

# EE371

## 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  $-60...60^{\circ}\text{C Td}$  ( $-112...140^{\circ}\text{F Td}$ ) 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

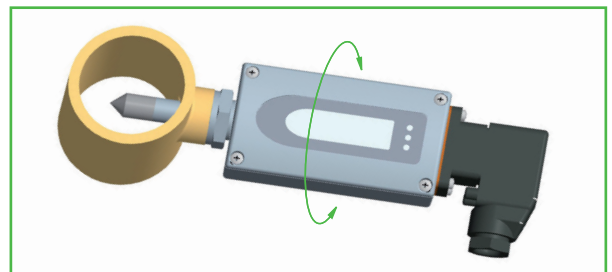
The optional configuration software allows flexible and easy adjustment of the analogue resp. relay outputs to the respective requirements.

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  $-60...60^{\circ}\text{C Td}$  ( $-76...140^{\circ}\text{F Td}$ )
- 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

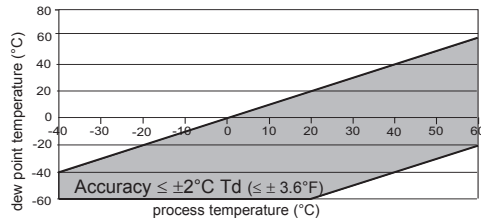
Measuring range

Accuracy

HMC01

-60...60°C Td (-76...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

$\pm(5 \text{ ppm} + 9 \% \text{ from measured value})$

### Outputs

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

0 - 1V / 0 - 5V / 0 - 10V<sup>1)</sup> -1mA <  $I_L$  < 1mA

4 - 20mA / 0 - 20mA  $R_L < 500 \text{ Ohm}^{1)}$

**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

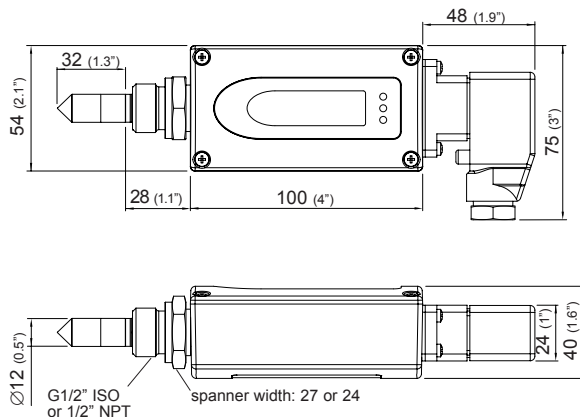
Industrial Environment

FCC Part15 ClassB



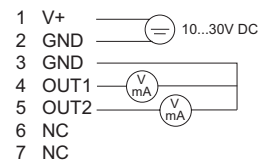
1) minimum supply voltage 15V DC

### Dimensions (mm)



### Connection Diagram

#### analogue output



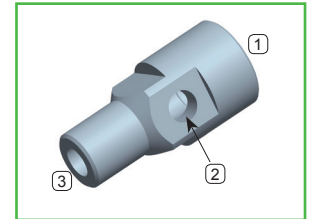
#### relay output



## Basic Sampling Cell

The basic sampling cell offers the possibility to integrate the EE371 into an existing or self-constructed sampling system.  
 Pressure range: 0...64 bar (0...928 psi)

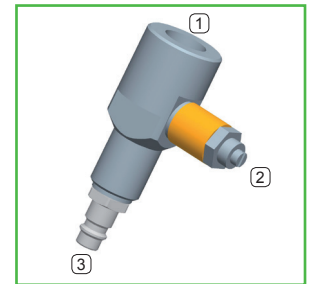
- 1 = G 1/2" ISO or 1/2" NPT  
 2 = G 1/4" ISO or 1/4" NPT  
 3 = G 1/4" ISO or 1/4" NPT



## Sampling Cell with Quick Connector

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.  
 Pressure range: 0...10 bar (0...145 psi)

- 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 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	select according to Ordering Guide(C,D,P)			
	frost point temperature Tf [°C/°F] (D) output/relay 2	select according to Ordering Guide(C,D,P)			
	volume concentration Wv [ppm] (P)				
<b>Type of output signals</b>	0-1V	1			
	0-5V	2			
	0-10V	3			
	0-20mA	5			
	4-20mA	6			
<b>Measured value units for T / Td / Tf</b>	metric/SI non metric /US	E01		E01	
<b>Scaling of Td/Tf-output (in °C or °F)</b>	-40...60 (Td/Tf02) -10...50 (Td/Tf03)	-60...20 (Td/Tf65)	Other Td/Tf-scaling refer to data sheet „Scaling of the outputs“	select according to Ordering Guide (Tdx / Tfxx)	
<b>ppm range Wv</b>	0...100ppm (X01) 0...500ppm (X02) 0...1000ppm (X03)	other measurement range: _____		select according to Ordering Guide	
<b>Setting of alarm output</b>	standard for configuration CC other set points	R1: -40 °C (-40°F) H1: 2 °C (35.6°F) relay 1: _____ hysteresis 1: _____	R2: -35°C (-31°F) H2: 2°C (35.6°F) relay 2: _____ hysteresis 2: _____	SP	

## Order Example

### EE371-TEHA07D08/CD2-Td/Tf03

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

## Scope of Supply

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- EE371 Transmitter according to Ordering Guide
- Operation Manual
- Inspection certificate according to DIN EN10204 - 3.1

## Accessories

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- |                                      |   |
|--------------------------------------|---|
| - Sampling cell with quick connector | (HA050102)  |
| - Basic sampling cell ISO            | (HA050103)  |
| - Basic sampling cell NPT            | (HA050105)  |
| - Display                            | (D08)   |
| - Stainless steel sintered filter    | (HA010103)  |
| - Product configuration adapter      | see data sheet EE-PCA   |
| - Product configuration software     | EE-PCS (free download: <a href="http://www.epluse.com/configurator">www.epluse.com/configurator</a> ) |