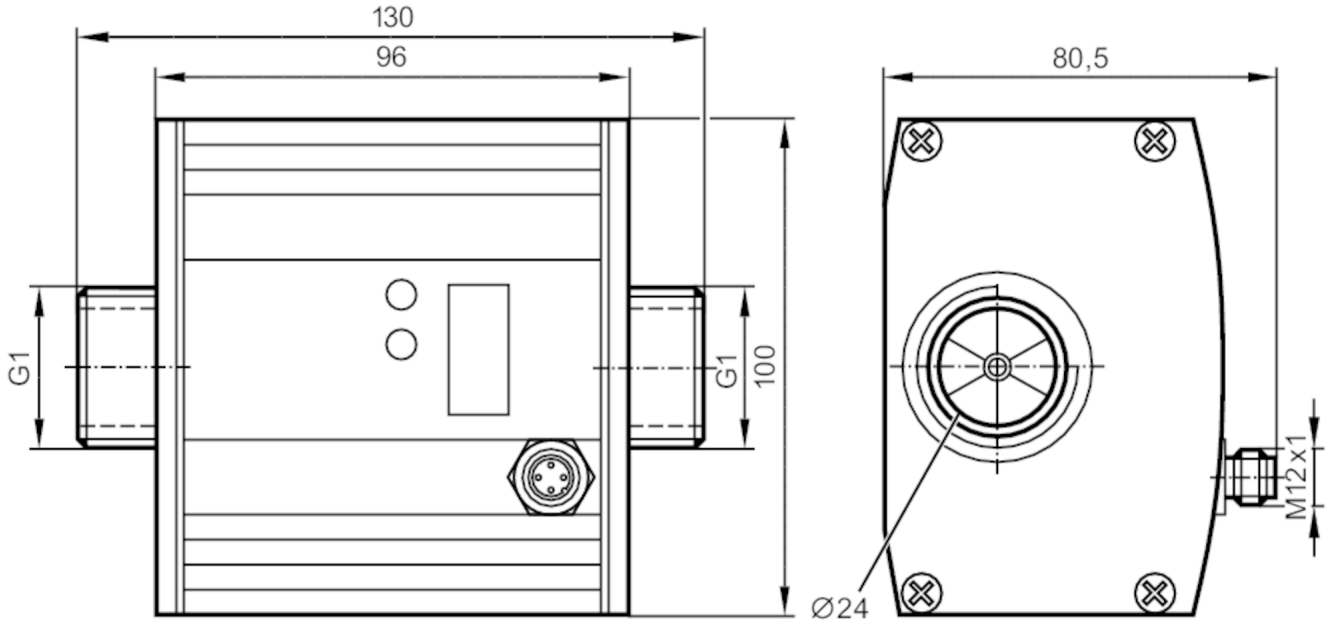
SU8000

Ultrasonic flow meter

SUR11HGBFRKG/W/US-100-IPF



installation length with pipe adapter E40152 / E40155: 205 mm
installation length with pipe adapter E40153 / E40156: 215 mm

Product characteristics			
Number of inputs and outputs		Number of digital outputs: 2; Number of analog outputs: 1	
Measuring range		0...100 l/min	0...6 m³/h
Process connection		threaded connection G 1 external thread flat seal	
Application			
System		gold-plated contacts	
Application		Totalizer function; for industrial applications	
Installation		connection to pipe by means of an adapter	
Media		water; glycol solutions; Coolants; oils	
Note on media		low-viscosity oils with viscosity: 7...40 mm²/s (40 °C)	
		high-viscosity oils with viscosity: 30...68 mm²/s (40 °C)	
Medium temperature	[°C]	-10...80	
Pressure rating		16 bar	1.6 MPa
Electrical data			
Operating voltage	[V]	19...30 DC; (to SELV/PELV)	
Current consumption	[mA]	100	
Min. insulation resistance	[MΩ]	100; (500 V DC)	
Protection class		III	
Reverse polarity protection		yes	
Power-on delay time	[s]	10	
Measuring principle		ultrasonic	
Inputs / outputs			
Number of inputs and outputs		Number of digital outputs: 2; Number of analog outputs: 1	

SU8000

Ultrasonic flow meter

SUR11HGBFRKG/W/US-100-IPF

Inputs			
Inputs		counter reset	
Outputs			
Total number of outputs		2	
Output signal		switching signal; analog signal; pulse signal; (configurable)	
Electrical design		PNP/NPN	
Number of digital outputs		2	
Output function		normally open / closed; (configurable)	
Max. voltage drop switching output DC	[V]	2	
Permanent current rating of switching output DC	[mA]	250; (per output)	
Number of analog outputs		1	
Analog current output	[mA]	4...20; (scalable)	
Max. load	[Ω]	500	
Analog voltage output	[V]	0...10; (scalable)	
Min. load resistance	[Ω]	2000	
Pulse output		flow rate meter	
Short-circuit protection		yes	
Type of short-circuit protection		yes (non-latching)	
Overload protection		yes	
Measuring/setting range			
Measuring range		0...100 l/min	0...6 m³/h
Display range		0...120 l/min	0...7.2 m³/h
Resolution		0.1 l/min	0.005 m³/h
Set point SP		0.2...100 l/min	0.01...6 m³/h
Reset point rP		0...99.8 l/min	0...5.99 m³/h
Analog start point ASP		0...80 l/min	0...4.8 m³/h
Analog end point AEP		20...100 l/min	1.2...6 m³/h
Max. flow rate		110 l/min	6.6 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	
Resolution	[°C]	0.2	
Set point SP	[°C]	-9.8...80	
Reset point rP	[°C]	-10...79.8	
Analog start point	[°C]	-10...62	
Analog end point	[°C]	8...80	
In steps of	[°C]	0.2	

SU8000

Ultrasonic flow meter

SUR11HGBFRKG/W/US-100-IPF

Accuracy / deviations			
Flow monitoring			
Accuracy (in the measuring range)		water: < ± (3 % MW + 0,2 % MEW); glycol (35 %), oil (viscosity 68 mm²/s at 40 °C): < ± (5 % MW + 0,5 % MEW)	
Repeatability		0,2 l/min; 12 l/h; 0,012 m³ /h	
Temperature monitoring			
Accuracy	[K]	± 3 (Q > 1 l/min)	
Reaction times			
Flow monitoring			
Response time	[s]	0.25; (dAP = 0)	
Delay time programmable dS, dr	[s]	0...50	
Damping process value dAP	[s]	0...1	
Temperature monitoring			
Dynamic response T05 / T09	[s]	T09 = 70 (Q > 5 l/min); (water)	
Software / programming			
Parameter setting options		Flow monitoring; quantity meter; Preset counter; Temperature monitoring	
Operating conditions			
Ambient temperature	[°C]	-10...60	
Storage temperature	[°C]	-25...80	
Protection		IP 67	
Tests / approvals			
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
CPA approval		model number	001US
		accuracy class	3
		maximum allowable error	-
		Q (min)	0,3 m³/h
		Q (t)	0,54 m³/h
		Q (max)	6 m³/h
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	
Pressure equipment directive		sound engineering practice; can be used for group 2 fluids; group 1 fluids on request	
Mechanical data			
Weight	[g]	1713.5	
Housing		rectangular	
Dimensions	[mm]	130 x 100 x 80.5	
Material		housing: AlMgSi0.5 anodized; sealing: FKM; PA 6.6; cover film: PA	
Materials (wetted parts)		stainless steel (1.4404 / 316L); FKM; PES; Centellen 200	
Process connection		threaded connection G 1 external thread flat seal	

SU8000

Ultrasonic flow meter

SUR11HGBFRKG/W/US-100-IPF

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	alphanumeric display, 4-digit
	Programming	alphanumeric display, 4-digit

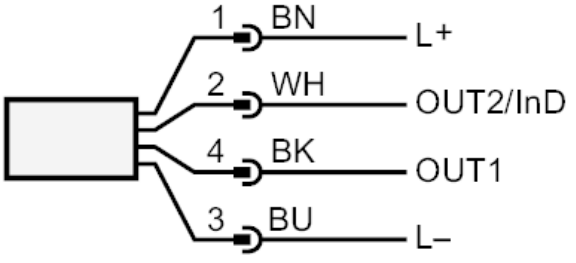
Accessories	
Items supplied	sealings: 2, Centellen
Accessories (optional)	adapter for pipe: 1 x R 1/2, stainless steel, E40179
	adapter for pipe: 1 x R 3/4, stainless steel, E40180
	adapter for pipe: 1 x R 1/2, brass, E40152
	adapter for pipe: 1 x R 3/4, brass, E40153

Remarks	
Remarks	MW = Measured value
	MEW = Final value of the measuring range
	sealing: only with supplied Centellen seals
Pack quantity	1 pcs.

Electrical connection

Connector: 1 x M12; coding: A; Moulded body: brass, Optalloy-plated; Contacts: gold-plated

Connection



OUT1:	Switching output Volumetric flow quantity monitoring
	Pulse output quantity meter
	signal output Preset counter
OUT2/InD:	Switching output Volumetric flow quantity monitoring / Temperature monitoring
	analog output Volumetric flow quantity monitoring / Temperature monitoring
	Input counter reset

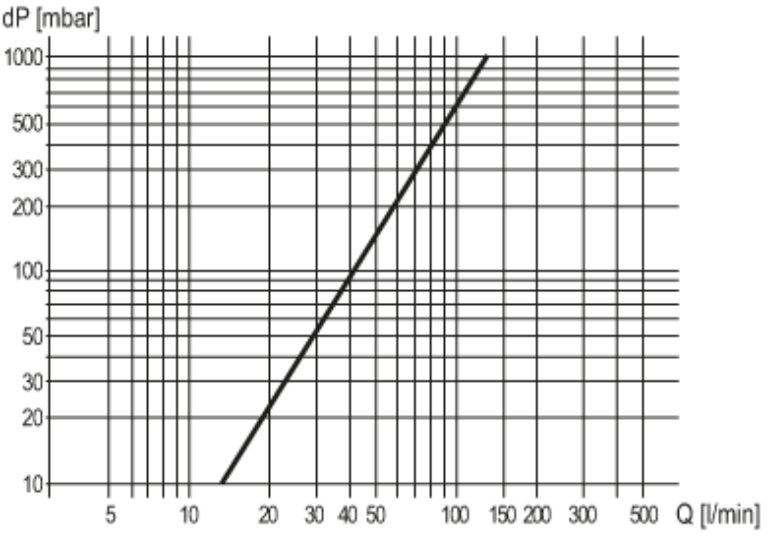
SU8000

Ultrasonic flow meter

SUR11HGBFRKG/W/US-100-IPF

Diagrams and graphs

Pressure loss



dP Pressure loss

Q volumetric flow quantity