

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.

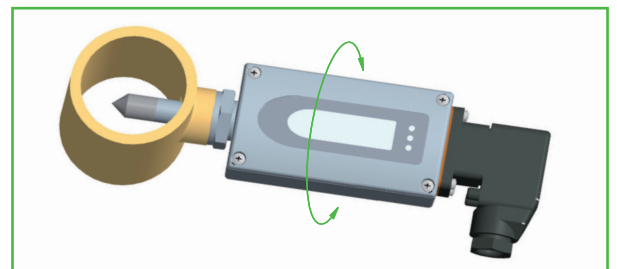
Configuration Software

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

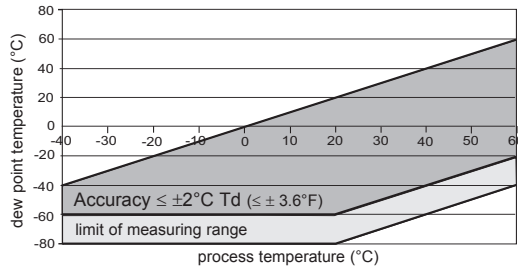
measuring range $-80...60^{\circ}\text{C Td}$ ($-112...140^{\circ}\text{F Td}$)
accuracy of measurement $\pm 2^{\circ}\text{C Td}$ ($\pm 3.6^{\circ}\text{F Td}$)
two Td/Tf alarm outputs
autocalibration
pressure tight up to 100 bar (1450psi)

Technical Data

Measuring Quantities

Dew point (Td)

Dew point sensor	HMC01
Measuring range	-80...60°C Td (-112...140°F Td)
Accuracy	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

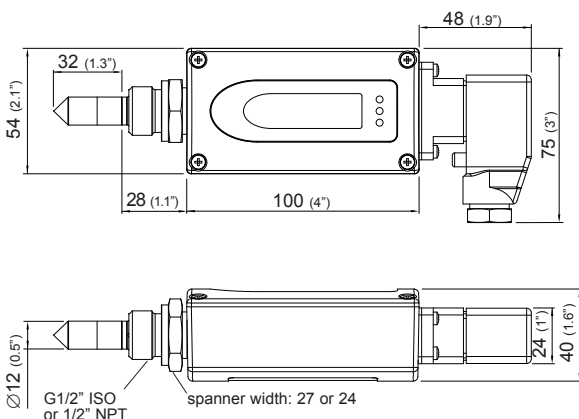
EE371-Tx two freely selectable and scaleable analogue outputs for Td, Tf, Wv	0 - 1V / 0 - 5V / 0 - 10V ¹⁾	-1mA < I _L < 1mA
	4 - 20mA / 0 - 20mA	R _L < 500 Ohm ¹⁾
EE371-Sx Alarm output	2 potential-free relays (NC) 30V DC 0.6A / 35V AC 0.3A (resistive)	

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 ² 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 FCC Part15 ClassB

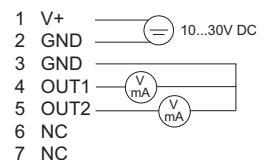
1) minimum supply voltage 15V DC

Dimensions (mm)

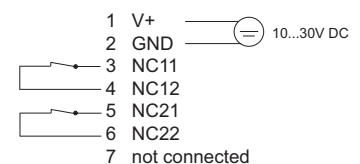


Connection Diagram

analogue output



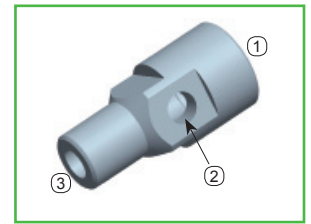
relay output



Basic Sampling Cell

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

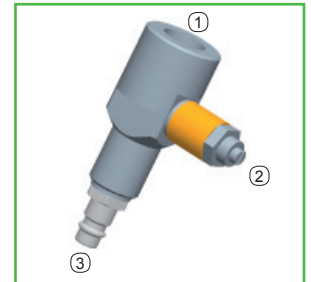
- 1 = G 1/2" ISO
- 2 = G 1/4"
- 3 = G 1/4"



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-
Hardware Configuration			
Model	transmitter switch	T	S
Pressure range	up to 20bar (290psi) up to 100bar (1450psi)	E I	E I
Pressure tight feedthrough	G1/2" male thread 1/2" NPT thread	HA03 HA07	HA03 HA07
Display	without display with display	D08	D08
Software Configuration			
Physical parameters of the outputs/relays	dew point temperature Td [°C/°F] (C) frost point temperature Tf [°C/°F] (D) volume concentration Wv [ppm] (P)	output/relay 1 output/relay 2	select according to Ordering Guide (C, D, P) select according to Ordering Guide (C, D, P)
Type of output signals	0-1V 0-5V 0-10V 0-20mA 4-20mA	1 2 3 5 6	
Measured value units for T / Td / Tf	metric / SI non metric / US	E01	E01
Scaling of Td/Tf-output (in °C or °F)	-40...60 (Td/Tf02) -10...50 (Td/Tf03)	-80...20 (Td/Tf63) -60...20 (Td/Tf65)	Other Td/Tf-scaling refer to page 146 select according to Ordering Guide (Tdx / Tfx)
ppm range Wv	0...100ppm (X01) 0...500ppm (X02) 0...1000ppm (X03)	other measuring range: _____	select according to Ordering Guide
Setting of alarm output	standard 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