# FTSE20 / FTSE 60

## 2-STAGE ELECTRONIC FROST PROTECTION THERMOSTAT

**PRODUCT DATA**

## GENERAL

Frost protection thermostats are installed on the air side for the purpose of protecting air conditioning units, heat exchangers, radiators, and similar installations against damages due to frost or freezing. With the FTSE Electronic Frost Protection Thermostat, Honeywell FEMA has expanded its line of electromechanical products with an electronic device.

A special warming-up function, the integrated housing head heater, and especially simple operation are the hallmarks of the FTSE.

### Models

| Model | Capillary tube length | Protection type |
|---|---|---|
| FTSE20 | 2 meters | 42 |
| FTSE60 | 6 meters | 42 |

## FEATURES

- **Special warming-up function**
- **Integrated housing head heater for operation at temperature of down to -15 °C**
- **Especially simple operation**
- **Adjustable to function as either monitor or limiter**
- **Built-in relay contact allows direct switching of loads of up to 250 VAC, 6(2) A**
- **Possible to issue a control voltage to the 0…10V output via the 0…10V input**
- **Current temperature measurement can be sent via the separate 0…10 V output to, e.g., an external temperature display**
- **CE-approved**
- **(Eurasian Conformity)**

## SPECIFICATION

| | |
|---|---|
| Measuring range: | 0 … 15 °C |
| Setting range: | 1 … 10 °C |
| Voltage supply: | 24 VAC +10 / -20% SELV, 48 … 63 Hz |
| Valve control input: | (Y1) 0 … 10 V, input current max. 0.1 mA |
| Valve control output: | (Y2) 0 … 10 V, load max. 1 mA |
| Transmitter output: | (T) 0 … 15 °C = 0 … 10 V, load max. 1 mA |
| Electrical safety: | According to DIN EN 60730-2-9. Overvoltage category III. Pollution degree 2. Rated surge voltage 4.0 kV. Brinell test temperature 125 °C. Software class A. |
| Protection rating: | I, with internal isolation from SELV circuit |
| Power consumption: | Max. 6.6 VA |
| Electrical connection: | Tension spring terminals |
| Conductor cross-sec.: | Max. 2 x 1.5 $mm^2$ or 1 x 2.5 $mm^2$, min. 1 x 0.25 $mm^2$ |
| EMC: | DIN EN 61326-1 |
| Interference emission: | Class B |
| Interference immunity: | Industrial requirements |
| Perm. Ambient temp.: | -15 … +55 °C (use)<br>-25 … +65 °C (storage) |
| Fuse protection: | Max. 10 A |
| Max. switching cap.: | Relay output: 230 VAC, 6(2) A; 24 VDC, 6A |
| Protection type: | IP42 according to EN 60529 |
| Mode of operation: | According to 60730-1, type 1 B |
| Weight: | 2-meter probe line, approx. 0.34 kg; 6-meter probe line, approx. 0.41 kg |

## FUNCTION

If any portion of the capillary tube is cooled to below the set temperature switch-point, the thermostat automatically switches itself off. Alternately, the thermostat can be adjusted to function as either a monitor or as a limiter (the latter with a manual reset button - see "4" in Fig. 3). The built-in relay contact allows the direct switching of loads of up to 250 VAC, 6(2) A.

Over the measuring range of +10…0 °C, the sensor delivers an output signal of 0…10V at the output. A heating valve actuator or air damper actuator can be connected to this output; the actuator will then open continuously according to the output signal.

It is also possible to issue a control voltage to the 0…10V output via the 0…10V input.

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As soon as the temperature drops below the temperature threshold set by the customer, the FTSE assumes priority and closes the connected valves or air dampers continuously until the final shut-off point is reached – regardless of the given input voltage.

Furthermore, the current temperature measurement can be sent via the output to, e.g., an external temperature display.

The FTSE is equipped with a housing head heater as a standard feature. Down to a temperature of -15 °C, this heater keeps the sensor head at a temperature of +15 °C and thus guarantees perfect operation even at low temperatures. In order to prevent repeated and frequent switching on and off during the warm-up phase, the FTSE features a warm-up function which ensures that the heating valve (or air damper) is first completely opened via the 0…10V output before the relay contact has the chance to shut off the entire installation.

All settings on the thermostat can be carried out using two pushbuttons (see "3" and "4" in Fig. 3) accessible after unscrewing a small cover screw (see "A" in Fig. 3). It is not necessary to remove the power supply before carrying out adjustments. The FTSE allows both the switch-point and the operating mode to be selected. The switch-point can be set to between 1 and 10 °C. One has the choice of an operating mode with or without restart lock-out. When selecting the operating mode with restart lock-out, after the set switch-point is reached, the thermostat is locked until manually reset by pushbutton (see "4" in Fig. 3) (however, this is possible only after the temperature has dropped by the switching differential of approx. 2 K). One can also reset the device by removing it from the power supply.

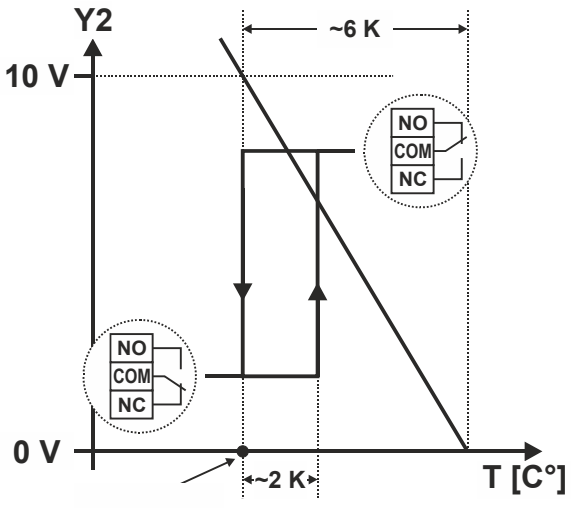


**Fig. 1. Function chart**

# ACCESSORIES

## Incl. in Delivery

| | |
|---|---|
| Brackets for capillary | 6 pcs. for FTSE60<br>3 pcs. for FTSE20 |
| Cable glands | 2 pcs., M 16x1,5 |
| Screws for direct mounting | 2 pcs. |
| Protective sleeve for capillary | 1 pc. |

# DIMENSIONS

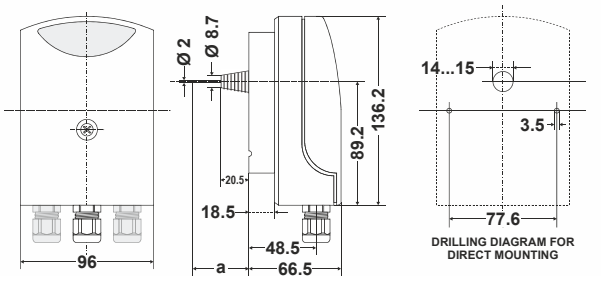


**Fig. 2. Dimensions of FTSE (in mm)**

# MOUNTING

See FTSE20 / FTSE60 - Mounting Instructions ( MU1B-0589GE51).

# WIRING

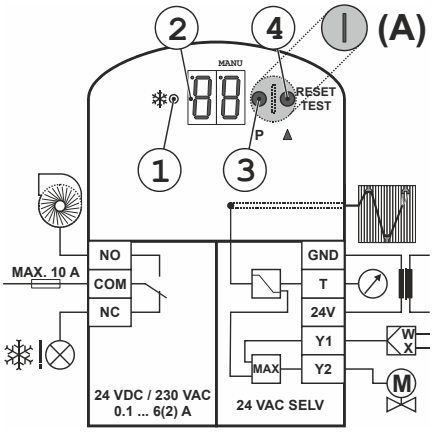


**Fig. 3. Connection example**

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