X10761 – FP6E/FP6I
Envirostat 6kW Range Frost Protection Controllers
Issue 2

1 Introduction

The **ENVIROSTAT** FP6E & FP6i are electronic thermostats designed to give energy-efficient frost protection to pipe-work where thermal insulation alone cannot protect pipes from freezing or being damaged by ice. The units control heater tape or Infra-Red (IR) quartz lamps.
FP6E - Frost Protection 6kW – alarm indication temperature control functions.
FP6i - Frost Protection 6kW – additional BMS alarm features (see spec.).

2 Features

- Simple setup and installation
- Includes 2m long sensor
- Soft start function (gradual switch-on)
- Built in encapsulated sensor
- Temperature range -10°C to +10°C
- IP65 Ingress protection
- Current capacity 25A max.
- Output & load fault detection
- Power & output LED indicators
- BMS alarm - FP6i only

Alternative Options Available

- Temperature range 0 to 20°C

RoHS Compliant

Picture shows Model FP6i

3 Product Setup

Connect the mains supply and load to the controller using the appropriate round section cable. Position the sensor to measure the air temperature where required or use cable ties to fix the sensor to a pipe etc.

4 Operation

Set the Set Point Temperature using the main knob.
When the ambient temperature drops below the set point temperature, the load output soft-starts for 1 second before the main output relay energises, the output LED will be lit.
When the ambient temperature is equal to or greater than the set point temperature, the load output switches off and the output LED will be off.

ALARMS
The unit can detect an open-circuit or short-circuit temperature sensor. In addition to this, the unit tests the output immediately at power up and every four hours thereafter. The output will switch off momentarily during a test. Normal operation will resume once the test is complete. Alarm relay fitted to FP6i model (see specifications, BMS).

The unit can detect the following faults:

1. Open-circuit/short-circuit temperature sensor.
2. Open-circuit load.
3. Short-circuit semi-conductor device or relay.
4. Open-circuit semi-conductor device or relay.

In all above cases, the alarm LED will flash.
For the temperature sensor alarm the rate is approximately one tenth of a second and for the output/load alarm the rate is approximately half a second.

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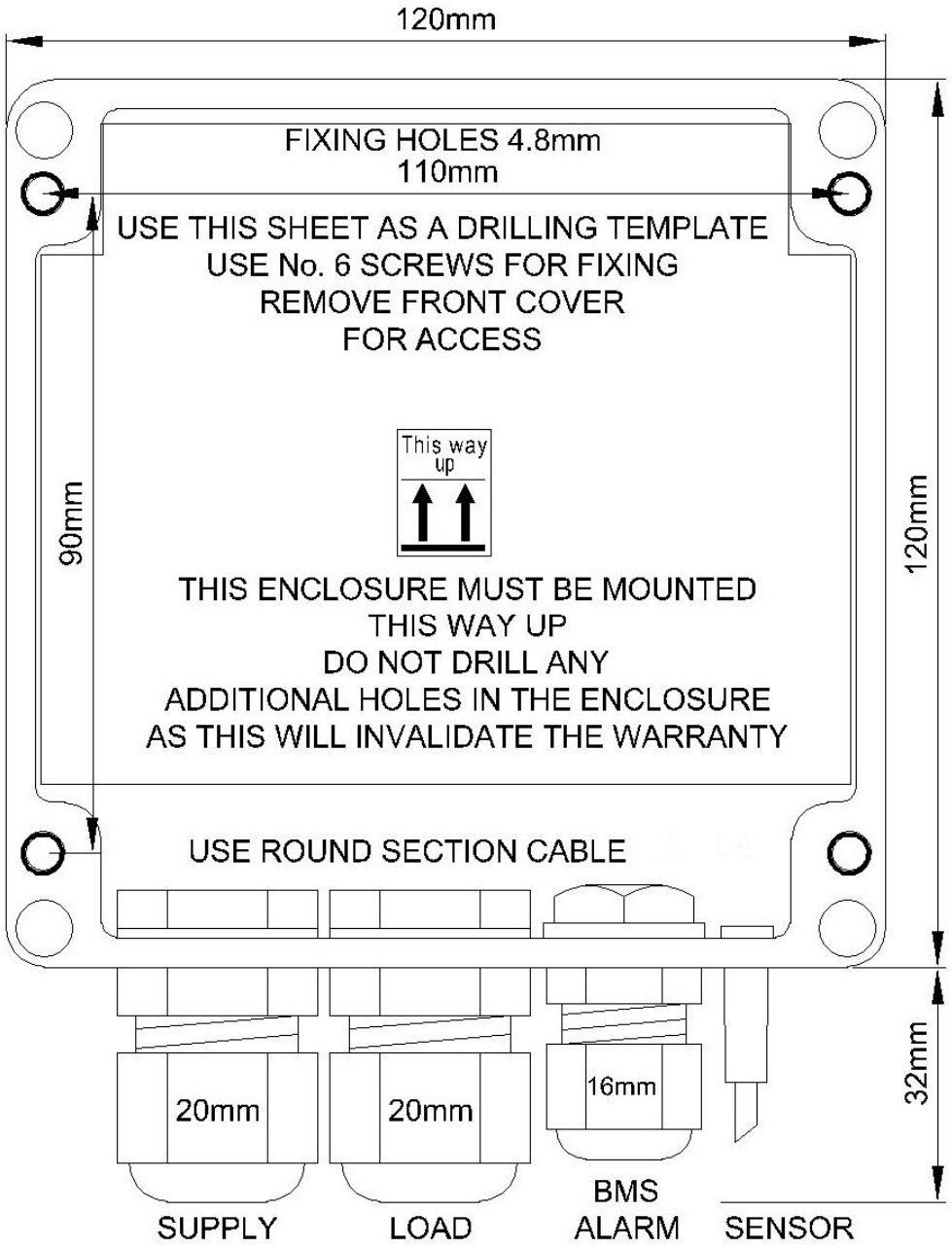
5 Installation Mounting

This is a fixing-hole template which may be used for securing the enclosure to the wall.
NOTE: If mounted in the vertical plane they MUST be as shown to ensure IP rating.



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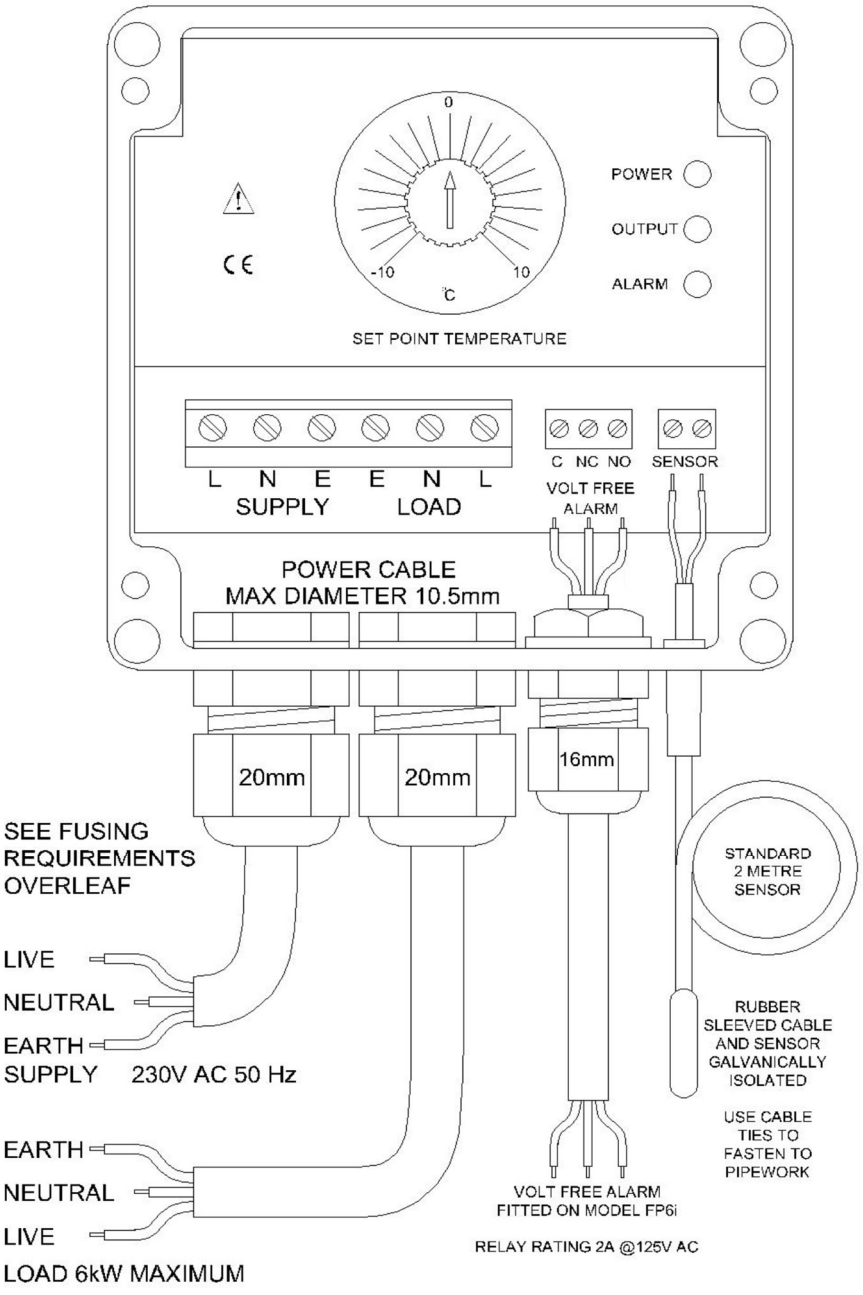
6 Installation Wiring

Diagram shows the wiring connections and cable entry – FP6i shown.
NOTE: the glands MUST be tightened to ensure the IP rating. The 'set point' control dial is also shown.



7 Specifications

(all models unless otherwise stated)

Supply voltage	230V ac +/- 10%
Supply frequency	50Hz
Power switching capacity	6kW max.
Load current	25A max.
Temperature range	-10°C to +10°C OR 0°C to +20°C
Temperature accuracy	1°C
Current consumption	16mA
Soft start duration	1 second
Output and load fault detection	Only on FP6i model (see ALARMS section for details)
Power and output LED indicators	(see ALARMS section for details)
Supply terminal connections	0.2 to 6mm² rising clamp
Gland cable entry	10.5 & 8mm Ø (Note: cable MUST be round to ensure IP rating)
Ambient operating temperature	-20℃ to +40℃
Ingress protection (IP) rating	IP65
Built in Sensor	Encapsulated 10k NTC thermistor probe, 2m long
Sensor monitoring	FP6E: open or short circuit - unit shuts down
	FP6i: open or short circuit - unit shuts down and alarms
Sensor terminal connections	0.1 to 1.5mm² rising clamp
Sensor mounting	To secure to pipe etc., use appropriately sized nylon cable ties
Building Management System (BMS)	Alarm relay normally energised when system is 'healthy' (for FP6i)
Dimensions	
Enclosure dimensions	120(W) x 120(L) x 65(H)
Fixing holes and centres	4 x 4.8mm Ø holes on fixing centes 110(W) x 90(L)mm

8 Fusing

It is recommended to use standard F-type quick-blow fuse or circuit breaker (MCB 'type 'B) rated at 30A Max. for 'in line' unit protection. (See the SRA Datasheet for further information).

9 CE Marking

This product family carries a "CE marking" and is RoHS compliant.
For further information, see the recommendations section or contact our sales desk. (See the Declaration of Conformity).

10 Recommendations

Other documents available on request, which may be appropriate for your application:-

Code	Identity	Description
X10255	SRA	Safety Requirements: Addressing the Low Voltage Directive (LVD) including, Thermal Data/Cooling, Live Parts Warning, Earthing Requirements and Fusing Recommendations
P01.1	COS	UAL Conditions of Sale

NOTE It is recommended that installation and maintenance of this equipment should be done with reference to the current edition of the I.E.E. wiring regulations (BS7671) by suitably qualified/trained personnel. The regulations contain important requirements regarding safety of electrical equipment. For International Standards refer to I.E.C/ directive IEC 950.

11 Order Code

Part Number	State part number: Envirostat-FP6E-230V or FP6i-230V
Note: 110V model available on request	

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