

EE074

Temperature Probe with Modbus RTU

The EE074 probe measures accurately the temperature (T) of air, gases and liquids in demanding process and climate control applications such as food and beverages, pharma and biotech, clean rooms or agriculture.

Robust and Reliable

The IP68 stainless steel enclosure in combination with fully encapsulated electronics leads to an outstanding long term measurement performance in harsh and condensing environment.

Easy Installation

The M12x1 connector and the choice of mounting accessories minimize the installation costs. The immersion well with innovative clamp ring allows for safe installation in pressurized liquids.

Configurable and Adjustable

An optional adapter and the free PCS10 Product Configuration Software facilitates the setup and adjustment of the EE074.



Features

User configurable and adjustable
 » Free configuration software



Connection
 » RS485 with Modbus RTU
 » M12x1 connector
 » User configurable

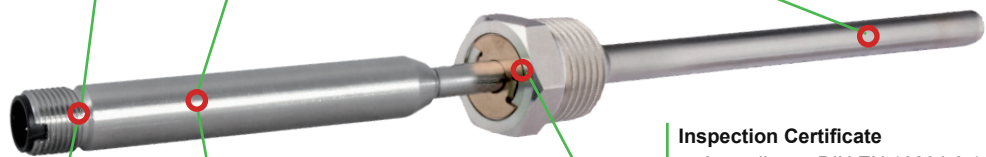
Mechanical construction
 » IP68 stainless steel enclosure
 » Encapsulated electronics

Installation
 » Various probe lengths
 » Immersion well up to 25 bar
 » Wall mounting clip

Measurement performance
 » ± 0.1 °C accuracy
 » Wide working range up to -70...105 °C
 » Compatible with dry block calibrators

Inspection Certificate
 » According to DIN EN 10204-3.1

Immersion well
 » Innovative mounting spring
 » No fastening screw, no tools required



E+E Modular Sensor Platform

The EE074 is compatible with the Sigma 05 host device of the E+E Modular Sensor Platform. Together they become a versatile, plug-and-play modular T sensor with analogue outputs and optional display. Besides EE074, Sigma 05 accommodates also other E+E intelligent sensing probes. See www.epluse.com/Sigma05 for further details.



Technical Data

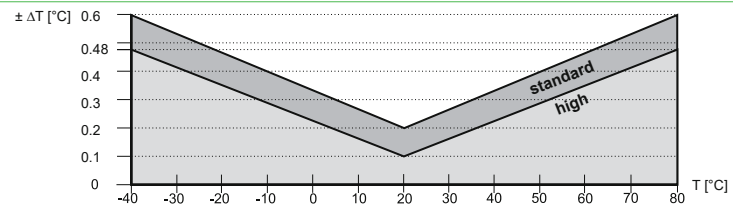
Measurand

Temperature sensor

Accuracy¹⁾

incl. hysteresis, non-linearity,
temperature dependency of electronics
and repeatability

Pt1000 Class A



Resolution

0.01 °C

Response time t_{63}

75 s in air @ 3.0 m/s

21 s in liquid

Measuring interval

1 s

General

Digital interface

RS485 (EE074 = 1 unit load)

Protocol

Modbus RTU

Default settings

Baud rate 9600²⁾, parity even, 1 stop bit, Modbus address 233

Power supply class III

10 - 28 V DC

Current consumption, typ.

3 mA

Enclosure material

Stainless steel 1.4404 / AISI 316 L

Protection rating³⁾

IP68 (electrical connection IP67)

Connector

M12x1, 5 poles, stainless steel

Electromagnetic compatibility

EN 61326-1 EN 61326-2-3
Industrial Environment
FCC Part15 Class A ICES-003 Class A



Working range electronics

-40...80 °C (-40... 176 °F) / 0...100 % RH

probe (70 & 155 mm)

-40...80 °C (-40... 176 °F) / 0...100 % RH

probe (305 mm)

-70...105 °C (-94... 221 °F) / 0...100 % RH

Storage conditions

-40...80 °C (-40... 176 °F) / 0...90 % RH

Immersion well

Material

Brass nickel-plated

Stainless steel (tube: 1.4571 / 316Ti, mounting thread: 1.4404 / 316L)

Pressure rating

15 bar (218 psi), brass

25 bar (363 psi), stainless steel

1) Traceable to intern. standards, administrated by NIST, PTB, BEV,... The accuracy statement includes the uncertainty of the factory calibration with an enhancement factor $k=2$ (2-times standard deviation). The accuracy was calculated in accordance with EA-4/02 and with regard to GUM (Guide to the Expression of Uncertainty in Measurement). The accuracy is defined at a 24 V DC supply, 9600 Baud rate, without termination resistor and a polling interval of ≥ 1 second. For the accurate measurement in air, please observe the installation note in the product manual.

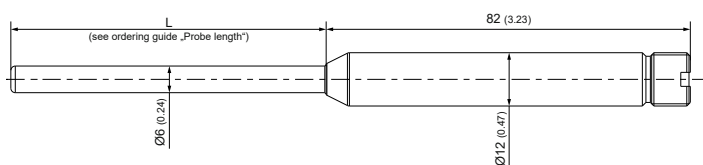
2) Supported baud rates 9600, 19200, 38400, 57600, 76800 and 115200; more details about communication setting: See User Guide and Modbus Application Note at www.epluse.com/EE074

3) The IP67 protection rating applies when plugged into an appropriate M12x1 female connector.

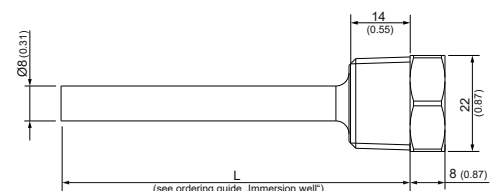
Dimensions

Values in mm (inch)

Temperature Probe



Immersion Well



Ordering Guide

Position 1 - Temperature Probe

| | | EE074- |
|--------------|-----------------|--------|
| Probe length | 70 mm (2.82") | L70 |
| | 155 mm (6.16") | L155 |
| | 305 mm (12.07") | L305 |

Position 2 - Mounting Accessories (optional)

| | | | R½" ISO | ½" NPT |
|----------------|--|-----------------|----------|----------|
| Immersion well | 50 mm (1.97") | brass | HA400101 | HA400111 |
| | | stainless steel | HA400201 | HA400211 |
| | 100 mm (3.94") | brass | HA400104 | HA400114 |
| | | stainless steel | HA400204 | HA400214 |
| | 135 mm (1.97") | brass | HA400102 | HA400112 |
| | | stainless steel | HA400202 | HA400212 |
| | 285 mm (11.22") | brass | HA400103 | HA400113 |
| | | stainless steel | HA400203 | HA400213 |
| Flanges & Clip | Plastic flange Ø 6 mm (0.24") | | HA401101 | |
| | Stainless steel flange Ø 12 mm (0.47") | | HA010201 | |
| | Wall mounting clip Ø 12 mm (0.47") | | HA010211 | |

Order Example

Position 1:

EE074-L305

Probe length: 305 mm

Position 2 (optional):

HA400203

Immersion well: R½" ISO, stainless steel, 285 mm (11.22")

Accessories (See data sheet "Accessories")

| | | |
|---|----------------|--|
| Modbus configuration adapter | | HA011018 |
| PCS10 Product Configuration Software | | PCS10 (free download: www.epluse.com/PCS10) |
| Connection cable M12 - flying leads | 1.5 m (59.06") | HA010819 |
| | 5 m (196.85") | HA010820 |
| | 10 m (393.70") | HA010821 |
| T-coupler M12 - M12 | | HA030204 |
| M12 cable connector for self assembly | | HA010707 |
| Protection cap for the M12 cable socket | | HA010781 |
| Protection cap for the M12 plug | | HA010782 |