

# EE70 Series

## High Accuracy Air Velocity and Temperature Transmitter

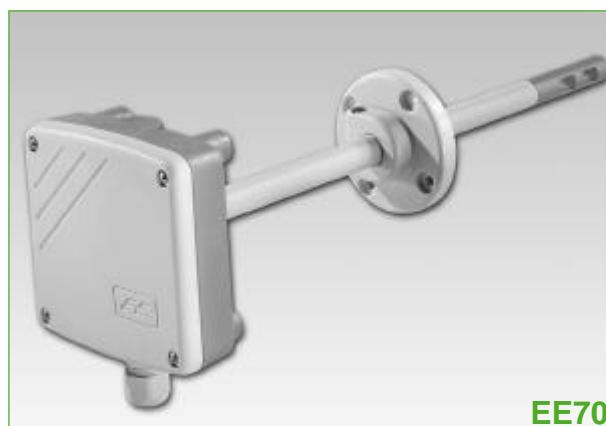
EE70 air velocity and temperature transmitters are the ideal solution for high-end applications in the field of HVAC, clean rooms, ventilation, filter control and chemical hoods.

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.



### 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 ... 10 m/s               |  |
|   | 0 ... 20 m/s               |  |
| Output appropriate<br>0-2 / 0-5 / 0-20 m/s  | 0 - 10 V                   | -1 mA < I <sub>L</sub> < 1 mA (linear, 3 wire) |
|   | or<br>4 - 20 mA            | R <sub>L</sub> < 500 Ohm (linear, 3 wire)      |
| Accuracy<br>at 45 %RH and 1013 hPA          | 0 ... 2 m/s                | ± (0.05 m/s + 0.5 % of measuring value)        |
|   | 0 ... 10 m/s               | ± (0.1 m/s + 2 % of measuring value)           |
|   | 0 ... 20 m/s               | ± (0.2 m/s + 2 % of measuring value)           |
| Response time τ <sub>90</sub> <sup>1)</sup> | < 1.5 s                    |  |
| Angular dependence at 10 m/s                | < 0.3 m/s at  Δα  < 10 deg |  |

1) Response time τ<sub>90</sub> is measured from the beginning of a step change of air velocity to the moment of reaching 90% of the step.

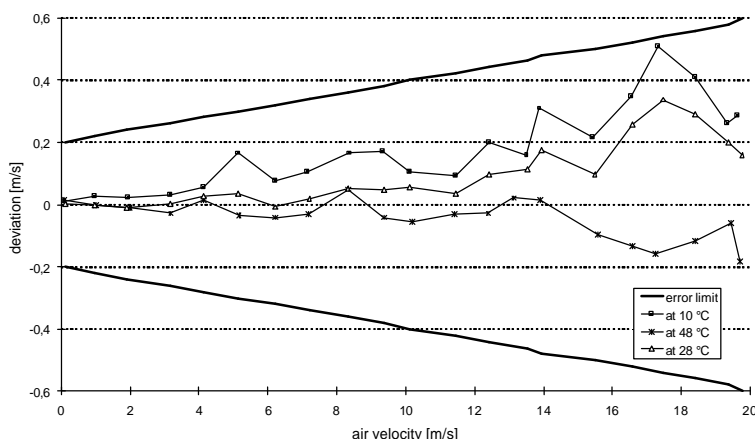
### Temperature

|                                   |                             |   |
|-----------------------------------|-----------------------------|---|
| Working range temperature         | 0 ... 50 degC               |   |
| Output appropriate<br>0 - 50 degC | 0 - 10 V<br>or<br>4 - 20 mA | -1 mA < I <sub>L</sub> < 1 mA (linear, 3 wire)<br><br>R <sub>L</sub> < 500 Ohm (linear, 3 wire) |
| Accuracy at 20 degC               | ± 0.5 degC                  |   |
| Response time t <sub>90</sub>     | < 1.5 s                     |   |

### General

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

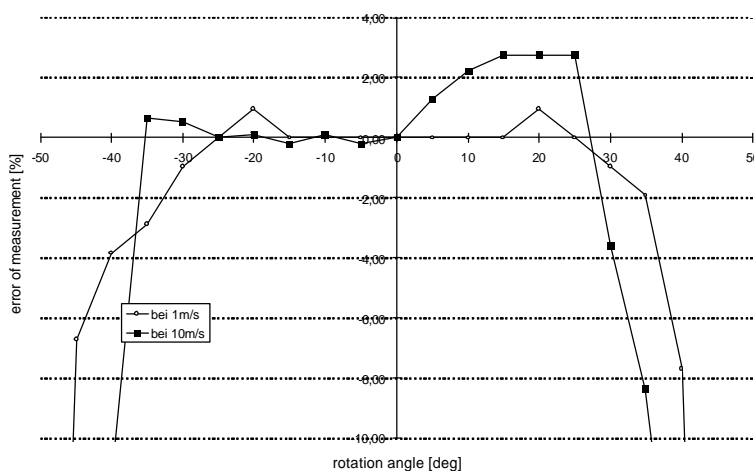
### Temperature Dependence



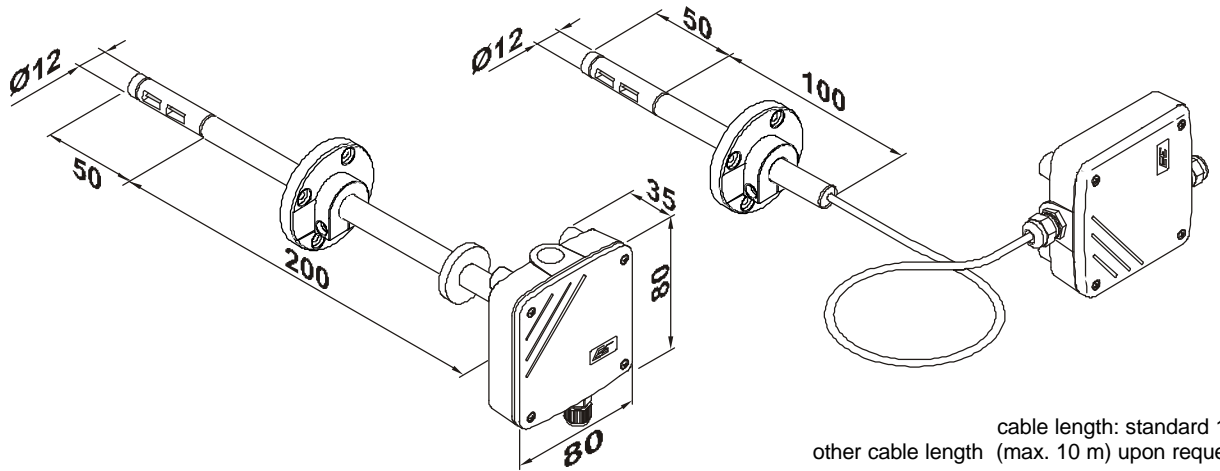
Due to the mass flow measurement principle, the accuracy is highly dependent on the temperature. To guarantee the excellent specification over the entire temperature working range, EE70 series are using a micro-controller for temperature compensation.

### 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.

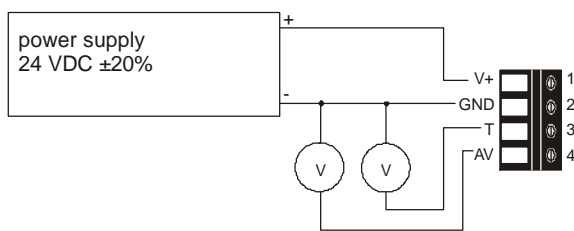


## Dimensions (mm)

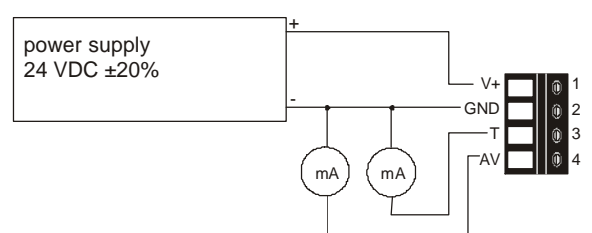


## Connection Diagram

### EE70-VT3xx



### EE70-VT6xx



## Ordering Guide

| MODEL                                 | OUTPUT      | WORKING RANGE  | HOUSING                    | PROBE LENGTH |
|---------------------------------------|-------------|----------------|----------------------------|--------------|
| air velocity +<br>temperature<br>(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) |                            |              |
| <b>EE70-VT</b>                        |             |                |                            |              |

## 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