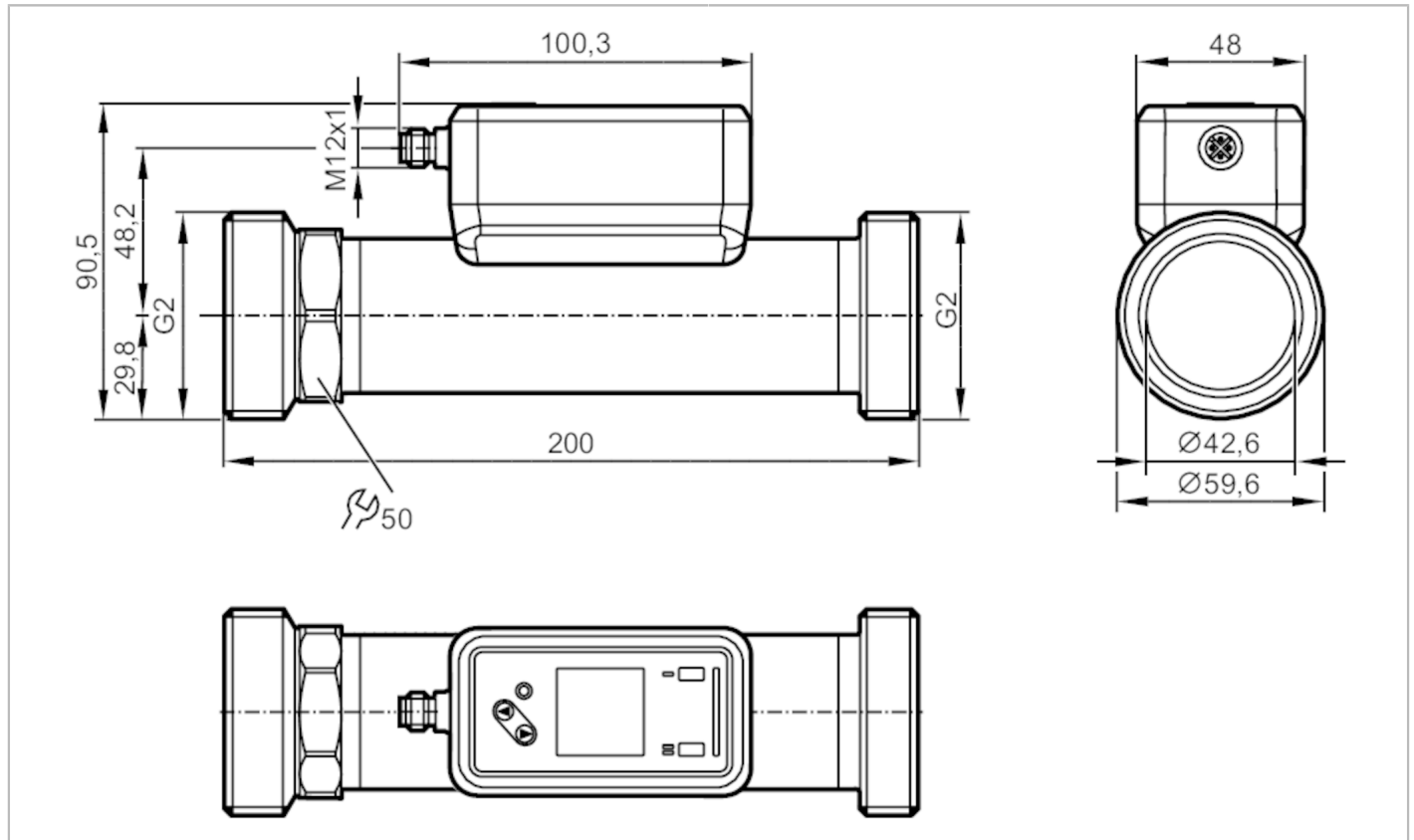


SU2021



Ultrasonic flow meter

SUR21XXBFRKG/US



ACS IO-Link KTW/W270 Reg31

Product characteristics	
Process connection	G 2 DN50 external thread
Application	
Special feature	Gold-plated contacts
Media	ultra-pure water; water; hydrous media
Note on media	hydrous media: for media with >10 % additives, the repeatability is the only available value
Medium temperature	-20...100 °C
Min. bursting pressure	150 bar
Pressure rating	100 bar
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
Outputs	
Total number of outputs	2



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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	5...1000 l/min	0.3...60 m ³ /h	79...15850 gph	1.32...264.18 gpm
Display range	-1200...1200 l/min	-72...72 m ³ /h	-19020...19020 gph	-317...317 gpm
Resolution	0.1 l/min	0.001 m ³ /h	1 gph	0.01 gpm
Set point SP	10.5...1000 l/min	0.63...60 m ³ /h	166...15850 gph	2.77...264.17 gpm
Reset point rP	5.3...994.8 l/min	0.318...59.688 m ³ /h	84...15768 gph	1.4...262.8 gpm
Analogue start point ASP	-1000...800 l/min	-60...48000 m ³ /h	-15850...12680 gph	-264.17...211.34 gpm
Analogue end point AEP	-800...1000 l/min	-48...60 m ³ /h	-12680...15850 gph	-211.34...264.17 gpm
Low flow cut-off LFC	5...50 l/min	0.3...3 m ³ /h	79...793 gph	1.32...13.21 gpm
Frequency end point, FEP	200.6...1000 l/min	12.037...60 m ³ /h	3180...15850 gph	53...264.17 gpm
Frequency at the end point FRP [Hz]	1...10000			

Volumetric flow quantity monitoring

Pulse length [s]	0.002...2
Pulse value	0.1...99990000 l; 0.026...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
Analogue start point	-20...76 °C	-4...168.8 °F
Analogue 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	39.2...212 °F
Frequency at the end point FRP [Hz]	1...10000	

Accuracy / deviations

Flow monitoring	
Accuracy (in the measuring range)	± (1,0 % MW + 0,5 % MEW)
Repeatability	± 0,2 % MEW



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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		Identification and Diagnosis (0x4000)
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	1461
Operating conditions		
Ambient temperature	[°C]	-20...60
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)
Pressure Equipment Directive	can be used for group 2 fluids; group 1 fluids on request	
Mechanical data		
Weight	[g]	1173
Type of mounting		inlet pipe length 5xDN; outlet pipe length 1xDN

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Materials	housing: stainless steel (1.4404 / 316L); Display: PFA; Sealing Display: FKM; connector: POKAN
Materials (wetted parts)	Pipe section: stainless steel (1.4404 / 316L); Process connection sealing: Centellen Flat seal
Process connection	G 2 DN50 external thread
Surface characteristics Ra/Rz of the wetted parts	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

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

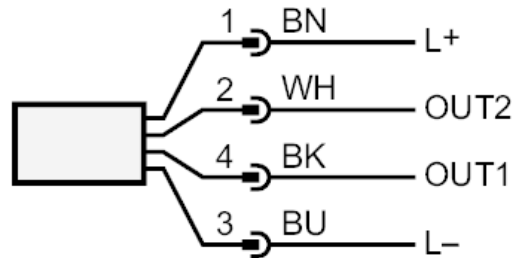




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Connection



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
 signal output Preset counter

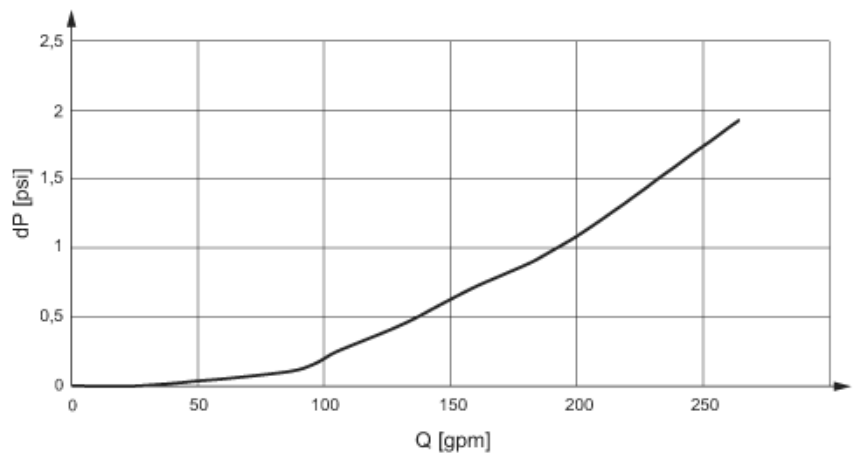
OUT2/InD: switching output volumetric flow quantity monitoring
 switching output Temperature monitoring
 Pulse output quantity meter
 analogue output flow
 analogue output temperature
 signal output Preset counter
 input counter reset

colours to DIN EN 60947-5-2

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

Diagrams and graphs

Note on pressure loss



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derating ambient temperature

