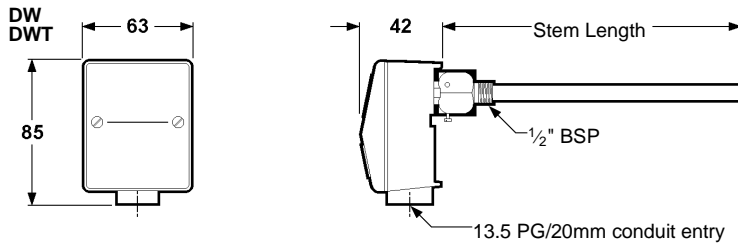
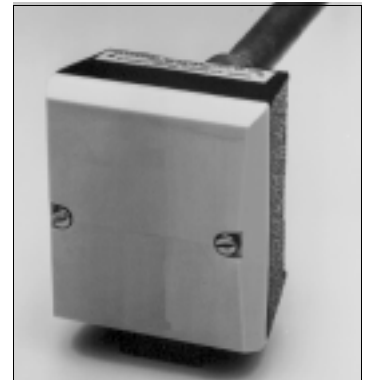


WATER TEMPERATURE SENSORS

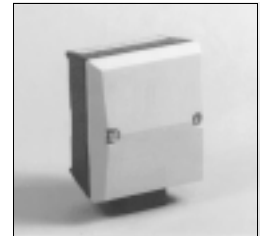
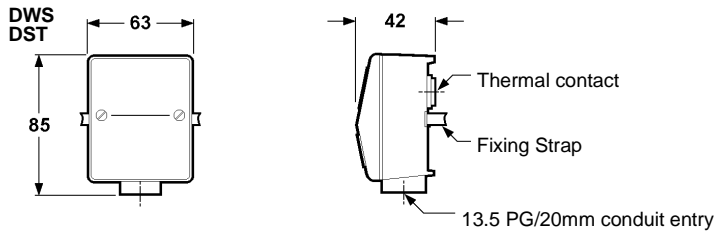
Types DW, DWT, DWS & DST

Specification No. DW/DWT 335-X-XXX*
DWS/DST 339-X-XXX*

The sensors described below are for use with Satchwell controllers to provide temperature control of heating, air conditioning and solar heating systems. If a fast acting water loop is to be controlled see the DWT 1801 on DS 1.26.



* For the full specification number replace the 4 X's with the appropriate figures from the Type column in the table below



Dimensions in mm

SPECIFICATIONS

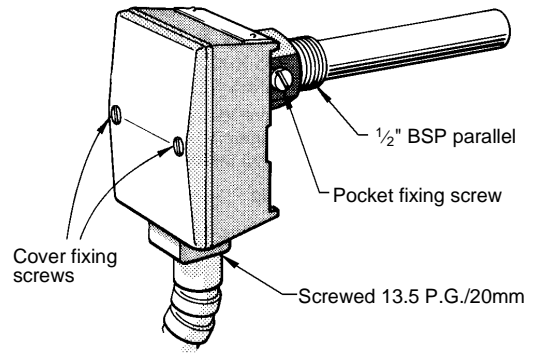
Type	Mounting & Stem Length	Resistance at 20°C (ohms)	Adjustable	Temperature Sensing Range	For use with Controller types:-	See Data Sheet:-
DW 1202 DW 1304	Immersion 125mm 200mm	1690	No	-5 to 40°C	CXR, CZT, CXT	CZT DS2.21 CXT DS2.20 CXR DS2.25 CSC DS2.40
DW 1204 DW 1305	125mm 200mm	2708	No	35 to 120°C	CSC, CZT, CXT	
DWS 1202	Pipe surface	2708	No	35 to 120°C	CSC, CZT, CXT, CZT	
DWT 1701 DWT 1702	Immersion 125mm 200mm	5573	No	-10 to 120°C	CMC, MMC, CSMC, BAS, IAC, KZT, KET	CMC DS2.45 MMC DS2.7* KMC DS2.55 BAS DS13.41 CSMC DS2.47 UNC 122+ DS13.33 UNC 132 DS13.34 IAC 400 DS2.81 IAC 600 DS2.10
DST 1601	Pipe Surface	5573	No	5 to 120°C	CMC, MMC, CSMC, BAS	

- Sensing element:** Negative temperature coefficient thermistor
- Wiring:** 2-wire non-polarised low Voltage dc
- Ambient Temperature Limits - at Head:** -40 to +70°C (Type DWT only: -40 to 100°C)
- Characteristics:** DWT & DST: Non linear - See Page 2.
DW 1202, 1304 approx 23 ohms/°C - See Page 2.
DW 1204, 1305 DWS 1202 approx 23 ohms/°C - See Page 2.
- Head:** Aluminium alloy die-casting with moulded plastic cover. Protection Class: I.P. 43.
- Stem:** DW & DWT only: Aluminium alloy tube
- Terminals:** Accept 3 x 1.5mm² wires: Larger sizes not recommended.
- Pocket:** DW & DWT types only: Corrosion resisting bronze pocket screwed 1/2" BSP parallel. Maximum working pressure of 16 bar. Retaining screw to fix sensor in position. Pocket is included in specification type number and is supplied as standard. Stem lengths quoted are overall, including pocket.
- Fixing Strap:** DWS & DST types only: Length supplied is sufficient for pipes up to 100mm dia.
- Accessories:** Weatherproofing kit (gasket and screws for head cover) all types: 836-1-203 (improves protection of sensor head to I.P. 47)

INSTALLATION

Immersion Sensor type DW, DWT

1. Select location where water can circulate freely around the sensor pocket ensuring that the whole of the pocket is immersed in the water to be controlled.
The pocket should be plugged to prevent entry of foreign matter before sensor is fitted.
NOTE: For chilled water applications pocket should be mounted horizontally or sloping downwards towards mouth to allow condensation to drain away. If this is not possible the pocket may be filled with a suitable oil, e.g. Fina 'Solco' AC43 or Shell 'Dialo Oil B'.
2. Fix sensor pocket into pipe. Allow a sufficient length of flexible conduit to permit complete withdrawal of the sensor.
3. Insert sensor and tighten clamping screw.
4. Remove cover for access to terminals.
5. Connect wires (non-polarised).
6. Replace cover and tighten fixing screws.



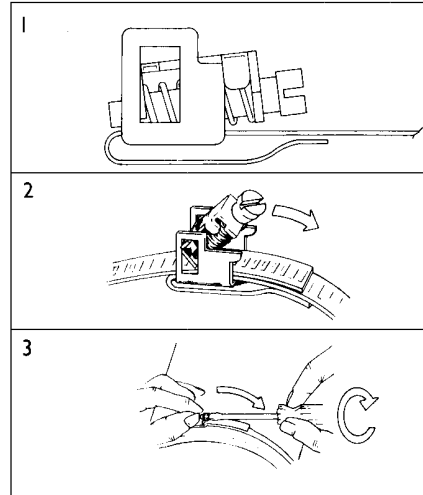
WIRING DIAGRAMS

WIRING PRECAUTIONS

Refer to Data Sheet relevant to the controller to which sensor is to be connected (See Table on Page 1).
Maximum resistance, 15 Ohms per core.

Surface Sensor types DWS, DST

1. Select location on pipe surface which has an unrestricted flow of water.
2. Clean pipe contact area and assemble the strap to the sensor. Fix to the pipe as shown in the diagram. Allow sufficient flexible conduit to avoid straining sensor fixing.
3. Remove cover for access to terminals and temperature adjustment.
4. Connect wires (non-polarised).
5. Replace cover and tighten fixing screws.
6. Keep pipe insulation clear of cover.

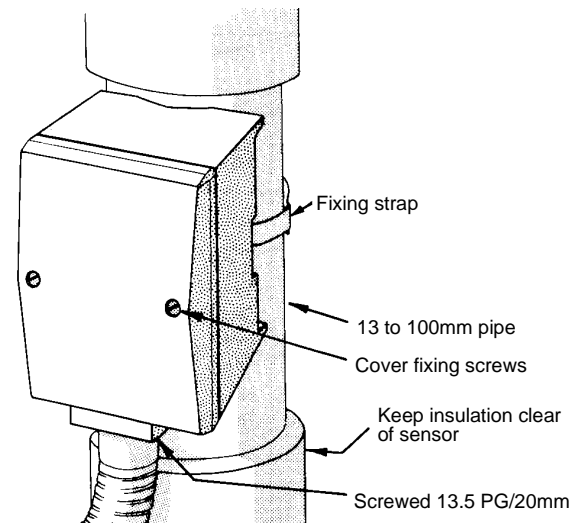


WIRING DIAGRAMS

WIRING PRECAUTIONS

Refer to Data Sheet relevant to the controller to which sensor is to be connected. (See Table on Page 1).
Maximum resistance, 15 Ohms per core.

DW 1202 -5 to 40°C DW 1304 -5 to 40°C		DW 1204 35 to 120°C DW 1305 35 to 120°C DWS 1202 35 to 120°C		DWT 1701 -10 to 120°C DWT 1702 -10 to 120°C DST 1601 5 to 120°C	
°C	Resistance	°C	Resistance	°C	Resistance
-5	2202	35	2346	-10	8471
0	2094	40	2216	-5	8092
5	2010	45	2086	0	7660
10	1911	50	1950	5	7182
15	1809	55	1818	10	6666
16	1787	60	1694	15	6125
17	1764	65	1578	20	5573
18	1740	70	1461	25	5024
19	1716	75	1353	30	4492
20	1690	80	1258	35	3986
21	1667	85	1171	40	3517
22	1644	90	1089	45	3089
23	1621	95	1020	50	2702
24	1596	100	950	55	2358
25	1571	105	917	60	2055
30	1452	110	866	65	1791
35	1336	115	821	70	1562
40	1219	120	781	75	1363
				80	1193
				85	1047
				90	921
				95	814
				100	721
				105	642
				110	574
				115	516
				120	466



CAUTION

- These sensors must only be used in conjunction with the appropriate Satchwell controllers shown on page 1.
- 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.