

Autonics
Temperature/Humidity Transducer
THD SERIES
INSTRUCTION MANUAL



Thank you for choosing our Autonics product.
Please read the following safety considerations before use.

Safety Considerations

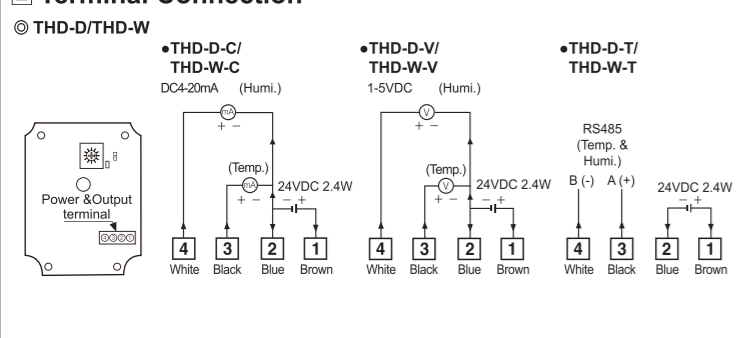
- Please observe all safety considerations for safe and proper product operation to avoid hazards.
Warning: Failure to follow these instructions may result in serious injury or death.
Caution: Failure to follow these instructions may result in personal injury or product damage.

- 1. Do not use the unit outdoors.
2. Do not touch the temperature/humidity sensor by hands.
3. In case of THD-R model, the unit must be mounted on wall.
4. Do not use water or oil-based detergent when cleaning the unit.

Ordering Information

Table showing ordering codes (THD-D, THD-R, THD-W) and their corresponding specifications like PT, C, V, T, No-mark, and Mounting.

Terminal Connection



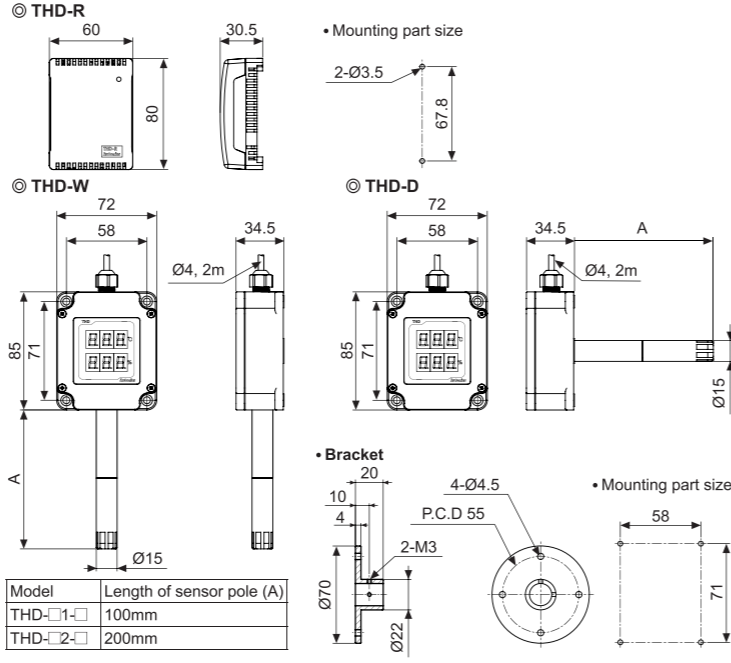
*The above specifications are subject to change and some models may be discontinued without notice.

Specifications

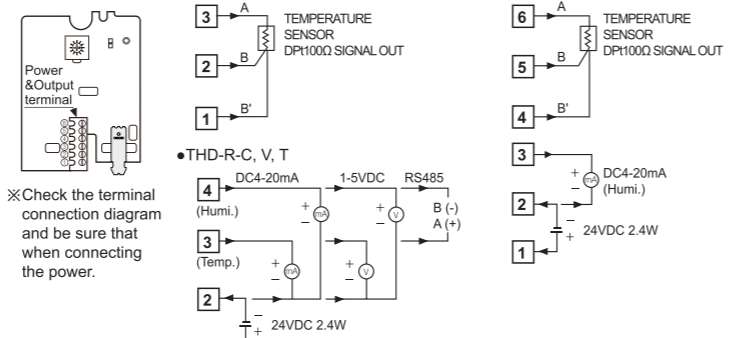
Table with columns for Model (THD-R-PT, THD-R-PT/C, THD-R-C, THD-D, THD-W) and rows for Power supply, Accuracy, Output, Resolution, Sampling period, etc.

- *1: Room temperature is 23°C±5°C.
*2: It may cause degree of degradation when the unit is exposed to organic chemicals such as alcohol gas or sulfuric acid.

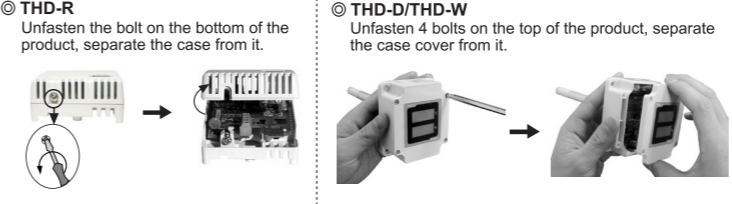
Dimensions



THD-R, THD-R-PT, THD-R-PT/C, THD-R-C, V, T



Case Detachment



Current Output

It transmits current temperature/humidity to other devices (PC, recorder, etc.) and outputs DC4-20mA. It outputs DC4mA at -19.9°C of temperature and 0%RH of humidity.

Voltage Output

It transmits current temperature/humidity to other devices (PC, recorder, etc.) and outputs 1-5VDC. It outputs 1VDC at -19.9°C of temperature and 0%RH of humidity.

DPt 100Ω Resistance Value Output

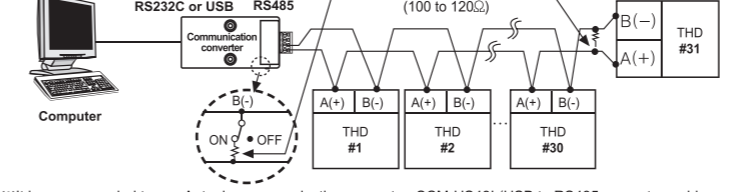
It transmits current temperature to other devices (recorder, thermometer, etc.). It outputs 100Ω at 0°C and 119.40Ω at 50°C.

RS485 Communication Output

It is output transmit current temperature and humidity to other devices (PC, recorder, etc.) by communication.

Table for RS485 Communication Output showing Comm. protocol (Modbus RTU), Max. connection (31 units), Comm. method (Two-wire half duplex), etc.

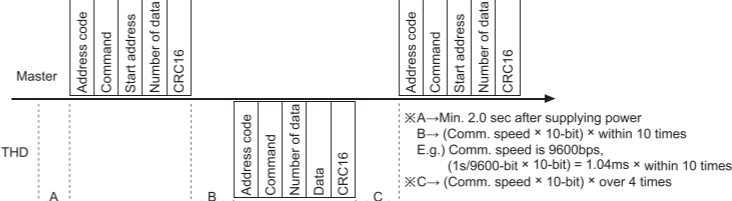
Application of system organization



*It is recommended to use Autonics communication converter; SCM-US481 (USB to RS485 converter, sold separately), SCM-381 (RS232C to RS485 converter, sold separately).

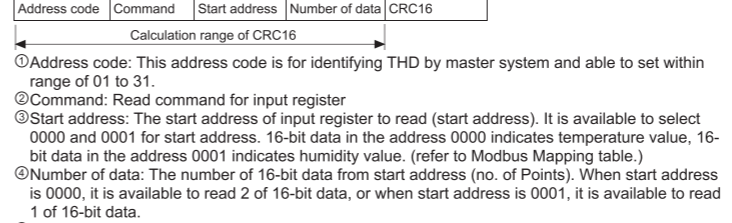
Ordering of communication control

- 1. The communication method is Modbus RTU.
2. After 2.0 sec being supplied the power into master system, it is able to start communication.
3. The initial communication is started by master system.



Communication command and block

The format of query and response. Query: Address code, Command, Start address, Number of data, CRC16.



*Address code: This address code is for identifying THD by master system and able to set within range of 01 to 31.
*Command: A response for read command of input register.
*Number of data: The number of 8-bit data to send from start address (no. of bytes).

Application for communication command

Tables showing communication command formats for Query (Address code, Command, Start address, Number of data, Temperature, Humidity) and Response (Address code, Reponse command, Number of data, Temperature data, Humidity data, CRC16).

Error processing (Slave -> Master)

Table for Error processing showing Address code, Response command, Exception code, and CRC16.

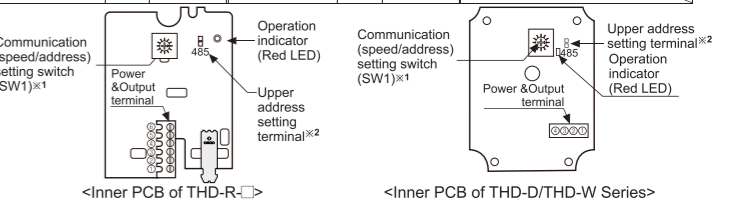
Setting communication speed

- 1. Turn off the power of the unit.
2. Set SW1 to 0 and supply the power.
3. Operation indicator LED is flashing.
4. Set a communication speed after choosing SW1 within the range 1 to 8, and hold it for 3 sec.

Table for Setting communication speed showing SW1, Comm. speed (bps), and SW1, Comm. speed (bps) values.

Setting communication address

- 1. Set upper address setting terminal and setting switch (SW1) to the desired address and supply the power.
2. The communication address is changed automatically.
*Factory default communication address is 01.



- *1: Only when communication setting, remove the case cover and adjust communication setting switch to set address and communication speed.
*2: Short terminal as upper address setting terminal, the lower address setting is available.

Comprehensive Device Management Program

[DAQMaster]

DAQMaster is comprehensive device management program. It is available for temperature and humidity monitoring. For more information, please refer to the DAQMaster user manual.

Caution During Use

- 1. When removing a packing box, do not store the unit at the high temperature/humidity environment.
2. Do not use or storage the unit at over the 90%RH for a long time.
3. Cautions for cleaning
4. Check power terminal polarity when wiring power cable.

Major Products

- Photoelectric Sensors, Temperature Controllers, Fiber Optic Sensors, Temperature/Humidity Transducers, Door Sensors, SSRs/Power Controllers, etc.

