

# EE371 Series

## Compact Dew Point Temperature Transmitter / Switch

The exact monitoring of dew point temperature in compressed air systems, dryers for plastic and other industrial processes is becoming increasingly more important. EE371 series with a measuring range  $-80...60^{\circ}\text{C Td}$  ( $-112...140^{\circ}\text{F Td}$ ) is the ideal solution for such applications. The core of the transmitter is the monolithic measurement cell type HMC01, developed by E+E Elektronik in thin-film technology.

An autocalibration procedure which is integrated in the device and years of experience in low humidity adjustment make an accuracy of  $<2^{\circ}\text{C Td}$  ( $\pm 3.6^{\circ}\text{F Td}$ ) possible.

The compact construction in a robust aluminium housing and the numerous options allow easy mounting and many application possibilities.



### Autocalibration

Dew point temperatures in the range of  $-60...-20^{\circ}\text{C}$  ( $-76...-4^{\circ}\text{F}$ ) at room temperature correspond to relative humidity values of 0.08...5.37% RH. The measurement of these low humidity values is not possible with conventional capacitive measurement methods. For the EE371 series a special autocalibration procedure is utilized to achieve high accuracy measurements at lowest dew points too.

### Outputs

Model T: The transmitter has two freely selectable and scaleable outputs for dew point, frost point or ppm volume concentration.

Model S: The switch with two relay outputs is designed for control and alarm purposes. The status for early warning and main alarm is indicated by LED's. Adjustment of the Td/Tf set point and hysteresis can be achieved with the optional configuration software.

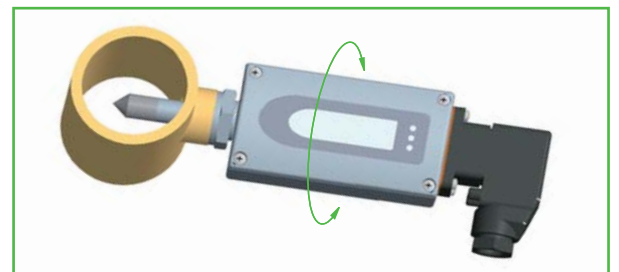
### Configuration Software

The optional configuration software allows flexible and easy adjustment of the analogue resp. relay outputs to the respective requirements.

The adjustment / calibration of the transmitters can easily be performed.

### Screw Connection for Mounting - 360° positionable

The construction of this screw connection enables any position / rotation of the mounted transmitter. So an optimal position of the display resp. the cable outlet is guaranteed.



### Typical Applications

- monitoring of compressed air systems**
- refrigerant type dryer**
- absorption dryer**
- plastics dryer**

### Features

- measuring range  $-80...60^{\circ}\text{C Td}$  ( $-112...140^{\circ}\text{F Td}$ )**
- accuracy of measurement  $\pm 2^{\circ}\text{C Td}$  ( $\pm 3.6^{\circ}\text{F Td}$ )**
- two Td/Tf alarm outputs**
- autocalibration**
- pressure tight up to 100 bar (1450psi)**

## Technical Data

### Measuring Quantities

#### Dew point (Td)

Dew point sensor

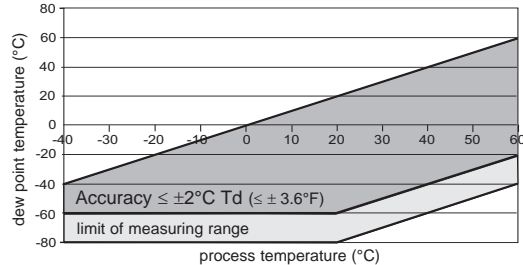
Measuring range

Accuracy

HMC01

-80...60°C Td (-112...140°F Td)

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



Response time  $t_{90}$

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

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

#### Volume concentration

Measuring range

20...200,000ppm

Accuracy at 20°C (68°F) and 1013mbar

5ppm + 9% of reading

### Outputs

**EE371-Tx** two freely selectable and scaleable analogue outputs for Td, Tf, Wv

0 - 1V / 0 - 5V / 0 - 10V<sup>1)</sup> -1mA < I<sub>L</sub> < 1mA

4 - 20mA / 0 - 20mA

R<sub>L</sub> < 500 Ohm<sup>1)</sup>

**EE371-Sx** Alarm output

2 potential-free relays (NC)

30V DC 0.6A / 35V AC 0.3A (resistive)

### General

Supply voltage

10...30V DC

Current consumption at 24V DC

voltage output: typ. 40mA / during autocalibration: 100mA

current output: typ. 80mA / during autocalibration: 140mA

Pressure range

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

System requirements for software

WINDOWS 2000 or later; serial interface

Serial interface for configuration

RS232C

Housing / protection class

Al Si 9 Cu 3 / IP65

Electrical connection

7-pole industrial plug: DIN VDE 0627 / IEC 61984

cable cross-section: 0.25 - 1 mm<sup>2</sup>

cable connection: PG 11

Sensor protection

stainless steel sintered filter

Working temperature range

probe: -40...70°C (-40...158°F)

electronic: -40...60°C (-40...140°F)

with LC display: -20...50°C (-4...122°F)

Storage temperature range

-40...60°C (-40...140°F)

Electromagnetic compatibility according to

EN 61326-1

EN61326-2-3

ICES-003 ClassB

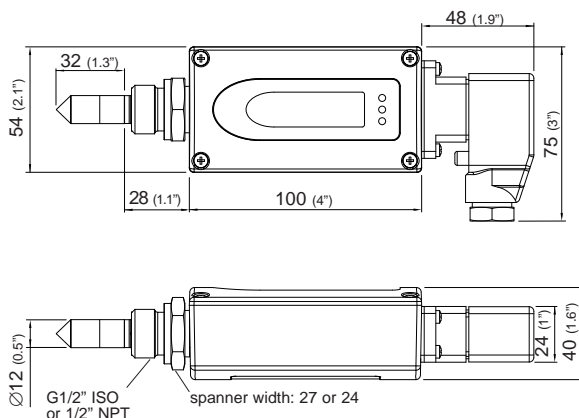


Industrial Environment

FCC Part15 ClassB

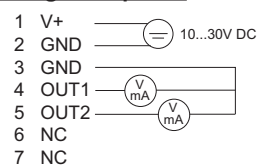
1) minimum supply voltage 15V DC

### Dimensions (mm)

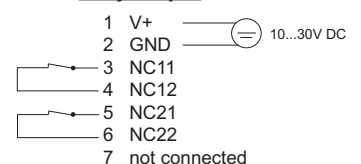


### Connection Diagram

#### analogue output



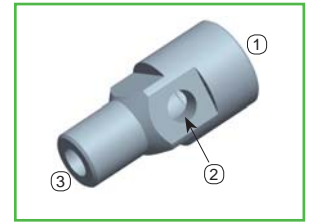
#### relay output



## Basic Sampling Cell

The basic sampling cell offers the possibility to integrate the EE371 into an existing or self-constructed sampling system.

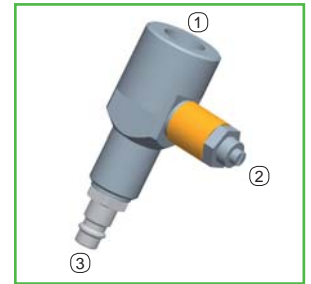
- 1 = G 1/2" ISO
- 2 = G 1/4"
- 3 = G 1/4"



## Sampling Cell with Quick Connector up to 10 bar (145psi)

The sampling cell is specially developed for use in compressed air lines and has a quick-connector suitable for standard compressed air connections. It allows for the cell to be fitted and removed without interrupting the process. The flow of gas can be adjusted using a bleed screw.

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



## Ordering Guide

		EE371-	EE371-
<b>Hardware Configuration</b>			
<b>Model</b>	transmitter switch	T	S
<b>Pressure range</b>	up to 20bar (290psi) up to 100bar (1450psi)	E I	E I
<b>Pressure tight feedthrough</b>	G1/2" male thread 1/2" NPT thread	HA03 HA07	HA03 HA07
<b>Display</b>	without display with display	D08	D08
<b>Software Configuration</b>			
<b>Physical parameters of the outputs/relays</b>	dew point temperature Td [°C/°F] (C)      output/relay 1 frost point temperature Tf [°C/°F] (D)      output/relay 2 volume concentration Wv [ppm] (P)	select according to Ordering Guide (C, D, P) select according to Ordering Guide (C, D, P)	
<b>Type of output signals</b>	0-1V 0-5V 0-10V 0-20mA 4-20mA	1 2 3 5 6	
<b>Measured value units for T / Td / Tf</b>	metric / SI non metric / US	E01	E01
<b>Scaling of Td/Tf-output</b> (in °C or °F)	-40...60 (Td/Tf02)      -80...20 (Td/Tf63)      Other Td/Tf-scaling -10...50 (Td/Tf03)      -60...20 (Td/Tf65)      refer to page 165	select according to Ordering Guide (Tbox / Tfbox)	
<b>ppm range Wv</b>	0...100ppm (X01) 0...500ppm (X02)      other measuring range: _____ 0...1000ppm (X03)	select according to Ordering Guide	
<b>Setting of alarm output</b>	standard for configuration CC      R1: -40°C (-40°F)      R2: -35°C (-31°F) H1: 2°C (35.6°F)      H2: 2°C (35.6°F) other set points:      relay 1: _____      relay 2: _____ hysteresis 1: _____      hysteresis 2: _____		SP

## Accessories

- sampling cell with quick connector (HA050102)
- basic sampling cell (HA050103)
- configuration software + interface cable (HA010604)
- stainless steel sintered filter (HA010103)
- display (D08)

## Order Example

### EE371-TEHA07D08/CD2-Td03

Model: transmitter  
 Pressure range: up to 20bar (290psi)  
 Pressure tight feedthrough: 1/2" NPT thread  
 Display: with display

Output 1: Td  
 Output 2: Tf  
 Output signal: 0-5V  
 Measured value unit: metric  
 Scaling of output: -10...50°C