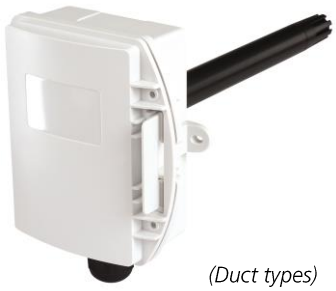
UN-600

Single Output Universal Sensors



(Duct types)

(Wall types)

(Outside types)

Features:

- Self-detecting 0-10Vdc or 4-20mA (3-wire) output
- Fully configurable LCD Display
- Resistive temperature output option

Benefits:

- No jumpers or DIP-switches to select output type
- Low cost

Technical Overview

The UN-600 range offers a cost-effective single output based on the sensing element required. This can be either IAQ, CO_2, or RH, but can also include the familiar passive temperature output option

A unique feature of the sensor is its ability to automatically detect what sort of controller input it is connected to, 4-20mA or 0-10Vdc, removing the requirement for output jumpers which can be inadvertently set incorrectly. Just connect it to the controller input and it does the rest. PCB LED indication of which output type is in operation is provided, with diagnostic LED patterns for determining faults.

Specification:

Outputs	0-10Vdc or 4-20mA self-detecting (not loop powered)
Power supply	24Vac/dc
Output ranges:	
IAQ	0 to 10 incicates AQ value (0 = good, 10 – poor)
CO_2	0-2000ppm or 0 to 5000ppm
RH	0 to 100%
Optional passive outputs:	
-T	Resistive, PTC & NTC types
Measurement accuracies:	
CO_2	±70ppm
RH	±3% RH
Other optional outputs *(avalible on request)*	
Dewpoint	-10 to +50°C
Absolute humidity	-5 to 75g/m³
Enthalpy	-20 to 250kJ/kg
Accuracy	
Dew point	1.2°C typical (4°C max)
Enthalpy	1.8kj/kg typical (27kj/kg max)
Ambient:	
Temperature	-30 to 70°C
RH	0 to 95% RH, non-condensing
Housing:	
Material	ABS (flame retardant)
Dimensions	116 x 106 x 52mm
Probe:	
Material	Probe, PVC - End cap, Delrin
Dimensions;	
Duct types	210 x 19mm dia.
RH-631-UN	90 x 19mm dia.
RH-632-UN	200 x 118mm dia. (Shield)
Protection:	
Duct types	
Snap-shut lid	IP54 IP65 (see page 3 note 6)
RH-63-UN	IP54
RH63-UN2	IP65 (see page 3 note 6)
Country of origin	UK

CE

The products referred to in this data sheet meet the requirements of EU Directive 2004/108/EC

Part Codes:

GS-AQ622-UN
Duct air quality transmitter

GS-CO2-622-UN
Duct CO_2 transmitter

RH-622-UN
Duct RH transmitter

RH-631-UN
Wall RH transmitter

RH-632-UN
Outside RH transmitter

Suffixes (add to part code)

-T Direct resistive temperature output

Thermistor types:

A (10K3A1)	**B** (10K4A1)	**C** (20K6A1)
H (SAT1)	**K** (STA1)	**L** (TAC1)
M (2.2K3A1)	**N** (3K3A1)	**P** (30K6A1)
Q (50K6A1)	**S** (SAT2)	**T** (SAT3)
W (SIE1)	**Y** (STA2)	**Z**(10K NTC)

Platinum types:

D (PT100a) **E** (PT1000a)

Nickel types:

F (NI1000a) **G** (NI1000a/TCR (LAN1))

Interface Options (add to part code)

-HR	0-5000ppm CO_2 range (GS-CO2 only)
-LCD	Integral LCD display
-LED	3-colour LED CO_2 indication (GS-CO2 only)

Accessory

DPA Duct probe adjustment flange (duct types only)

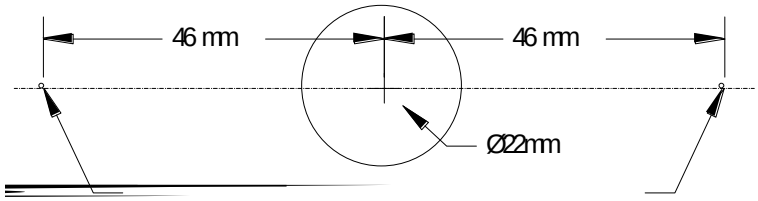
Installation:

Antistatic precautions must be observed when handling these sensors. The PCB contains circuitry that can be damaged by static discharge.

Duct types

1. Select a location in the duct where dust & contaminants are at a minimum (i.e. after filters etc.) and which will give a representative sample of the prevailing air condition.

2. Fix the housing to the duct with appropriate screws, or by using the optional duct mounting flange.



RH-631-UN

1. Select a location in the occupied space, or externally where contaminants are at a minimum, and which will give a representative sample of the prevailing room condition.

2. Fix the housing to the wall with appropriate screws.

RH-632-UN

1. Fix the radiation shield to a suitable mast using the U bolts supplied.

2. Insert the probe into the shield and tighten the gland.

Common installation;

3. Release the snap-fit lid by gently squeezing the locking tab.

4. Feed the cable through the waterproof gland and terminate the cores at the terminal block. Leaving some slack inside the unit, tighten the cable gland onto the cable to ensure water tightness.

5. If the sensor is to be mounted outside, it is recommended that the unit be mounted with the cable entry at the bottom. If the cable is fed from above then into the cable gland at the bottom, it is recommended that a rain loop be placed in the cable before entry into the sensor.

6. Snap shut the lid after the connections have been made if IP65 protection is required, secure the lid with two screws provided.

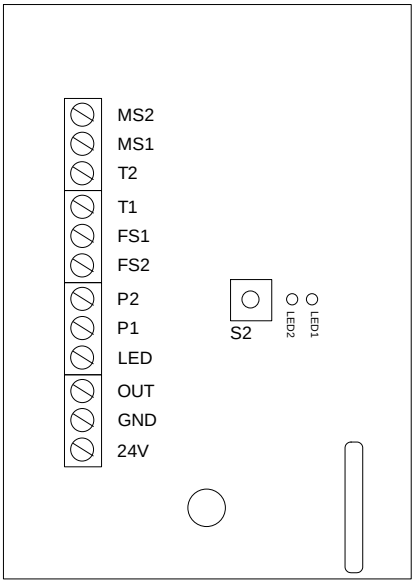
7. Before powering the sensor, ensure that the supply voltage is within the specified tolerances.

8. Allow 3 minutes before checking functionality, and at least 30 minutes before carrying out pre-commissioning checks. This will allow the electronics time to stabilise.

To perform an accurate comparison between a transmitter output and any portable reference, it is essential that the two sensors are held adjacent for a minimum of 30 minutes in a stable environment. Only in this way can speed of response and temperature factors be eliminated.

Connections:

MS2	Momentary switch output (VFC)
MS1	Momentary switch output (VFC)
T2	Direct thermistor output (resistive)
T1	Direct thermistor output (resistive)
FS1	Fan speed switch output (resistive)
FS2	Fan speed switch output (resistive)
P2	Set point (resistive)
P1	Set point (resistive)
LED	0-10Vdc input for "traffic light" led or Occupied/unoccupied test on LCD
OUT	Auto-selecting 0-10Vdc or 4-20mA (3-wire) output
GND	Common 0V
24V	Supply + 24Vac or Vdc



LED's & Self-Test:

The LEDs are labelled LED1 and LED2. On power up or when the load resistance is in the "forbidden zone" (550R to 3K) the LEDs will flash alternately. Once the system has established which mode to operate in, the appropriate led will be on and not flashing.

- LED1 Current output
- LED2 Voltage output

Currently an 'Error Halt' will occur if:-

1. Temperature, RH, Dewpoint, Absolute Humidity or Enthalpy is selected and the appropriate sensor not fitted.
2. In CO_2 mode a CO_2 sensor element is is not fitted or is faulty.
3. In IAQ mode a sensor is not fitted.

In all 3 cases above, both LEDs are on and the output is set to zero.

PCB Self Test:

Push button is for 50% output. Press and hold, the output in voltage mode it may take several seconds to settle. The screen displays 50% message when active (if disply is fitted).

0-10Vdc input:

- In traffic light mode: Zero to 2.5V = Green 3.5V to 6V = Amber and 8.5V to 10V = Red.
- In override mode: 0-4.9V Override Off, 5-10V Override On