

Capillary, Duct, Immersion, Wall & Strap-on Thermostats



Features:

- Robust housing
- Easy setting of set point
- Pocket supplied with immersion types as standard
- Volt Free Contacts

Benefits:

- Concealed adjustment to prevent unauthorized adjustment (not ST-S)
- Manual reset versions have an exposed push button on the front cover so no tools needed to reset

Technical Overview

The ST-x range of thermostats can be used to control the temperatures of liquids and gases in a variety of applications. The liquid filled sensing elements ensure rapid response and accurate switching differentials. They are available in two formats;

Control thermostats (auto reset), with an adjustable set point, adjustable differential and auto rest, which provides a switched output to a heater, or controller.

Safety thermostats (manual reset), with an adjustable set point, fixed differential and manual reset, which provides high limit cut-out on boilers etc.

Specification:

| | |
|--------------------------|--|
| Control range | See product codes for ranges |
| Switch rating | 24 to 240Vac @16(4)A |
| Sensing element | Liquid filled copper element |
| Housing: | |
| Material | ABS UL94 VO (flame retardant) |
| Dimensions | 108 x 70 x 72mm (4.25 x 2.76 x 2.83") |
| ST-S-01A | 86.5 x 38 x 53mm (3.41 x 1.50 x 2.09") |
| Capillary (ST-C) | Bulb, 67mm x 6.5mm dia. (2.64 x 0.26" dia) Capillary 1.5m (4.92ft) |
| Duct probe (ST-D) | 280mm x 16mm dia. (11.02 x 0.63" dia.) |
| Immersion pocket (ST-I): | |
| Material | Stainless steel |
| Dimensions | 130mm (5.12") x ½" BSPT |
| Strap length (ST-S) | 250mm |
| Ambient: | |
| RH | 0 to 95% RH, non-condensing |
| Temperature | -35 to 65°C (-31 to 194°F) |
| Protection: | |
| ST-D-01A | IP54 |
| ST-S-01A | IP30 |
| Other auto reset | IP65 |
| Manual reset | IP43 |
| Weights: | |
| ST-C | 340g (0.75lb) |
| ST-D | 700g (1.54lb) |
| ST-I | 580g (1.25lb) |
| ST-W | 480g (1.06lb) |
| ST-S | 250g (0.55lb) |
| Country of origin | China |



The products referred to in this data sheet meet the requirements of EU 2004/108/EC and 2006/95/EC

Part Codes:

| | |
|-------------------|--|
| Capillary | |
| ST-C-01M | Manual reset, 50 to 140°C (122 to 284°F) |
| Duct | |
| ST-D-01A | Auto reset, -35 to +35°C (-31 to +95°F) Differential 3°C |
| ST-D-02A | Auto reset, 0 to 90°C (32 to 194°F) Differential 2°C |
| ST-D-03A | Auto reset, -30 to +30°C (-22 to +86°F) Differential 3°C |
| ST-D-04M | Manual reset, 0 to 90°C (32 to 194°F) |
| Immersion | |
| ST-I-01A | Auto reset, 0 to 120°C (32 to 248°F) Differential 2 to 12°C |
| ST-I-02M | Manual reset, 0 to 110°C (32 to 230°F) |
| ST-I-03M | Manual reset, 20 to 90°C (68 to 194°F) |
| Wall | |
| ST-W-01A | Auto reset, -30 to +30°C (-22 to +86°F) Differential 3°C |
| Strap-on | |
| ST-S-01A | Auto reset, 0 to 90°C (32 to 194°F) Differential 6°C |
| Accessory | |
| ST-IMM-PKT | Optional stainless steel pocket (ST-I range <u>only</u>) |

Installation:

Common installation;

1. The ST-x range 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.
3. If the sensor is to be mounted outside (IP65 housing options only), it is recommended that the unit be mounted with the cable entry at the bottom. If the cable is fed from above then into the cable gland at the bottom, it is recommended that a rain loop be placed in the cable before entry into the sensor.
4. Chose a suitable for place to install the thermostat.

ST-C

Fix the capillary in position, sensing is only done at the bulb end not along the capillary length.

ST-D

When mounting in the duct ensure that it will give a representative sample of the prevailing air condition.

Mount to the supplied support to the duct and fix using suitable screws. Slide the capillary into the support and tighten the grub screw to secure the housing.

ST-I

Fit a ½" BSPT female threaded boss in a suitable location in the pipe.

Screw the pocket into the boss using a thread-seal compound.

Slide the capillary into the pocket and tighten the grub screw to secure the housing.

ST-S

Mount the stat onto the pipe or surface to be monitored using the strap supplied, ensuring that there is sufficient room to adjust the controls.

Common installation;

5. Remove the front cover by removing the two screws, and separate from the main body.
6. Feed the cable through the waterproof gland and terminate the cores at the terminal block as required see page 4 for connection details. Leaving some slack inside the unit, tighten the cable gland onto the cable to ensure water tightness.
7. Adjust the set point as required and replace the front cover.

Connections:

| Auto reset versions; | | Manual reset versions; | | ST-S-01W; | |
|----------------------|----------------------------|------------------------|----------------------------|-----------|----------------------------|
| 2(yellow) | Heating N/C Cooling N/O | 1 | Heating N/O Cooling N/C | 1 | Heating N/C Cooling N/O |
| 3(blue) | Cooling N/C Heating N/O | 2 | Cooling N/O Heating N/C | 2 | Cooling N/C Heating N/O |
| 1(red) | Common | C | Common | C | Common |

Whilst every effort has been made to ensure the accuracy of this specification, Sontay cannot accept responsibility for damage, injury, loss or expense from errors or omissions. In the interest of technical improvement, this specification may be altered without notice.

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