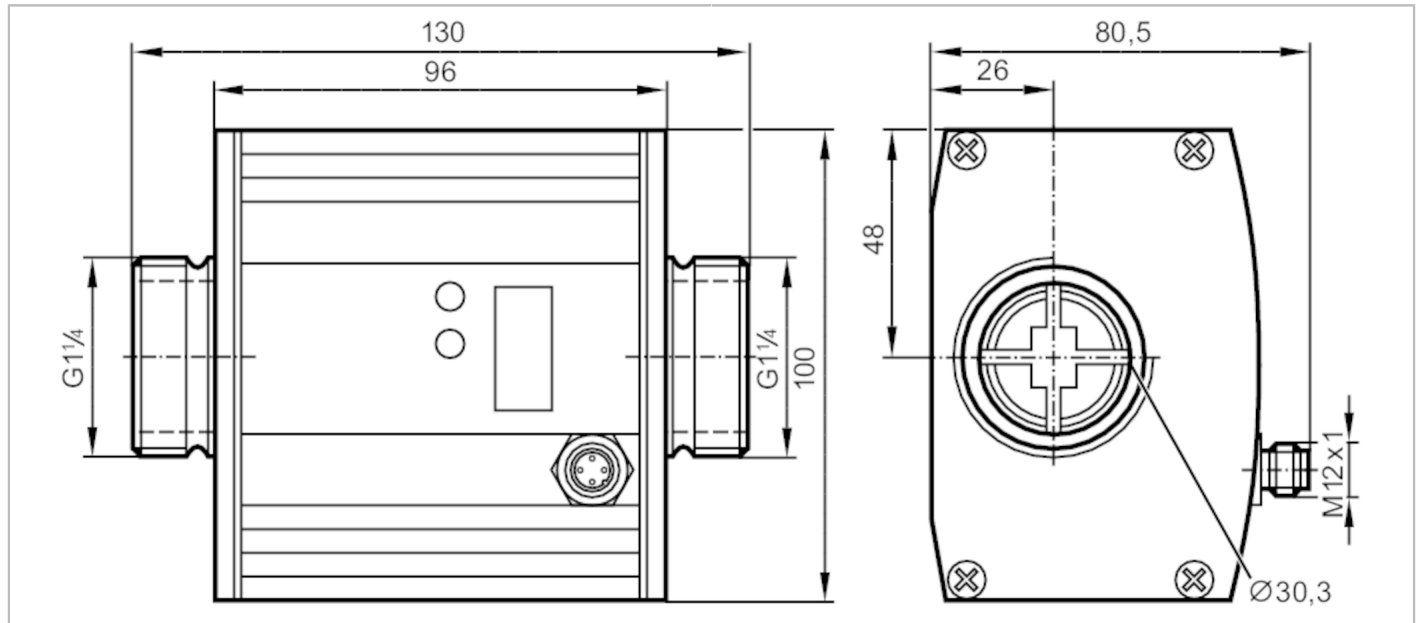


# SU9001



## 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 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; oil	
Note on media	low-viscosity oils with viscosity: 7...40 mm <sup>2</sup> /s (40 °C) high-viscosity oils with viscosity: 30...68 mm <sup>2</sup> /s (40 °C)	
Medium temperature [°F]	14...176	
Pressure rating [bar]	16	
Pressure rating [psi]	232	

### 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 / outputs

Number of inputs and outputs	Number of digital outputs: 2; Number of analogue outputs: 1	
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### 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...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 <sup>3</sup> 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)	$< \pm (3 \% MW + 0,2 \% MEW) / < \pm (8 \% MW + 0,5 \% MEW);$ (water; glycol: 35%; oil: viscosity 68 mm <sup>2</sup> /s at 40 °C)	
Repeatability	0,05 gpm; 3 gph	
Temperature monitoring		
Accuracy [K]	$\pm 5,4 (Q > 0,26 \text{ gpm})$	
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 > 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	
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	5 x LED, green (gpm, gph, gal, °F, 10 <sup>3</sup> )
	switching status	2 x LED, yellow
	measured values	alphanumeric display, 4-digit
	programming	alphanumeric display, 4-digit

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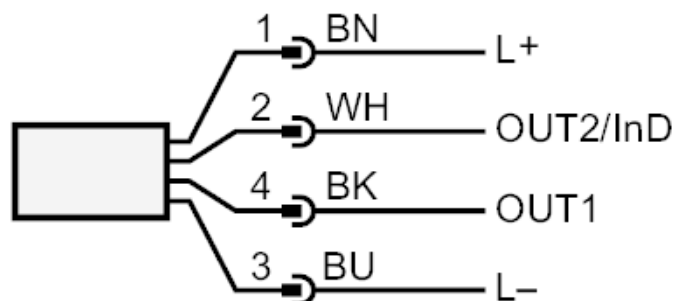
Accessories	
Accessories (supplied)	sealings: 2, Centellen
Accessories (optional)	adapter for pipe: 1 x 1 NPT, stainless steel, E40206
Remarks	
Remarks	sealing: only with supplied Centellen seals MW = measured value MEW = Final value of the measuring range
Pack quantity	1 pcs.

## Electrical connection

Connector: 1 x M12; 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

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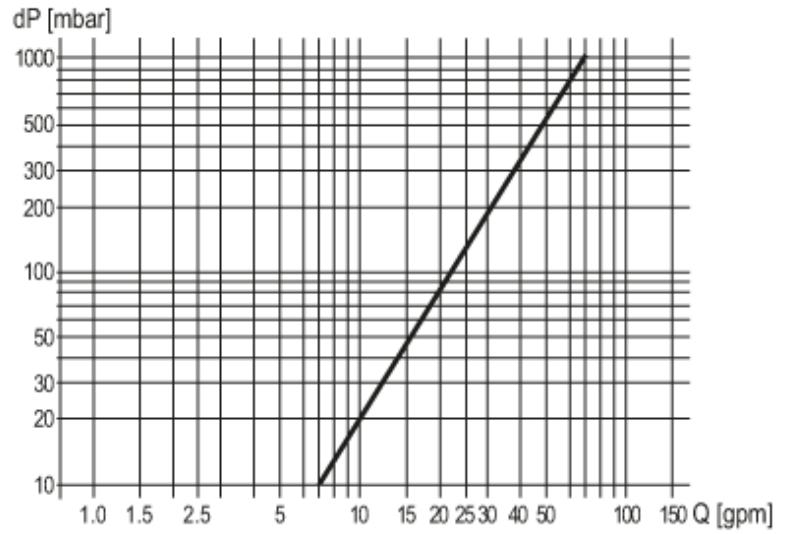


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### Diagrams and graphs

Pressure loss



dP Pressure loss

Q volumetric flow quantity