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# + Datasheet EE671

HVAC Air Velocity Probe



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# EE671

## HVAC Air Velocity Probe

The compact EE671 air velocity probe is dedicated for HVAC (Heating, Ventilation, Air Conditioning) applications. It operates on the hot-film anemometer principle and offers high accuracy and excellent long-term stability.

### Reliability

The flow sensing element combines state-of-the-art E+E thin-film technology with modern transfer molding technology. By this, the EE671 is very robust and highly insensitive to contamination.

### Easy installation

EE671 is available with M12 connector. The alignment strip on the probe facilitates the correct positioning in the air flow. The mounting flange within the scope of supply enables precise setting of the immersion depth.

### Versatility

The measured data up to 20 m/s (4000 ft/min) is available either on the analogue voltage output or on the RS485 interface with Modbus RTU protocol.

### Configurable and Adjustable

The free PCS10 Product Configuration Software together with an optional adapter facilitates the configuration and adjustment of the EE671.



EE671 with plug

# Features



## Flange (in the scope of supply)

- Enables precise setting of the immersion depth.
- Easy and quick mounting
- Ø12 mm (0.47")
- Material: PA6-GF30 (Polyamide - glass fiber)

## Sensing Element

- High accuracy
- State-of-the-art
  - E+E thin-film technology
  - Transfer molding technology
- Insensitive to contamination
- Very robust

## Probe head

- IP50 protection rating
- PC (Polycarbonate)

## Probe

- IP54 protection rating
- PC (Polycarbonate)

## Connection

- RS485 with Modbus RTU
- Voltage output: 0 - 10 V

## Configurable and adjustable

- Free PCS10 Product Configuration Software



# Features

## E+E Modular Sensor Platform

The EE671 is compatible with the Sigma 05 host device of the E+E Modular Sensor Platform. Together they become a versatile, plug-and-play modular air velocity sensor with analogue outputs and optional display. Besides EE671, Sigma 05 accommodates also other E+E intelligent sensing probes. See [www.epluse.com/sigma05](http://www.epluse.com/sigma05) for further details.

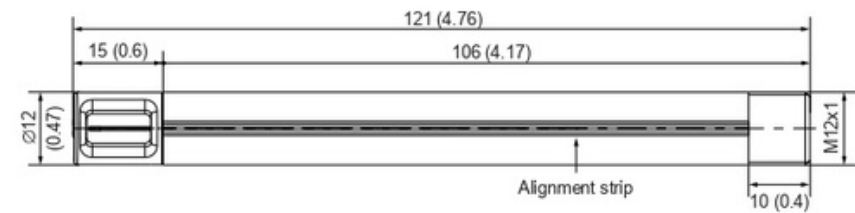


Sigma 05 with EE671

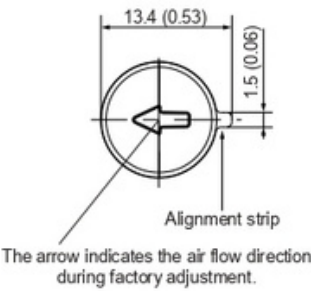
# Dimensions

Values in mm (inch)

## Probe with M12x1 plug

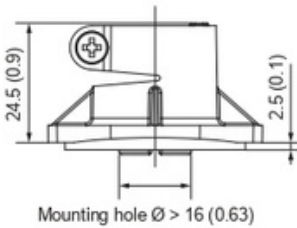
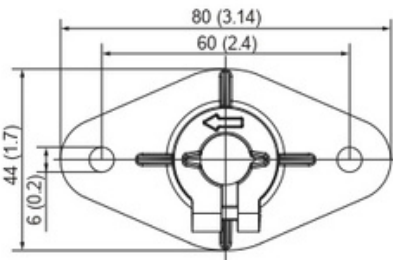


## Front view sensing head



## Flange

Included in the scope of supply



# Technical Data

## Measurands

| Air Velocity (v)                                                                                                                                                                                                     |                                                                                                                                                                                                           |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Measuring range                                                                                                                                                                                                      | 0...5 m/s (0...1000 ft/min)<br>0...10 m/s (0...2000 ft/min)<br>0...15 m/s (0...3000 ft/min)<br>0...20 m/s (0...4000 ft/min)                                                                               |
| Accuracy <sup>1)</sup><br>in air @ 20 °C (68 °F) and 1013 hPa (14.7 psi)<br>0.5...5 m/s (100...1000 ft/min)<br>1... 10 m/s (200...2000 ft/min)<br>1... 15 m/s (200...3000 ft/min)<br>1... 20 m/s (200...4000 ft/min) | ±(0.2 m/s + 3 % of mv / 40 ft/min + 3 % of mv )<br>±(0.3 m/s + 4 % of mv / 60 ft/min + 4 % of mv )<br>±(0.35 m/s + 5 % of mv / 70 ft/min + 5 % of mv )<br>±(0.4 m/s + 6 % of mv / 80 ft/min + 6 % of mv ) |
| Response time t <sub>90</sub> , typ.                                                                                                                                                                                 | 4 s                                                                                                                                                                                                       |

1) The accuracy statement includes the uncertainty of the factory calibration with an enhancement factor k=2 (2-fold standard deviation). The tolerance was calculated in accordance with EA-4/02 following the GUM (Guide to the Expression of Uncertainty in Measurement).

# Technical Data

## Outputs

|                                                    |                                                         |
|----------------------------------------------------|---------------------------------------------------------|
| Analogue                                           |                                                         |
| Output signal                                      | 0 - 1 / 5 / 10 V <sup>1)</sup> max. 1 mA                |
| 1) 0 - 10 V version only with supply voltage ≥15 V |                                                         |
| Digital                                            |                                                         |
| Digital interface                                  | RS485 (EE671 = 1 unit load)                             |
| Protocol                                           | Modbus RTU                                              |
| Factory settings                                   | 9 600 Baud, parity even, 1 stop bit, Modbus address 238 |
| Supported Baud rates                               | 9 600, 19 200 and 38 400                                |
| Measured data types                                | FLOAT32 and INT16                                       |

## General

|                                                                                                                                                      |                                                                                                                                                                         |                            |                        |
|------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------|------------------------|
| Power supply class III <br>USA & Canada: Class 2 supply necessary | 10 - 29 V DC                                                                                                                                                            |                            |                        |
| Current consumption, max.<br>@ 20 m/s (4000 ft/min)                                                                                                  | 50 mA                                                                                                                                                                   |                            |                        |
| Humidity working range                                                                                                                               | 5...95 %RH, non-condensing                                                                                                                                              |                            |                        |
| Temperature range                                                                                                                                    | Operation                                                                                                                                                               | -20...60 °C (-4...140 °F)  |                        |
|                                                                                                                                                      | Storage                                                                                                                                                                 | -30...60 °C (-22...140 °F) |                        |
| Connection                                                                                                                                           | Plug                                                                                                                                                                    | M12 connector, 5 poles     |                        |
| Material                                                                                                                                             | Enclosure and Probe head                                                                                                                                                | PC (Polycarbonate)         |                        |
| Protection rating                                                                                                                                    | Probe                                                                                                                                                                   | IP54                       |                        |
|                                                                                                                                                      | Probe head                                                                                                                                                              | IP50                       |                        |
| Electromagnetic compatibility <sup>1)</sup>                                                                                                          | EN 61326-1                                                                                                                                                              | EN 61326-2-3               | Industrial environment |
|                                                                                                                                                      | FCC Part15 Class B                                                                                                                                                      | ICES-003 Class B           |                        |
| Conformity                                                                                                                                           |   |                            |                        |
| Configuration and adjustment                                                                                                                         | PCS10 Product Configuration Software ( <a href="#">free download</a> ) and an optional configuration adapter                                                            |                            |                        |

1) The EE671 is not short-circuit-proof and not surge-proof (ESD-sensitive device).

# Ordering Guide

| Feature                | Description            | Code   |    |
|------------------------|------------------------|--------|----|
| Hardware Configuration |                        | EE671- |    |
|                        | Type                   | T15    |    |
|                        | Output                 | A1     |    |
|                        |                        | A2     |    |
|                        |                        | A3     |    |
|                        |                        |        | J3 |
|                        | Measuring range        | HV25   |    |
|                        |                        | HV26   |    |
|                        |                        | HV27   |    |
|                        |                        | HV28   |    |
| SW                     | Protocol <sup>1)</sup> |        | P1 |

1) Factory setting: Baud rate 9600, parity even, 1 stop bit, Modbus address 238. Other factory settings available upon request. Baud rate choice: 9 600 / 19 200 / 38 400. Modbus Map and communication setting: see User Guide and Modbus Application Note at [www.epluse.com/ee671](http://www.epluse.com/ee671).

# Order Example

EE671-T15A2HV26

| Feature         | Code | Description                   |
|-----------------|------|-------------------------------|
| Type            | T15  | With plug                     |
| Output          | A2   | 0 - 5 V                       |
| Measuring range | HV26 | 0...10 m/s (0...2 000 ft/min) |

# Accessories

For further information see datasheet [Accessories](#).

| Description                                                                                                            | Code     |
|------------------------------------------------------------------------------------------------------------------------|----------|
| E+E Product Configuration Software<br>(Free download: <a href="http://www.epluse.com/pcs10">www.epluse.com/pcs10</a> ) | PCS10    |
| Connection Cable M12x1 Socket 5 Poles / Free Cable Ends                                                                |          |
| 1.5 m (4.9 ft)                                                                                                         | HA010819 |
| 5 m (16.4 ft)                                                                                                          | HA010820 |
| 10 m (32.8 ft)                                                                                                         | HA010821 |
| Connection cable with ferrules PVC (Polyvinylchloride), 5x0.25 mm <sup>2</sup><br>(AWG23)                              |          |
| 0.5 m (1.64 ft)                                                                                                        | HA010831 |
| 2 m (6.56 ft)                                                                                                          | HA010832 |
| M12x1 cable connector, 4 poles, for self assembly                                                                      | HA010707 |
| Protection cap for the M12 plug                                                                                        | HA010782 |
| Protection cap for the M12 cable socket                                                                                | HA010781 |
| Modbus configuration adapter                                                                                           | HA011018 |
| Y-style splitter M12 - M12                                                                                             | HA030204 |

Company Headquarters &  
Production Site

**E+E Elektronik Ges.m.b.H.**  
Langwiesen 7  
4209 Engerwitzdorf | Austria  
T +43 7235 605-0  
F +43 7235 605-8  
info@epluse.com  
www.epluse.com

Subsidiaries

**E+E Sensor Technology (Shanghai) Co., Ltd.**  
T +86 21 6117 6129  
info@epluse.cn

**E+E Elektronik France SARL**  
T +33 4 74 72 35 82  
info.fr@epluse.com

**E+E Elektronik Deutschland GmbH**  
T +49 6171 69411-0  
info.de@epluse.com

**E+E Elektronik India Private Limited**  
T +91 990 440 5400  
info.in@epluse.com

**E+E Elektronik Italia S.r.l.**  
T +39 02 2707 86 36  
info.it@epluse.com

**E+E Elektronik Korea Ltd.**  
T +82 31 732 6050  
info.kr@epluse.com

**E+E Elektronik Corporation**  
T +1 847 490 0520  
info.us@epluse.com



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datasheet\_EE671 | Version v2.6 | 10-2024  
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