design pressures
- High reliability and increased service life
- Cost effective
- Uniform heat distribution
- Increased safety due to the encasement
- Resistant to any internal vibrations
- Compact size with a reduced footprint
- Available on shorter lead times
- Excellent heat transfer and residual heating from the aluminium casting

The design incorporates electric heating elements and an indirect process heating coil embedded within marine grade cast aluminium. This provides excellent heat transfer properties combined with low surface temperatures.

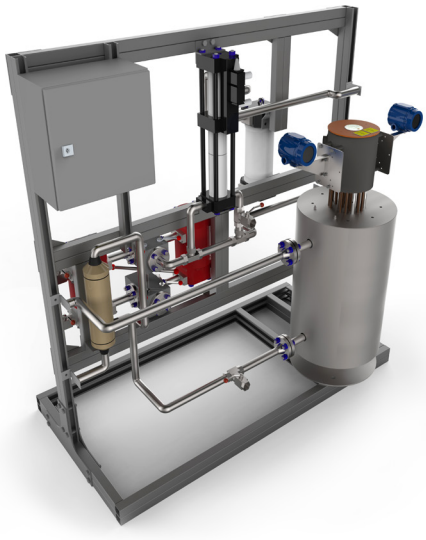
FEATURES

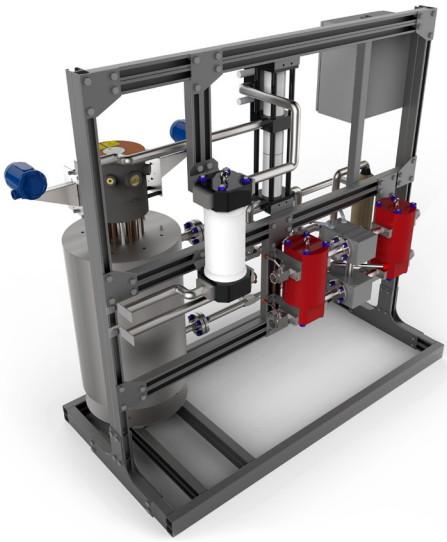
- Certified to ATEX, IECEx or CSA standards
- Certified under EN/IEC 60079-0, 60079-1, 60079-7, 60079-31 and standards per CEC/NEC 500
- Flameproof IP66 rated terminal enclosure
- Cellular glass insulated with stainless steel cladding
- Maximum design pressure and temperature of 660 barg at up to 400°C
- Process control and over-temperature protection sensors: RTD Pt100, thermocouple type K or thermostats
- Wall or floor, vertical or horizontal mounting
- Multiple heating elements allow for step control, alternatively, solid state relay or thyristor control can be employed
- Coil materials: stainless steel 316L, duplex S31803, super duplex S32760 (others, including nickel alloys available on request)
- Process connections available using standard flanged or compression joints

TYPICAL APPLICATIONS

- Seal gas
- Air
- Natural gas
- Biogas
- Paint heating
- Nitrogen
- CO2
- Solvent
- Instrument air
- Pasteurisation

Certi ication	ATEX / IECEx Ⓔx II 2 G/D Ex d IIC T1 to T6 Gb Ex tb IIIC T85 to T450°C Db IP66 EN/IEC 60079-0, EN/IEC 60079-1, EN/IEC 60079-7, EN/IEC 60079-31 CCOE (India), KGS (Korea), Inmetro (Brazil) CSA (Canada and US), CU TR (formerly GOST)
Enclosure	Stainless steel or painted mild steel
Elements	XX Small: Hairpin type 316/L sheathed with 80/20 nickel chrome resistance wire embedded in high purity magnesium oxide X Small: Cartridge type stainless steel 316/L sheathed with 80/20 nickel chrome resistance wire embedded in high purity magnesium oxide Small / Medium / Large: Hairpin type nickel alloy N08800 (Alloy 800) sheathed with 80/20 nickel chrome resistance wire embedded in high purity magnesium oxide
Casting	Marine grade aluminium Gr. LM25 (Al-Si7Mg)
Cladding	Stainless steel ASTM A366 TP316 2B finish
Insulation	Cellular glass insulation (-260°C / +430°C)
Process Coil	Stainless steel Gr. 316L Duplex S31803 Super duplex S32760 Others, including nickel alloys available on request All with NACE MR1075 compliance
Design Code	Designed SEP (Sound Engineering Practice) in accordance with the PED for installation within the European Union; designed in accordance with ASME B31.3, EN 13445 or PD5500
CE Marked	In accordance with relevant EC Directives
Voltage	Up to 690VAC
Delivery	From 10 weeks, depending on options
Duty	XX Small: up to 3kW X Small: up to 10kW Small: up to 24kW Medium: up to 40kW Large: up to 70kW



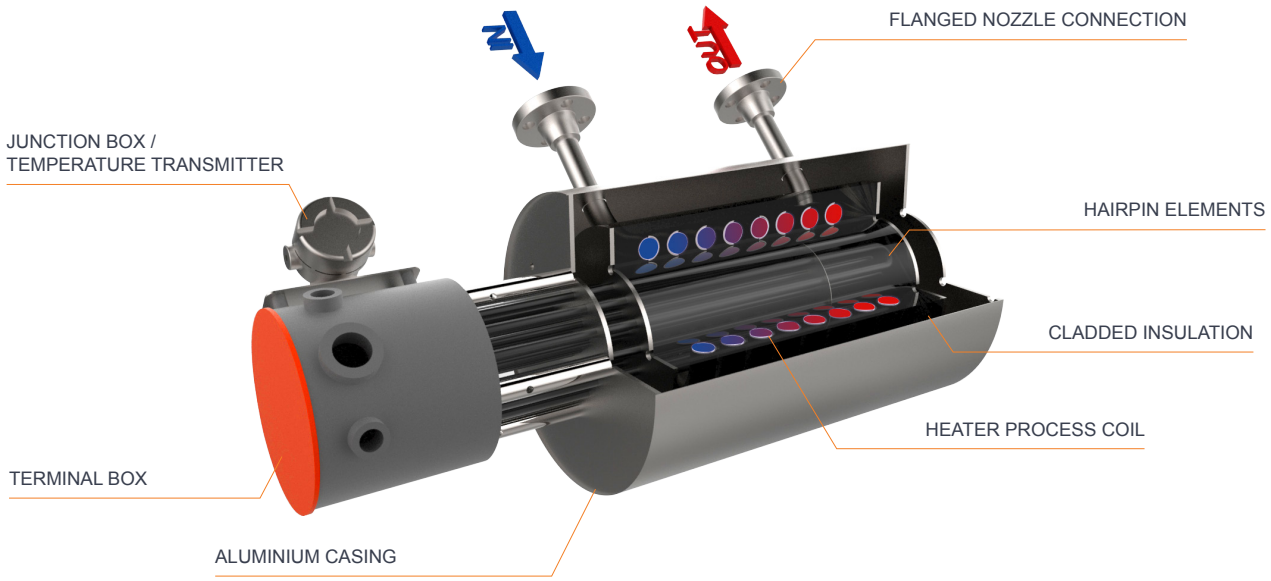


EXHEAT has developed a series of standard cast heaters which serve a broad variety of processes and design conditions. These heaters are highly cost effective, can be ordered simply by model number and are available with short lead times for delivery. If all standard options are taken, the engineering will be furnished by EXHEAT alongside the proposal. Upon receipt of PO, the goods will go straight into production and packing for dispatch without any engineering or documentation approval process post PO award.

If a bespoke design or additional options are required, then EXHEAT can also provide a unique designed solution. However, an engineering phase and special purchase items must be considered in the lead time of the project and the pricing.

	Standard	Additional Options
Mounting	Natural finish Floor or wall mounted	Painted Floor or wall mounting
Terminal Box	Ex d stainless steel (natural finish) Ex d carbon steel - painted (EXHEAT standard)	Ex e stainless steel - natural finish (not for CAN or USA) Ex d stainless steel - painted (client specification) Ex d carbon steel - painted (client specification)
Junction Box	Ex e Ex d Instrinsically safe *	Transmitters *
Sensors (Type)	RTD Pt100 simplex RTD Pt100 duplex	Thermocouple type K simplex * Thermocouple type K duplex * Thermostats *
Sensors (Quantity)	1 × over-temperature protection sensor 1 × process control sensor	Additional sensors to suit control system *
Sunshade	None	EXHEAT standard
Process Coil	Stainless steel 316L: SCH 10†, SCH 40, SCH 80 Duplex steel S31803: SCH 10†, SCH 40, SCH 80	Any SCH 40§, SCH 160 Super duplex S32760 Nickel alloys Others (please enquire)
Flanges	150 to 2500lbs Raised Face (RF) flange 150 to 2500lbs Ring Type Joint (RTJ) flange	Graylock NPT fittings 5000/10000 API flanges PN25, PN32, PN50 flanges Client specified flanges

* Not available with EXHEAT standard control panel.
† Only for XX Small and X Small models.
§ Only for X Small models.



STANDARD FP CAST LINE HEATERS

EXHEAT's range of cast aluminium line heaters provide a compact and efficient heating solution for constant flow liquids or gases. Cast heaters are increasingly being selected over traditional pressure vessel type heaters for the following reasons:

- Suitable for high process design pressures
- High reliability and increased service life
- Cost effective (especially if all standard options are taken)
- Uniform heat distribution
- Increased safety due to the encasement
- Resistant to any internal vibrations
- Compact size with a reduced footprint
- Available on shorter lead times
- Excellent heat transfer and residual heating from the aluminium casting

The design incorporates electric heating elements and an indirect process heating coil embedded within marine grade cast aluminium. This provides excellent heat transfer properties combined with low surface temperatures. EXHEAT has developed a series of standard cast heaters which serve a broad variety of processes and design conditions. These heaters are highly cost effective, can be ordered simply by model number and are available with short lead times for delivery.

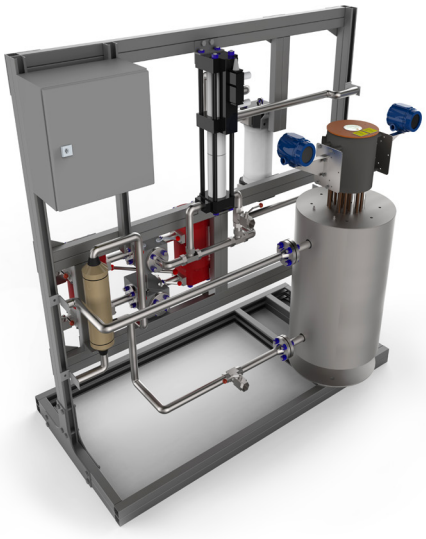
FEATURES

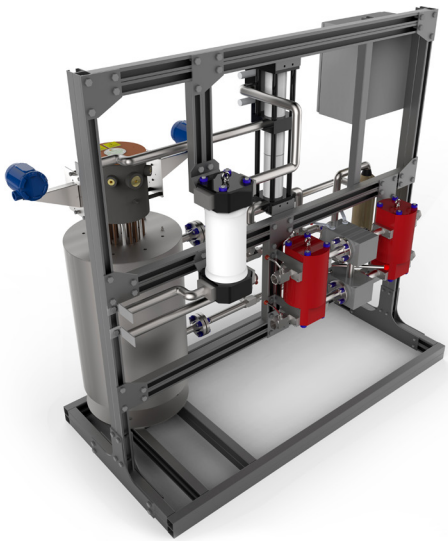
- Certified to ATEX, IECEx, CSA or other standards
- Certified under EN/IEC 60079-0, 60079-1, 60079-7, 60079-31 and standards per CEC/NEC 500
- Flameproof IP66 rated terminal enclosure
- Cellular glass insulated with stainless steel cladding
- Maximum design pressure and temperature of 430 barg at up to 400°C
- RTD Pt100 sensors for process control and over-temperature protection
- Wall or floor, vertical or horizontal mounting
- Multiple heating elements allow for step control, alternatively, solid state relay or thyristor control can be employed
- Process connections available using standard flanged or compression joints

TYPICAL APPLICATIONS

- Seal gas
- Air
- Natural gas
- Biogas
- Paint heating
- Nitrogen
- CO2
- Solvent
- Instrument air
- Pasteurisation

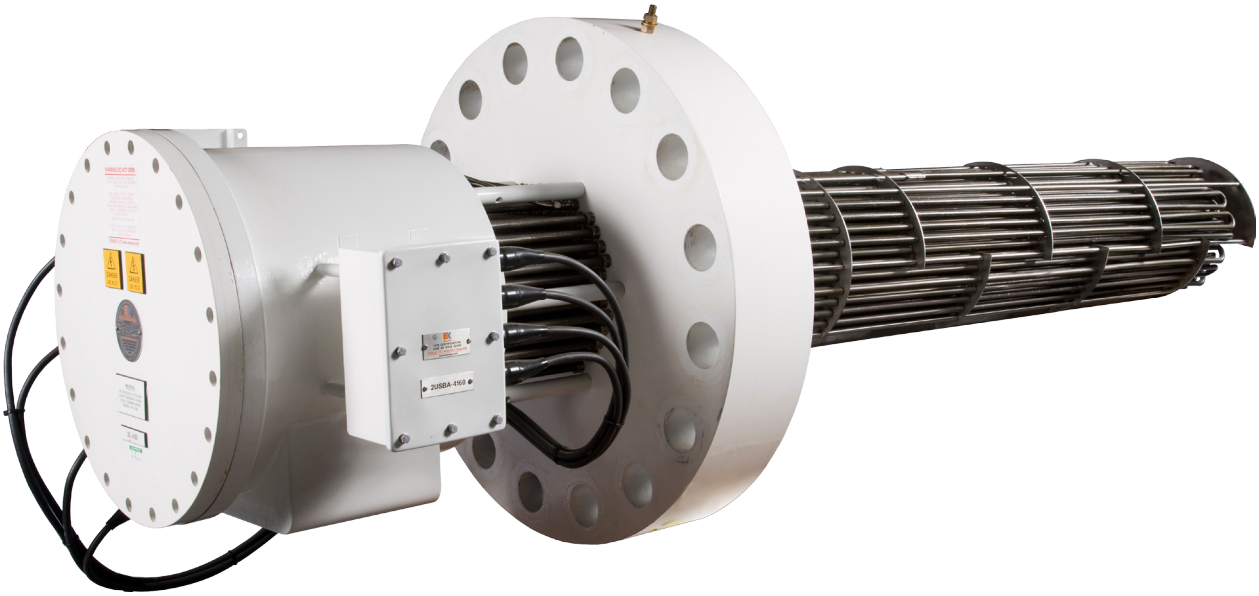
Certi ication	ATEX / IECEx Ⓔx II 2 G/D Ex d IIC T1 to T6 Gb Ex tb IIIC T85 to T450°C Db IP66 EN/IEC 60079-0, EN/IEC 60079-1, EN/IEC 60079-7, EN/IEC 60079-31 CCOE (India), KGS (Korea), Inmetro (Brazil) CSA (Canada and US), CU TR (formerly GOST)
Enclosure	Natural stainless steel or painted mild steel
Elements	XX Small: Hairpin type 316/L sheathed with 80/20 nickel chrome resistance wire embedded in high purity magnesium oxide X Small: Cartridge type stainless steel 316/L sheathed with 80/20 nickel chrome resistance wire embedded in high purity magnesium oxide Small / Medium / Large: Hairpin type nickel alloy N08800 (Alloy 800) sheathed with 80/20 nickel chrome resistance wire embedded in high purity magnesium oxide
Casting	Marine grade aluminium Gr. LM25 (Al-Si7Mg)
Cladding	Stainless steel ASTM A366 TP316 2B finish
Insulation	Cellular glass insulation (-260°C / +430°C)
Process Coil	Stainless steel Gr. 316L Duplex S31803 All with NACE MR1075 compliance
Design Code	Designed SEP (Sound Engineering Practice) in accordance with the PED for installation within the European Union; designed in accordance with ASME B31.3, EN 13445 or PD5500
CE Marked	In accordance with relevant EC Directives
Voltage	Up to 690V (subject to duty)
Delivery	From 6 weeks
Duty	XX Small: up to 3kW X Small: up to 10kW Small: up to 24kW Medium: up to 40kW Large: up to 70kW
Optional Accessories	Sunshade: 316 stainless steel (120 degree adjustment for X Small cast heater)





BFP RANGE OF HAZARDOUS AREA EX D CERTIFIED IMMERSION HEATERS

The BFP electric heater comprises a large range of process immersion heaters, certified for use in hazardous areas and are custom built to meet client specifications.

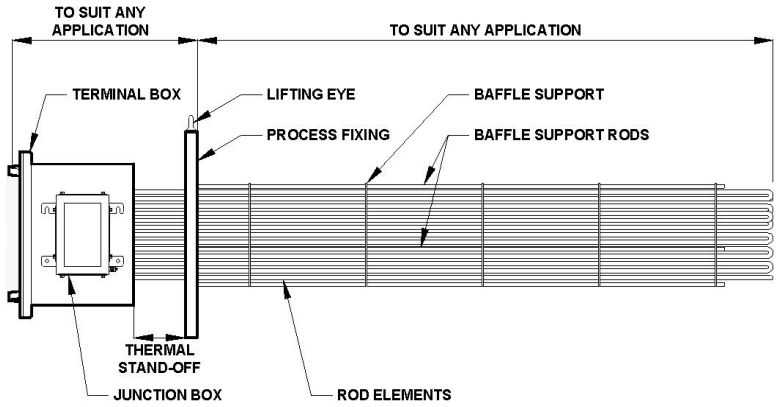


FEATURES

- Certified to ATEX or IECEx standards
- Terminal box is certified weatherproof to IP65 as well as Type 4 standards
- Temperature classifications T1 to T6
- Up to 1400kW
- Elements are specially sealed to prevent moisture ingress
- Elements are individually replaceable on site without the need for special tools
- Withdrawable type elements are available to facilitate replacement without draining the vessel
- Suitable and certified for use in high ambient temperatures (e.g. Middle East)
- Anti-condensation heaters fitted, if required

TYPICAL APPLICATIONS

- Crude oil / hydrocarbon liquids
- Molecular sieve regeneration
- Glycol (TEG & MEG) reboilers
- Heat transfer oils
- Industrial gases
- Tank heating
- Natural gas
- Heating medium
- Fuel gas
- Water
- Fuel oils



Nominal Flange Size		kW LOAD with Maximum Immersed Length of 3665 mm		
Inch	mm	1 w/sq cm	2.5 w/sq	7.44 w/sq cm
6	150	30	80	200
8	200	60	160	400
10	250	100	260	650
12	300	150	380	950
14	350	180	460	1150
16	400	245	620	1550
18	450	325	800	2000
20	500	400	980	2500
24	600	585	1460	3650
30	750	1110	2780	5000
36	900	1610	4040	n/a
40	1000	1995	5000	n/a

Certification ATEX / IECEx Ⓔx II 2 G/D
Ex d IIB T1 to T6 Gb
Ex tD A21 T85 to T450°C Db IP65
EN 60079-0, EN 60079-1, EN 60079-7, EN 60079-31

Terminal Box Manufactured from low temperature carbon steel or stainless steel throughout, with flanged lid

Elements Manufactured from 80/20 NiCr resistance wire with high purity compacted magnesium oxide powder sheathed within corrosion / erosion resistant tube, eg:

Incoloy 800/825	Inconel 600/625	Titanium
316/316L stainless steel	321 stainless steel	Monel

Internals Elements are supported in a baffle type support assembly to prevent vibration and element deformation

Voltage Suitable for voltages up to 690V

BFP RANGE OF EXPLOSIONPROOF / FLAMEPROOF CERTIFIED PROCESS FLOW HEATERS

The BFP type flameproof electric heaters comprise a large range of process flow heaters, certified for use in hazardous areas and are custom built to meet client specifications.

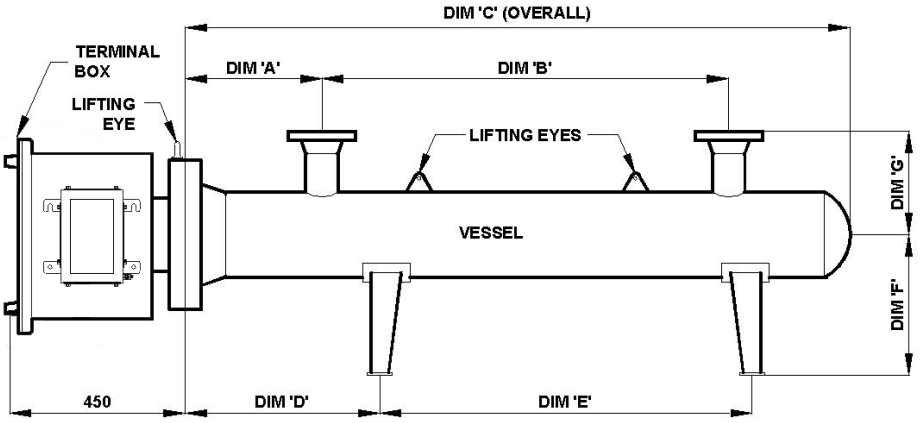
FEATURES

- Certified to ATEX or IECEx standards
- Terminal box is certified weatherproof to IP65
- Temperature classifications T1 to T6
- Up to 1400kW (larger ratings achieved by a combination of enclosures)
- Elements are individually replaceable on site without the need for special tools
- Anti-condensation heaters fitted, if required

TYPICAL APPLICATIONS

- Fuel gas
- Natural gas
- Industrial gases
- Molecular sieve regeneration
- Heat transfer oils
- Fuel oils
- Water
- Crude oil / hydrocarbons / liquids
- Heating mediums

Certi ications	ATEX / IECEx Ⓔx II 2 G/D Ex d IIB T1 to T6 Gb Ex tD A21 T85 to T450°C Db IP65 EN 60079-0, EN 60079-1, EN 60079-7, EN 60079-31		
Vessel Design Codes	PED Compliant Stoomwezen CODAP	PD 5500 2000 Cat 1 ASME VIII Div 1/2 EN13445	AS 1210 AD Merkblätter
Vessel Materials	Carbon steel Duplex Monel	Low temperature steel Titanium Nickel alloys	Stainless steel Super austenitic
Elements	Manufactured from 80/20 NiCr resistance wire with high purity compacted magnesium oxide powder sheathed within corrosion / erosion resistant tube, eg:		
	Incoloy 800/825 316/316L stainless steel	Inconel 600/625 321 stainless steel	Titanium Monel
	Element sheath available in welded or seamless tube up to 1.6mm thick		
Internals	Elements are supported in a segmental or rod type baffle assembly to prevent flow-induced vibration and hot spots, generally complying with TEMA standards		
Element to Tubesheet	Generally, elements are sealed into the flange by ‘Bite’ type couplings which provide a 100% seal at pressures up to 400 barg and give the opportunity to replace individual elements on site; elements can be welded to the tubesheet, in stand-off and non-stand-off configurations		
Terminal Box	Manufactured from either iron or stainless steel		
Voltage	Suitable for voltages up to 690V		



Tables indicate EXHEAT standard designs for hydrocarbon gas heating applications. Dimensions may vary from other mediums on compliance with project specification.

Short Option

kW	Withdrawal	A	B	C	D	E	F	G	Diameter (Ins)	Diameter (mm)
25	2200	1490	1605	1985	215	1555	400	250	4	100
50	2200	240	1555	2035	265	1505	400	275	6	150
75	2200	240	1555	2035	265	1505	400	275	6	150
100	2200	240	1555	2035	265	1505	400	275	6	150
125	2200	290	1520	2100	315	1470	400	300	8	200
150	2200	290	1520	2100	315	1470	400	300	8	200
175	2200	290	1520	2100	315	1470	400	300	8	200
200	2200	333	1500	2166	358	1450	400	325	10	250
225	2200	335	1500	2170	360	1450	400	325	10	250
250	2200	335	1500	2170	360	1450	400	325	10	250
275	2200	335	1500	2170	360	1450	400	325	10	250
300	2200	335	1500	2170	360	1450	400	325	10	250
325	2200	385	1450	2220	410	1400	400	350	12	300
350	2200	385	1450	2220	410	1400	400	350	12	300
375	2200	385	1450	2220	410	1400	400	350	12	300
400	2200	385	1450	2220	410	1400	400	350	12	300
425	2200	385	1450	2220	410	1400	400	350	12	300
450	2200	385	1450	2220	410	1400	400	350	12	300
475	2200	425	1440	2290	450	1390	400	375	14	350
500	2200	425	1440	2290	450	1390	400	375	14	350
600	2200	450	1410	2310	475	1360	400	400	16	400
700	2200	450	1410	2310	475	1360	400	400	16	400
800	2200	500	1375	2375	525	1325	400	425	18	450
900	2200	500	1375	2375	525	1325	400	425	18	450

Long Option

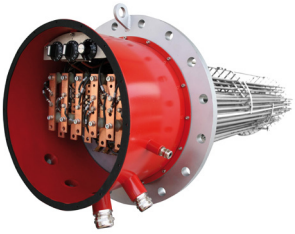
kW	Withdrawal	A	B	C	D	E	F	G	Diameter (Ins)	Diameter (mm)
50	3600	190	3005	3385	215	2955	400	250	4	100
100	3600	240	2955	3435	265	2905	400	275	6	150
150	3600	240	2955	3435	265	2905	400	275	6	150
200	3600	240	2955	3435	265	2905	400	275	6	150
250	3600	290	2920	3500	315	2870	400	300	8	200
300	3600	290	2920	3500	315	2870	400	300	8	200
350	3600	290	2920	3500	315	2870	400	300	8	200
400	3600	335	2900	3570	360	2850	400	325	10	250
450	3600	335	2900	3570	360	2850	400	325	10	250
500	3600	335	2900	3570	360	2850	400	325	10	250
600	3600	335	2900	3570	360	2850	400	325	10	250
700	3600	385	2850	3620	410	2800	400	350	12	300
800	3600	385	2850	3620	410	2800	400	350	12	300
900	3600	385	2850	3620	410	2800	400	350	12	300

ELVARME

VORES PRODUKTSORTIMENT INKLUDERER:

GENNEMSTRØM KUNDEDESIGN

GENNEMSTRØM STANDARD



FLANGEVARMELEGEMER KUNDEDES.

WATER HEATERS

FLANGEVARMELEGEMER STANDARD

ATEX

VI FØRER PRODUKTER INDENFOR KATEGORIERNE:

AUTOMATIK

HVAC & BYGNINGS-AUTOMATIK

KØLEPROFILER

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