

KRACHT



Screw-Type
Flow Meter

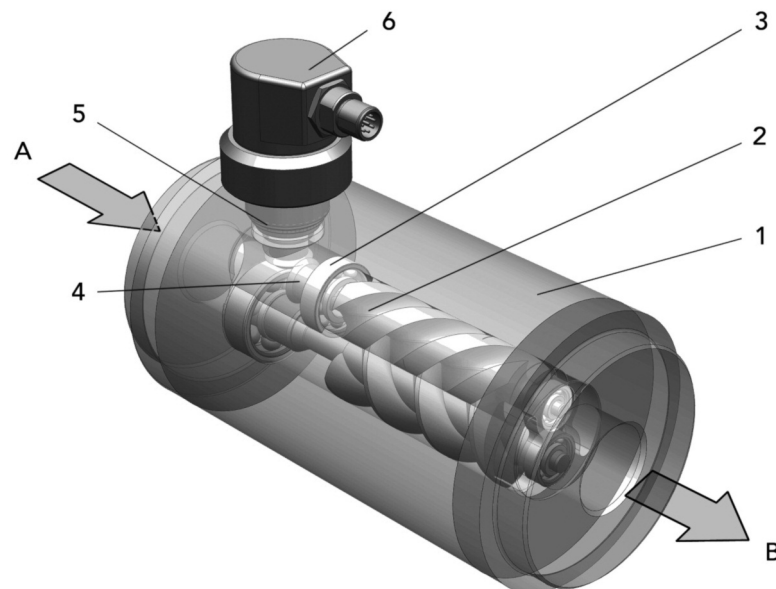
SVC PULSE

Description

Screw-type flow meters are included in the group of displacement counters. Two measuring spindles (Item 2) with screw-shaped profile are engaged with one another. They are supported by roller contact bearings (Item 3) with low friction and are enclosed by a housing (Item 1). The liquid flow makes the spindles rotate and runs through the device in axial direction. During this, closed part volumes are formed that are continually filled and emptied. The measuring principle does not cause any pressure or volume flow pulsation.

The rotation of the measuring spindle is deflected 90° by a bevel gear stage (4). A high-efficiency magnetic coupling (5) transfers the rotation slip-free to a sensor assembly (6) that is applied to the exterior of the unit. Flow in and out has barely any deflection, which means the device only loses comparatively little pressure. This measuring principle means there is no need for stabilizing sections at the inlet and outlet. All moving parts are lubricated by the measuring medium.

Construction



- | | |
|-----------------------------------|---------------------|
| 1 Housing | 5 Magnetic coupling |
| 2 Measuring unit (screw spindles) | 6 Magnetic coupling |
| 3 Bearing (anti-friction bearing) | |
| 4 Bevel gear stage | |

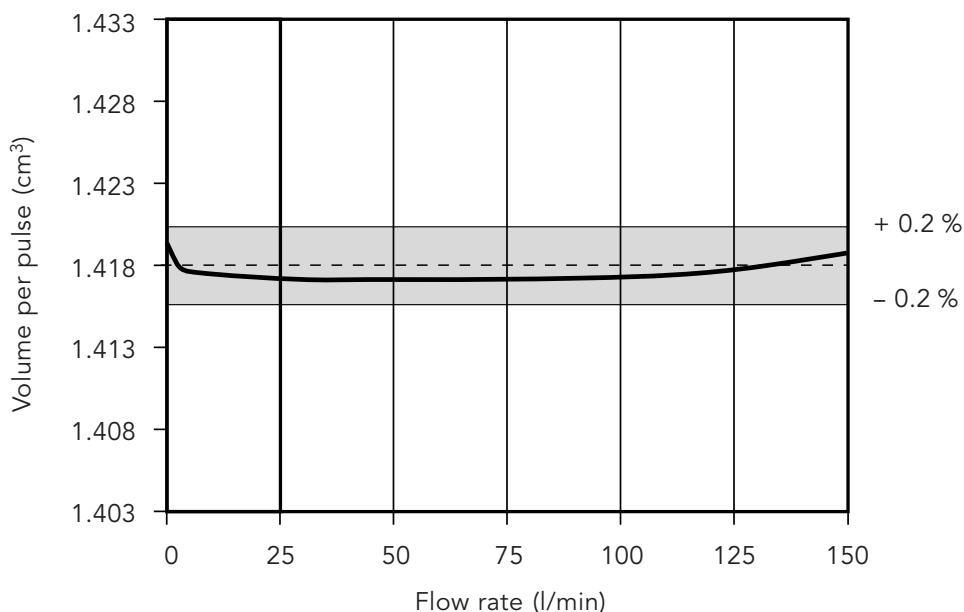
Product Characteristics

- Very low flow resistances
- Selectable high measurement value resolution
- Pulsation-free measuring principle
- High compression strength
- Very low noise emission
- Highly-precise measurements with outstanding reproducibility
- Temperature independent pulses in a large temperature range
- Great accuracy and resolution even at low flow rates in lower measurement range
- Electronics has low susceptibility to disturbance
- Easy to install electronics connection

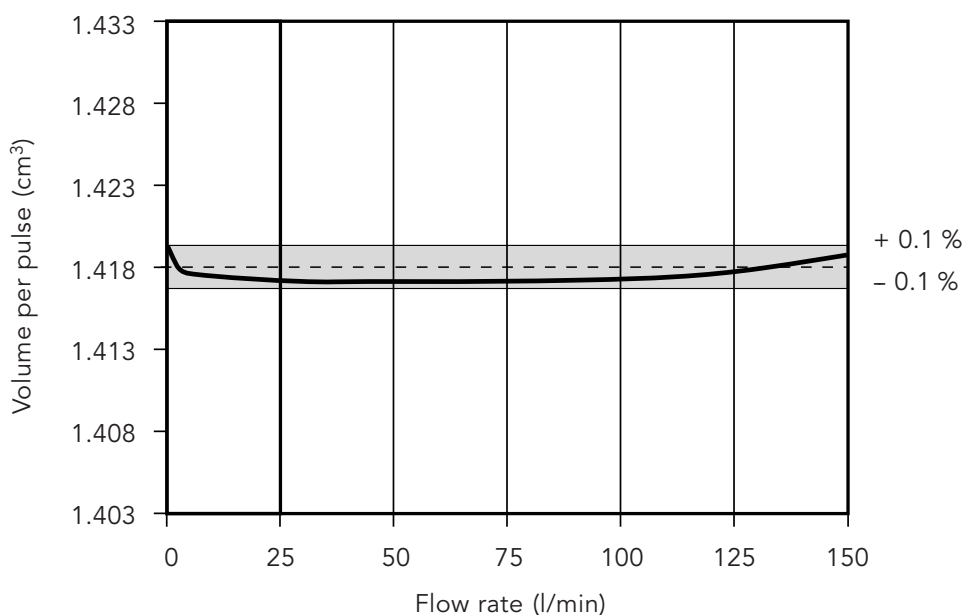
Accuracy Characteristics

- The accuracy values stated by KRACHT refer to the pulse volumes [cm³/Imp], i.e., the percentage deviation applies to each current measurement value.
- The linearity error over the entire measurement range is $\leq \pm 0.1\%$.
- Reproducibility of a measured value is $< 0.1\%$.
- The accuracy check is a component of every pre-delivery inspection.
- On request, we will calibrate in the factory and the result will be documented in the form of an accuracy characteristic curve. Such an accuracy characteristic curve is shown below for an SVC 10 C1 as an example.
- The accuracy values stated by KRACHT are traceable to the DKD (Deutscher Kalibrierdienst).

Accuracy



Linearity



Materials

Housing and flange	EN-GJS-400-15 (GGG-40)
Measuring spindles	Heat-treated steel
Roller contact bearing	Heat-treated steel
O-ring	FKM, EPDM, FEP (other sealing materials on request)

Characteristics

Mounting position	optional		
Flow direction	A -> B (see page 2 "Construction")		
Connection type	Pipe thread, SAE flange, DIN flange		
Operating pressure	SVC 10	p_{max}	= 250 bar
Max. pressure drop	(short-time) (permanent)	Δp_{max} Δp_{max}	= 25 bar = 12 bar (at 20 % of max. flow rate)
Viscosity	1 ... 2,500,000 mm ² /s (flow rate dependent)		
Sound power level	SVC 10	L_{WA}	= 46 dB (A) (at max. flow rate)

Permitted Temperature Ranges

Sealing material	FKM	EPDM	FEP
Ambient temperature	-15 °C ... 80 °C	-30 °C ... 80 °C	-30 °C ... 80 °C
Media temperature	-15 °C ... 120 °C	-30 °C ... 120 °C	-30 °C ... 120 °C

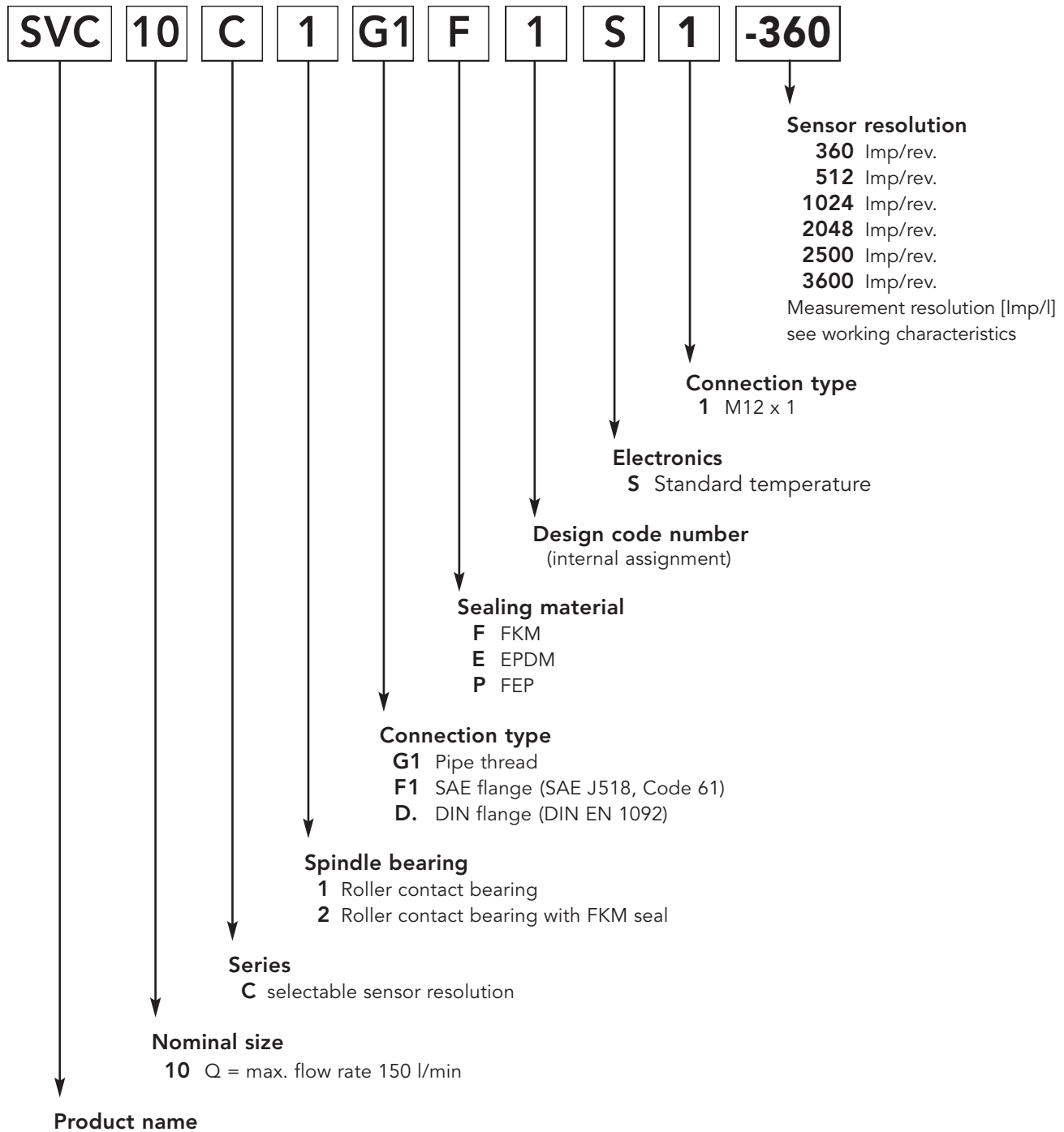
Working Characteristics SVC 10

Sensor resolution	Pulse volume	Re-solution	Resolution (4-fold evaluation)	Pulse frequency (at Q_{nom})	Resolution factor*	Starting point Mounting position		Measuring range
						horizontal	vertical	
[Imp/rev.]	[cm ³ /Imp]	[Imp/l]	[Imp/l]	[Hz]	[-]	horizontal	vertical	[l/min]
360	0.112250	8909	35635	14848	12.6	0.05	0.02	1.0 ... 150
512	0.078926	12670	50681	21117	18.0			
1024	0.039463	25340	101361	42234	35.9			
2048	0.019731	50681	202722	84468	71.9			
2500	0.016164	61866	247463	103110	87.7			
3600	0.011225	89087	356347	148478	126.3			

* as compared to SVC 10 with standard sensor system

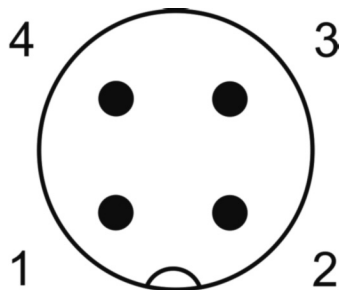
Type Key

Order example



Electrical Connection

Electronics: S



- 1 V_{cc} 11 ... 30 V DC
- 2 Channel 1
- 3 GND
- 4 Channel 2

Electrical Characteristics

Number of measuring channels	2	Pulse offset between both channels*	$90^\circ \pm 30^\circ$
Supply voltage	$U_B = 11 \dots 30$ V DC reverse-polarity protection	Maximum load	± 30 mA
Pulse amplitude	$U_A \geq 0,8 U_B$	Current consumption	Standard 45 mA Maximum 150 mA
Pulse form at symmetr. Output signal	square wave, pulse duty factor/ channel 1: $1 \pm 15\%$	Frequency	max. 200 kHz
Signal output	Push-Pull	Degree of protection	IP 65 DIN EN 60529

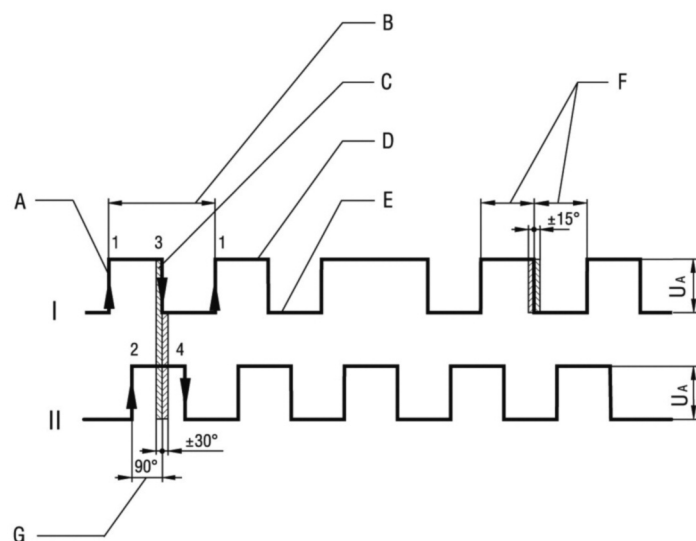
Signal Characteristics

Channel I

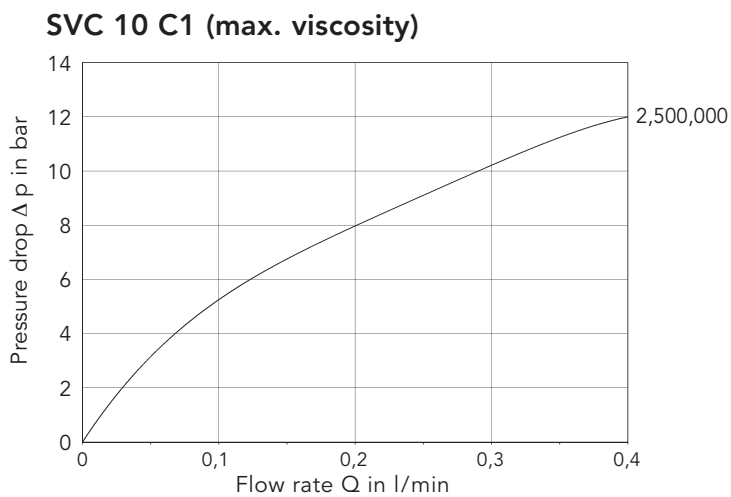
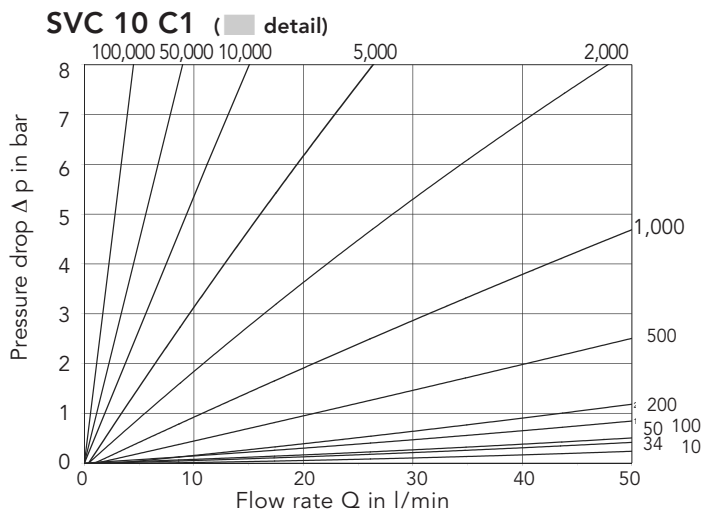
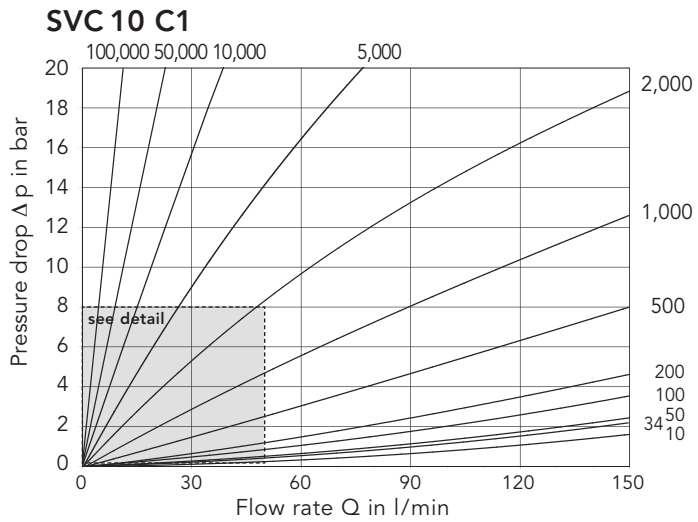
- A rising flank
- B one pulse
- C falling flank
- D ON phase
- E OFF phase
- F Pulse duty factor: $1:1 \pm 15\%$

Channel II*

- G Channel offset



Pressure Drop Parameter: Viscosity (mm²/s)



Product Portfolio

Gear Pumps

Gear pumps for lubricating oil supply equipment, low pressure filling and feed systems, dosing and mixing systems.

Hydraulics

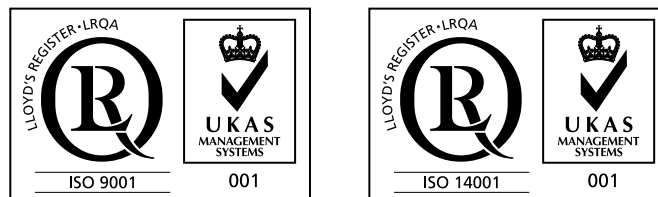
Single and multistage high pressure gear pumps and hydraulic motors for construction machinery, vehicle-mounted machines.

Flow Measurement

Gear, turbine and screw type flow meters and electronics for volume and flow metering technology in hydraulics, processing and laquering technology.

Valves

Cetop directional control and proportional valves, pressure, quantity and stop valves for pipe and slab construction.



SVC PULSE/GB/03.18

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