

# 96PD-THS16B

## IP65 High Accuracy Temperature & Humidity Sensor



### Features

- Metal probe reduce electromagnetic interference
- 0 ... 100%RH measurement,
- -40 ~ 100°C Temperature Measurement Range
- IP65 Housing Classification

### Technical Data

#### Humidity

- **Measurement Range** 0 ... 100 %RH
- **Accuracy (including non-linearity, hysteresis, and repeatability)**
- **96PD-THS16B** 3%RH@25°C (20 ... 80%RH)
- **Temperature coefficient** (from 0°C to 80°C)  
typ.  $\pm 0.02\%$  RH/°C
- **Long term drift1** < 0.25% RH/year
- **Response time T632** 8 second (at 1m/s air flow)

#### Temperature

- **Measurement Range** -40 ... 100°C
- **Accuracy (including non-linearity, hysteresis, and repeatability)**  
 $\pm 0.7^\circ\text{C}$  (-40 ... 5°C)  
 $\pm 0.3^\circ\text{C}$  (5 ... 60°C)  
 $\pm 0.9^\circ\text{C}$  (60 ... 120°C)
- **Long term drift3** < 0.02°C/year

#### RS485 Modbus RTU

- **ID** 1...247
- **Baud Rate** 9600/19200/38400/57600/115200
- **Data Format** N81/N82/E81/E82/O81/O82

#### Power Supply

- **RS485 output** 12...28V<sub>DC</sub>

#### Power Consume (25 °C, V+ 24 V<sub>DC</sub>)

- **RS485 output** typ. 3mA

#### Mechanics

- **Filter material** PC, Polycarbonate
- **Probe material** Brass nickel-plated
- **Probe pressure** 10bar
- **Housing classification** IP65
- **Cable** M12 4-pin 2M female
- **Operation Temperature Range** -40 ... 100°C (-40 ... 212°F)

#### Electromagnetic compatibility

- **EN61326-1:2013 Emission**
- **CISPR11:2009+A1:2010 Group 1 Class B**
- **EN61326-1:2013 Immunity**
- **IEC 61000-4-2:2008**
- **IEC 61000-4-3:2006+A1:2007+A2:2010**
- **IEC 61000-4-8:2009**

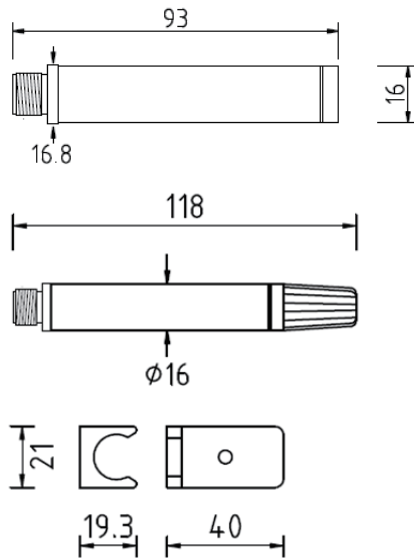
1. Typical value for operation in normal RH/T operating range. Max. value is < 0.5%RH/year. Value may be higher in environments with vaporized solvents, outgassing tapes, adhesives, packaging materials, etc.

2. Time for achieving 63% of a step function, valid at 25°C and 1m/s airflow.

3. Max. value is < 0.04°C/year.

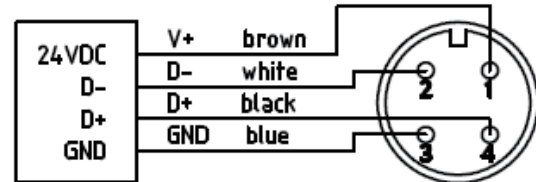
## Dimensions

Unit: mm



## Connection Diagrams

### RS-485 Output



## Physical Quantity Output Range

Item	Metric	Imperial
Temperature <u>T</u>	-40 ... 100 °C	-40 ... 212 °F
Relative Humidity <u>RH</u>	0 ... 100 %	0 ... 100 %
Dew point <u>Td</u>	-20 ... 100 °C	-4 ... 212 °F
Frost/dew point <u>Tf</u>	-20 ... 100 °C	-4 ... 212 °F
Wet bulb temperature <u>Tw</u>	-40 ... 100 °C	-40 ... 212 °F
Water vapor pressure <u>E</u>	0 ... 1013 mbar	0 ... 14.7 psi
Mixing ratio <u>R</u>	0 ... 30000 g/kg	0 ... 210000 gr/lb
Absolute humidity <u>A</u>	0 ... 550 g/m <sup>3</sup>	0 ... 240 gr/ft <sup>3</sup>
Enthalpy <u>S</u>	-40 ... 40000 kJ/kg	-10 ... 20000 BTU/lb