

Flow sensors

SU9000

SUR54HGBFRKG/W/US
 Ultrasonic volumetric flow sensor
 Connector
 Process connection: G1¼ flat seal

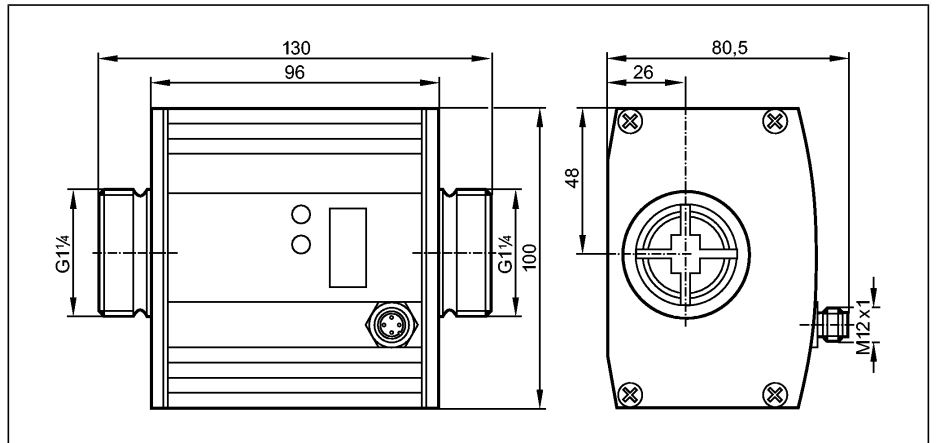
Function programmable
 Totalizer function
 2 outputs

OUT1 = flow monitoring (binary), flow rate meter (pulse), preset meter (binary)

OUT2 = flow monitoring or temperature monitoring (analogue or binary)

Input for counter reset
 Measuring range
 0...200 l/min
 -10...80 °C

Maximum permissible flow rate
 220 l/min (13.2 m³/h)
 connection to pipe by means of an adapter



Made in Germany



Application
Electrical design
Output

liquids: water, glycol solutions, oils (viscosity: ≤ 68 mm²/s at 40°C)
DC PNP/NPN
OUT1: normally open / closed programmable or pulse
OUT2: normally open / closed programmable or analogue (4...20 mA / 0...10 V, scaleable)

Operating voltage [V]	
Current rating [mA]	
Short-circuit protection	
Reverse polarity protection	
Overload protection	
Voltage drop [V]	
Current consumption [mA]	
Power-on delay time [s]	
Analogue output	
Pulse output	
Pulse value	
Pulse length [s]	

19...30 DC 1)
2 x 250
pulsed
yes
yes
< 2
100
10
4...20 mA (max. 500 Ω) / 0...10 V (min. 2000 Ω)
flow rate meter
0.1 l...100000 m³
min. 0.189 / max. 2

Flow monitoring	
Display range	
Measuring range	
Resolution	

0.0...240.0 l/min	0.00...14.40 m³/h
0.0...200.0 l/min	0.00...12.00 m³/h
0.1 l/min	0.01 m³/h

Setting range	
Set point, SP	
Reset point, rP	
Analogue start point, ASP	
Analogue end point, AEP	
in steps of	

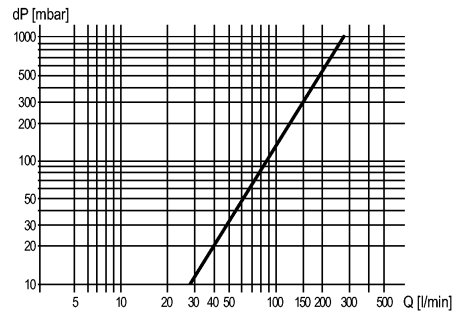
0.4...200.0 l/min	0.02...12.00 m³/h
0.0...199.6 l/min	0.00...11.98 m³/h
0.0...160.0 l/min	0.00...9.60 m³/h
40.0...200.0 l/min	2.40...12.00 m³/h
0.1 l/min	0.01 m³/h

Damping, dAP [s]	
Response time [s]	
Start-up delay [s]	
Accuracy [% of the final value]	
Repeatability	

0.0...1.0
< 0.250 (dAP = 0)
0...50
< ± (3% MW + 0.2% MEW) *) / < ± (8% MW + 0.5% MEW) **)
1 l/min; 60 l/h; 0.06 m³ /h

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Pressure loss (dP) / flow rate (Q)



Temperature monitoring

Measuring range	[°C]	-10...80.0
Resolution	[°C]	0.2
Setting range		
Set point, SP	[°C]	-9.8...80.0
Reset point, rP	[°C]	-10.0...79.8
Analogue start point, ASP	[°C]	-10.0...62.0
Analogue end point, AEP	[°C]	8.0...80.0
in steps of	[°C]	0.2
Response time	[s]	T09 = 30 (Q > 20 l/min) *)
Accuracy	[°C]	± 3 (Q > 20 l/min)
Ambient temperature	[°C]	-10...60
Medium temperature	[°C]	-10...80
Storage temperature	[°C]	-25...80
Protection		IP 67, III
Insulation resistance	[MΩ]	> 100 (500 V DC)
Pressure rating	[bar]	16
Shock resistance		DIN IEC 68-2-27: 20 g (11 ms)
Vibration resistance		DIN IEC 68-2-6: 5 g (10...2000 Hz)
EMC		EN 61000-4-2 ESD: 4 kV CD / 8 kV AD
		EN 61000-4-3 HF radiated: 10 V/m
		EN 61000-4-4 Burst: 2 kV
		EN 61000-4-5 Surge: 0.5 kV
		EN 61000-4-6 HF conducted: 10 V
MTTF	[Years]	185
Housing materials		housing: AlMgSi0.5 anodised; sealing: Viton; connector housing: brass Optalloy-plated; PA 6.6; cover film: polyamide
Materials (wetted parts)		stainless steel 316L / 1.4404; Viton; PPS; Centellen 200
Display		Display unit 6 x LED green (l/min, m³/h, l, m³, 10³, °C)
		Switching status 2 x LED yellow
		Measured values 4-digit alphanumeric display
		Programming 4-digit alphanumeric display
Connection		M12 connector; gold-plated contacts
Weight	[kg]	1.903
Remarks		1) to EN50178, SELV, PELV *) for water **) for glycol solutions (35%) and oils (viscosity: 68 mm²/s at 40°C) sealing: only with supplied Centellen seals MW = measured value MEW = final value of the measuring range

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Accessories (included)	2 x packing washer (Centellen)
Accessories (optional)	adapter order no. E40205 (for R1 pipe, high-grade stainless steel)

Wiring

- OUT1: 3 selection options
- switching output volumetric flow monitoring
 - pulse output volumetric flow
 - switching output preset counter
- OUT2/InD: 5 selection options
- switching output volumetric flow monitoring
 - switching output temperature monitoring
 - analogue output volumetric flow
 - analogue output temperature
 - input for an external reset signal

