

# INDUSTRIAL TRANSMITTER FOR DEW POINT

## EE35 Series

Exact dew point monitoring is increasingly playing a more important role in many industrial applications, such as drying processes, air pressure pipelines, etc. For these purpose the multifunctional EE35 Series offers the ideal features.

The EE35 Series is based on a functional, user-friendly housing concept and on the proven proven polymer humidity sensors of the HC Series.

A specially developed autocalibration process enables measurements in a measurement range of  $-60...60^{\circ}\text{C Td}$  ( $-76...140^{\circ}\text{Td}$ ), with a Td measurement accuracy of  $\pm 2^{\circ}\text{C}$  ( $\pm 3.6^{\circ}\text{F}$ ).

Two freely configurable and scaleable analogue outputs are available for the two measurement values (Td, T)

An optional hygrostat output, which can be set by means of a potentiometer, provides an alarm signal in a simple way when a threshold of the permitted dew point is exceeded.

An optional display for the measurement values and the associated MIN / MAX values allows a quick overview of the current situation.

## Industrial Transmitter for Dew Point Measurement



## Autocalibration

Dew point 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 such low humidity values is not possible with conventional capacitive measurement methods. For the EE35 Series, a special autocalibration process is used to compensate for the usual drift effects and thus to achieve high accuracy measurement also  $-60^{\circ}\text{C Td}$  ( $-76^{\circ}\text{F Td}$ ).

## Installation

In addition to the direct mounting of the dew point probe, a ball valve installation enables the mounting and removal of the probe without having to interrupt the running process.

## Typical Applications

- Industrial processes
- Monitoring of air pressure pipelines
- Warehouses
- Drying processes
- Paper industries
- Chemical industries

## Features

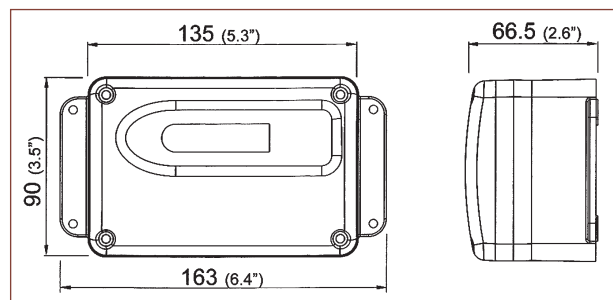
- Measuring range  $-60...60^{\circ}\text{C Td}$  ( $-76...140^{\circ}\text{F Td}$ )
- Accuracy of measurement  $\pm 2^{\circ}\text{C Td}$  ( $\pm 3.6^{\circ}\text{F Td}$ )
- Alarm output for dew point
- Autocalibration

## Alarm Output

An optional alarm module with done relay output is available for control and alarm purpose. The setting of the Td threshold can be easily done with the potentiometer on the printed circuit board.

## NEW Metal Housing

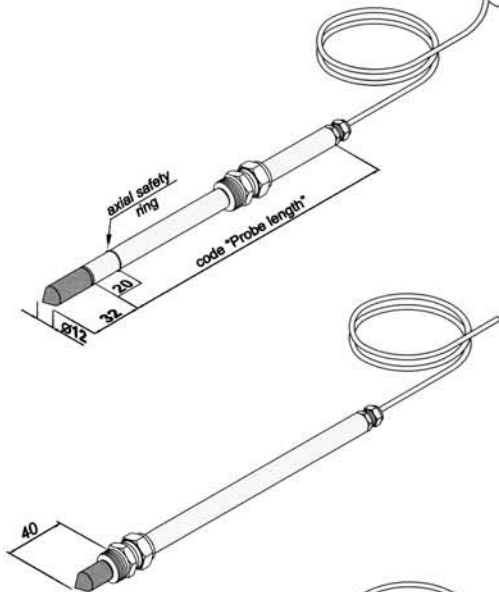
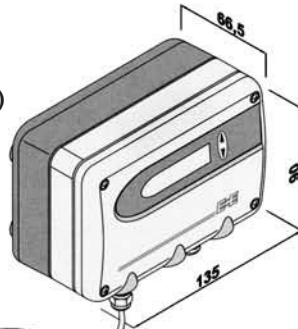
For sue in harsh industrial environments the EE35 series is available in a robust metal housing.



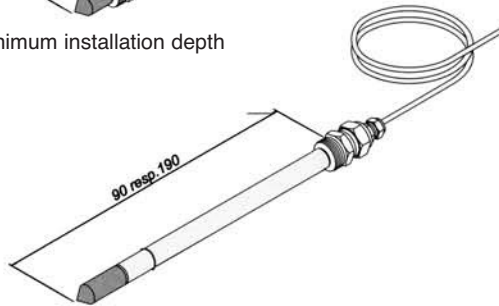
# INDUSTRIAL TRANSMITTER FOR DEW POINT

## Housing Dimensions (mm)

Remote probe for T up to 60°C (140°F)  
and pressure-tight up to 10bar (145psi)  
EE35-PE  
Probe material: stainless steel



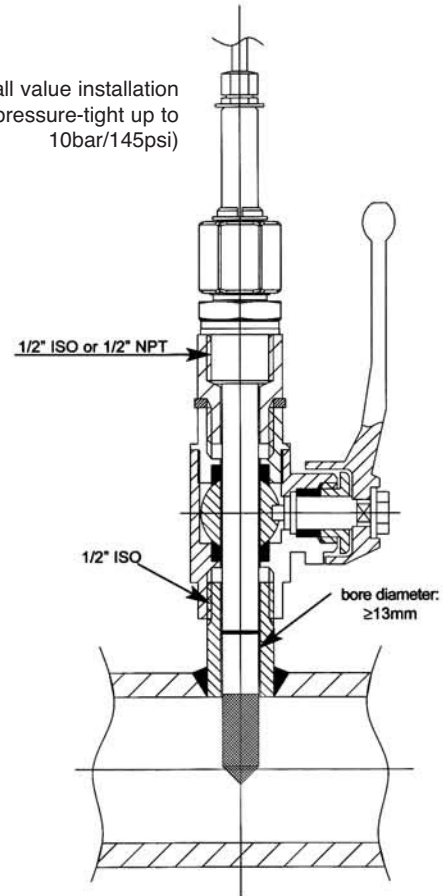
Minimum installation depth



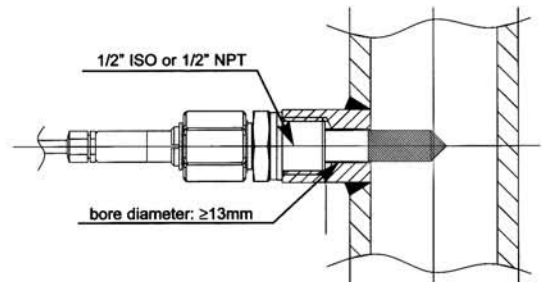
Maximum installation depth

1 mm = 0.03937" / 1" = 25.4 mm

Ball valve installation  
(pressure-tight up to  
10bar/145psi)

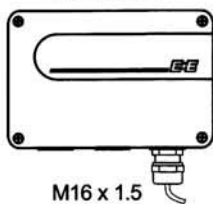


Fixed installation  
(pressure-tight up to 10bar/145psi)



## Connection Versions

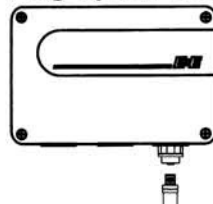
### Standard



M16 x 1.5

Transmitter	1xM16
Transmitter include alarm output	2xM16

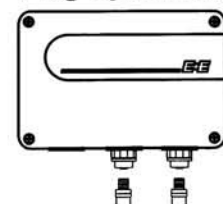
### Plug Option C03



Lumberg  
RKC 5/7

Power supply +  
Analogue output

### Plug Option C09



Lumberg  
RKC 5/7

Power supply +  
Analogue output

Lumberg  
RKC 4/3/7

alarm output



# INDUSTRIAL TRANSMITTER FOR DEW POINT

## Technical Data EE35

### Measuring Quantities

#### Dew Point

Humidity sensor	HC1000-400
Measuring range (below 0°C / 32°F the transmitter outputs frostpoint)	standard calibration: -40...60°C (-40...140°F) special calibration: -60...60°C (-76...140°F)
Accuracy	≤±2°C (≤±3.6°F)
Response time $t_{90}$	80 sec. -20°C → -40°C (-4°F → -40°F) 10 sec. -40°C → -20°C (-40°F → -4°F)

#### Temperature

Sensor	Pt1000 DIN A
Measuring range	0...60°C (32...140°F)
Accuracy of temperature measurement at 20°C (68°F)	±0.2°C (±0.36°F)
Sensitivity error at full scale	±0.1°C (±0.18°F)
Temperature dependence of electronics	< 0.005°C/°C

#### Outputs

Two freely selectable and scaleable analogue outputs xx...yy°C T, Td / Tf / xx...yy°C respectively	0 - 5V 0 - 10V 4 - 20mA 0 - 20mA
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#### General

Supply voltage	SELV 8...48V DC or SELV 12...35V AC SELV = Safety Extra Low Voltage
Current consumption - voltage output - current output	typ. 40mA, with autocalibration: 100mA typ. 80mA, with autocalibration: 140mA
Pressure range	0...10bar (0...145psi)
Housing / protection class	PC bzw. Al Si 9 Cu 3 / IP65; Nema 4
Cable gland	M16 x 1.5 (option: plug) cable ø 4.5 - 10mm (0.18 - 0.39")
Electrical connection	screw terminals up to max. 1.5mm <sup>2</sup> (AWG 16)
Sensor protection	stainless steel sintered filter
Working temperature range	probe : -40...60°C (-40...140°F) electronic: -40...60°C (-40...140°F) with LC display: -20...50°C (-4...122°F) with alarm module: -40...60°C (-40...140°F)
Storage temperature range	-40...60°C (-40...140°F)
Electromagnetic compatibility according to	EN61326-1:1997 + note1:1998 FCC Part15 Class B ICES-003 ClassB

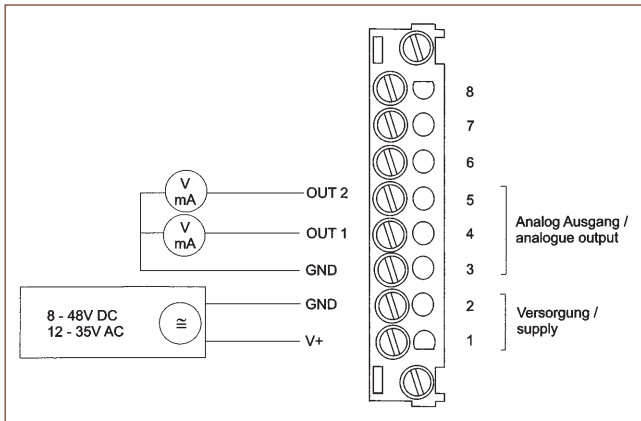


#### Technical Data for Options

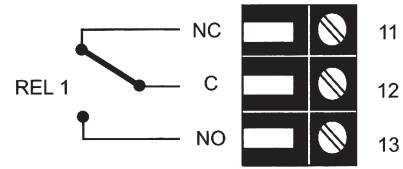
Display	Graphical LC display (128x32 pixels), integrated push- buttons for selecting parameters Td or T and MIN/MAX functions
Alarm output for T/Tf	- range: -60...40°C Td (-76...104°F Td) adjustable with the potentiometer on the printed circuit board - 1 switch contact - 250V AC/6A or 28V DC/6A

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## Connection Diagram



## Terminal configuration - Alarm output



## Ordering Guide EE35

		EE35-
<b>Hardware Configuration</b>		
Housing	metal housing polycarbonate housing	M P
Type	pressure tight	E
Cable length	1m (3.3ft) 2m (6.6ft) 5m (16.4ft)	01 02 05
Probe length	100mm (3.9") 200mm (7.9")	3 5
Pressure tight feedthrough	1/2" male thread 1/2" NPT thread	HA03 HA07
Display	without display with display	D05
Alarm output	without relay with relay	SW
Plug	cable glands 1 plug for power supply for power supply and outputs 2 plug for power supply / outputs and alarm output	C03 C09
Probe length	fixed pluggable	P01
Td Calibration	standard -40...60°C (-40...140°F) special calibration -60...60°C (-76...140°F)	CA02
<b>Software Configuration</b>		
Physical parameters of the outputs	temperature T [°C / °F] dew point temperature Td [°C / °F] frost point temperature Tf [°C / °F]	Output 1 B Output 2 C D
Type of output signals	0-5V 0-10V 0-20mA 4-20mA	2 3 5 6
T / Td / Tf Unit	°C °F	E01
Scaling of T-output	-40... 60 (T02) -60... 20 (T65) -40...100 (T79) -50... 50 (T27) -50...100 (T66) -40...140 (T83) -80... 20 (T63) -20... 70 (T73) -60...120 (T97) -60... 60 (T64) 20...140 (T77)	Output T Select according to ordering guide (Txx)
Scaling of Td/Tf-output	-40... 60 (T02) 0... 60 (T07) -60... 60 (T64) -10... 50 (T03) 0... 80 (T21) 32...120 (T90) 0... 50 (T04) -40... 80 (T22) 32...140 (T91) 0...100 (T05) -20... 80 (T24) 32...132 (T96)	Output Td resp. Tf Select according to ordering guide (Tdx resp. Tfx)

## Accessories

- Ball valve set	(HA050101)	- Interface cable	(HA010301)
- Stainless steel sintered filter	(HA010103)	- Bracket for installation onto mounting rails	(HA010203)
- Display	(D05)	- Sealing element	(HA050309)

