SIEMENS 1932



Air velocity sensor

QVM62.1

Use

This sensor is used to control the air velocity to a constant value, or to balance out pressure fluctuations (supply or extract air control), or to monitor the flow in air ducts. It primarily is used for modulating fan control in primary plants to set the basic volume flow.

Action

The QVM62.1 records the air velocity as a measured value and converts it to an active DC 0...10 V output signal.

Three measuring ranges are available:

0...5 m/s, 0...10 m/s, and 0...15 m/s.

The sensor measures a point, i.e., it measures the values at a specific location in the flow profile. For recording the mean air velocity in the duct, the sensor's immersion depth is the key measure. The immersion depth depends on the flow profile.

Ordering

When ordering, indicate the name and type designation : Air velocity sensor **QVM62.1**

The air velocity sensor consists of:

- Immersion stem with sensor head and sensing element
- Extension pipe with fitting
- Immersion stem end with flow direction arrow
- Adjustable connecting flange
- Transducer
- Connection cable, screened, four-core, 1 m long

A scale with 0.5 cm grating on the immersion stem and the extension pipe indicates the immersion depth.

The connecting flange is used to attach and seal the immersion stem on the duct wall.

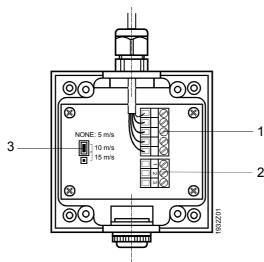
A plastic housing with removable cover accommodates the transducer. It can be screwed to a flat surface.

The sensor cable is connected; the sensor and the transducer together represent a unit

The measuring ranges are selected by inserting or removing a plug-in jumper.

- Protection against false wiring is provided related to own voltages, i.e., measuring output U1 is short-circuit proof.
- The sensor head connections are not protected against AC 24 V operating voltage.

Wiring and setting elements



- Terminal block for connection to the immersion stem
- 2 Terminal block for connection to controller
- 3 Plug-in unit for setting the three velocity ranges. The following applies:

No plug-in jumper = 0...5 m/sPlug-in jumper on 1 and 2 = 0...10 m/s

(factory setting)

Plug-in jumper on 2 and 3 = 0...15 m/s

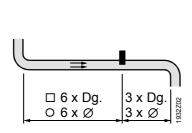
Technical data

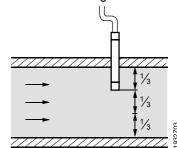
Power supply	Operating voltage	AC 24 V ±20 %	
	Frequency	50/60 Hz	
	Power consumption	≤5 VA (max. 200 mA)	
Measuring data	Measuring ranges, adjustable	05 m/s	
		010 m/s (factory setting)	
		015 m/s	
	Measuring accuracy at 20 °C, 45 % r.h., 1013 hPa		
	05 m/s	\pm (0.2 m/s + 3 % of measured value)	
	010 m/s	\pm (0.2 m/s + 3 % of measured value)	
	015 m/s	\pm (0.2 m/s + 3 % of measured value)	
	Permissible air velocity	20 m/s	
	Direction dependence at 15 m/s	<0.3 m/s at <±10°	
	Time constant t ₉₀ at 10 m/s	≤3 s	
Signal output U1	Voltage	DC 010 V	
-	Current	+1 mA	

Line length	Perm. line length to controller at 0.6 mm dia copper cable 1 mm² copper cable 1.5 mm² copper cable Line length to the sensor head	50 m 150 m 300 m 1 m (prewired)
Connections	Mechanical: Electric:	screw connection screw terminal, max. $2 \times 1.5 \text{ mm}^2$
Degree of protection	Degree of protection provided by enclosures as per EN 60 529 Transducer Sensor head Degree of protection as per EN 60 730	IP 42 IP 20 III
Environmental conditions	Operation (transducer and immersion stem) Climatic conditions Temperature Humidity (non-condensing) Mechanical conditions Chemical conditions Storage (transducer and immersion stem) Climatic conditions Temperature Humidity (non-condensing) Mechanical conditions Transport (transducer and immersion stem) Climatic conditions Transport (transducer and immersion stem) Climatic conditions Temperature Humidity (non-condensing) Mechanical conditions	IEC 721-3-3 class 3K5 -5+45 °C <95 % r.h. class 3M2 class 3C2 IEC 721-3-1 class 1K3 -5+45 °C <95 % r.h. class 1M2 IEC 721-3-2 class 2K3 -25+70 °C <95 % r.h. class 2M2
Materials and colours	Housing bottom Housing cover Sensor pipes Sensor head, extension, end Connecting flange Sensor, total	polycarbonat, RAL 7001 (silver-grey) polycarbonat, RAL 7035 (light-grey) polycarbonat, RAL 7001 (silver-grey) polycarbonat, RAL 7035 (light-grey) polycarbonat, RAL 7001 (silver-grey) silicon-free
Standards	Product safety Automatic electrical controls for household and similar use Electromagnetic compatibility Immunity Emissions € conformity Electromagnetic compatibility Low voltage directive	EN 60 730-1 EN 50 082-2 EN 50 081-1 89/336/EEC 73/23/EEC
Weight	With packaging	0.352 kg

Engineering notes

Place the sensor on the measuring path in a location where the air flow is quiet. Thus: do not place it close to dampers, registers, and duct direction changes.





Use a transformer with safety extra-low voltage (SELV) with separate winding for 100% ON-time. Observe all local safety rules and regulations pertaining to sizing and protecting transformers.

Note the permissible line length to the controller.

Mounting and installation notes

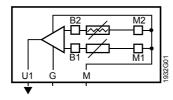
Mount the immersion stem so that the air flows through the opening at the sensor head. The immersion stem is premounted and wired to the transducer on delivery. The sensor pipes and the end with the direction arrow are prearranged on the connecting cable-fit them together (use the direction-oriented snap-on connections). If the extension pipe is not required, remove it from the cable. The connecting flange is not attached on delivery.

The sensor is supplied with mounting instructions.

Commissioning notes

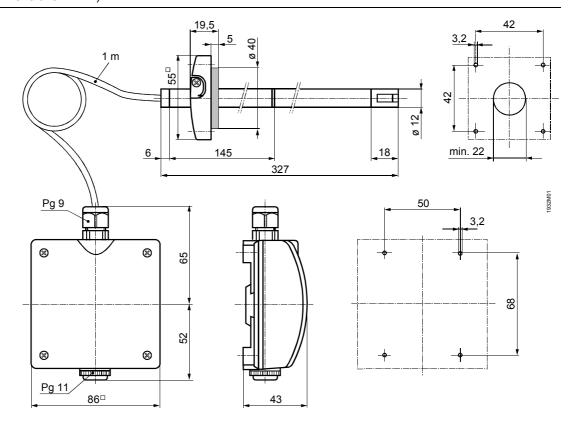
Check the wiring and the air velocity range settings prior to commissioning. Check the immersion stem position in the air duct (mounting instructions!).

Diagrams



- G Operating voltage AC 24 V
- M Measuring neutral/operating voltage ground
- U1 Output signal DC 0...10 V

Dimensions (All dimensions in mm)



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Subject to technical alteration

Landis & Staefa Division