



VA 409 Flow direction switch for compressed air systems

The thermal flow direction switch VA 409 with direction indication serves for determination of the flow direction of compressed air and gases especially in closed circular pipelines.

By means of VA 409 with flow direction indication the flow direction of the compressed air can be determined quickly and safely. Compared with the former mechanical paddle flow switches VA 409 is able to detect even the smallest changes in the flow direction quickly and without any mechanical movement.

The direction information in form of a potential-free contact (normally closed max. 60 VDC, 0.5 A) is transferred to the consumption sensors VA 500/ VA 520 or to a separate building management system (mbs). Two LEDs show the flow direction.

In connection with 2 flow sensors VA 500/ VA 520 incoming and outflowing compressed air in closed circular pipelines can be measured precisely.

Special features

- detects smallest changes <0.1 m/s referred to 20 °C and 1000 mbar
- no mechanical wear parts
- easy installation under pressure



Technical data VA 409

Detection range recognition flow direction:	< 0.1 m/s referred to 20°C and 1000 mbar
Measuring principle:	calorimetric measurement
Sensor:	Pt 30/ Pt 700/ Pt 330
Measuring medium:	air, gases
Operating temp.:	0...50°C probe tube -20...70°C housing
Operating pressure:	up to 16 bar
Power supply:	24 VDC, 40 mA
Power input:	max. 80 mA up to 24 VDC
Protection class:	IP 54
EMV:	acc.to DIN EN 61326
Connection:	2 x M12, 5-pole, plug A and plug B
2 potential-free contacts:	2 x U max. 60 VDC, I max 0,5 A (normally closed); on request: Normally open
Housing:	polycarbonate
Probe tube:	stainless steel, 1,4301, length 160 mm, Ø 10 mm, safety ring Ø 11.5 mm, longer probes on request
Mounting thread:	G 1/2"
Diameter housing:	65 mm
Flow direction:	2 LEDs

Description	Order No.
Flow direction switch VA 409	0695 0409
Mains unit in wall housing	0554 0108
Connection cable VA/FA Series 400, 5 m with M12 plug	0553 0104
Connection cable VA/FA Series 400, 10 m with M12 plug	0553 0105



Flow station DS 400 with direction indication in one direction

By connecting the flow direction switch VA 409 to the flow station DS 400 only the flow in one direction is measured. So it is guaranteed that the back-flowing compressed air is not counted twice.

Special features

- precise flow measurement in one direction
- when doing the cost calculation of the compressed air it is avoided that backflowing compressed air is counted twice

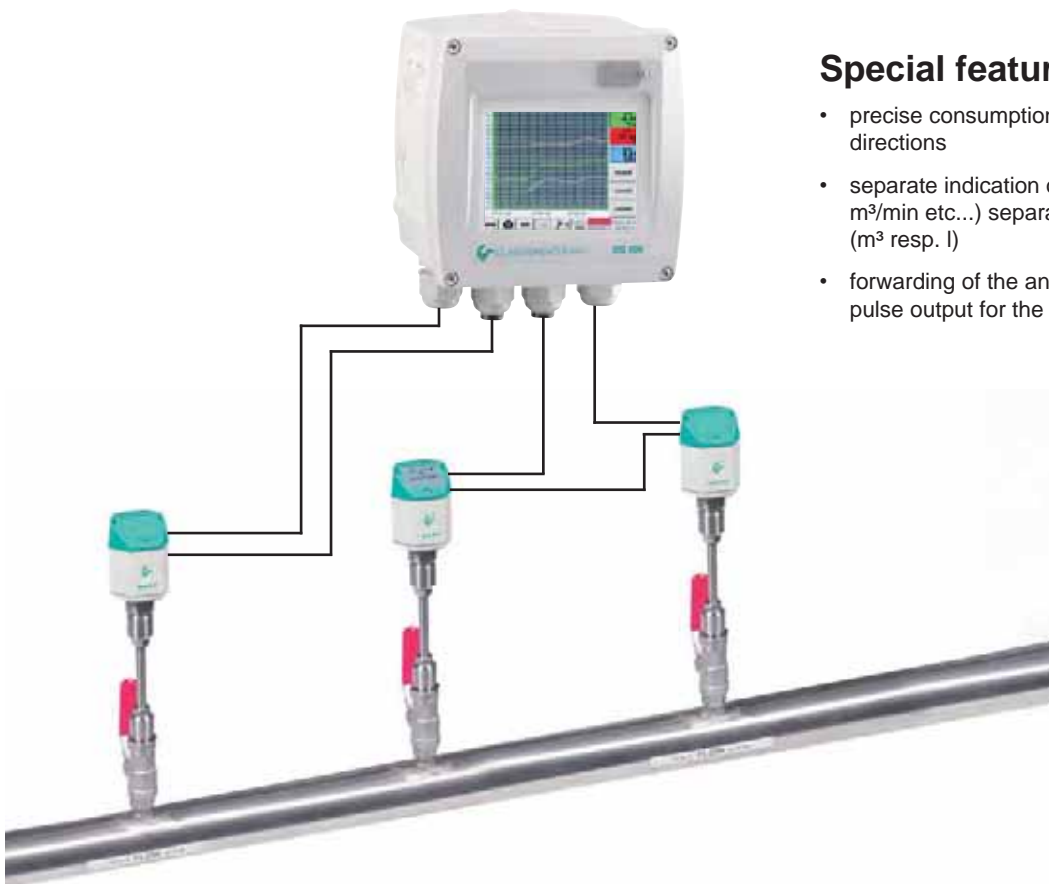


Flow station DS 400 with flow direction indication in both directions

In case the flow direction switch VA 409 indicates the flow direction and forwards this information to the flow station DS 400.

Each of both flow stations DS 400 exclusively measures the flow in one direction. The flow direction switch VA 409 is mounted in the middle between both flow stations in order to avoid flow turbulences.

For this reason two flow stations DS 400 are used for precise flow measurement of both flow directions.



Special features

- precise consumption measurement in both directions
- separate indication of the actual flow (m^3/h resp. m^3/min etc...) separate summing of the total flow (m^3 resp. l)
- forwarding of the analogue output and of the pulse output for the respective flow direction