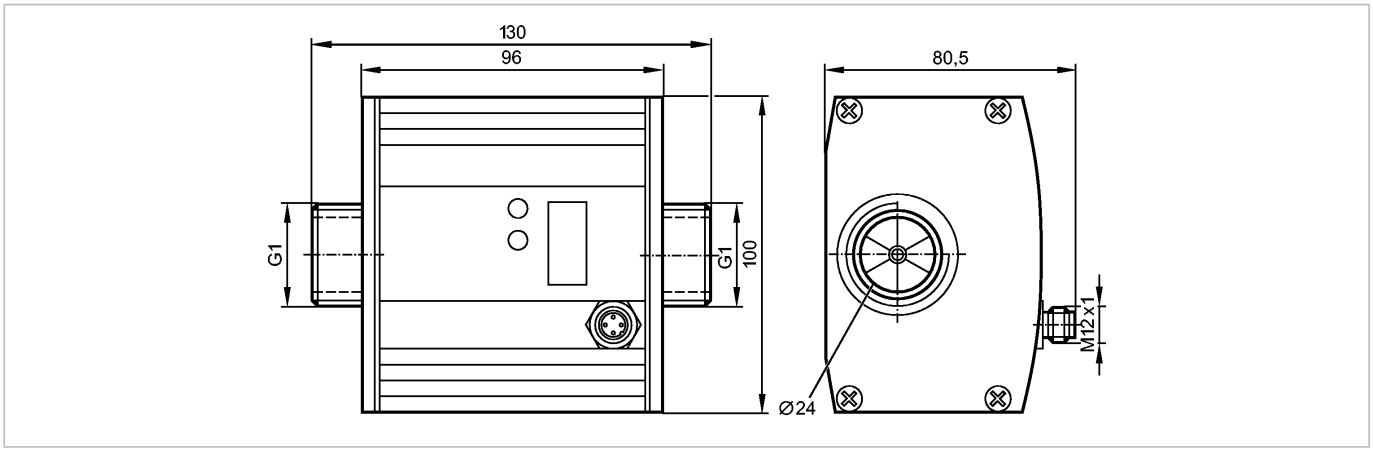
efector300
SU8000

SUR11HGBFRKG/W/US-100-IPF

Flow sensors

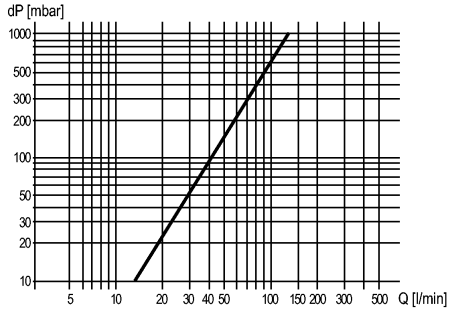


Product characteristics

Ultrasonic flow meter
Quick disconnect
Process connection: G1 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 (analog or binary)
Input for counter reset
Measuring range 0...100 l/min
-10...80 °C
Maximum permissible flow rate
110 l/perc (6.6 m³/h)
connection to pipe by means of an adapter

Application		
Application		Liquids of the fluid group 2 according to the Pressure Equipment Directive (PED): water, glycol solutions, oils (low-viscosity oils with viscosity 7...40 mm²/s at 40°C; high-viscosity oils with viscosity 30...68 mm²/s at 40°C)
Pressure rating	[bar]	16
Medium temperature	[°C]	-10...80
Electrical data		
Electrical design		DC PNP/NPN
Operating voltage	[V]	19...30 DC [1])
Current consumption	[mA]	100
Insulation resistance	[MΩ]	> 100 (500 V DC)
Protection class		III
Reverse polarity protection		yes
Outputs		
Output function		OUT1: normally open / closed programmable or pulse OUT2: normally open / closed programmable or analog (4...20 mA / 0...10 V, scaleable)
Current rating	[mA]	2 x 250
Voltage drop	[V]	< 2
Short-circuit protection		yes (non-latching)
Overload protection		yes
Analog output		4...20 mA; 0...10 V
Max. load	[Ω]	500

SU8000 - Ultrasonic flow meter - eclass: 27273101 / 27-27-31-01

Min. load	[Ω]	2000	
Pulse output		flow rate meter	
Measuring / setting range			
Flow monitoring			
Measuring range		0.0...100.0 l/min	0.000...6.000 m³/h
Display range		0.0...120.0 l/min	0.000...7.200 m³/h
Resolution		0.1 l/min	0.005 m³/h
Set point, SP		0.2...100.0 l/min	0.010...6.000 m³/h
Reset point, rP		0.0...99.8 l/min	0.000...5.990 m³/h
Analog start point, ASP		0.0...80.0 l/min	0.000...4.800 m³/h
Analog end point, AEP		20.0...100.0 l/min	1.200...6.000 m³/h
in steps of		0.1 l/min	0.005 m³/h
Volumetric flow quantity monitoring			
Pulse value		0.1 l...1 000 000 m³	
Pulse length	[s]	0.025...2	
Temperature monitoring			
Measuring range	[°C]	-10...80.0	
Resolution	[°C]	0.2	
Set point, SP	[°C]	-9.8...80.0	
Reset point, rP	[°C]	-10.0...79.8	
Analog start point, ASP	[°C]	-10.0...62.0	
Analog end point, AEP	[°C]	8.0...80.0	
in steps of	[°C]	0.2	
Accuracy / deviations			
Flow monitoring			
Accuracy		< ± (3% MW + 0.2% MEW) *) / < ± (5% MW + 0.5% MEW) **)	
Repeatability		0.2 l/min; 12 l/h; 0.012 m³ /h	
Pressure loss (dP) / flow rate (Q)			
Temperature monitoring			
Accuracy	[K]	± 3 (Q > 1 l/min)	
Reaction times			
Power-on delay time	[s]	10	
Flow monitoring			
Start-up delay	[s]	0...50	
Response time	[s]	< 0.250 (dAP = 0)	
Damping, dAP	[s]	0.0...1.0	
Temperature monitoring			
Response time	[s]	T09 = 70 (Q > 5 l/min) *)	
Environment			
Ambient temperature	[°C]	-10...60	
Storage temperature	[°C]	-25...80	
Protection		IP 67	
Tests / approvals			
Pressure equipment directive		article 3, section 3 - sound engineering practice	
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

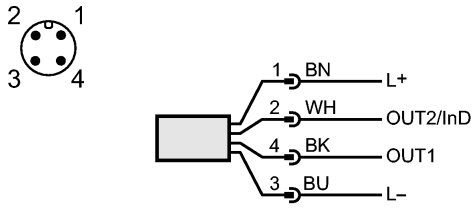
SU8000 - Ultrasonic flow meter - eclass: 27273101 / 27-27-31-01

	EN 61000-4-6 HF conducted:	10 V
Shock resistance	DIN IEC 68-2-27:	20 g (11 ms)
Vibration resistance	DIN IEC 68-2-6:	5 g (10...2000 Hz)
MTTF [Years]	185	
Mechanical data		
Process connection	G1 flat seal	
Materials (wetted parts)	stainless steel 316L / 1.4404; Viton; PES; Centellen 200	
Housing materials	housing: AlMgSi0.5 anodized; sealing: Viton; connector housing: brass Optalloy-plated; PA 6.6; cover film: polyamide	
Weight [kg]	1.712	
Displays / operating elements		
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
Electrical connection		
Connection	M12 connector; gold-plated contacts	

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
- analog output volumetric flow
- analog output temperature
- input for an external reset signal



Accessories	
Accessories (included)	2 x packing washer (Centellen)
Accessories (optional)	adapter; order no. E40179 (for R½ pipe, high-grade stainless steel) order no. E40180 (for R¾ pipe, high-grade stainless steel); order no. E40152 (for R½ pipe, brass) order no. E40153 (for R¾ pipe, brass)
Remarks	
Remarks	1) to EN50178, SELV, PELV *) for water **) for glycol solutions (35%) and oils (viscosity: 68 mm²/s at 40°C) MW = measured value MEW = final value of the measuring range sealing: only with supplied Centellen seals
Pack quantity [piece]	1