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+ Datasheet EE671

HVAC Air Velocity Probe



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



Connection

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

Probe head

- IP50 protection rating
- PC (Polycarbonate)

Probe

- IP54 protection rating
- PC (Polycarbonate)

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 for further details.

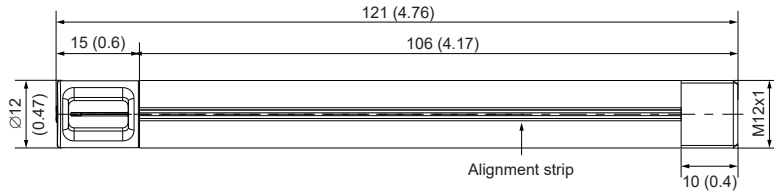


Sigma 05 with EE671

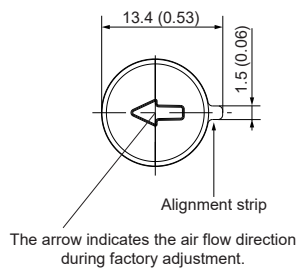
Dimensions

Values in mm (inch)

Probe with M12x1 plug

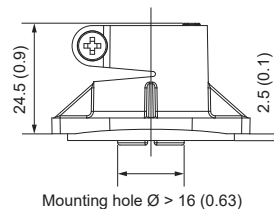
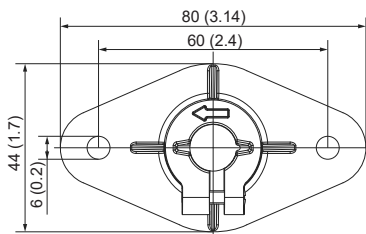


Front view sensing head



Flange

Included in the scope of supply



Technical Data

Measurands

Air Velocity (v)

Measuring range	0...5 m/s (0...1000 ft/min) 0...10 m/s (0...2000 ft/min) 0...15 m/s (0...3000 ft/min) 0...20 m/s (0...4000 ft/min)
Accuracy¹⁾ in air @ 20 °C (68 °F) and 1013 hPa (14.7 psi)	mv = measured value
0.5...5 m/s (100...1000 ft/min)	$\pm(0.2 \text{ m/s} + 3 \% \text{ of mv} / 40 \text{ ft/min} + 3 \% \text{ of mv})$
1... 10 m/s (200...2000 ft/min)	$\pm(0.3 \text{ m/s} + 4 \% \text{ of mv} / 60 \text{ ft/min} + 4 \% \text{ of mv})$
1... 15 m/s (200...3000 ft/min)	$\pm(0.35 \text{ m/s} + 5 \% \text{ of mv} / 70 \text{ ft/min} + 5 \% \text{ of mv})$
1... 20 m/s (200...4000 ft/min)	$\pm(0.4 \text{ m/s} + 6 \% \text{ of mv} / 80 \text{ ft/min} + 6 \% \text{ of mv})$
Response time t_{90}, 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 ¹⁾ max. 1 mA
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1) 0 - 10 V version only with supply voltage ≥15 V

Digital

Digital interface	RS485 (EE671 = 1 unit load)
Protocol	Modbus RTU
Factory settings	9600 Baud, parity even, 1 stop bit, Modbus address 238
Supported Baud rates	9600, 19200 and 38400
Measured data types	FLOAT32 and INT16

General

Power supply class III  USA & Canada: Class 2 supply necessary	10 - 29 V DC
Current consumption , max. @ 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 Probe head	IP54 IP50
Electromagnetic compatibility ¹⁾	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 (free download) 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	0 - 1 V	A1	
		0 - 5 V	A2	
		0 - 10 V	A3	
		RS485		J3
	Measuring range	0...5 m/s (0...1000 ft/min)	HV25	
0...10 m/s (0...2000 ft/min)		HV26		
0...15 m/s (0...2000 ft/min)		HV27		
0...20 m/s (0...4000 ft/min)		HV28		
SW Protocol ¹⁾	Modbus RTU		P1	

1) Factory setting: Baud rate 9600, parity even, 1 stop bit, Modbus address 238. Other factory settings available upon request. Baud rate choice: 9600 / 19200 / 38400. Modbus Map and communication setting: see User Guide and Modbus Application Note at www.epluse.com/ee671.

Order Example

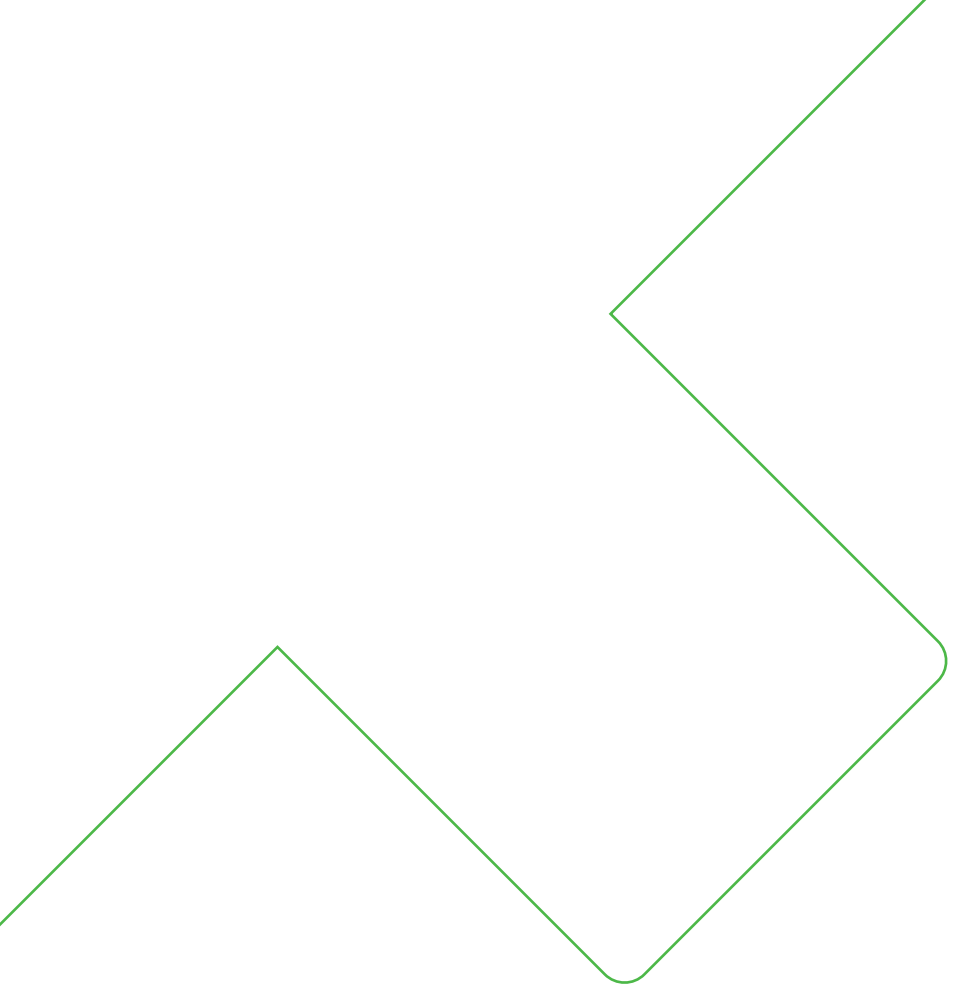
EE671-T15A2HV26

Feature	Code	Description
Type	T15	With plug
Output	A2	0 - 5 V
Measuring range	HV26	0...10 m/s (0...2000 ft/min)

Accessories

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

Description	Code
E+E Product Configuration Software (Free download: www.epluse.com/pcs10)	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 PVC (Polyvinylchloride), 5x0.25 mm2 (AWG23) with ferrules	
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



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