



- Measuring range:  
1-10 to 50-500 l/min air
- Accuracy:  $\pm 5\%$  f.s.
- LCD display
- Two outputs PNP
- LED switching indication
- Compact and separate version



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**Model:**  
 DVK



### Description

The digital KOBOLD flow meter/monitor model DVK serves to measure and monitor small and average flows of air in piping and hoses.

The device is absolutely maintenance-free and uses the calorimetric method. When the operating voltage is applied, a thermistor integrated in the sensor is heated to a defined value above the medium temperature. When air (or gas) flows through the sensor, the heat generated in the sensor is absorbed by the medium. This means that the sensor is cooled down to the medium temperature. Depending on the velocity and rate of flow, the temperatures are equalized and the resistance of the sensor is reduced proportionally. The flow velocity can be determined by measuring the resistance. The medium temperature is measured by a second sensor.

The resistance values of both sensors are compared by the electronics over a Wheatstone bridge circuit and an output relay is actuated if the set switching values has been fall short or exceeded. The switch state is signalled by two LEDs (ON: LED on; OUT 1\*: green, OUT 2\*: red).

The digital KOBOLD flow meter type DVK works with practically no pressure loss. The wetted materials are stainless steel or plastic (PPS).

Typically, the device is available in two different versions (display and sensor as compact instrument, or display and sensor separated but connected with a cable) with the necessary screw connections.

\* The two outputs OUT 1 and OUT 2 can only be activated by flow measurement per unit of time, and not by totalizing.

### Areas of Application

- flow monitoring of air and gases
- in air conditioning systems
- in extraction systems

### Technical details

Method of measurement:	calorimetric principle
Mounting position:	any, flow in direction of arrow
Measuring ranges:	1...10 l/min; 10...100 l/min (CFMx 10 <sup>-2</sup> switchable); 20...200 l/min; 5...50 l/min; 50...500 l/min switchable to CFMx 10 <sup>-1</sup> )
Accuracy:	±5% f.s.
Repeatability:	±1% f.s. (DVK-..01/DVK-..05) ±2% f.s. (other types)
Temperature characteristic:	±3% f.s. (15 - 35 °C) ±5% f.s. (0 - 50 °C)
Operating pressure:	0 - 5 bar
Pressure loss at full scale:	300 mbar (DVK-..50) 100 mbar (DVK-..20) 30 mbar (other types)
Service temperature:	0 - 50 °C
Material:	
connections:	stainless steel
sensor and housing:	PPS (polyphenylene sulphide)
Response time:	1 s
Connections:	G 1/4; G 3/8; G 1/2
Display:	3-digit 7-segment LCD, 90° rotatable
Totalizing:	0...999999 (litres or ft <sup>3</sup> x 10 <sup>-1</sup> ), resettable
Supply:	12...24 V <sub>DC</sub> , max. 150 mA
Outputs:	2 x PNP open collector, 80 mA, active only with rate metering
Switching indication:	2 x LED (OUT 1: green, OUT 2: red)
Minimum switching adjustment:	1 % of max. range value
Hysteresis:	adjustable
Shock resistance:	490 m/s <sup>2</sup> in X-, Y-, Z-direction (3 x each direction)
Vibration resistance:	10 - 500 Hz at amplitude < 1.5 mm or acceleration of 98 m/s <sup>2</sup> in X-, Y-, Z-direction (2 hours per direction)
Protection:	IP 65
Weight:	< 290 g (without connecting lead)

**Order details** (example: DVK-12 01R08)

Description	Model	Measuring range/connection
Flow meter compact version	DVK-12...	<b>01R08</b> = 1-10 l/min; G 1/4 <b>05R08</b> = 5-50 l/min; G 1/4 <b>10R10</b> = 10-100 l/min; G 3/8 <b>20R10</b> = 20-200 l/min; G 3/8 <b>50R15</b> = 50-500 l/min; G 1/2
Flow meter sensor unit *	DVK-22...	
Display unit for DVK-22 DIN-rail, wall mounting	DVK-32...	
Display unit for DVK-22 panel mounting	DVK-42...	

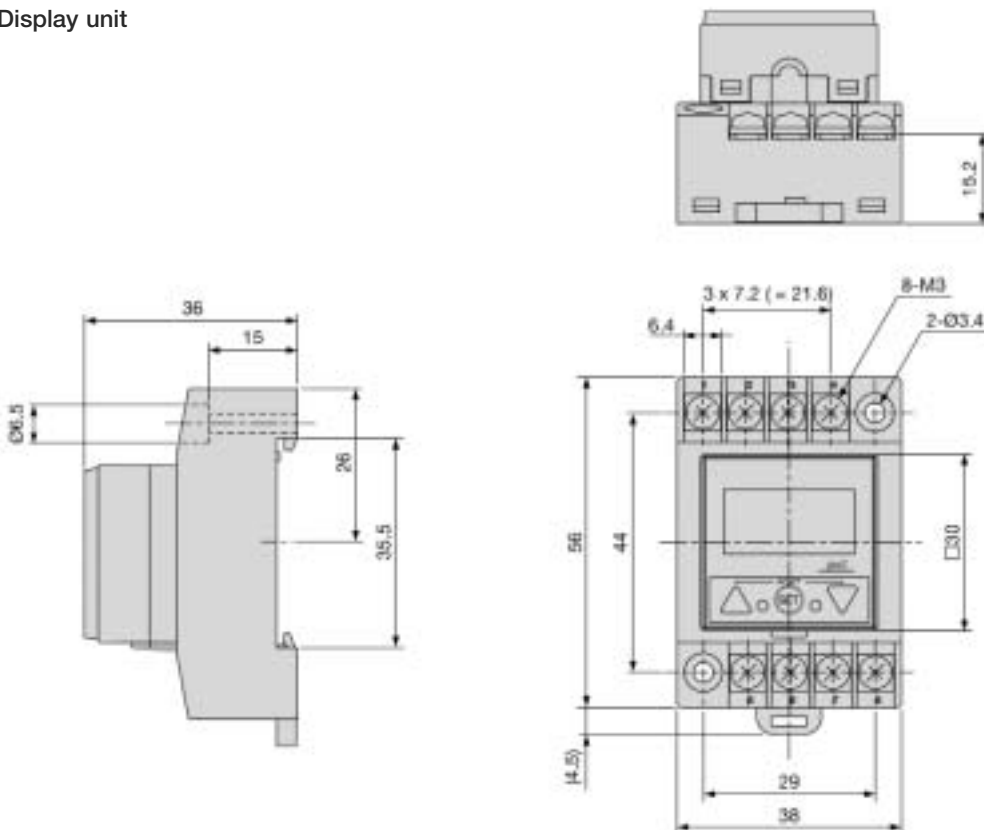
\*A display unit DVK-32 or DVK-42 is required for the sensor unit DVK-22.

**Accessories: electrical connection**

Description	Model
M12x1 box with 2 m cable	ZUB-KAB-12K002
M12x1 box with Quickon plug connector	ZUB-KAB-12Q000

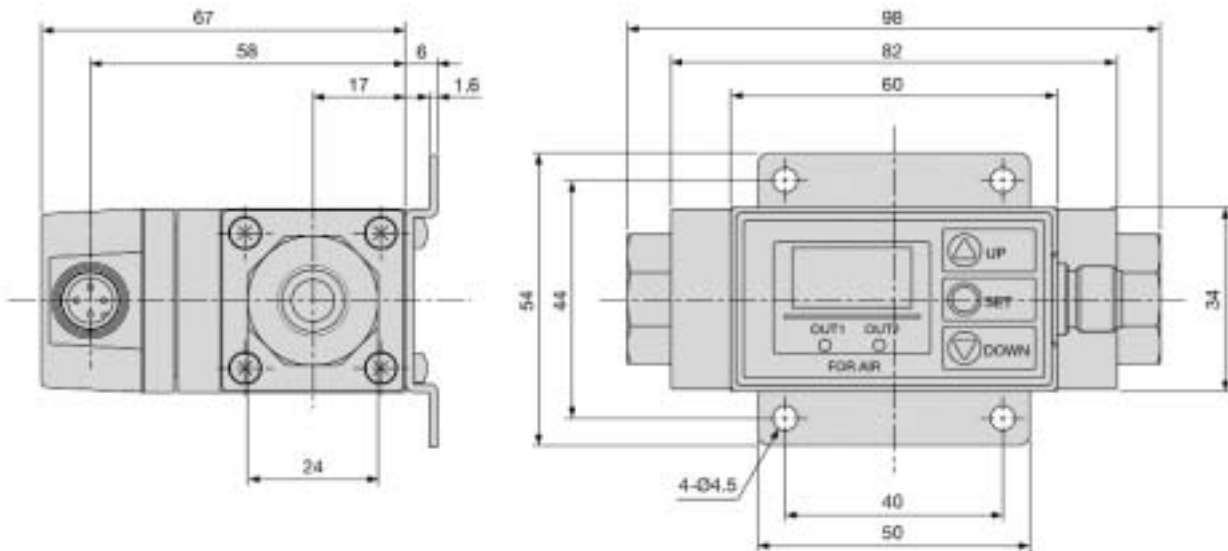
**Dimensions**

Display unit



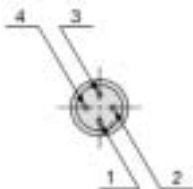


Dimensions



Electrical connection

Pin numbers



Number	Pin name
1	DC (+)
2	OUT 2
3	DC (-)
4	OUT 1

Connector thread M12

