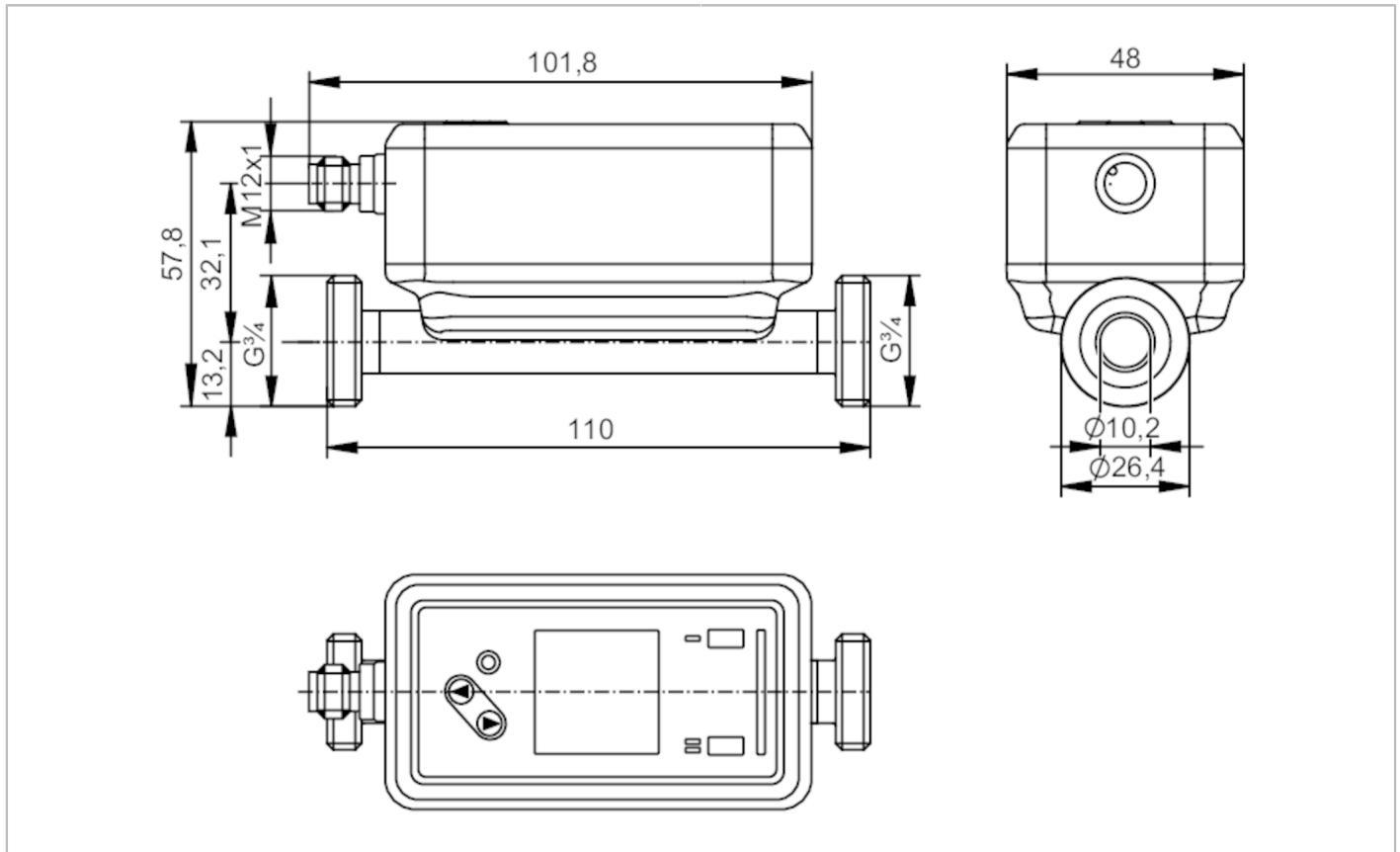


SU7030



Ultrasonic flow meter

SUR34XFBFRKG/US



Product characteristics	
Measuring range	0.5...75 l/min 30...4500 l/h 0.104...15.601 m/s 0.03...4.5 m ³ /h
Process connection	threaded connection G 3/4 external thread DN20
Application	
Special feature	Gold-plated contacts
Media	ultra-pure water; water; hydrous media; glycol solutions; oils; coolants
Note on media	hydrous media: for media with >10 % additives, the repeatability is the only available value 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]	-20...100
Min. bursting pressure	150 bar 15 MPa
Pressure rating	100 bar 10 MPa
Vacuum resistance [mbar]	-1000
Electrical data	
Operating voltage [V]	18...32 DC; (to SELV/PELV)
Current consumption [mA]	< 75
Protection class	III
Reverse polarity protection	yes
Power-on delay time [s]	5
Measuring principle	ultrasonic



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Inputs				
Inputs	counter reset			
Outputs				
Total number of outputs	2			
Output signal	switching signal; pulse signal; analogue signal; IO-Link; frequency signal; diagnostic signal; totaliser switching signal			
Electrical design	PNP/NPN			
Output function	normally open / normally closed; (parameterisable)			
Max. voltage drop switching output DC [V]	2			
Permanent current rating of switching output DC [mA]	100			
Switching frequency DC [Hz]	0...10000			
Analogue current output [mA]	4...20			
Max. load [Ω]	500			
Pulse output	flow rate meter			
Short-circuit protection	yes			
Type of short-circuit protection	pulsed			
Overload protection	yes			
Measuring/setting range				
Measuring range	0.5...75 l/min	30...4500 l/h	0.104...15.601 m/s	0.03...4.5 m³/h
Display range	-90...90 l/min	-5400...5400 l/h	-18.721...18.721 m/s	-5.4...5.4 m³/h
Resolution	0.1 l/min	2 l/h	0.001 m/s	0.002 m³/h
Set point SP	0.9...75 l/min	55...4500 l/h	0.192...15.601 m/s	0.055...4.5 m³/h
Reset point rP	0.5...74.6 l/min	32...4477 l/h	0.112...15.521 m/s	0.032...4.477 m³/h
Analogue start point ASP	-75...60 l/min	-4500...3600 l/h	-15.604...12.481 m/s	-4.5...3.6 m³/h
Analogue end point AEP	-60...75 l/min	-3600...4500 l/h	-12.481...15.601 m/s	-3.6...4.5 m³/h
Low flow cut-off LFC	0.5...3.2 l/min	30...195 l/h	0.104...0.676 m/s	0.03...0.195 m³/h
Frequency end point, FEP	15...75 l/min	903...4500 l/h	3.13...15.601 m/s	0.903...4.5 m³/h
Frequency at the end point FRP [Hz]	1...10000			
Volumetric flow quantity monitoring				
Pulse length [s]	0.002...2			
Pulse value	0.02...99990000 l			
Temperature monitoring				
Measuring range [°C]	-20...100			
Display range [°C]	-44...124			
Resolution [°C]	0.1			
Set point SP [°C]	-19.6...100			
Reset point rP [°C]	-20...99.6			
Analogue start point [°C]	-20...76			
Analogue end point [°C]	4...100			
Frequency start point, FSP [°C]	-20...76			
Frequency end point, FEP [°C]	4...100			

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Frequency at the end point FRP	[Hz]	1...10000
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Accuracy / deviations

Flow monitoring		
Accuracy (in the measuring range)	glycol solutions (35%)	±(5,0 % MW + 0,5 % MEW)
	high-viscosity oils with viscosity 46mm ² /s (40°C)	±(5,0 % MW + 1,0 % MEW)
	low-viscosity oils with viscosity 10mm ² /s (40°C)	±(5,0 % MW + 1,0 % MEW)
	water	± (2,0 % MW + 0,5 % MEW)
Repeatability		± 0,2 % MEW
Temperature monitoring		
Accuracy	[K]	± 2,5 (Q > 5 % MEW)
Temperature coefficient [% of the span / 10 K]		0,2

Response times

Flow monitoring		
Response time	[s]	< 0.25; (dAP = 0, T09)
Damping process value dAP	[s]	0...5
Temperature monitoring		
Dynamic response T05 / T09	[s]	5,7 / 86

Software / programming

Diagnostic functions		direction of flow detection; signal quality
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Interfaces

Communication interface		IO-Link
Transmission type		COM2 (38,4 kBaud)
IO-Link revision		1.1.3
SDCI standard		IEC 61131-9: 2013-07
Profiles	BLOB	Binary Large Object transfer
	Common - I&D	Identification and Diagnosis
Required master port type		A
Process data analogue		3
Process data binary		2
Min. process cycle time	[ms]	9.6
IO-Link process data (cyclical)	function	bit length
	totaliser	32
	Flow monitoring	32
	Temperature monitoring	32
	status	4
	Output 1	1
	Output 2	1
	Supported DeviceIDs	Type of operation
	default	1756

Operating conditions

Ambient temperature	[°C]	-20...60
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Storage temperature	[°C]	-25...80
Protection		IP 67

Tests / approvals

EMC	DIN 61326-1:2021	
Shock resistance	DIN IEC 68-2-27	20 g (11ms)
Vibration resistance	DIN IEC 68-2-6	20 g (10...2000Hz)
MTTF	[years]	160
UL approval	UL approval no.	I034
Pressure Equipment Directive	can be used for group 2 fluids; group 1 fluids on request	

Mechanical data

Weight	[g]	492.8
Housing		rectangular
Type of mounting		inlet pipe length 5xDN; outlet pipe length 1xDN
Dimensions	[mm]	110 x 48 x 57.8
Materials		housing: stainless steel (316L/1.4404); Display: PFA; Sealing Display: FKM; connector: PBT
Materials (wetted parts)		Pipe section: stainless steel (316L/1.4404); Process connection sealing: NBR reinforced fibre Flat seal
Process connection		threaded connection G 3/4 external thread DN20
Surface characteristics Ra/Rz of the wetted parts		Ra < 1.25 µm

Displays / operating elements

Display		colour display 1,44", 128 x 128 pixels
	Switching function	2 x LED, yellow
	diagnosis	1 x LED, three-colour
Display unit		l/min; l/h; m³/h; m/s

Accessories

Items supplied	Flat seal 2, Centellen package insert
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Remarks

Remarks	MW = measured value MEW = Final value of the measuring range pulse and totaliser signal are only available for one of the two outputs the accuracy indications are adhered to over the entire application area
Pack quantity	1 pcs.

Electrical connection

Connector: 1 x M12; coding: A; Contacts: gold-plated

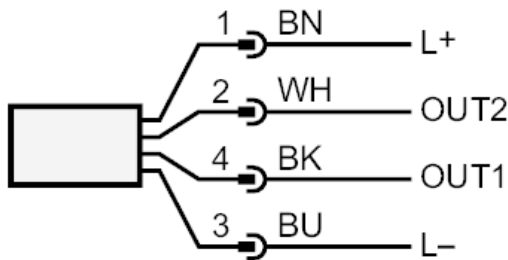




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Connection



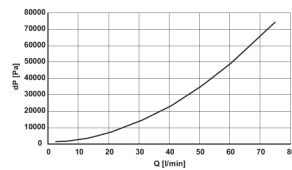
- OUT1/IO-Link:**
- switching output volumetric flow quantity monitoring
 - switching output Temperature monitoring
 - Pulse output quantity meter
 - frequency output volumetric flow quantity monitoring
 - frequency output Temperature monitoring
 - Diagnostic output direction of flow detection / signal quality
 - signal output Preset counter
- OUT2/InD:**
- switching output volumetric flow quantity monitoring
 - switching output Temperature monitoring
 - Pulse output quantity meter
 - analogue output flow
 - analogue output temperature
 - Diagnostic output direction of flow detection / signal quality
 - signal output Preset counter
 - input counter reset

colours to DIN EN 60947-5-2

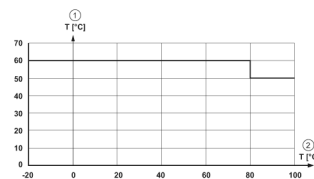
- Core colours
- BK= black
 - BN= brown
 - BU= blue
 - WH= white

Diagrams and graphs

Note on pressure loss



derating ambient temperature



- 1 Ambient temperature
- 2 Medium temperature