WALL TYPE

T&H Transmitter

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

RS485 Communication Output, Relay Output

Model No.: MTH800
Overview

MTH800 is a high-quality wall-type temperature and humidity sensor, adopting Switzerland advanced sensor module and high-performance single chip, designed for temperature and humidity measurement in indoor rooms, widely used in building automation, library rooms, warehouses, medical industries, HVAC industries, greenhouses, 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: ±0.3°C, H: ±3%
- Protection: Electrical housing: IP65; Probe: IP54
- Wide power supply: 12-36VDC; 15-36VDC (4-20mA only)

Front Panel

MTH800 Wall Type Intelligent Temperature Humidity Transmitter
With Indicator, Optional
## Specification

<table>
<thead>
<tr>
<th>Specification</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Accuracy</strong></td>
<td>T: ±0.3°C (Full range in average); RH: 3%RH (non-linear, repeatability, hysteresis)</td>
</tr>
<tr>
<td><strong>Power Supply</strong></td>
<td>15-36VDC (+20mA Output); 12-36VDC (0-5VDC, 0-10VDC; RS485)</td>
</tr>
<tr>
<td><strong>Power consumption</strong></td>
<td>60mA</td>
</tr>
<tr>
<td><strong>Case/Probe Material</strong></td>
<td>ABS (-20 to 80°C; 0 to 50°C, -40 to 60°C)</td>
</tr>
<tr>
<td><strong>Range (T)</strong></td>
<td>RH: 0.04°C/year; RH: &lt;0.05%RH/year</td>
</tr>
<tr>
<td><strong>Analog Output</strong></td>
<td>T: -20 to 80°C; 0 to 50°C, -40 to 60°C; T: 0-100°C, 0-120°C, customized</td>
</tr>
<tr>
<td><strong>Cable Material</strong></td>
<td>Rubber cable or Silica gel with Teflon cable</td>
</tr>
<tr>
<td><strong>Probe Type</strong></td>
<td>Dust-proof (standard); water-proof</td>
</tr>
<tr>
<td><strong>High-temp. Probe</strong></td>
<td>316LSS with zincification and cooperies</td>
</tr>
<tr>
<td><strong>RS485 Output</strong></td>
<td>T: -20 to 80°C</td>
</tr>
<tr>
<td><strong>Case Size</strong></td>
<td>134mmx90mm (LXD)</td>
</tr>
<tr>
<td><strong>Probe Size</strong></td>
<td>96mm/115mmx 16mm (LXD) (normal Temp.)</td>
</tr>
<tr>
<td><strong>Range (RH)</strong></td>
<td>RH: 0-99.9%</td>
</tr>
<tr>
<td><strong>Resolution</strong></td>
<td>T: 0.1°C, RH: 0.1%RH</td>
</tr>
<tr>
<td><strong>Response time</strong></td>
<td>T: 6t(63%): min=5s, max=30s; H (90% static air): 8second</td>
</tr>
<tr>
<td><strong>Terminals Size</strong></td>
<td>1x2.5 mm² or 2x1.5 mm²</td>
</tr>
<tr>
<td><strong>Load resistor</strong></td>
<td>&lt;500ohm</td>
</tr>
<tr>
<td><strong>Output</strong></td>
<td>4-20ma, 0-5VDC, 1-5VDC; RS485 output</td>
</tr>
<tr>
<td><strong>Installation</strong></td>
<td>Wall Type</td>
</tr>
<tr>
<td><strong>RS485 Protocol</strong></td>
<td>Standard MODBUS-RTU protocol</td>
</tr>
<tr>
<td><strong>Baud rate</strong></td>
<td>9600; customized</td>
</tr>
<tr>
<td><strong>Protection</strong></td>
<td>Electrical Case: IP65; Probe: IP54</td>
</tr>
<tr>
<td><strong>Working Ambient</strong></td>
<td>T: -40 to 80°C,</td>
</tr>
<tr>
<td><strong>Relay Output</strong></td>
<td>Load: 2A/30VDC (0.5A/125VAC), max. 2A</td>
</tr>
<tr>
<td><strong>Storage Temperature</strong></td>
<td>0-50°C (0-125°C at peak)</td>
</tr>
<tr>
<td><strong>Indicator</strong></td>
<td>LCD display, optional</td>
</tr>
<tr>
<td><strong>Storage Humidity</strong></td>
<td>H:0-99.9%, no dew,</td>
</tr>
</tbody>
</table>

## Dimension (mm)

### Integrated type with Normal Temperature Probe

![Integrated type with Normal Temperature Probe](image1.png)

### Separated type with normal, high-temperature probe

![Separated type with normal, high-temperature probe](image2.png)
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

<table>
<thead>
<tr>
<th>DIN Switch Range</th>
<th>P1</th>
<th>P2</th>
<th>P3</th>
<th>P4</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 to 50°C</td>
<td>-20 to 80°C</td>
<td>-40 to 60°C</td>
<td>Reserved</td>
<td></td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>Address Setting as Follows</th>
</tr>
</thead>
<tbody>
<tr>
<td>DIN Switch Address</td>
</tr>
<tr>
<td>---------------------</td>
</tr>
<tr>
<td>00000001</td>
</tr>
<tr>
<td>00000010</td>
</tr>
<tr>
<td>00000011</td>
</tr>
<tr>
<td>00000100</td>
</tr>
<tr>
<td>11111111</td>
</tr>
</tbody>
</table>
MTH800: 4-20mA, 0-5Vdc, 1-5Vdc output Terminals

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

MTH800: Relay Output+RS485 Output Terminals

MTH800: RS485 Communication, Standard MODBUS-RTU Protocol
Configurable with PLC, DCS, HMI, SCADA, OPC flexibly
# Accuracy

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

![Graphs showing temperature and humidity accuracy](image)

**RS485 Output**

![Graphs showing temperature and humidity accuracy](image)

# Order Code

<table>
<thead>
<tr>
<th>Order Code: MTH800-NN-AN</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>MTH800</td>
<td>MTH800 temperature and humidity transmitter</td>
</tr>
<tr>
<td>Indicator</td>
<td>None, without indicator</td>
</tr>
<tr>
<td>-N</td>
<td>Yes, with indicator</td>
</tr>
<tr>
<td>Probes Type</td>
<td>Integrated, probe without extended lead cable</td>
</tr>
<tr>
<td>N</td>
<td>Separated, probe with extended cable, please advise the cable length need</td>
</tr>
<tr>
<td>E</td>
<td></td>
</tr>
<tr>
<td>Output</td>
<td>4-20mA</td>
</tr>
<tr>
<td>-A</td>
<td>0-5VDC</td>
</tr>
<tr>
<td>-V</td>
<td>0-10VDC</td>
</tr>
<tr>
<td>-V2</td>
<td>RS485 output</td>
</tr>
<tr>
<td>-R</td>
<td>2 Relay Output. 2 Relay NO or NC, optional</td>
</tr>
<tr>
<td>-S</td>
<td>RS485+2 Relay Output</td>
</tr>
<tr>
<td>Probe Type</td>
<td>Standard, dust-proof</td>
</tr>
<tr>
<td>N</td>
<td>Water-proof</td>
</tr>
<tr>
<td>W</td>
<td>High Temperature</td>
</tr>
<tr>
<td>Cable Length (m)</td>
<td>None</td>
</tr>
<tr>
<td>X</td>
<td>0-10m, please advise the remote cable length exactly, such as 2 means 2m</td>
</tr>
</tbody>
</table>

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.