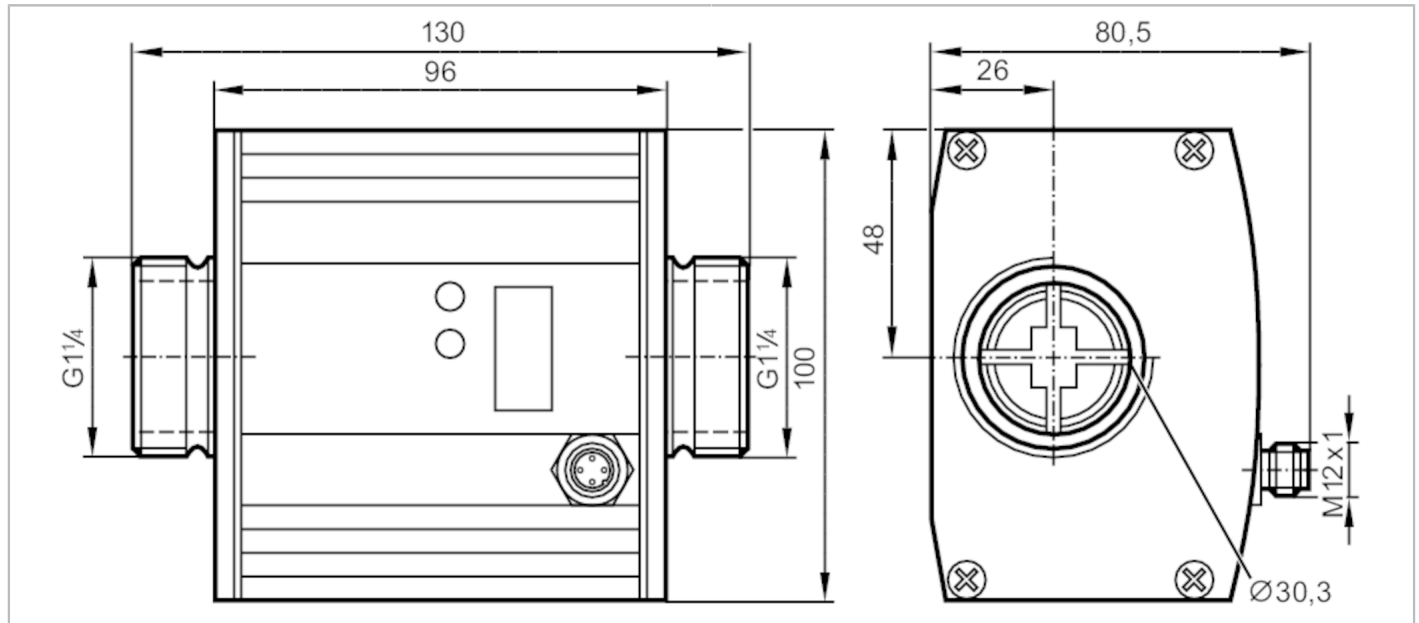




Ultrasonic flow meter

SUR54HGBFRKG/W/US-100-IPF



Product characteristics

Number of inputs and outputs	Number of digital outputs: 2; Number of analogue outputs: 1	
Measuring range	0...3170 gph	0...52.84 gpm
Process connection	threaded connection G 1 1/4 external thread flat seal	

Application

Special feature	Gold-plated contacts	
Application	totaliser 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 mm ² /s (40 °C) high-viscosity oils with viscosity: 30...68 mm ² /s (40 °C)	
Medium temperature	[°F]	14...176
Pressure rating	[bar]	16
Pressure rating	[MPa]	1.6
Pressure rating	[psi]	232

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 analogue outputs: 1
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Ultrasonic flow meter

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Inputs		
Inputs	counter reset	
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...3170 gph	0...52.84 gpm
Display range	0...3804 gph	0...63.4 gpm
Resolution	1 gph	0.02 gpm
Set point SP	7...3170 gph	0.12...52.84 gpm
Reset point rP	0...3163 gph	0...52.72 gpm
Analogue start point ASP	0...2547 gph	0...42.46 gpm
Analogue end point AEP	621...3170 gph	10.36...52.84 gpm
Max. flow rate	3804 gph	63.4 gpm
In steps of	1 gph	0.02 gpm
Volumetric flow quantity monitoring		
Pulse value	0.02...9000 * 10 ³ gal	
In steps of	0.02 gal	
Pulse length [s]	0,095...2	
Temperature monitoring		
Measuring range [°F]	14...176	
Resolution [°F]	0.5	
Set point SP [°F]	14.5...176	
Reset point rP [°F]	14...175.5	
Analogue start point [°F]	14...144	
Analogue end point [°F]	46...176	
In steps of [°F]	0.5	



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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): < ± (8 % MW + 0,5 % MEW)	
Repeatability	0,05 gpm; 3 gph	
Temperature monitoring		
Accuracy	[K]	± 5,4 (Q > 0,26 gpm)
Response 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 = 30 (Q > 5 gpm); (water)
Software / programming		
Parameter setting options	Flow monitoring; quantity meter; Preset counter; Temperature monitoring	
Operating conditions		
Ambient temperature	[°F]	14...140
Storage temperature	[°F]	-13...176
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]	1859
Housing	rectangular	
Dimensions	[mm]	130 x 100 x 80.5
Materials	housing: AlMgSi0,5 anodised; Sealing: FKM; PA 6.6; cover film: PA	
Materials (wetted parts)	stainless steel (316L/1.4404); FKM; PPS; Centellen 200	
Process connection	threaded connection G 1 1/4 external thread flat seal	
Displays / operating elements		
Display	Display unit	5 x LED, green (gpm, gph, gal, °F, 10³)
	switching status	2 x LED, yellow
	measured values	alphanumeric display, 4-digit
	programming	alphanumeric display, 4-digit

SU9001



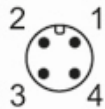
Ultrasonic flow meter

SUR54HGBFRKG/W/US-100-IPF

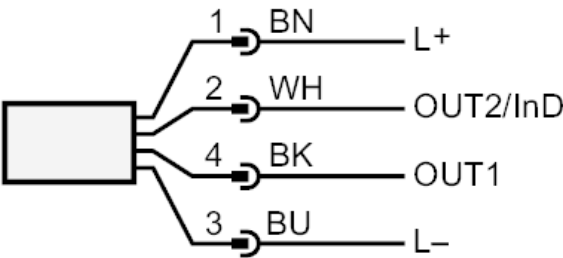
Accessories	
Items supplied	sealings: 2, Centellen
Accessories (optional)	adapter for pipe: 1 x 1" NPT, stainless steel, E40206
Remarks	
Remarks	sealing: only with supplied Centellen seals
	MW = measured value
	MEW = Final value of the measuring range
Pack quantity	1 pcs.

Electrical connection

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

SU9001

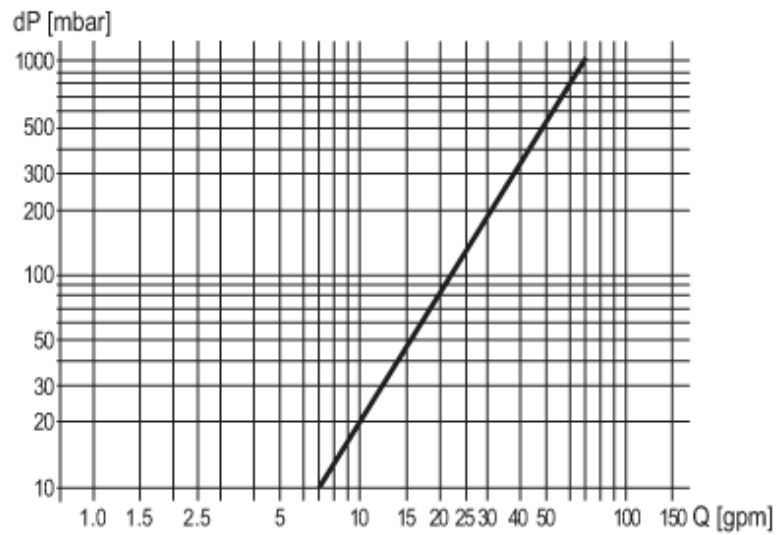
Ultrasonic flow meter

SUR54HGBFRKG/W/US-100-IPF



Diagrams and graphs

Pressure loss



dP Pressure loss

Q volumetric flow quantity