

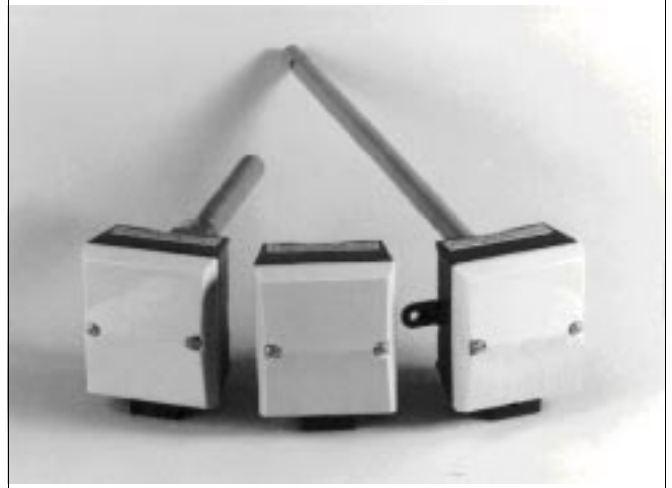
ACTIVE SENSORS

Specification No. DDTE/DWTE 527-X-XXX*

The active sensors are designed for use with Satchwell controllers to give a low limit to any 0 to 10Vdc controller output or to give a reset signal to a controller.

The sensors are available as duct mounting and water immersion versions to cater for all applications.

* For the full specification number replace the 4X's with the appropriate figures from the Type column in the table on page 2.



FEATURES

- Tamperproof
- Low Voltage
- Low cost installation
- Simple commissioning
- Reversible output ramp



SPECIFICATION

Type	Mounting Details	Stem Length	Control Range	Proportional Band Adjustment	Sensor Output	Associated Controllers and Modules
DDTE 1601	Duct	300mm	0 to 40°C	2 to 15K	0 to 10Vdc Over Proportional Band Reverse Action Available by ± Selector Switch One fixed 10Vdc output	Reset MMC – DS 2.74/2.701 IAC – DS 2.81, 2.10/2.801, 2.951 Low Limit MMC – DS 2.74/2.701 IAC – DS 2.81, 2.10/2.801, 2.951
DWTE 1201	Immersion	125mm	0 to 40°C	2 to 15K		
DWTE 1202	Immersion	125mm	40 to 90°C	2 to 15K		

Power Supply:

24V (±10%) 50/60Hz - supplied from a transformer conforming to EN 60742 - see DS 25.00

Consumption:

3VA + actuators connected

Fuse:

Supply should be externally fused

Sensing Element:

Built in negative temperature coefficient thermistor

Ambient Temperature Limits:

DDTE, DWTE 1201 - Operating: 0 to 45°C

DWTE 1202 - Operating: 0 to 100°C

Storage/Transit: -40 to 55°C

Max. Ambient Humidity:

Operating & Storage: 95% rh non condensing

CONSTRUCTION

Adjustments:

Under cover set value, proportional band, and ± switch

Terminals:

Accept 2x1.5mm² wires. Larger sizes not recommended.

Case:

Aluminium alloy with moulded plastic cover.

Stem:

Aluminium alloy tube

Protection Class:

IP 43

Thermistor Housing:

DWTE types only:

Spring loaded mounting to give good thermal contact with pocket.

Pocket: DWTE only:

Corrosion resisting Bronze pocket screwed 1/2" BSP parallel. 16 bar maximum working pressure. Retaining screw hold sensor in pocket. Pocket is included.

Conduit Entry:

20mm/13.5PG

ACCESSORIES

862-1-202 – Adaptor 20mm/13.5PG to 3/4" BS conduit.

836-1-203 – Weatherproofing kit (gasket and stainless steel screws for head cover) improves protection of sensor head to IP47.

SETTINGS & ADJUSTMENTS

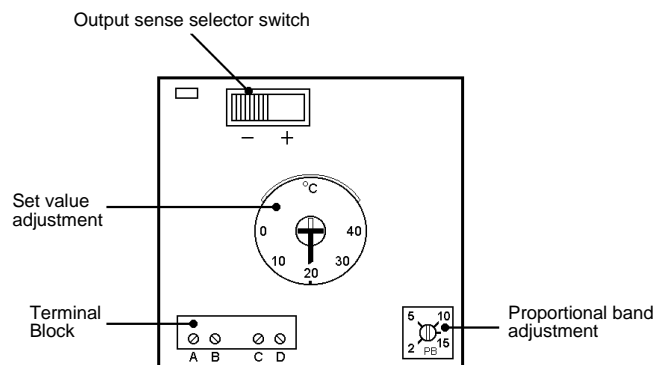


Fig.1

OUTPUT

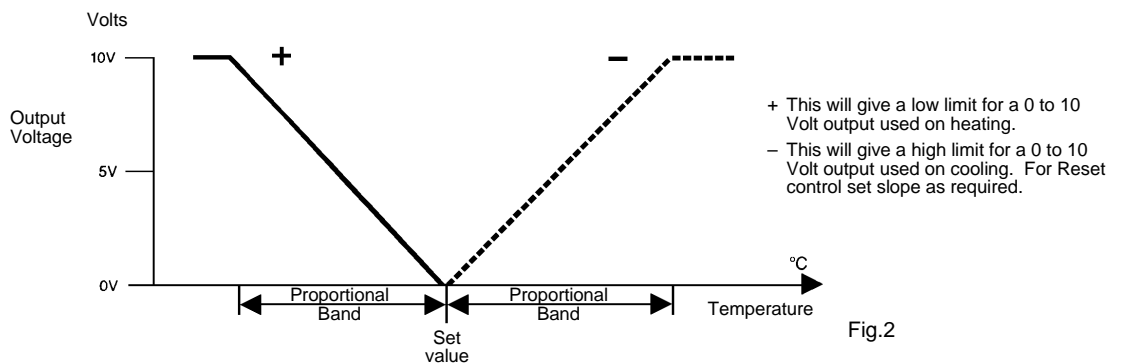


Fig.2

INSTALLATION

IMMERSION TYPE DWTE

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 'Diala 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 the wires in accordance with the wiring diagrams.
6. Replace cover and tighten fixing screws.

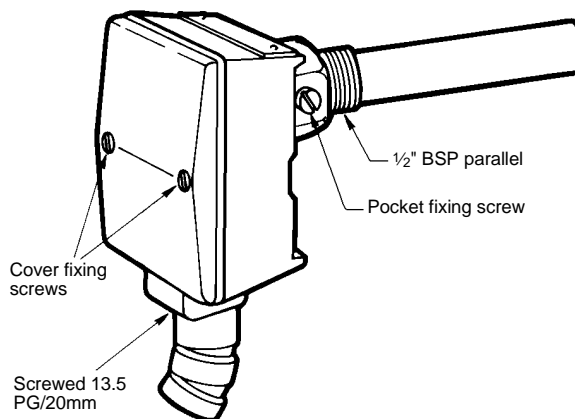


Fig.3

DUCT TYPE DDTE

1. Select a location where the temperature sensitive stem is fully immersed in the air stream. The location must not suffer from direct hot or cold radiation effects.
2. Fix sensor to duct using fixing screws provided. Allow a sufficient length of flexible conduit to permit complete withdrawal of the sensor.
3. Remove cover for access to the terminals.
4. Connect the wires in accordance with the wiring diagrams.
5. Replace cover and tighten fixing screws.

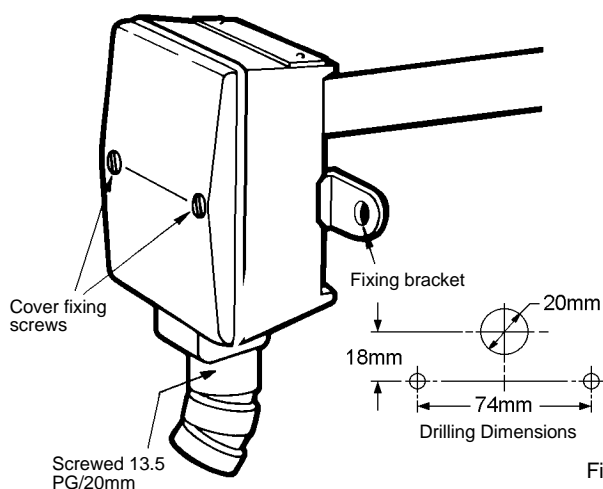


Fig.4

NOTE: DO NOT SWITCH ON THE POWER SUPPLY UNTIL COMMISSIONING STEPS 1 TO 6 HAVE BEEN COMPLETED.

COMMISSIONING

1. Ensure all power supplies are off.
2. Check all equipment is correctly located and wired in accordance with the system diagram.
3. Remove sensor cover.
4. Set the set value and proportional band required. Set the \pm selector switch to the slope required i.e. + for heating slope, - for a cooling slope.
5. Refit sensor cover.
6. Turn on power supply.

FINE TUNING THE SYSTEM

If the output tends to be sluggish reduce the proportional band slightly. If it appears to hunt increase the proportional band.

WIRING PRECAUTIONS

Wiring from active sensor to:	Maximum length for 1.5mm ² core unscreened cable*	Maximum resistance per conductor
**Actuators		
24V~ supply	100m	3 Ω
0-10Vdc signal	100m	50 Ω
Controllers	100m	3 Ω

IMPORTANT: Low Voltage unscreened signal wiring must be run in a separate loom or trunk from any mains wiring and spaced as far as possible away from it (220/240Vac 45cm Min, 415Vac 58cm Min, both Voltages are with respect to earth and a maximum current of 15A). For other Voltages/currents refer to the IEE report titled "Electro magnetic interference" September 1987 (ISBN85296353X).

NOTES

* Where length exceeds figures in column 2 up to a maximum of 300m select cable size to comply with the resistance in column 3 and use one of the following screening options:

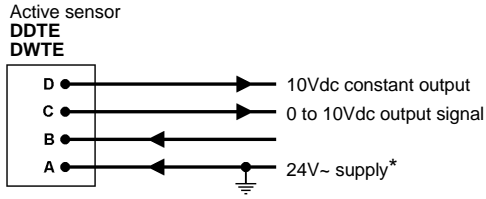
- Screened cable. Earth screen at controller end only.
- MICC. Earth sheath at controller end only.

** Up to 20 actuators maximum may be connected to the sensor (0-10V signal 24V supply must be run separately).

24Vac devices must be supplied by a transformer conforming to EN 60742 - see DS 25.00.

CONNECTION DIAGRAMS

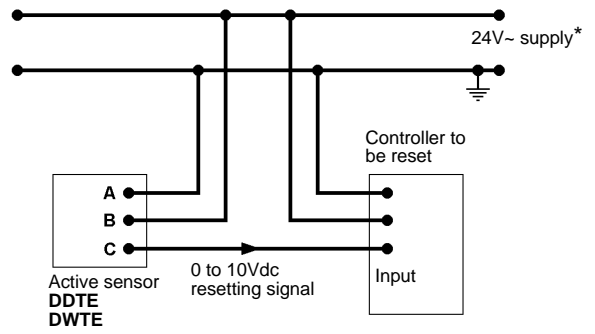
BASIC DIAGRAM



* 24Vac devices must be supplied by a transformer conforming to EN 60742 - see DS 25.00.

Fig.5

0 TO 10Vdc RESET WITH A COMMON SUPPLY

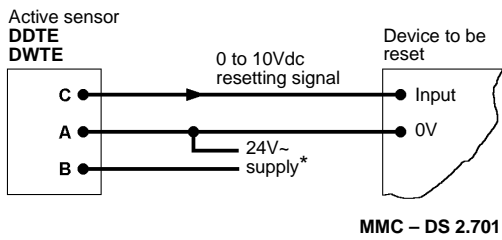


* 24Vac devices must be supplied by a transformer conforming to EN 60742 - see DS 25.00.

MMC - DS 2.701

Fig.6

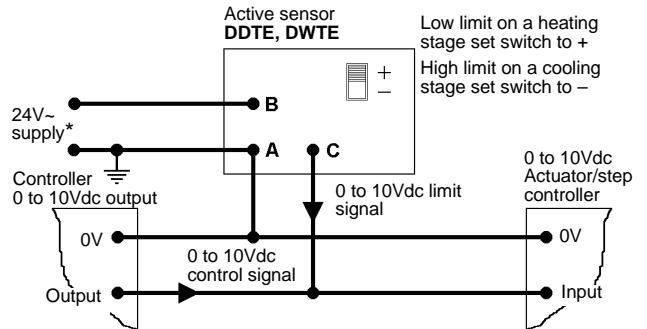
0 TO 10Vdc RESET WITH SEPARATE SUPPLIES



* 24Vac devices must be supplied by a transformer conforming to EN 60742 - see DS 25.00.

Fig.7

LOW LIMIT ON A 0 TO 10Vdc OUTPUT



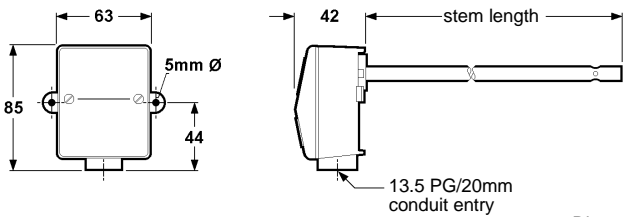
NOTE: For wiring see the appropriate data sheets indicated.

* 24Vac devices must be supplied by a transformer conforming to EN 60742 - see DS 25.00.

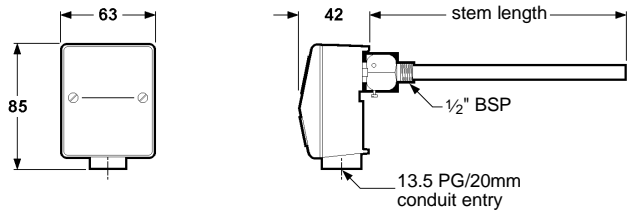
- MMC - DS 2.74/2.701
- CZT - DS 2.23/2.105
- IAC - DS 2.10, 2.81/2.801, 2.951
- ALE - DS 3.20/3.401
- ALES - DS 3.21/3.501
- ARE - DS 3.15, 3.17/3.210, 3.215
- ARES - DS 3.18/3.301
- AVUE - DS 3.23/3.001
- FLS - DS 2.63/2.195

Fig.8

DDTE



DWTE



Dimensions in mm



Satchwell Control Systems Limited
Farnham Road, Slough, Berkshire,
United Kingdom SL1 4UH

Tel: +44 (0)1753 550550
Fax: +44 (0)1753 824078

A Siebe Group Company

CAUTION

- This is a 24Vac device: do not exceed rated Voltages. Local wiring regulations and usual safety precautions must be observed.
- 24Vac devices must be supplied by a transformer conforming to EN 60742 - see DS 25.00.
- Observe wiring precautions shown on Page 3.
- Observe installation instructions on Page 3.
- Do not switch on the power supply until commissioning steps 1 to 6 have been completed see Page 3.
- Do not exceed maximum ambient temperature.
- Interference with those parts under sealed covers renders the guarantee void.
- 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 or installation of its products unless information has been given by 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.