

HLX354

Miniature Dew Point Transmitter up to -20 °C Td (-4 °F Td)

The HLX354 was developed for monitoring dew point up to -20 °C Td (-4 °F Td). The high measurement accuracy of ± 1 °C Td (± 1.8 °F Td) in the typical working range of a refrigeration dryer makes the HLX354 the ideal solution for OEM manufacturers.

Integration into the measurement task is considerably simplified thanks to its highly compact design and exceptional robust stainless steel housing. The measurement values are issued on an analog 4-20 mA and a digital Modbus RTU output. Furthermore, excellent long-term stability and temperature compensation across the entire measurement range are important features of the HLX354.

Using the free EE-PCS configuration software and the Modbus USB converter (available as an accessory), the scaling of the analog output can be modified. This also permits one and two-point adjustments by the user.



HLX354

Typical Applications

Compressed air monitoring
Refrigeration dryer

Features

Measurement range -20...50 °C Td (-4...122 °F Td)
Accuracy ± 1 °C (± 1.8 °F) for refrigerant dryers
Output 4...20 mA
MODBUS RTU digital interface
Pressure-tight up to 20 bar (290 psi)

Technical Data

Measured Values

Dew point (Td)

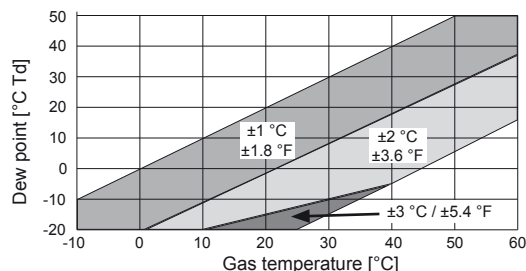
Sensor

HC1000

Measurement range

-20...50 °C Td (-4...122 °F Td)

Accuracy at 20 °C ¹⁾



Response time t_{90} at 20°C

< 30 sec.

Output

Analog output (scalable)
Maximum adjustable scaling
Digital interface

4 - 20 mA (3-wire technology) $R_L < 500$ Ohm
-40...80 °C Td (-40...176 °F Td)
MODBUS RTU

Temperature dependence

± 0.005 % of the measuring span / °C

General

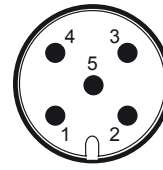
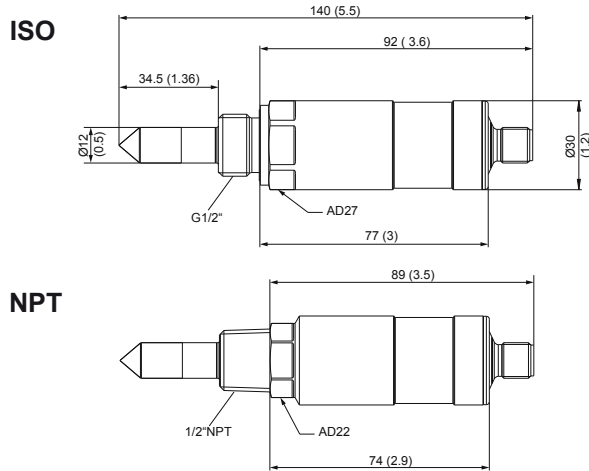
Supply voltage
Power consumption at 24V DC
Pressure range of use
Housing / protection rating
Electrical connection
Sensor protection
Temperature / humidity operating range
Storage temperature range
Electromagnetic compatibility in accordance with

10¹⁾...28V DC ²⁾ 10V+0.02*R_L
<40mA
0...20 bar (0...290 psi)
Stainless steel 1.4404 / IP65
M12x1 5-pin plug
Stainless steel sinter filter
-40...60 °C (-40...140 °F) / 0...100 % rh
-40...60 °C (-40...140 °F)
EN61326-1 EN61326-2-3
Industrial environment

¹⁾ The accuracy statement includes the uncertainty of the factory calibration with an enhancement factor $k=2$ (2 x standard deviation).
The accuracy was calculated in accordance with EA-4/02 and with regard to GUM (Guide to the Expression of Uncertainty in Measurement).

Dimensions in mm (inch)

Connection Diagram



Plug

- 1...V+
- 2...Analog output 4-20mA
- 3...GND
- 4...RS485 A
- 5...RS485 B

Modbus Map

The measured values are 32Bit *float* values. The factory-set slave ID is 243 as *integer* 16Bit value. This ID can be customised in the register 0x00 (value range 1 - 247 permitted). For Modbus setting please see Application Note [AN0103](#). The factory setting of the transmission rate is: baud rate 9600, parity even, and stop bit 1.

FLOAT:

Register address	Protocol address	Parameter name
30032	0x1F	dew point Td
30042	0x29	frost point Tf

INTEGER:

Register address	Protocol address	Parameter name
60001	0x00	Slave-ID
60002	0x01	RS485 setting

Ordering Information

		HLX354-T63E
Pressure-tight screw connection	G1/2" thread 1/2" NPT thread	A C
Software configuration		
Physical parameters	Dew point temperature Td [°C/°F]	TD
Analog output	Frost point temperature Tf [°C/°F] at dew point <0°C, the frost point is issued	TF
Td/Tf output scaling (in °C or °F)	non metric [°F]	xxx (acc. to table scaling ranges)
Measured value unit	metric [°C]	M N

Scaling Range

TD or TF									
002	-40...60	007	0...60	024	-20...80	048	-20...50	090	32...120
003	-10...50	008	-30...70	025	-20...60	060	-20...40	091	32...140
004	0...50	022	-40...80	047	-20...150	083	-40...140		

Accessories

M12x1 5pin mating plug suitable for customer-specific assembly	HA010708	sampling cell with quick connector	HA050102
M12x1 5pin connection cable socket/flying leads 1.5m	HA010819	basic sampling cell	HA050103
M12x1 5pin connection cable socket/flying leads 5m	HA010820	stainless steel sinter filter	HA010103
M12x1 5pin connection cable socket/flying leads 10m	HA010821	Modbus - USB converter for EE35x	HA011013

Order example

HLX354-T63EA/TD060M

Pressure-tight screw connection: G1/2" thread
 Output: Dew point Td
 Scaling of output: 4-20 mA = -20...40 °C Td
 Measured value unit: metric [°C]