

Temperature / Humidity Sensor



THD Series CATALOG

For your safety, read and follow the considerations written in the instruction manual, other manuals and Autonics website.

The specifications, dimensions, etc. are subject to change without notice for product improvement. Some models may be discontinued without notice.

Features

- Compact design
- Built-in high accuracy temperature / humidity sensor
- 7 segment LED display (THD-DD / THD-WD)
- Various output options: DC4-20mA, 1-5 VDC \pm , RS485 (Modbus RTU)
- Wide measurable range of temperature / humidity: -19.9 to 60.0 °C / 0.0 to 99.9 %RH
- Communication speed: 115200 bps

Ordering Information

This is only for reference.

For selecting the specified model, follow the Autonics website.

THD - ① ② ③ - ④

① Mounting type

R: Room type (for indoor)

D: Duct mounting type

W: Wall mounting type

② Display

No mark: Non-display type

D: Display type

③ Sensor pole length

No mark: Built-in type

1: 100 mm

2: 200 mm

④ Output

	Temperature	Humidity
C	Current output	
V	Voltage output	
T	RS485 communication output	
PT	DPt100 Ω resistance value	-
PT/C	DPt100 Ω resistance value	Current output

Product Components

- Product
- Bracket (THD-W / D model)
- Instruction manual

Software

Download the installation file and the manuals from the Autonics website.

■ DAQMaster

DAQMaster is comprehensive device management program. It is available for parameter setting, monitoring.

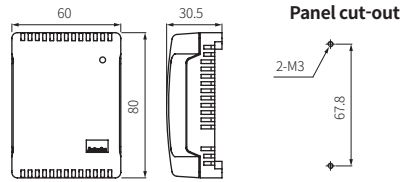
Specifications	
Model	THD-R-PT
Sensor type	Temperature sensor
Display type	Non-display type
Temp. measuring range	-19.9 to 60.0 °C
Temp. accuracy	≤ ±0.8 °C
Temp. output	DPT100Ω resistance value (TCR: 3850 ppm/°C)
Protection structure	IP10 (IEC standards)
Ambient temperature	-20 to 60 °C, Storage: -20 to 60 °C (rated at no freezing or condensation)
Approval	CE ENEC

Model	THD-R-PT/C	THD-R-C THD-R-V THD-R-T	THD-D□-□ THD-W□-□	THD-DD□-□ THD-WD□-□
Power supply	24 VDC ± 10 %			
Power consumption	≤ 2.4W			
Sensor type	Temperature/Humidity Sensor			
Sensor response time	10 sec			
Display type	Non-display type	7 seg. LED display		
Display digit	-	Each 3 digits for temp. / humi.		
Temp. measuring range	-19.9 to 60.0 °C			
Humi. measuring range	0.0 to 99.9 %RH (THD-R is required to attend for using over 90 %RH)			
Temp. accuracy	± 1.0 °C (at room temp.)			
Humi. accuracy	± 3 %RH (30 to 70 %RH, at room temp.) ± 4 %RH (10 to 90 %RH)	Typ. ± 2 %RH (10 to 90 %RH, at room temp.) ± 2.5 %RH		
Temp. output	DPT100Ω resistance value (TCR: 3850 ppm/°C)	DC 4-20 mA (allowable impedance: ≤ 600 Ω), 1-5 VDC, RS485 Communication (Modbus RTU)		
Humi. output	DC 4-20 mA (allowable impedance: ≤ 600 Ω)			
Resolution	1/1000			
Sampling period	0.5 sec			
Insulation resistance	≥ 100 MΩ (500 VDC= megger)			
Dielectric strength	500 VAC ~ 50/60 Hz for 1 min			
Noise immunity	± 0.3 kV the square wave noise (pulse width: 1 μs) by the noise simulator			
Vibration	0.75 mm amplitude at frequency of 10 to 55 Hz (for 1 min) in each X, Y, Z direction for 1 hour			
Vibration (Malfunction)	0.5 mm amplitude at frequency of 10 to 55Hz (for 1 min) in each X, Y, Z direction for 1 hour			
Shock	300 m/s ² (≈ 30 G) in each X, Y, Z direction for 3 times			
Shock (Malfunction)	100 m/s ² (≈ 10 G) in each X, Y, Z direction for 3 times			
Protection structure	IP10 (IEC standards)	IP65 (except sensor part, IEC standards)		
Ambient temperature	-20 to 60 °C, Storage: -20 to 60 °C (rated at no freezing or condensation)			
Cable spec.	-	Ø4 mm, 4-wire, length: 2 m		
Wire spec.	-	AWG22 (0.08 mm, 60-wire), Insulator diameter: Ø1.25 mm		
Approval	CE ENEC (only for THD-□-T model) ENEC			

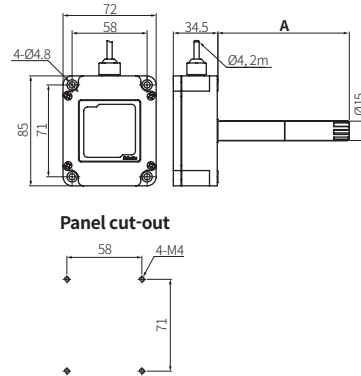
Dimensions

• Unit: mm, For the detailed drawings, follow the Autonics website.

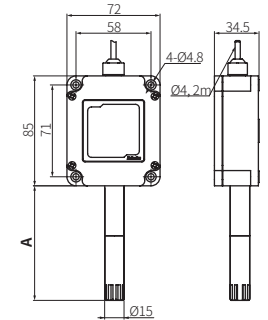
THD-R



THD-D

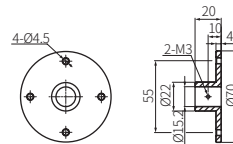


THD-W



Model	Sensor pole length (A)
THD-□1-□	100 mm
THD-□2-□	200 mm

Bracket



Communication Interface

RS485

Comm. protocol	Modbus RTU
Application standard	Compliance with EIA RS485
Max. Connection	31 units (address: 01 to 31)
Synchronous method	Asynchronous
Comm. method	2-wire half duplex
Comm. distance	< 800 m
Comm. speed	1200 to 115200 bps (selectable)
Start bit	1 bit (fixed)
Data bit	8 bit (fixed)
Parity bit	None (fixed)
Stop bit	1 bit (fixed)

- It is not allowed to change parameter related to THD communication under the communication with high order system. (THD and upper system are available to change the address at communication status.)
- Match the parameter of THD communication to be same as the high order system.
- It is not allowed to set overlapping communication address at the same communication line. Use twisted pair wire which is appropriate communication cable for RS485 communication.