# Digitron

# HLX08 Series

## High-Precision Miniature Humidity / Temperature Transmitter

Accurate humidity / temperature measurement over a wide working range, fitted in a small-sized housing and high flexibility have been the main goals for the development of the HLX08 series.

Low power consumption and short start-up time support efficient energy management for battery operated systems. For this application an additional version (V10) with supply voltage 4.5-15V DC has been developed.

Calibration data and other relevant functions like linearization or temperature compensation are stored in the probe. This feature, together with the optional connector, allows for easy replacement of the probe without a need for re-adjustment of the reading device (interchangeability).

**with cable**

**with connector**

The humidity and temperature measurement are available as analogue outputs (0-1/2.5/5V) and as a digital interface (E2-interface). Easy implementation and data processing is warranted.

Humidity and temperature reading can be re-adjusted using the calibration software; available as an accessory.

## Typical Applications

**meteorology / weather stations**
**humidity / temperature data logging**
**incubators**
**fermentation chambers**
**green houses**
**snow machines**
**dry storage facilities**

## Features

**small dimensions**
**wide working range, high accuracy**
**traceable calibration**
**customer adjustment possible**
**interchangeable in seconds**
**low power consumption / short start-up time**
**analogue outputs / digital interface**

## Technical Data

### Measuring values

**Relative Humidity**

| | |
|---|---|
| Sensor | HC101 |
| Working range[1] | 0...100% RH |
| Digital output (2 wire)[2] | output value: 0.00...100.00% RH |
| Analogue output 0...100% RH | 0-1/2.5/5/10V     $-0.2mA < I_L < 0.2mA$ |
| Accuracy at 20°C (68°F) and 12V DC | ±2% RH (0...90% RH)    ±3% RH (90...100% RH) |
| | Traceable to intern. standards, administrated by NIST, PTB, BEV... |
| | (typ. 0.02% RH/°F) |

**Temperature**

| | |
|---|---|
| Sensor | Pt 1000 (DIN A) |
| Digital output (2 wire)[2] | output value: -40.00...+80.00°C (-40...176°F) |
| Analogue output | 0-1/2.5/5/10V     $-0.2mA < I_L < 0.2mA$ |
| Accuracy at 12/24V DC | |
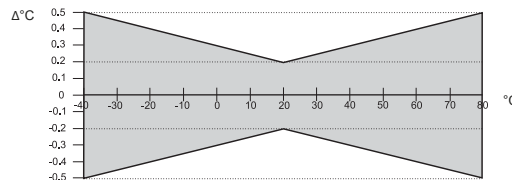


### General

| | | |
|---|---|---|
| Supply voltage | output 0-1V / 0-2.5V | 4.5-15V DC or 7-30V DC |
| | output 0-5V | 7-30V DC |
| | output 0-10V | 12-30V DC |
| Current consumption | typ. < 1.3mA | |
| Digital interface | E2-interface    level = 3.3V / ±0.1V | |
| Housing | polycarbonate / IP65 | |
| Sensor protection | metal grid filter | |
| Electromagnetic compatibility | EN61326-1     EN61326-2-3 | |
| | Industrial Environment | |
| Temperature ranges | working temperature: -40...80°C (-40...176°F) | |
| | storage temperature: -40...80°C (-40...176°F) | |

1) refer to the working range of the humidtiy sensor HC101     2) serial protocol

$C\epsilon$

# Dimensions (mm)

### HLX08 with cable (Type E)

61 (2.4") · M12x1 · 12 (0.5") · 25 (1") · 73 (2.9")
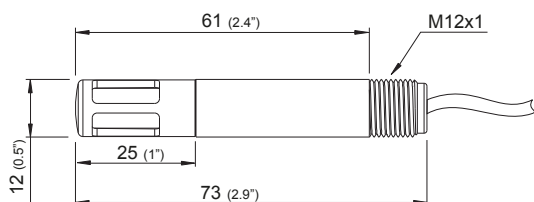
### HLX08 with connector (Type D)

83 (3.3") · M16x1.5 · 12 (0.5") · 61 (2.4") · 71 (2.8") · connector M12 (8-pole)
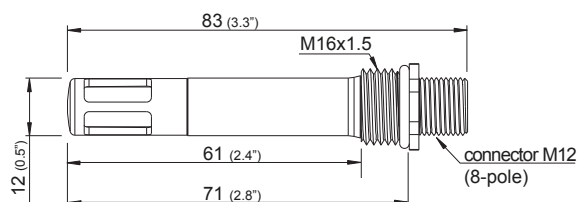
# Connection Diagram

## Type E:

| | Temp. active | Temp. passive, 4-wire |
|---|---|---|
| T-passive | white (not connected) | white, black |
| T-passive | blue (not connected) | blue, violet |
| GND | pink | pink |
| T-out | grey | grey (not connected) |
| RH-out | yellow | yellow |
| SCL } E2-inerface | green | green |
| SDA | brown | brown |
| +UB | red | red |

## Type D:

| 1 | T-passive |
|---|---|
| 2 | SDA } E2-interface |
| 3 | SCL |
| 4 | RH-out |
| 5 | T-out |
| 6 | GND |
| 7 | T-passive |
| 8 | +UB |
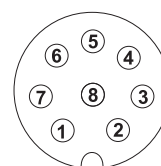
# Ordering Guide

| HOUSING | MODEL | OUTPUT | SUPPLY | T-SENSOR (passive, 4-wire) | TYPE |
|---|---|---|---|---|---|
| polycarbonate **(P)** | humidity active / temperature active **(FT)**<br>humidity active / temperature passive **(FP)** | 0 - 1V [1] **(1)**<br>0 - 2.5V [1] **(7)**<br>0 - 5V [2] **(2)**<br>0 - 10V [2] **(3)** | 4.5 - 15V DC **(V10)**<br>7 - 30V DC **(V11)** | Pt 100 DIN A **(A)**<br>Pt 1000 DIN A **(C)** | with connector **(D)**<br>with cable **(E)** |

**HLX08-**

1) possible with supply 4.5 - 15V DC (V10) or 7 - 30V DC (V11)
2) possible with supply 7 - 30V DC (V11) only

| FILTER | COATING | CABLE LENGTH (Type E only) | T-SCALING |
|---|---|---|---|
| metal grid filter **(6)** | without coating **(no code)**<br>with coating **(HC01)** | 1m (3.3ft) **(01)**<br>2m (6.6ft) **(02)**<br>5m (16.4ft) **(05)** | -40...80 **(T22)**<br>-40...60 **(T02)**<br>-30...70 **(T08)**<br>-20...80 **(T24)**<br>-20...50 **(T48)**<br>other **(Txx)** |

# Order Example

### HLX08-PFT2V11E602T22

| | | | |
|---|---|---|---|
| housing: | polycarbonate | filter: | metal grid filter |
| model: | humidity active / temp. active | coating: | without |
| output: | 0 - 5V | cable length: | 2m (6.6ft) |
| supply: | 7 - 30V DC | T-scaling: | -40...80°C (-40...176°F) |
| type: | with cable | | |

# Accessories / Replacement Parts

- M12 connection cable for type D, length 1,5m (5ft) (HA010322)
- M12 connection cable for type D, length 3m (10ft) (HA010323)
- M12 connection cable for type D, length 5m (16.4ft) (HA010324)
- M12 connection cable for type D, length 10m (32.8ft) (HA010325)
- E2-interface - RS232 converter (incl. calibration software) for testing purposes and customer adjustment (HA011005)
- radiation shield (HA010506)
- M12 female socket with wires (HA010703)
- M12 female cable connector assembly possible (HA010704)
- metal grid filter (HA010113)