

EE56 Series

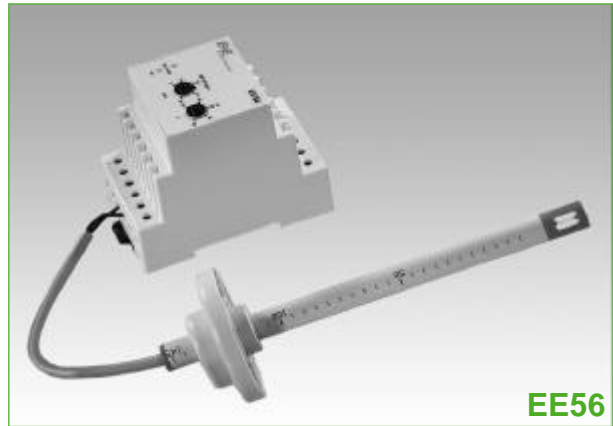
Air Velocity Switch for low velocity (40 - 390 ft/min)

EE56 air velocity switch is designed for special laminar flow and HVAC applications with a switching threshold between 0.2 and 2 m/s (40 - 390 ft/min). It uses a E+E thin film sensor working on the hot film anemometer principle. This has an outstanding accuracy at very low air velocity, which is not possible for conventional anemometers with commercial temperature sensors or NTC bead thermistors.

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

EE56 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 has high immunity to electromagnetic interferences.

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



EE56

Typical Applications

laminar flow control
clean room control

Features

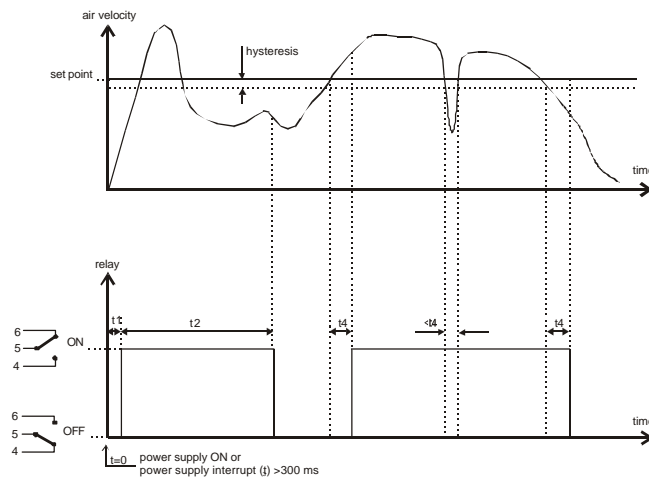
measurements down to "0" m/s
compact case size
interchangeable sensing probe
easy setting of threshold and preset time
remote sensing probe up to 10 m (33 ft)
easy electric wiring
easy installation

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

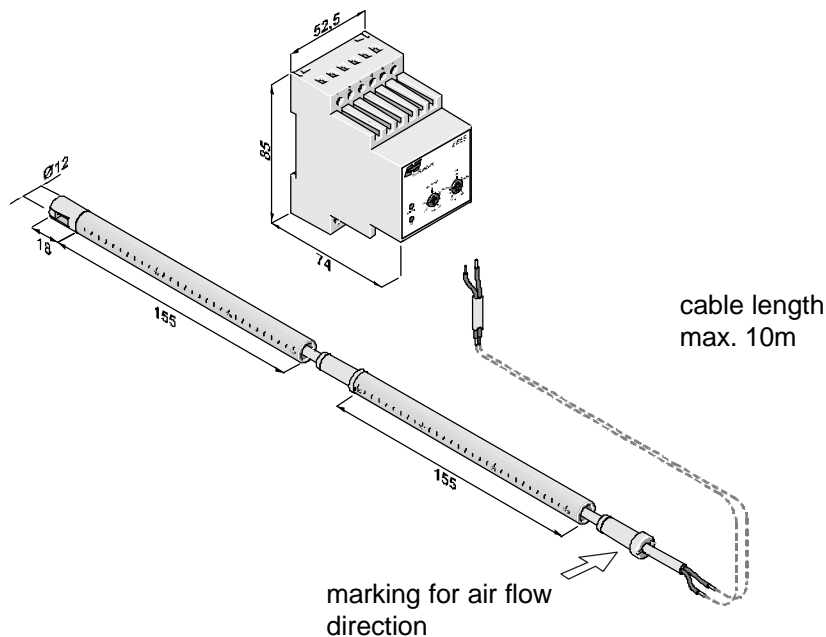
Measuring values

Working range threshold	0.2 ... 2 m/s (40 ... 390 ft/min)
Setting accuracy	typ. $\pm 6\%$ of end value
Repeatability at 20 degC	$\pm 5\%$ of measuring value
Hysteresis	3 % of measuring value, min. 0.05 m/s
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 (8.2 or 33 ft)	
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	
Temperature range		
sensor probe	-30 ... +80 degC (-22 ... +176°F)	
housing	-20 ... +60 degC (-4 ... +140°F)	

Dimensions (mm) 1" = 25 mm

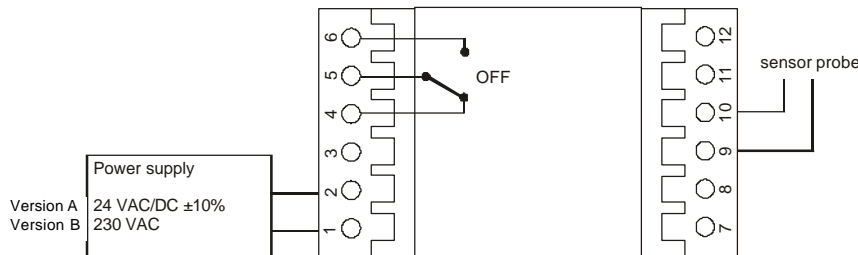


Depth of immersion

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



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)
EE56-		

Order Example

EE56-VA25

model: air velocity switch
power supply: 24 VDC/AC
probe cable length: 2.5 m