

EE35 Series

Industrial Transmitter for Dew Point Measurement

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 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°C Td (-76...140°F Td), with a Td measurement accuracy of ±2°C (±3.6°F).

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

An optional hygostat 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.



Autocalibration

Dew points in the range of -60...-20°C (-76...-4°F) 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°C Td (-76°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.

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.

Integrated power supply

A power supply, integrated in the back module of the housing, can be ordered optionally (100...240V AC, 50/60Hz; ordering code V01). The power supply V01 is available for both polycarbonate and metal housing and comes standard with two plugs for supply and outputs to allow an easy connection.



Typical Applications

- industrial processes**
- monitoring of air pressure pipelines**
- warehouses**
- drying processes**
- paper industries**
- chemical industries**

Features

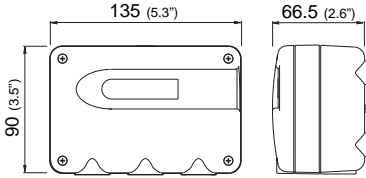
- measuring range -60...60°C Td (-76...140°F Td)**
- accuracy of measurement ±2°C Td (±3.6°F Td)**
- traceable calibration**
- alarm output for dew point**
- autocalibration**

Housing Dimensions (mm)

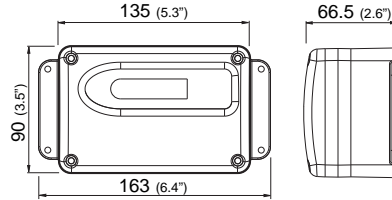
Installation Example

Housing:

polycarbonate housing

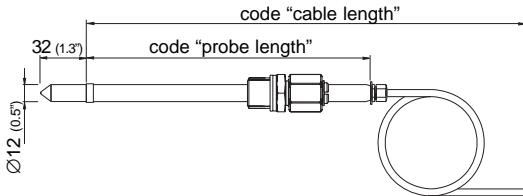


metal housing

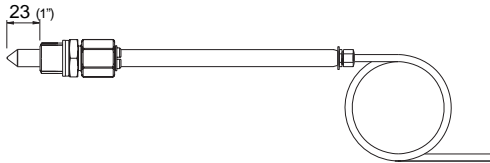


For use in harsh industrial environments the EE35 series is available in a robust metal housing.

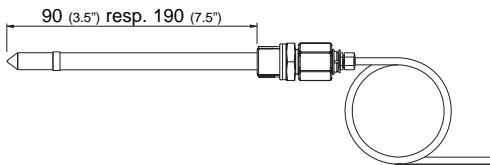
Model:



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

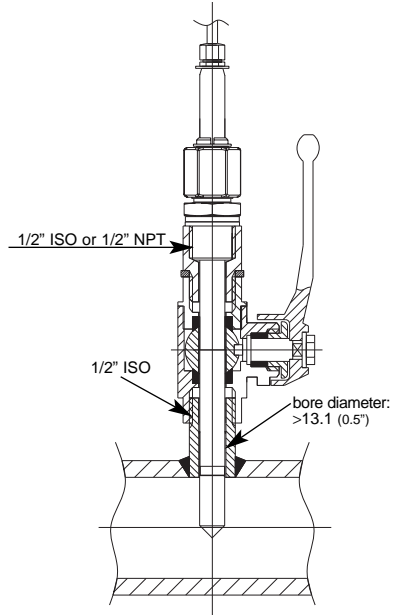


minimum installation depth

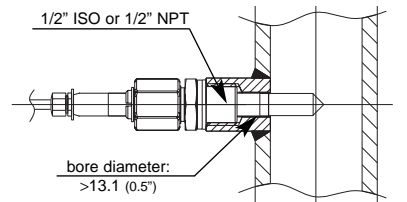


maximum installation depth

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

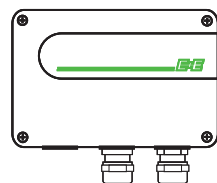


fixed installation
(pressure-tight up to 10bar/145psi)



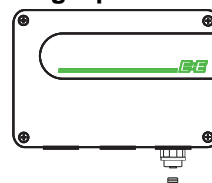
Connection Versions

Standard



2x M16x1.5

Plug Option C03



Lumberg
RKC 5/7

Power supply +
Analogue output

Technical Data

Measuring Quantities

Dew point

Humidity sensor

Measuring range

(below 0°C / 32°F the transmitter outputs frostpoint)

Accuracy

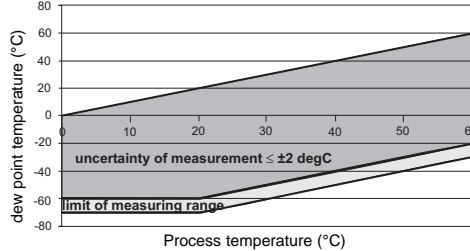
Traceable to intern. standards,
 administrated by NIST, PTB, BEV...

HC1000-400

standard calibration: -40...60°C (-40...140°F)

special calibration: -60...60°C (-76...140°F)

≤ ±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

General

Supply voltage

SELV 8...35V DC

SELV = Safety Extra Low Voltage

SELV 12...30V AC

(optional 100...240V AC, 50/60Hz)

Current consumption - voltage output

typ. 40mA, with autocalibration: 100mA

- current output

typ. 80mA, with autocalibration: 140mA

Pressure range

0...10bar (0...145psi)

Housing / protection class

PC or Al Si 9 Cu 3 / IP65; Nema 4

Cable gland

M16 x 1.5 (option: plug) cable Ø 4.5 - 10 mm (0.18 - 0.39")

Electrical connection

screw terminals up to max. 1.5mm² (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 ClassB

ICES-003 ClassB



Technical Data for Options

Display

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

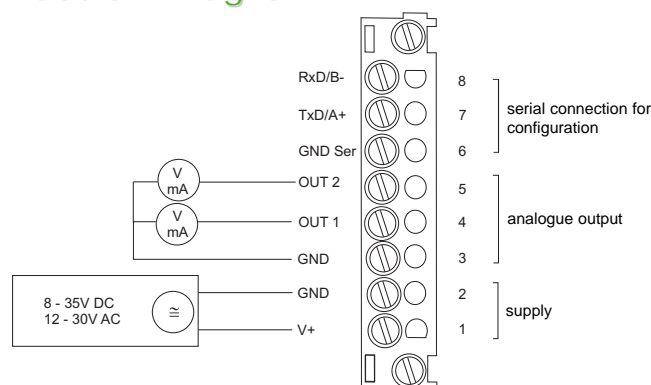
Alarm output for Td/Tf

- range: -60...40°C Td (-60...40°F Td) adjustable with the potentiometer on the printed circuit board

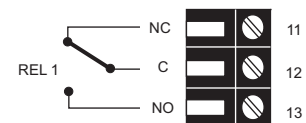
- 1 switch contact

- 250V AC/6A or 28V DC/6A

Connection Diagram



Terminal configuration - Alarm output



Ordering Guide EE35

EE35-

Hardware Configuration		
Housing	metal housing polycarbonate housing	M P
Type	pressure tight	E
Cable length	1m (3.3ft)	01
(incl. probe length)	2m (6.6ft)	02
	5m (16.4ft)	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 ¹⁾	without relay with relay	SW
Plug	cable glands 1 plug for power supply for power supply and outputs	C03
Probe	fixed interchangeable	P01
Td Calibration	standard -40...60°C (-40...140°F) special calibration -60...60°C (-76...140°F)	CA02
Supply voltage	8...35V DC / 12...30V AC integrated power supply 100...240V AC, 50/60Hz ²⁾	V01
Software Configuration		
Physical parameters of the outputs	temperature T [°C/°F] output 1 dew point temperature Td [°C/°F] output 2 frost point temperature Tf [°C/°F]	B 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) output T -50...50 (T27) -50...100 (T66) -40...140 (T83) -80...20 (T63) -20...70 (T73) -60...120 (T97) -60...60 (T64) 20...140 (T77)	Select according to ordering guide (Txx) Other T-scaling refer to page 134
Scaling of Td/Tf-output	-40...60 (T02) 0...60 (T07) -60...60 (T64) output Td resp. Tf -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)	Select according to ordering guide (Tdx resp. Tfxx) Other Td/Tf-scaling refer to page 134

1) Combination alarm output and plugs is not possible (with cable glands only) / combination alarm output and integrated power supply is not possible
2) Integrated power supply includes 2 plugs for power supply and outputs / further plug options are not possible

Accessories

- | | |
|---|---|
| - Ball valve set (HA050101) | - Interface cable (HA010301) |
| - Stainless steel sintered filter (HA010103) | - Bracket for installation onto mounting rails (HA010203) |
| - Display + housing cover in metal (D05M) | - Sealing element (HA050309) |
| - Display + housing cover in polycarbonate (D05P) | |

Order Example

EE35-ME025HA03D05P01/BC5-T02-Td02

Housing: metal housing	Output 1: T
Type: pressure tight	Output 2: Td
Cable length: 2m (6.6ft)	Output signal: 0-20mA
Probe length: 200mm (7.9")	Measured value unit: metric
Pressure tight feedthrough: 1/2" male thread	Scaling of T-output: -40...60°C
Display: with display	Scaling of Td-output: -40...60°C
Alarm output: without relay	
Plug: cable glands	
Sensing probe: interchangeable	
Td Calibration: standard	
Supply voltage: 8...35V DC / 12...30V AC	

EE35

EE32/33 Series

Humidity / Temperature Transmitter for High Humidity and Chemical Applications

The highly accurate EE32/33 series are designed for fast and reliable measurement of relative humidity / dew point temperature / absolute humidity / ...under the most demanding conditions.

Neither condensation nor heavy chemical pollutions will affect prompt and reliable measurements. Process pressures as high as 100 bar (1450 psi) and continuous high humidity are also no problem for the EE32/33 series.

The core of the EE32/33 series is the new monolithic measurement cell type HMC1, manufactured in thin-film technology by E+E Elektronik.

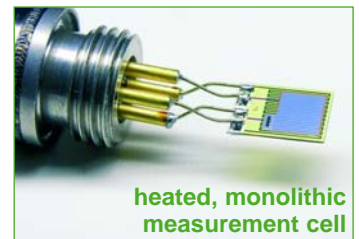
Chemical contamination and also condensation will actually evaporate due to the innovative design of the HMC1 measurement cell. The monolithic construction of the sensor allows a fast return to normal conditions and a continuation of the measurement.

Additionally, with the inimitable E+E sensor coating the HMC1 measurement cell is even better protected against corrosive and short-circuit-causing conductive soils.

Distinctive models and mounting versions allow the EE32/33 series to be utilized in numerous applications:

- **Measurement of relative humidity during temporary condensation:**
the measurement cell is briefly heated, but very intense
- **Measurement of dew point temperature at continuous high humidity (EE33 only):**
the measurement cell is controlled and heated continuously
- **Measurement of relative humidity at continuous high humidity:**
the measurement cell is controlled and heated continuously;
an additional temperature sensor is added
- **Measurement of relative humidity at high chemical exposure and average humidity:**
the measurement cell is briefly heated, but very intense
- **Measurement of relative humidity at process pressure up to 100bar (1450psi) and average humidity:**
the measurement cell is installed in a special high pressure probe

The configuration software included in the scope of supply allows user friendly setup of the operation / sensor heating mode as well as selection and adjustment of the electrical outputs.



Model

A - wall mounting

B - duct mounting

C - remote sensing probe up to 120°C (248°F)

D - remote sensing probe up to 180°C (356°F)

E - remote sensing probe, pressure tight up to 15bar (218psi)

I - remote sensing probe, pressure tight up to 100bar (1450psi)

J - 2 remote sensing probes (RH-measurement),
pressure tight up to 15bar (218psi)

K - remote sensing probe (Td-measurement)
pressure tight up to 15bar (218psi)

Environmental Conditions

chemical pollution, temporary condensation

chemical pollution, temporary condensation

chemical pollution, temporary condensation

chemical pollution, temporary condensation

chemical pollution, temporary condensation

chemical pollution, temporary condensation

continuous high humidity and condensation

continuous high humidity and condensation

Typical Applications

pharmaceutical and food industry
dryers for ceramics, wood, concrete, polyester, etc
mushroom farms
high-humidity storage rooms
climate, test and curing chambers
meteorology

Features

heated, monolithic measurement cell
working range 0...100% RH / -40...+180°C (-40...356°F)
measurement near condensation
fast recovery after condensation
chemical purge after chemical exposure
pressure tight up to 100bar (1450psi)
calculation of additional physical quantities
optional sensor coating
traceable calibration

Product Comparison EE32 - EE33

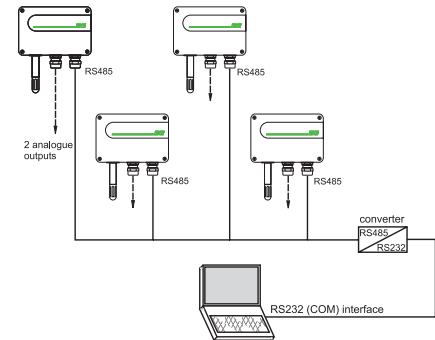
Functions	Comment	EE32	EE33
Measurement of humidity and temperature		✓	✓
Calculation h, r, dv, Tw, Td, Tf, e			✓
2 freely scaleable and configurable analogue outputs		✓	✓
Remote sensing probe up to 20m (65.6ft)		✓	✓
On-site adjustment for relative humidity and temperature		✓	✓
LED indication of transmitter status / error diagnosis of probes		✓	✓
RS232 for transmitter configuration via PC		✓	✓
Configuration software	standard supply	✓	✓
Alternating display with MIN/MAX indication	optional	✓	✓
2 freely configurable alarm outputs	optional	✓	✓
Removeable sensing probe	optional	✓	✓
Sensor protection with coating	optional	✓	✓
Pluggable electrical connections	optional	✓	✓
Data output via RS232 interface			✓
Data output via RS485 interface	optional		✓
Network for up to 32 transmitters via RS485 bus	optional		✓
Ethernet interface for networking and remote monitoring	optional		✓
Data logging and analysis PC software	optional		✓

Networkability / Ethernet Interface

The optional RS485 interface (order code N) allows for building a network of up to 32 transmitters.

The measurement data can be collected in a shared database and made available for all kinds of further processing.

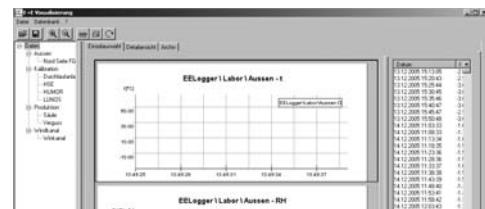
Additionally, the transmitters can be networked with an Ethernet module (order code E) for remote monitoring.



Software

Configuration Software: (included in the scope of supply)

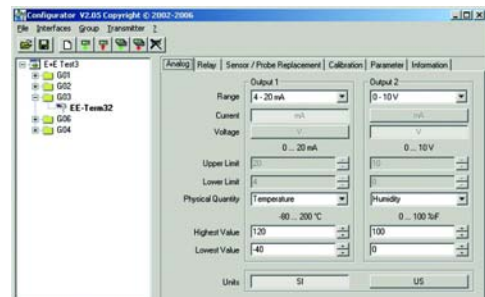
The configuration software allows flexible and simple adjustment of the analogue and alarm outputs in accordance with the requirements. The adjustment / calibration of the humidity and temperature outputs is possible as well. Furthermore the settings of the start and duration of the heating of the measurement cell can be defined.



Data Logging / Analysis Software: (EE33 only ordering code HA010602)

An additional software package enables data recording and management, including alerts by e-mail or text message when set points are triggered.

It is also possible to present the collected measurement data on a PC in graphs or tables. If the option N (RS485) or E (Ethernet) is selected in the ordering code, the data logging and analysis software will be included in the scope of supply.



Integrated Display

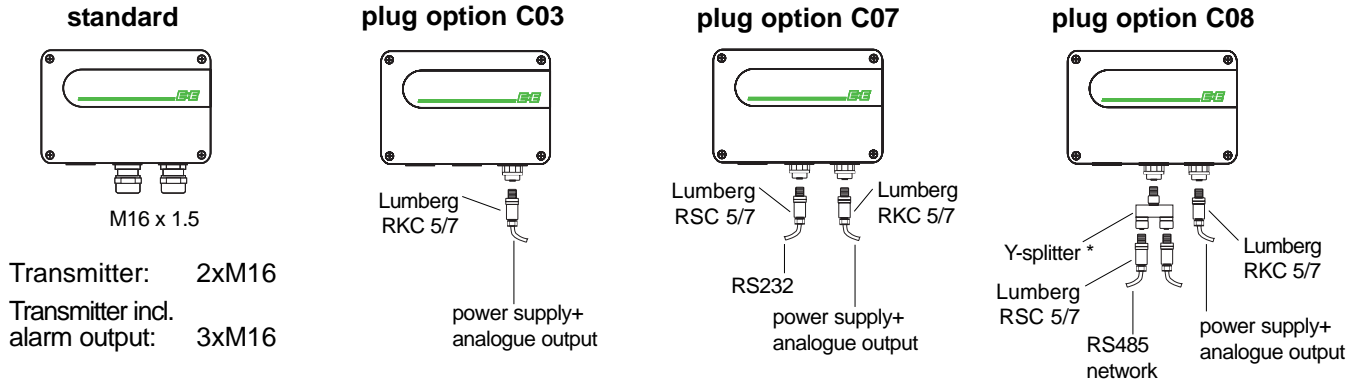
The actual measurement data and the corresponding Min/Max values can be indicated in an optional display (order code D05). The physical quantity to be displayed is selected by the push buttons next to the display.



Alarm Outputs

An optional alarm module with 2 relay outputs is available for control and alarm purposes (order code SW). The selection of the physical quantity and the setting of threshold and hysteresis can be made with the configuration software included in the scope of supply.

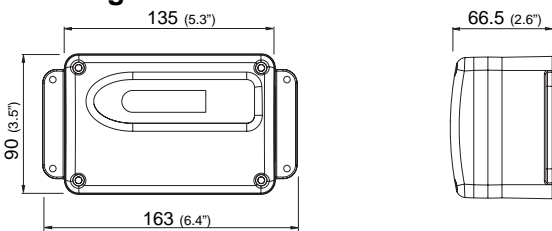
Connection Versions



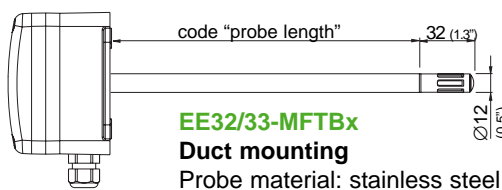
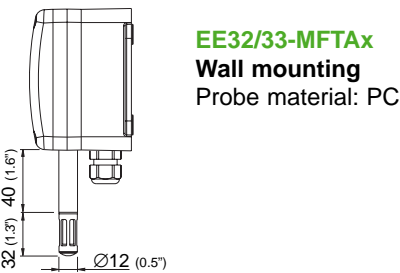
* Siemens 6ES7 194-1KA01-0XA0

Dimensions (mm)

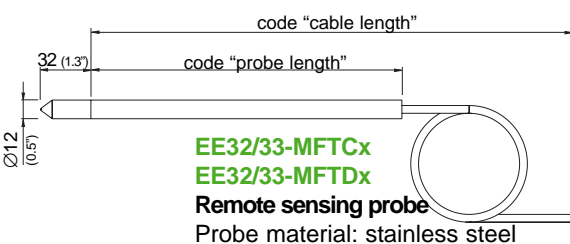
Housing:



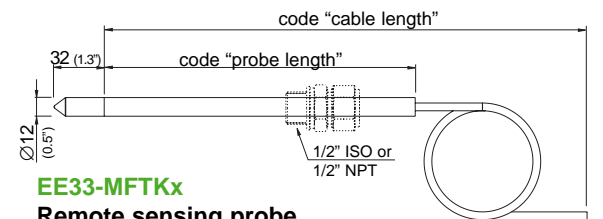
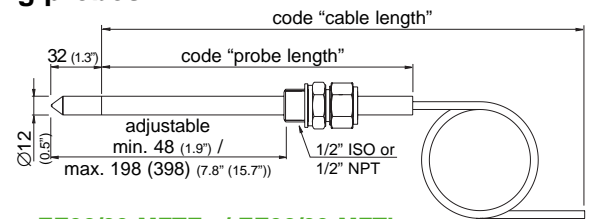
Models:



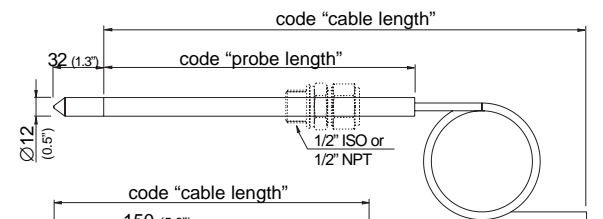
Sensing probes:



Sensing probes:



screw connection: 1/2" ISO Ø12mm HA011102
1/2" NPT Ø12mm HA011103



screw connection: 1/2" ISO Ø12mm HA011102
1/2" NPT Ø12mm HA011103
1/2" ISO Ø6mm HA011104
1/2" NPT Ø6mm HA011105

Technical Data EE33

Measurement values

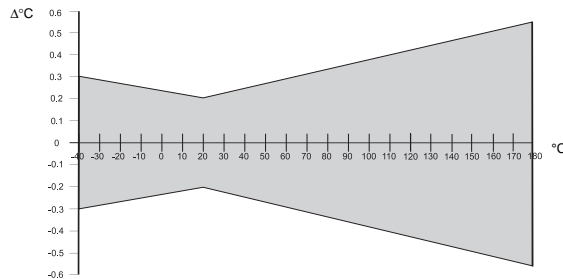
Relative humidity

Humidity sensor ¹⁾	heated, monolithic measurement cell HMC1	
Working range ¹⁾	0...100% RH	
Accuracy ²⁾ (including hysteresis, non-linearity and repeatability, traceable to intern. standards, administrated by NIST, PTB, BEV...)	± (1.3 + 0.3%*mv) % RH	
-15...40°C (5...104°F) <90% RH	± 2.3% RH	
-15...40°C (5...104°F) >90% RH	± (1.4 + 1%*mv) % RH	
-25...70°C (-13...158°F)	± (1.5 + 1.5%*mv) % RH	
-40...180°C (-40...356°F)	typ. ± 0.01% RH/°C (0.0055% RH/°F)	
Temperature dependence of electronics	typ. ± 0.01% RH/°C (0.0055% RH/°F)	
Response time with metal grid filter at 20°C (68°F) / t ₉₀	< 15s	

Temperature

Temperature sensor element	monolithic measurement cell HMC1	
Working range sensing head	EE33-MFTA: -40...60°C (-40...140°F)	EE33-MFTB: -40...80°C (-40...176°F)
	EE33-MFTC: -40...120°C (-40...248°F)	EE33-MFTD/E/I/J/K: -40...180°C (-40...356°F)

Accuracy (typ.)



Temperature dependence of electronics	typ. ± 0.005°C/°C
External temperature probe	Pt1000 (DIN A)

Outputs²⁾

Two freely selectable and scaleable analogue outputs	0 - 1V	-1mA < I _L < 1mA
	0 - 5V	-1mA < I _L < 1mA
	0 - 10V	-1mA < I _L < 1mA
	4 - 20mA	R _L < 500 Ohm
	0 - 20mA	R _L < 500 Ohm
Digital interface	RS232	optional: RS485 or ethernet

Max. adjustable measurement range²⁾³⁾

		from	EE33-A	EE33-B	to	EE33-C	EE33-D/E/I/J	EE33-K	unit
Humidity	RH	0	100	100	100	100	100	/	% rF
Temperature	T	-40 (-40)	60 (140)	80 (176)	120 (248)	180 (356)	/	/	°C (°F)
Dew point temperature	Td	-40 (-40)	60 (140)	80 (176)	100 (212)	100 (212)	100 (212)	100 (212)	°C (°F)
Frost point temperature	Tf	-40 (-40)	0 (32)	0 (32)	0 (32)	0 (32)	0 (32)	0 (32)	°C (°F)
Wet bulb temperature	Tw	0 (32)	60 (140)	80 (176)	100 (212)	100 (212)	100 (212)	/	°C (°F)
Water vapour partial pressure	e	0 (0)	200 (3)	500 (7.5)	1100 (15)	1100 (15)	/	/	mbar (psi)
Mixture ratio	r	0 (0)	425 (2900)	999 (9999)	999 (9999)	999 (9999)	/	/	g/kg (gr/lb)
Absolute humidity	dv	0 (0)	150 (60)	300 (120)	700 (300)	700 (300)	/	/	g/m ³ (gr/f ³)
Specific enthalpy	h	0 (0)	400 (50000)	1000 (375000)	2800 (999999)	2800 (999999)	/	/	kJ/kg (lb/lb)

General

Supply voltage	SELV 8...35V DC SELV 12...30V AC	SELV = Safety Extra Low Voltage (optional 100...240V AC, 50/60Hz)
Current consumption - 2x voltage output - 2x current output	for 24V DC/AC: typ. 40mA / 80mA typ. 80mA / 160mA	
Pressure range for pressure tight probe	EE33-MFTEx/Jx/Kx: 0.01...15bar (0.15...218psi) EE33-MFTIx: 0...100bar (0...1450psi)	
System requirements for software	WINDOWS 98 or later; serial interface	
Housing / protection class	Al Si 9 Cu 3 / IP65; (Nema 4)	
Cable gland	M16 x 1.5	cable Ø 4.5 - 10 mm (0.18 - 0.39")
Electrical connection	screw terminals up to max. 1.5mm ² (AWG 16)	
Working and storage temperature range of electronics	-40...60°C (-40...140°F) -20...50°C (-4...122°F) - housing with display	
Electromagnetic compatibility according to	EN61000-6-2 EN61000-6-3 ICES-003 ClassB EN61326-1+A1+A2 FCC Part15 ClassB	

¹⁾ Refer to the working range of the humidity sensor.

²⁾ Can be easily changed by software.

³⁾ Refer to accuracies of calculated values (page 140)

*) The accuracy statement includes the uncertainty of the factory calibration with an enhancement factor k=2 (2-times standard deviation). The accuracy was calculated in accordance with EA-4/02 and with regard to GUM (Guide to the Expression of Uncertainty in Measurement).

Technical Data EE32

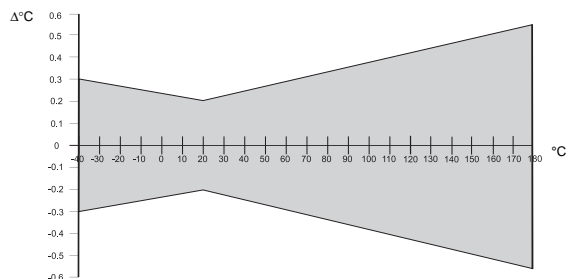
Measurement values

Relative humidity

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Accuracy ²⁾ (including hysteresis, non-linearity and repeatability, traceable to intern. standards, administrated by NIST, PTB, BEV...)		
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-15...40°C (5...104°F) >90% RH	± 2.3% RH	
-25...70°C (-13...158°F)	± (1.4 + 1%*mv) % RH	
-40...180°C (-40...356°F)	± (1.5 + 1.5%*mv) % RH	
Temperature dependence of electronics	typ. ± 0.01% RH/°C (0.0055% RH/°F)	
Response time with metal grid filter at 20°C (68°F) / t ₉₀	< 15s	

Temperature

Temperature sensor element	monolithic measurement cell HMC1	
Working range sensing head	EE32-MFTA: -40...60°C (-40...140°F)	EE32-MFTB: -40...80°C (-40...176°F)
	EE32-MFTC: -40...120°C (-40...248°F)	EE32-MFTD/E/I/J: -40...180°C (-40...356°F)
Accuracy (typ.)		



Temperature dependence of electronics	typ. ± 0.005°C/°C
External temperature probe	Pt1000 (DIN A)

Outputs ²⁾

Two freely selectable and scaleable analogue outputs	0 - 1V	-1mA < I _L < 1mA
	0 - 5V	-1mA < I _L < 1mA
	0 - 10V	-1mA < I _L < 1mA
	4 - 20mA	R _L < 500 Ohm
	0 - 20mA	R _L < 500 Ohm

Max. adjustable measurement range ²⁾³⁾

		from			to			unit
			EE32-A	EE32-B	EE32-C	EE32-D/E/I/J		
Humidity	RH	0	100	100	100	100	% RH	
Temperature	T	-40 (-40)	60 (140)	80	120 (248)	180 (356)	°C	

General

Supply voltage	SELV 8...35V DC	SELV = Safety Extra Low Voltage
	SELV 12...30V AC	(optional 100...240V AC, 50/60Hz)
Current consumption - 2x voltage output	for 24V DC/AC: typ. 40mA / 80mA	
- 2x current output	typ. 80mA / 160mA	
Pressure range for pressure tight probe	EE32-MFTEx/Jx: 0.01...15bar (0.15...218psi)	
	EE32-MFTIx: 0...100bar (0...1450psi)	
System requirements for software	WINDOWS 98 or later; serial interface	
Housing / protection class	Al Si 9 Cu 3 / IP65; (Nema 4)	
Cable gland	M16 x 1.5	cable Ø 4.5 - 10 mm (0.18 - 0.39")
Electrical connection	screw terminals up to max. 1.5mm ² (AWG 16)	
Working and storage temperature range of electronics	-40...60°C (-40...140°F)	
	-20...50°C (-4...122°F) - housing with display	
Electromagnetic compatibility according to	EN61000-6-2	EN61000-6-3 ICES-003 ClassB
	EN61326-1+A1+A2	FCC Part15 ClassB



¹⁾ Refer to the working range of the humidity sensor.

²⁾ Can be easily changed by software.

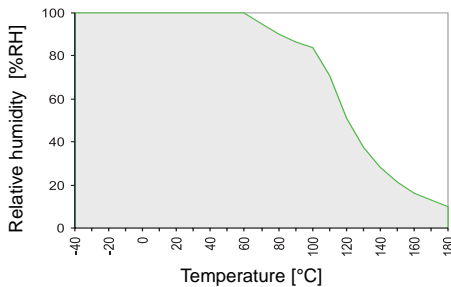
³⁾ Refer to accuracies of calculated values

*) The accuracy statement includes the uncertainty of the factory calibration with an enhancement factor k=2 (2-times standard deviation). The accuracy was calculated in accordance with EA-4/02 and with regard to GUM (Guide to the Expression of Uncertainty in Measurement).

Technical Data for Options

Display	graphical LC display (128x32 pixels), with integrated push-buttons for selecting parameters and MIN/MAX function		
Alarm outputs	2 x 1 switch contact 250V AC / 6A 28V DC / 6A threshold + hysteresis: can be adjusted with configuration software switching parameters:		
	freely selectable between	EE32-MFTA/B/D/E/I/J	EE32-MFTK
RH	Relative humidity	✓	
T	Temperature	✓	
Td	Dew point temperature	✓ (EE33 only)	✓
Tf	Frost point temperature	✓ (EE33 only)	✓
Tw	Wet bulb temperature	✓ (EE33 only)	
e	Water vapour partial pressure	✓ (EE33 only)	
r	Mixture ratio	✓ (EE33 only)	
dv	Absolute humidity	✓ (EE33 only)	
h	Specific enthalpy	✓ (EE33 only)	

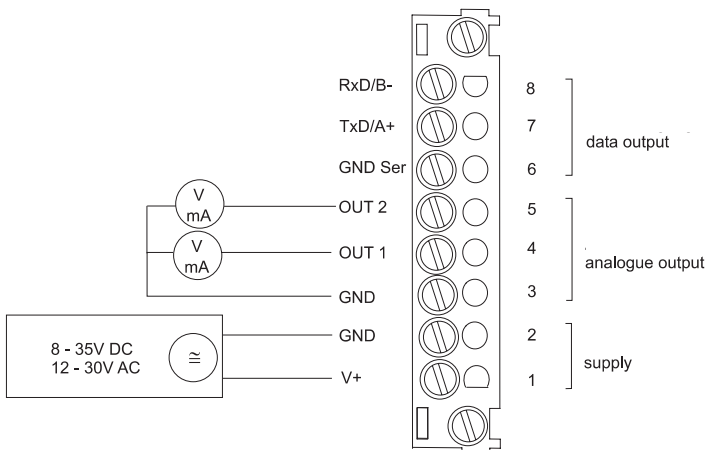
Working Range Humidity Sensor



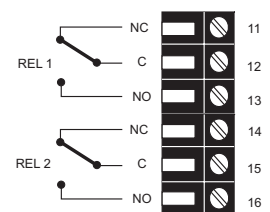
The grey area shows the allowed measurement range for the humidity sensor.

Operating points outside of this range do not lead to destruction of the sensor, but the specified measurement accuracy cannot be guaranteed.

Connection Diagram



Terminal configuration - Alarm output (order code SW)



Accessories / Replacement Parts

(For further information, see data sheet "Accessories", page 128)

- | | | | |
|--------------------------------------|------------|------------------------------------|------------|
| - Filter caps | (HA0101xx) | - Drip water protection | (HA010503) |
| - Display + housing cover | (D05M) | - 1% Calibration | (EE90/3H) |
| - Interface cable | (HA010301) | - Calibration set | (HA0104xx) |
| - 1/2" NPT-adapter for configuration | (HA011101) | - Pressure tight screw connections | |
| - Mounting flange 12mm (RH probe) | (HA010201) | 1/2" ISO Ø12mm | (HA011102) |
| - Mounting flange 6mm (T probe) | (HA010207) | 1/2" NPT Ø12mm | (HA011103) |
| | | 1/2" ISO Ø6mm | (HA011104) |
| | | 1/2" NPT Ø6mm | (HA011105) |
- EE33 only:**
- RS485 Kit (HW + SW) for networking (HA010601)
 - Data logging / analysis software (HA010602)

Ordering Guide EE33

				EE33-	EE33-	EE33-	EE33-	EE33-	EE33-	EE33-	EE33-
Hardware Configuration											
Housing	metal housing			M	M	M	M	M	M	M	M
Type	humidity + temperature			FT	FT	FT	FT	FT	FT	FT	FT
Model				A	B	C	D	E	I	J	K
Filter	stainless steel sintered filter			3	3	3	3	3	3	3	3
	PTFE filter			5	5	5	5	5	5	5	5
	stainless steel grid filter (up to 180°C / 356°F)			9	9	9	9	9	9	9	9
Cable length	2m (6.6ft)					02	02	02	02	02	02
(incl. probe length)	5m (16.4ft)					05	05	05	05	05	05
	10m (32.8ft)					10	10	10	10	10	10
	20m (65.6ft)					20	20	20	20	20	20
Probe length	65mm (2.6")			2		2	2	2			2
	200mm (7.9")				5	5	5	5	5	5	5
	400mm (15.8")				6	6	6	6			6
Pressure tight feedthrough	1/2" male thread							HA03	HA03		
	1/2" NPT thread							HA07	HA07		
Interface	RS232										
	RS485			N	N	N	N	N	N	N	N
	ethernet interface ¹⁾			E	E	E	E	E	E	E	E
Display	without display										
	with display			D05	D05	D05	D05	D05	D05	D05	D05
Alarm output ²⁾	without relay										
	with relay			SW	SW	SW	SW	SW	SW	SW	SW
Plug	cable glands										
	1 plug for power supply and outputs			C03	C03	C03	C03	C03	C03	C03	C03
	2 plugs for power supply / outputs and RS232			C07	C07	C07	C07	C07	C07	C07	C07
	2 plugs for power supply / outputs and RS485 network			C08	C08	C08	C08	C08	C08	C08	C08
Sensing probe	fixed										
	connectable in the housing					P03	P03	P03	P03	P03	P03
Coating sensor	no			HC01	HC01	HC01	HC01	HC01	HC01	HC01	HC01
	yes										
Supply voltage	8...35V DC / 12...30V AC										
	integrated power supply 100...240V AC, 50/60Hz ³⁾			V01	V01	V01	V01	V01	V01	V01	V01
Software Configuration											
Physical parameters of outputs	Relative humidity	RH [%]	(A)	Output 1	Select according to Ordering Guide (A - J)						C
	Temperature	T [°C]	(B)								
	Dew point temperature	Td [°C]	(C)	Output 2	Select according to Ordering Guide (A - J)						D
	Frost point temperature	Tf [°C]	(D)								
	Wet bulb temperature	Tw [°C]	(E)								
	Water vapour partial pres.	e [mbar]	(F)								
	Mixture ratio	r [g/kg]	(G)								
	Absolute humidity	dv [g/m ³]	(H)								
	Specific enthalpy	h [kJ/kg]	(J)								
Type of output signal	0-1V			1	1	1	1	1	1	1	1
	0-5V			2	2	2	2	2	2	2	2
	0-10V			3	3	3	3	3	3	3	3
	0-20mA			5	5	5	5	5	5	5	5
	4-20mA			6	6	6	6	6	6	6	6
Measured value units	metric / SI			E01	E01	E01	E01	E01	E01	E01	E01
	non metric / US										
T-Scaling	-40...60 (T02)		-20...100 (T14)	Output T	Select according to Ordering Guide (Txx)						
Td-Scaling	-10...50 (T03)		+20...120 (T15)								
Tf-Scaling	0...50 (T04)		0...120 (T16)	Output Td	Select according to Ordering Guide (Tdx)						
Tw-Scaling	0...100 (T05)		0...80 (T21)								
(in °C or °F)	0...60 (T07)		-40...80 (T22)	Output Tf	Select according to Ordering Guide (Tfxx)						
	-30...70 (T08)		-20...80 (T24)								
	-30...120 (T09)		-40...160 (T33)	Output Tw	Select according to Ordering Guide (Twxx)						
	-20...120 (T10)		+20...180 (T40)								
	-40...120 (T12)		-40...180 (T52)		Other T/Td/Tf/Tw-scaling refer to page 134						

1) Combination ethernet and alarm output is not possible / combination ethernet and integrated power supply is not possible
 2) Combination alarm output and plugs is not possible (with cable glands only) / combination alarm output and integrated power supply is not possible
 3) Integrated power supply includes 2 plugs for power supply and outputs / further plug options are not possible

Order Example

EE33-MFTD5025ND05SW/BC3-T02-Td07

Hardware Configuration:

Housing: metal
 Type: humidity + temperature
 Model: remote sensing probe
 Filter: PTFE filter
 Cable length: 2m (6.6ft)
 Probe length: 200mm (7.9")
 Interface: RS485

Display: with display
 Alarm output: with relay
 Plug: cable glands
 Sensing probe: fixed
 Coating sensor: no
 Supply voltage: 8...35V DC / 12...30V AC

Software Configuration:

Output 1: T
 Output 2: Td
 Output signal: 0-10V
 Measurand value unit: metric / SI
 T-Scaling: -40...60°C
 Td-Scaling: 0...60°C

Ordering Guide EE32

		EE32-	EE32-	EE32-	EE32-	EE32-	EE32-
Hardware Configuration							
Housing	metal housing	M	M	M	M	M	M
Type	humidity + temperature	FT	FT	FT	FT	FT	FT
Model		A	B	C	D	E	I
Filter	stainless steel sintered filter	3	3	3	3	3	3
	PTFE filter	5	5	5	5	5	5
	stainless steel grid filter (up to 180°C / 356°F)	9	9	9	9	9	9
Cable length (incl. probe length)	2m (6.6ft)			02	02	02	02
	5m (16.4ft)			05	05	05	05
	10m (32.8ft)			10	10	10	10
	20m (65.6ft)			20	20	20	20
Probe length	65mm (2.6")	2		2	2	2	
	200mm (7.9")		5	5	5	5	5
	400mm (15.8")		6	6	6	6	
Pressure tight feedthrough	1/2" male thread					HA03	HA03
	1/2" NPT thread					HA07	HA07
Display	without display						
	with display	D05	D05	D05	D05	D05	D05
Alarm output ¹⁾	without relay						
	with relay	SW	SW	SW	SW	SW	SW
Plug	cable glands						
	1 plug for power supply and outputs 2 plugs for power supply / outputs and RS232	C03 C07	C03 C07	C03 C07	C03 C07	C03 C07	C03 C07
Sensing probe	fixed						
	connectable in the housing			P03	P03	P03	P03
Coating sensor	no						
	yes	HC01	HC01	HC01	HC01	HC01	HC01
Supply voltage	8...35V DC / 12...30V AC						
	integrated power supply 100...240V AC, 50/60Hz ²⁾	V01	V01	V01	V01	V01	V01
Software Configuration							
Physical parameters of outputs	relative humidity	RH [%]	(A)				Select according to Ordering Guide (A or B)
	temperature	T [°C]	(B)				Select according to Ordering Guide (A or B)
Type of output signal	0-1V		1	1	1	1	1
	0-5V		2	2	2	2	2
	0-10V		3	3	3	3	3
	0-20mA		5	5	5	5	5
	4-20mA		6	6	6	6	6
Measured value units	metric / SI		E01	E01	E01	E01	E01
	non metric / US						
T-Scaling (in °C or °F)	-40...60 (T02)	-20...100 (T14)					Select according to Ordering Guide (Txx) Other T-scaling refer to page 134
	-10...50 (T03)	+20...120 (T15)					
	0...50 (T04)	0...120 (T16)					
	0...100 (T05)	0...80 (T21)					
	0...60 (T07)	-40...80 (T22)					
	-30...70 (T08)	-20...80 (T24)					
	-30...120 (T09)	-40...160 (T33)					
	-20...120 (T10)	+20...180 (T40)					
	-40...120 (T12)	-40...180 (T52)					

1) Combination alarm output and plugs is not possible (with cable glands only) / combination alarm output and integrated supply voltage is not possible
2) Integrated power supply includes 2 plugs for power supply and outputs / further plug options are not possible

Order Example

EE32-MFTJ5025D05SW/AB3-T02

Hardware Configuration:

Housing: metal
Type: humidity + temperature
Model: remote sensing probe
Filter: PTFE filter
Cable length: 2m (6.6ft)
Probe length: 200mm (7.9")

Display: with display
Alarm output: with relay
Plug: cable glands
Sensing probe: fixed
Coating sensor: no
Supply voltage: 8...35V DC / 12...30V AC

Software Configuration:

Output 1: RH
Output 2: T
Output signal: 0-10V
Measurand value unit: metric / SI
T-Scaling: -40...60°C

Accessories:

Pressure tight screw connections: HA011102 (1/2" ISO Ø12mm)
HA011104 (1/2" ISO Ø6mm)