

## RLP 10 F902: Pneumatic volume-flow transducer

### How energy efficiency is improved

Enables the accurate recording of volume flows for the optimisation of energy consumption in ventilation systems.

### Areas of application

Measuring actual volume flow value using a suitable dynamic pressure sensor

### Features

- Conversion of pressure difference by means of a square root extracting transducer into a linear flow signal
- Application of output signal as a command variable of a volume flow controller in the supply air
- Static differential pressure sensor with large measuring range (10 to 250 Pa)
- Controller front panel is printed with circuit diagram for rapid identification of function
- Thermoplastic housing suitable for wall or top-hat rail mounting (rail EN 60715 )
- Compressed-air connections with Rp 1/8" female thread
- Low-pressure connections in form of stepped nipples for flexible plastic hose (internal Ø 4 and 6 mm)
- Complies with directive 97/23/EC Art. 3.3 on pressure equipment

### Technical description

- Supply pressure 1.3 bar  $\pm$  0.1
- Response sensitivity of sensor 0.5 Pa
- Linearity, square root extraction accuracy 2%
- One output for:
  - actual value of volume-flow

Type	Description	Measuring range Volume flow % $\dot{V}$	Measuring range Pressure diff. <sup>1)</sup> Pa	Weight kg
<b>RLP 10 F902</b>	–	20...100	10...250	0,2
Output pressure	0,2...1,0 bar	Response sensitivity Linearity; accuracy of root extraction <sup>2)</sup>	Permissible amb. temp.	0,1 Pa
Usable range p <sub>stat</sub>	0...3 kPa			
Permissible pressure (low-pressure connections)	10 kPa			
Supply pressure <sup>3)</sup>	1,3 bar $\pm$ 0,1	Connection diagram		A02889
Air capacity	330 l <sub>r</sub> /h	Dimension drawing		M297240
Air consumption	19 l <sub>r</sub> /h	Fitting instructions		MV 505678

### Accessories

**0297354 000\*** Short screw-type connector (R 1/8) for soft plastic tubing, internal Ø 4 mm; 2 pcs required

**0296936 000\*** Fixing bracket for rail EN 60715, 35 × 7,5 and 35 × 15

\*) Dimension drawing or wiring diagram are available under the same number

1) Factory setting 10...250 Pa. Using the XYP 3 test unit, the range can be altered from 5...125 Pa (E = 0.7) to 20...500 Pa (E = 1,4)

2) The percentages refer to 100% air volume.

3) See Section 60 on regulations concerning the quality of supply air, especially at low ambient temperatures

### Operation

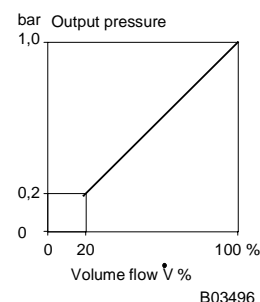
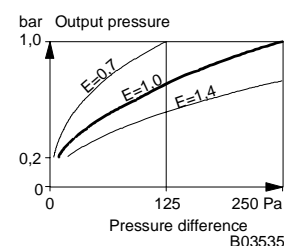
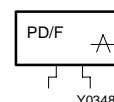
The pressure difference (10...250 Pa) created at the orifice plate of dynamic pressure sensor is converted by the root-extracting transducer into a fluidic-linear standard signal (0,2...1,0 bar). The output signal at connection 2 is, therefore, proportional to either the air volume or the air speed.

### Technical information

Technical manual: VAV 7 000 621 003

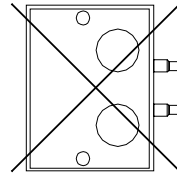
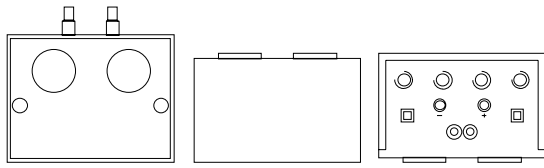


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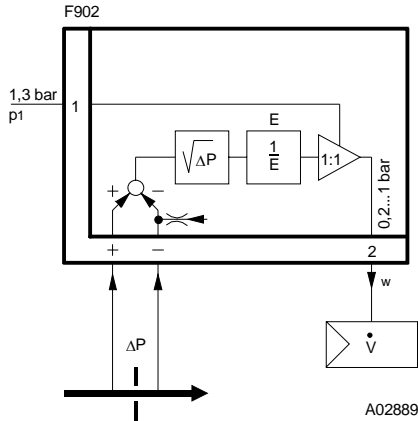
**Engineering and fitting notes**

The unit should not be fitted standing on its side.



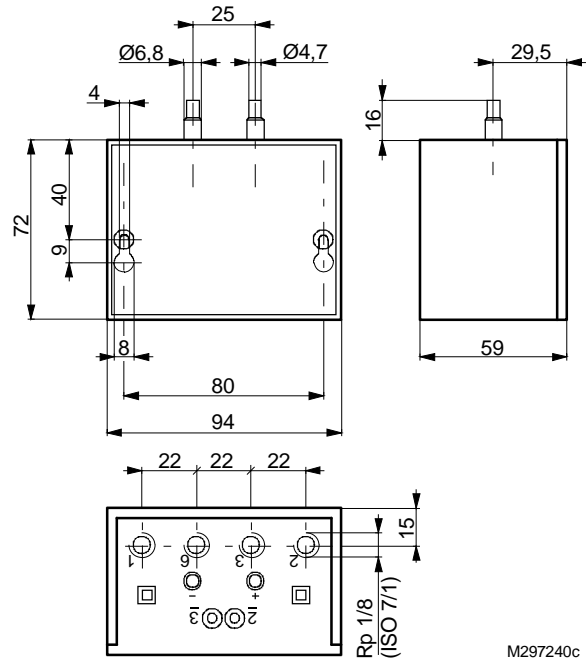
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**Connection diagram**



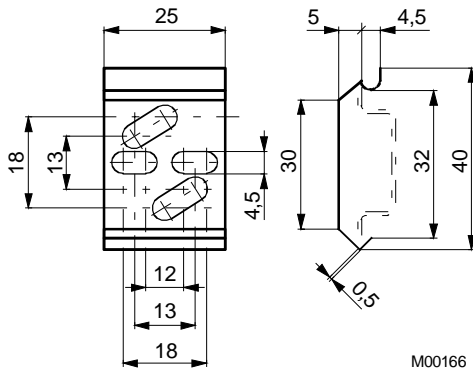
w command variable  
 $\Delta p$  pressure difference

**Dimension drawing**

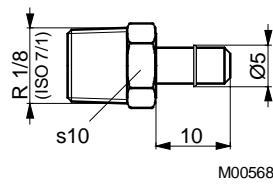


**Accessories**

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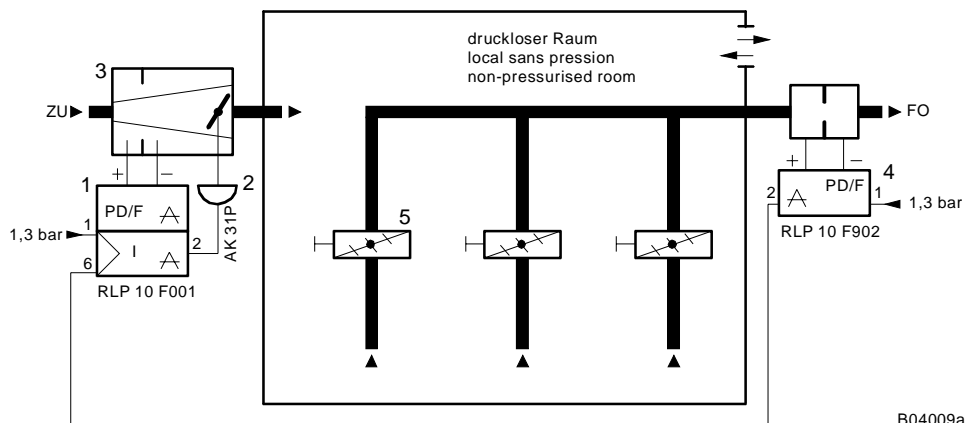


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**Example of use**

Control facility for variable air volume with transducer for 'open' rooms. The output signal of the transducer in the return air is used as the command signal for the VAV controller in the supply air.



1	Volume-flow controller	4	Volume-flow transducer
2	Damper drive	5	Manual damper
3	Pressure-release unit	FO	EA (exhaust air)
		ZU	SA ( supply air)