THORNE & DERRICK INTERNATIONAL
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FP-CA Flameproof Removable Cartridge Immersion Heaters

The range of FP-CA flameproof removable cartridge heaters offers a hazardous area heating solution for oil and similar applications where low heat density is required. The element can be withdrawn for inspection without system drain down. The standard heater consists of a single element or multiple cartridges fitted into a mounting flange. A robust Ex d terminal enclosure protects the electrical connections. The watts density of the element fitted depends upon the media to be heated and the kilowatt rating required.

The FP removable cartridge-type immersion heater range is certified for use in hazardous areas where the atmosphere is classified as a Zone 1 or 2 (IIA, IIB, IIC) gas group, or a Zone 21 or 22 (IIIA, IIIB, IIIC) dust group.



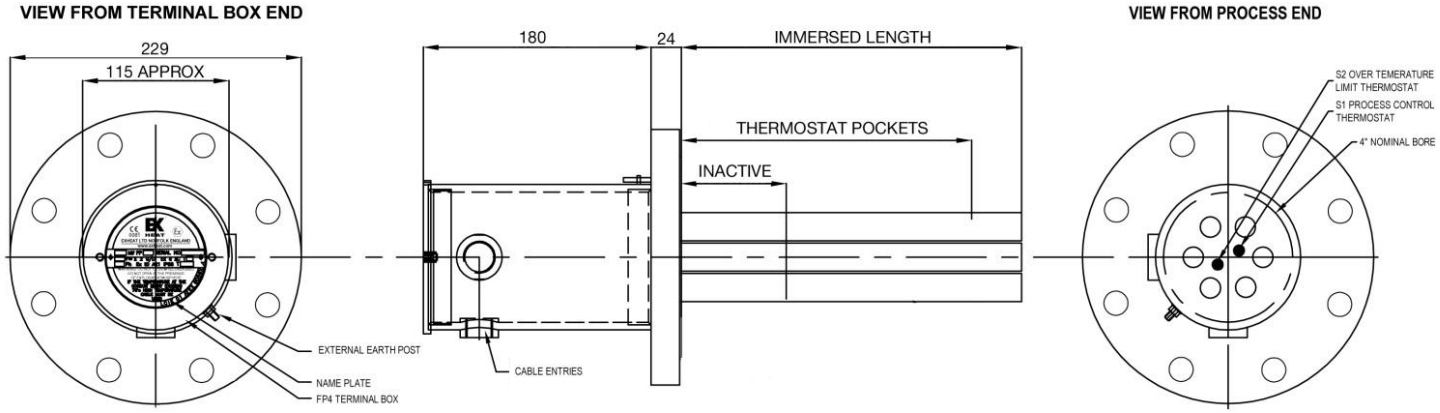
FEATURES

- Certified to meet the ATEX Equipment Directive and IECEx
- Mild steel or 316 stainless steel terminal enclosure with weatherproof protection to IP66 or NEMA 4
- Choice of built in process temperature sensors
- Suitable for ambient temperatures from -60°C to +60°C (subject to certification parameters)
- Mounting of the heater can be by a threaded NPT or BSP boss or an industry standard flange
- Designed for horizontal installation (vertical mounting version available on request)
- Can be supplied with the terminal box mounted away from the fixing boss / flange for high process temperatures

TYPICAL APPLICATIONS

- Pre-heating oil / water
- Processing equipment
- Cleaning and rinsing tanks
- Heat transfer systems
- Boiler equipment
- Frost protection
- Compressors
- Turbines
- Oil sumps
- Water / glycol cooling
- Lube oil reservoirs
- Oil separators

Terminal Box Type	Min Flange Size		kW LOAD with a maximum immersed Length of 2800mm	
	Ins	mm	Max Cable Entries	Max No of Elements Without Stand Off
FP 4	3	75	1 off M25 & 1 off M20	6
FP 6	6	150	1 off M32 & 2 off M25	15
FP 8	8	200	2 off M25 & 1 off M40	33
FP 10	10	250	1 off M50 & 2 off M25	54
FP 12	12	300	Up to 3 off M63 & 2 off M25	115



Certification

ATEX / IECEx Ⓔx II 2 G/D
Ex d IIC T1 to T6 Gb Zone 1 and 2
Ex tb IIIC T450 to 85°C Db Zone 21 and 22
EN 60079-0, EN 60079-1, EN 60079-7, EN 60079-31
CSA Class I, Division 1, Groups A, B, C, D; Temperature coded T1 to T6; Enclosure type 4
CAN Zones: CSA Ex d IIC; T1 to T6 Gb, IP66
USA Zones: CSA Class I, Zone 1, AEx d IIC; T1 to T6 Gb, IP66
CU TR (formerly GOST); Inmetro; KGS; CNEx; CCOE

Enclosure

Mild steel or 316 stainless steel, external and internal earths, screwed terminal cover, finished in epoxy paint (if required)

Elements

Removable 304 stainless steel cartridge, comprising high quality 80/20 nickel chrome resistance wire, housed within 316L stainless steel sheath; cartridges secured by welding

Controls

Heater over-temperature protection is fitted as standard (optional process temperature sensing devices can be incorporated in the form of thermostats, RTD's or thermocouples)

Mounting

Any threaded boss or flange in any material can be specified within the limits of the design parameters; heater terminal box can be either 'direct-on' or 'stand-off', depending on process temperature

Rating

To suit process requirement within the design and certification parameters

Voltage

Any electrical supply up to 690V (600V CSA)

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