

SRZ Series Helical Flow Meters



Design and Principle

Two highly accurate cycloid-shaped screw spindles mesh and rotate inside a cylindrical housing with two overlapping holes in the form of a figure 8, which forms the measuring chamber.

The medium flows in axial direction and rotates the spindles, it is forced along the measuring chamber bores by the profile of the spindles. This happens without pulsation and with minimum leakage.

A pickup will inductively detect the speed of the spindle pair through the housing via a pole wheel with a high number of gears. The speed of the spindles is absolutely proportional to the volume flow over a very wide range. Pulses per volume unit will finally serve the evaluation (in addition an analogue signal 4 to 20 mA will be available when using the local display unit VTM. Please see pickup and amplifier datasheets). The K-factor (calibration factor) of the helical flow meter defines the exact pulserate per litre. We calibrate our flow meters to determine their K-factors, calibration records are part of delivery. When calibrating we consider as much as possible operating viscosities and customers' specifications.



Pickups and Amplifiers

The pickups are suitable for fluid temperatures up to +150°C and ambient temperatures up to +50°C (higher temperatures on request). Versions for double pulserate and reverse-flow detection are also available.

For detailed information on our pickups and amplifiers ask for datasheets. The following types are available for our SRZ flow meters:

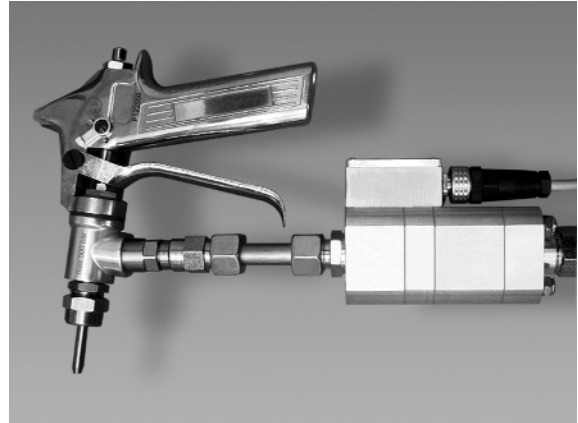
- VTER/P Carrier-Frequency Pickup and Amplifier
- VTM Local Display Unit
with frequency and analogue output 4 to 20 mA

Applications

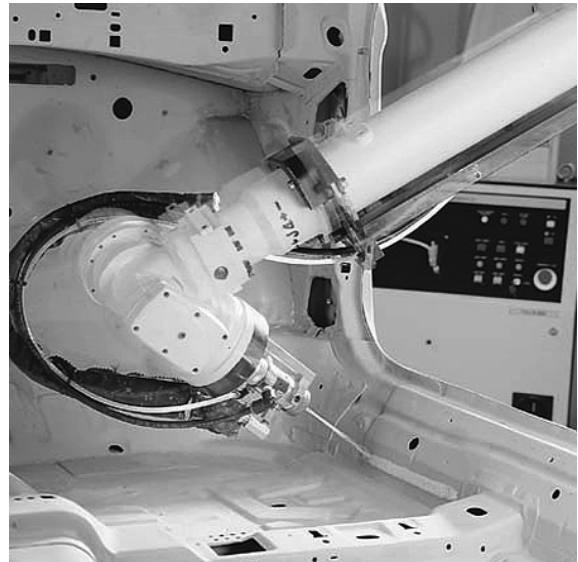
- Polyurethane and polymer
- Glues and sealing materials
- Heavy fuel oil
- Petrochemical products
- Thixotropic fluids
- Fat and oils with varying viscosities
- Hydraulic test rigs with varying viscosities and fluids

Characteristics

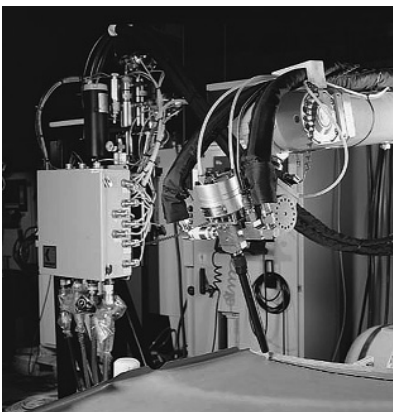
- High accuracy
- Wide measuring ranges 1:100, 1:400
- Suitable for pressures up to 400 bar
- Largely independent of viscosity, perfect for 30 up to 1×10^6 mm²/s
- Low pressure drop compared with other positive displacement meters
- Double pulse rate and reverse-flow detection possible
- Pulsation-free measurement, non-sensitive to pulsating flows
- Ex-protection EExiaIICT6 for zone 1
- Resistant to corrosion by advanced materials and bearings
- Low operating noise



SRZ as a component of a glue dispensing process in the automotive industry



robotically applied PVC



appliance of two component structural adhesive



manually dispensed cavity wax

Technical Data

Type	Measuring range ltr./min	K-factor pulses/ltr.	Frequency range in Hz
SRZ 10	0.01 up to 4	16,500	3 up to 1,000
SRZ 20	0.04 up to 16	9,000	6 up to 1,250
SRZ 40	0.40 up to 40	3,500	20 up to 1,740
SRZ 100	1.00 up to 100	850	8 up to 1,750
SRZ 400	4.00 up to 400	214	14 up to 1,800

The measuring ranges are based on a viscosity of 30 mm²/s, K-factor and frequency figures are average values – the individual figures are recorded during calibration (see datasheet »SRZ ... *.C.* for versions with double pickup).

Please note different pulse rates and frequency ranges for high temperature versions:

SRZ 10: 11,200 pulses/ltr. and 2 up to 760 Hz, SRZ 40: 1,750 pulses/ltr. and 11 up to 1,167 Hz

Linearity: ±0.50% of actual flow value (from 30 mm²/s onwards)

. ±0.25% of actual flow value (from 100 mm²/s onwards)

Repeatability: ±0.10%

Operating Pressure:PN 16/40 up to PN 400

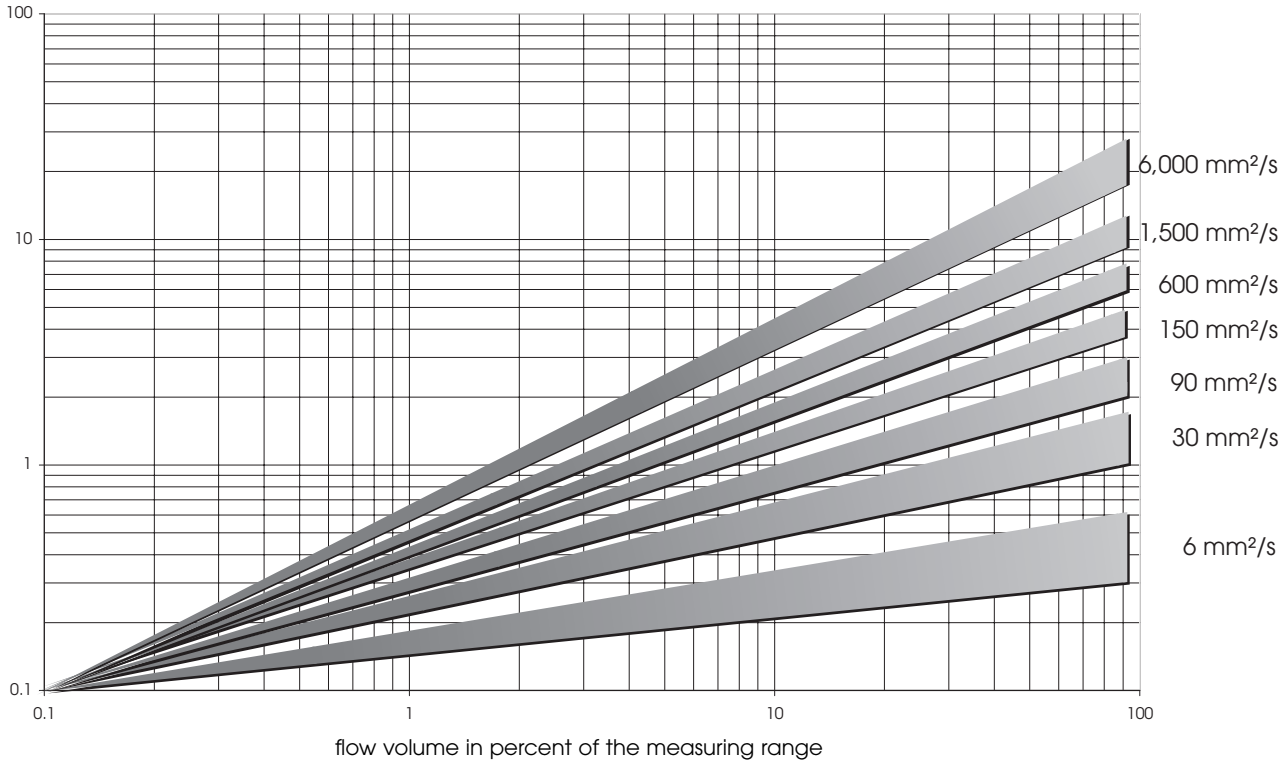
Temperature: up to +150°C fluid temperature (higher temperatures on request)

Viscosity: 30 up to 1 x 10⁶ mm²/s (below 30 mm²/s with restricted measuring range
. and vertical mounting position)

Materials: stainless steel DIN 1.4305/1.4122 (SS303) or DIN 1.4571/1.4435 (SS316 Ti/316L)

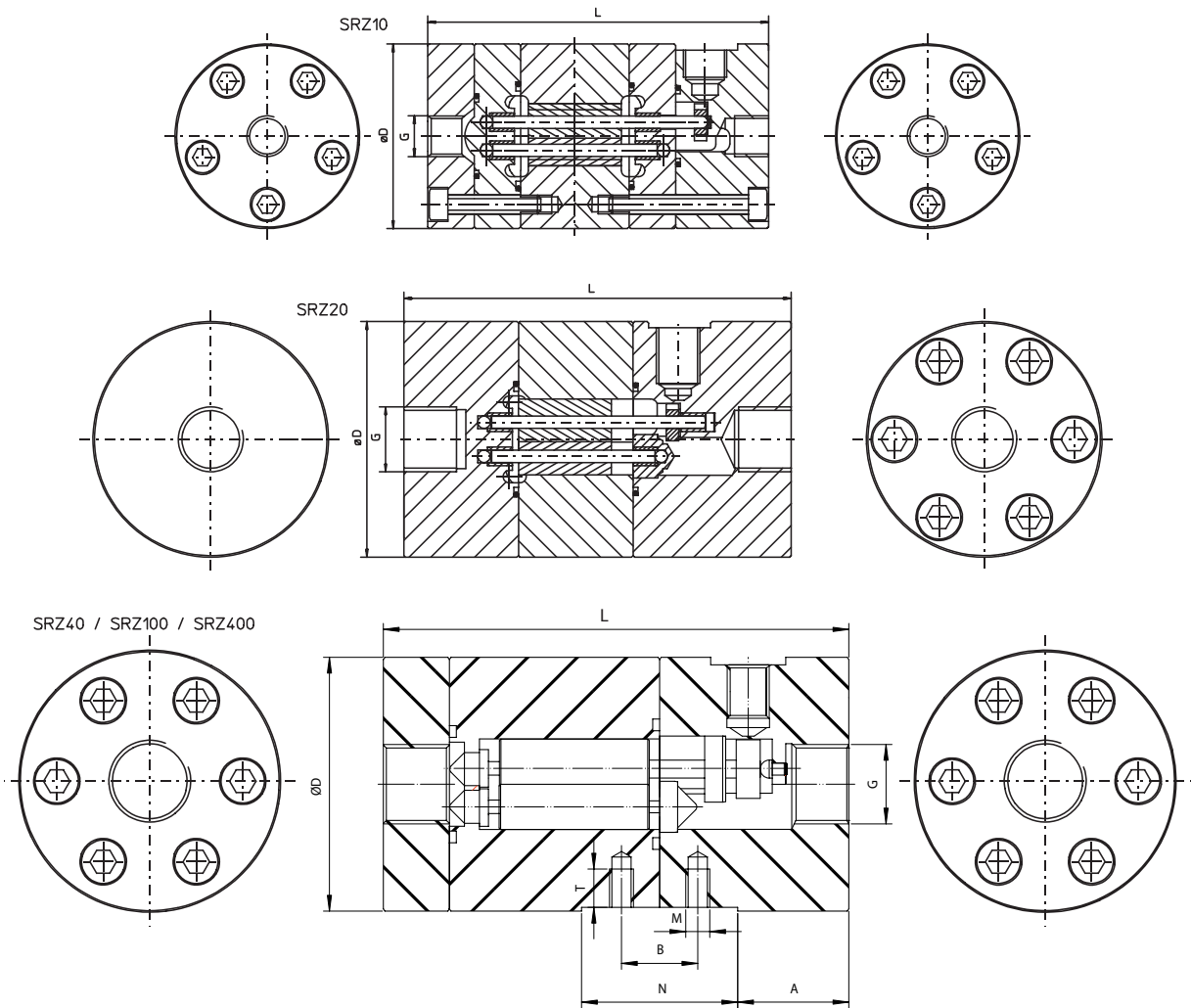
Pressure Drop Diagram

pressure drop in bar (average values)



SRZ 10	. . . . . 0.04	. . . . . 0.4	. . . . . .4	ltr./min
SRZ 20	. . . . . 0.16	. . . . . 1.6	. . . . . 16	ltr./min
SRZ 40	. . . . . 0.4	. . . . . 4.0	. . . . . 40	ltr./min
SRZ 100	. . . . . 1.0	. . . . . 10.0	. . . . . 100	ltr./min
SRZ 400	. . . . . 4.0	. . . . . 40.0	. . . . . 400	ltr./min

Cross Section Drawings



Dimensions

Type	G	L	D	PN
SRZ 10	1/4"	110 mm	60 mm	400 bar
SRZ 20	1/2"	125 mm	76 mm	400 bar
SRZ 40	3/4"	155 mm	85 mm	400 bar
SRZ 100	1"	221 mm	110 mm	400 bar
SRZ 400	1 1/2"	318 mm	134 mm	400 bar

Fixing holes (only SRZ 40 and 100)

Type	M	T	B	N	A
SRZ 40	M 8	12.0 mm	25.4 mm	52.0 mm	36.5 mm
SRZ 100	M 10	18.0 mm	44.0 mm	66.0 mm	54.0 mm