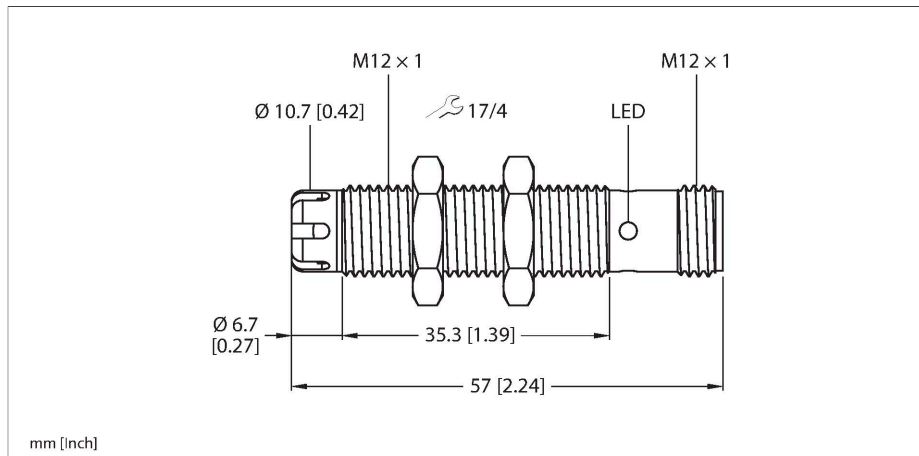# CMTH-M12-IOL6X2-H1141
Humidity and Temperature Sensor – For Condition Monitoring with IO-Link

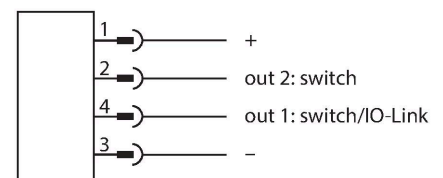

mm [Inch]

Technical data

Type	CMTH-M12-IOL6X2-H1141
ID	100016580
General data	
Function	Temperature/humidity sensor
Measuring range	-40…100 °C
Measuring range	-40…212 °F
Accuracy	±0.8 °C
Resolution — temperature	0.1 K
Repeat accuracy	0.2 °C
Measuring range	0…100 % RH
Accuracy	±5 % RH (10…90 % RH) ±7 % RH (0…10 % RH/90…100 % RH)
Resolution — relative humidity	0.1 % rH
Electrical data	
Operating voltage	18…30 VDC
Residual ripple	< 10 % U_{ss}
DC rated operational current	≤ 150 mA
No-load current	≤ 10 mA
Short-circuit protection	yes / Cyclic
Reverse polarity protection	yes
Output function	Programmable, IO-Link SIO Mode
Output 2	Switching output

Features

- Sensor for condition monitoring
- Accurate temperature and humidity measurement
- Sensor-2-cloud compatible
- DC 4-wire, 18…30 VDC
- M12 × 1 male connector
- Configuration and communication via IO-Link v1.1
- Smart sensor profile 4
- Continuous process values for temperature and humidity
- Temperature monitoring with adjustable switching thresholds or windows
- Humidity monitoring with adjustable switching thresholds or windows
- Operating hours and switching threshold counter
- Dew point calculation and output as well as temperature and humidity histogram via IO-Link

Wiring diagram

Functional principle

Condition monitoring sensors are specially designed for use in system parts in which

CMTH-M12-IOL6X2-H1141| 01/16/2024 23-00 | technical changes reserved

Technical data

max. load current I_o	50 mA
Response time	RH % (t63) 6
Setting option	IO-Link
IO-Link	
IO-Link specification	V 1.1
IO-Link port type	Class A
Communication mode	COM 3 (230.4 kBaud)
Process data width	64 bit
Measured value information	24 bit
Switchpoint information	4 bit
Frame type	2.2
Minimum cycle time	10 ms
Function pin 4	IO-Link
Function Pin 2	SIO
Maximum cable length	20 m
Profile support	Smart Sensor Profile
Mechanical data	
Design	Cylindrical/threaded, M12
Dimensions	Ø 12 x 57 mm
Housing material	Metal, CuZn, Chrome-plated
Electrical connection	Connector, M12 × 1
Ambient temperature	-40…+100 °C
Storage temperature	-40…+100 °C
Process Pressure	10 bar
Protection class	IP67
Power-on indication	LED, Green
Tests/approvals	
MTTF	610 years
Vibration resistance	IEC 60060-2-6: (10…150 Hz) 20 g
Shock test	IEC 60068-2-27: 50 g (6 ms)
EMV	EN 61326-1
Approvals	CE, UL

the environmental parameters can have a significant influence on machine availability or process quality. By monitoring the application temperature or the humidity within the application, process deviations can be detected at an early stage and countermeasures initiated. For this purpose, the continuous detection value is transferred to the controller via IO-Link process data and customer-specific limit value exceedance/shortfall is additionally transported. The robust sensor design can be used indoors as well as outdoors for more challenging applications.