

# WALL TYPE

## T&H Transmitter

4-20mA, 0-5VDC, 0-10VDC OUTPUT

RS485 Communication Output, Relay Output

Model No.: MTH800



# General Specifications

GS 19A16D01-01EN



TEMPERATURE HUMIDITY  
HIGH QUALITY  
MTH800

## ■ Overview

MTH800 is high quality wall type temperature and humidity sensor, adopting Switzerland advanced sensor module and high performance single chip, designed for temperature humidity measurement indoor room, widely used building automation, library room, warehouse, Medical Industry, HAVC Industry, Greenhouse etc. High humidity environment

## ■ Feature

- High Accuracy, High Stability, Anti-Interference dealing on PCB
- High sealing technology and excellent three-proof coating protection
- SMT Technology, with indicator, optional
- **Range:** T: -20 to 80°C, -20 to 120°C, 0-50°C, -40 to 60°C; H: 0-100%
- **Output:** 4-20mA, 0-5VDC, 0-10VDC, RS485 output, optional
- **With 2 relays outputs, optional**
- **Temperature range, offset function can be set by keys**
- **Probe can be dust-proof, water-proof type, high-temperature**
- **Probe can be with external lead cable max.10m as separate type**
- Accuracy: T:  $\pm 0.3^{\circ}\text{C}$ , H:  $\pm 3\%$  ;
- Protection: Electrical housing: IP65; Probe: IP54
- Wide power supply: 12-36VDC or AC24V ( $\pm 20\%$ )

## ■ Front Panel



## ■ Specification

|                       |                                                                                                    |                             |                                                                                                       |
|-----------------------|----------------------------------------------------------------------------------------------------|-----------------------------|-------------------------------------------------------------------------------------------------------|
| <b>Accuracy</b>       | T: $\pm 0.3^{\circ}\text{C}$ (Full range in average);                                              | <b>Power Supply</b>         | 15-36VDC (4-20mA Output); 24VAC                                                                       |
|                       | RH: 3%RH                                                                                           |                             | 12-36VDC (0-5VDC, 0-10VDC; RS485); 24VAC                                                              |
|                       | (non-linear, repeatability, hysteresis)                                                            | <b>Power consumption</b>    | Less than 1VA                                                                                         |
| <b>Long Stability</b> | T: $< 0.04^{\circ}\text{C}/\text{year}$ ; RH: $< 0.05\%\text{RH}/\text{year}$                      | <b>Case /Probe Material</b> | ABS ( $-20$ to $80^{\circ}\text{C}$ ; $0$ to $50^{\circ}\text{C}$ , , $-40$ to $60^{\circ}\text{C}$ ) |
| <b>Range (T)</b>      |                                                                                                    | <b>Cable Material</b>       | Rubber cable or Silica gel with Teflon cable                                                          |
| <b>Analog Output</b>  | T: $-20$ to $80^{\circ}\text{C}$ ; $0$ to $50^{\circ}\text{C}$ , , $-40$ to $60^{\circ}\text{C}$ ; | <b>Probe Type</b>           | Dust-proof (standard); water-proof                                                                    |
|                       | T: $0-100^{\circ}\text{C}$ , $0-120^{\circ}\text{C}$ , customized                                  | <b>High-temp. Probe</b>     | 316LSS with zincification and cooperies                                                               |
| <b>RS485 Output</b>   | T: $-20$ to $80^{\circ}\text{C}$                                                                   | <b>Case Size</b>            | 134mmx90mm (LXD)                                                                                      |
| <b>Range (RH)</b>     | RH: 0-99.9%                                                                                        | <b>Probe Size</b>           | 96mm/115mmx 16mm (LXD) (normal Temp.)                                                                 |
| <b>Resolution</b>     | T: $0.1^{\circ}\text{C}$ , RH: $0.1\%\text{RH}$                                                    |                             | 73mmx16mm (LXD) (High temperature)                                                                    |
| <b>Response time</b>  | T: 6t(63%): min=5s, max=30s;                                                                       | <b>Cable Length</b>         | 1-10m, optional                                                                                       |
|                       | H (90% static air): 8second                                                                        | <b>Terminals Size</b>       | 1x2.5 mm <sup>2</sup> or 2x1.5 mm <sup>2</sup>                                                        |
| <b>Load resistor</b>  | $< 500\text{ohm}$                                                                                  | <b>Entry connector</b>      | M16x1.5mm                                                                                             |
| <b>Output</b>         | 4-20ma, 0-5VDC, 1-5VDC; RS485 output                                                               | <b>Installation</b>         | Wall Type                                                                                             |
| <b>RS485 Protocol</b> | Standard MODBUS-RTU protocol                                                                       | <b>Protection</b>           | Electrical Case: IP65; Probe: IP54                                                                    |
| <b>Baud rate</b>      | 9600; customized                                                                                   | <b>Working Ambient</b>      | T: $-40$ to $80^{\circ}\text{C}$ ,                                                                    |
| <b>Relay Output</b>   | Load $< 2\text{A}/30\text{VDC}$ ( $0.5\text{A}/125\text{VAC}$ ), max. 2A                           | <b>Storage Temperature</b>  | $10-50^{\circ}\text{C}$ ( $0-125^{\circ}\text{C}$ at peak)                                            |
| <b>Indicator</b>      | LCD display, optional                                                                              | <b>Storage Humidity</b>     | H: 0-99.9%, no dew,                                                                                   |

## ■ Dimension (mm)

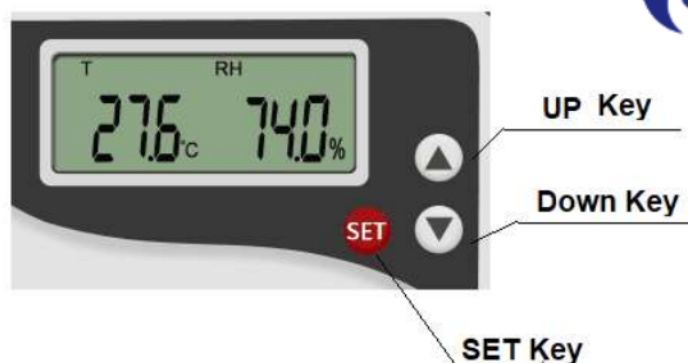
Integrated type with Normal Temperature Probe



Separated type with normal, high-temperature probe



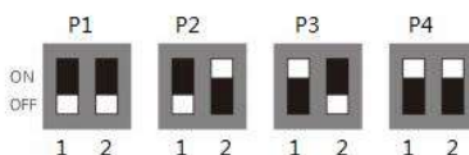
## MTH800-D Indicator Type



D-Indicator type: Temperature range, offset function, communication address functions can be set by keys directly.

## MTH800-N Without Indicator Type

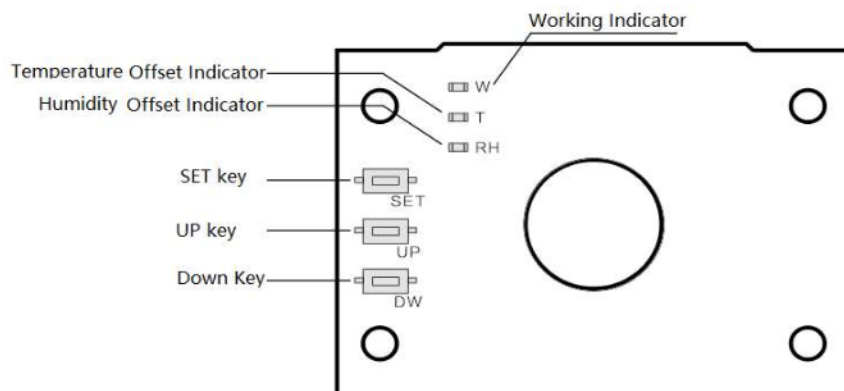
Temperature Range Output can be Set for A: without Indicator Type by Inner DIN Switch Setting



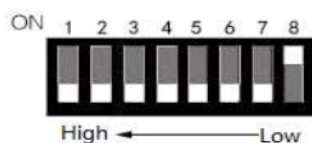
| DIN Switch <sup>ρ</sup> | P1                     | P2                       | P3                       | P4 <sup>ρ</sup>       |
|-------------------------|------------------------|--------------------------|--------------------------|-----------------------|
| Range <sup>ρ</sup>      | 0 to 50°C <sup>ρ</sup> | -20 to 80°C <sup>ρ</sup> | -40 to 60°C <sup>ρ</sup> | Reserved <sup>ρ</sup> |

△ Temperature Range Setting

Offset function can be Set for N: without Indicator Type by Inner keys Setting



Rs485 Address Setting (RS485 Output:-20 to 80°C can be through inner DIN Switch directly)

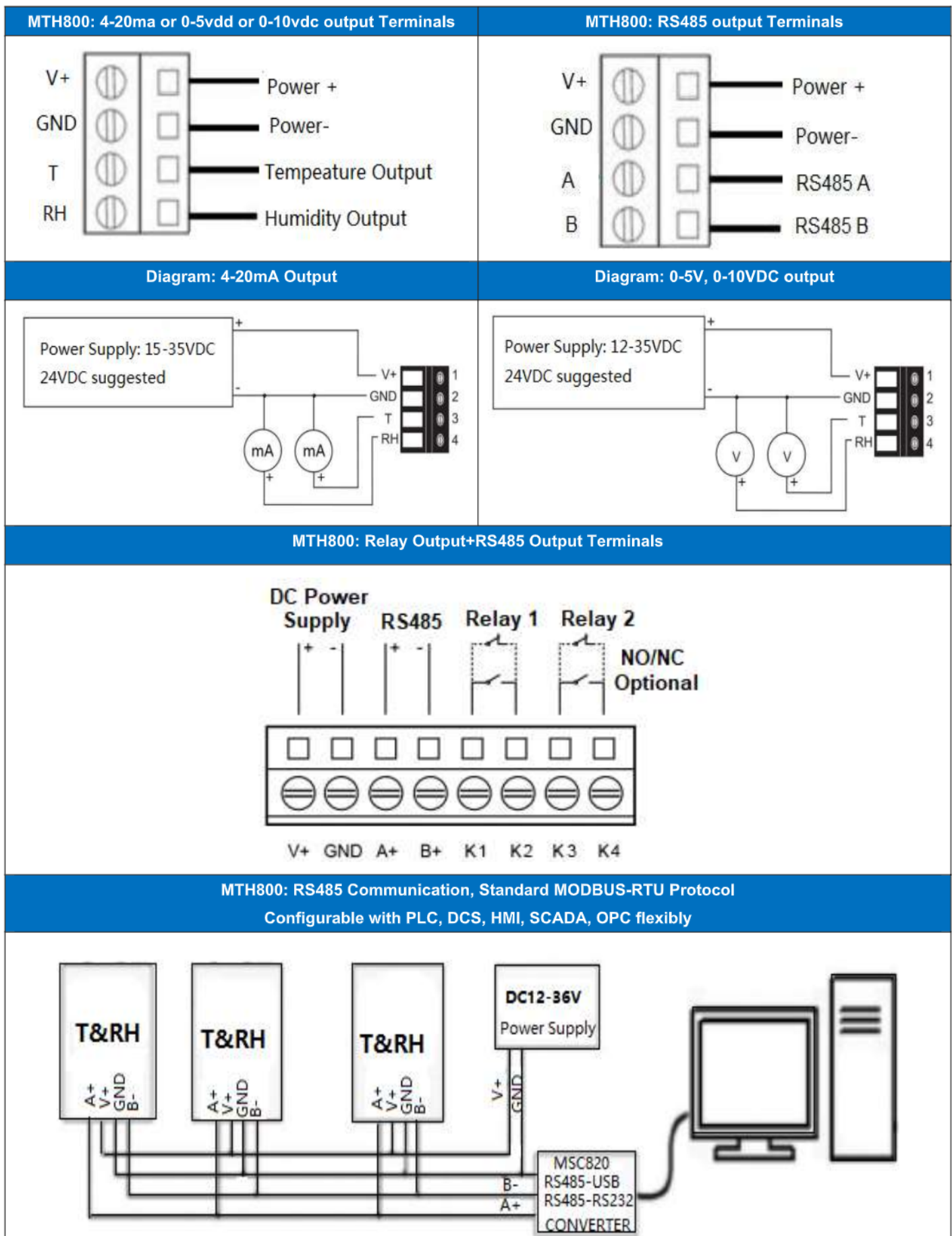


DIN Switch on ON: 1  
DIN Switch on OFF: 0

Address Setting as Follows

| DIN Switch Address | Decimal System Address |
|--------------------|------------------------|
| 00000001           | 1                      |
| 00000010           | 2                      |
| 00000011           | 3                      |
| 00000100           | 4                      |
| .....              | .....                  |
| 11111111           | 255                    |

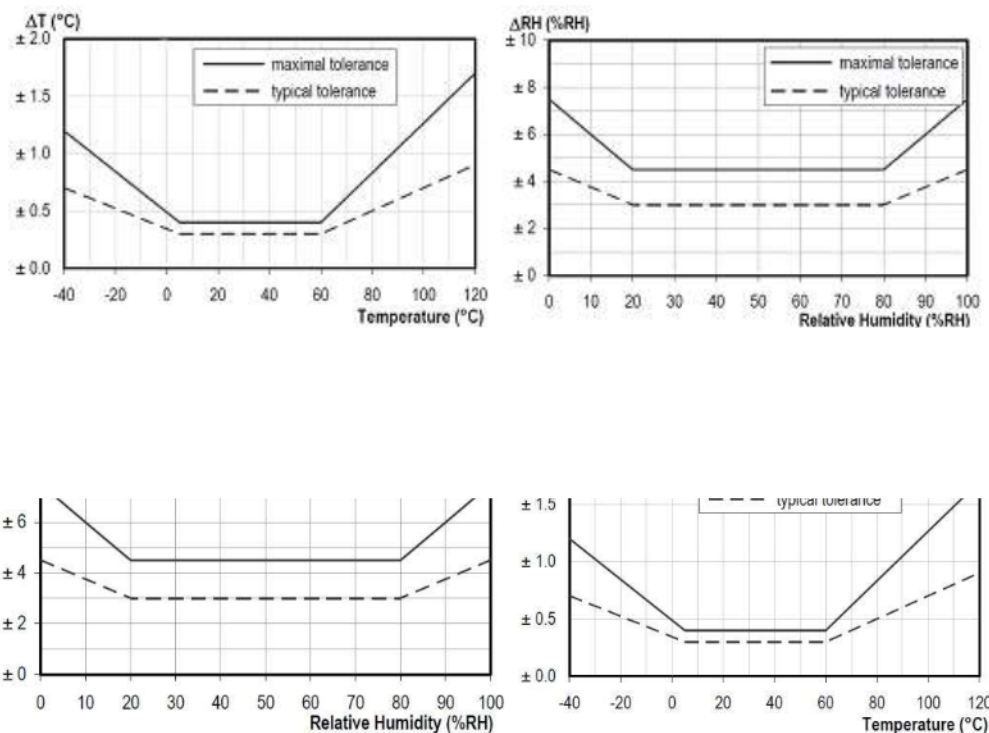
## ■ Diagram





## ■ Accuracy

Analog Output: 4-20mA, 0-5VDC, 0-10VDC



## ■ Order Code

| MTH800 temperature and humidity transmitter |     |   |   |   |   | Description                                                               |
|---------------------------------------------|-----|---|---|---|---|---------------------------------------------------------------------------|
| Order Code: MTH800-NN-ANN                   |     |   |   |   |   |                                                                           |
| MTH800                                      | -X  | X | X | X | X | MTH800 temperature and humidity transmitter                               |
| Indicator                                   | -N  |   |   |   |   | None, without indicator                                                   |
|                                             | -D  |   |   |   |   | Yes, with indicator                                                       |
| Probe type                                  | N   |   |   |   |   | Integrated, probe without extended lead cable                             |
|                                             | E   |   |   |   |   | Separated, probe with extended cable, please advise the cable length need |
| Output                                      | -A  |   |   |   |   | 4-20mA                                                                    |
|                                             | -V  |   |   |   |   | 0-5VDC                                                                    |
|                                             | -V2 |   |   |   |   | 0-10VDC                                                                   |
|                                             | -R  |   |   |   |   | RS485 output                                                              |
|                                             | -E  |   |   |   |   | Ethernet TCP/IP output                                                    |
|                                             | -S  |   |   |   |   | 2 Relay Output. 2 Relay NO or NC, optional                                |
|                                             | -M  |   |   |   |   | RS485+2 Relay Output                                                      |
|                                             | -K  |   |   |   |   | Ethernet +2 Relay Output                                                  |
| Probe Type                                  | N   |   |   |   |   | Standard, dust-proof                                                      |
|                                             | W   |   |   |   |   | Water-proof                                                               |
|                                             | H   |   |   |   |   | High Temperature                                                          |
| Cable Length (m)                            |     |   |   | N |   | None                                                                      |
|                                             |     |   |   | X |   | 0-10m, please advise the remote cable length exactly, such as 2, means 2m |

Note: Order Code: E.g.: MTH800-NN-AN, MTH800 wall type temperature and humidity sensor without indicator, 4-20ma output, integrated type without external lead cable.