

## 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 ATEX standards

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

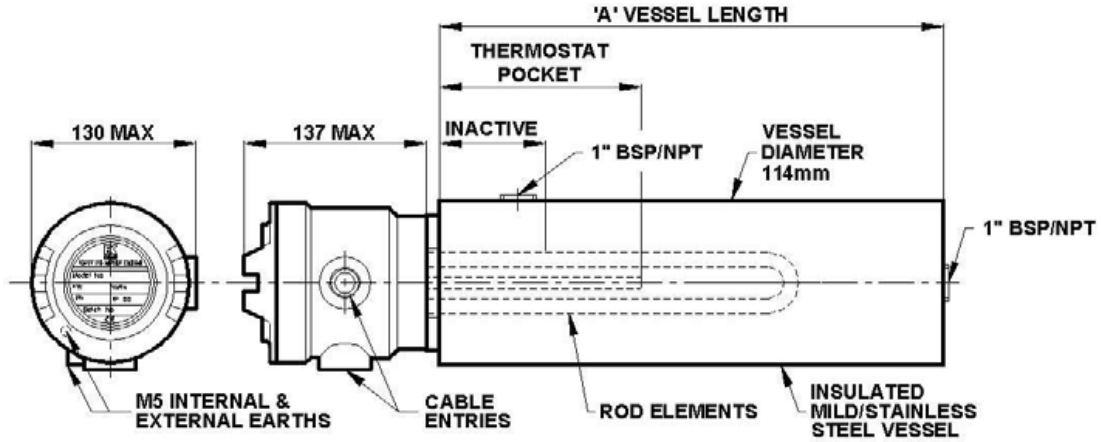
### TYPICAL APPLICATIONS

**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



Model	Loading (kW)	Dimension A (mm)	BSP/NPT
WATER			
Short Body			
FP-MLH1S	1	475	1"
FP-MLH2S	2	475	1"
FP-MLH3S	3	475	1"
Long Body			
FP-MLH3L	3	925	1"
FP-MLH6L	6	925	1"
FP-MLH9L	9	925	1"
FP-MLH12L	12	925	1"
OIL			
Long Body			
FP-MLHX1	1	925	1"
FP-MLHX2	2	925	1"
FP-MLHX3	3	925	1"

Note 1½" BSP Connections available on request

**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 (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)

**Elements**

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)

**Vessel**

Mild steel or stainless steel

**Insulation**

Mineral wool

**Cladding**

Coated mild steel or 304 stainless steel

**Voltage**

Standard units are normally designed for 220V to 254V (1 phase) or 380 to 440V (3 phase)