

# STR/STD/STC/STO-D



## PART NUMBER

Part Number	Model Number	Type	Temperature Range (°C)	Fixings
5126000000	STO600D	Outdoor	0 to + 120	2 x 5 mm dia screw holes
5126010000	STP600D	Pipe	0 to + 120	Screwed pocket 1/2" BSP
5126020000	STC600D	Contact	0 to + 120	Metal Strap
004604000	STR600D	Room	0 to + 45	Various

## SPECIFICATIONS

### STO/STP/STC/STR

**Sensing Element** . . . . . **Negative temperature coefficient thermistor**

**Characteristics** . . . . . **See Page 2**

**Enclosure IP Rating** . . . . . **IP 65 (STO, STP, STC)**  
**STR is IP 20**

**Ambient Temperature Limits** . . . **STO, STP, STC:**  
**-10°C to 70°C**  
**STR: 0°C to 45°C**

**Wiring** . . . . . **2-wire non-polarised low voltage dc**  
**(Safety Extra Low Voltage (SELV))**

**Cable Entry** . . . . . **M20 Conduit (STO, STP, STC)**  
**STR via slots in base-plate**

**Terminations** . . . . . **Two terminals each**  
**accept 1 x 1.5mm<sup>2</sup> wire**

**Associated Controller** . . . . . **DC1100**  
**Controller Datasheet** . . . . . **DS 2.042**

## FEATURES

- Outdoor
- Pipe (Immersion)
- Contact (Surface)
- Room
- Plastic units
- Simple wiring connections – non polarised
- Simple commissioning
- IP 65 for STO, STP & STC
- IP 20 for STR
- 0°C to 120°C (STO, STP, STC)
- 0°C to 45°C (STR)

### Outdoor, Pipe, Contact and Room Temperature Sensors for the DC1100

This range of temperature sensors provides a selection suitable for many HVAC applications. They are housed in sturdy plastic units with mounting arrangements suitable for their duties.

These sensors are specifically for use with the DC1100 controller and they all use the same Negative Temperature Coefficient (NTC) temperature sensor (see Temperature - Resistance characteristics overleaf).

All the sensors operate on low voltage dc (two-wire, non-polarised). The Outside, Pipe and Contact sensors all have M20 conduit cable entry and access to the wiring terminals is possible after removing the two cover screws; in the case of the Outside sensor, the dome shaped housing is the cover (as well as being a shield against the effects of wind and rain).

The Room sensor has a pleasant appearance and a well-designed interface making it suitable for any contemporary building. It is easy to install, comprising a removable, hinged core with a surrounding cover, and a universal, wall mounted base-plate. Cable

## SENSOR CHARACTERISTICS

Temp. (°C)	Ω
-20	331,020
-18	293,370
-16	260,370
-14	231,410
-12	205,960
-10	183,560
-8	163,820
-6	146,400
-4	131,000
-2	117,380
0	105,310
2	94,596
4	85,080
6	76,614

Temp. (°C)	Ω
8	69,078
10	62,355
12	56,352
14	50,985
16	46,185
18	41,883
20	38,022
22	34,557
24	31,440
26	28,634
28	26,107
30	23,827
32	21,768
34	19,907

Temp. (°C)	Ω
36	18,223
38	16,697
40	15,314
42	14,059
44	12,919
46	11,882
48	10,937
50	10,077
52	9,292
54	8,577
56	7,922
58	7,324
60	6,777
62	6,275

Temp. (°C)	Ω
64	5,815
66	5,394
68	5,006
70	4,650
72	4,323
74	4,021
76	3,743
78	3,487
80	3,251
82	3,033
84	2,831
86	2,644
88	2,472
90	2,312

Temp. (°C)	Ω
92	2,164
94	2,026
96	1,899
98	1,780
100	1,670
102	1,568
104	1,473
106	1,384
108	1,301
110	1,224
112	1,153
114	1,085
116	1,023
118	964
120	909

## INSTALLATION

### Outdoor Sensor

Select a location on an outside wall away from warm air outlets such as windows or extract ducts. Avoid fixing to chimney stacks or other artificially warm surface. Unzoned buildings – locate on an outside wall exposed to prevailing winds and in continuous shade. Preferably near top of building unsheltered by surrounding buildings. Zoned buildings – for aspect zoning locate the sensor so that it faces the same general direction as the window area of the zone being controlled. For horizontal zoning locate as near top of the zone as possible.

Access for wiring is via M20 conduit connections and the terminals are accessed via the removable cover (two screws). The terminals are not polarised. See wiring diagram.

### Pipe Sensor

The pipe sensor should be mounted in its previously installed immersion pocket. Do not position in any spurs or dead legs in the pipework, but where it is able to sense properly mixed fluid reflecting the true temperature.

Access for wiring is via M20 conduit connections and terminals are accessed via the removable cover (two screws). The terminals are not polarised. See wiring diagram.

### Contact Sensor

Select a location on pipe surface which has an unrestricted flow of water. Clean the pipe contact area and fix sensor to the pipe, using the strap provided. Keep the pipe insulation clear of the cover.

Access for wiring is via M20 conduit connections and terminals are accessed via the removable cover (two screws). The terminals are not polarised. See wiring diagram.

### Room Sensor

Select a location for the sensor which is representative of the space to be controlled and where it will be readily affected by changes in the general space temperature level. The sensor location should also be reasonably clean and free from damp and condensation.

Remove the base-plate by pushing in the fixing lugs on the top and bottom of the sensor with a small screwdriver or similar tool.

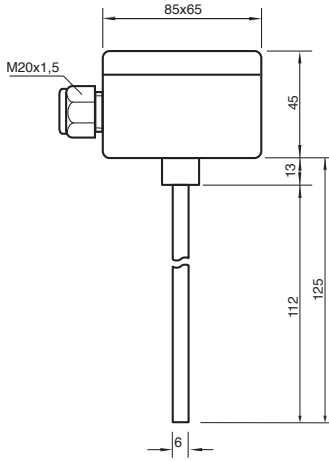
Remove the core by pushing the bottom of the core panel upwards, then unhooking the core panel from the base-plate.

Thread the wires through the base-plate slots and fix it to the wall or conduit box with the word 'TOP' upwards.

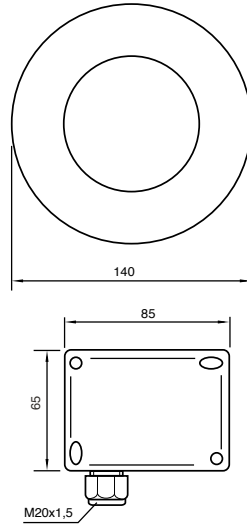
Connect the wires to the sensor terminals. The terminals are not polarised. See wiring diagram.

### DIMENSIONS

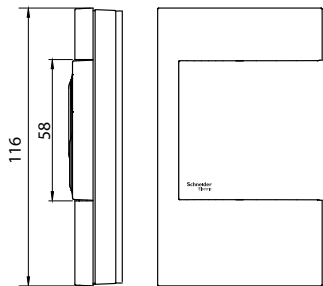
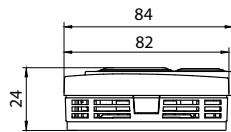
STP



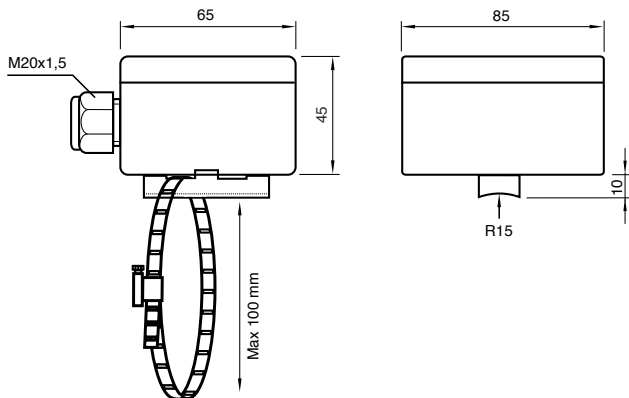
STO



STR

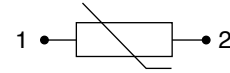


STC



### WIRING

STO, STP, STC (STO shown)



**Caution**

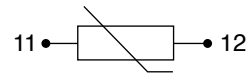
Screened wiring is mandatory. Screen should be earthed at the DC1100 only.

Terminals are not polarized.

Maximum resistance, 25Ω per core.

Refer to DC1100 controller data sheet (DS2.042A)

STR



## CAUTIONS

- Do not apply any voltages until a qualified technician has checked the system and the commissioning procedures have been completed.
- Outdoor detectors must not be fitted where they are exposed to direct sunlight.
- These sensors must only be used in conjunction with the DC1100 controller.
- Screened wiring is mandatory. Screens should be earthed at the controller only.
- If any equipment covers have to be removed during the installation of this equipment, ensure that they are refitted after installation to comply with CE safety requirements.
- Do not exceed maximum ambient temperature.
- Interference with those parts under sealed covers renders the guarantee void.
- The design and performance of TAC equipment is subject to improvement and therefore liable to alteration without notice.
- Information is given for guidance only and TAC does not accept responsibility for the selection or installation of its products unless information is given by the company in writing relating to a specific application.
- A periodic check of the Building Management System is recommended. Please contact your local sales office for details.