

Certified according to DIN EN ISO 9001

Technical Datasheet



SRZ...ST Series

Helical Flow Meters

for high-viscosity and abrasiv media

Application

The shaft flow meter of the standard series ST is mainly used in the areas where media of high viscosity are transported. The innovative measurement technology is primarily characterized by low pressure loss, small distortion and high accuracy.

In addition, the products SRZ are suitable specifically for use on test stands as the viscosity change due to fluctuating temperatures have only a little influence on the measurement accuracy. The robust version is suitable for abrasive media as well as for contaminated media, e.g. heavy heating oil. High quality structural materials provide long service life and low wearing as well as better measurement accuracy.

Principle and Design

Two high-accuracy cycloidal screw shafts with geometrically overlapping profiles in mutual engagement lie in a cylindrical body of the flow meter so that between the shaft profiles and body walls of the flow meter closed measuring chambers arise.

The measured medium forced-flows in axial direction through the shaft sections along both the holes of the measuring chamber and forces the spindles to rotate. This is done without pulsation and with very small leakage. The sensor, by means of an electromagnetic sensing wheel with a high number of teeth, senses contactlessly the number of revolutions of the pair of spindles through the body wall. The number of revolutions is to a large sensed extent absolutely proportional to the volumetric flow.

For assessment there are available pulses per each volumetric unit. K-factor (calibration factor) of shaft flow meter indicates the exact number of pulses per one volumetric unit. To specify an individual K-factor we perform calibration of each our flow meter. In doing so, we take into account, where possible, the middle operating viscosity in the customer's facility. Relevant calibration protocols form an integral part of the delivery.

Applications

- Polyurethane and polymer
- Light and heavy fuel oil
- Petrochemical products
- Thixotropic fluids
- Fat and oils with varying viscosities
- Hydraulic test rigs with varying viscosities and fluids
- Water / glycol mixtures

Features

- High accuracy
- Wide measuring ranges up to 1:400
- Pressure: up to 400 bar
- Argely independent of viscosity, perfect for 1 to 10⁶ mm²/s
- Low pressure drop compared with other positive displacement meters
- High resolution
- Pulsation-free measurement, non-sensitive to pulsating flows
- Resistant to corrosion by advanced materials and bearings
- Low operating noise

Technical Data

Type	Measuring range, l/min		K-Factor, pulses/l ¹⁾	max. Pressure, bar	Frequency, in Hz ¹⁾			Weight, kg
SRZ 10*	0.02	to 4	16,500	400	5	to	1,100	2,2
SRZ 20*	0.04	to 16	9,000	400	6	to	2,400	4,2
SRZ 40*	0.4	to 40	3,500	400	20	to	2,350	6,2
SRZ 100*	1	to 100	850	400	14	to	1,450	15
SRZ 400*	4	to 400	214	400	14	to	1,450	34

1) Average values with single-pickup
 * Detailed type code on request

General	
Linearity	± 0.5% of actual flow (≥ 30 mm ² /s) ± 0.25% of actual flow (≥ 100 mm ² /s)
Repeatability	± 0.1%
Viscosity range	1 to 10 ⁶ mm ² /s
Materials	Housing: as per DIN 1.4305 (SS303); 1.4404 (SS316L) Helicals: as per DIN 1.4435 (SS316L) Bearing: Carbide Sealing: FKM, PTFE, EPDM
Medium temperature	-20°C bis +150°C (higher temperatures on request)
Dimensions	See drawing (page 4-5)

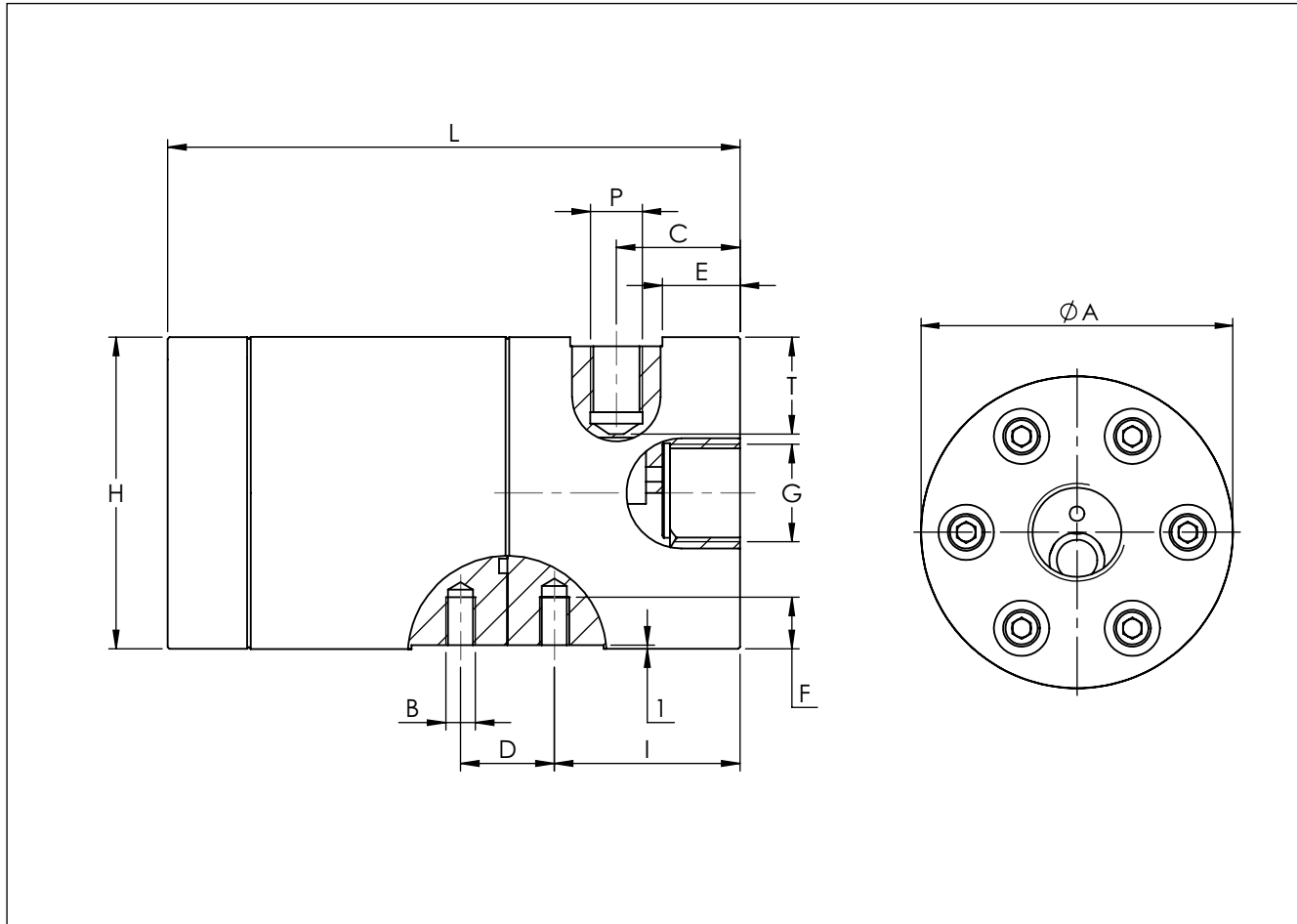
Pickup Selection

Criteria	Type	VTE *	WT */ WI*	VIE *	IF */ VIEG	VTC *	VTB *	TD *	VHE*	FOP *
		Drilling type ¹⁾	E	E	E	E	E	E	D	E
Medium temperature	≤ +70°C									
	≤ +120°C					✓	✓		✓	✓
	≤ +150°C	✓	✓	✓						
	≤ +350°C				✓					
EX-Approval		✓	✓	✓	✓	✓	✓			✓
Frequency output		✓	✓	✓	✓	✓			✓	✓
Dual frequency output										
Analogue output 4 - 20 mA			✓			✓				
Forward / backward recognition										
Local Display						✓	✓			
Linearization			✓			✓				
Supply 12 - 24 V		✓	✓	✓	✓	✓			✓	
Supply battery							✓			✓
Interface			✓			✓				

1) Thread types: E: single pickup / D: dual pickup / F: FOP-pickup

* Ordering code (please see separate datasheet)

Dimensional Drawings (mm) - SRZ with Single Pickup



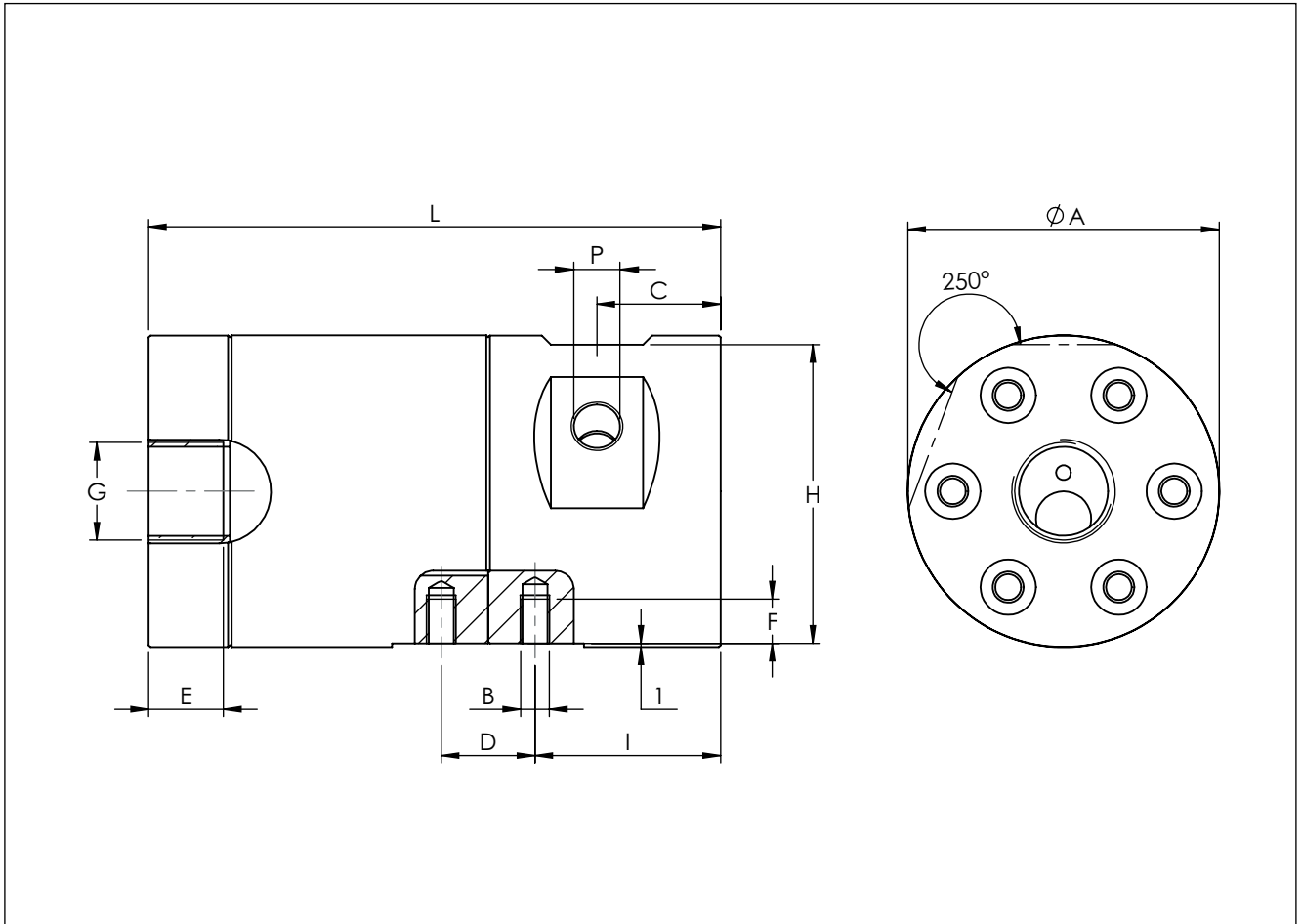
SRZ Type	Ø A	B	C	D	E	F	G	H	I	L	P ¹⁾	T ²⁾
SRZ 10*	59.5	M6	20	-	11	-	G1/4" G3/8"	57	-	95	E	16
SRZ 20*	76	M8	36.5	-	17	-	G1/2"	74	-	125	E	23
SRZ 40*	85	M8	33.5	25	19	13	G3/4" M22x1,5 3/4" NPT	81	50	155	E	26
SRZ 100*	109	M10	53	44	23	18	G1" 1"NPT	106	65	221	E	30
SRZ 400*	134	M12	60	-	30	-	G1 1/2"	132	-	318	E	33

1) See "Pickup Selection" table (page 3)

2) Please notice: total height is calculated by adding up the height (H) and the height of the pickup (separate data sheet) and subtract the bore hole depth (T)

* Detailed type code on request

Dimensional Drawings (mm) - SRZ with Double Pickup



SRZ Type	Ø A	B	C	D	E	F	G	H	I	L	P ¹⁾	T ²⁾
SRZ 20*	76	-	36	-	17	-	G1/2" G3/4"	74	-	125	D	25
SRZ 40*	85	M8	33	25	19	13	G3/4" M22x1,5 3/4" NPT	81	50	155	D	26
SRZ 100*	109	M10	41	44	23	18	G1" 1" NPT	106	65	221	D	30
SRZ 400*	134	-	60	-	30	-	G1 1/2"	132	-	318	D	33

1) See "Pickup Selection" table (page 3)

2) Please notice: total height is calculated by adding up the height (H) and the height of the pickup (separate data sheet) and subtract the bore hole depth (T)

* Detailed type code on request

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