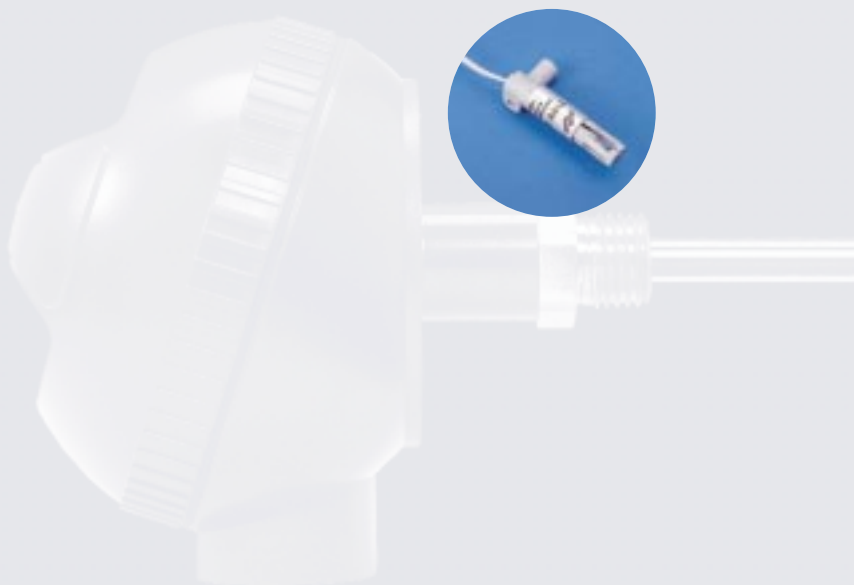
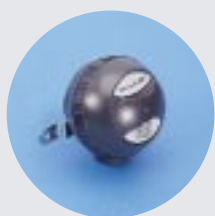




## HIGH PERFORMANCE TEMPERATURE SENSORS

DDT  
DDU  
DOS  
DOT  
DST  
DWT

There is a logical common sense to the features  
on our new GLOBAL sensor range



Accuracy, response time and reliability – three basic elements for effective sensor control. If one fails to perform, the plant suffers and you get loss of comfort and energy wastage.

Satchwell has gone back to basics and looked at all aspects of sensor control from the initial installation to the accuracy

of their performance. We have combined our research with common sense design to produce stylish, high performance sensors for fast processor controllers.

The result – the most innovative range of sensors on the market today!

## Fast response GLOBAL temperature sensor



**DUCT TEMPERATURE**



**WATER TEMPERATURE**



**WATER TEMPERATURE (FAST RESPONSE)**



### Easier installation ... and improved performance

**Easy connection** – simply unscrew the lid to gain access to the reversible terminal block – **no fiddly screws**. The head can be rotated on the pocket to ease conduit connection.



**Replacement of immersion sensors** – existing pockets can be used if the bore of the pocket is not less than 6.5mm (also redundant gauge pockets) – **no need to drain system**.



**Accessories to enhance performance** – brass and stainless steel pockets are engineered specifically to improve performance and reduce pressure drops in the hydraulic system.

**Easy replacement of old sensors** – the same fixing footprint has been used for simple replacement.



**IP 65 as standard** – when fitted correctly sensors can be mounted in more adverse environments.



**Brass pocket adapter** – used to fit the DWT 0001 sensor into old Satchwell and other manufacturers' pockets.

Common sense design means ...

**ONE PROBE THAT CAN BE USED IN ALMOST ANY STANDARD POCKET OR DUCT SIZE ... simply extend to suit**

No more monitoring problems using the incorrect stem length or finding the middle of the duct. No more need to specify a certain length or hold a large stock of model types. **Simply extend the Global probe and fit.**



Sensor shown full size

# Sensors for advanced processor control

**SURFACE TEMPERATURE**



**OUTSIDE AIR TEMPERATURE**



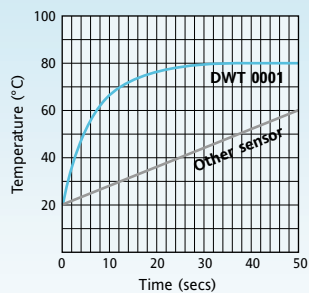
**SOLAR GAIN**



**TERMINAL UNIT TEMPERATURE**

## Designed to respond ...

**The latest thermistor technology** – used for the sensing heads on our new range, it gives exceptional accuracy and fast response, as shown below with DWT 0001.



**Fast response DWT 0002** – the high quality, small diameter, stainless steel pocket reduces obstruction in the pipe and gives an ultra fast temperature conduction to the thermistor. It is one of the fastest pocket sensors on the market giving 63% transient response time in less than two seconds.



**Sensor crown** – ensures good thermal contact with the end of the pocket using a pre-applied heat paste which conducts the heat directly to the thermistor.



## The Development Story

### Project name ... *Mushi*

Our aim was to rationalise the manufacture and use of temperature sensors, maintaining excellent reliability while improving performance and reducing installation time.

To achieve this, the Satchwell design team worked closely with specialist manufacturers to develop the high-performance thermistors and the telescopic shaft concept for the Global range.

Field and application tests were carried out over a period of two years to gain approval for the patented designs\*. They included rigorous testing of the stem in various mounted positions, and of response time performances of the thermistors in extreme conditions.

The final designs have achieved all our objectives and exceeded even our own expectations; the knowledge we have gained from this project will now be applied to the development of further products for the range.

## Servicing

Global sensors do not normally need servicing during their operational life.

## Future products

As a result of Satchwell's ongoing development programme, Global sensors is just one part of the exciting new generation of high performance controls that will fulfil the future demands of the HVAC market.

\* patent pending No.99309103.2

## General Information

### SENSOR SELECTION:

Type	Mounting	Code	Sensing Range	Notes:
Air Temp	Immersion *	<b>DDT 0001</b>	-5 to +100°C	duct sizes min 100mm, max 330mm duct direct mounting to duct wall wall mounted
	Terminal unit **	<b>DDU 0001</b>	-5 to +40°C	
	Outside	<b>DOT 0001</b>	-40 to +40°C	
Water Temp	Immersion *	<b>DWT 0001</b>	-10 to +120°C	120mm pocket supplied fast response – 120mm stem length sensor fixing strap supplied
	Immersion	<b>DWT 0002</b>	-10 to +120°C	
	Pipe surface	<b>DST 0001</b>	+5 to +120°C	
Solar Effect	Outside	<b>DOS 0001</b>	-40 to +40°C	wall mounted

### ELECTRICAL/MECHANICAL:

**Protection Class:** IP 65 (weather proof)

**Ambient** Operating: -40 to +120°C

**Temp. Limits:** Storage/transit: -40 to 55°C

**Max. Ambient** Operating: 95% RH

**Humidity:** Storage/transit: 95% RH

**Ambient** DDT -5 to +100°C

**Temperature** DDU -40 to +70°C

**at Head:** DWT 0001 -40 to +100°C

DWT 0002 -10 to +120°C

DST -40 to +70°C

DOT, DOS -40 to +40°C

**Compatible** DDT sensor – BAS, CSC, CXR, CXT, CZT, CZU, IAC, KMC, MMC, MicroNet

**Controllers:** DDU sensor – CZU, BAS, CXR, CXT, CZT, IAC, KMC, MMC, MicroNet

DWT, DST sensors – BAS, CSC, CSMC, CXR, CXT, CZT, IAC, KMC, MMC, MicroNet

DOT, DOS sensors – BAS, CSC, CSMC, IAC, KMC, MMC, MicroNet

### CONSTRUCTION:

**Head:** Moulded base with screw on lid

**Head Material:** Polyamide (nylon 66), UV and heat stabilised, UL 94-V0 rated.

DOS has polycarbonate lid.

**Terminals:** Terminal block accepts 2 x 1.5mm<sup>2</sup> wires

**Stem material:** DDT, DWT 0001 – chromium plated brass

DWT 0002 – stainless steel (120mm length) – no pocket required, fitted directly into pipework

**Pocket material:** DWA 0003, 0005 – corrosion resisting brass pocket 1/2" BSP parallel

DWA 0002, 0004 – stainless steel pocket 1/2" BSP parallel

**Fixing strap:** DST – supplied metal strap sufficient for pipes upto 100mm

### ACCESSORIES:

**DWT sensor:** DWA 0001 – pocket adaptor

DWA 0002 – 120mm stainless steel pocket

DWA 0003 – 200mm brass pocket

DWA 0004 – 200mm stainless steel pocket

DWA 0005 – 120mm brass pocket (supplied with DWT 0001)

\* Adjustable stem length min 100mm, max 300mm. The pocket adaptor (DWA 0001) can be used to install DWT 0001 sensor into older Satchwell pockets (DWT 1701 & 1702) and third party manufacturer's pockets if – the head is less than 30mm across flats (typical), the pocket bore diameter is less than 6.5mm and the stem length is between 100 to 300mm. Also redundant gauge pockets can be used.

\*\* Fly lead length 1.5 metre

Satchwell Control Systems Limited is an Invensys company. The company has over 75 years experience in the design, installation, manufacture and maintenance of automated control systems for commercial and industrial buildings.

Innovative product design and a coherent development policy, combined with positive long-term relationships with customers have led to the installation of many thousands of systems throughout the world.

ISO 9001 certification, international recognition of the high quality and long life of Satchwell products and a world-wide service network give customers unrivalled confidence and support.



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DDT – DS 1.003  
DST, DWT 0001 – DS 1.203  
DWT 0002 – DS 1.204  
DOS, DOT – DS 1.402