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**EX**  
**HEAT**  
INDUSTRIAL

## ***STANDARD PRODUCTS***



# EXHEAT Industrial Standard Products

EXHEAT Industrial offers fast-track solutions to the industry's wide and varied requirements for electrical heating systems. Drawing upon years of experience, we have engineered a comprehensive range of standard design hazardous area heaters and temperature controllers that have been carefully analysed and manufactured in advance, then stored in facilities in the UK and the US. This allows us to deliver products that are designed for optimum heating performance at reduced lead times for customers around the world.

We are committed to ensuring our customers' requirements are met and backed up by a level of service and safety standards necessary to operate in a global market. EXHEAT Industrial operates a Quality Management System that complies with ISO 9001:2015 (FM 26078), manufacturing products that meet the rigorous standards of ATEX Directive (2014/34/EU) and the internationally recognised IECEx scheme, as well as other compliance approvals required as appropriate.

## Product Range

- **Space Heaters:** Radiator, convector and fan-type heaters designed for smaller enclosures/cabinets or larger room/containers.
- **Immersion Heaters:** Stab-in heaters for direct immersion into process fluids, manufactured with low-watt density rod/hairpin, ceramic core or cartridge-type heating element options.
- **Line Heaters:** A comprehensive range of line heaters providing clean, safe and efficient heating for bulk liquid (corrosive/non-corrosive) flow applications.
- **Temperature Sensors/Controls:** Weatherproof and flameproof industrial sensors/controls that can be provided as standalone components or integrated with our heaters.



**GOST**

**GGTN-K**



**CQST**



# Advantages of Electric Heating

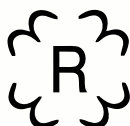
Compared to other types of industrial heating such as fuel and gas fired heating systems, or indirect heat exchangers for steam, electric heating offers many advantages:

- **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 many environmental regulations. This, combined with minimal moving parts, means noise regulations are no longer a concern.
- **Physical size:** Electric heating boasts a small footprint, saving valuable space by not requiring additional piping and supports.
- **Costs:** Electric heating equipment are typically physically smaller in size, meaning that initial costs are considerably lower. Operating costs are also minimised, as the need for frequent and complex maintenance, down times, and expensive performance monitoring activities are similarly reduced.
- **Maintenance:** With minimal moving parts, electric heating requires less maintenance.
- **Installation:** Electric heating boasts a simpler means of operation, with faster setup times.

CCOE



PED



# 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

- Elements sheathed in metal and mineral insulation for versatility and cost effectiveness
- Various materials available, including 800/825 nickel alloy, or 304/316L/321 stainless steel (subject to design parameters and medium)
- L-shaped element bend formation for vertical orientated tanks
- 8mm, 10mm, 12.5mm diameter elements for various process fixings
- Any electrical supply up to 600V (CSA) and 690V (subject to design parameters)
- 100% efficiency



## REMOVABLE CORE TYPE ELEMENTS

- Removable ceramic core elements designed for large tank heating can be withdrawn/removed without system drain down
- Mild steel or 316L stainless steel element sheath
- Short lead time
- Single cores available, in 1Ph or 3Ph variations
- 38mm or 45mm diameter elements suitable for various process fixings
- Low watt-density (surface temp across element)
- Any electrical supply up to 600V (CSA) and 690V (subject to design parameters)
- 100% efficiency



## REMOVABLE CARTRIDGE TYPE ELEMENT

- Element terminations at both ends for easy withdrawal/removal without system drain down
- 304/316L 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 wiring configuration
- 100% efficiency



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**TEMPERATURE SENSORS/CONTROLS** Page 24 - 27



# Space Heaters - HEF Hazardous Area Enclosure Heaters

The HEF is self-regulating, automatically adjusting its output to match ambient temperatures. Coupled with its compact design, this makes the HEF ideal for anti-condensation, frost protection and temperature regulation purposes.

The HEF range is certified for use in hazardous areas where the atmosphere is classified under Zone 1 or 2 (IIC) or Class I, Division 2; gas group B, C or D (gas group A for Canada only).



## FEATURES

- 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 (-55°C for CSA certified models only) to +80°C
- Mounting of the heater can be in any orientation
- Design allows for closer installation proximity to internal components and cables (minimum distance 100mm away)

## TYPICAL APPLICATIONS

- Condensation prevention
- Container skid housing
- Control/monitoring panels
- Control valve housings
- Fire hose cabinets
- Frost protection
- Generators
- Instrumentation cabinets
- Manifolds
- Motor enclosures
- Temperature fluctuations

## Certification

### ATEX/IECEx

II 2 G Ex e IIC T4 Gb

### CU TR (EAC)

1Ex e II T4 Gb

### CSA (CAN & USA)

**CAN:** Class I, Division 2, Groups A, B, C and D, T3 or T4

**CAN:** Ex e IIC T3 or T4 Gb

**USA:** Class I, Division 2, Groups B, C and D, T3 or T4

**USA:** Class I, Zone 1, AEx e IIC T3 or T4 Gb

### KGS

Ex e IIC T4

## Casing

316 perforated stainless steel

## 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 be used in conjunction with the AFT, HFT or FXT flameproof air sensing thermostats

## Elements

Self-regulating

## Mounting

The heater may be mounted in any orientation, using appropriate securing bolts through the mounting feet or DIN rail holes

## Rating

The HEF range is available in a nominal 30W, 50W, 100W, 200W and 500W outputs

## Voltage

Models available for 110V to 120V and 230V to 240V 1 phase supplies (max 254V subject to design parameters)



# Space Heaters - FXE Fixed Duty

## Compact Flameproof Enclosure/Cabinet Heaters



The FXE range of heaters is designed specifically for frost protection, anti-condensation and temperature control within Zone 1 or 2 (gas group IIA, IIB, IIC) and Zone 21 or 22 (dust group IIIA, IIIB, IIIC) hazardous areas. The heaters deliver a constant power output with an optional inline or stand alone thermostat.

### FEATURES

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

### TYPICAL APPLICATIONS

- Condensation prevention
- Control/monitoring panels
- Control valve housings
- Frost protection
- Generators
- Instrumentation cabinets
- Manifolds
- Motor enclosures

#### Certification

**ATEX/IECEx**  II 2 G/D  
Ex d IIC T4...T3 Gb  
Ex tb IIIC T135°C...T200°C Db

#### CU TR (EAC)

1Ex db IIC T4...T3 Gb X  
Ex tb IIIC T135°C...T200°C Db X

#### Ambient

-50°C with options up to +80°C

#### Cabling

1.5m standard

#### IP Rating

IP66

#### Mounting

Wall or rail mounted vertically using the supplied mounting kit

#### Output

30 to 100W

#### Protection

**Heater:** Flameproof  
**Thermostat:** Flameproof or encapsulated

#### T Class

T4 (T135°C) and T3 (T200°C)

#### Voltage

110 to 254VAC

# Space Heaters - FX Enclosure/Cabinet Heaters

EXHEAT Industrial's range of FX enclosure heaters comprise a selection of fixed duty and self-regulating thermal solutions designed for compact and efficient heating of enclosures/cabinets in Zone 1/2 (Gas Groups IIA, IIB, IIC) or Zone 21/22 (Dust Groups IIIA, IIIB, IIIC) hazardous areas.

The FX heaters are offered in standard "double-finned", "low-profile", or "block" type variants, and can be custom engineered (FXS self-regulating models only) to meet your specific requirements. They are also designed to easily integrate with the FXT range of thermostats to provide enhanced frost protection, condensation prevention, and temperature maintenance.



## FEATURES

- Compact, hard anodised aluminium profile suitable for enclosures in onshore and offshore applications
- Fitted with fixed-duty or self-regulating cartridge-type elements
- Bespoke design option available for self-regulating models
- T3 and T4 options available
- Easily integrates with FXT thermostats

## TYPICAL APPLICATIONS

- Condensation prevention
- Control/monitoring panels
- Control valve housings
- Fire hose cabinets
- Frost protection
- Generators
- Instrumentation cabinets
- Manifolds
- Motor enclosures
- Valve blocks

## Certification

**ATEX/IECEx**  II 2 G D  
Ex db IIC T4...T3 Gb  
Ex tb IIIC T135°C...T200°C Db

**CU TR (EAC)**  
1Ex db IIC T4...T3 Gb X  
Ex tb IIIC T135°C...T200°C Db X

## CSA (USA/CAN)

Class I Div 1, Groups A, B, C, D. T4...T3  
Class II Div 1, Groups E, F, G. T4...T3  
Class I Zone 1, AEx tb IIIC T4...T3  
Zone 21, AEx tb IIIC T135°C...T200°C

## Ambient

-60°C to +180°C

## Cabling

3m standard (up to 10m available on request)

## IP Rating

IP66/IP68

## Mounting

Various options, including vertical wall/rail mounting or direct bolting to enclosure/bracket (based on model)

## Output

45 to 500W

## T Class

T4 (135°C) and T3 (200°C)

## Voltage

110 to 277VAC



# Space Heaters - FAW

## Hazardous Area Room/Container Heaters



The FAW range offers a versatile lightweight air warming solution for small work and storage areas located in Zone 1 and Zone 2 (Gas Groups IIA, IIB, IIC) hazardous areas.

The range is suitable for use with 1 phase or 3 phase power supplies up to 440 volts, and can also be configured for use with DC power supplies.

### FEATURES

- 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 be provided
- Suitable for ambient temperatures from -60°C to +60°C (subject to conditions to be discussed with sales engineer)

### TYPICAL APPLICATIONS

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

#### Certification

**ATEX/IECEx** II 2 G Ex e IIC T4...T2 Gb. Zone 1 or 2 (IP67)  
**CSA** Class I, Div 2. Groups A, B, C & D. Temperature Class T4, T3 or T2  
**CU TR (EAC)** 1Ex e II T4...T2 Gb  
**KGS** available on request

#### Controls

If required, the heaters can be controlled from the EXHEAT Industrial range of remote mounted thermostats available for use in hazardous areas

#### Enclosure

Lightweight 304/316 stainless steel or powder coated mild steel

#### 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

#### Rating

250W to 3kW

#### Voltage

**1 phase:** 110V, 120V, 220-240V & 254V  
**3 phase:** 380V to 440V (max voltage 660V FAW standard units, and 550V FAW-C compact units, subject to design parameters)  
**Voltage tolerance:** +0/-10%

# Space Heaters - FWD Flameproof Room/Container Heaters



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

- Weatherproof to IP66
- Temperature classes T2, T3 and T4 available
- Suitable for floor or wall mounting
- 2 x 20mm (plugged) cable entries provided as standard
- Corrosion resistant powder coated finish
- Suitable for ambient temperatures from -60°C to +60°C (subject to conditions to be discussed with sales engineer)
- Individually replaceable heating elements

## TYPICAL APPLICATIONS

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

## Certification

**ATEX/IECEx**  II 2 G/D

Ex d IIC T2...T4 Gb (Zone 1 and 2)

Ex t IIIC T300°C...T135°C Db (Zone 21 and 22)

**CU TR (EAC)**

1Ex db IIC T4...T2 Gb X

Ex tb IIIC T135°C...T300°C Db X

**KGS** available on request

## Controls

If required, the heaters can be controlled from the EXHEAT Industrial range of remote mounted thermostats available for use in hazardous areas

## Enclosure

Mild steel powder coated orange/grey (stainless steel option available to special order)

## Mounting

Pre-drilled support feet supplied as standard; heaters should be mounted horizontally with unrestricted air flow around the unit

## Rating

500W to 2kW

## Voltage

**1 phase:** 110V to 120V and 230V to 254V

**3 phase:** 380V to 440V, subject to design parameters

**Voltage tolerance:** +0/-10%

# Space Heaters - FWD-T

## Flameproof Adjustable Room/Container Heaters

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

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

### TYPICAL APPLICATIONS

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

#### Certification

**ATEX/IECEx** II 2 G/D  
Ex d IIC T2...T4 Gb (Zone 1 and 2)  
Ex t IIIC T300°C...T135°C Db (Zone 21 and 22)

#### CU TR (EAC)

1Ex db IIC T4...T2 Gb X  
Ex tb IIIC T135°C...T300°C Db X

**KGS** available on request

#### Controls

Externally adjustable 0°C to 40°C room temperature controlled thermostat (max setting 25°C)

#### Enclosure

Mild steel powder coated orange/grey

#### Mounting

Pre-drilled support feet supplied as standard; heaters should be mounted horizontally with unrestricted air flow around the unit

#### Rating

500W to 2kW

#### Voltage

**1 phase:** 110V to 120V and 230V to 254V  
**Voltage tolerance:** +0/-10%

# Space Heaters - FCR

## Hazardous Area Room/Container Convactor Heaters

The heavy duty folded steel construction and the finned stainless steel elements give the FCR range an exceptionally long life. The FCR range is certified for use in hazardous areas where the flammable atmosphere is a IIA, IIB or IIC gas group.

### FEATURES

- 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 x M20 (temporary plugged) cable entry provided as standard



### TYPICAL APPLICATIONS

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

#### Certification

**ATEX/IECEx** Ⓔ II 2 G Ex e IIC T3...T2 Gb. Zone 1 or 2 (IP67)

**CU TR (EAC)** 1Ex e II T4...T2 Gb

**CSA** approval available for models up to 2kW

#### Controls

If required, the heaters can be controlled from the EXHEAT Industrial range of remote mounted thermostats available for use in hazardous areas

#### 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

#### Enclosure

Heavy duty powder coated mild steel

#### Mounting

Wall or floor mounting via brackets/feet supplied

#### Rating

Standard heating ratings 1kW, 2kW, and 3kW

#### Voltage

**1 phase:** 110V to 120V and 230V to 254V

**3 phase:** 380V to 440V, subject to design parameters

# Space Heaters - FLR

## Flameproof Liquid Filled Room/Container Radiators




The FLR range of liquid filled electrically heated radiators has been specifically designed to provide heating in Zones 1 and 2 or Zone 21 and 22 hazardous areas where airborne dust particles are of particular concern. Our FLR-A range comes complete with an externally adjustable control thermostat.

### FEATURES

- 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 x 25mm (plugged) cable entry provided as standard

### TYPICAL APPLICATIONS

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

<b>Certification</b>	<b>ATEX</b>  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	<b>CU TR (EAC)</b> 1Ex db IIC T6 Gb X Ex tb IIIC T85°C Db X
<b>Controls</b>	Preset radiator surface temperature control thermostat and manual reset safety temperature limiter (optional externally adjustable control thermostat)	
<b>Elements</b>	Long life 321 stainless steel rod-type, comprising high quality 80/20 nickel chrome resistance wire, compacted in magnesium oxide insulating powder	
<b>Enclosure</b>	Cast aluminium finished in orange/grey	
<b>Mounting</b>	Floor standing with welded-on feet and wall retention brackets	
<b>Radiator</b>	Pressed steel with white powder coated finish to RAL 9016	
<b>Rating</b>	Standard heater ratings 1kW, 2kW and 3kW	
<b>Voltage</b>	<b>1 phase:</b> 230V to 240V	

# Space Heaters - STW Industrial

## Room/Container 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 integral 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°C to 40°C room temperature controlled thermostat
- 1 × 25mm (plugged) cable entry provided as standard

### TYPICAL APPLICATIONS

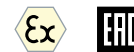
- Container heating
- Crane cabs
- Dairies
- Engine bay
- Equipment rooms
- Frost protection
- Greenhouses
- Living quarters
- Pump stations
- Ships
- Storage units
- Wet rooms
- Workshops

<b>Construction</b>	Powder coated carbon steel construction to RAL 9007 Grey
<b>Elements</b>	304 stainless steel finned type
<b>Mounting</b>	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
<b>Rating</b>	1kW, 2kW, 3kW ratings available
<b>Supply</b>	Standard heaters are designed to 1 phase 110V to 120V and 230V to 240V
<b>Terminal Box</b>	Powder coated die cast aluminium, weatherproof to IP66



# Space Heaters - FUH Flameproof Fan Heaters

The FUH range offers a compact high capacity air heating solution that is suitable for large premises. The flexible design allows for the FUH to be supplied according to the capacity requirements and power supply of the client.




## FEATURES

- 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 x 25mm (plugged) cable entry provided as standard

## TYPICAL APPLICATIONS

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

<b>Certification</b>	<b>ATEX</b>  II 2 G Ex d IIC T3 Gb for use in Zone 1 and 2 areas	<b>CU TR (EAC)</b> 1Ex db IIC T3 Gb
<b>Casing</b>	Grey powder coated steel	
<b>Controls</b>	If required, the heaters can be controlled from the EXHEAT Industrial range of remote mounted thermostats available for use in hazardous areas	
<b>Elements</b>	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	
<b>Rating</b>	9kW to 30kW	
<b>Voltage</b>	<b>Heater and motor:</b> 415V supply suitable for use from 380V 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 <b>Controls:</b> Up to 230VAC, 1 phase	

# Space Heaters - MFH 'The Bulldog' Portable Fan Heater

EXHEAT Industrial's MFH 'The Bulldog' is the world's first truly portable hazardous area fan assisted heater, combining efficient design with simple functionality to provide a portable heating solution for use in Zone 1/2 (IIB+H2) or Zone 21/22 (IIIC) hazardous atmospheres.

Certified to the new EN ISO 80079-36 and EN ISO 80079-37 standards for constructional safety, The Bulldog comes ready to 'plug and play' with the option of fitting a plug, or hard wiring to an isolator unit.



## FEATURES

- Compact and rigid housing suitable for both onshore and offshore usage.
- Portable and lightweight, allowing for single user manipulation/operation. Can be supplied on a long flying lead to get heat where you need it.
- Up to 6kW. The heater can be directed at an engineer working in a larger space, or at the same time, warm a mid-sized room to a comfortable operating temperature for all within.
- The Bulldog's design increases efficiency, providing a warmer flow of air for the operator at up to 5m.
- Suitable for ambient temperatures as low as -40°C and up to +40°C.
- Available in T3 and T4 temperature classes.

## TYPICAL APPLICATIONS

- Fabric Maintenance
- Localised Heating
- Offshore Containers
- Oil Drilling
- Oil Refineries
- Paint Curing
- Paint Store
- Production Platforms
- Spray Booth

## Certification

**ATEX/IECEx/CU TR (EAC)**

Ex II 2 G D Ex h

Ex db eb IIB+H2 T3...T4 Gb

Ex tb IIIC T200°C...T135°C Db

**CSA** (USA)

Approval upcoming

## Main Materials

**Casing:** PA66 30% with EMI shielding

**Impeller:** PA66 30% with EMI shielding with epoxy coated aluminium hub

**Ex d Enclosure:** Anodised extruded aluminium

**Ex e Enclosure:** Stainless steel

**Motor Housing:** Epoxy coated aluminium

## Mounting

Adjustable feet at each corner allow for a stable standing on uneven surfaces

## Voltage

Single phase 110V to 277V, three phase 380V to 690V 50/60Hz

## Element

Finned stainless steel tubular elements

## Dimensions

Length 475mm, width 470mm, height 530mm

## IP Rating

IP65

## Weight

28kg each, excluding cable and any optional components

## Trademark

EU IPO trademark registration number 06118069

## Space Heaters - LFH Fan Heater



EXHEAT Industrial's LFH Fan Heater combines superior efficiency with simple functionality to provide a next-generation heating solution for use in hazardous environments where the atmosphere is classified as Zone 1/2 (IIB+H2).

Incorporating a stainless steel casing for added toughness and durability, the LFH is designed to operate in ambient temperatures of  $-40^{\circ}\text{C}$  to  $+40^{\circ}\text{C}$ , and uses a framework allowing for multiple mounting options on floors, walls and even ceilings

### FEATURES

- Robust stainless steel housing suitable for onshore and offshore usage
- Up to 20kW (40kW with EXHEAT Advanced Controls) of thermal power can be directed to heat areas within a larger room, or warm a mid-sized room to a comfortable operating temperature
- Suitable for ambient temperatures as low as  $-40^{\circ}\text{C}$  and up to  $+40^{\circ}\text{C}$
- Available in T3 and T4 temperature classes

### TYPICAL APPLICATIONS

- Fabric Maintenance
- Localised Heating
- Offshore Containers
- Oil Drilling
- Oil Refineries
- Paint Curing
- Paint Store
- Production Platforms
- Spray Booth

#### Certification

**ATEX/IECEx/CU TR (EAC)**  
 Ⓔ II 2 G D Ex h  
 Ex db eb IIB+H2 T3...T4 Gb  
 Ex tb IIIC T200°C...T135°C Db

#### Main Materials

**Casing:** Stainless steel  
**Impeller:** PA66  
**Element:** Finned stainless steel tubular elements  
**Ex e Enclosure:** Stainless steel  
**Ex d Enclosure:** Anodised extruded aluminium

#### Dimensions

**LFH:** Length 540mm, width 600mm, height 600mm  
**XLFH:** Length 690mm, width 720mm, height 680mm

#### Mounting

Floor, wall, or ceiling mounting options available as standard

#### Voltage

Three Phase, 380V to 690V, 50/60Hz

# Immersion Heaters - FP Flameproof Immersion Heaters



**KGS CCOE**

The FP range of flameproof immersion heaters are a robust and highly adaptable solution for heating process fluids within tanks or pressure vessels, and are designed with various heating element types ideal for direct immersion into liquids and gases.

The heaters 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.

## TYPICAL APPLICATIONS

- Anti-condensation
- Boiler equipment
- Cleaning and rinsing tanks
- Compressors
- Frost protection
- Heat transfer systems
- Heating medium
- Lube oil reservoirs
- Oil separators
- Oil sumps
- Pre-heating oil/water
- Processing equipment
- Refrigeration packages
- Safety showers
- Tank heating
- Turbines
- Water/glycol cooling

## FEATURES

- Mild steel or 316 stainless steel enclosure (optional epoxy paint finish)
- Choice of rod/core/cartridge-type elements
- Built-in process temperature sensors available
- Suitable for ambient temperatures from -60°C to +60°C (subject to certification parameters)
- Mounting of the heater can be by a threaded boss or an industry standard flange
- Designed for horizontal installation (vertical mounting design on request)
- Can be supplied with the terminal box mounted away from the fixing boss/flange for high process temperatures

## Certification

**ATEX/IECEx** II 2 G D  
Ex d IIC T1...T6 Gb. Zone 1, 2  
Ex tb IIIC T450°C...T85°C Db. Zone 21, 22 (IP66)

Other Certifications

**CU TR (EAC), KGS, CNEx, CCOE (CCEs), Inmetro**

**CSA** (USA/CAN)

Class I Div 1, Groups A, B, C, D. T1...T6. Enclosure Type 4 (NEMA 4) or Type 4X (NEMA 4X)

**CAN:** Ex d IIC; T1...T6 Gb (IP66)

**USA:** Class I, Zone 1, AEx d IIC; T1...T6 Gb (IP66)

## Controls

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

## Elements

Various fittings available. Standard heater consists of a single element (or multiple cores/cartridges) fitted into a mounting flange.

**Rod:** Choice of rod-type elements, comprising 80/20 NiCr resistance wire, compacted in MgO insulating powder, encased in Incoloy or stainless steel sheath. Elements secured by compression fittings, brazing or welding.

**Core:** Withdrawable core, comprising 80/20 NiCr resistance wire, encased in plain or extended surface tubes, housed in ceramic formers.

**Cartridge:** Withdrawable 304/316L stainless steel cartridge, comprising 80/20 NiCr resistance wire, encased in 316L stainless steel sheath. Cartridges secured by welding.

## Enclosure

Mild steel or 316 stainless steel, external and internal earths, screwed terminal cover (optional epoxy paint finish)

## 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

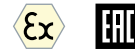
To suit process requirement within the design and certification parameters

## Voltage

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

# Immersion Heaters - RFA Flameproof Immersion Heaters

The RFA flameproof immersion heaters provide a lightweight process heating solution, and can be fitted with various heating element types. They are suitable for installation within process tanks, safety showers, engine sumps, and other locations classified as Zone 1 or 2 (Gas Groups IIA, IIB, IIC) hazardous areas.



## FEATURES

- Lightweight cast aluminium alloy terminal enclosure (optional epoxy paint finish)
- Choice of rod/core/cartridge-type elements
- Built-in temperature sensors available
- Suitable for ambient temperatures from -40°C to +40°C
- Mounting of the heater can be by threaded boss or an industry standard flange
- Designed for horizontal installation only (vertical mount design on request)

## TYPICAL APPLICATIONS

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

## Certification

**ATEX**  II 2 G  
Ex d IIC T3 to T6 Gb Zone 1 and 2

**CU TR (EAC)**  
1Ex db IIC T6...T3 Gb X

## Controls

Heater over temperature protection is fitted as standard

## Elements

Various fittings available. Standard heater consists of a single element (or multiple cores/cartridges) fitted into a mounting flange.

**Rod:** Maximum of three rod-type elements, comprising 80/20 NiCr resistance wire, compacted in MgO insulating powder, encased in Incoloy 800/825 or 316L/304/321 stainless steel sheath. Elements secured by brazing or welding.

**Core:** Withdrawable core, comprising 80/20 NiCr resistance wire, encased in carbon steel or 316L stainless steel sheath, housed in ceramic formers. Cores secured by brazing or welding.

**Cartridge:** Removable 304 stainless steel cartridge, comprising 80/20 NiCr resistance wire, encased in 316L stainless steel sheath. Cartridges secured by brazing or welding.

## Enclosure

Cast aluminium alloy, external and internal earths, screwed terminal cover (optional epoxy paint finish)

## Mounting

Any threaded 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

## Rating

To suit process requirement within the design and certification parameters

## Voltage

Any electrical supply up to 690V

# Immersion Heaters - HB Industrial Immersion Heaters



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

## FEATURES

- Certified weatherproof to IP66
- Robust lightweight aluminium or mild steel enclosure
- Fitted with control and limit (on request) thermostats
- 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)

## TYPICAL APPLICATIONS

- Chemical injection systems
- Cleaning and rinsing equipment
- Food processing equipment
- Heat transfer
- Hot water storage tanks
- Pre-heating oil and water
- Process and boiler equipment



# Line Heaters - 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

- 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**  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 (EAC)**

**FP4-MLH** also certified to:  
ATEX/IECEX, CSA, Inmetro, KGS,  
CNEEx, 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)

# Line Heaters - 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

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



<b>Construction</b>	Weatherproof protection to IP66	<b>Vessel</b>	Mild steel or 316 stainless steel
<b>Rating</b>	Up to 200kW (HEWL) and up to 120kW (HEOL), subject to application	<b>Insulation</b>	Mineral wool
<b>Working Pressure</b>	Up to 10 barg/145 psig, subject to design parameters	<b>Cladding</b>	Stucco aluminium
<b>Design Code</b>	Sound Engineering Practice (SEP)	<b>Voltage</b>	Standard supplies up to 690V, subject to design parameters
<b>Element</b>	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)		

# Line Heaters - 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

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

## Certification

**ATEX/IECEx**  II 2 G/D Ex d IIC T1 to T6 Gb Zone 1 and 2  
**ATEX/IECEx** Ex tb IIIC T450°C to T85°C Db Zone 21 and 22 (IP66)  
**CSA (CEC/NEC)** Class I, Div 1, Groups A, B, C, D; T1 to T6, Enclosure Type/NEMA 4 or 4X  
**CSA (CEC)** Ex d IIC; T1 to T6 Gb, IP66 (Canada)  
**CSA (NEC)** Class I, Zone 1, AEx d IIC; T1 to T6 Gb, IP66 (USA)  
**CU TR (EAC), KGS, CNEx, CCOE (CCEs), Inmetro**

## 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

# Temperature Sensors/Controls - AFT, HFT & RFT

EXHEAT Industrial supplies a full range of thermostats and other temperature sensing devices in weatherproof or flameproof 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 (EAC) 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

- Ingress protection IP66/Type NEMA 4X
- Wall mounted
- 316 stainless steel enclosure
- Suitable for ambient temperatures from -60°C to +60°C



## RFT FLAMEPROOF PROCESS SENSING THERMOSTATS

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

# Temperature Sensors/Controls - FXT Thermostats

The FXT thermostats are a range of compact hazardous area thermostats that provide smart and energy-efficient temperature management for heaters up to 2kW, and can be engineered (upon request) with custom set-points to suit individual requirements.

FXT thermostats are designed to complement the FX, FXE and FXS range of enclosure/cabinet heaters, but can also be utilised for many other standalone applications. They are additionally 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.

## FXT FLAMEPROOF AIR SENSING THERMOSTATS

- Hard anodised radial-fin profile, designed to be paired with FXE heaters
- Vertically mounted by bracket or rail
- Suitable for ambient temperatures from -60°C to +78°C
- Voltage up to 250V (1.3A)



## FXT-DI AND FXT-DR FLAMEPROOF THERMOSTATS

- Flameproof protected thermostats for larger heaters (up to 2kW)
- Available in remote (FXT-DR) or inline (FXT-DI) variants
- 3m standard cables provided (up to 10m on request)
- Suitable for ambient temperatures from -50°C to +195°C
- Voltage up to 277VAC



## FXT-M ENCAPSULATED INLINE THERMOSTATS

- Encapsulation protected thermostats for small and medium sized heaters
- 3m standard cables provided (up to 10m on request)
- Suitable for ambient temperatures from -50°C to +80°C
- Voltage up to 277VAC




# Temperature Sensors/Controls - 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 Industrial 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  II 2 G/D Ex d IIC T6 (Gas) Ex tD A21 T85°C (Dust)
- CU TR (EAC) 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

*WIKA is a registered trademark of WIK-Alexander Wiegand GmbH  
Siemens is a registered trademark of Siemens AG  
Rosemount is a registered trademark of Rosemount Inc  
Yokogawa is a registered trademark of Yokogawa Electric Corp*



# Temperature Sensors/Controls - 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/CU TR (EAC)						
Zone	0	1	2	20	21	22
		✓	✓		✓	✓

NEC/CEC 505 Class I			
Zone	0	1	2
		✓	✓

NEC/CEC 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:

<b>ATEX</b> <ul style="list-style-type: none"><li>• II2 G Ex tD T6</li><li>• II2 G Ex db IIC</li><li>• II2 D Ex tb IIIC (T85 to T150°C)</li><li>• II2 G Ex ed II T6</li><li>• II2 D Ex tD A21 T85°C</li></ul>	<b>IECEX</b> <ul style="list-style-type: none"><li>• Ex db IIB T6</li><li>• Ex tb IIIC (T85 to T150°C)</li><li>• Ex ed II T6</li><li>• Ex tD A21 T85°C</li></ul>
<b>INMETRO</b> <ul style="list-style-type: none"><li>• Ex db IIB T6</li><li>• Ex tb IIIC (T85 to T150°C)</li><li>• Ex ed II T6</li><li>• Ex tD A21 T85°C</li></ul>	<b>CU TR (EAC)</b> <ul style="list-style-type: none"><li>• 1 Ex d IIB T6</li><li>• Ex tD A21 (T85 to T150°C)</li><li>• Ex ed Gb IIC T6</li><li>• Ex t IIIC Db</li><li>• Ex tD A21 T85°C</li></ul>
<b>NEC 505</b> <ul style="list-style-type: none"><li>• <b>USL:</b> Class I, Zone 1 Ex db IIB Zone 21 Ex tb IIIC (T85 to T150°C)</li><li>• <b>CNL:</b> Ex d IIB Class II, Groups E, F, G</li></ul>	



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