



Outdoor Mounting Transmitter

Temp, Hum, Dew Point, Enthalpy HTO

Aug. 14



HTO

Technical Data

Long term stability	<0,5%RH p.a
Output ranges	
Temp range	-20...+50°C (standard) Others on request
Humidity	0 to 100%rH
Enthalpy	-20 to +250kj/kg
Dew point	-50 to +50°C
Temp accuracy	±0,3°C (between +20 & 40C)
Humidity accuracy	±2% (between +20 to 80%rH) ±3% (between +20 to 80%rH)
Dew point accuracy	1,2°C typical (4°C max.)
Enthalpy accuracy	1,8kj/kg typical (27kj/kg max)
Materials	
Housing	ABS (flame retardant)
Dimensions	116 x 106 x 52mm
End Cap	Delrin
Probe	PVC
Sensor	210 x 19mm, Shield 200 x 118 dia
Ambient range	-30...+70°C Temperature 0 to 95% rH, non-condensing
Protection Class	IP65
Power supply	
4-20mA (no 0V)	20 to 26Vdc only @60mA max
4-20mA (with 0V)	12 to 26Vac or 16-26Vdc@70mA max
0-10Vdc	12 to 26Vac or 16-26Vdc @60mA max
Connections	0,5-2,5mm ² cable
Output ranges	4-20mA, 0-10Vdc or 0-5Vdc (option for direct PTC/NTC temperature output)
Standards	This product meet the standard CE approvals

Features

- Outputs 4-20mA, 0-5Vdc or 0-10Vdc
- Direct thermistor temperature output option
- High stability and reliability
- ±2% & ±3%rH accuracy versions
- Housing IP 65 Protection Class
- Snap fit cover
- Fully configurable LCD display
- Long term stability
- Non-standard temperature output ranges can be specified at time of order

Technical Overview

The HTO humidity and temperature sensors offer the latest technology high precision and accuracy RH & T element and installed in robust housing.

The housing has an added benefit easy to install with the hinged lid, which can also be screwed closed to make the unit tamperproof

An optional multiline back-lite LCD display is available, along with a direct PTC/NTC sensing element.

Also a custom output range for temperature can be requested, between -20C and +50C

Ordering Codes

Accuracy 2%

HTO2 142 4-20 mA/ 0-10Vdc/ 0-5Vdc output

HTO2 142/T* 4-20mA/ 0-10Vdc/ 0-5Vdc output
RH and direct output
temp.element

Accuracy 3%

HTO3 142 4-20mA/ 0-10 Vdc/ 0-5Vdc output

HTO3 142/T* 4-20mA/ 0-10Vdc/ 0-5Vdc output
RH and direct output
temp.element

HTO 142DEW Duct Enthalpy & Dew Point Transmitter

T* = Direct output temperature element.

The Element type must be specified at the time of ordering, as this option cannot be changed on site

Compatible temperature element T* see page 3

Other temperature elements on request.

-LCD Integral LCD



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Installation

Antistatic precautions must be observed when handling these sensors.

The PCB contains circuitry that can be damaged by static discharge.



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. The housing is designed to make it easy for an electric screwdriver to be used if desired.
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 (see page 3 for connection details).
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. Set the yellow dip-switches according to output type required (see page 4 for dip-switches details).
7. Snap shut the lid after the connections have been made, if IP65 protection is required, secure the lid with two screws provided
8. Before powering the sensor, ensure that the supply voltage is within the specified tolerances.

Note: When using the sensor with a 4-20mA output, it is important to make all electrical connections before applying the supply voltage.
If the sensor is not connected in this sequence, then you may see a higher reading than expected (can be as much as 55mA).

9. 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.

Connections

Left Hand terminal Block:

24V Supply + 24Vac or Vdc (see note below)

GND Supply 0V

OP1 Temperature output (see J11 settings)

OP2 RH output

GND Common 0V

OP3 Not used

GND Common 0V

OVRD Not used

Right Hand Terminal Block (if -T option is selected);

T2 Direct thermistor output only

MS1 Not used

MS2 Not used

P5 Not used

P6 Not used

P7 Not used

FS2 Not used

FS1 Not used

Notes:

Direct thermistor output (if fitted) is between terminals OP1 and T2, polarity is independent.

Voltage output: Nominal voltage 24Vac/dc.

Current output: Loop powered (no 0V connection) 24Vdc supply only
3-wire (0V connection) 24Vac/dc
Please see note in section 8 on previous page regarding connections

If using -LCD option, when in loop powered mode the back light will not be lit.

The transmitter will require a 0V connection for the back light to work (3-wire)

-T Direct thermistor input (if fitted) is between terminals OP1 and T2, polarity is independent

-EN Terminal OP1= Dew point Terminal OP2= Enthalpy