

EE35 Series

Industrial Transmitter for Dewpoint Measurement

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

The EE35 Series is based on a functional, user-friendly housing concept and on the proven polymer humidity sensors of the HC Series. A specially developed autocalibration process enables measurements in a measurement range of $-60...+60$ degC Td, with a Td measurement accuracy of ± 2 degC.

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 dewpoint is exceeded.

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



Autocalibration

Dewpoints in the range of $-60...-20$ degC at room temperatures 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 measurements also at -60 degC Td.

Installation

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

Alarm Output

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

Typical Applications

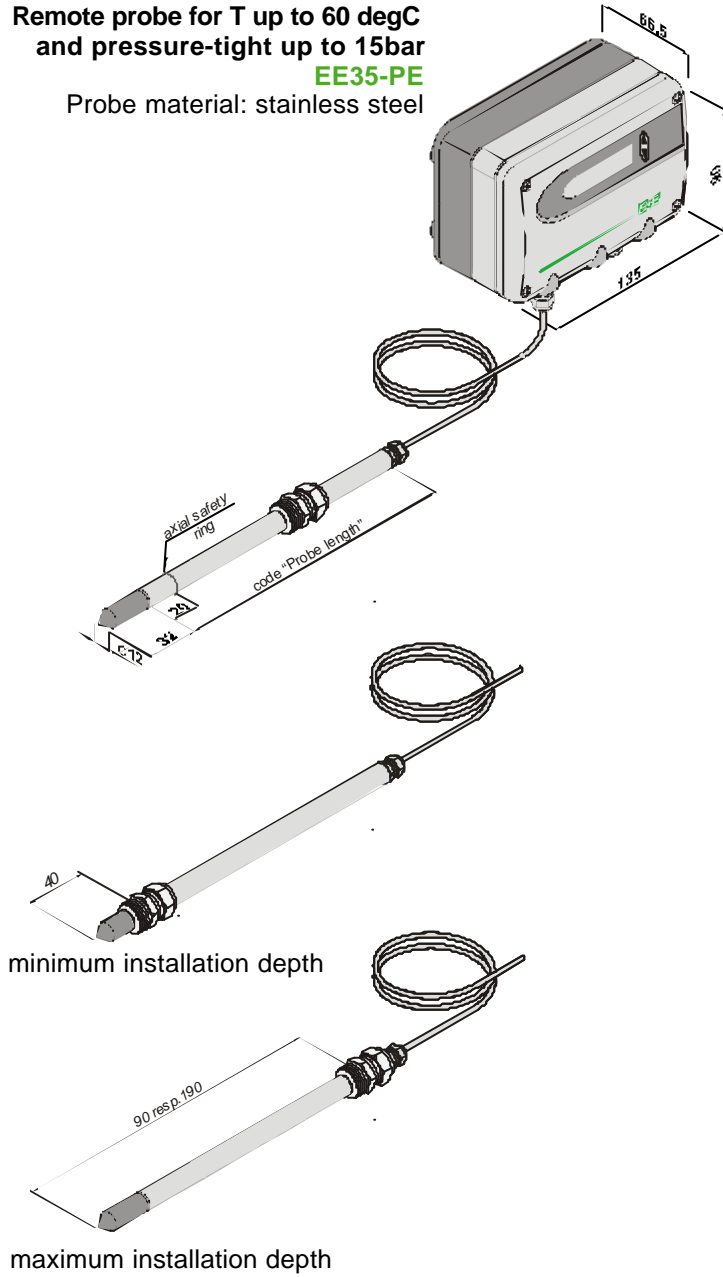
Industrial processes
Monitoring of air pressure pipelines
Warehouses
Drying processes
Paper industries
Chemical industries

Features

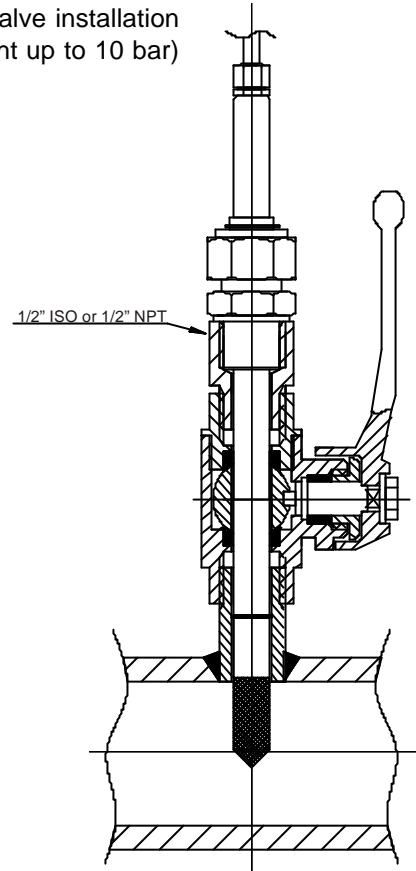
Measuring range $-60...60$ degC Td
Accuracy of measurement ± 2 degC Td
Alarm output for dewpoint
Autocalibration

Housing Dimensions (mm) _____ **Installation Example**

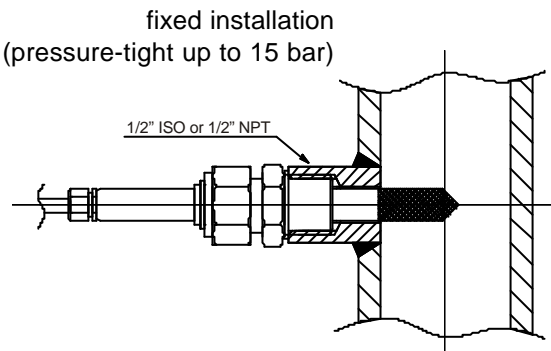
Remote probe for T up to 60 degC
and pressure-tight up to 15bar
EE35-PE
Probe material: stainless steel



ball valve installation
(pressure-tight up to 10 bar)

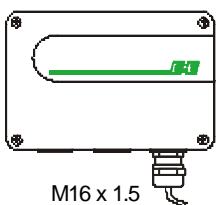


fixed installation
(pressure-tight up to 15 bar)



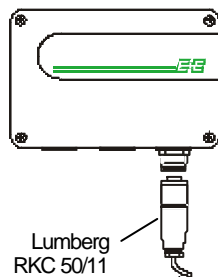
Connection Versions

Standard



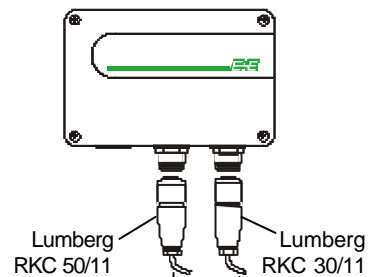
transmitter	1xM16
transmitter incl. alarm output	2xM16

Plug Option C03



Power supply + Analogue output

Plug Option C09



Power supply + Analogue output
alarm output

Technical Data

Measuring Quantities

Dewpoint

Humidity sensor

HC1000-400

Measuring range

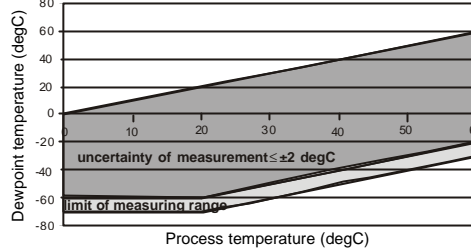
standard calibration: -40...60 degC

(below 0 degC the transmitter outputs frostpoint)

special calibration: -60...60 degC

Accuracy

≤ +2 degC



Response time t_{90}

-20 degC ⇒ -40 degC 80 sec.
 -40 degC ⇒ -20 degC 10 sec.

Temperature

Sensor

Pt1000 DIN A

Measuring range

0...60 degC

Accuracy of temperature measurement at 20 degC

±0.2 degC

Sensitivity error at full scale

±0.1 degC

Temperature dependence of electronics

< 0.005 degC/degC

Outputs

Two freely selectable and scaleable analogue outputs
 xx...yy degC T, Td/Tf / xx...yy degC respectively

0 - 5V
 0 - 10V
 4 - 20mA
 0 - 20mA

General

Supply voltage

SELV 8...48V DC or SELV 12...35V AC

Current consumption - voltage output
 - current output

typ. 40mA, with autocalibration: 100mA
 typ. 80mA, with autocalibration: 140mA

Pressure range

probe: 0...15bar ball valve installation: 0...10bar

Housing / protection class

PC / IP65

Cable gland

M16 x 1.5 (option: plug)

Electrical connection

screw terminals up to max. 1.5mm²

Sensor protection

stainless steel sintered filter

Working temperature range

probe: -40...+60 degC electronic: -40...+60 degC
 with LCD display: -20...+50 degC with alarmmodul: -40...+60 degC

Storage temperature range

-40...+60 degC

Electromagnetic compatibility according to

EN61326-1:1997 + note1:1998



Technical Data for Options

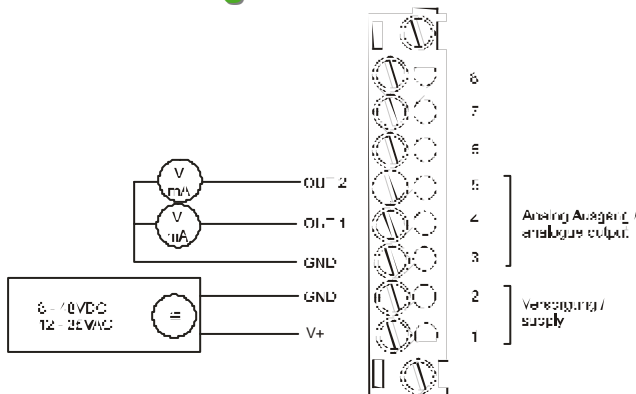
Display

graphical LCD display (128x32 pixels), with integrated push-buttons for selecting parameters Td or T and MIN/MAX functions

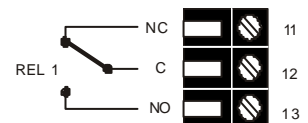
Alarm output for Td/Tf

- range: -60...+40 degC Td adjustable with the potentiometer on the printed circuit board
 - 1 switch contact
 - 250V AC/6A or 28V DC/6A

Connection Diagram



Terminal configuration - Alarm output



Ordering Guide EE35

EE35-PE

Hardware Configuration						
Cable length	1m			(01)	01	
	2m			(02)	02	
	5m			(05)	05	
Probe length	100mm			(3)	3	
	200mm			(5)	5	
Pressure tight feedthrough	1/2" male thread			(HA03)	HA03	
	1/2" NPT thread			(HA07)	HA07	
Display	without display			(no code)		
	with display			(D05)	D05	
Alarm output	without relay			(no code)		
	with relay			(SW)	SW	
Plug	cable thread			(no code)		
	1 plug for power supply and outputs			(C03)	C03	
	2 plugs for power supply / outputs and alarm output			(C09)	C09	
Sensing probe	fixed			(no code)		
	pluggable			(P01)	P01	
Calibration	standard -40...60 degC			(no code)		
	special calibration -60...60 degC			(CA02)	CA02	
Software Configuration						
Physical parameters of outputs	dewpoint/frostpoint temperature	Td/Tf	[degC]	(D)	output 1	D
	temperature	T	[degC]	(B)	output 2	B
Type of output signals	0-5V			(2)		2
	0-10V			(3)		3
	0-20mA			(5)		5
	4-20mA			(6)		6
Measured value units	metric			(no code)		
	not metric			(E01)		E01
Temperature range Td/Tf	-40...60 degC (-40...140 °F)	(Td02)	-60...60 degC (-76...140 °F)	(Td64)	output Td/Tf	Select according to ordering guide (Td02-Td66)
	-50...50 degC (-58...122 °F)	(Td27)	-60...20 degC (-76...68 °F)	(Td65)		
	-80...20 degC (-112...68 °F)	(Td63)	-50...100 degC (-58...212 °F)	(Td66)		
Temperature range T	0...50 degC (32...122 °F)	(T04)	0...80 degC (32...176 °F)	(T21)	output T	Select according to ordering guide (T04-T24)
	0...100 degC (32...212 °F)	(T05)	-40...80 degC (-40...176 °F)	(T22)		
	0...60 degC (32...140 °F)	(T07)	-20...80 degC (-4...176 °F)	(T24)		

Accessories

- Ball valve set (ordering code: HA 050101)

Order Example

EE35-PE025HA03SWC03P01/DB5-Td02-T24

Dewpoint Transmitter EE35 Series

Cable length:	2m	Calibration:	standard
Probe length:	200mm	Output 1:	Td/Tf
Pressure tight feedthrough:	1/2" male thread	Output 2:	T
Display:	no	Output signal:	0-20mA
Alarm output:	with relay	Measured value unit:	metric
Plug:	1 plug for power supply and outputs	Temperature range Td/Tf:	-40...60 degC
Sensing probe:	pluggable	Temperature range T:	-20...80 degC