

AIR TEMPERATURE SENSORS

Specification No. DDT - 336-X-XXX*
DR/DRT - 337-X-XXX*

The Satchwell range of air temperature sensors are designed for use with Satchwell controllers to provide temperature control of heating and air conditioning plant. For typical applications see relevant controller data sheets.

The room sensors are designed to be aesthetically pleasing and the neutral colours are sure to fit in with most types of room décor.

A Guard kit is available for use the adjustable DRT to prevent occupants from adjusting the set-point out of a pre-selected range. Alternatively the temperature scale can be replaced with a scale which reads '+' or '-' only.



* For the full specification number replace the 4Xs with the appropriate figures from the TYPE column in the table overleaf.

FEATURES

- Aesthetically pleasing case designs
- Small physical size
- Wide temperature sensing range
- Simple wiring connections
- Simple commissioning



MLI 1.001 - Installation Instructions
 DS 2.021 - CSC
 DS 2.041 - CMC
 DS 2.101 - CXT
 DS 2.105 - CZT
 DS 2.110 - CXR
 DS 2.120 - KMC
 DS 2.201 - CZU
 DS 2.541 - CSMC
 DS 2.701 - MMC
 DS 2.751 - MMC
 DS 2.801 - IAC
 DS 2.951 - IAC
 DS 10.101 - MN 300
 DS 10.102 - MN 440
 DS 10.103 - MN 500
 DS 10.104 - MN 620
 DS 13.341 - BAS

SPECIFICATION

Type	Room or Duct	Adjustable Scale	Temp. Sensing Range	Stem Length mm	For use with controller or controller actuator types									
					CZT CXT CXR	CSC	CMC CSMC	MMC	BAS	CZU	KMC	IAC	SVT	MN
		For further information see data sheets:			DS 2.105 DS 2.101 DS 2.110	DS 2.021	DS 2.041 DS 2.541	DS 2.701 DS 2.751	DS 13.341	DS 2.201	DS 2.120	DS 2.951 DS 2.801	DS 2.001	DS 10.101 DS 10.102 DS 10.103 DS 10.104
DR 3253	Room	None	-5/40°C	-	-	-	-	-	-	-	-	-	•	-
DRT 3451	Room	Exposed 10/35°C	-5/40°C	-	•*	-	-	-	-	•	-	-	-	-
DRT 3453	Room	None	-5/40°C	-	•*	•	•	•	•	•	•	•	-	•
DRT 3651	Room	Exposed 10/35°C	-5/40°C	-	•*	-	-	•	•	-	•	•	-	•
DRT 3652	Room	Exposed 10/35°C + LED	-5/40°C	-	-	-	-	-	-	-	-	•	-	•
DDT 1701	Duct	None	-5/100°C	300	•	-	-	•	•	-	•	•	-	•
DDT 1702	Duct	None	-5/100°C	460	•	-	-	•	•	-	•	•	-	•

*Not CXT

Sensing element: Negative temperature coefficient thermistor (0-10k ohm)

Wiring: DRT 2, 3 or 4 wire low voltage dc.
DR, DDT 2 wire low voltage dc.

Adjustment: Where applicable, exposed adjustment.

Ambient temperature limits: DR, DRT -40°C to +70°C
DDT -40°C to +100°C

Characteristics: See below:

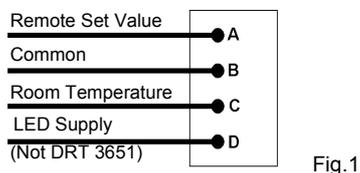
Housing: DR, DRT Tough fire resistant plastic case and back plate (IP 20)
DDT Sealed aluminium tube, alloy head, with plastic cover. (IP 43)

Terminals: Accept 3 x 1.5mm² wires or 2 x 2.5mm² wires (DDT). 1 x 1.5mm² (DR, DRT)

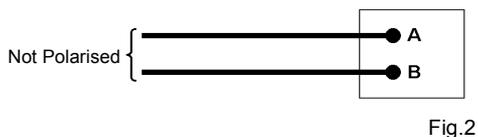
Accessories: 837-1-203: DR/DRT Guard kit - Protects Detector against impact and tampering.
836-1-203: DDT Weatherproofing kit - (Improves protection of sensor head to IP 47).
837-1-352: DRT +/- scale converter - Used to convert standard exposed adjustment room sensor scales to read + and - only. Consists of just the sensor front cover. Suitable for use with DRT 3451/3651 and RPW 4401/4425.

WIRING DIAGRAMS

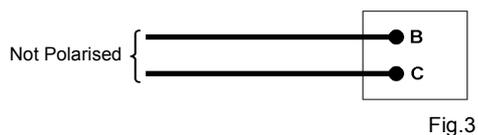
DRT 3651 & 3652



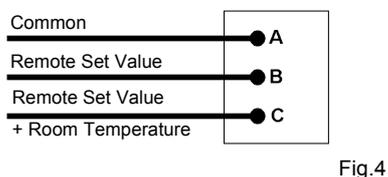
DR 3253



DRT 3453



DRT 3451



Temperature °C	Resistance Ω	Temperature °C	Resistance Ω
-5	8093	60	2056
0	7661	65	1792
+5	7182	70	1563
10	6667	75	1364
15	6126	80	1193
20	5573	85	1047
25	5025	90	921
30	4492	95	815
35	3987	100	722
40	3518		
45	3089		
50	2702		
55	2358		

Temperature °C	Resistance Ω
0	2101
5	2010
10	1908
15	1799
16	1777
17	1754
18	1731
19	1708
20	1684
21	1661
22	1637
23	1614
24	1590
25	1567
30	1449
35	1334
40	1224
45	1121
50	1025

Sensor	Terminals
DR 3253	A, B
DRT 3451	A, B, C
DRT 3651	A, B, C
DRT 3652	A, B, C, D
DRT 3453	B, C
DDT 1701/2	-

INSTALLATION OF THE DR & DRT ROOM SENSORS

1. 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.
2. Remove the backplate by pushing in the fixing lugs on the top and bottom of the sensor with a small screwdriver or similar tool.
3. Thread the wires through the backplate and baffle card and fix it to the wall or conduit box with the arrow pointing upwards. The baffle card is used to ensure that there are not draughts from the cable entries to influence the sensed temperature.
4. Connect the wires to the sensor terminals on the sensor. See the data sheet for the controller the sensor is to be connected to for the terminal designations.
5. Refit the sensor housing to the backplate.

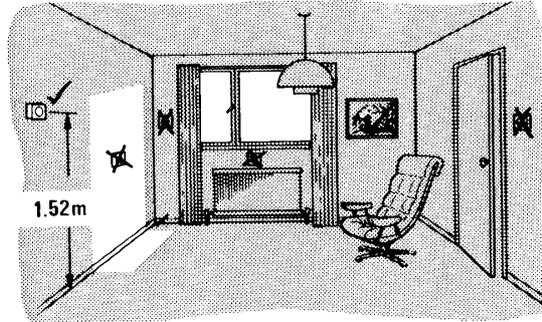


Fig.5

INSTALLATION OF THE DDT DUCT SENSOR

1. Select a location where the temperature sensitive stem is fully immersed in the controlled air stream. The location must not suffer from direct hot or cold radiation effects. For heater batteries the distance from the battery should not be less than 2 metres (6ft). For cooler batteries and spray coils the minimum distance can be reduced to 25-50mm (1-2ins).
2. Fix the sensor to the duct using the fixing screws provided. Allow a sufficient length of flexible conduit to permit complete withdrawal of the sensor.
3. Remove the cover for access to the terminals.
4. Connect wires (non-polarised).
5. Replace the cover and tighten the fixing screws.

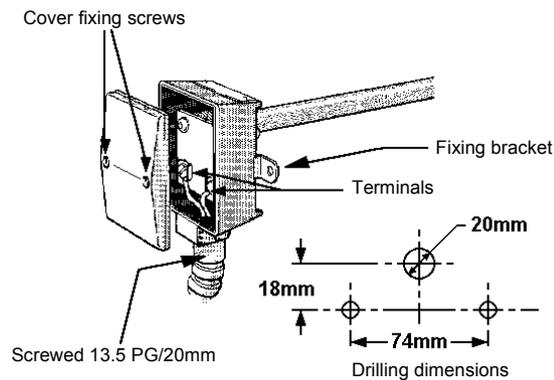
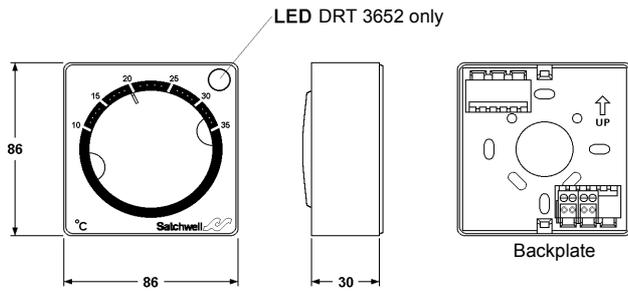


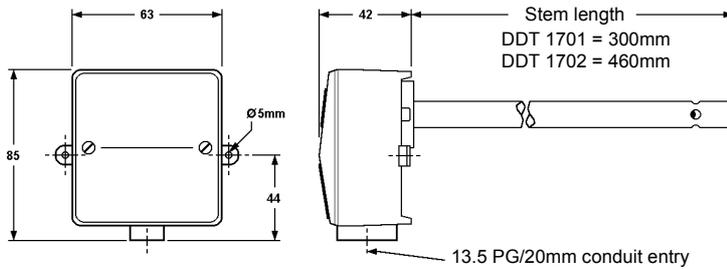
Fig.6

DIMENSION DRAWINGS

DR, DRT



DDT



Dimensions in mm

WIRING DIAGRAMS AND PRECAUTIONS

Refer to the Data Sheet relevant to the controller to which the sensor is to be connected. (See Table on Page 2).

Maximum resistance is 15Ω per core.

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Cautions

- These sensors must only be used in conjunction with the appropriate Satchwell Controllers shown on Page 2.
- Observe wiring precautions given on the data sheet for the controller that the sensor will be connected to.
- Do not exceed the maximum ambient temperature.
- Interference with parts under sealed covers invalidates guarantee.
- Design and performance of Satchwell equipment are subject to continual improvement and therefore liable to alteration without notice.
- Information is given for guidance only and Satchwell do not accept responsibility for the selection and installation of its products unless information has been given to the Company in writing relating to a specific application.
- A periodic system and tuning check of the control system is recommended. Please contact your local Satchwell service office for details.