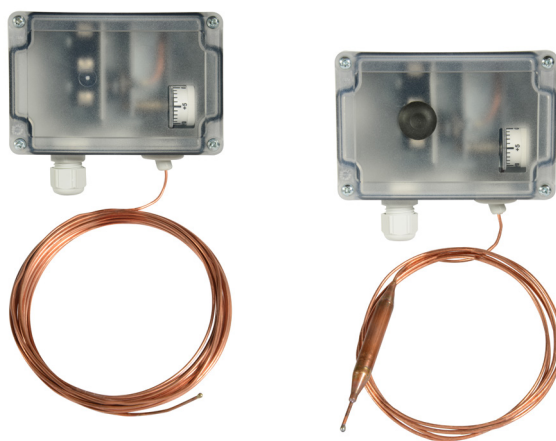


STT900 Series

Frost Thermostats



Product Description

The STT900 Series is a mechanical thermostat suitable for use in general ventilation and air conditioning applications, to assist in the prevention of equipment operating exceptions due to frost conditions. Typical applications include air or water-side temperature monitoring of heat exchangers, hot water circulation systems and water / air heaters.

The entire length of the capillary is active and responds to a temperature change over a minimum length of 60 cm (2 ft.). The capillary itself is available in five different lengths, either with automatic reset functionality or mechanical locking and manual reset by push button.

The change-over contact switch can be used to request the switch-off of fans, closure of outside air dampers, the opening of heating valves, enabling of heat pumps, to de-energise refrigeration compressors and humidifiers, or to initiate a visual and / or acoustic frost condition.

Features

- Transparent cover with inspection window
- Multiple capillary lengths
- Water and air applications
- Manual or automatic reset
- IP65 plastic enclosure

Available Products

Part Number	Model Number	Description	Capillary Length (L)	Reset Function	Permissible Medium
5127040000	STT900	Frost Thermostat	0.6 m (2 ft.)	Automatic	Air
5127010000	STT901	Frost Thermostat	1.8 m (5.9 ft.)	Automatic	Water
5127020000	STT902	Frost Thermostat	3 m (9.8 ft.)	Automatic	Air
5127000000	STT903	Frost Thermostat	6 m (19.7 ft.)	Automatic	Air
5127030000	STT904	Frost Thermostat	12 m (39 ft.)	Automatic	Air
5127090000	STT910	Frost Thermostat	0.6 m (2 ft.)	Manual	Air
5127060000	STT911	Frost Thermostat	1.8 m (5.9 ft.)	Manual	Water
5127070000	STT912	Frost Thermostat	3 m (9.8 ft.)	Manual	Air
5127050000	STT913	Frost Thermostat	6 m (19.7 ft.)	Manual	Air
5127080000	STT914	Frost Thermostat	12 m (39 ft.)	Manual	Air

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Specifications

Setting range (factory default)	-10 ... +15 °C (14 ... 59 °F) +5 °C (41 °F)
Switching capacity	10 (6) A at 250 Vac gold-plated switching contacts
Switch contact type	SPDT (change-over)
Switch hysteresis	2 K ±1 K (3.6 °F ±1.8 °F)
Reproducibility	±0.5 K (±0.9 °F)
Capillary tube material	Copper
Capillary tube filling	R507 refrigerant gas
Capillary length	0.6 ... 12 m (2 ... 39 ft.)
Capillary responding length	60 cm (2 ft.)
Capillary mounting	Fixing clamps (included)
Operating temperature	Ambient max.: +70 °C (158 °F) Ambient min.: Setting + minimum 2 °C (3.6 °F) Storage: -30 ... +70 °C (-22 ... +158 °F)
Enclosure material	Case: Polyamide (30% glass beads reinforced) Cover: ABS
Protection standard	IP65
Protection class	I (EN 60730-1)
Electrical connection	0.14 ... 2.5 mm ² Screw terminals Cable gland type M16 x 1.5 complete with cable strain relief
Test/admissions	Electromagnetic compatibility: CE conformity according to EN 61326-1, EN 61326-2-3 EU conformity: EMC Directive 2014/30/EU

Functions

The operating temperature of the change-over contact switch can be adjusted using the rotary dial found beneath the enclosure cover. If desired, this setting can be lead-sealed at the adjustment screw. The temperature is detected over the entire length of the capillary tube. The gas-filled (R507) membrane system and the capillary tube constitute one measuring unit, which is mechanically coupled to the change-over switch.

A frost condition occurs when the temperature falls below the defined set-point over a minimum 60 cm (2 ft.) of the capillary tube length. Frost condition is signified when terminal C and terminal 2 are closed. Normal operation is signified when terminal C and terminal 3 are closed. Terminals 2 and 3 operate simultaneously in a change-over contact switch arrangement. See Figure 1 for switch connection details.

Resetting of a frost condition for models STT90x occurs automatically once the temperature rises above the defined set-point plus the switching hysteresis, whilst models STT91x are mechanically locked and fitted with a manual reset button on the cover of the plastic enclosure.

It is necessary to ensure that the ambient temperature at the enclosure does not fall below the defined temperature setting of the change-over contact switch. The device must also be operated in a non-precipitating, pollutant-free environment.

The STT900 Series are intrinsically safe devices, such that in the event of the capillary tube membrane becoming damaged, the device automatically switches to a frost condition, i.e. terminals C and 2 are closed.

The capillary tube should be laid at the warm side of the air heater to offer maximum protection. In the case of air coolers the device should be upstream of the air cooler. It should be fitted uniformly over the entire duct area at a distance of approximately 5 cm across the heat exchanger tubes.

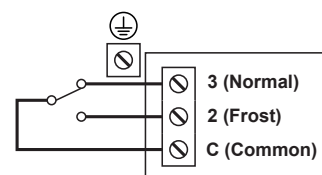
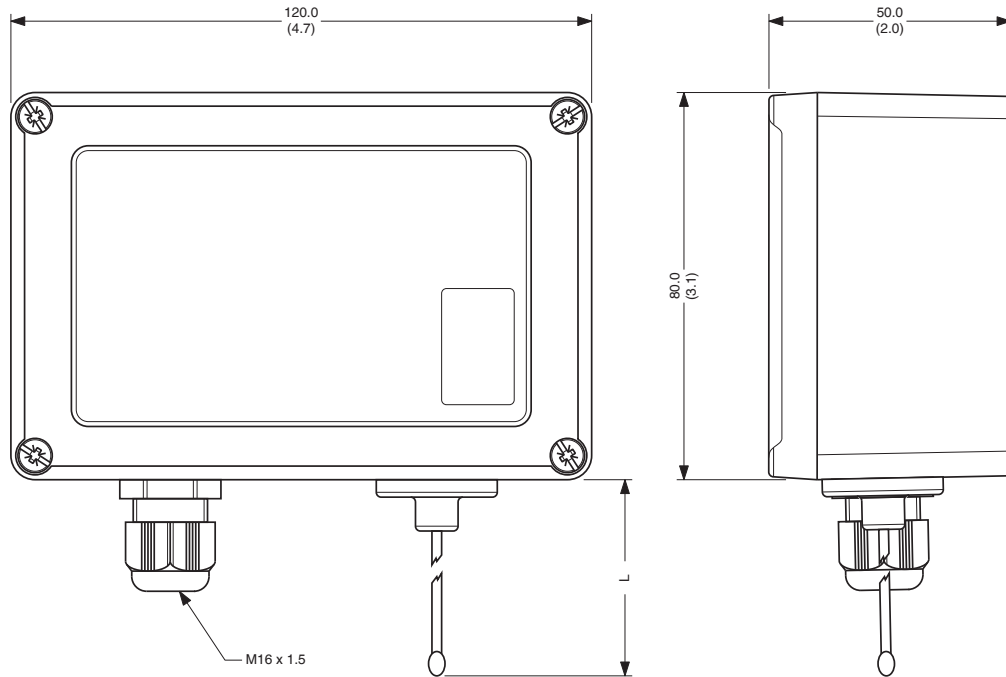


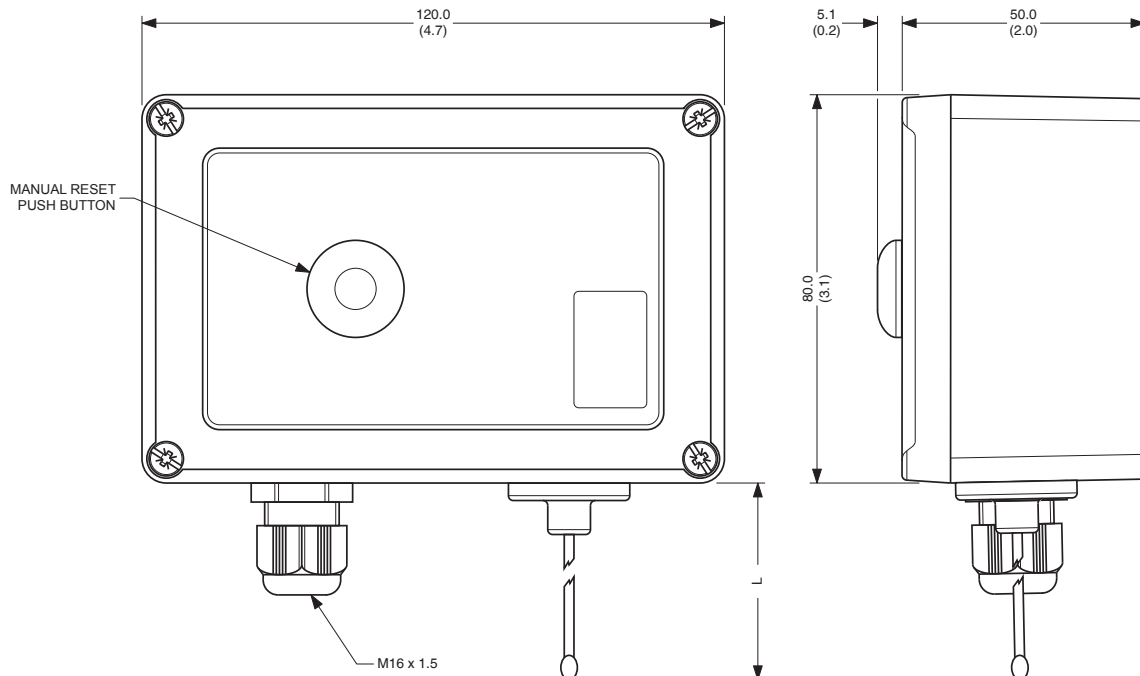
Figure 1

Dimensions mm (in.)

STT90x (automatic reset)



STT91x (manual reset)



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