



### STW capillary tube thermostat

#### Features

- Extremely compact
- Different temperature range combinations available in one enclosure
- Suitable for use in Zone 1 areas
- Temperature can be set in Zone 1 areas
- Alternative versions available

#### Function

Any change in temperature at the sensor bulb causes a change in the volume of fluid in the measuring system, which in turn results in a movement of the diaphragm membrane. This membrane is connected to a mechanical device that activates a microswitch. If the temperature at the sensor bulb exceeds the pre-set value, terminals 1 and 4 are opened. If there is a rupture or break in the sensor tube (leakage), then the switch remains permanently open (fail-safe). If the temperature falls below the minimum setting, the autocontrol opens the circuit but closes again on temperature rise.

#### Description

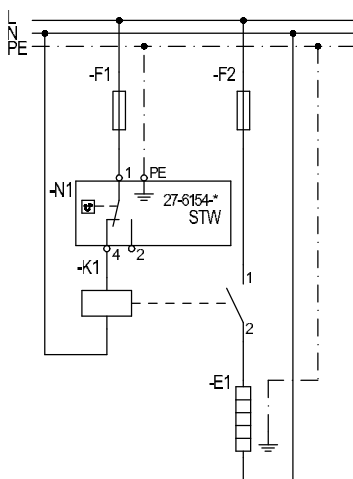
The 5 A capillary tube thermostat, STW, is a compact change-over controller housed in an EEx e certified polyester enclosure.

Heaters, fans, motors and other equipment are energised and de-energised by means of this thermostat when specific temperature ranges are exceeded. This device can also be used to control the temperature in air or on various surfaces.

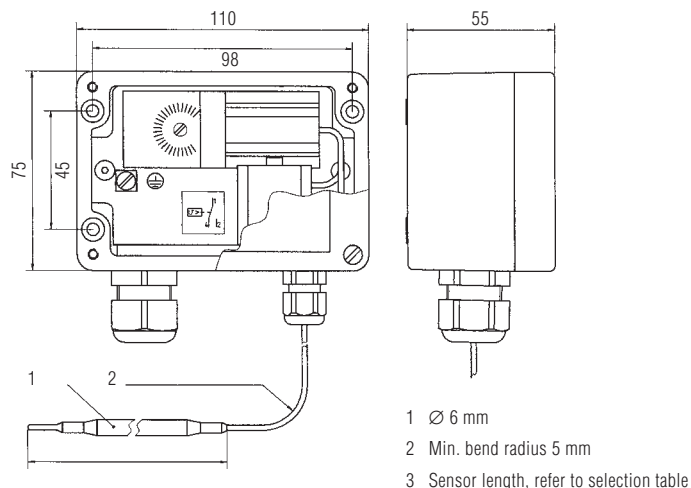
#### Application example

The STW thermostat can directly switch temperature-dependent equipment loads (heaters etc.) of up to 5 A. Higher rated currents can be switched by means of a contactor; the STW switches the contactor coil. If an interlock is installed by means of an additional relay (according to DIN VDE 0116), the STW can also be used as a limiter.

#### Connection diagram



#### Dimensions





**Explosion protection**

**Ex protection type**

II 2G EEx ed IIC T6

**Certification**

PTB 01 ATEX 1114

**Technical data**

**Protection class**

IP 65/EN 60529

**Min. storage temperature**

-40 °C

**Ambient temperature**

-20 °C up to +50 °C

**Min. sensor temperature**

-20 °C (Safety cut-out)

**Capillary tube**

length 1000 mm  
 OD sensor line 1.5 mm  
 min. bend radius 5 mm  
 Sensor bulb diameter 6 mm  
 Sensor material stainless steel SS 1.4571

**Enclosure sizes (in mm)**

single unit 110 x 75 x 55  
 single unit, special size 122 x 120 x 90  
 double unit 220 x 120 x 90

**Weight**

single unit 550 g

**Electrical data**

**Switching capacity**

5 A

**Rated voltage**

maxi. AC 250 V  
 50/60 Hz

**Contacts**

1 change-over contact

**Terminals**

3 x 2.5 mm<sup>2</sup> + 1 PE

**Cable glands**

1 x M20, cable diameter 6 up to 12 mm

**Temperature ranges**

Temperature setting range	fail-safe	-20 °C up to +50 °C	0 °C up to +50 °C	0 °C up to +120 °C	+50 °C up to +300 °C
Switching accuracy	STW	-0 K +3.5 K	-0 K +2.5 K	-0 K +6 K	-0 K +12.5 K
Switching differential	STW = 5 up to 7 % of the scale range				
<b>operating limits</b>					
Max. sensor temperature (DIN 3440)		+60 °C	+60 °C	+140 °C +200 °C <sup>2)</sup>	+345 °C
Min. sensor temperature (DIN 3440)	STW	-30 °C	-10 °C	-10 °C	-15 °C
Max. temperature at switch		+50 °C	+50 °C	+50 °C	+50 °C
Capillary		+50 °C	+50 °C	+50 °C	+50 °C
Min. temperature at switch		-20 °C	-20 °C	-20 °C	-15 °C
Capillary		-40 °C	-40 °C	-40 °C	-15 °C
Mean influence of ambient temperature as % of scale range <sup>1)</sup>	STW	Switch 0.17 % K			0.13 % K
		capillary 0.054 % K m			0.11 % K m

<sup>1)</sup> Switching point accuracy with reference to a room temperature of +22 °C.

<sup>2)</sup> Steam cleaning allowed (not DIN).

**Selection chart**

Temperature setting range	Sensor length	Code no.
-20 °C up to +50 °C	129 mm	<b>0</b>
0 °C up to +50 °C	172 mm	<b>1</b>
+50 °C up to +300 °C	51 mm	<b>7</b>
0 °C up to +120 °C	81 mm	<b>8</b>

**Complete order no. 27-6154-11  5/1**

Please enter code number. Capillary tube length: 3 m on request