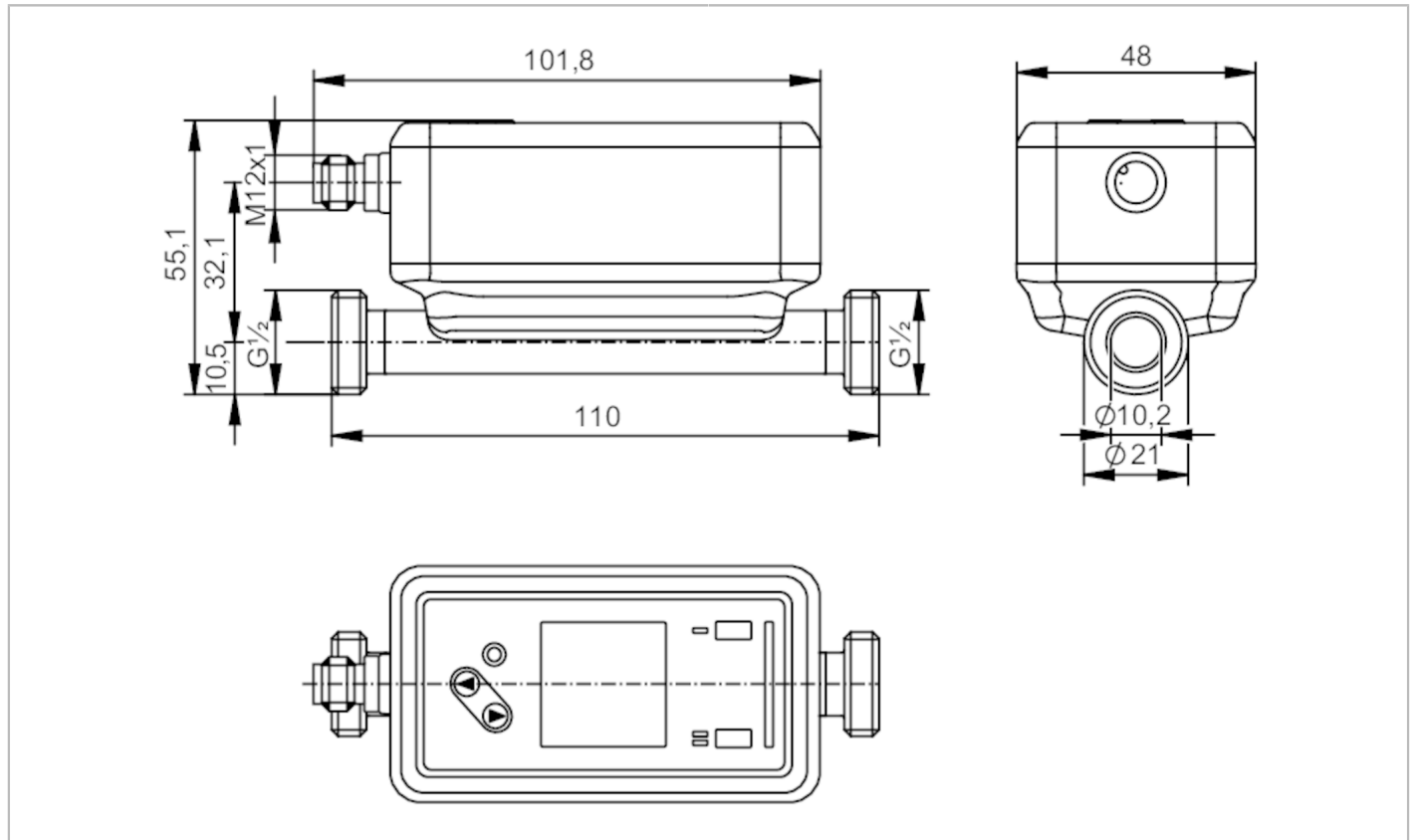


SU6020



Ultrasonic flow meter

SUR12XXBFRKG/US



ACS KTW/W270 Reg31

Product characteristics	
Measuring range	0.5...65 l/min 30...3900 l/h 0.104...13.521 m/s 0.03...3.9 m ³ /h
Process connection	G 1/2 DN15 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 [°C]	-20...100
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

SU6020



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SUR12XXBFRKG/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...65 l/min	30...3900 l/h	0.104...13.521 m/s	0.03...3.9 m³/h
Display range	-78...78 l/min	-4680...4680 l/h	-16.225...16.225 m/s	-4.68...4.68 m³/h
Resolution	0.1 l/min	2 l/h	0.001 m/s	0.002 m³/h
Set point SP	0.9...65 l/min	52...3900 l/h	0.18...13.521 m/s	0.052...3.9 m³/h
Reset point rP	0.5...64.7 l/min	32...3880 l/h	0.111...13.452 m/s	0.032...3.88 m³/h
Analog start point ASP	-65...52 l/min	-3900...3120 l/h	-13.521...10.817 m/s	-3.9...3.12 m³/h
Analog end point AEP	-52...65 l/min	-3120...3900 l/h	-10.817...13.521 m/s	-3.12...3.9 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	13...65 l/min	782...3900 l/h	2.713...13.521 m/s	0.782...3.9 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			
Analog start point [°C]	-20...76			
Analog 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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SUR12XXBFRKG/US

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)	Function	bit length
	totalizer	32
	Flow monitoring	32
	Temperature monitoring	32
	status	4
	Output 1	1
	Output 2	1
	Supported DeviceIDs	Type of operation
default		1459
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)

SU6020



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SUR12XXBFRKG/US

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

Mechanical data

Weight	[g]	477.9
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 1/2 DN15 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



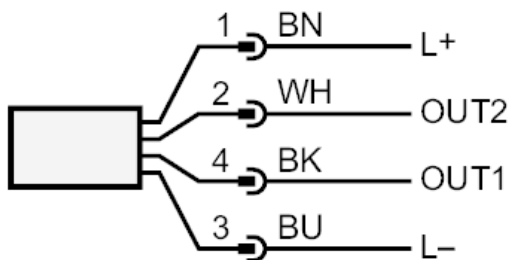
SU6020



Ultrasonic flow meter

SUR12XXBFRKG/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

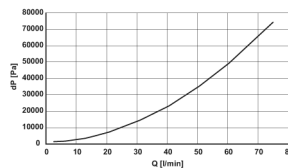
OUT2/InD: Switching output Volumetric flow quantity monitoring
 Switching output Temperature monitoring
 Pulse output quantity meter
 analog output flow
 analog output temperature
 Diagnostic output direction of flow detection / signal quality
 signal output Preset counter
 Input counter reset

Colors to DIN EN 60947-5-2

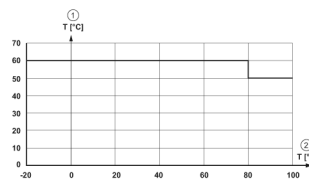
Core colors BK= black
 BN= brown
 BU= blue
 WH= white

Diagrams and graphs

Note on pressure loss



derating ambient temperature



- 1 Ambient temperature
- 2 Medium temperature