

# AMBIENT & PROCESS Humidity & Temperature Sensor with Modbus output MBRTU-ATH

SKU: MBRTU-ATH

Doc No: MBRTU-ATH-DS-EN-10

## Introduction

MBRTU-ATH Humidity and Temperature Sensor utilizes digital temperature sensor delivers high accuracy measurement in range -40 to + 85 oC for ambient version or -40 to + 120 oC for Process version. Output is Modbus RTU for easily integrating with any PLC, controller, SCADA, BMS or IoT gateway.

- 1 Digital sensor technology;
- 1 High accuracy;
- 1 Standard ModbusRTU output;
- 1 Plug & Play.

## Typical Applications

MBRTU-ATH can be used widely in the followings:

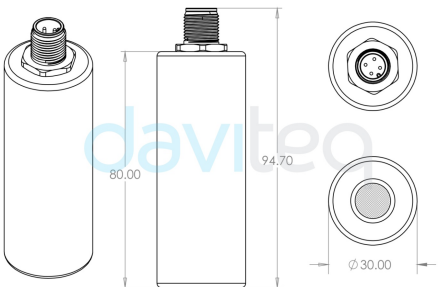
- 1 Ambient Humidity and Temperature Monitoring for Factory, Building, Warehouse, Datacenter, HVAC...
- 1 Process Humidity and Temperature Monitoring for Food processing....

AMBIENT HUMIDITY & TEMPERATURE SENSOR  
WITH MODBUS OUTPUT  
MBRTU-ATH



MBRTU-ATH-H1.PNG

DIMENSION DRAWING OF MODBUS OUTPUT SENSOR  
(Unit: mm)



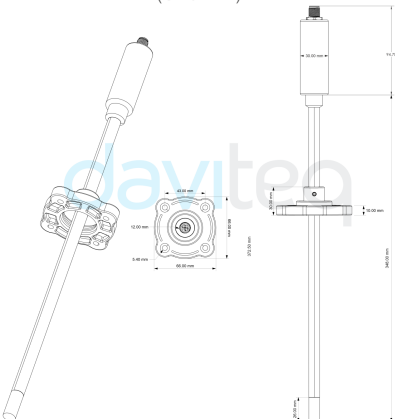
MBRTU-ATH-H2.PNG

PROCESS HUMIDITY & TEMPERATURE SENSOR  
WITH MODBUS OUTPUT



MBRTU-ATH-H4.PNG

DIMENSION DRAWINGS OF  
PROCESS HUMIDITY & TEMPERATURE SENSOR  
MBRTU-ATH-15-...  
(Unit: mm)



MBRTU-ATH-H5.PNG

## MONITORING AMBIENT HUMIDITY & TEMPERATURE IN WAREHOUSE



MBRTU-ATH-H3.PNG

### Specification

| AMBIENT VERSION MBRTU-ATH-11 or MBRTU-ATH-12-...    |   |
|---|---|
| Sensor  | Digital type, factory calibrated, output both Humidity & Temperature values         |
| Humidity measuring range                            | 0 .. 100 %RH  |
| Humidity accuracy in Ambient temperature 0 .. 60 oC | Typical +/- 2.0% RH in 10..80%RH, otherwise +/- 3.0% RH                             |
| Humidity repeatability                              | +/- 0.1% RH   |
| Humidity resolution                                 | 0.1%  |
| Temperature measuring range                         | -40 .. + 85 oC  |
| Temperature accuracy                                | Typical +/- 0.2 oC in range 5 oC to 60 oC   |
| Temperature repeatability                           | +/- 0.1 oC  |
| Temperature resolution                              | 0.1 oC  |
| Sensor Filter                                       | PTFE (for integrated version) OR 20um Alloy sintered filter (for sensor with cable) |
| PROCESS VERSION MBRTU-ATH-15                        |   |
| Sensor  | Digital type, factory calibrated, output both Humidity & Temperature values         |
| Humidity measuring range                            | 0 .. 100 %RH  |
| Humidity accuracy                                   | +/- 1.8% RH typical in 30-70%RH range and 0-80 oC                                   |
| Humidity resolution                                 | 0.1%  |
| Temperature measuring range                         | -40 .. + 120 oC   |
| Temperature accuracy                                | +/- 0.5 oC in 0-100 oC range  |

|                                  |   |
|----------------------------------|---|
| Temperature resolution           | 0.1 oC  |
| Sensor Filter                    | 20um Alloy sintered filter (for sensor with cable)                            |
| Sensor Probe                     | 12mm diameter, 304SS with sliding flange<br>Probe length: 300mm, 600mm, 900mm |
| Working pressure                 | atmosphere  |
| <b>TRANSMITTER SPECIFICATION</b> |   |
| Communication Port               | RS485, ModbusRTU protocol, max 19200 baud                                     |
| Power supply                     | 7..48VDC, avg. < 200mA  |
| Connector                        | M12-male 4-pin Code A   |
| Working temperature and humidity | -40 .. 85 oC, 0 .. 100% RH  |
| Housing and Rating               | 304SS, IP67   |
| Dimension and Weight             | H100xD30 (without sensor cable), < 200 grams                                  |
| Mounting                         | AMBIENT: SS304 L type bracket for wall mounting<br>PROCESS: integral on probe |
| Certification                    | CE  |

## Ordering Code

| Item code  | Descriptions  |
|--|---|
| MBRTU-ATH-11   | <b>INDOOR AMBIENT</b> HUMIDITY AND TEMPERATURE SENSOR, INTEGRATED TYPE, -40 .. + 85 C, RS485/MODBUSRTU, 7..48VDC SUPPLY, M12-MALE                                 |
| MBRTU-ATH-12-300                                     | <b>INDOOR AMBIENT</b> HUMIDITY AND TEMPERATURE SENSOR, CABLE TYPE 300MM, -40 .. + 85 C, RS485/MODBUSRTU, 7..48VDC SUPPLY, M12-MALE                                |
| MBRTU-ATH-15-300                                     | <b>PROCESS</b> HUMIDITY AND TEMPERATURE SENSOR, -40 .. +120 C, 300MM PROBE, ALL 304SS MATERIAL, SLIDING-FLANGE, RS485/MODBUSRTU, 7..48VDC SUPPLY, M12-M CONNECTOR |
| MBRTU-ATH-15-600                                     | <b>PROCESS</b> HUMIDITY AND TEMPERATURE SENSOR, -40 .. +120 C, 600MM PROBE, ALL 304SS MATERIAL, SLIDING-FLANGE, RS485/MODBUSRTU, 7..48VDC SUPPLY, M12-M CONNECTOR |
| MBRTU-ATH-15-900                                     | <b>PROCESS</b> HUMIDITY AND TEMPERATURE SENSOR, -40 .. +120 C, 900MM PROBE, ALL 304SS MATERIAL, SLIDING-FLANGE, RS485/MODBUSRTU, 7..48VDC SUPPLY, M12-M CONNECTOR |
| Please select below M12 cable with different lengths |   |
| 2M-FM12CAB4X0.25                                     | M12 4PIN FEMALE ASSEMBLY CONNECTOR WITH SOLDERING TERMINALS AND CODING A AND CONTROL CABLE CU/PVC/OS/PVC 4X0.25MM2, L=2M, ROHS, SHIELD 80%                        |
| 5M-FM12CAB4X0.25                                     | M12 4PIN FEMALE ASSEMBLY CONNECTOR WITH SOLDERING TERMINALS AND CODING A AND CONTROL CABLE CU/PVC/OS/PVC 4X0.25MM2, L=5M, ROHS, SHIELD 80%                        |
| 10M-FM12CAB4X0.25                                    | M12 4PIN FEMALE ASSEMBLY CONNECTOR WITH SOLDERING TERMINALS AND CODING A AND CONTROL CABLE CU/PVC/OS/PVC 4X0.25MM2, L=10M, ROHS, SHIELD 80%                       |



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