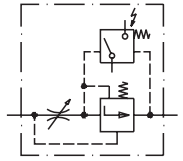




- Subject to modifications -



Volume flow meter with connection board VUA-B



- Volume flow meter with pressure governor
- Mounting on connection boards

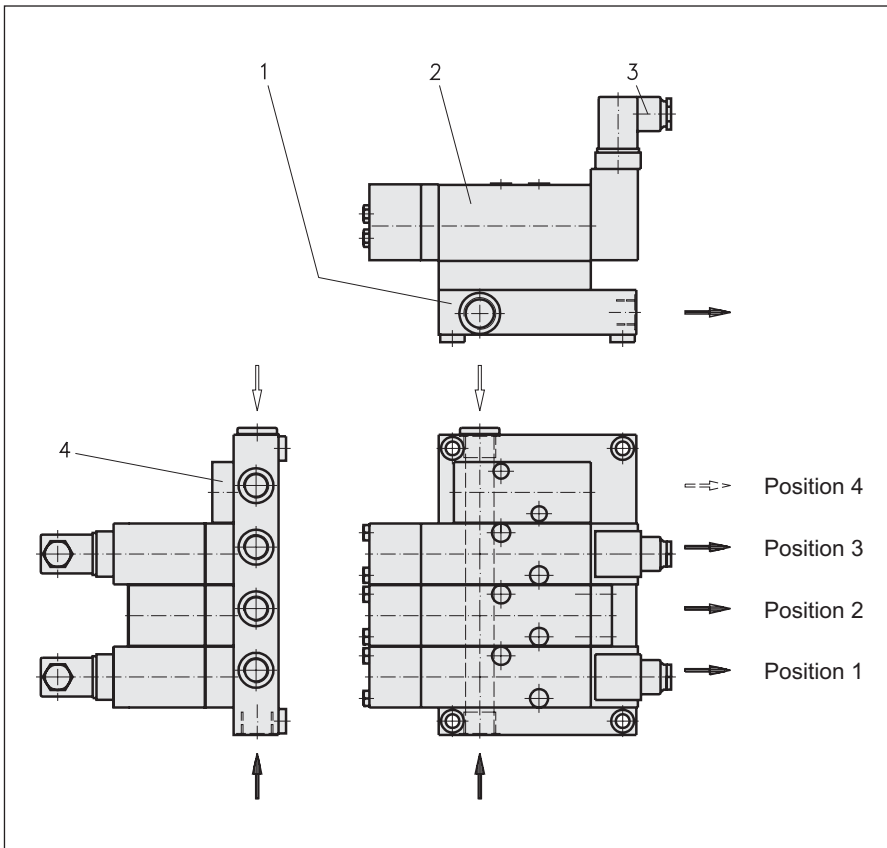
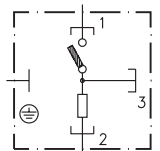
Technical data:

Operating pressure at max.: 100 bar
 Minimum differential pressure between inlet and outlet: 6 bar
 Adjustable throttle volume range: 0,1 ... 5 l/min (viscosity dependent, see diagram)
 Viscosity density ratio: 20 ... 1000 mm²/s
 Installation position: as needed
 Casing material:
 Functional unit: Aluminium hard coated
 Connection board: Aluminium
 Sealing material: NBR (Perbunan), FPM (Viton)

Control element:

Temperature range: -5 ... +90 °C
 Switching voltage at max.: 36 V \leq
 Switching current at max.: 25 mA
 Switching power at max.: 0,9 W
 Plug-type connection: DIN 43650
 System of protection: IP 65

Switching diagram:

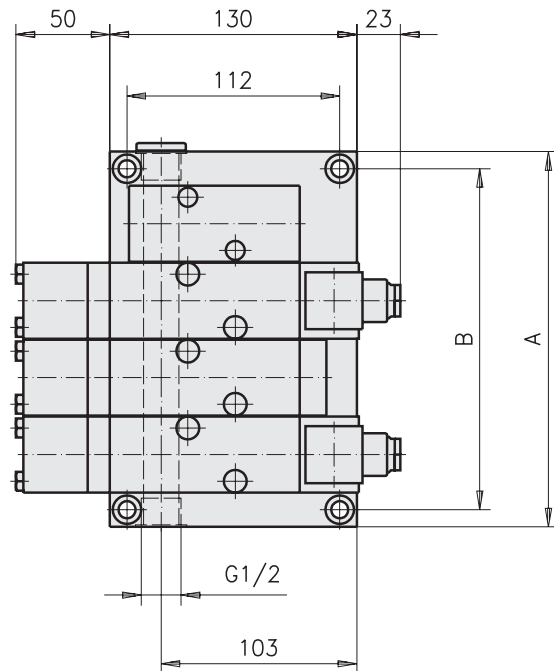
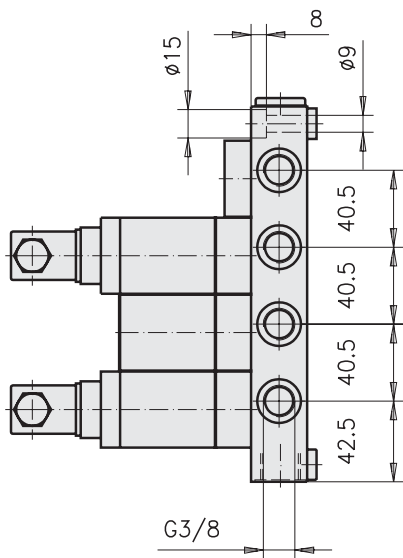
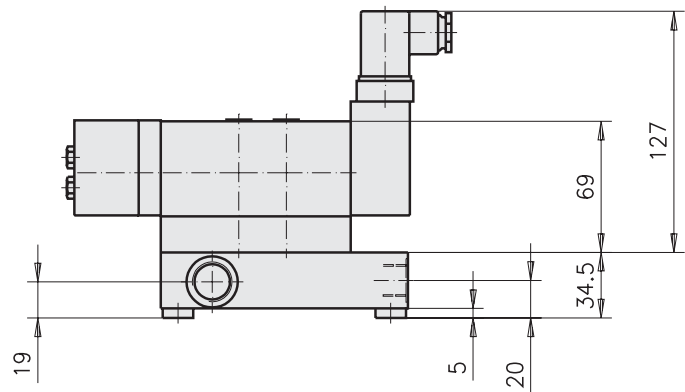
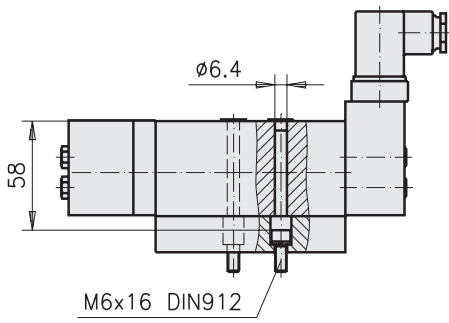


Note pertaining to dimensional drawing:

Pos.
 1 = Connection board
 2 = Volume flow meter
 3 = Control element
 4 = Blind element

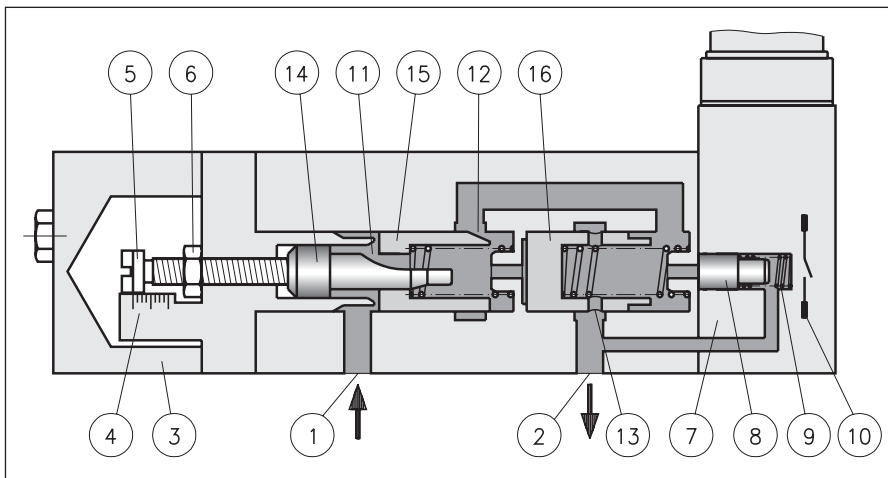


Mounting of the volume flow meters on the connection board:



| Position number | A | B |
|-----------------|-------|-------|
| 1 | 76 | 58 |
| 2 | 116,5 | 98,5 |
| 4 | 197,5 | 179,5 |

- Subject to modifications -



Pos.

- 1 - Inlet
- 2 - Outlet
- 3 - Protective cap
- 4 - Scale
- 5 - Volume flow adjustment screw
- 6 - Locknut
- 7 - Control element
- 8 - Switch-actuation piston
- 9 - Spring
- 10 - Reed contact
- 11 - Throttle I
- 12 - Throttle II
- 13 - Throttle III
- 14 - Throttle piston I
- 15 - Throttle piston II
- 16 - Throttle piston III

Operation:

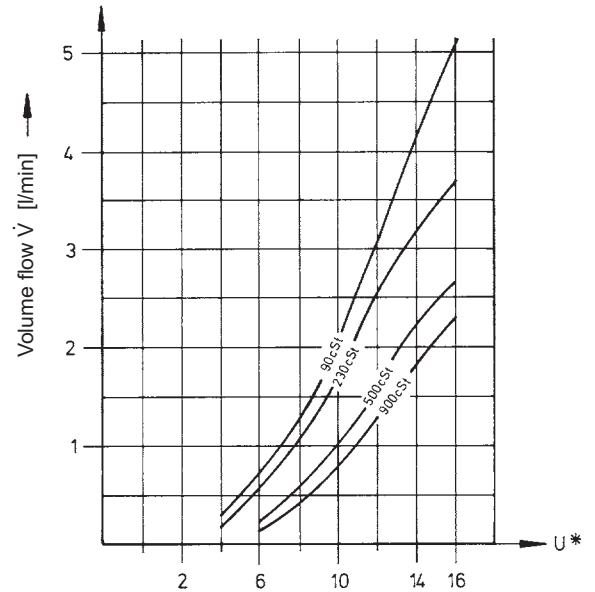
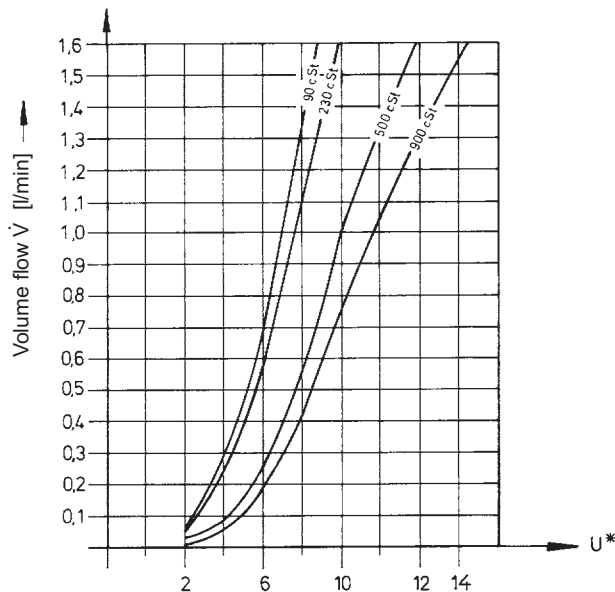
The precondition for a constant flow volume is a constant pressure inclination at the measuring throttle. To ensure this, the proportioning block is provided with three throttle pistons being switched in series. The throttle pistons I (14) and II (15) are used as measuring throttles I (11) and II (12), whereas throttle piston III (16) serves as pressure governor. The throttles I (11) and II (12) are used to regulate the volume flow. By turning the adjustment screw (5) to the right, the throttle

pistons I (14) and II (15) are shifted to the right, the flow cross sections of the throttles I (11) and II (12) reduced and, at a constant pressure difference, the volume flow decreased. When turning the adjustment screw to the left, the volume flow will increase. By shifting the throttle piston III (16) against the spring's force, the throttle cross-section and resistance at throttle III (13) will change automatically, thus ensuring a constant pressure difference at throttles I (11) and II (12). As a result, the volume flow will, if there is no change in the adjustment, remain

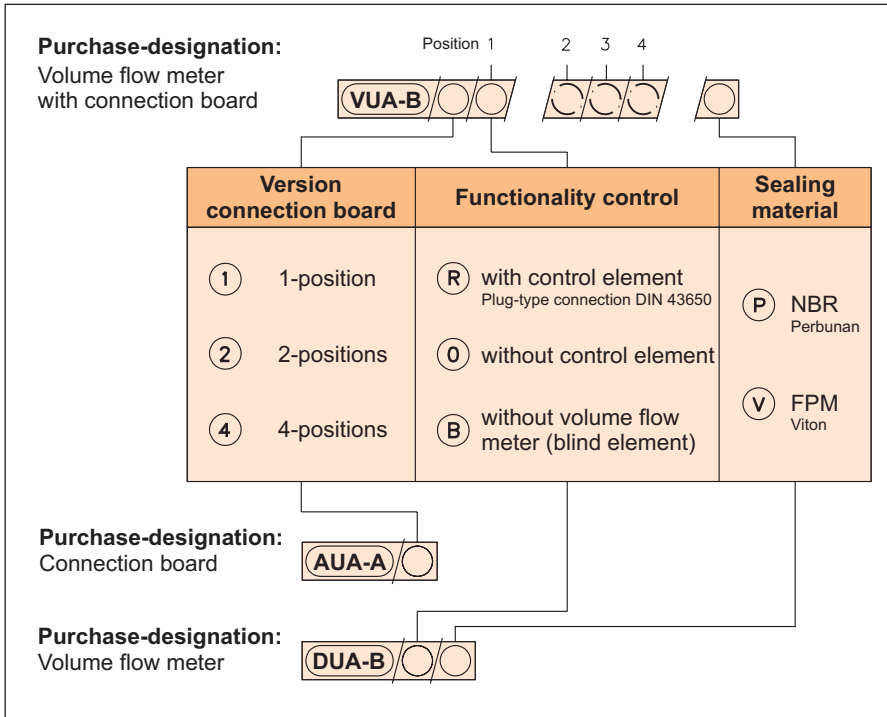
constant, independently from the pressure difference between inlet (1) and outlet (2). The pressure difference between the inlet and outlet amounts to 6 bar. In the version comprising a control element (7), the volume flow is watched by means of a reed switch. If the volume flow falls short of the value preset, spring (9) will shift the actuation piston (8) and the reed contact (10) will open then. Due to the throttle pistons arrangement, an extensive self-cleaning of the throttles is achieved. Hence it is possible to set the smallest volume flows (0,1 l/min at minimum).

- Subject to modifications -

Volume flow depending on viscosity and throttle cross-section:



* Rotations at the adjustment screw as counted from the initial position: delivery volume = 0



Purchase-example:

4-position connection board with 3 volume flow meters, sealing material FPM
 Position 1: with control element
 Position 2: without control element
 Position 3: with control element
 Position 4: with blind element

Purchase-designation:

Volume flow meter
 VUA-B/4/R/0/R/B/V

| Spare parts | Purchase-no. | |
|--|----------------------|----------------------|
| | Sealing material NBR | Sealing material FPM |
| Volume flow meter with functional control R | 357.184-65 | 357.185-65 |
| Volume flow meter without functional control | 357.105-65 | 357.110-65 |
| Blind element | 357.190-65 | 357.195-65 |

- Subject to modifications -