Characteristics

- Input:	0...100% rH (non-aggessive gases)
- Air speed:	1 m/s minimum
- Output:	4...20 mA
- Voltage supply:	12...30 VDC
- Accuracy:	see technical data
- Process connection:	1/2", 3/4", 1", 1,5", 1/2NPT
- Electrical connection:	lateral
- Electrical connection:	several plugs / cable
- Temperature range:	-40...+80 °C (operation)
- Fitting length:	72...300 mm
- Protection class:	at least IP65 (electronics)

Technical Data

Input		
Relative humidity:	Range:	0...100%
	Operation range:	5...95% (recommended)
Output		
Current signal:	4...20 mA	
Load:	see diagram page 4	
	Note: Load should be matched to the supply voltage	
Signal interference:	3,5 mA (sensor short circuit, underflow)	
	21 mA (sensor break, sensor circuit open, overflow)	
Performance		
Sensor:	Accuracy:	±2% of span (5...95% rH and 10...40 °C)
	Temperature effect:	additional <0,1%/K (below 10°C, above 40 °C)
	Transient response:	linear with humidity
	Air speed:	1m/s minimum (cross to sensor)
Measurement amplifier:	Accuracy:	0,3% of range
	Resolution:	16 bit
	Filter setting:	0...99 s
	Transient response:	linear with level
	Measurement rate:	10 measurements/s
	Setting:	Keys on display / via software (HART-communication)
	Switch-on delay:	<5 s
	Response time:	20 ms
Display / limit values:	Resolution:	-9999...9999 Digit
	Measurement error:	±0,2% of measurement range, ±1 digit
	Temperature drift:	100 ppm/K
	Functions, operation:	as per VDMA 24574-1 up to 24574-4
Supply		
Voltage:	12...30 VDC	
Reverse voltage protection:	available (no function, no damage)	

Applications

For use in industrial plants, terotechnology, public utility (eg compressor plants) and climating, ventilating and heating installations. With the numerous electrical connections the humidity sensor is also suitable for applications with higher requirements.

Photo: Erich Westendarp @ pixelio.de

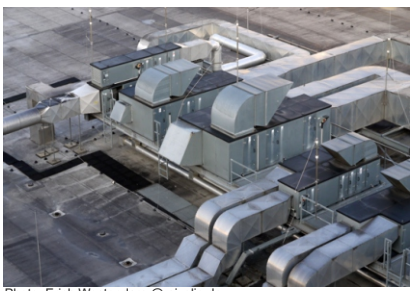


Photo: Erich Westendarp @ pixelio.de

Technical Data (Continued)

Indication

Display:	7- segment, 8,5 mm, red, 4-digits, mirror-inverted 180° possible
Head of display:	rotatable approx. 330°
Memory:	minimum / maximum values
Indication:	- measured value - measurement unit - operating menu
Decimal point:	manual or automatic setting, dependent on measurement range / unit
Representation:	xxxx / xxx.x / xx.xx / x.xxx

Limit Contacts

Electronically:	2x PNP or NPN (30 VDC, 200 mA) Option: 2x PNP or NPN (30 VDC, 1000 mA)
Indication:	1 LED red per limit value
Voltage drop:	<1 V
Settings:	with 3 keys (TouchM-Technology)
Setting range:	Switch point and hysteresis: any value within measurement range
Switching delay:	0,0...999,9 s
Failsafe-function:	adjustable
Galvanic isolation:	Switching outputs are separated from measuring amplifier

Environmental Behaviour

Inside the operating manual for this sensor, (MEHS-T-M) you will find more details about the behaviour of the humidity sensor with different environmental effects:

- Humidity
- Thermal load capability
- Mechanical sensitivity
- Temperature dependence
- Storage influences
- Effect of pollutants
- Contamination or dirt

Environmental Conditions

Temperature:	Operating range:	-40...+80 °C (nominal range)
	Safe operating range:	-20...+80 °C
	Medium:	-40...+80 °C
Condensation:	Casing:	uncritical
	Sensor:	uncritical (without drying: measuring error)
Splash water:	Sensor:	uncritical (without drying: measuring error)
Dust deposit:	Sensor:	uncritical (possible reduction of dynamic response)
System pressure:	1 bar maximum	

Mechanics

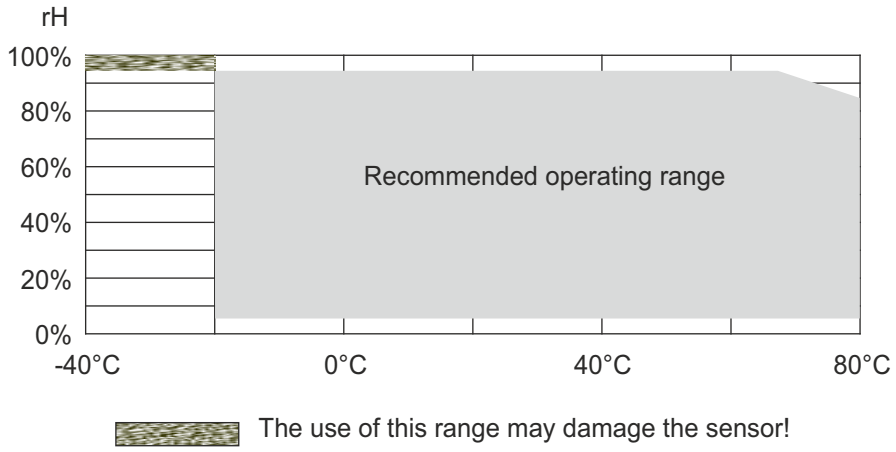
Dimensions:	see page 6	
Fitting length:	72...300 mm	
Pressure connection:	1/2", 3/4", 1", 1,5", 1/2NPT	
Electrical connection:	lateral	
	Plugs and cables:	see page 5
Material:	Process connection:	stainless steel CrNi
	Sensor filter:	PTFE
	Protecting cage:	stainless steel
	Body:	PBT GF30
	Cover:	PBT GF30
Weight:	approx. 170 g (1/2", 100 mm, M12)	
Device protection:	Protection class:	at least IP65 (electronics) IP20 (humidity sensor element)

Technical Data (Continued)

Approvals

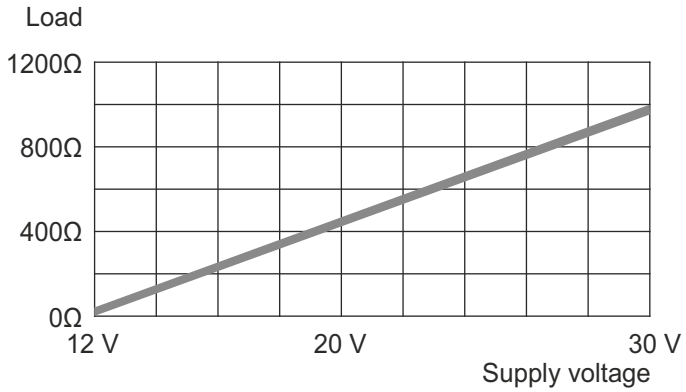
CE-conformity:	EMC-directive:	2014/30/EU

Diagram Operating Range Humidity



The use of this range may damage the sensor!

Diagram Load of Current Output



Electrical Connection

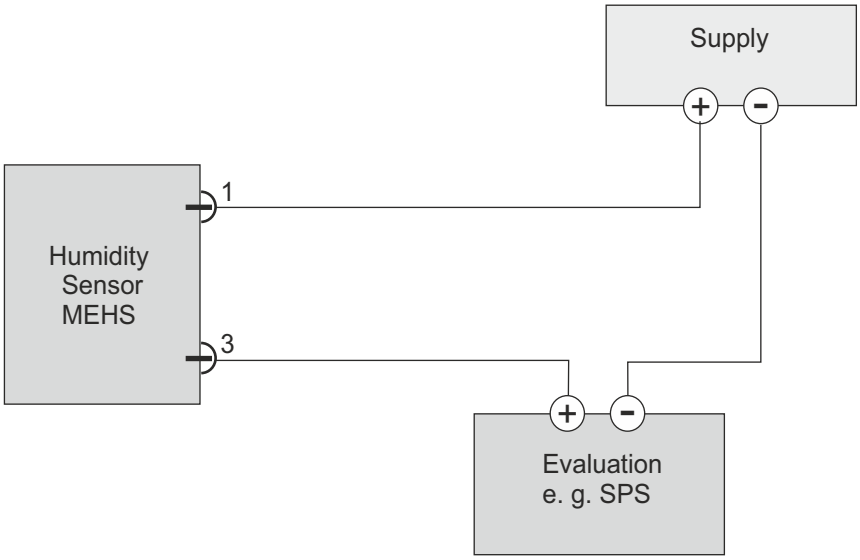
M12x1	Super Seal	Deutsch	Deutsch	Bayonet	Valve	MIL	Cable
							
4-, 5-, 8-pole	3-pole	3-pole	4-pole	4-pole	4-pole	6-pole	4-, 6-pole

Connection Limit Value (LV)	M12 4-pole	M12 5-pole	M12 8-pole	Bayonet 4-pole	Deutsch 4-pole	Deutsch 3-pole	Super Seal 3-pole	Valve 4-pole	MIL 6-pole	Cable 4-pole
1 electr. LV	X	X	X	X	X			X	X	X
2 electr. LV		X	X						X	

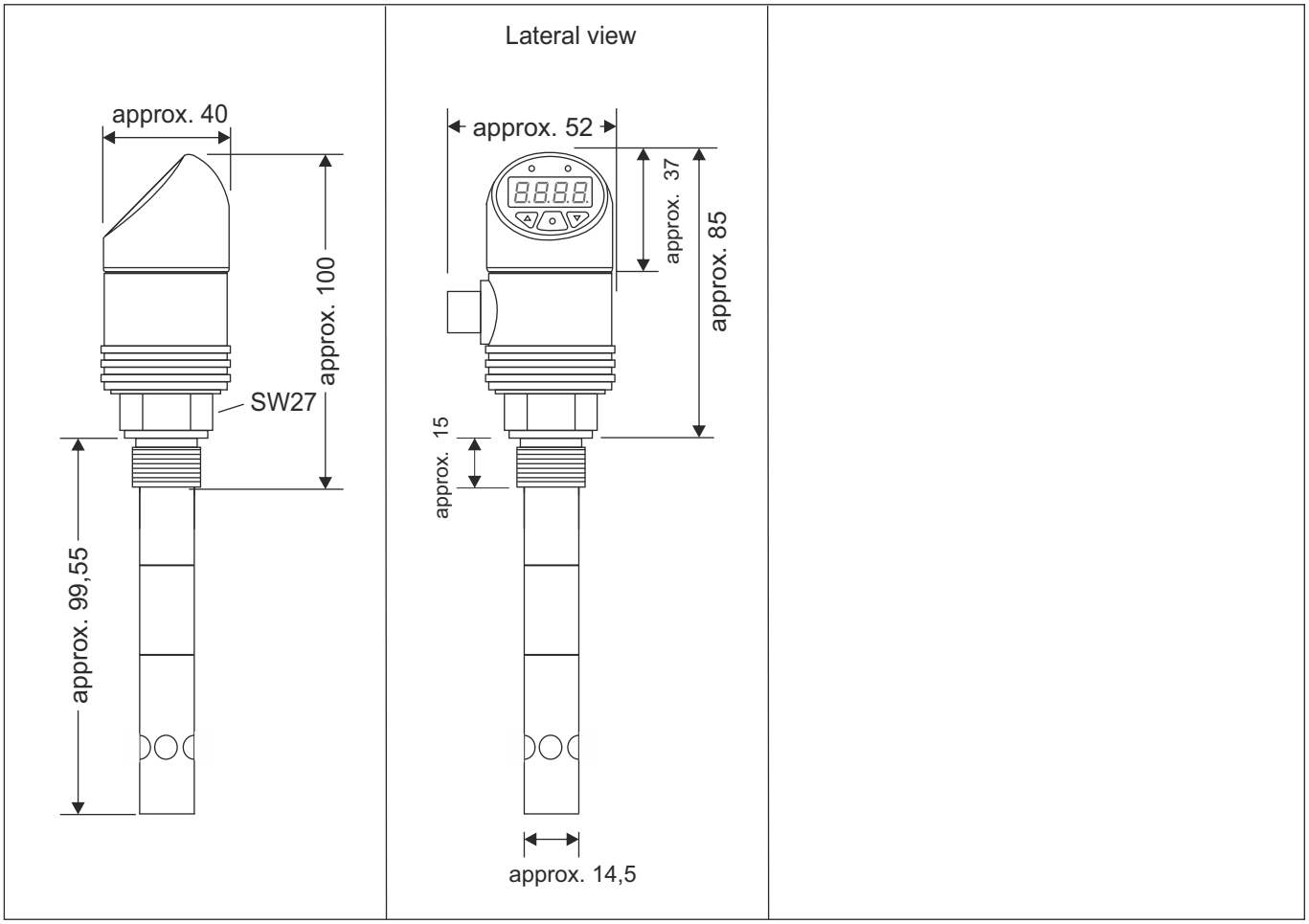
Connection	Supply	
	U+	U-
M12, 4-pole	1	3
M12, 5-pole	1	3
M12, 8-pole	1	3
Super Seal, 3-pole	1	3
Deutsch DT04, 3-pole	A	B
Deutsch DT04, 4-pole	1	3
Bayonet DIN, 4-pole	1	2
Valve (L-plug), 4-pole	1	2
Cable, 4-pole	yellow	white
MIL, 6-pole	A	C

Example for connection see page 6

Example Connection (M12, 4-pole)



Dimensions (in mm)



HART-Communication and Configuration

The HART-Tool is a graphical user interface for the ME series with a menu-driven progam for configuration. It can be used for start-up, configuration, analysis of signals, data backup and device documentation. Connection via HART / PC-USB interface or handheld HART-communicator; for operating systems: Windows 2000, Windows XP, Windows 7, 8.1 and 10.

Possible settings are: Adjustment and simulation of output current, filter function, limits of measuring range, linear output signal, HART address, 2-point calibration, 10-point calibration (linearization)
Limit values 1 and 2 / hysteresis 1 and 2 / delay times 1 and 2

Please note: When using communication via a HART modem, a communication resistance of 250 Ω has to be taken into account.

Order Code

F	I	X	X	X	X	X	-	X	X	X	X

Input:	Humidity 0...100%	0
Output:	4...20 mA	0
Process connection:	1/2”	2
	3/4"	3
	1"	4
	1,5"	5
	1/2”NPT	8
	Other connection (to indicate)	X
Fitting length:	72 mm	072
	100 mm	100
	150 mm	150
	200 mm	200
	250 mm	250
	300 mm	300
	Other length (to indicate)	X
Electrical connection:	M12, 4-pole	0
	M12, 5-pole	1
	M12, 8-pole	2
	Deutsch DT04, 3-pole	3
	Deutsch DT04, 4-poe	4
	Super Seal 1.5, 3-pole	5
	Bayonet (DIN), 4-pole	6
	Valve plug, 4-pole	7
	Cable, 2 m	8
	MIL, 6-pole	9
Configuration:	Factory setting	0
Special Model:	No	0
	Yes (to specify)	1