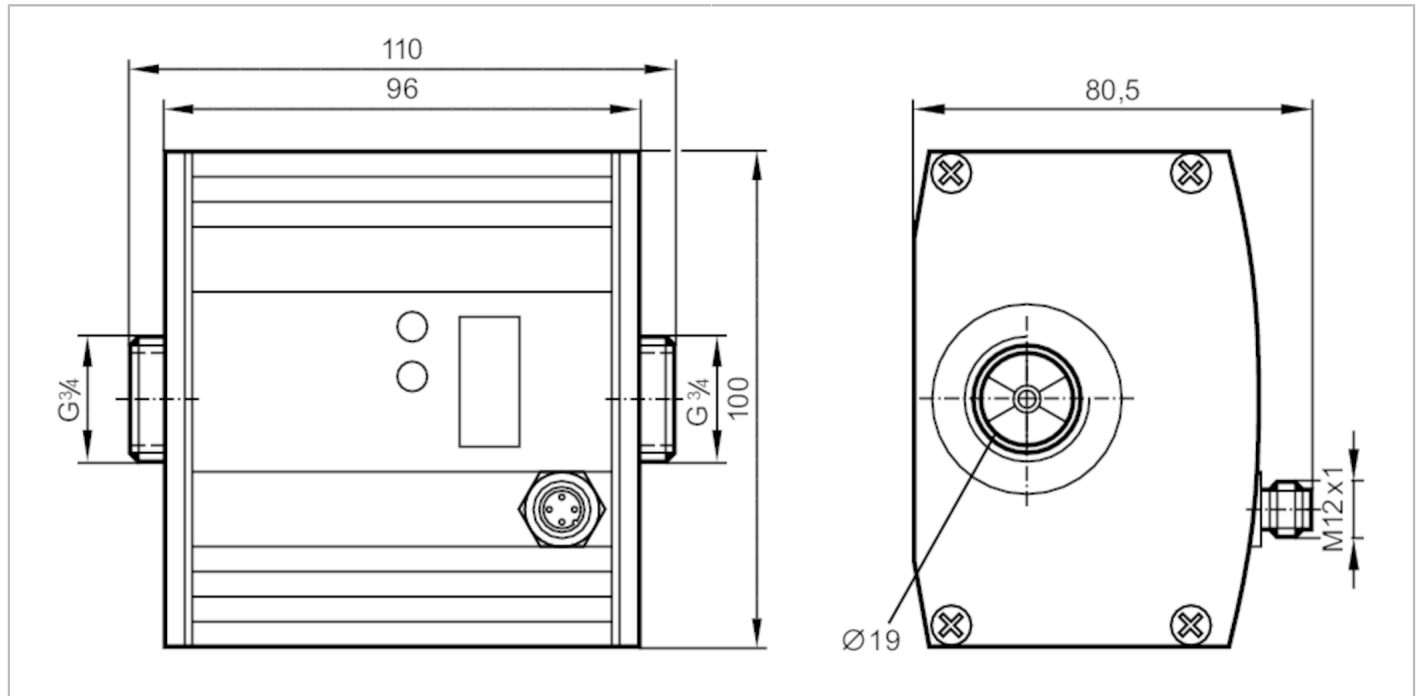


SU7000



Ultrasonic flow meter

SUR34HGBFRKG/W/US-100-IPF



Product characteristics	
Number of inputs and outputs	Number of digital outputs: 2; Number of analogue outputs: 1
Measuring range	0...50 l/min 0...3 m ³ /h
Process connection	threaded connection G 3/4 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 [°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 analogue outputs: 1



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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...50 l/min	0...3 m³/h
Display range	0...60 l/min	0...3.6 m³/h
Resolution	0.1 l/min	0.005 m³/h
Set point SP	0.1...50 l/min	0.005...3 m³/h
Reset point rP	0...49.9 l/min	0...2.995 m³/h
Analogue start point ASP	0...40 l/min	0...2.4 m³/h
Analogue end point AEP	10...50 l/min	0.6...3 m³/h
Max. flow rate	60 l/min	3.6 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]	0,05...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)	water: $< \pm (3 \% MW + 0,2 \% MEW)$; glycol (35 %), oil (viscosity 68 mm ² /s at 40 °C): $< \pm (5 \% MW + 0,5 \% MEW)$	
Repeatability	0,1 l/min; 6 l/h; 0,006 m ³ /h	
Temperature monitoring		
Accuracy [K]	$\pm 3 (Q > 1 \text{ l/min})$	
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 = 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
accuracy class		3
maximum allowable error		-
Q (min)		0,5 m ³ /h
Q (t)		-
Q (max)		3 m ³ /h
Shock resistance		DIN IEC 68-2-27
Vibration resistance	DIN IEC 68-2-6	5 g (10...2000 Hz)
MTTF [years]	175	
Pressure Equipment Directive	Sound engineering practice; can be used for group 2 fluids; group 1 fluids on request	
Mechanical data		
Weight [g]	1551.5	
Housing	rectangular	
Dimensions [mm]	110 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; PES; Centellen 200	
Process connection	threaded connection G 3/4 external thread flat seal	

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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 R1/2, stainless steel, E40178
	adapter for pipe: 1 x R1/2, brass, E40151

Remarks

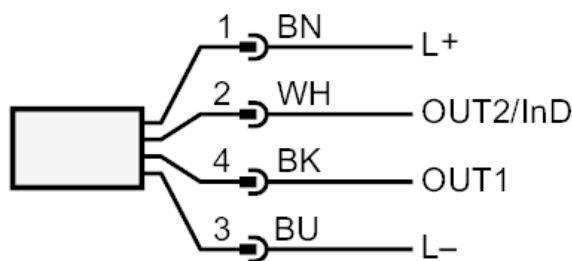
Remarks	MW = measured value
	MEW = Final value of the measuring range
	sealing: only with supplied Centellen seals
Pack quantity	1 pcs.

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
analogue output volumetric flow quantity monitoring / Temperature monitoring
input counter reset

SU7000

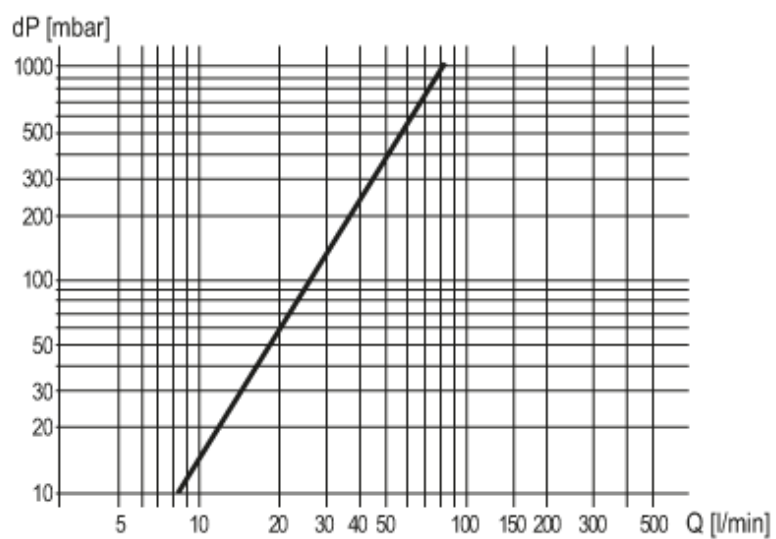
Ultrasonic flow meter

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Diagrams and graphs

Pressure loss



dP Pressure loss

Q volumetric flow quantity