HEAT
INDUSTRIAL LTD

Standard Products

EXHEAT Industrial Standard Products

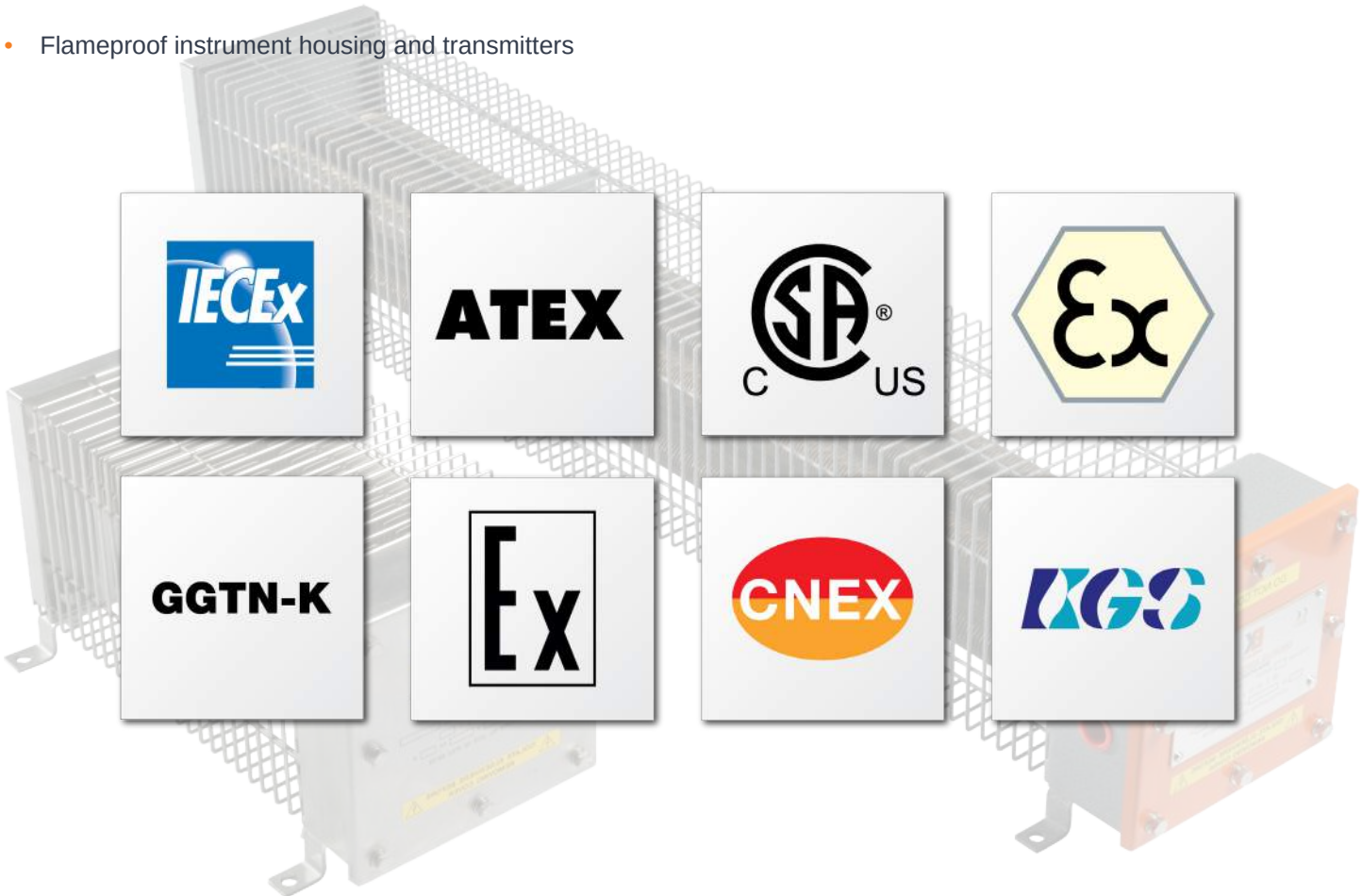
EXHEAT Industrial offers fast track solutions to the industry's wide and varied requirements for electrical heating systems. All heaters manufactured by EXHEAT Industrial for use in hazardous areas are supplied fully certified to meet the latest requirements of the IECEx scheme, CSA, Inmetro, CU TR (formerly GOST), CCOE, CNEx, KGS or the European ATEX Equipment Directive as appropriate. Products manufactured for the European market are CE marked and meet the requirements of the European Low Voltage, EMC and Machinery Directives.

When the standard range of products does not exactly meet our customer's requirements, EXHEAT sales engineers and designers will design a custom built hazardous or safe area electric heater. Close consultation with the customer and years of experience will ensure that our clients procure a heater that is optimal for their applications.

All EXHEAT Industrial heaters are manufactured and stocked in the UK, a selection of stock is also kept at our regional office in Singapore to facilitate faster delivery time. NEXT DAY delivery / collection service is available for UK and Europe on selected products.

EXHEAT Industrial Product Range

- Hazardous area air warmers, enclosure heaters and industrial convector or fan heaters
- Flameproof radiators, water boilers, immersion heaters and thermostats
- Industrial, baptistery and portable immersion heaters
- Heating elements (rod, cartridge and core type)
- Flameproof instrument housing and transmitters



Advantages of Electric Heating

Compared to other types of industrial heating such as fuel and gas fired heating systems, or indirect heat exchangers for steam, electric heating offers many advantages:

- **Efficiency:** Without the need for regular tuning or additional heat sources, electric heating boasts virtually 100% efficiency, since almost all of the electricity is converted to heat.
- **Precision:** Being a direct heating solution, electric heating boasts fast reaction times, offering superior temperature control and the flexibility to deal with varying process conditions.
- **Environmental:** Without the production of pollutants as a by-product, electric heating avoids the monitoring and control measures necessary to meet environmental regulations and furthermore, with minimal moving parts, noise regulations are not a concern either.
- **Physical size:** Electric heating boasts a small footprint, without the need for additional piping and supports, thereby saving valuable space.
- **Costs:** Being physically smaller in size, not only are initial costs considerably less with electric heating but without the need for frequent and complex maintenance activities and their associated down times or expensive performance monitoring either, operating costs are less too.
- **Maintenance:** With minimal moving parts, electric heating requires less maintenance.
- **Installation:** Electric heating boasts a simpler means of operation with faster setup times.

Heating Element Types

EXHEAT Industrial offers a range of heating element types for a wide variety of applications. We will work with you to determine the most suitable type for client application, material, specification and budget.

ROD TYPE ELEMENT

Metal sheathed with mineral insulated rod elements are the most versatile and cost effective method of electric heating.

- Various materials available subject to design parameters and medium; Incoloy 800, 825 or 304, 316L, 321 stainless steel
- L-shaped element bend formation for vertical orientated tanks
- 8mm, 10mm, 12.5mm diameter elements suitable for various process fixings
- Any electrical supply up to 600V (CSA) and 690V (subject to design parameters)
- 100% efficiency

REMOVABLE CORE ELEMENT

Removable ceramic core type elements are designed for use in heating large tanks, having the advantage that maintenance can be done without the need to drain the tank.

- Elements can be withdrawn / removed without system drain down
- Mild steel or 316L stainless steel element sheath
- Short lead time
- Single cores available 1Ph or 3Ph
- 38mm or 45mm diameter elements suitable for various process fixings
- Low watts density (surface temperature across the element)
- Any electrical supply up to 600V (CSA) and 690V (subject to design parameters)
- 100% efficiency

REMOVABLE CARTRIDGE ELEMENT

Cartridge elements are similar in construction to rod elements only both terminations are made at a single end. This allows elements to be installed within a removable element heater construction.

- Elements can be withdrawn / removed without system drain down
- 304 and 316L stainless steel elements
- 10mm or 12mm diameter elements suitable for various process fixings
- Any electrical supply up to 600V (CSA) and 690V (ATEX / IECEx) 4-W STAR or 3-W STAR with Floating Neutral wiring configuration
- 100% efficiency

AIR HEATERS Page 6 - 15






LINE HEATERS Page 16 - 18



IMMERSION HEATERS Page 19 - 24






THERMOSTATS / TRANSMITTER ENCLOSURES / CONTROLS Page 25 - 27



FWD Flameproof Air Warmers

The FWD range of air warmers is designed for use in small work or storage areas, and are 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
- Fabricated carbon steel enclosure weatherproof to IP66
- Temperature classes T2, T3 and T4 available
- Suitable for floor or wall mounting
- 2 × 20mm (plugged) cable entries provided as standard
- Corrosion resistant powder coated finish
- Suitable for ambient temperatures from -60ºC to +60ºC (subject to conditions to be discussed with sales engineer)
- Individually replaceable heating elements

TYPICAL APPLICATIONS

- Fuel servicing areas
- Chemical plants
- Offshore installations
- Battery stores
- Gas installations
- Containers
- Explosive stores
- Paint / solvent stores
- Dusty environments
- Sugar refineries
- Firework factories
- Ammunition depots
- Aircraft hangar service bays

Certification	ATEX / IECEx Ⓔx II 2 G/D Ex d IIC T2 to T4 Gb suitable for Zones 1 and 2 Ex t IIIC T300 to T135°C Db suitable for Zones 21 and 22 CU TR (formerly GOST)
Rating	500W to 2kW
Enclosure	Mild steel powder coated orange / grey, stainless steel option available to special order
Controls	If required, the heaters can be controlled from the EXHEAT range of remote mounted thermostats available for use in hazardous areas (see page 25)
Mounting	Pre-drilled support feet supplied as standard; heaters should be mounted horizontally with unrestricted air flow around the unit
Voltage	1 phase: 110 to 120V and 230 to 254V 3 phase: 380 to 440V, subject to design parameters

FWD-T Flameproof Adjustable Air Warmers

The FWD-T range comes with an easy to adjust external thermostat, and is designed for heating small work or storage areas and similar applications.

EXHEAT Industrial FWD-Ts are 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
- Weatherproof to IP66
- Temperature classes T2, T3 and T4 available
- Suitable for floor or wall mounting
- 2 × 25mm (plugged) cable entries provided as standard
- Corrosion resistant powder coated finish
- Rotatable terminal box
- Suitable for ambient temperatures from -60ºC to +60ºC (subject to conditions to be discussed with sales engineer)

TYPICAL APPLICATIONS

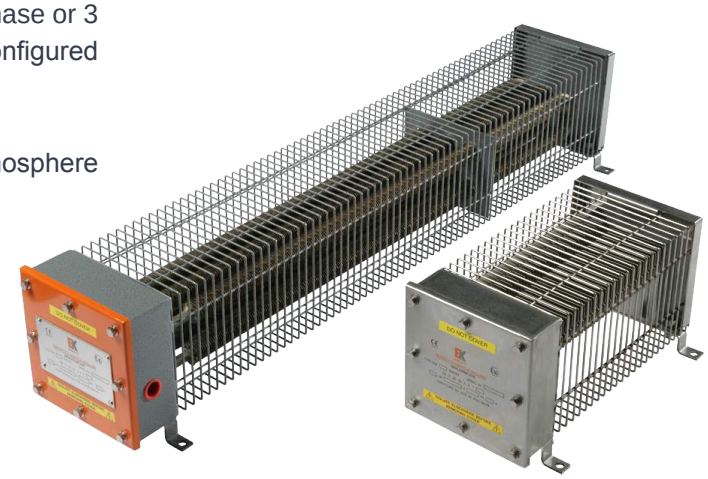
- Fuel servicing areas
- Chemical plants
- Offshore installations
- Battery stores
- Gas installations
- Containers
- Explosive stores
- Paint / solvent stores
- Dusty environments
- Sugar refineries
- Firework factories
- Ammunition depots
- Aircraft hangar service bays

Certification	ATEX / IECEx Ⓔx II 2 G/D Ex d IIC T2 to T4 Gb suitable for Zones 1 and 2 Ex t IIIC T300 to T135°C Db suitable for Zones 21 and 22 CU TR (formerly GOST)
Rating	500W to 2kW
Enclosure	Aluminium powder coated orange / grey
Controls	Externally adjustable 0 to 40°C room temperature controlled thermostat (max setting 25°C)
Mounting	Pre-drilled support feet supplied as standard; heaters should be mounted horizontally with unrestricted air flow around the unit
Voltage	1 phase: 110 to 120V and 230 to 254V

FAW Hazardous Area Air Warmers

The FAW range offers a versatile, lightweight air warming solution for small work and storage areas, and is suitable for use with 1 phase or 3 phase power supplies up to 660 volts. The range can also be configured for use with DC power supplies.

This range is certified for use in hazardous areas where the atmosphere is classified as a Zone 1 or 2 (IIA, IIB, IIC) gas group.



FEATURES

- Certified to meet the ATEX Equipment Directive and IECEx
- Temperature classes T2, T3, and T4 available
- Lightweight enclosure certified weatherproof to IP67
- Suitable for 1 phase or 3 phase (3 or 4 wire) or DC power supplies
- Suitable for floor or wall mounting
- A 20mm cable entry is provided as standard, additional entries can be provided as required
- Powder coated finish
- Optional range of flameproof room thermostats can also be provided
- Suitable for ambient temperatures from -60°C to +60°C (subject to conditions to be discussed with sales engineer)

TYPICAL APPLICATIONS

Aircraft hangars	Fuel servicing areas
Chemical plants	Offshore installations
Battery stores	Gas installations
Paint / solvent stores	Safety showers
Frost protection	Enclosures / cabinets

Certification	ATEX / IECEx Ⓔx II 2 G Ex e IIC T2 to T4 Gb Zone 1 and 2 IP67 CU TR (formerly GOST)
Rating	250W to 3kW
Enclosure	Lightweight 316 stainless steel or powder coated mild steel
Controls	If required, the heaters can be controlled from the EXHEAT range of remote mounted thermostats available for use in hazardous areas (see page 25)
Mounting	Support feet are pre-drilled and suitable for floor mounting supplied as standard (wall mounting brackets available on request); heaters should be mounted horizontally with unrestricted air flow around the unit
Voltage	1 phase: 110 to 120V and 220 to 254V 3 phase: 380 to 440V (max voltage 660V standard units and 550V compact units, subject to design parameters)
Voltage Tolerance	+5/-10%

STW Industrial Convector Heaters

The heavy duty natural convector type STW air warmer range is most suitable for medium sized spaces. The units can be supplied with an optional integrated externally adjustable limit thermostat, a remote thermostat or frost protection as required.

FEATURES

- Heavy duty robust construction
- Suitable for floor or wall mounting
- Powder coated carbon steel construction
- Supplied with plugged cable entries
- Weatherproof protected to IP66 against water and dust
- Optional adjustable 0 to 40°C room temperature controlled thermostat
- 1 × 25mm (plugged) cable entry provided as standard

TYPICAL APPLICATIONS

- Workshops
- Dairies
- Storage units
- Pump stations
- Frost protection
- Engine bay
- Wet rooms
- Crane cabs
- Ships
- Greenhouses
- Equipment rooms
- Container heating
- Living quarters

Rating	1kW, 2kW and 3kW ratings available
Construction	Powder coated carbon steel construction to RAL 9007 Grey
Terminal Box	Powder coated die cast aluminium, weatherproof to IP66
Element	304 stainless steel finned type
Supply	Standard heaters are designed to 1 phase 110 to 120V and 230 to 240V
Mounting	Support feet are pre-drilled and suitable for floor mounting or wall mounting; heaters should be mounted horizontally with unrestricted air flow around the unit

FLR Flameproof Liquid Filled Radiators

The FLR range of liquid filled electrically heated radiators comes complete with an externally adjustable control thermostat, and 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.

TYPICAL APPLICATIONS

- Ammunition depots
- Explosive stores
- Firework factories
- Sugar refineries
- Laboratories
- Dusty environments
- Chemical plant warehouses

FEATURES

- Certified to meet the ATEX Equipment Directive
- Low surface temperature
- Certified weatherproof protected to IP6X
- Integral preset surface temperature control thermostat
- Floor mounting
- Radiator filled with water / glycol mix
- Suitable for ambient temperatures from -20°C to +40°C
- Robust construction
- Manual reset over-temperature cut-out fitted to ensure radiator surface temperature never exceeds 80°C
- Optional externally adjustable control thermostat
- 2 × 25mm (plugged) cable entry provided as standard

Certification	ATEX Ⓔx II 2 G/D Ex d IIC T6 Gb (Gas) suitable for Zones 1 and 2 Ex t IIIC T85°C Db (Dust) suitable for Zones 21 and 22 CU TR (formerly GOST)
Enclosure	Cast aluminium finished in orange / grey
Radiator	Pressed steel with white powder coated finish to RAL 9010
Element	Long life 321 stainless steel rod-type, comprising high quality 80/20 nickel chrome resistance wire, compacted in magnesium oxide insulating powder
Controls	Preset radiator surface temperature control thermostat and manual reset safety temperature limiter (optional externally adjustable control thermostat)
Mounting	Floor standing with welded-on feet and wall retention brackets
Rating	Standard heater ratings 1kW, 2kW and 3kW
Voltage	1 phase: 230 to 240V

FCR Hazardous Area Convector Heaters

Heavy duty folded steel construction and finned stainless steel elements give the FCR range an exceptionally long life.

The FCR range is certified for use in hazardous areas where the atmosphere is classified as a Zone 1 or 2 (IIA, IIB, IIC) gas group.

FEATURES

- Certified to meet the ATEX Equipment Directive and IECEx
- Certified weatherproof protected to IP67
- Small footprint, occupying less floor space
- Sloped top, preventing objects being placed on the grill
- Floor or wall mounting
- Integral terminal enclosure
- Suitable for ambient temperatures from -60°C to +40°C
- Incoloy 800 finned elements for long life
- Grey gloss, powder coated, sheet steel construction
- Optional built-in room temperature control thermostat
- 2 × M20 (temporary plugged) cable entry provided as standard

TYPICAL APPLICATIONS

- Aircraft hangars
- Chemical plants
- Battery stores
- Container heating
- Frost protection
- Fuel servicing areas
- Offshore installations
- Gas installations
- Storage areas

Certification	ATEX / IECEx Ex II 2 G Ex e IIC T2 to T4 Gb Zone 1 and 2 CU TR (formerly GOST)
Enclosure	Heavy duty powder coated mild steel
Elements	Finned heating elements, comprising high quality 80/20 nickel chrome resistance wire, compacted in magnesium oxide insulating powder and encased in an Incoloy 800 sheath
Controls	If required, the heaters can be controlled from the EXHEAT range of remote mounted thermostats available for use in hazardous areas (see page 25)
Mounting	Wall or floor mounting via brackets / feet supplied
Voltage	1 phase: 110 to 120V and 230 to 254V 3 phase: 380 to 440V, subject to design parameters
Rating	Standard heating ratings 1kW, 2kW and 3kW

FUH Flameproof Fan Heaters

The FUH range offers a compact high capacity air heating solution that is suitable for large premises, and is designed for flexibility, allowing it to be supplied according to our clients' capacity and power supply requirements.

The FUH range is certified for use in hazardous areas where the atmosphere is classified as a Zone 1 or 2 (IIA, IIB, IIC) gas group.

FEATURES

- Certified to meet the ATEX Equipment Directive
- Available weatherproof to IP56
- Over-temperature protection
- Adjustable angle outlet louvres
- Optional room temperature control thermostat
- Suitable for ambient temperatures from -40°C to +40°C
- Available for current offshore standard 480V supplies
- 2 × 25mm (plugged) cable entry provided as standard

TYPICAL APPLICATIONS

Jack-up rigs	FPSOs
Oil refineries	Petrochemical plants
Offshore platforms	Ammunition stores
Sewage plants	Solvent recovery plants
Drilling floors	Frost protection
Lube oil coolers for gas turbines	

Certification	ATEX Ⓔx II 2 G Ex d IIC T3 Gb for use in Zone 1 and 2 areas CU TR (formerly GOST)
Casing	Grey powder coated steel
Element	Rod-type heating elements comprising 80/20 nickel chrome resistance wire, compacted high purity magnesium oxide insulating powder and encased in Incoloy 825 metal sheath
Controls	If required, the heaters can be controlled from the EXHEAT range of remote mounted thermostats available for use in hazardous areas (see page 25)
Rating	9 to 30kW
Voltage	Heater and motor: 415V supply suitable for use from 380 to 415V and up to 440V for 9kW, 12kW and 15kW units; 30kW model 3 phase (4 wire STAR); 20kW model 3 phase (3 wire DELTA); 480V available on request, all 3 phase, 3 wire DELTA Controls: Up to 230VAC, 1 phase

HEF Hazardous Area Enclosure Heaters

The self-regulating properties of the HEF enclosure heaters eliminate the requirement for a thermostat. Coupled with its compact design, this makes the HEF ideal for anti-condensation, frost protection and temperature control.

The HEF range is certified for use in hazardous areas where the atmosphere is classified as a Zone 1 or 2 (IIA, IIB, IIC) gas group.

FEATURES

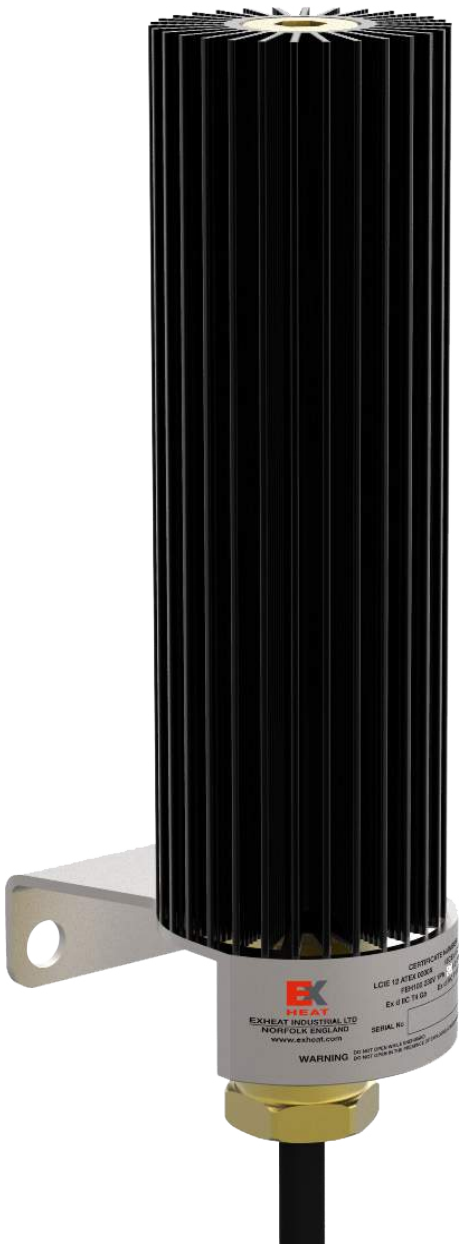
- Certified to meet the ATEX Equipment Directive and IECEx
- Compact, low profile, 316 stainless steel case, requires minimal space
- Self-regulating - can be used without a thermostat
- Suitable for ambient temperatures from -60°C to +80°C
- Mounting of the heater can be in any orientation
- Design allows for closer installation proximity to internal components and cables

TYPICAL APPLICATIONS

- Control / monitoring panels
- Instrumentation cabinets
- Condensation prevention
- Temperature fluctuations
- Frost protection
- Control valve housings
- Motor enclosures

Certification	ATEX / IECEx Ⓔx II 2 G Ex e IIC T4 Gb Zone 1 and 2 CU TR (formerly GOST)
Casing	316 perforated stainless steel
Element	Self-regulating
Controls	The HEF is self-regulating, automatically reducing its output as the ambient temperature rises; if overall enclosure temperature control is required it is recommended that the HEF heater is used in conjunction with one of the EXHEAT range of Ex d thermostats (see page 25)
Mounting	The heater may be mounted in any orientation, using appropriate securing bolts through the mounting feet
Rating	The HEF range is available in a nominal 30, 50, 100, 200 and 500W outputs; models available for 110 to 120V and 230 to 240V 1 phase supplies

FXE Flameproof Finned Extruded Enclosure Heater



The FXE range of heaters is designed specifically for frost protection, anti-condensation and temperature control, delivering constant power output. It comes complete with mounting bracket and 1.5m flying lead.

The FXE 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
- Certified weatherproof protected to IP6X
- Compact design, requires minimal space
- Black anodized convective surface
- Standard product available with short delivery times
- Suitable for ambient temperatures -50°C to +80°C
- Optional over-temperature protection

TYPICAL APPLICATIONS

- Control / monitoring panels
- Instrumentation cabinets
- Condensation prevention
- Temperature fluctuations
- Frost protection
- Motor enclosures

Certification	ATEX / IECEx Ⓔx II 2 G/D Ex d IIC T3 to T4 Gb Zone 1 and 2 Ex tb IIIC T200 to T135°C Db Zone 21 and 22 CU TR approval upcoming
Mounting	Vertically mounted by bracket or rail
Rating	Available in 30, 50, 75 and 100W
Extrusion	Finned aluminium, anodised matt black
Voltage	Up to 254VAC
Control	If required, heaters can be supplied with a range of remote mounted thermostats
Element	18mm dia 321 stainless steel cartridge element with 1.5m of silicone flex cable

FXT Flameproof Air Sensing Thermostats

The FXT range of thermostats reflects the design of other FX range of air warmers; the extruded aluminium finned tube can be mounted vertically by bracket or rail. The thermostat can be paired with the FXE heater or used as a standalone product supplied with cables fitted through certified cable glands for termination.

Certification	ATEX / IECEx Ⓔx II 2 G/D Ex d IIC T6 Gb Zone 1 and 2 Ex tb IIIC T85°C Db Zone 21 and 22 CU TR approval upcoming
Mounting	Vertically mounted by bracket or rail
Voltage	Up to 250V, 1.3A
Extrusion	Finned aluminium, anodised matt black

FEATURES

- Certified to meet the ATEX Equipment Directive and IECEx
- Certified weatherproof protected to IP6X
- Compact design, requires minimal space
- Black anodized convective surface
- Standard product available with short delivery times
- Suitable for ambient temperatures -60°C to +78°C

FP-MLH Flameproof Mini Line Heaters

The range of flameproof mini line heaters consist of a screw plug or flanged type immersion heater mounted in a thermally insulated heating vessel, and is designed to efficiently transfer heat to a flowing medium (liquid, air or gas).

The FP-MLH range is certified for use in hazardous areas where the atmosphere is classified as a Zone 1 or 2 (IIA, IIB, IIC) gas group.

FEATURES

Certified to meet the ATEX Equipment Directive

Weatherproof protected to IP66 or NEMA 4 (FP4-MLH only)

Choice of built in process temperature sensors and externally adjustable option

Mild steel or 316 stainless steel vessel

Suitable for ambient temperatures from -40°C to +40°C (FP-MLH) and -60°C to +60°C (FP4-MLH)

Standard range of high quality Incoloy or stainless steel rod-type elements, designed for water or withdrawable ceramic core elements, designed for oil

Maximum allowable working pressure up to 10 barg / 145 psig, subject to design parameters

Designed for both horizontal and vertical installation (if mounted vertically, terminal box must be located at the bottom)

FP4-MLH range available with multi approvals

TYPICAL APPLICATIONS

Water heating: Wash rooms, industrial washing equipment, hot water storage tanks

Frost protection: Pre-start systems for water cooled engines, fire extinguishing equipment, oil sump heating

Heat transfer oils: Moulds, dies and platens, closed loop systems for bitumen, etc

Fuel oil heating: Pre-heating to pumping viscosity

Certification	ATEX Ⓔx II 2 G Ex d IIC T4 to T6 Gb Zone 1 and 2 EN 60079-0, EN 60079-1, EN 60079-7, EN 60079-31 CU TR (formerly GOST)	FP4-MLH also certified to: ATEX / IECEx, CSA, Inmetro, KGS, CNEx, CCOE
Enclosure	Cast aluminium alloy with a maximum of one M20 and one M25 cable entry, external and internal earths and screwed terminal cover (FP4-MLH - mild steel or 316 stainless steel)	
Element	High quality nickel chrome resistance wire compacted in magnesium oxide insulating powder and sheathed in corrosion resistant Incoloy 825/800, 316L stainless steel, withdrawable ceramic core elements housed in mild steel or 316L stainless steel tube	
Pressure	Maximum allowable working pressure up to 10 barg / 145 psig subject to design parameters	
Design Code	Sound Engineering Practice (SEP)	
Insulation	Mineral wool	
Cladding	Coated mild steel or 304 stainless steel	
Rating	Up to 12kW (water applications) and up to 3kW (light-medium oil applications)	

HEWL/HEOL Line Heaters

The HEWL and HEOL range of line heaters is suitable for heating all process fluids which are non-corrosive to the materials of construction. They provide a clean and efficient heating method for bulk liquid flow applications.

FEATURES

- Thermal insulation and cladding
- Weatherproof terminal enclosure with protection to IP66
- Internal control thermostats and over-temperature thermostat
- Also available in flameproof construction for hazardous areas utilising the FP range
- Alternative materials of construction available
- Designed for horizontal installation (vertical mounting version available on request)

TYPICAL APPLICATIONS

- Fuel oil
- Heat transfer oils
- Lube oil pre-heating
- Indirect heating of liquids
- Engine jacket pre-heating
- Under floor heating schemes
- Industrial washing and rinsing processes
- Temperature maintenance of storage tanks
- Tempering of low grade residual oils for burners and engines

Construction	Weatherproof protection to IP66	**Vessel**	Mild steel or 316 stainless steel
Rating	Up to 200kW (HEWL) and up to 120kW (HEOL), subject to application	**Insulation**	Mineral wool
Working Pressure	Up to 10 barg / 145 psig, subject to design parameters	**Cladding**	Stucco aluminium
Design Code	Sound Engineering Practice (SEP)	**Voltage**	Standard supplies up to 690V, subject to design parameters
Element	Incoloy 800 or 825, 316L or 304 stainless steel, sheathed rod type (HEWL), or removable ceramic core type housed in mild steel or 316 stainless steel, or cartridge type housed in 316 stainless steel (HEOL)		

Ex d Flameproof Line Heaters

The range of Ex d flameproof line heaters are suitable for heating all process fluids which are non-corrosive to the materials of construction, providing a clean and efficient heating method for bulk liquid flow applications.

The Ex d flameproof line 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

- Thermal insulation and cladding
- Weatherproof terminal enclosure to IP66
- Internal control thermostats and over-temperature thermostat
- Alternative materials of construction available
- Designed for horizontal installation (vertical mounting version available on request)

TYPICAL APPLICATIONS

- Fuel oil
- Heat transfer oils
- Lube oil pre-heating
- Indirect heating of liquids
- Engine jacket pre-heating
- Under floor heating schemes
- Industrial washing and rinsing processes
- Temperature maintenance of storage tanks
- Tempering of low grade residual oils for burners and engines

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 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		
Construction	Flameproof protection to IP66	Vessel	Mild steel or 316L stainless steel sheath
Rating	Up to 120kW (subject to application)	Insulation	Mineral wool
Working Pressure	Up to 10 barg / 145 psig, subject to design parameters	Cladding	Stucco aluminium
Design Code	Sound Engineering Practice (SEP)	Voltage	Standard supplies up to 690V (600V CSA)
Element	Incoloy 825 or 316L stainless steel sheathed rod-type or removable ceramic core type housed in mild steel or 316L stainless steel		

FP Flameproof Rod-Type Immersion Heaters

The FP range of flameproof rod-type immersion heaters is a highly adaptable solution that can be customised to suit the process requirements of our clients, and are suitable for heating all types of process mediums which are non-corrosive to the materials of construction, and carry multiple approvals for global supply.

The FP rod-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 cert parameters)
- Mounting of the heater can be by a threaded 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	Boiler equipment
Processing equipment	Frost protection
Heating medium	Heat transfer systems
Safety showers	Tank heating
Compressors	Turbines
Anti-condensation	Water / glycol cooling
Oil separators	Refrigeration packages
Cleaning and rinsing tanks	

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	A choice of rod-type elements comprising of 80/20 nickel chrome resistance wire, compacted in high purity magnesium oxide insulating powder and encased in either Incoloy or stainless steel sheath, secured by compression fittings, brazing or welding, depending upon the process application
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 NPT or BSP 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 requirements within the design and certification parameters
Voltage	Any electrical supply up to 690V (600V CSA)

FP-C Flameproof Removable Core Immersion Heaters

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

The FP removable core-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.

TYPICAL APPLICATIONS

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

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 cert 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

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 core, comprising high quality 80/20 nickel chrome resistance wire, contained within ceramic formers housed in plain or extended surface tubes
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 NPT or BSP 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 requirements within the design and certification parameters
Voltage	Any electrical supply up to 690V (600V CSA)

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

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)

RFA Flameproof Rod-Type Immersion Heaters

The RFA range of flameproof rod-type immersion heaters is suitable for installation in process tanks, safety showers, engine sumps, pressure vessels and similar plants, and are suitable for heating all process liquids or gases which are non-corrosive to the materials of construction.

The RFA rod-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.

FEATURES

- Certified to meet the ATEX Equipment Directive
- Lightweight cast aluminium alloy terminal enclosure with weatherproof protection to IP66 and IP67
- Choice of built in process temperature sensors
- Suitable for ambient temperatures -40°C to +40°C
- Mounting of the heater can be by a threaded boss or an industry standard flange
- Designed for horizontal installation (vertical mounting available on request)

TYPICAL APPLICATIONS

Pre-heating oil / water	Processing equipment
Heat transfer systems	Boiler equipment
Frost protection	Safety showers
Water / glycol packages	Refrigeration packages
Cleaning and rinsing tanks	Oil separators

Certification	ATEX Ⓔx II 2 G Ex d IIC T3 to T6 Gb Zone 1 and 2 CU TR (formerly GOST)
Enclosure	Cast aluminium alloy with a maximum of one M20 and one M25 cable entry, external and internal earths and screwed terminal cover; certified Ex d IIC T4 to T6 with the option of T3 to T6, where the terminal enclosure is stood away from the processing equipment
Elements	A maximum of three rod-type elements, comprising 80/20 nickel chrome resistance wire, compacted in high purity magnesium oxide insulating powder and encased in either Incoloy 800, 825 or 316L, 304 or 321 stainless steel, secured by either brazing or welding depending upon the process application
Mounting	Any threaded NPT or BSP boss or flange in any material can be specified within the limits of the design parameters; heaters can be either ‘direct-on’ or ‘standoff’ as required by the certification
Controls	Heater over temperature protection is fitted as standard
Rating	12kW (water applications) and up to 3kW (light-medium oil applications)
Voltage	Any electrical supply up to 690V

HB Rod-Type Industrial Immersion Heaters

The HB rod-type range of screwed or flanged immersion heaters is an inexpensive solution for all commercial and industrial hot water cylinders, cooling tower frost protection and other applications which are non-corrosive to the construction materials. Adjustable control thermostats can also be supplied and scaled to suit the specific application.

FEATURES

- Robust lightweight aluminium or mild steel enclosure
- Fitted with control and limit (on request) thermostats
- Certified weatherproof to IP66
- Suitable for working pressures of up to 8 barg (higher working pressures are available on request)
- All stock coded models fitted with Incoloy 825 elements and 2-off stainless steel thermostat pockets
- Terminal box can be rotated through 360 degrees to allow final cable entry position to be chosen
- Heavy duty brass fixing boss screwed 2", 2¼" or 2½" BSPP, alternatively supplied with square mounting flange
- Up to two cable entries (standard 1-off)
- Standard immersion heaters are designed for horizontal installation (heaters for vertical installation are available on request)

Heat is transferred to the liquid by means of Incoloy 825 sheathed heating elements with automatic control being achieved using an integral adjustable thermostat. Rating up to 18kW.

TYPICAL APPLICATIONS

- Hot water storage tanks
- Pre-heating oil and water
- Food processing equipment
- Cleaning and rinsing equipment
- Heat transfer, process and boiler equipment
- Frost protection

HB Removable Core Type Industrial Immersion Heaters

FEATURES

Robust lightweight aluminium or mild steel enclosure

Fitted with control and limit (on request) thermostats

Certified weatherproof to IP66

Suitable for working pressures of up to 8 barg (higher working pressures are available on request)

All stock coded models fitted with Incoloy 825 elements and 2-off stainless steel thermostat pockets

Terminal box can be rotated through 360 degrees to allow final cable entry position to be chosen

Heavy duty brass fixing boss screwed 2", 2¼" or 2½" BSPP, alternatively supplied with square mounting flange

Up to two cable entries (standard 1-off)

Standard immersion heaters are designed for horizontal installation (heaters for vertical installation are available on request)

The HB removable core type range is recommended for applications where the equipment cannot be easily drained. Heat is transferred to the liquid by means of removable ceramic heating elements within a carrier tube to allow replacement without draining.

Automatic control can be achieved by fitting a thermostat into the integral pocket. Sheath material available in stainless steel or mild steel. Rating up to 6kW.

TYPICAL APPLICATIONS

Hot water storage tanks

Pre-heating oil and water

Food processing equipment

Cleaning and rinsing equipment

Heat transfer, process and boiler equipment

Frost protection

ATEX Certified Flameproof Thermostats

EXHEAT Industrial supplies a full range of thermostats and other temperature sensing devices in weatherproof or explosionproof enclosures to complement our heaters. All thermostats are certified for use in hazardous areas where the atmosphere is classified as a Zone 1 or 2 (IIA, IIB, IIC) gas group.

AFT FLAMEPROOF AIR / PROCESS SENSING THERMOSTATS

Certified to meet the ATEX Equipment Directive and IECEx II 2 G/D Ex d IIC T6 Gb (Gas) Ex t IIIC T85°C Db (Dust) IP6X and CU TR (formerly GOST) standards

Externally adjustable option, enabling quick and accurate variable control for air applications.

Wall mounted

Suitable for ambient temperatures from -60°C to +60°C

Lightweight cast aluminium enclosure certified weatherproof to IP6X

HFT FLAMEPROOF AIR SENSING THERMOSTATS

Certified to ATEX / IECEx II 2 G Ex d IIC T6 Gb Zone 1 and 2 and CU TR (formerly GOST) standards; CSA approval upcoming

Designed for temperature control in work or storage areas, in conjunction with a hazardous area air heater

Ingress protection IP66

Wall mounted

316 stainless steel enclosure

Suitable for ambient temperatures from -60°C to +60°C

RFT FLAMEPROOF PROCESS SENSING THERMOSTATS

Certified to meet the ATEX Equipment Directive

Suitable for use in process tanks and vessels containing liquids

Lightweight cast aluminium enclosure certified weatherproof to IP6X

Suitable for ambient temperatures from -20°C to +40°C

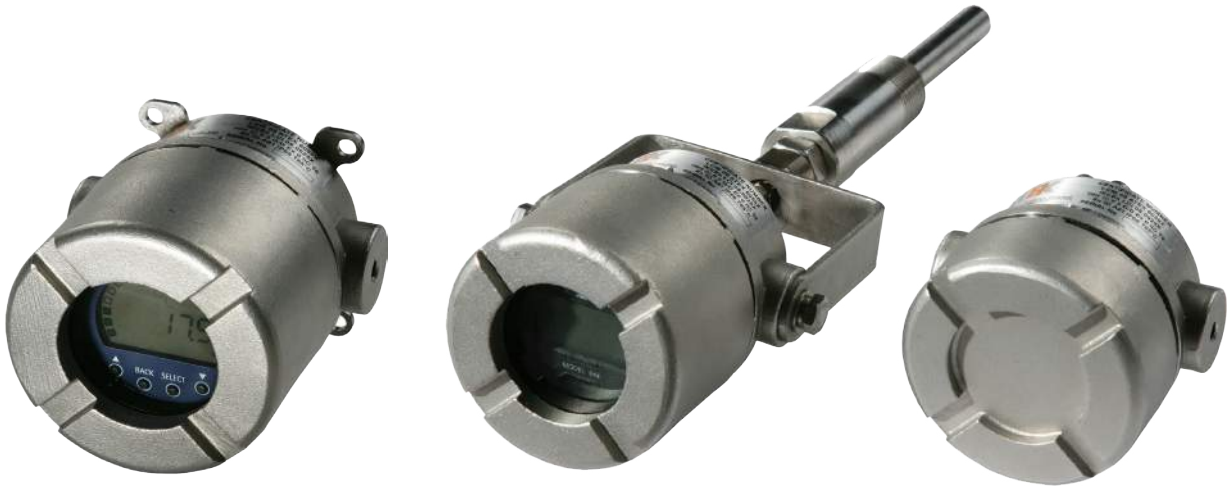
Mounting can be by a threaded boss or an industry standard flange

1 × M20 and 1 × M25 (plugged) cable entries provided as standard

HIH Flameproof Transmitter Enclosures

The HIH range of instrument enclosures are designed to accommodate most makes of head mounted process transmitter or termination block. EXHEAT promotes the use of its preferred range of WIKA® temperature transmitters, however empty enclosures can be supplied or, on special request, other makes of transmitter such as Siemens®, Rosemount® or Yokogawa® can be installed.

The range of HIH instrument enclosures are 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
Ⓔx II 2 G/D Ex d IIC T6 (Gas) Ex tD A21 T85°C (Dust)

CU TR (formerly GOST) certified

Ingress protection IP66

316 stainless steel enclosure

Optional viewing window for transmitter LCD displays

M20 cable entries (2 standard, 4 maximum)

Suitable for ambient temperatures from -50°C to +60°C

TYPICAL APPLICATIONS

Temperature measurement and display for all applications

Accommodates all major brands of head mounted process transmitter

Hazardous area process temperature measurement

Thermowell assemblies available

Machinery and plant construction, power engineering, heating, ventilation, and refrigeration

Local / Remote Control Units

The range of local and remote control units are designed to offer a local interface for equipment in the field, controlled by a remote source. These units can be manufactured for use in both hazardous and non-hazardous areas having the control facility for on and emergency stop, with indications for on and fault status.

All products are supplied with full wiring schematics and hazardous area certification, as required. Suitable cable gland kits can also be provided to ensure a one-stop cost effective solution. All units are provided with our standard warranty and are built and tested in our ISO 9001 certified UK factory, ensuring that our unrivalled high standards are incorporated throughout all of our products.

All units can be manufactured for use in any of the below hazardous and non-hazardous areas:

ATEX / IECEx / GOST						
Zone	0	1	2	20	21	22
		✓	✓		✓	✓

NEC 505 Class 1			
Zone	0	1	2
		✓	✓

NEC 500						
	Class I		**Class II**		**Class III**	
Division	1	2	1	2	1	2
		✓	✓	✓	✓	✓

All units can be certified to any of the below international standards:

ATEX Equipment Directive

- II2 G Ex tD T6
- II2 G Ex db IIC
- II2 D Ex tb IIIC (T85 to T150°C)
- II2 G Ex ed II T6
- II2 D Ex tD A21 T85°C

IECEx

- Ex db IIB T6
- Ex tb IIIC (T85 to T150°C)
- Ex ed II T6
- Ex tD A21 T85°C

Inmetro

- Ex db IIB T6
- Ex tb IIIC (T85 to T150°C)
- Ex ed II T6
- Ex tD A21 T85°C

CU TR (formerly GOST)

- 1 Ex d IIB T6
- Ex tD A21 (T85 to T150°C)
- Ex ed Gb IIC T6
- Ex t IIIC Db
- Ex tD A21 T85°C

NEC505

- USL: Class 1, Zone 1
  Ex db IIB Zone 21
  Ex tb IIIC (T85 to T150°C)
- CNL: Ex d IIB Class II, Groups E, F, G