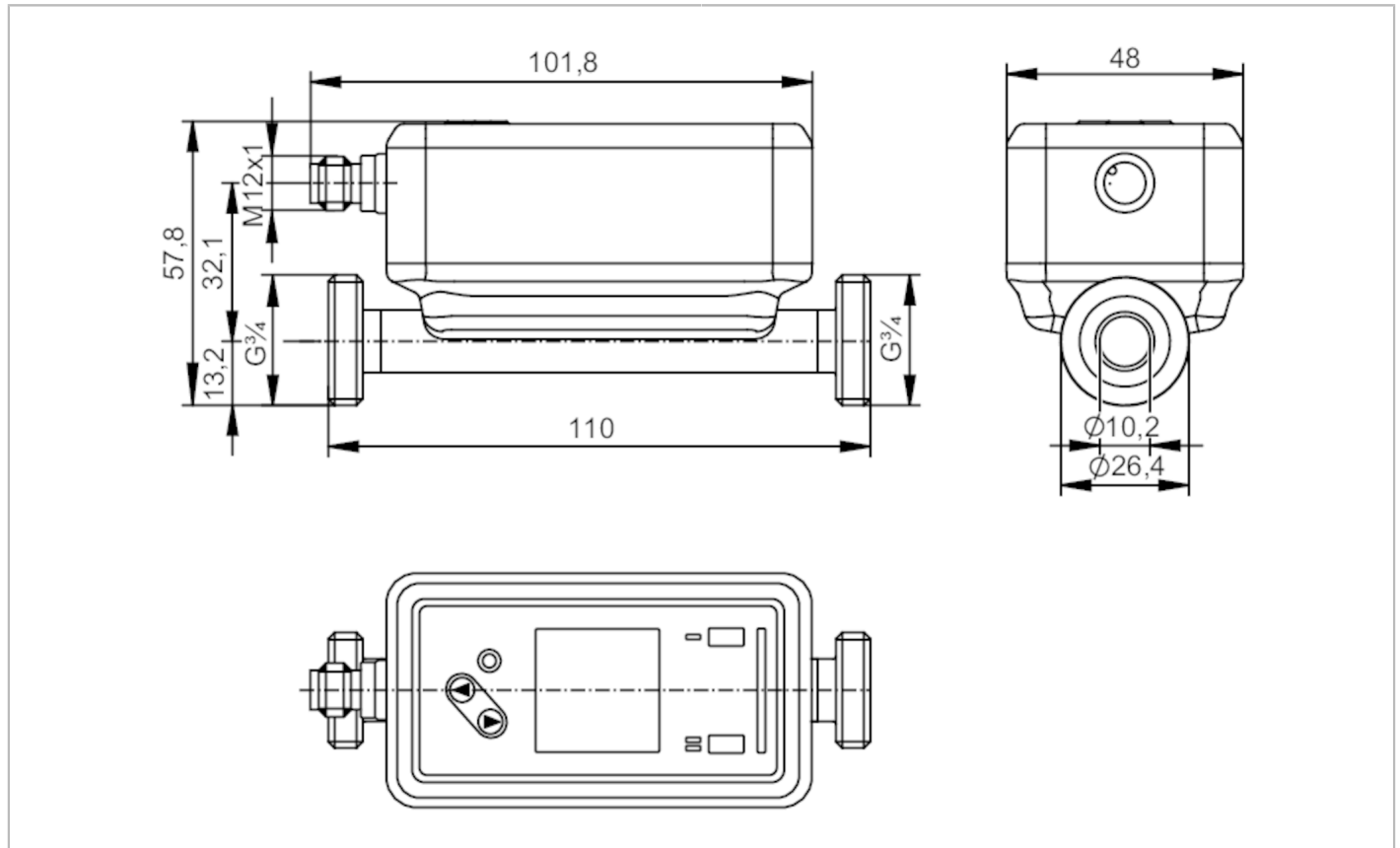


# SU7021



## Ultrasonic flow meter

SUR34XXBFRKG/US



ACS KTW/W270 Reg31

Product characteristics	
Measuring range	0.5...75 l/min    0.03...4.5 m <sup>3</sup> /h    8...1189 gph    0.13...19.81 gpm
Process connection	G 3/4 DN20 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    -4...212 °F
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
Inputs	
Inputs	counter reset

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## Ultrasonic flow meter

SUR34XXBFRKG/US

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...168.8 °F	
Frequency at the end point FRP [Hz]	1...10000			

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## Ultrasonic flow meter

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Accuracy / deviations		
Flow monitoring		
Accuracy (in the measuring range)		$\pm (2,0 \% MW + 0,5 \% MEW)$
Repeatability		$\pm 0,2 \% MEW$
Temperature monitoring		
Accuracy [K]		$\pm 2,5 (Q > 5 \% MEW)$
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		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 class		A
Process data analog		3
Process data binary		2
Min. process cycle time [ms]		9.6
IO-Link process data (cyclical)	<b>Function</b>	<b>bit length</b>
	totalizer	32
	Flow monitoring	32
	Temperature monitoring	32
	status	4
	Output 1	1
	Output 2	1
	Supported DeviceIDs	<b>Type of operation</b>
default		1636
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)

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## Ultrasonic flow meter

SUR34XXBFRKG/US

MTTF [years]	160
Pressure equipment directive	can be used for group 2 fluids; group 1 fluids on request

### Mechanical data

Weight [g]	494.4
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 3/4 DN20 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
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### 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



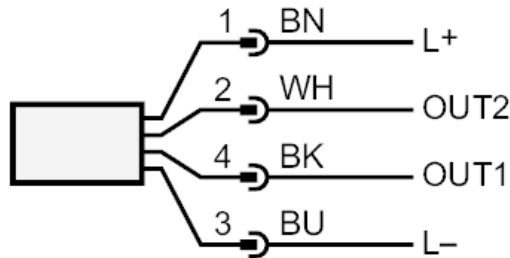
# SU7021



## Ultrasonic flow meter

SUR34XXBFRKG/US

### Connection



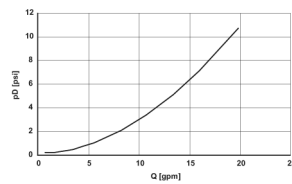
- OUT1/IO-Link: Switching output Volumetric flow quantity monitoring  
 Switching output Temperature monitoring  
 Pulse output quantity meter  
 Frequency output Volumetric flow quantity monitoring  
 Frequency output Temperature monitoring  
 Diagnostic output direction of flow detection / signal quality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

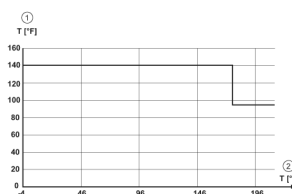
- Core colors
- BK= black
  - BN= brown
  - BU= blue
  - WH= white

### Diagrams and graphs

Note on pressure loss



derating ambient temperature



- 1 Ambient temperature
- 2 Medium temperature