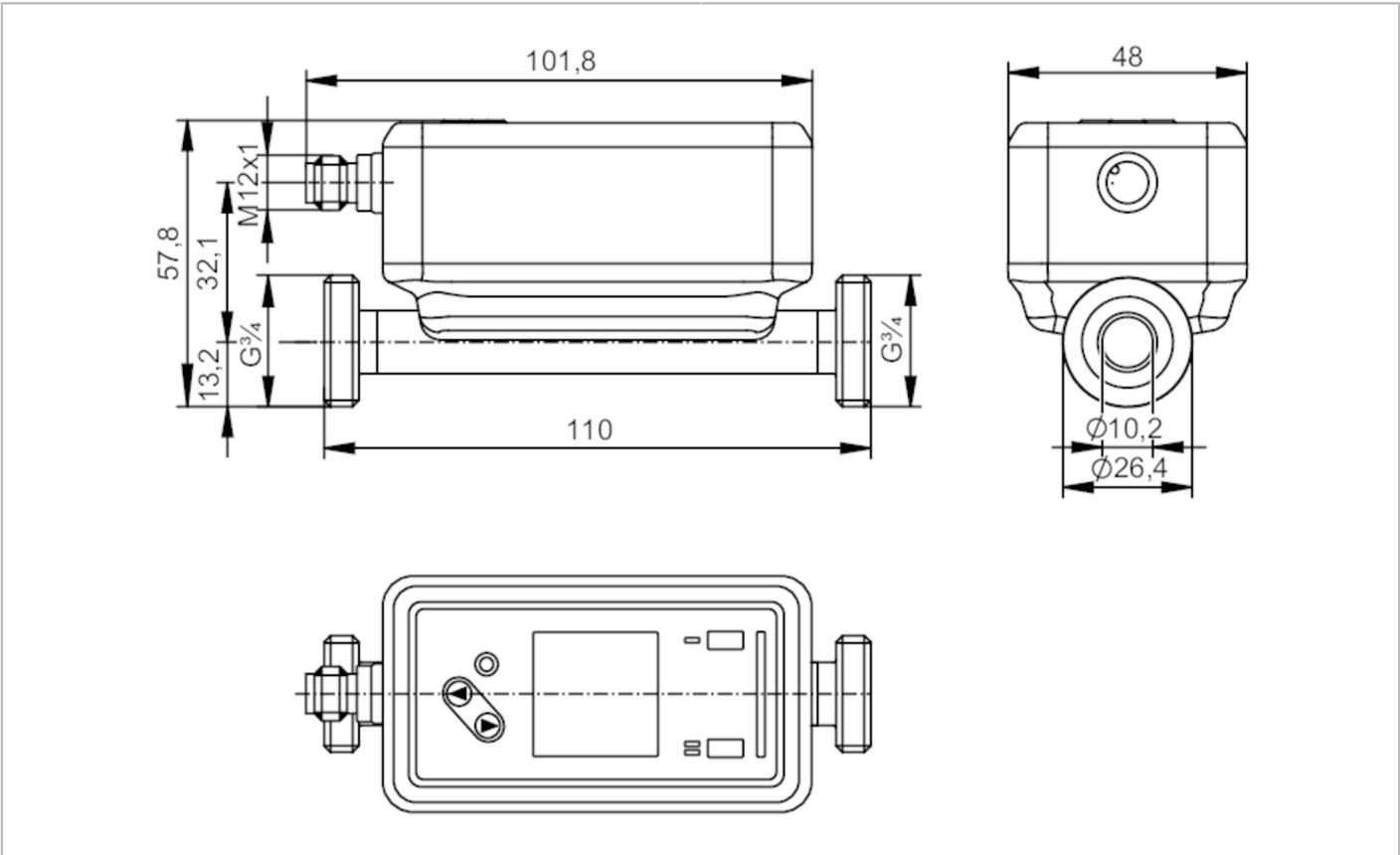


SU7021



Ultrasonic flow meter

SUR34XXBFRKG/US



ACS

Product characteristics				
Measuring range	0.5...75 l/min	0.03...4.5 m³/h	8...1189 gph	0.13...19.81 gpm
Process connection	threaded connection G 3/4 external thread DN20			
Application				
System	gold-plated contacts			
Media	ultra-pure water; water; water-based media			
Note on media	water-based media: for media with >10 % additives, the repeatability is the only available value			
Medium temperature	-20...100 °C		-4...212 °F	
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; 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	0.03...4.5 m³/h	8...1189 gph	0.13...19.81 gpm
Display range	-90...90 l/min	-5.4...5.4 m³/h	-1427...1427 gph	-23.78...23.78 gpm
Resolution	0.1 l/min	0.002 m³/h	1 gph	0.01 gpm
Set point SP	0.9...75 l/min	0.055...4.5 m³/h	15...1189 gph	0.24...19.81 gpm
Reset point rP	0.5...74.6 l/min	0.032...4.477 m³/h	9...1183 gph	0.14...19.71 gpm
Analog start point ASP	-75...60 l/min	-4.5...3.6 m³/h	-1189...951 gph	-19.81...15.85 gpm
Analog end point AEP	-60...75 l/min	-3.6...4.5 m³/h	-951...1189 gph	-15.78...19.81 gpm
Low flow cut-off LFC	0.5...3.2 l/min	0.03...0.195 m³/h	8...59 gph	0.13...0.99 gpm
Frequency end point, FEP	15...75 l/min	0.903...4.5 m³/h	238...1189 gph	3.97...19.81 gpm
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; 0.005...26414563.515 gal			
Temperature monitoring				
Measuring range	-20...100 °C		-4...212 °F	
Display range	-44...124 °C		-47.2...255.2 °F	
Resolution	0.1 °C		0.1 °F	
Set point SP	-19.6...100 °C		-3.2...212 °F	
Reset point rP	-20...99.6 °C		-4...211.2 °F	
Analog start point	-20...76 °C		-4...168.8 °F	
Analog end point	4...100 °C		39.2...212 °F	
Frequency start point, FSP	-20...76 °C		4...168.8 °F	
Frequency end point, FEP	4...100 °C		4...212 °F	
Frequency at the end point FRP [Hz]	1...10000			



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Accuracy / deviations		
Flow monitoring		
Accuracy (in the measuring range)		$\pm (2,0 \% \text{ MW} + 0,5 \% \text{ MEW})$
Repeatability		$\pm 0,2 \% \text{ MEW}$
Temperature monitoring		
Accuracy [K]		$\pm 2,5 (Q > 5 \% \text{ MEW})$
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
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 Common - I&D	Binary Large Object transfer 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	1636
Operating conditions		
Ambient temperature [°C]		-20...60
Storage temperature [°C]		-25...80
Protection		IP 65; 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)

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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]	494.4
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: NBR fiber-reinforced Gasket
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		Color display 1,44", 128 x 128 pixels
	Switching function	2 x LED, yellow
	diagnosis	1 x LED, three-color

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



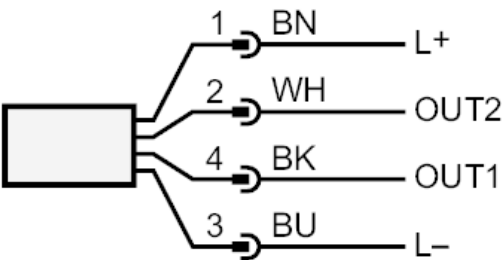
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Connection



- OUT1/IO-Link:
- OUT2/InD:
- 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
 - 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

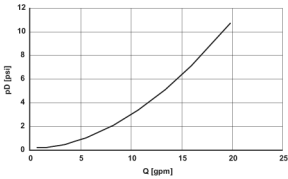
Colors to DIN EN 60947-5-2

Core colors

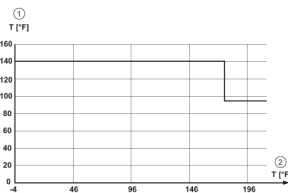
- BK= black
- BN= brown
- BU= blue
- WH= white

Diagrams and graphs

Note on pressure loss



derating ambient temperature



- 1 Ambient temperature
- 2 Medium temperature