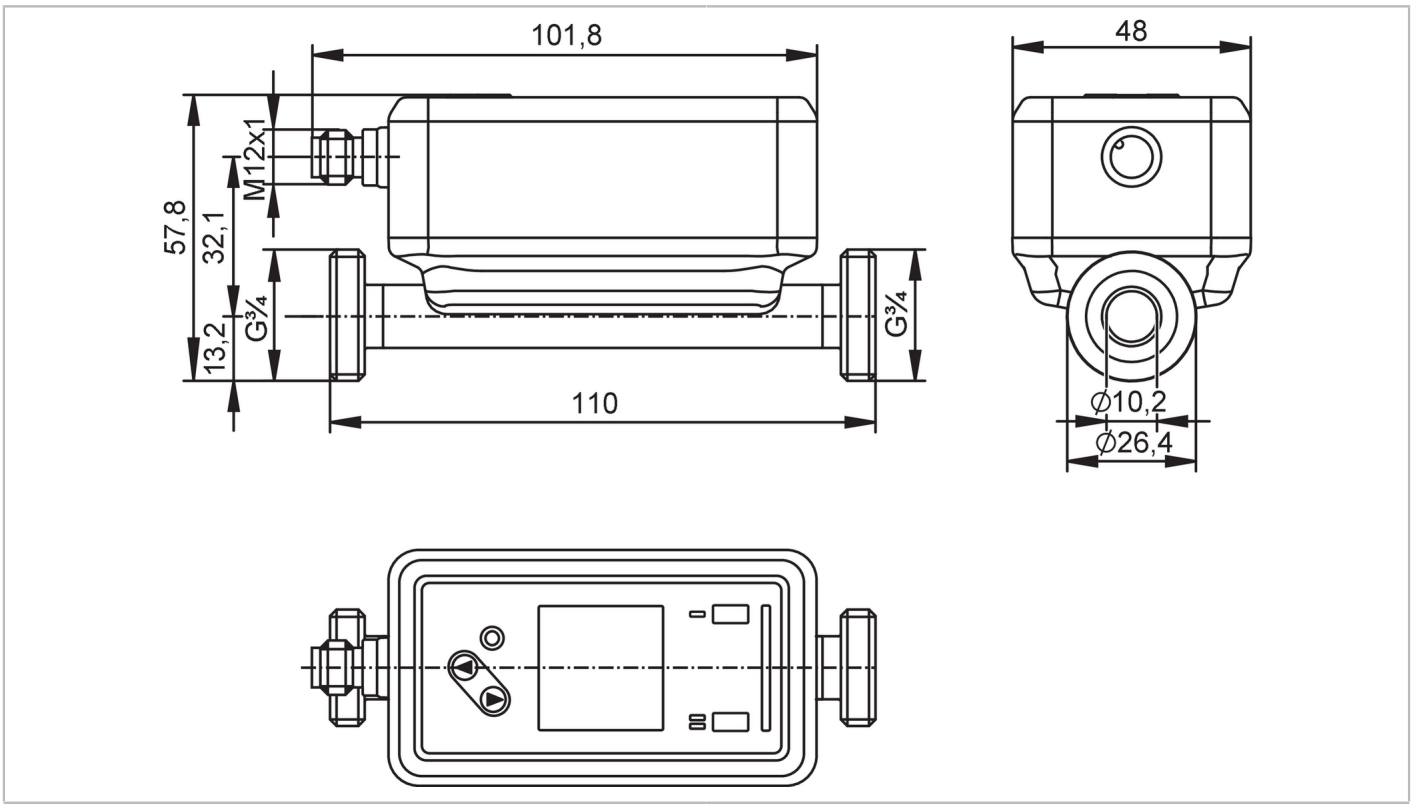
SU7030

Ultrasonic flow meter

SUR34XFBFRKG/US



ACS CE cULus LISTED IO-Link KTW/W270 Reg31

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					
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 mm²/s (40 °C)			
		high-viscosity oils with viscosity: 30...68 mm²/s (40 °C)			
Medium temperature	[°C]	-20...100			
Min. burst 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			
Inputs					
Inputs		counter reset			

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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			
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 46mm2/s (40°C)	±(5,0 % MW + 1,0 % MEW)
		low-viscosity oils with viscosity 10mm2/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	
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**	**DeviceID**
		default	1756
Operating conditions			
Ambient temperature	[°C]	-20...60	
Storage temperature	[°C]	-25...80	
Protection		IP 65; IP 67	

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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	
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: 4, gold-plated

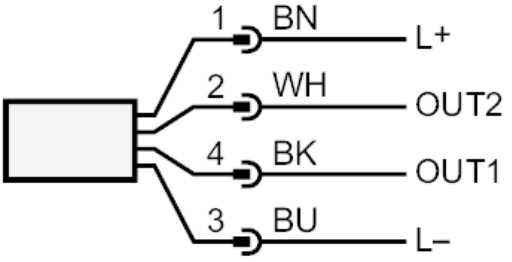


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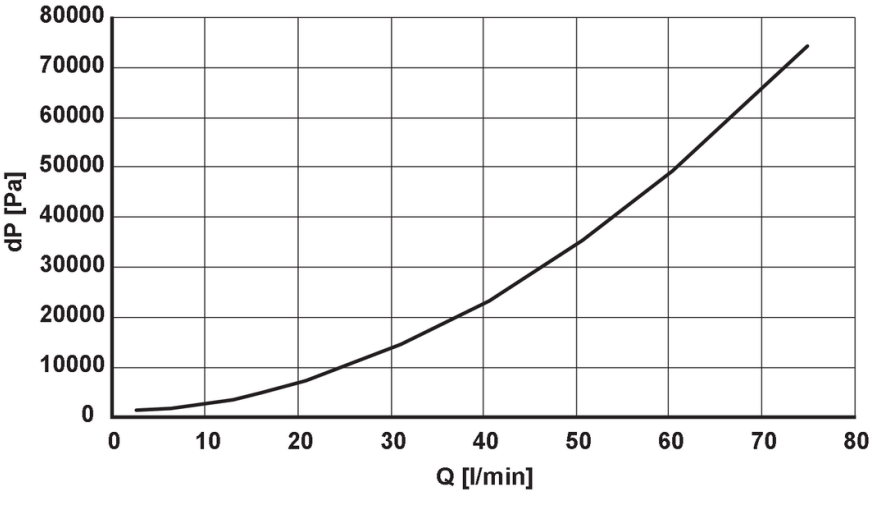
Connection



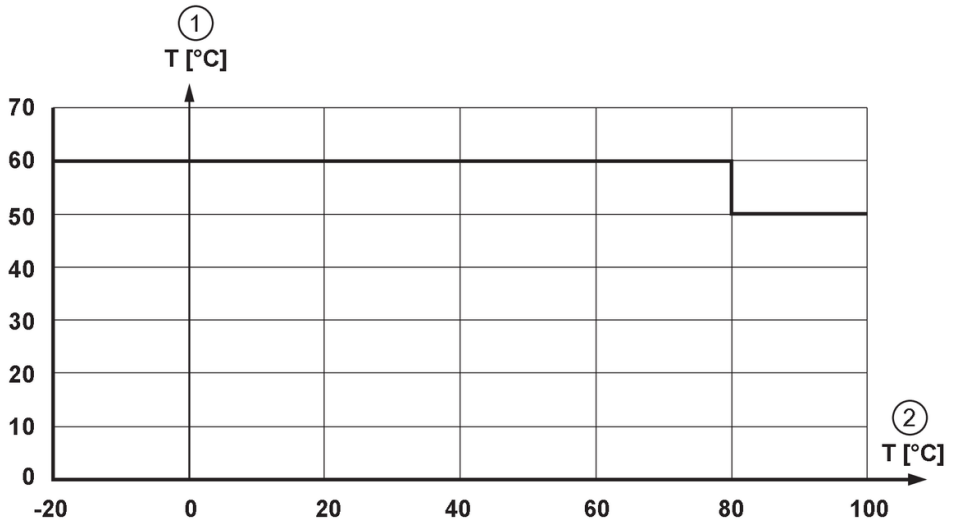
OUT1/IO-Link:	switching output volumetric flow quantity monitoring switching output Temperature monitoring Pulse output quantity meter frequency output volumetric flow quantity monitoring frequency output Temperature monitoring Diagnostic output direction of flow detection / signal quality signal output 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