EE35 Series

Industrial Transmitter for Dewpoint Measurement

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


EE35

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 output of the two measurement values (Td, T).
An optional hygrostat output, which can be set by means of a potentiometer, can provide an alarm signal in a simple way when a threshold of the permitted dewpoint is exceeded.
An optional display for on site display of 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

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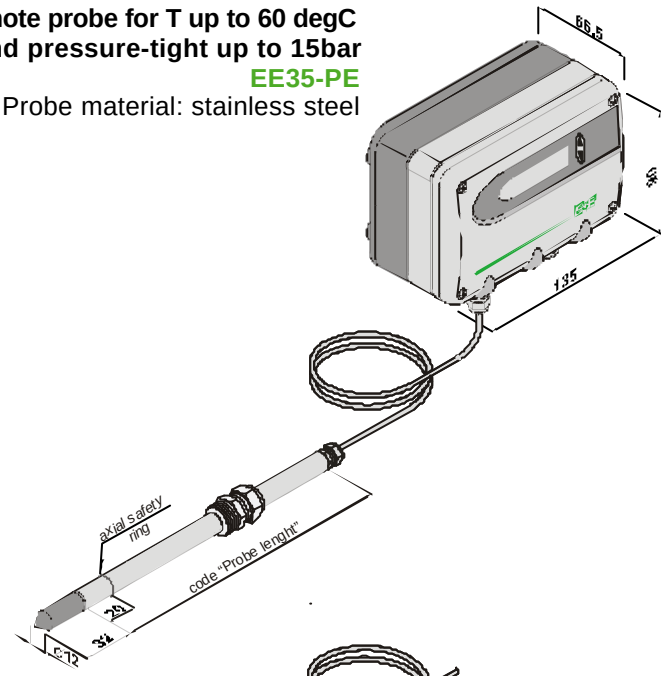
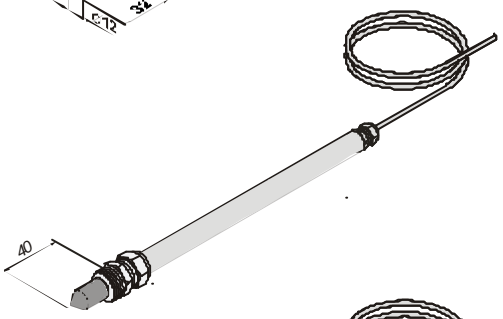
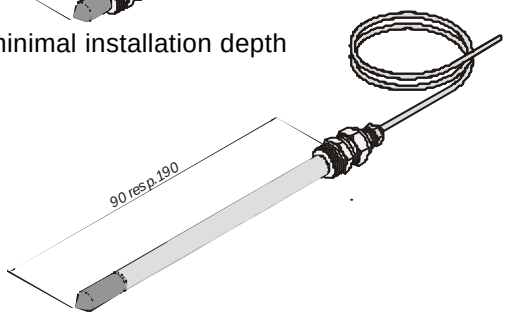
Housing Dimensions (mm)

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





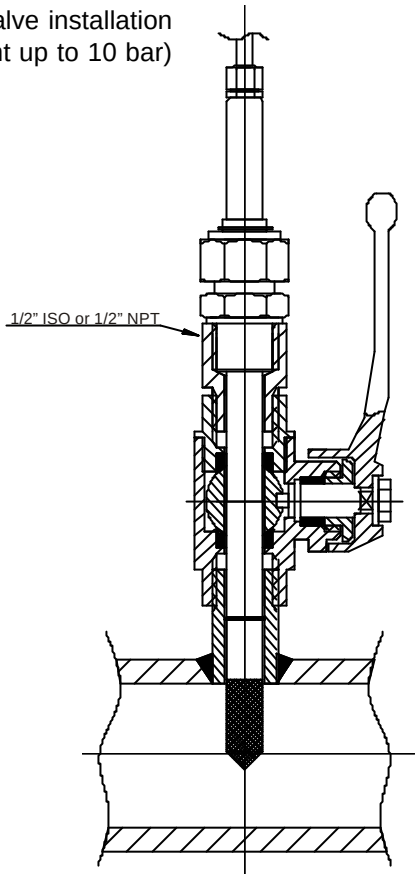
minimal installation depth



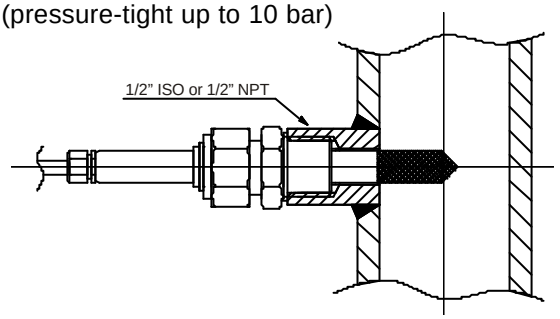
maximal installation depth

Installation Example

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

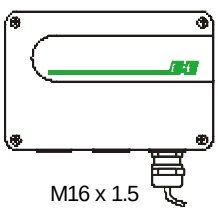


fixed installation
(pressure-tight up to 10 bar)



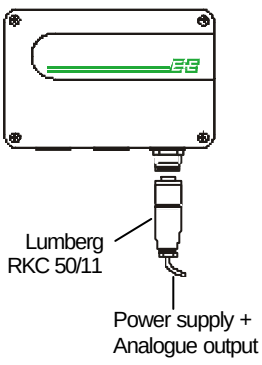
Connection Versions

Standard

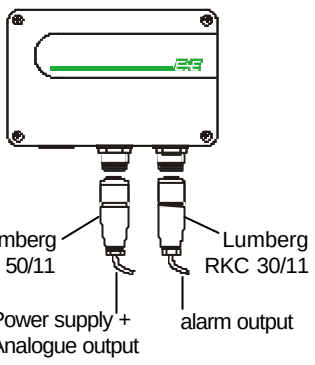


transmitter	1xM16
transmitter incl. alarm output	2xM16

Plug Option C03



Plug Option C09

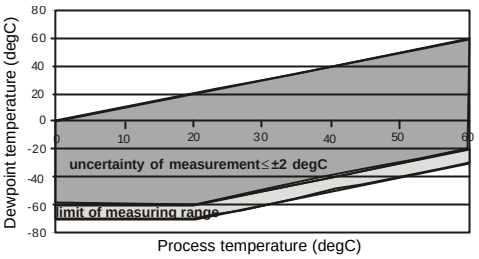


Technical Data

Measuring Quantities

Dewpoint

Humidity sensor	HC1000-400
Measuring range (below 0 degC the transmitter outputs frostpoint)	standard calibration: -40...60 degC 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	±0.1degC
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

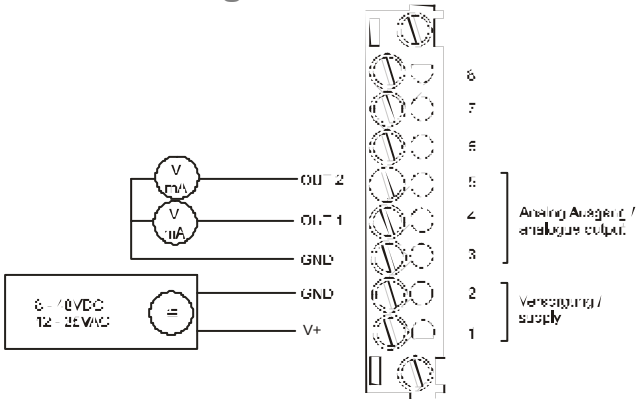
General

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

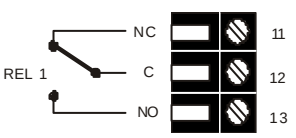
Technical Data for Options

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



EE35

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		(D06)	D06
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
	temperature	T [degC]	(B)	output 2
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 accorcding 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 accorcding 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 040101)**

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