

EE70 Series

High Accuracy Air Velocity and Temperature Transmitter

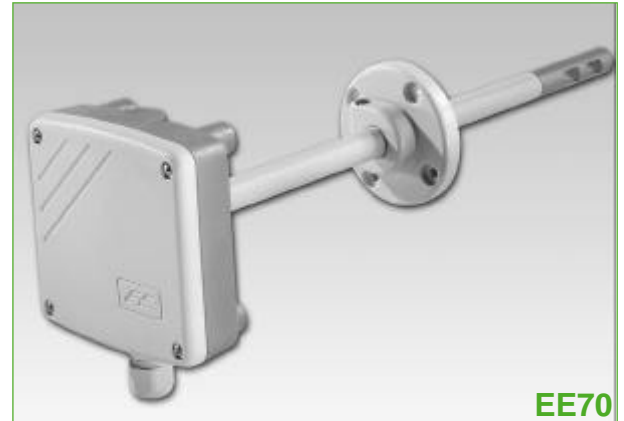
EE70 air velocity and temperature transmitters are the ideal solution for high-end applications in the field of HVAC, clean rooms, ventilation, filter control and chemical hoods.

The calculation of the air velocity, linearisation and full temperature compensation are carried out by a high performance micro-controller.

EE70 transmitters are using E+E thin film sensors operating on an innovative hot film anemometer principle. This guarantees excellent accuracy in the low range, even below 0.5 m/s, which is not possible for conventional anemometers with commercial temperature sensors or NTC bead thermistors. Furthermore, the E+E sensor is much more insensitive to dust and dirt than all other anemometer principles, which increases reliability and reduces maintenance costs.

EE70 Series are available with current or voltage output, an integrated LCD display and as a version with remote sensing probe.

Very low angular dependence enables easy, cost-effective installation.



EE70

Typical Applications

medical room
filter control

Features

high accuracy
two measured variables in one instrument
temperature compensated
low sensitivity to shocks
good resistance to pollutants
almost nondirectional
easy mounting

Technical Data

Measuring values

Air Velocity

| | | |
|---|--|---|
| Working range | 0 ... 2 m/s (0 ... 390 ft/min) | |
| | 0 ... 10 m/s (0 ... 1,960 ft/min) | |
| | 0 ... 20 m/s (0 ... 3920 ft/min) | |
| Output appropriate 0-2 / 0-5 / 0-20 m/s | 0 - 10 V | -1 mA < I _L < 1 mA (linear, 3 wire) |
| | or 4 - 20 mA | R _L < 500 Ohm (linear, 3 wire) |
| Accuracy at 45 %RH and 1013 hPA | 0 ... 2 m/s (0 ... 390 ft/min) | ± (0.05 m/s (10 ft/min) + 0.5 % of measuring value) |
| | 0 ... 10 m/s (0 ... 1,960 ft/min) | ± (0.1 m/s (20 ft/min) + 2 % of measuring value) |
| | 0 ... 20 m/s (0 ... 3920 ft/min) | ± (0.2 m/s (40 ft/min) + 2 % of measuring value) |
| Response time τ ₉₀ ¹⁾ | < 1.5 s | |
| Angular dependence at 10 m/s | < 0.3 m/s (60 ft/min) at Δα < 10 deg | |

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

Temperature

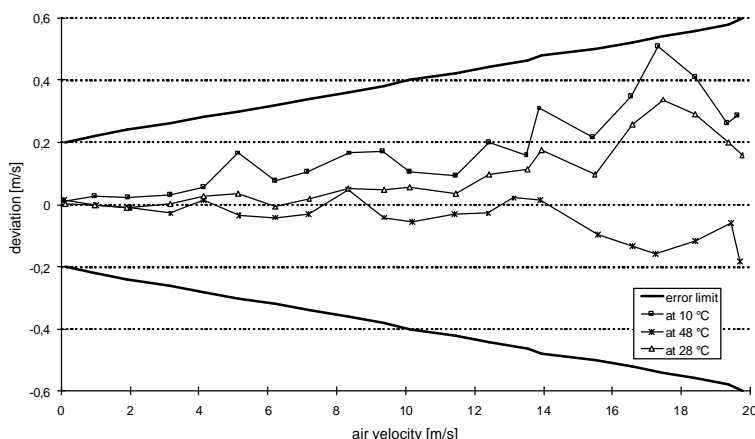
| | | |
|-------------------------------|------------------------------|--|
| Working range temperature | 0 ... 50 degC (32 ... 122°F) | |
| Output appropriate | 0 - 10 V | -1 mA < I _L < 1 mA (linear, 3 wire) |
| 0 - 50 degC | or | |
| | 4 - 20 mA | R _L < 500 Ohm (linear, 3 wire) |
| Accuracy at 20 degC | ± 0.5 degC (0.9°F) | |
| Response time t ₉₀ | < 1.5 s | |

General

| | | |
|-------------------------------|--|------------------|
| Supply voltage | 24 VDC ± 20 % | |
| Current consumption | max 150 mA | |
| Electrical connection | screw terminals max. 1.5 mm ² | |
| Electromagnetic compatibility | EN 50081-1 | |
| | EN 50082-1 | |
| Housing/protection class | Polycarbonat / IP65 | |
| Temperature range | working temperature | -10 ... +50 degC |
| | storage temperature | -30 ... +60 degC |



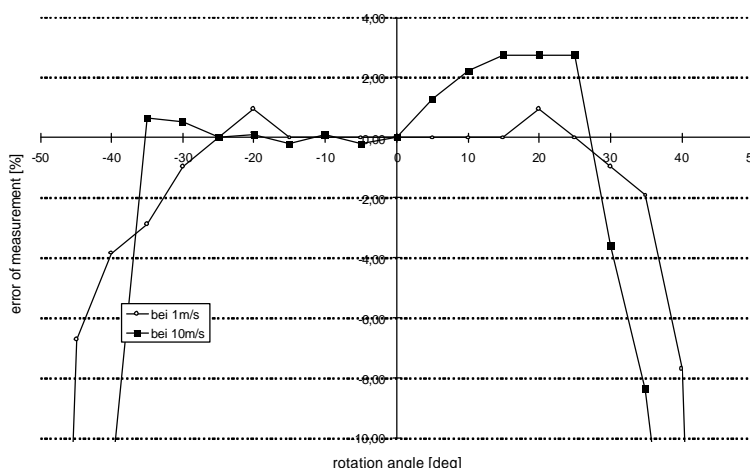
Temperature Dependence



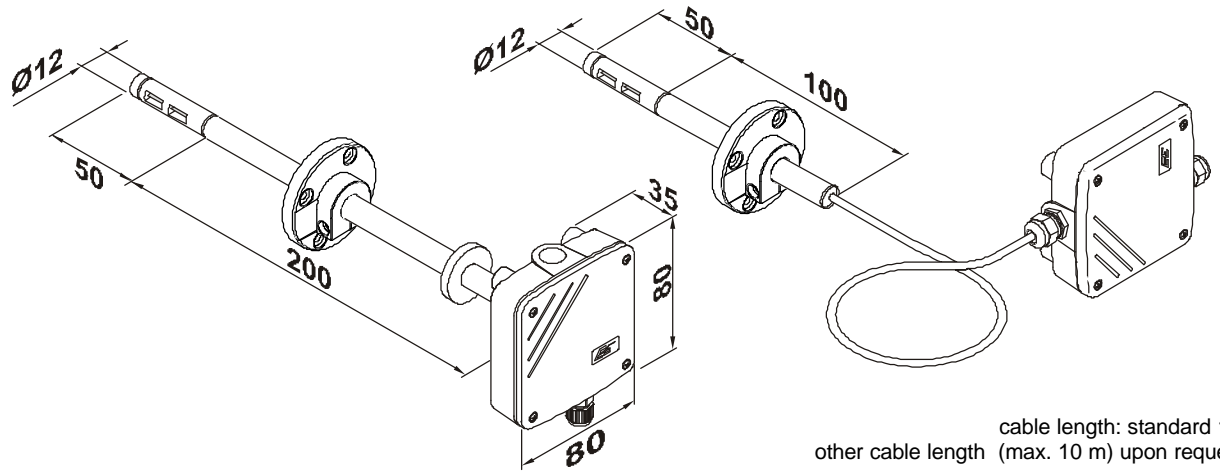
Due to the mass flow measurement principle, the accuracy is highly dependent on the temperature. To guarantee the excellent specification over the entire temperature working range, EE70 series are using a micro-controller for temperature compensation.

Angular Dependence

The sensor probe was designed based on the “inflow” technique and therefore shows a very small angular derivative. The tolerance of the measured value within a range of -10 to +10° is less than 3 %, which allows an easy mounting of the sensing probe.

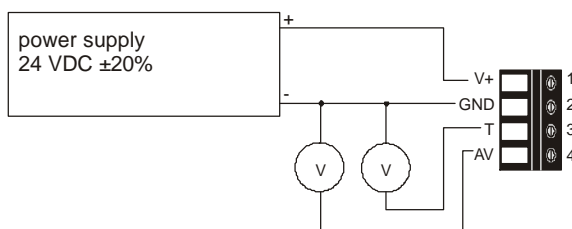


Dimensions (mm) 1" = 25 mm

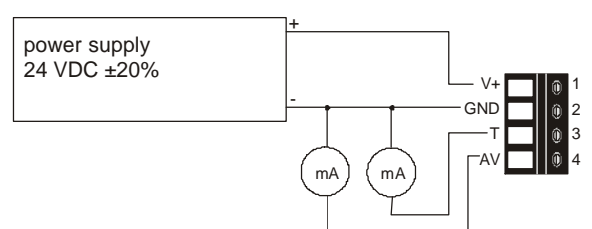


Connection Diagram

EE70-VT3xx



EE70-VT6xx



Ordering Guide

| MODEL | OUTPUT | WORKING RANGE | HOUSING | PROBE LENGTH |
|---------------------------------|-------------|----------------|----------------------------|--------------|
| air velocity + temperature (VT) | 0-10V (3) | 0...2 m/s (1) | duct mounting (B) | 100mm (3) |
| | 4-20 mA (6) | 0...10 m/s (2) | separated sensor probe (C) | 200mm (5) |
| | | 0...20 m/s (3) | | |
| EE70-VT | | | | |

Order Example

EE70-VT32B5

model: air velocity/temperature transmitter
 output: 0 - 10 V
 working range: 0 ... 10 m/s
 model: duct mounting
 probe length: 200 mm