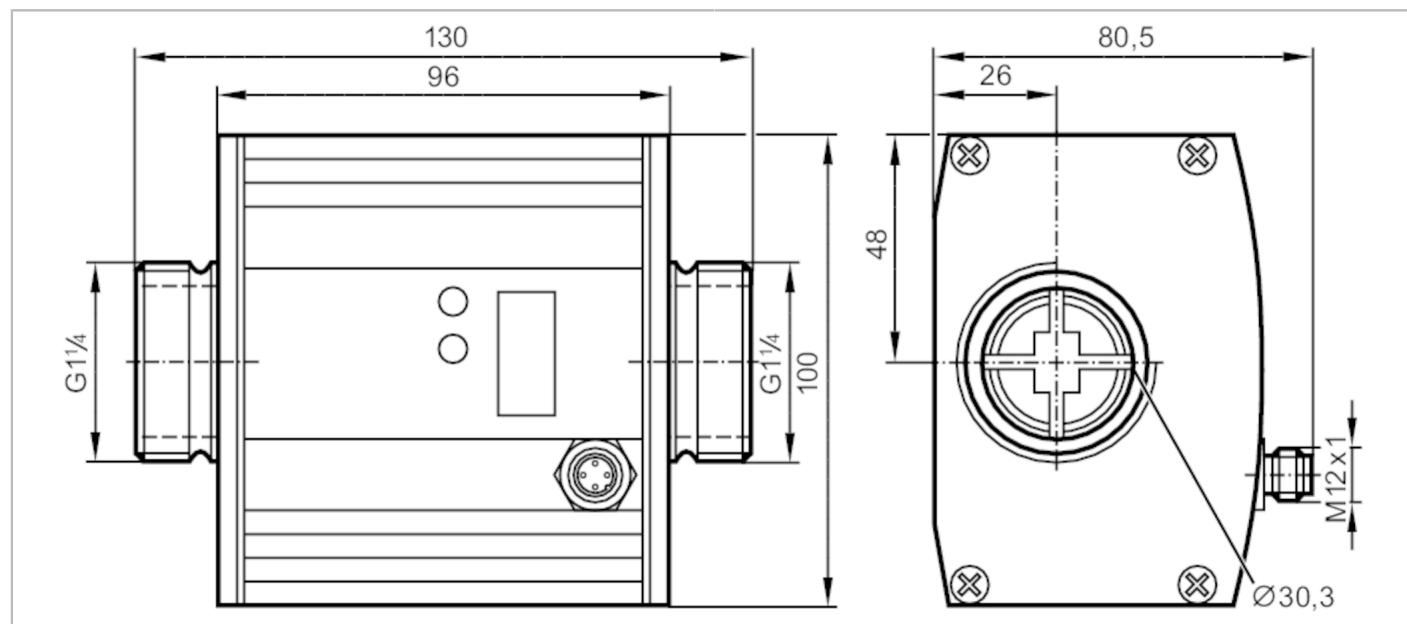


SU9000

Ultrasonic flow meter

SUR54HGBFRKG/W/US-100-IPF



Application		
Application		totaliser function; for industrial applications
Installation		connection to pipe by means of an adapter
Media		water; glycol solutions; coolants; oil
Medien		low-viscosity oils with viscosity: 7...40 mm ² /s (40 °C) high-viscosity oils with viscosity: 30...68 mm ² /s (40 °C)
Medium temperature	[°C]	-10...80
Pressure rating	[bar]	16
Electrical data		
Operating voltage	[V]	19...30 DC; (according to EN 50178 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
Inputs		
Inputs		counter reset



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Outputs		
Total number of outputs	2	
Output signal	switching signal; analogue signal; pulse signal; (configurable)	
Electrical design	PNP/NPN	
Number of digital outputs	2	
Output function	normally open / normally closed; (parameterisable)	
Max. voltage drop switching output DC [V]	2	
Permanent current rating of switching output DC [mA]	250; (per output)	
Number of analogue outputs	1	
Analogue current output [mA]	4...20; (scalable)	
Max. load [Ω]	500	
Analogue 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	pulsed	
Overload protection	yes	
Measuring/setting range		
Measuring range	0...200 l/min	0...12 m³/h
Display range	0...240 l/min	0...14.4 m³/h
Resolution	0.1 l/min	0.01 m³/h
Set point SP	0.4...200 l/min	0.02...12 m³/h
Reset point rP	0...199.6 l/min	0...11.98 m³/h
Analogue start point ASP	0...160 l/min	0...9.6 m³/h
Analogue end point AEP	40...200 l/min	2.4...12 m³/h
Max. flow rate	220 l/min	13.2 m³/h
In steps of	0.1 l/min	0.01 m³/h
volumetric flow quantity monitoring		
Pulse value	0.1 l...100000 m³	
Pulse length [s]	0,0125...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	
Analogue start point [°C]	-10...62	
Analogue end point [°C]	8...80	
In steps of [°C]	0.2	



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Accuracy / deviations		
Flow monitoring		
Accuracy (in the measuring range)	< ± (3 % MW + 0,2 % MEW) / < ± (8 % MW + 0,5 % MEW); (water; glycol: 35%; oil: viscosity 68 mm²/s at 40 °C)	
Repeatability	1 l/min; 60 l/h; 0,06 m³ /h	
Temperature monitoring		
Accuracy	[K]	± 3 (Q > 20 l/min)
Response times		
Flow monitoring		
Response time	[s]	0.25; (dAP = 0)
Delay time programmable dS, dr	[s]	0...50
Damping for the switching output dAP	[s]	0...1
Temperature monitoring		
Dynamic response T05 / T09	[s]	T09 = 30 (Q > 20 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
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]	1901.2
Materials	housing: AlMgSi0,5 anodised; Sealing: FKM; connector housing: brass Optalloy-plated; PA 6.6; cover film: PA	
Materials (wetted parts)	stainless steel (1.4404 / 316L); FKM; PPS; Centellen 200	
Process connection	threaded connection G 1 1/4 flat seal	
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

SU9000



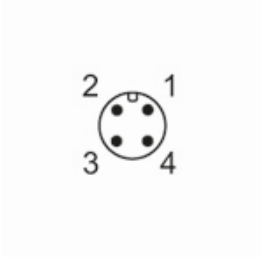
Ultrasonic flow meter

SUR54HGBFRKG/W/US-100-IPF

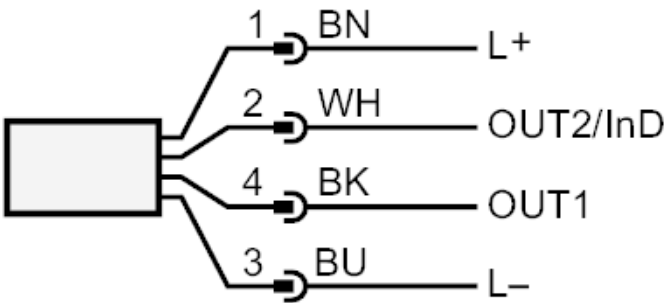
Accessories	
Accessories (supplied)	sealings: 2, Centellen
Accessories (optional)	adapter for pipe: 1 x R1, stainless steel, E40205
Remarks	
Remarks	sealing: only with supplied Centellen seals
	MW = measured value
	MEW = Final value of the measuring range
Pack quantity	1 pcs.

Electrical connection

Connector: 1 x M12; 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 analogue output volumetric flow quantity monitoring / Temperature monitoring input counter reset

SU9000

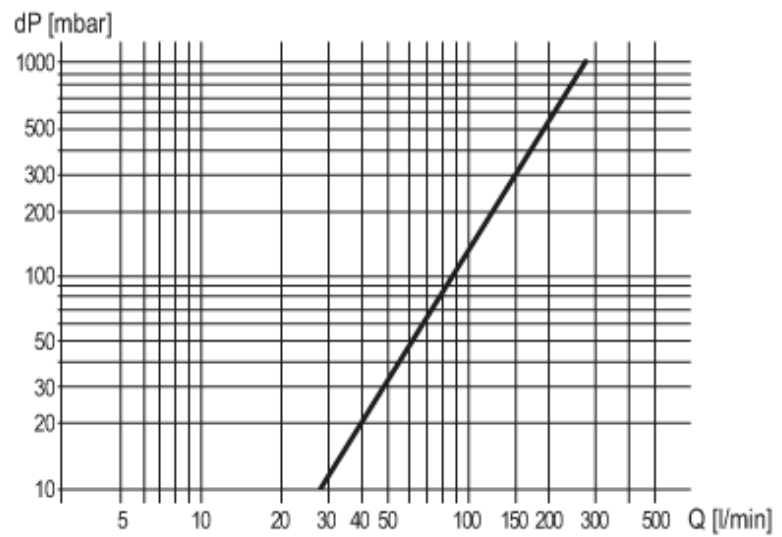
Ultrasonic flow meter

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Diagrams and graphs

Pressure loss



dP Pressure loss

Q volumetric flow quantity