

Certified according to DIN EN ISO 9001

Technical Datasheet



SRZ KL-Series

Helical Flow Meters with Ball Bearings

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Application

Helical Flowmeters are mainly used for processing media with high viscosities. The innovative measuring principle excels through the very low pressure drop, minimal shear of the medium and high measuring precision.

The SRZ range is also particularly well suited for test rig applications, since variations in the viscosity caused by varying temperatures have little effect on measuring accuracy. The robust design of the SRZ facilitates its use for abrasive media as well as contaminated materials, such as heavy heating oils. The choice of high specification materials guarantees longevity, minimal wear and excellent measuring results.

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 rotational 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 data-sheets. The following types are available for our SRZ flow meters.

- VTER/P Carrier-Frequency Pickup and Amplifier
- VTES/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
- Thixotropical fluids
- Fat and oils with varying viscosities
- Hydraulic test rigs with varying viscosities and fluids

Specials:

- 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 10⁶ 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 EExialICT6 for zone 1
- Resistant to corrosion by advanced materials and bearings
- Low operating noise

Technical Data

SRZ Series Helical Flowmeters	
Linearity:	± 0.5% of actual flow value (from 30 mm ² /s onwards) ± 0.25% of actual flow value (from 100 mm ² /s onwards)
Repeatability:	± 0.1%
Operating Pressure:	PN 16/40 up to PN 400
Temperature:	up to +150°C fluid temperature (higher temperatures on request)
Viscosity:	30 up 10 ⁶ mm ² /s (below 30 mm ² /s with restricted measuring range and vertical mounting position)
Materials:	housing: standard: stainless steel as per DIN 1.4305 (SS303) special: 1.4404 (SS316Ti) helicals: standard: stainless steel as per DIN 1.4122 (SS303) special: 1.4435 (SS316L)

Type	Measuring range ltr./min	K-factor pulses/ltr.	Frequency range in Hz
SRZ 40	0.4 to 40	3,500	20 to 1,740
SRZ 100	1 to 100	850	8 to 1,750
SRZ 400	4 to 400	214	14 to 1,800

The measuring ranges are based on a viscosity of 30 mm²/s

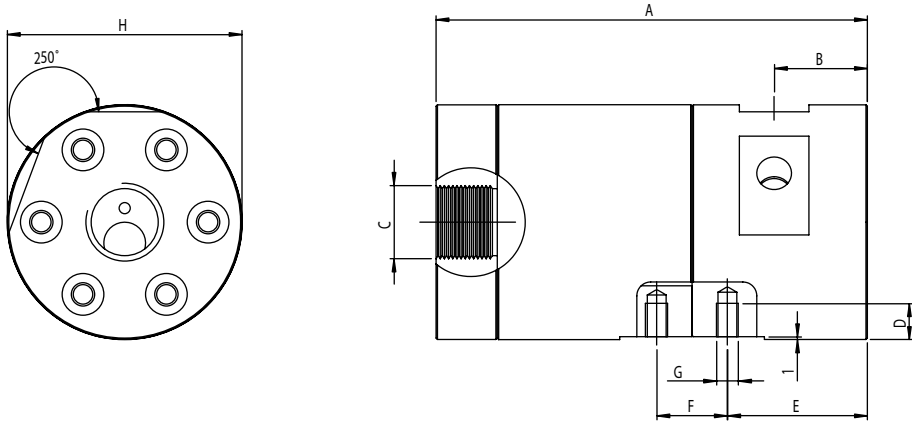
K-factor and frequency figures are average values - the individual figures are recorded during calibration (see datasheet »SRZ...*.C.*« for versions with double pickup).

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

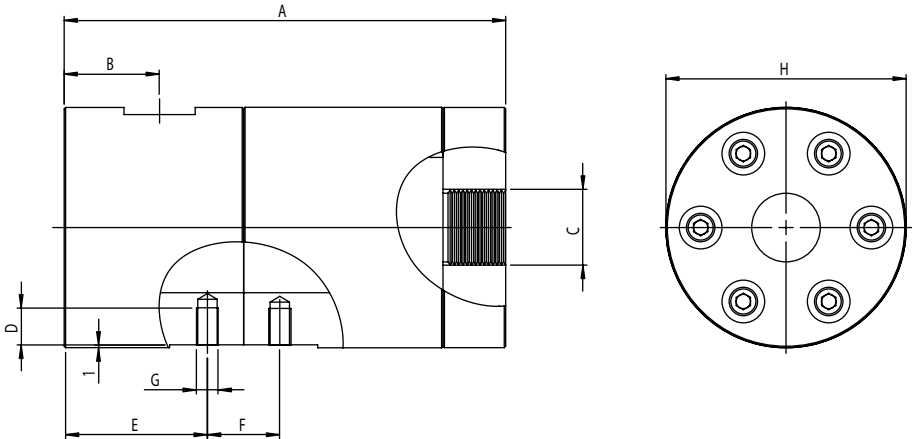
SRZ 10: 11.200 pulses/ltr. and 2 up to 760 Hz
SRZ 40: 1.750 pulses/ltr. and 11 up to 1.167 Hz

Dimensional Drawings

SRZ*-Double Pickup:



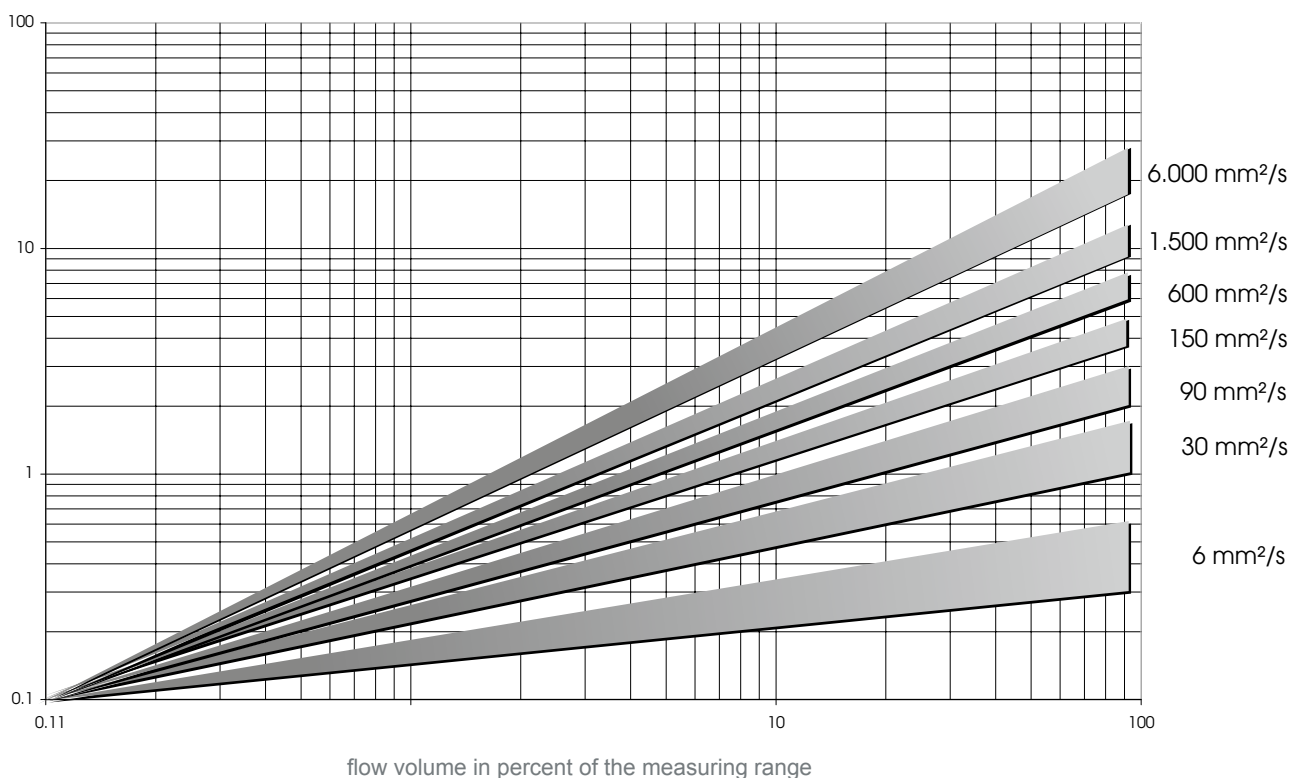
SRZ*-Single Pickup:



Dimensions

Type	A	B	C	D	E	F	G	H
SRZ 40	155	33	G3/4" / M22x1.5 / 3/4" NPT	13	50	25.4	M8	85
SRZ 100	221	41	G1" / 1" NPT	18	65	44	M10	110
SRZ 400	318	60	G1.5"	-	-	-	-	134

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

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