

EE650

Air Velocity Transmitter for HVAC Applications

The EE650 air velocity transmitter is dedicated for accurate and reliable measurement in building automation and ventilation applications.

EE650 employs the new VTQ air velocity sensor element, which operates on the thermal anemometer principle and is manufactured by E+E in state-of-the-art thin film technology. Due to its innovative design, the VTQ sensor element is very robust and highly insensitive to pollution, which leads to outstanding long-term performance.

The measuring range 0-10/15/20 m/s (0-2000/3000/4000 ft/min), the output signal 4-20 mA or 0-10 V as well as the response time 1 or 4 seconds are selectable by jumpers.

The enclosure design and the mounting flange included in the scope of supply allow for easy installation or replacement. EE650 can be adjusted by the user via digital interface.



EE650 - Duct mounting



EE650 - Remote sensor probe

Features

Bayonet Screws

- » Open/closed with a ¼ rotation

Appropriate for US mounting requirements

- » Knock-out for ½" conduit fitting

Electronics on the underside of the PCB

- » Optimum protection against mechanical damage during installation

External mounting holes

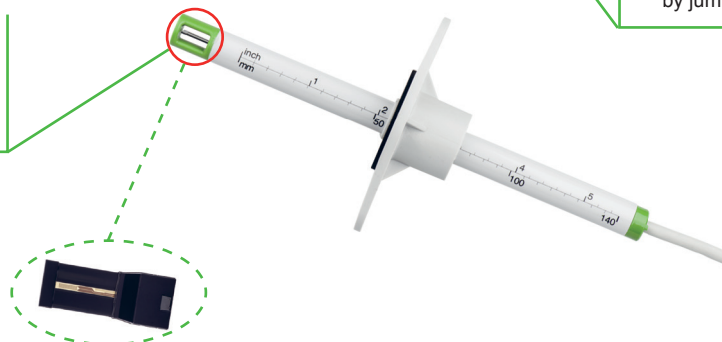
- » Mounting with a closed cover
- » Electronics protected against construction site pollution

Jumper adjustment

- » Measuring range, output signal and response time selectable by jumper.

E+E Air velocity sensor VTQ

- » High insensitivity to pollution
- » Long-term stable
- » Measurement from 0.2 m/s (40 ft/min)



VTQ - Air velocity sensor

VTQ is the new thin film air velocity sensor element from E+E Elektronik and features exceptional mechanical stability and resistance to pollution. These are achieved by combining the advantages of thin film anemometer operation principle with those of state-of-the-art transfer-moulding technology.

Hot-film anemometer measuring principle

All air velocity measuring devices from E+E Elektronik are based on the thermal anemometer principle and include E+E thin-film sensor elements. The thermal flow measurement offers special advantages compared to differential pressure or vane probes:

- » Wear-free due to no moving parts
- » Negligible pressure loss in the duct thanks to compact probe design
- » Outstanding accuracy over the entire measuring range
- » Volume flow measurement possible without additional sensors
- » Easy installation
- » Excellent price/performance ratio

Technical data

Measuring range

Working range ¹⁾	0...10 m/s (0...2000 ft/min)	
	0...15 m/s (0...3000 ft/min)	
	0...20 m/s (0...4000 ft/min) (factory setting)	
Output ¹⁾	0 - 10 V	-1 mA < I _L < 1 mA
0...10 m/s / 0...15 m/s / 0...20 m/s	4 - 20 mA (factory setting)	R _L < 500 Ω (linear, 3-wires)
Accuracy at 20 °C (68 °F), 45 % RH, 1013 hPa	0.2...10 m/s (40...2000 ft/min)	± (0.2 m/s (40 ft/min) + 3 % of m. v.)
	0.2...15 m/s (40...3000 ft/min)	± (0.2 m/s (40 ft/min) + 3 % of m. v.)
	0.2...20 m/s (40...4000 ft/min)	± (0.2 m/s (40 ft/min) + 3 % of m. v.)
Response time τ ₉₀ ^{1) 2)}	typ. 4 sec. (factory setting) or	typ. 1 sec. at constant temperature

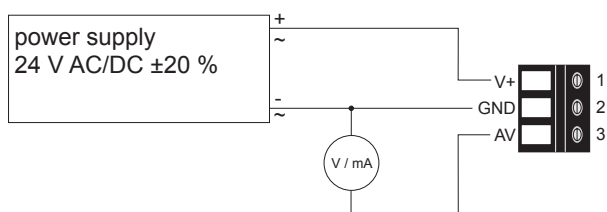
General

Power supply	24V AC/DC ± 20%	
Current consumption	for AC supply	max. 170 mA
	for DC supply	max. 70 mA
Electrical connection	screw terminals max. 1.5 mm ² (AWG 16) ²	
Cable gland	M16x1,5	
Electromagnetic compatibility	EN61326-1	EN61326-2-3
	Industrial Environment	
Housing material	Polycarbonate, UL94V-0 approved	
Protection class	Enclosure IP65 / NEMA 4, remote probe IP20	
Temperature range	working temperature probe	-25 ... +50 °C (-13...122 °F)
	working temperature electronic	-10 ... +50 °C (14...122 °F)
	storage temperature	-30 ... +60 °C (-22...140 °F)
Working range humidity	5...95 % RH (non-condensing)	

1) Selectable by jumper

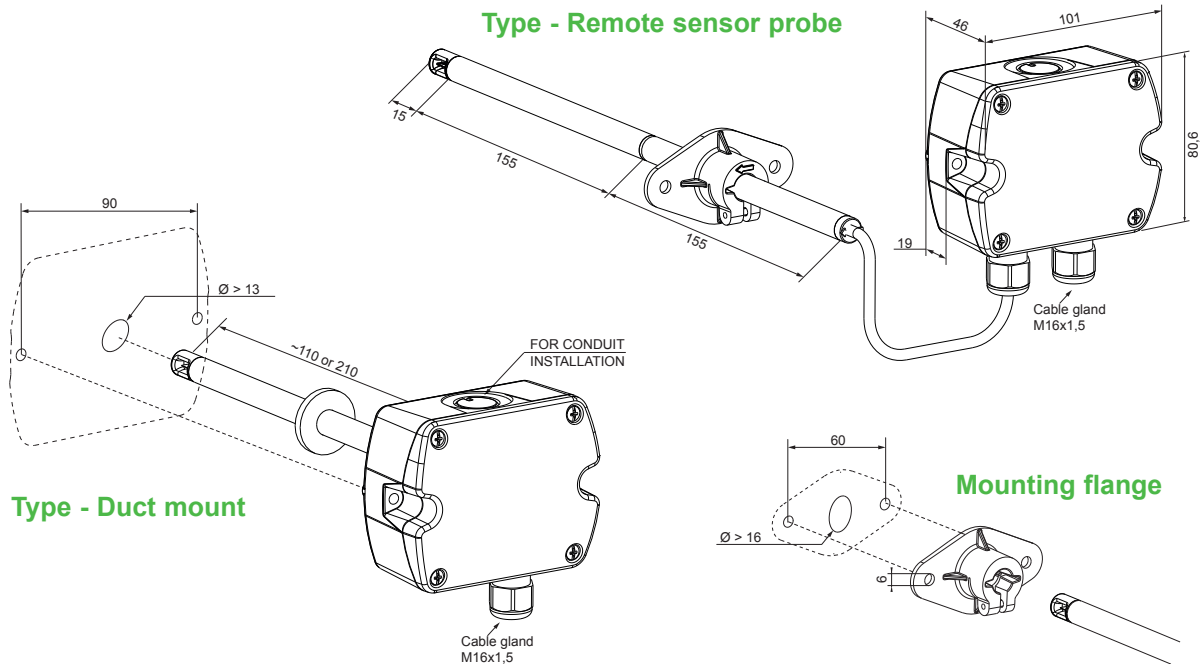
2) Response time τ₉₀ is measured from the beginning of a step change of air velocity to the moment of reaching 90% of the step.

Connection Diagram



V+ = supply voltage
GND = ground
AV = air velocity output

Dimensions (mm)



Ordering Guide

		EE650-	
Type	duct mount remote sensor probe	T2	T3
Analogue output	4-20 mA (selectable by jumper to 0-10 V)	A6	A6
Probe length	100 mm 200 mm 300 mm (2 x 150 mm)	L100 L200	L300
Cable length	not applicable 1 m 2 m 5 m 10 m	no code	K1 K2 K5 K10

Order Example

EE650-T2A6L200

Type: duct mount
 Analogue output: 4-20 mA
 Probe length: 200 mm

EE650-T3A6L300K2

Type: remote sensor probe
 Analogue output: 4-20 mA
 Probe length: 300 mm
 Cable length: 2 m

Note:
 Measuring range, output signal
 and response time selectable by
 jumper.

Scope of Supply

- EE650 Transmitter according to ordering guide
- Cable gland
- Mounting flange
- Mounting materials
- Protection cap
- Instruction manual
- Two self-adhesive labels for configuration changes (see user guide at www.epluse.com/relabeling)
- Test report according to DIN EN10204 - 2.2

Accessories

Product configuration adapter
 Product configuration software
 Power supply adapter

see data sheet EE-PCA
 EE-PCS (free download: www.epluse.com/EE650)
 V03 (see data sheet Accessories)