

EE371

Compact Dew Point Sensor

The EE371 is dedicated for accurate and reliable monitoring of the dew point temperature (Td) in the range -60...60 °C Td (-76...140 °F Td), with pressure rating up to 100 bar (1450 psi). It is ideal for compressed air systems and industrial process control. Besides Td, the device measures also frost point temperature (Tf) or volume concentration (Wv).

High Accuracy

The innovative, monolithic E+E HMC200 humidity and temperature sensing element together with a sophisticated auto-calibration procedure leads to an accuracy better than $\pm 2^\circ\text{C}$ Td ($\pm 3.6^\circ\text{F}$ Td) and excellent long term stability.

Analog Outputs and Display

The measured data is available on two freely configurable voltage or current outputs as well as on the LCD display.

Functional Design

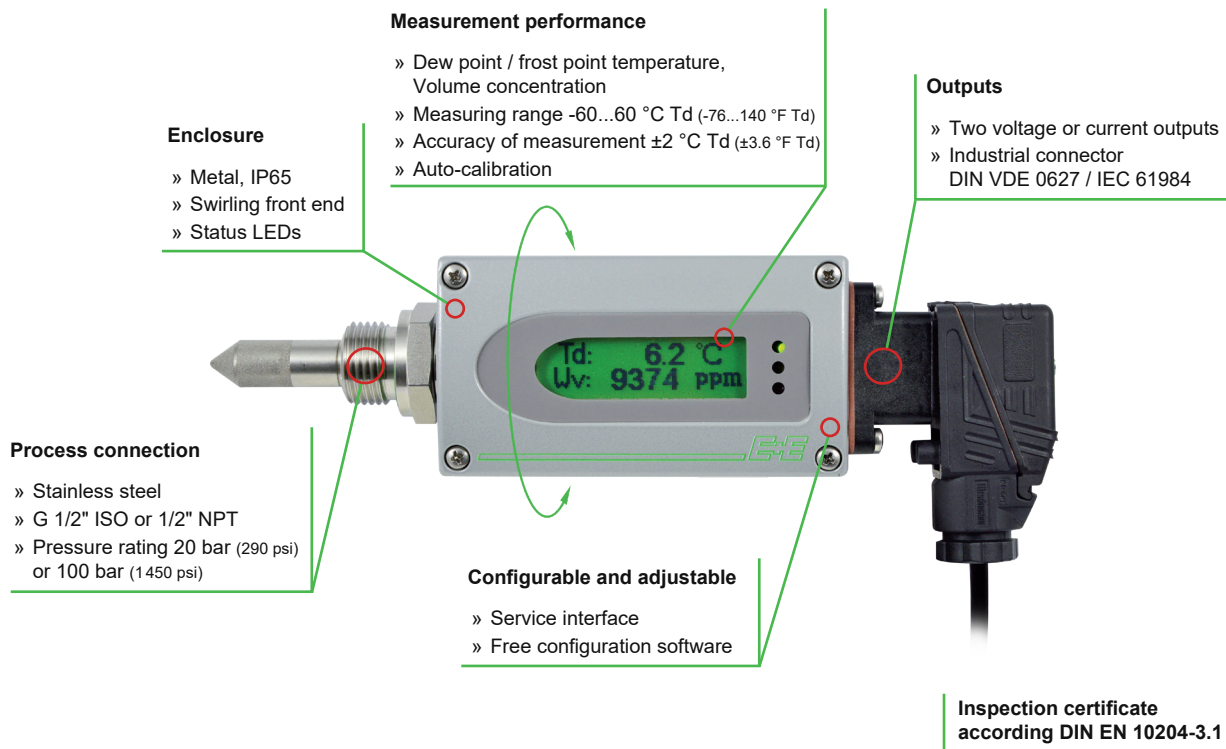
The compact, robust metal enclosure, the swirling front-end and various process connections and sampling options allow for easy and comfortable design-in, mounting and operation.

Easy Configuration

An optional adapter and the free EE-PCS Product Configuration Software facilitate easy configuration and adjustment of the EE371.



Features



Technical Data

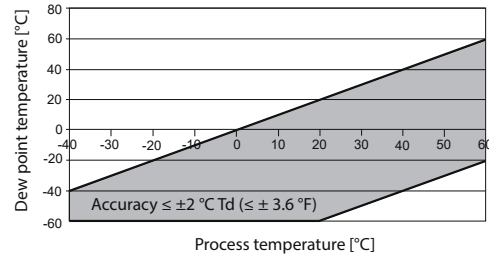
Measurands

Dew point (Td)

Measuring range

-60...60 °C Td (-76...140 °F Td)

Accuracy¹⁾



Response time t_{90}

80 s -20 °C Td → -40 °C Td (-4 °F Td → -40 °F Td)

10 s -40 °C Td → -20 °C Td (-40 °F Td → -4 °F Td)

Volume concentration

Measuring range

20...200 000 ppm

Accuracy at 20 °C (68 °F) and

±(5 ppm + 9 % from measured value)

1013 mbar (14.7 psi)

Outputs

Two freely selectable and scaleable
analogue outputs for Td, Tf, Wv

0 - 10 V

0 mA < I_L < 1 mA

4 - 20 mA, 3-wire

$R_L < 500 \text{ Ohm}^1$ R_L = load resistance

General

Supply voltage

15 - 30 V DC

Current consumption (typ.) voltage output
at 24 V DC current output

40 mA / during auto-calibration: 100 mA

80 mA / during auto-calibration: 140 mA

Pressure range

0...20 bar (0...290 psi) / 0...100 bar (0...1450 psi)

Enclosure material

Al Si 9 Cu 3

Protection rating

IP65

Electrical connection 7-pole industrial plug

DIN VDE 0627 / IEC 61984

wire cross-section

0.25 - 1 mm²

cable outlet

PG 11

Sensor protection

Stainless steel sintered filter

Working temperature range medium (air):

-40...70 °C (-40...158 °F)

electronics:

-40...60 °C (-40...140 °F)

display:

-20...50 °C (-4...122 °F)

Storage temperature range

-40...60 °C (-40...140 °F)

Electromagnetic compatibility

EN 61326-1

EN 61326-2-3

ICES-003 ClassB

Industrial Environment

FCC Part15 ClassB

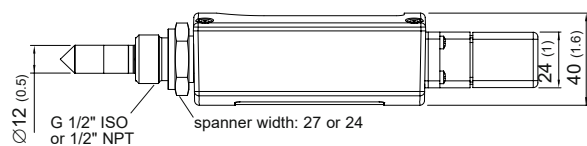
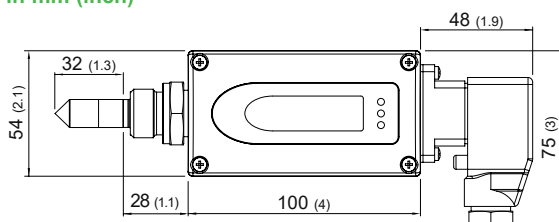


1) Traceable to intern. standards, administrated by NIST, PTB, BEV...

The accuracy statement includes the uncertainty of the factory calibration with an enhancement factor k=2 (2-times 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

Values in mm (inch)



Sampling Cells

Basic Sampling Cell

The basic sampling cell is suitable for the pressure range 0...64 bar (0...928 psi). It allows a simple installation of the dew point sensor into an existing or self-constructed sampling system.

ISO NPT
 1 = G 1/2" or 1/2"
 2 = G 1/4" or 1/4"
 3 = G 1/4" or 1/4"

HA050103 ISO
 HA050105 NPT



Sampling Cell with Quick Connector and Bleed Screw

The sampling cell is optimized for the pressure range 0...10 bar (0...145 psi). The air flow can be adjusted with the bleed screw. The G 1/2" ISO version features a quick connector suitable for standard DN7.2 connection, which allows for the sampling cell to be mounted and removed without process interruption.

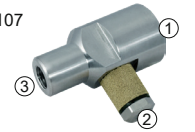
1 = G 1/2" ISO
 2 = Bleed screw
 3 = Quick connector

HA050102



1 = 1/2" NPT
 2 = Bleed screw
 3 = 1/4" NPT

HA050107



Sampling Cell for Atmospheric Dew Point

The sampling cell is optimized for measuring the atmospheric dew point temperature of compressed air with pressure range 0...10 bar (0...145 psi). It features a quick connector suitable for standard DN7.2 air connection, which allows for the sampling cell to be mounted and removed without process interruption. The pressure in the sampling cell can be set with by the needle valve.

1 = G 1/2" ISO
 2 = Quick connector

HA050106



Ordering Guide

			EE371-
Hardware	Process connection	G 1/2" ISO thread 1/2" NPT thread	PA1 PA2
	Pressure rating	20 bar (290 psi) 100 bar (1450 psi)	PN20 PN100
	Display	Display with backlight	D2
Software	Output 1	Dew point temperature Td [°C]	no code
		Dew point temperature Td [°F]	MA53
		Frost point temperature Tf [°C]	MA65
		Frost point temperature Tf [°F]	MA66
		Volume concentration Wv [ppm]	MA75
	Output signal 1 ¹⁾	0 - 10 V	GA3
		4 - 20 mA	GA6
	Scaling 1 low	-80	no code
		Value	SAL Value
	Scaling 1 high	20	no code
		Value	SAH Value
	Output 2	Dew point temperature Td [°C]	MB52
Dew point temperature Td [°F]		MB53	
Frost point temperature Tf [°C]		no code	
Frost point temperature Tf [°F]		MB66	
Volume concentration Wv [ppm]		MB75	
Output signal 2 ¹⁾	0 - 10 V	GB3	
	4 - 20 mA	GB6	
Scaling 2 low	-80	no code	
	Value	SBL Value	
Scaling 2 high	20	no code	
	Value	SBH Value	

1) Output signal 1 and 2 must be the same.

Order Example

EE371-PA2PN20D2MA53GA3SAH60MB53GB3SBH60

Process connection:	1/2" NPT thread
Pressure rating:	20 bar (290 psi)
Display:	Display with backlight
Output 1:	Dew point temperature Td [°F]
Output signal 1:	0 - 10 V
Scaling output 1:	-80...60 °F
Output 2:	Dew point temperature Td [°F]
Output signal 2:	0 - 10 V
Scaling output 2:	-80...60 °F

Accessories

- Basic sampling cell ISO	HA050103
- Basic sampling cell NPT	HA050105
- Sampling cell with quick connector	HA050102
- Sampling cell with 1/4" NPT	HA050107
- Sampling cell for atmospheric dew point	HA050106
- Product configuration adapter	See data sheet EE-PCA
- Product configuration software	EE-PCS (free download: www.epluse.com/configurator)