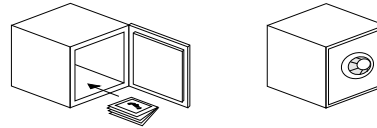
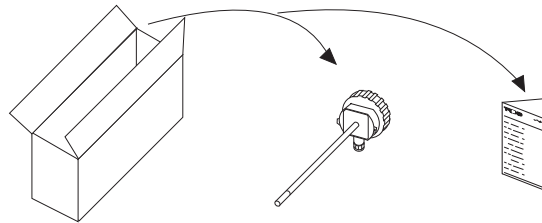


Duct Humidity and Temperature Sensors

Important: Retain these instructions



1 UNPACKING



HT/D Installation Instructions
TG200988

2 INSTALLATION

1 Dimensions

2 Location

a

b

c

electronics	-5 °C → +50 °C (23 °F) → (122 °F)	✓
	-20 °C → +60 °C probe (-4 °F) → (140 °F)	✓
	0 °C → +40 °C measurement (32 °F) → (104 °F)	

H₂O 0%RH → 100%RH non-condensing ✓

Protection :IP65

3 Prepare duct

either for screwing directly to duct

Ø 15 mm (0.59") 2 pilot holes

a

b

c

or for using optional mounting flange

a

b

c

d

e

f

2 INSTALLATION (continued)

4 Remove lid

5 Remove Connector

6 Insert cable through gland

either use flexible conduit

or use M16 cable gland

7 Wire to Controller

HT/D

IQ1 & IQ2 2 analog input channels

humidity — linked for current (I)

temperature — linked for thermistor (T)

terminate screens at IQ end

IQ3

humidity — linked for current (I)

temperature — linked for thermistor (T)

terminate screens at IQ end

HT/D/2%

IQ1 & IQ2 2 analog input channels

humidity — linked for current (I)

temperature — linked for current (I)

terminate screen at IQ end

IQ3

humidity — linked for current (I)

temperature — linked for current (I)

terminate screen at IQ end

Note that when connecting to IQ3, in order to provide sufficient supply current to the sensor, the sensor I-P terminal must be connected to both channels' 24 V terminals.

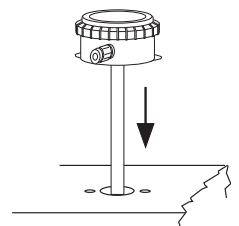
8 Replace Connector

9 Replace Lid

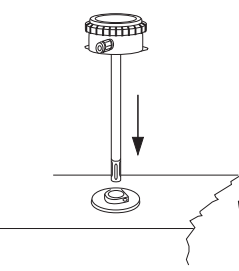
2 INSTALLATION (continued)

10 Mount Sensor

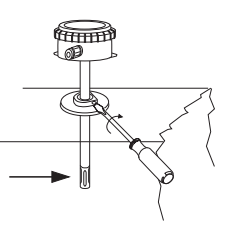
either if screwing directly to duct **b**



or if using optional mounting flange **a**

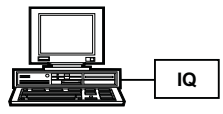


b adjust depth

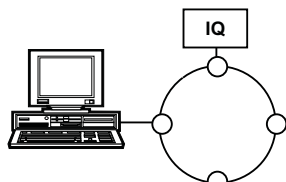



2 x No 6 x 20 mm screws DIN 7481

11 Configure IQ



or

IQ Configuration Manual 90-1533
IQ3 Configuration Manual TG200768

12 Set up IQ Sensor types

It is recommended to use SET (Software Tool) for the setting of the sensor type module. For all IQ2 series controllers with firmware version 2.1 or greater, or IQ3 series controllers, the following SET Unique Sensor References should be used:

Humidity	HT/D, HT/D/2%	:Humidity I
Temperature	HT/D/2%	:PRT I 0+40 (°C)
		PRT I +32+104 F (°F)
Temperature	HT/D	:Thermistor HTST DT (°C)
		Thermistor HTST DT F (°F)

Alternatively set scaling mode to 5 (characterise) and enter scaling manually as defined in appropriate tables below. Note that for IQ3 the scaling mode and exponent (E) do not need to be set up. For all other IQ controllers see Sensor Scaling Reference Card TB100521A

Temperature (thermistor) HT/D
(0 to +40 °C, 32 to 104 °F)

Units		°C	°F
Y	Input type	1 (thermistor volts)	
*E	Exponent	3	
U	Upper	50	122
L	Lower	-5	23
P	Points	6	
x	Ix	Ox (°C)	Ox (°F)
1	2.641	50	122
2	3.47	40	104
3	4.46	30	86
4	6.663	10	50
5	7.668	0	32
6	8.102	-5	23

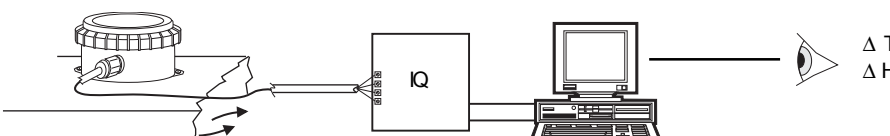
Temperature (current) HT/D/2%
(0 to +40 °C, 32 to 104 °F)

Units		°C	°F
Y	Input type	2 (current)	
*E	Exponent	3	
U	Upper	40	104
L	Lower	0	32
P	Points	2	
x	Ix	Ox	
1	4	0	32
2	20	40	104

Humidity (current) HT/D and HT/D/2%
(0 to 100 %RH)

Units		°C	°F
Y	Input type	2 (curr mA)	
E	Exponent	3	
U	Upper	100	
L	Lower	0	
P	Points	2	
x	Ix	Ox	
1	4	0	
2	20	100	

13 Test System



3 FAULT FINDING

Faults	Possible Causes	Remedies
Long response time	Filter polluted	Replace filter
Complete failure	No power supply	Check power supply and cable
Humidity reading too high	Condensation on sensor probe	Dry probe and replace filter if necessary

4 MAINTENANCE

Over time, the sensing element may become covered in dust. The dust can be removed using compressed air. Under no circumstances should water or cleansing agents be used on the sensing elements. It is recommended that the accuracy of the sensor is verified every 12 months. If the sensor falls outside the quoted accuracy, replace the filter and recalibrate as shown below. The calibration chamber and calibration liquids will need to be purchased from a specialist calibration equipment supplier.

1 Replace filter

a unscrew

b See Section 5, Disposal

c ACC/HTD/FILTER

d

Caution: Do not touch humidity sensing element

2 Preparation

- Keep sensor and humidity chamber in same room for 4 hours before.
- Place probe in humidity chamber 30 mins before.
- Keep temperature constant during calibration.

3 Remove lid

a

b

Caution: This unit contains static sensitive devices. Suitable anti-static precautions should be taken throughout the operation to prevent damage to the units.
 BSEN100015/1 Basic Specification: protection of electrostatic sensitive devices.

4 Locate buttons

calibration LED

DOWN UP

push buttons

5 Two point calibration
 For calibration over whole working range

- Start calibration at lower humidity point.
- Difference between the two points should be >30%RH

Low Humidity Calibration

- 1 Remove lid from the calibration chamber and clean chamber thoroughly.
- 2 Insert one of the cloths provided with the calibrating liquid. Pour calibrating liquid (35%RH) onto the fabric. Refit lid and screw tightly.
- 3 Insert probe into sensor aperture of chamber and tighten collar to provide air tight seal around the probe. Wait 30 min.
- 4 Press Down pushbutton for 3 s to start. LED will illuminate.
- 5 Press Up or Down pushbutton to adjust measured value in 0.1% steps.
- 6 **Either:** Press Up pushbutton for 3 s to stop. Calibrated value is stored. LED is extinguished.
Or: Press Down pushbutton for 3 s to exit calibration without storing value. LED is extinguished.

High Humidity calibration

- 7 Remove lid from the calibration chamber and clean chamber thoroughly.
- 8 Insert one of the cloths provided with the calibrating liquid. Pour calibrating liquid (80%RH) onto the fabric. Refit lid and screw tightly.
- 9 Insert probe into sensor aperture of chamber and tighten collar to provide air tight seal around the probe. Wait 30 min.
- 10 Press Up pushbutton for 3 secs to start. LED will illuminate.
- 11 Press Up or Down pushbutton to adjust measured value in 0.1% steps
- 12 **Either:** Press Up pushbutton for 3 s to stop. Calibrated value is stored. LED is extinguished.
Or: Press Down pushbutton for 3 s to exit calibration without storing value. LED is extinguished.

6 One point calibration
 For calibration over limited range about single point

- This calibration decreases accuracy over remainder of working range

Single Point Humidity Calibration

- 1 Remove lid from the calibration chamber and clean chamber thoroughly.
- 2 Insert one of the cloths provided with the calibrating liquid. Pour calibrating liquid (35%RH or 80%RH) onto the fabric. Refit lid and screw tightly.
- 3 Insert probe into sensor aperture of chamber and tighten collar to provide air tight seal around the probe. Wait 30 min.
- 2 **Either:** (If chamber humidity >50%RH.) Press Up pushbutton for 3 s to start. LED will illuminate.
Or: (If chamber humidity <50%RH.) Press Down pushbutton for 3 s to start. LED will illuminate.
- 3 Press Up or Down pushbutton to adjust measured value in 0.1% steps
- 4 **Either:** Press Up pushbutton for 3 s to stop. Calibrated value is stored. LED is extinguished.
Or: Press Down pushbutton for 3 s to exit calibration without storing value. LED is extinguished.

7 Replace Lid

8 Test System

IQ

Δ T

Δ H

5 DISPOSAL

WEEE Directive :

At the end of their useful life the packaging and product should be disposed of by a suitable recycling centre.
 Do not dispose of with normal household waste. Do not burn.

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