

# 11

## HUMIDITY TEMPERATURE & CO2 & AIR QUALITY



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## Averaging Temperature Duct Sensor

Description	Sensor Type	Additional Features	Part No.
Active	DC 0...5V / 0...10V 4...20mA	Probe length 6m	22MT-125 22MT-145

## Humidity / Temperature Duct Sensor

Active	DC 0...5V / 0...10V 4...20mA	Probe length 140mm	22DTH-11M 22DTH-13M 22DTH-15M 22DTH-16M
	MODBUS RTU BACnet MS/TP		

## CO2 Duct Sensor

Active	DC 0...5V / 0...10V 4...20mA	Probe length 180mm	22DC-11 22DC-13
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## CO2 / Temperature Duct Sensor

Active	DC 0...5V / 0...10V 4...20mA	Probe length 180mm	22DTC-11 22DTC-13
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## CO2 / Humidity / Temperature Duct Sensor

Active	MODBUS RTU BACnet MS/TP	Probe length 180mm	22DTM-15 22DTM-16
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## CO2 / VOC Duct Sensor

Active	DC 0...5V / 0...10V	Probe length 180mm	22DCV-11
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## CO2 / VOC / Temperature Duct Sensor

Active	DC 0...5V / 0...10V	Probe length 180mm	22DCM-11
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## CO2 / VOC / Mix CO2 + VOC / Temperature Duct Sensor

Active	DC 0...5V / 0...10V	Probe length 180mm	22DCK-11
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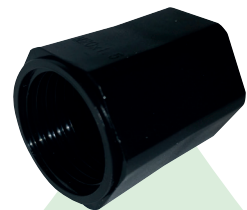
## Frost Protection Stat Sensor

Switch	Volt free relay NO/NC	Auto reset, probe length 3m	01DTS- 104
		Auto reset, probe length 6m	01DTS- 105
		Manual reset, probe length 3m	01DTS- 104X
		Manual reset, probe length 6m	01DTS- 105X

## Sensor Adaptors

### Sensor Adaptors

Description	Sensor Type	Additional Features	Part No.
20mm adaptor (in bags of 10x)	1 hole	20mm conduit adaptor	A-22G-A01.1
	2 holes		A-22G-A02.1
	4 holes		A-22G-A04.1



## Electro Controls



### Air Quality Transmitters

These products can be used to detect a mixture of pollutant gases in the air i.e. cigarette smoke, odours and other gases generally found within clubs, pubs, restaurants, kitchens, smoking areas etc. The 0-10V DC linear output signal is proportional to the contamination level produced and can be used to control fresh air dampers or fans etc. A solid state element is used to sense contaminant gases.

#### Features

**EAQ...** Transmitters should not be used to detect carbon dioxide (CO2). CO2 transmitters are ideal for use in clean areas i.e.. theatres, conference rooms.

**EAQ-R1** Fits square or round outlet box.

#### EAQ... Sensor

Type	Accuracy	Supply	Rating	Part No.
Room	±5%	24V AC/DC	IP30	<b>EAQ-R1</b>
Duct		24V AC/DC	IP65	<b>EAQ-D1</b>

### Carbon Dioxide Transmitter

These detect the presence of carbon dioxide ONLY and give a 0-10V DC or 4-20mA output signal linear across the range. Suitable for use in clean areas such as no-smoking rooms, theatres, conference rooms etc.

#### ECD... Sensor

Type	Accuracy	Supply	Rating	Part No.
Room	0-2000ppm ±75ppm	24V AC/DC	IP30	<b>ECD-R1</b>
Duct		24V AC/DC	IP65	<b>ECD-D1</b>



### CO2, Temperate & RH Transmitters

An accurate and cost effective solution for the HVAC market, with 0-10V outputs for CO2, temp & RH levels. Using the built in volt free contact allows the unit to be easily interfaced with a variety of systems including ventilation, window control, gas safety, or with the optional LCD the unit can simply be used as a traffic light indication to raise awareness of high CO2, temp or RH levels.

#### Features

- 24V AC/DC power supply
- Optional CO2 readout (Temp & RH on - H model only)
- Optional CO2 traffic light indication (can be configured for Temp & RH)
- Volt free contact output based on CO2 (can be configured for Temp & RH)
- Typical 15 year life expectancy
- Self-calibrating CO2 sensor
- Mounts onto any standard single gang junction or conduit box
- UK Manufactured

#### CO2, Temperate & RH Transmitters

Description	Part No.
CO2 Transmitter (24V)	<b>CO2T</b>
CO2, Temp & RH Transmitter (24V)	<b>CO2T-H</b>
CO2 & Temp Transmitter c/w 10K3 Thermistor (24V)	<b>CO2T-P3</b>
Temp & RH Transmitter (24V)	<b>RHT</b>
CO2 Transmitter c/w display (24V)	<b>CO2T-L</b>
CO2, Temp & RH Transmitter c/w LCD (24V)	<b>CO2T-HL</b>
CO2 & Temp Transmitter c/w 10K3 Therm & LCD (24V)	<b>CO2T-P3L</b>
Temp & RH Transmitter c/w Display (24V)	<b>RHT-L</b>

#### Features

- 24V AC/DC power supply
- Volt free contact output based on CO2 (can be configured for Temp & RH)
- Typical 15 year life expectancy
- Self-calibrating CO2 sensor
- 200mm duct probe
- UK Manufactured

#### CO2, Temperate & RH Transmitters - Duct Mount

Description	Part No.
CO2 Transmitter - Duct (24V)	<b>CO2TD</b>
CO2, Temp & RH Transmitter - Duct (24V)	<b>CO2TD-H</b>
CO2 & Temp Transmitter c/w 10K3 Therm - Duct (24V)	<b>CO2TD-P3</b>
Temp & RH Transmitter - Duct (24V)	<b>RHTD</b>

## Room/Duct Carbon Dioxide Transmitters

High reliability, low maintenance and BSF\* compliant. Sontay's new carbon dioxide sensor range uses a non-dispersive infrared sensor for measuring CO2 concentrations in controlled spaces. They deliver accurate measurement and instant control, with long-term stability.

The microprocessor electronics feature a unique self-calibration algorithm that continually adjusts for drift, prevalent in many other sensor types. The operation ensures adequate air quality while maximising energy savings by ventilating at the optimum level. Sensors can be connected to a BMS, using the optional ModBus communications interface for added overall efficiency.

These units are ideal for all types of ventilation in commercial buildings, industrial plants, laboratories and public spaces, such as schools and train stations. \* *Building Schools for the Future (BSF), Building Bulletin 1 (BB1) compliance.*

### Features

- Accurate and reliable measurement using NDIR technology
- 10 to 15-year product life time (depending on type)
- RH & Temp. models
- 3-stage status indication on CO2 only models
- 3-colour 'traffic light' status indication LCD with alarm function options
- RS485 ModBus connectivity available
- Wall and duct models available

### Specification

Output signal selectable: 0-10V DC/4-20mA  
 Range: 0 to 2000ppm  
 Protection: IP65 (duct) IP30 (wall)

### GS-CO2... Series

Mounting Type	ModBus/BACnet	Mode Button	LED (6) Indication	Part No.
Duct	-	-	-	<b>GS-CO2-622</b>
	Yes	-	-	<b>SM-33000</b>
Room	Yes	-	-	<b>SM-130000</b>
	-	-	Yes	<b>GS-CO2-1001</b>
	Yes	-	Yes	<b>SM-140000</b>
	-	-	Yes	<b>GS-CO2-1001-LED</b>

## Room/Duct Carbon Dioxide, RH & Temperature Transmitters

### GS-CO2... Series

Mounting Type	Temp Range	ModBus/BACnet	LED Display	Part No.
Duct	-20 to +60°C	-	-	<b>GS-CO2-RHT-622</b>
		-	Yes	<b>GS-CO2-RHT-622-LED</b>
		Yes	Yes	<b>SM-36000</b>
		-	-	<b>GS-CO2-RHT-1001</b>
Room		Yes	-	<b>SM-150000</b>
		-	Yes	<b>GS-CO2-RHT-1001-LED</b>
		Yes	Yes	<b>SM-160000</b>



## CO2 & Temperature Sensors

### TP Series

Type	Output	Part No.
CO2 & Temperature	0-10V	<b>TPVRC02T</b>
CO2 & Temperature	0-10V Resistive & Temperature	<b>TPVRC02-RT*</b>
CO2, Temperature & Humidity	0-10V	<b>TPVRC02HT</b>
CO2, Temperature & Humidity	0-10V & Resistive Temperature	<b>TPVRC02H-RT*</b>
CO2 & Temperature c/w LED indication	0-10V	<b>TPVRC02T/L</b>
CO2 & Temperature c/w LED indication	0-10V Resistive Temperature	<b>TPVRC02-RT/L</b>
CO2, Temperature & Humidity c/w LED indication	0-10V	<b>TPVRC02HT/L</b>
CO2, Temperature & Humidity c/w LED indication	0-10V & Resistive Temperature	<b>TPVRC02H-RT*/L</b>
Battery Powered CO2 indication only	LED indication only	<b>TP-CO2-IND/L</b>

\* State element type required.

All sensors available in white, grey or black housings.





## Outside Air RH & T Sensors

The RH-632 Duct Mounted Humidity and Temperature Sensors offer the latest technology for high accuracy RH measurement. Units can be ordered with an optional direct resistive temperature output (where this option is required, the type of temperature element MUST be specified at the time of ordering). The RH-632 is also available with additional outputs for enthalpy and dewpoint. Non-standard temperature output ranges can be specified at time of order.

### Features

- Snap fit cover
- Fully configurable LCD Display
- High stability & reliability
- Long term stability

### RH-632 Series

RH Accuracy	Description	Part No.
± 2%	RH & T High accuracy Transmitter	<b>RH-632-AH</b>
	Direct resistive temperature output	<b>RH-632-AH-T*</b>
	Enthalpy & dewpoint outputs	<b>RH-632-EN</b>
	Custom Temperature Output	<b>RH-632-AH-TR</b>
± 3%	RH & T Transmitter	<b>RH-632</b>
	Direct resistive temperature output	<b>RH-632-T*</b>
	Custom Temperature Output	<b>RH-632-TR</b>

\*Thermistor Type TBA prior to order

## Space Mount RH & T Sensors

Using the latest high accuracy RH & T element, the RH-1000 is available with active temperature and RH outputs, as well as a directly connected passive resistive temperature output along with other passive outputs. A multi-line backlit LCD display is also available.

### Features

- High stability and reliability
- Selectable 0-10V DC, 0-5V DC or 4-20mA output
- Fully configurable LCD display option

### RH-1000 Series

RH Accuracy	Description	Part No.
± 2%	RH & T high accuracy transmitter	<b>RH-1000-AH</b>
	Direct resistive temperature output	<b>RH-1000-AH-T*</b>
	Enthalpy & dewpoint outputs	<b>RH-1000-EN</b>
	Integral LCD for RH & Temp.	<b>RH-1000-AH-LCD</b>
	Custom temperature output	<b>RH-1000-AH-TR</b>
± 3%	RH & T transmitter	<b>RH-1000</b>
	Direct resistive temperature output	<b>RH-1000-T*</b>
	Integral LCD for RH & temp.	<b>RH-1000-LCD</b>
	Custom temperature output	<b>RH-1000-TR</b>

\*Thermistor Type TBA prior to order

## Wall Mount RH & T Sensors

The RH-631 Duct Mounted Humidity and Temperature Sensors offer the latest technology for high accuracy RH measurement. Units can be ordered with an optional direct resistive temperature output (where this option is required, the type of temperature element MUST be specified at the time of ordering). The RH-631 is also available with additional outputs for enthalpy and dewpoint. Non-standard temperature output ranges can be specified at time of order.

### Features

- Snap fit cover
- Fully configurable LCD Display
- High stability & reliability
- Long term stability

### RH-631 Series

RH Accuracy	Description	Part No.
± 2%	RH & T High accuracy transmitter	<b>RH-631-AH</b>
	Direct resistive temperature output	<b>RH-631-AH-T*</b>
	Enthalpy & dewpoint outputs	<b>RH-631-EN</b>
	Custom temperature output	<b>RH-631-AH-TR</b>
± 3%	RH & T transmitter	<b>RH-631</b>
	Direct resistive temperature output	<b>RH-631-T*</b>
	Custom temperature output	<b>RH-631-TR</b>

\*Thermistor Type TBA prior to order

## Humidistats

### Room/Duct Mounted

The RH-SH Humidistats are designed for the on/off control of humidification and dehumidification equipment, or the initiation of alarms or override controls.

### Features

- Single and 2-stage units available
- Duct or space mounted units

### RH-SH Series

Type	Stage Type	Description	Part No.
Room humidistats	Single	Concealed setpoint	RH-SH-1R
		Exposed setpoint	RH-SH-1RE
Duct humidistats	Single	RH & T transmitter	RH-SH-1D
		Exposed setpoint	RH-SH-1DE

## Humidity-Temperature Sensors

### Duct Mounted

The RH-622 duct mounted humidity and temperature sensors offer the latest technology for high accuracy RH measurement. Units can be ordered with an optional direct resistive temperature output (where this option is required, the type of temperature element MUST be specified at the time of ordering). The RH-622 is also available with additional outputs for enthalpy and dewpoint. Non-standard temperature output ranges can be specified at time of order.

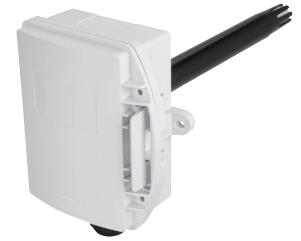
### Features

- $\pm 2\%$  and  $\pm 3\%$  Accuracy versions
- Snap fit cover
- Fully configurable LCD Display
- Direct thermistor temperature options available
- High stability & reliability
- Long term stability

### RH-622 Series

RH Accuracy	Description	Part No.
$\pm 2\%$	RH & T high accuracy transmitter	RH-622-AH
	Direct resistive temperature output	RH-622-AH-T*
	Enthalpy & dewpoint outputs	RH-622-EN
	Custom temperature output	RH-622-AH-TR
$\pm 3\%$	RH & T transmitter	RH-622
	Direct resistive temperature output	RH-622-T*
	Custom temperature output	RH-622-TR

\*Thermistor Type TBA prior to order



## Humidity & Combined Temperature Sensors

### Specifications

Output: 4-20mA or 0-10V (Thermistor option for temperature sensor)

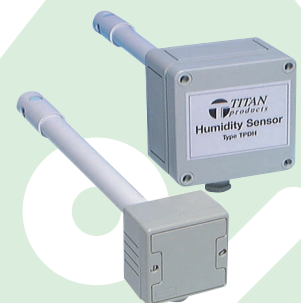
Range: 0 to 100% RH / 0-50°C temperature

Accuracy:  $\pm 2\%$  RH and  $\pm 0.3^\circ\text{C}$  temperature (@  $25^\circ\text{C}$  between 30 to 70% RH)

### TP Series

Type	Range	Part No.
Room Humidity Sensor	4-20mA signal 24V DC supply (2 wire)	TPRH (state colour)
	0-10V 24V AC/DC supply (3 wire)	TPVRH (state colour)
Room temp (Thermistor) & humidity sensor	4-20mA 24V DC supply (2+2 wire)	TPRH-RT (state colour)
	0-10V 24V AC/DC (3+2 wire)	TPVRH-RT (state colour)
Room temp & humidity sensor	4-20mA loop powered 24V DC supply (2+2 wire)	TPRHT/LP (state colour)
	0-10V signal only, 24V AC/DC (4 wire)	TPVRHT (state colour)
Duct humidity sensor	4-20mA signal 24V DC supply (2 wire)	TPDH
	0-10V signal 24V AC/DC supply (3 wire)	TPVDH
Duct temp (thermistor) & humidity sensor	4-20mA 24V DC (2+2 wire)	TPDH-RT
	4-20mA loop powered 24V DC (2+2 wire)	TPDHT/LP
Duct temp & humidity sensor	0-10V signal only 24V AC/DC (4 wire)	TPVDHT
	4-20mA signal 24V DC supply (2 wire)	TPDH
Outside humidity sensor	0-10V signal only 24V AC/DC supply (3 wire)	TPVOH
	4-20mA 24V DC (2+2 wire)	TPOH-RT
Outside temp & humidity sensor	4-20mA loop powered 24V DC (2+2 wire)	TPOHT/LP

\*Note: - For temperature thermistor element state type required.



# AXIO



## Room / Space Relative Humidity & Temperature Transmitter

High-quality, cost effective room (space) RH&T transmitters available in both 2% and 3% accuracy versions. Jumper-selectable outputs and an optional direct resistance temperature output make these units very flexible solution. The units will fit a standard single-gang back box.

### Features

- Fits a standard single gang back box.
- High stability & reliability
- 0-5/10V DC or 4-20mA selectable outputs

### AX-RHT-0... Series

RH Accuracy	Description	Part No.
± 3%	0-10V DC / 4-20mA	AX-RHT-S3
	0-10V DC / 4-20mA + Thermistor	AX-RHT-S3-x
± 2%	0-10V DC / 4-20mA	AX-RHT-S2
	0-10V DC / 4-20mA + Thermistor	AX-RHT-S2-x

## Duct Relative Humidity & Temperature Transmitter

Duct mounted RH & T transmitters offer very high-quality sensing for both humidity and temperature. Outputs are individually selectable for either 4-20mA or 0-10V DC and an optional direct resistive temperature output provides superb flexibility.

### Features

- High-quality 316 stainless steel probe
- 2% and 3% RH accuracy available
- High stability & reliability

### AX-RHT-D... Series

RH Accuracy	Description	Part No.
± 3%	0-10V DC / 4-20mA	AX-RHT-D3
	0-10V DC / 4-20mA + Thermistor	AX-RHT-D3-x
± 2%	0-10V DC / 4-20mA	AX-RHT-D2
	0-10V DC / 4-20mA + Thermistor	AX-RHT-D2-x

## Outside Relative Humidity & Temperature Transmitter

Wall mounted RH & T transmitters that offer a cost effective solution for RH and temperature measurement. Optional direct resistive temperature output. Outputs are individually selectable for either 4-20mA or 0-10V DC and an optional direct resistive temperature output provides superb flexibility.

### Features

- High-quality 316 stainless steel probe
- 2% and 3% RH accuracy available
- High stability & reliability

### AX-RHT-O... Series

RH Accuracy	Description	Part No.
± 3%	0-10V DC / 4-20mA	AX-RHT-O3
	0-10V DC / 4-20mA + Thermistor	AX-RHT-O3-x
± 2%	0-10V DC / 4-20mA	AX-RHT-O2
	0-10V DC / 4-20mA + Thermistor	AX-RHT-O2-x