

# 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

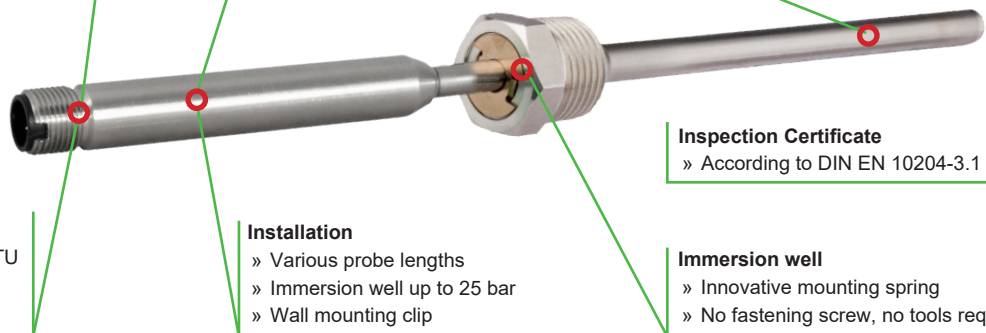
**Mechanical construction**  
 » IP68 stainless steel enclosure  
 » Encapsulated electronics

**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](http://www.epluse.com/sigma05) for further details.



## Technical Data

### Measurand

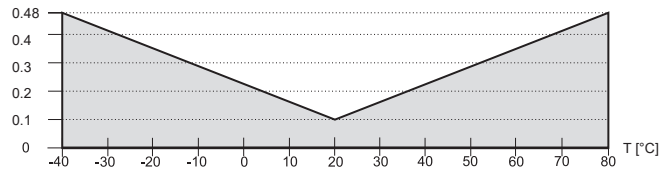
Temperature sensor

Pt1000 Class A

Accuracy<sup>1)</sup>

$\pm \Delta T$  [°C]

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



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 9600<sup>2)</sup>, parity even, 1 stop bit, Modbus address 233

Power supply class III<sup>3)</sup>

10 - 28 V DC

Current consumption, typ.

3 mA

Enclosure material

Stainless steel 1.4404 / AISI 316 L

Protection rating<sup>4)</sup>

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  
probe (70 & 155 mm)  
probe (305 mm)

-40...80 °C (-40... 176 °F) / 0...100 %RH  
-40...80 °C (-40... 176 °F) / 0...100 %RH  
-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  $\geq 1$  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](http://www.epluse.com/EE074)

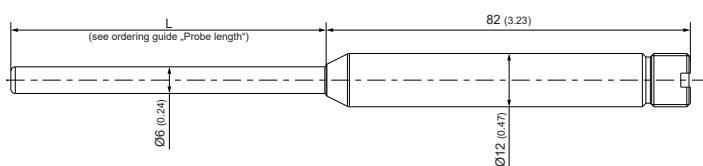
3) USA & Canada: class 2 supply required.

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

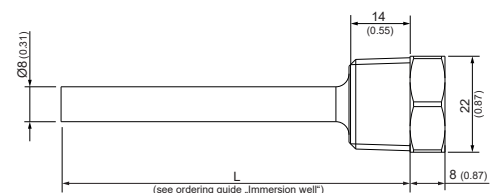
## Dimensions

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

(For further information, see data sheet "Accessories")

Modbus configuration adapter		HA011018
PCS10 Product Configuration Software		PCS10 (free download: <a href="http://www.epluse.com/PCS10">www.epluse.com/PCS10</a> )
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