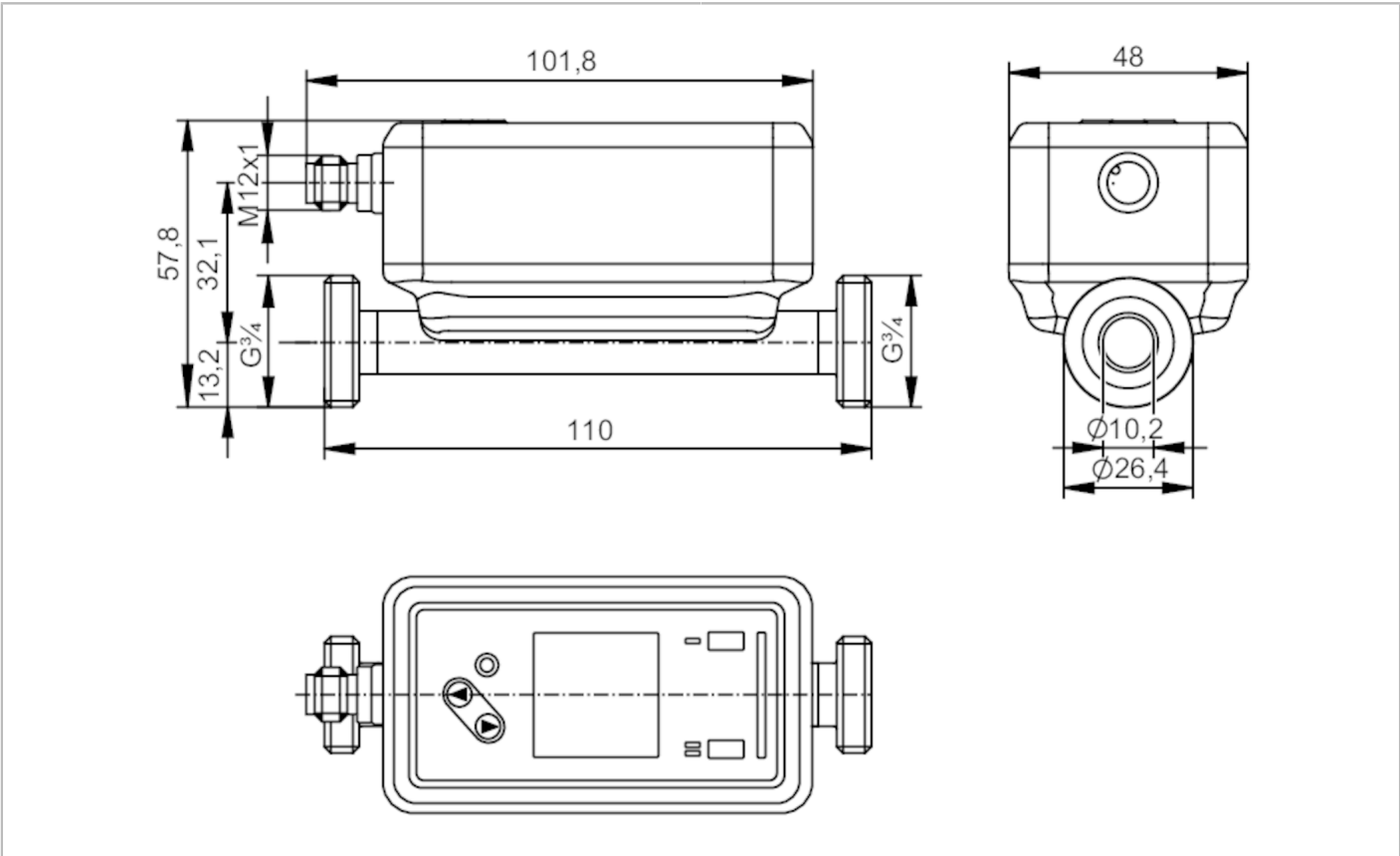


SU7030

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 m³/h
Process connection	threaded connection G 3/4 external thread DN20			
Application				
System	gold-plated contacts			
Media	ultra-pure water; water; water-based media; glycol solutions; oils; Coolants			
Note on media	water-based media: for media with >10 % additives, the repeatability is the only available value			
	low-viscosity oils with viscosity: 7...40 mm²/s (40 °C)			
	high-viscosity oils with viscosity: 30...68 mm²/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; analog signal; IO-Link; frequency signal; diagnostic signal; totalizer switching signal			
Electrical design		PNP/NPN			
Output function		normally open / closed; (configurable)			
Max. voltage drop switching output DC	[V]	2			
Permanent current rating of switching output DC	[mA]	100			
Switching frequency DC	[Hz]	0...10000			
Analog current output	[mA]	4...20			
Max. load	[Ω]	500			
Pulse output		flow rate meter			
Short-circuit protection		yes			
Type of short-circuit protection		yes (non-latching)			
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
Analog start point ASP		-75...60 l/min	-4500...3600 l/h	-15.604...12.481 m/s	-4.5...3.6 m³/h
Analog 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		
Analog start point		[°C]	-20...76		
Analog 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

Reaction 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	Function class	Description
	0x4000	Identification and Diagnosis
Required master port class	A	
Process data analog	3	
Process data binary	2	
Min. process cycle time	[ms]	9.6
IO-Link process data (cyclical)	Function	bit length
	totalizer	32
	Flow monitoring	32
	Temperature monitoring	32
	status	4
	Output 1	1
	Output 2	1
Supported DeviceIDs	Type of operation	DeviceID
	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	5 g (10...2000Hz)
MTTF	[years]	160
UL approval	UL approval number	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
Material		housing: stainless steel (1.4404 / 316L); Display: PFA; sealing Display: FKM; connector: PBT
Materials (wetted parts)		Pipe section: stainless steel (1.4404 / 316L); Process connection sealing: Centellen Gasket
Process connection		threaded connection G 3/4 external thread DN20
Surface characteristics Ra/Rz of the wetted parts		1.25 µm

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

Accessories		
Items supplied		Gasket 2, Centellen
		package insert

Remarks		
Remarks		MW = Measured value
		MEW = Final value of the measuring range
		pulse and totalizer 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



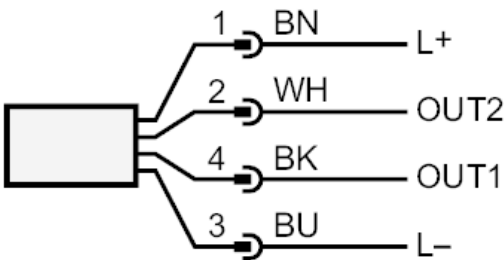
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Connection



- 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
analog output flow
analog output temperature
Diagnostic output direction of flow detection / signal quality
signal output Preset counter
Input counter reset

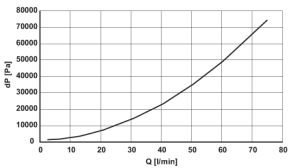
Colors to DIN EN 60947-5-2

Core colors

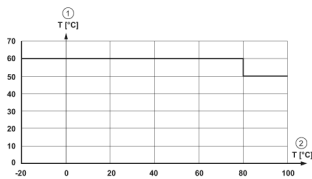
BK= black
BN= brown
BU= blue
WH= white

Diagrams and graphs

Note on pressure loss



derating ambient temperature



- 1 Ambient temperature
- 2 Medium temperature