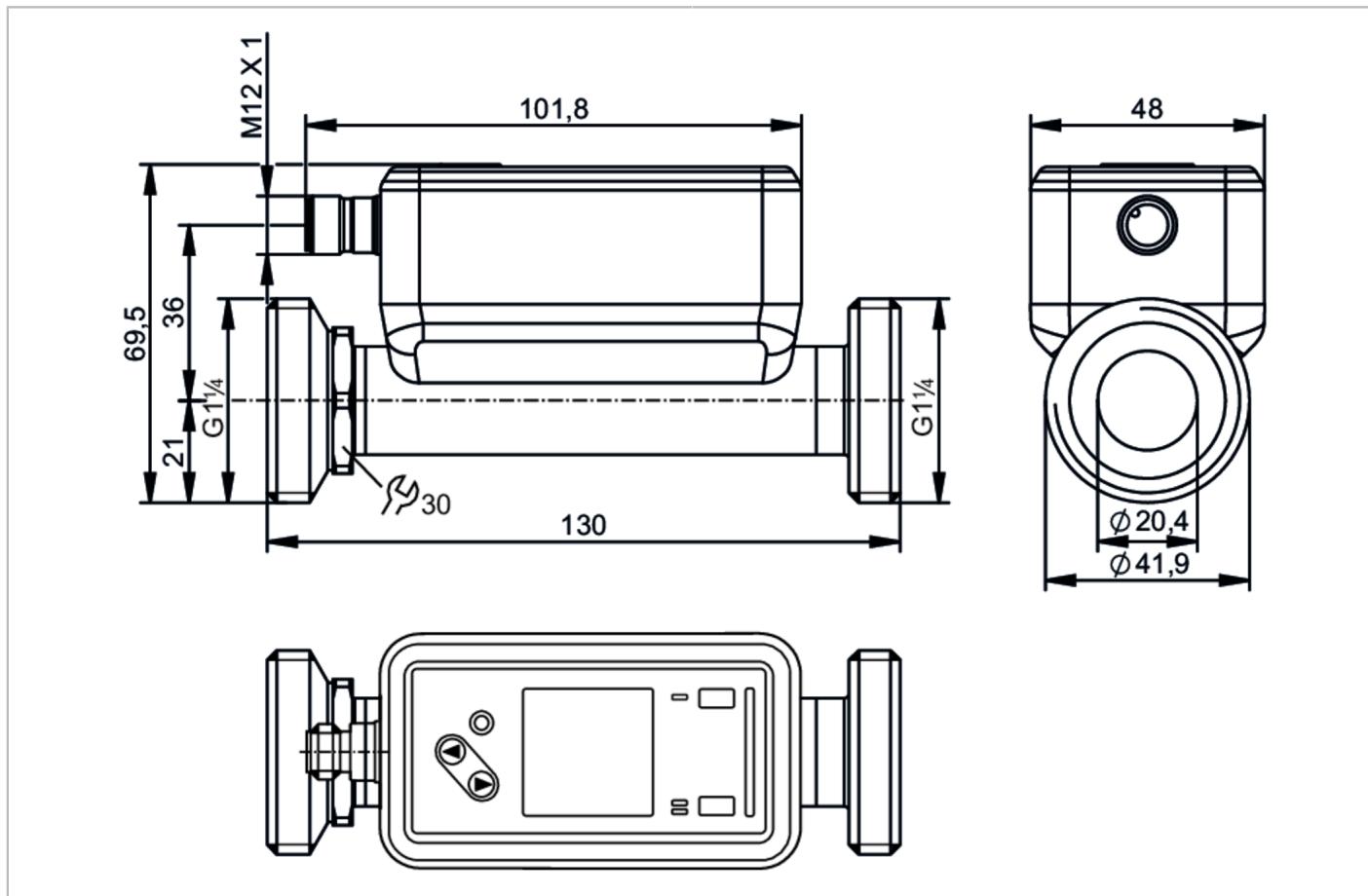


SU9021

Ultrasonic flow meter

SUR54XXBFRKG/US



ACS C E KTW/W270 Reg31

Product characteristics

Measuring range	1...275 l/min	0.06...16.5 m³/h	16...4359 gph	0.26...72.64 gpm
Process connection	G 1 1/4 DN32 external thread			

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
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

SU9021

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SUR54XXBFRKG/US



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	1...275 l/min	0.06...16.5 m³/h	16...4359 gph	0.26...72.64 gpm
Display range	-330...330 l/min	-19.8...19.8 m³/h	-5231...5231 gph	-87.18...87.18 gpm
Resolution	0.1 l/min	0.001 m³/h	1 gph	0.01 gpm
Set point SP	2.5...275 l/min	0.151...16.5 m³/h	40...4359 gph	0.66...72.65 gpm
Reset point rP	1.1...273.6 l/min	0.065...16.414 m³/h	17...4336 gph	0.29...72.27 gpm
Analog start point ASP	-275...220 l/min	-16.5...13.2 m³/h	-4359...3487 gph	-72.65...58.12 gpm
Analog end point AEP	-220...275 l/min	-13.2...16.5 m³/h	-3487...4359 gph	-58.12...72.65 gpm
Low flow cut-off LFC	1...13.8 l/min	0.06...0.825 m³/h	16...218 gph	0.26...3.63 gpm
Frequency end point, FEP	55.2...275 l/min	3.31...16.5 m³/h	874...4359 gph	14.75...72.65 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; 0.026...26414563.515 gal			
Temperature monitoring				
Measuring range	-20...100 °C			
Display range	-44...124 °C			
Resolution	0.1 °C			
Set point SP	-19.6...100 °C			
Reset point rP	-20...99.6 °C			
Analog start point	-20...76 °C			
Analog end point	4...100 °C			
Frequency start point, FSP	-20...76 °C			
Frequency end point, FEP	4...100 °C			
Frequency at the end point FRP [Hz]	1...10000			

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SUR54XXBFRKG/US

Accuracy / deviations		
Flow monitoring		
Accuracy (in the measuring range)		± (1,0 % 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
Interfaces		
Communication interface		
Transmission type		IO-Link
IO-Link revision		COM2 (38,4 kBaud)
SDCI standard		1.1.3
Profiles		IEC 61131-9: 2013-07
Required master port class		Identification and Diagnosis (0x4000)
Process data analog		A
Process data binary		3
Min. process cycle time	[ms]	2
IO-Link process data (cyclical)		9.6
Function		bit length
totalizer		32
Flow monitoring		32
Temperature monitoring		32
status		4
Output 1		1
Output 2		1
Type of operation		DeviceID
Supported DeviceIDs		default
		1463
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
Vibration resistance		20 g (11ms)
		DIN IEC 68-2-6
		5 g (10...2000Hz)

SU9021



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SUR54XXBFRKG/US

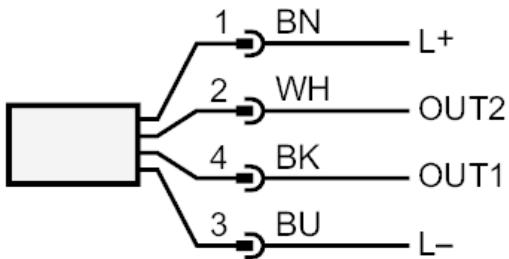
MTTF	[years]	160
UL approval	UL approval number	I034
Pressure equipment directive	can be used for group 2 fluids; group 1 fluids on request	
Mechanical data		
Weight	[g]	620.4
Type of mounting		inlet pipe length 5xDN; outlet pipe length 1xDN
Material		housing: stainless steel (1.4404 / 316L); Display: PFA; sealing Display: FKM; connector: POKAN
Materials (wetted parts)		Pipe section: stainless steel (1.4404 / 316L); Process connection sealing: Centellen Gasket
Process connection		G 1 1/4 DN32 external thread
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
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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SUR54XXBFRKG/US

Connection



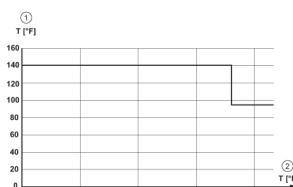
- OUT1/IO-Link:
Switching output Volumetric flow quantity monitoring
Switching output Temperature monitoring
Pulse output quantity meter
Frequency output Volumetric flow quantity monitoring
Frequency output Temperature monitoring
Diagnostic output direction of flow detection
Diagnostic output signal 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
Diagnostic output 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

derating ambient temperature



- 1 Ambient temperature
- 2 Medium temperature

Druckverlustkurve

