ST-FRE

Capillary Frost Thermostats

Features:

- Universal mounting
- Easy adjustment of set point
- Setting indicator
- Volt Free Contacts

Benefits:

- Manual reset versions have an exposed push button on the front cover so no tools needed to reset
- IP65 housing option

Technical Overview

The ST-FRE range of thermostats provide a low cost switch output based on the average temperature detected along a 6 meter (19.69ft) or 2 meter (6.56ft) capillary sensor.

The most common application is for frost protection on fresh air intakes or air-conditioning systems, to prevent the icing up of filters, fans and coils. The capillary is fixed in a matrix across the duct, in a position downstream of the pre-heater or frost coil.

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Specification:

Control range	-30 to +10°C (-22 to +50°F)
Differential:	
ST-FRE1 & 3	2 to 16°C (3.6 to 28.8°F)
ST-FRE2 & 4	2.5°C (fixed) (4.5°F)
Switch rating:	
230Vac	24(10)A
24Vdc	3A
Manual reset	On low temperature (ST-FRE2 & 4)
Housing material	ABS
Housing dimensions	86 x 75 x 44mm (3.39 x 2.95 x 1.73”) 130 x 130 x 100mm (IP65) (5.12 x 5.12 x 3.94”)
Capillary:	
Material	Copper
Charge	Vapour
Max. temp	+150°C (302°F)
Dimensions	6m (19.69’)or 2m (5.56;) x 1.8mm (0.07”) dia.
Ambient range:	
Housing	-50 to +70°C (-58 to +158°F)
Storage	-50 to +70°C (-58 to +158°F)
Sensing range	-55 to +180°C (-67 to +356°F)
Vibration resistance	4g (10 to 1000 Hz)
Protection	IP44 (IP65 enclosure kit option)
Country of origin	Czech Republic

CE

The products referred to in this data sheet meet the requirements of 2006/95/EC

Part Codes:

ST-FRE1
IP44, 6-Meter capillary, auto reset

ST-FRE2
IP44, 6-Meter capillary, manual reset

ST-FRE3
IP44, 2-Meter capillary, auto reset

ST-FRE4
IP44, 2-Meter capillary, manual reset

ST-FRE1-IP65
IP65, 6-Meter capillary, auto reset

ST-FRE2-IP65
IP65, 6-Meter capillary, manual reset

ST-FRE3-IP65
IP65, 2-Meter capillary, auto reset

ST-FRE4-IP65
IP65, 2-Meter capillary, manual reset

Accessories

ST-DFK*
Additional duct fixing clips 6-pack

BRK
Mounting bracket

***** 6 capillary fixing clips are supplied as standard.

The body of the device **must** be located at a point where it will not be subjected to temperatures lower than the set point.

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Installation & Connections:

1. The ST-FRE should only be installed by a competent, suitably trained technician, experienced in installation with hazardous voltages. (>50Vac & <1000Vac or >75Vdc & 1500Vdc)

2. Ensure that all power is disconnected before carrying out any work on the ST-FRE.

3. Maximum cable is 2.5mm², care must be taken not to over tighten terminals.

4. Mount the ST-FRE on a flat surface or using the optional bracket (BRK) using the screws supplied. **CAUTION**: If other screws are used, ensure that they do not penetrate into the control more than 8mm. Prevent distortion of the housing and ensure that there is sufficient room to adjust controls. You should avoid mounting the thermostat where it will be subjected to mechanical vibration.

5. Fix the capillary in the sensing location, not more than 100mm of the capillary should be located outside the control temperature. Unit trips when 300mm of capillary falls below set point temperature. The body of the device **must** be located at a point where it will not be subjected to temperatures lower than the set point.

6. The capillary should be secured using capillary clips (supplied) to prevent excessive vibration and must not be twisted or kinked. Any bends in the capillary must have a minimum radius of 25mm.

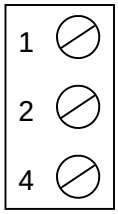
7. Feed the electrical cable through the rubber grommet, alternatively this can be replaced with a standard PG 13.5 cable gland.

8. Make electrical connections as required (terminal torque settings 1.2Nm max.).

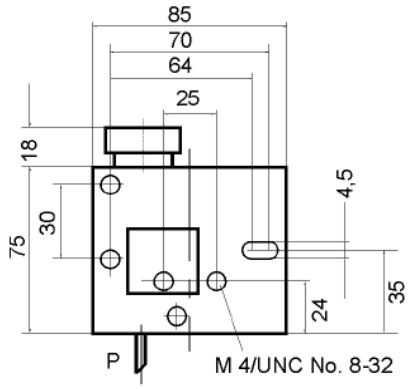
9. Set the switching point and differential (ST-FRE1 & 3 only) by adjusting the screws on top of the ST-FRE.

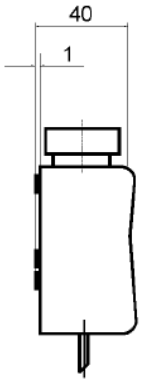
10. To test the switch, use the check-out lever to manually override the electrical contact position.

1	Common
2	Rising temperature
4	Falling temperature



Dimensions:





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