

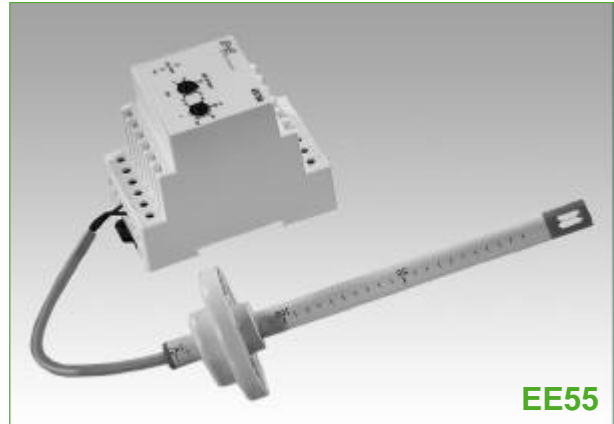
EE55 Series

Air Velocity Switch for HVAC Applications (390 - 3,900 ft/min)

The EE55 air velocity switch is designed for standard HVAC applications with a switching threshold between 2 and 20 m/s. It is based on the innovative E+E thin film sensor working on the hot film anemometer principle. This element is distinguished by its outstanding accuracy over the whole working range and its approved long term stability.

Moreover, the E+E sensor is much more insensitive to dust and dirt than other anemometer principles. This means high reliability and low maintenance costs.

EE55 consists of an interchangeable sensing probe and a relay unit suitable for panel mounting. The electronics integrated in the sensing probe allow a cable length up to 10 m (33 ft) to the relays unit and ensure high immunity to electromagnetic disturbances.



EE55

Low angular dependence and an extension tube allows cost-effective, easy positioning of the sensing probe in ducts with diameter between 50 and 630 mm (2" and 25"). For smooth plant start-up there is the possibility to set the delay time between 20 and 100 seconds.

Typical Applications

HVAC control
environmental control

Features

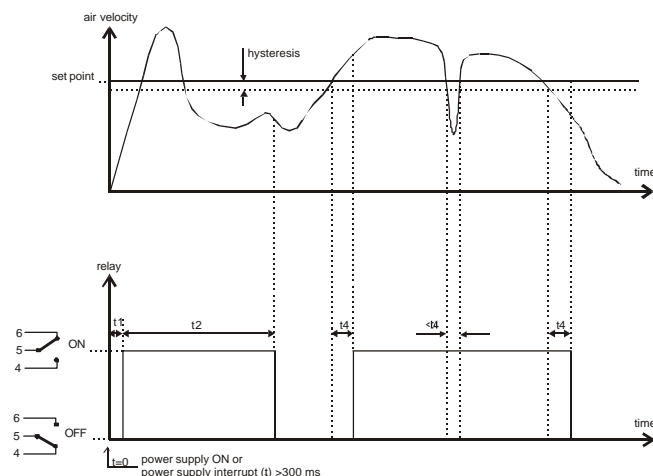
compact case size
interchangeable sensing probe
easy setting of threshold and preset time
remote sensing probe up to 10 m (33 ft)
easy electric wiring
easy installation

Working Principle

The sensing probe, which can be supplied with up to maximum 10 m cable, gives a signal to the relay module which is proportional to the air velocity. This value is compared to the threshold value set on the front panel of the air velocity switch. The relay is released if the threshold is reached or exceeded. To start without a hitch there are fixed and variable time steps integrated.

When switching on the EE55 or in case of short failure of the main supply > 300 ms (t_3) there is a delay of about 100 ms (t_1) till the relay is switched on. Independent of the true value the relays remain in this state for a delay time (t_2) (adjustable) between 20 and 100 s.

Only after that the air velocity switch reacts to the TRUE and RATED VALUE. The reaction time is limited by the response time (t_4) of the sensor probe which is about 2 s. The described function is related to continuous operation, which is reached after a warm-up phase of approx. 3 min after applying the supply voltage.



Technical Data

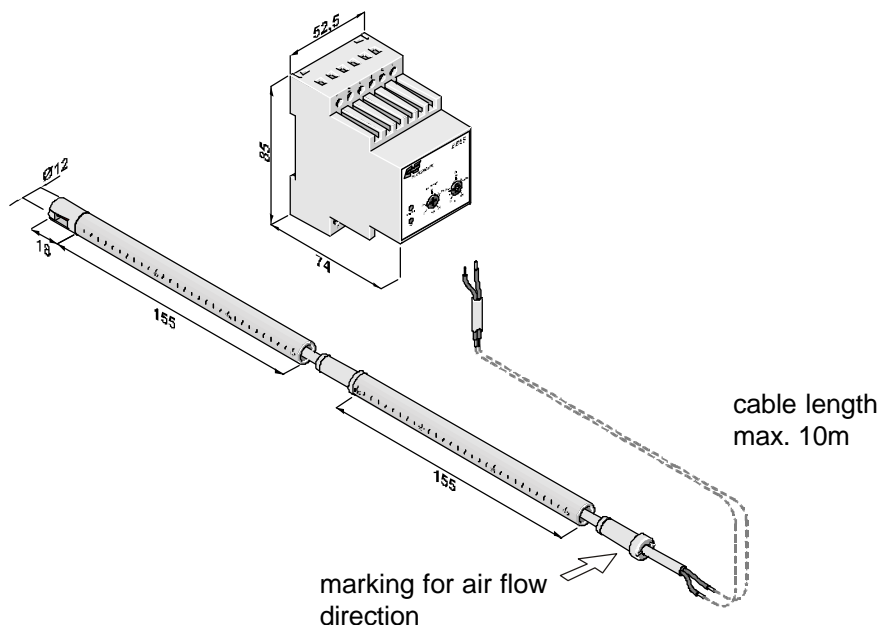
Measuring values

| | |
|---------------------------------|--|
| Working range threshold | 2 ... 20 m/s (390 ... 3,900 ft/min) |
| Setting accuracy | typ. $\pm 6\%$ of end value |
| Repeatability at 20 deg C | $\pm 5\%$ of measuring value |
| Hysteresis | 3% of measuring value, min. 0.05 m/s (10 ft/min) |
| Deviation by probe exchange | $\pm 5\%$ of measuring value (max.) |
| Temperature dependence | typ. 0,3 %/degC |
| Switching output (relays 250 V) | 10 A for ohmic load 3 A for inductive load |

General

| | | |
|--------------------------------|---|--|
| Supply voltage | | |
| Type A | SELV 24 VAC/DC $\pm 10\%$ | |
| Type B | 230 VAC | |
| Current consumption | | |
| Type A | max. 85 mA DC | max. $\sim 150\text{ mA}_{\text{eff}}$ |
| Type B | max. 20 mA _{eff} | |
| Switching delay time (t_2) | adjustable 20 to 100 s | |
| Response time (t_4) | approx. 2 s | |
| Probe cable length | 2.5 m or 10 m | |
| Electrical connection | screw terminals up to 1.5 mm ² | |
| Protection class | | |
| sensor probe | Polycarbonat / IP20 | |
| housing | Polycarbonat / IP30 | |
| Electromagnetic compatibility | EN 50081-1 EN 61000-6-2 | CE |
| Temperature range | | |
| sensor probe | -30 ... +80 degC (-22 ... +176°F) | |
| housing | -20 ... +60 degC (-4 ... +140°F) | |

Dimensions (mm) 1" = 25 mm



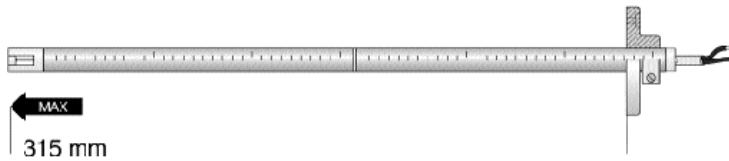
Depth of immersion

To adjust the probe length to the air duct dimensions the sensor probe consists of two parts (sensor head and extension tube). The extension tube should be used for duct diameters > 310 mm (12.4"). 1" = 25 mm

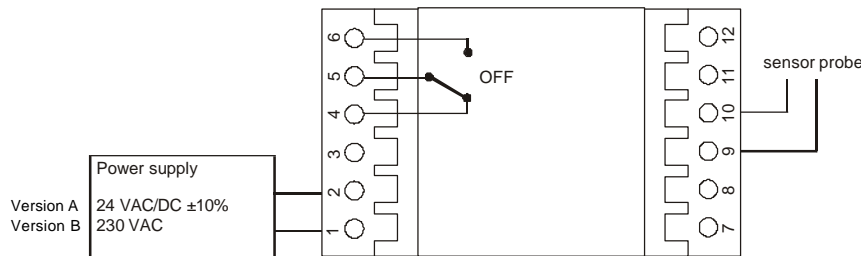
without extension tube:



with extension tube:



Connection Diagram



Ordering Guide

| MODEL | POWER SUPPLY | PROBE CABLE LENGTH |
|-------------------------|------------------------------|--------------------------|
| air velocity switch (V) | 24 VDC/AC (A) 230 VAC (B) | 2.5 m (25) 10 m (100) |
| EE55- | | |

Order Example

EE55-VB100

model: velocity switch
power supply: 230 VAC
probe cable length: 10 m