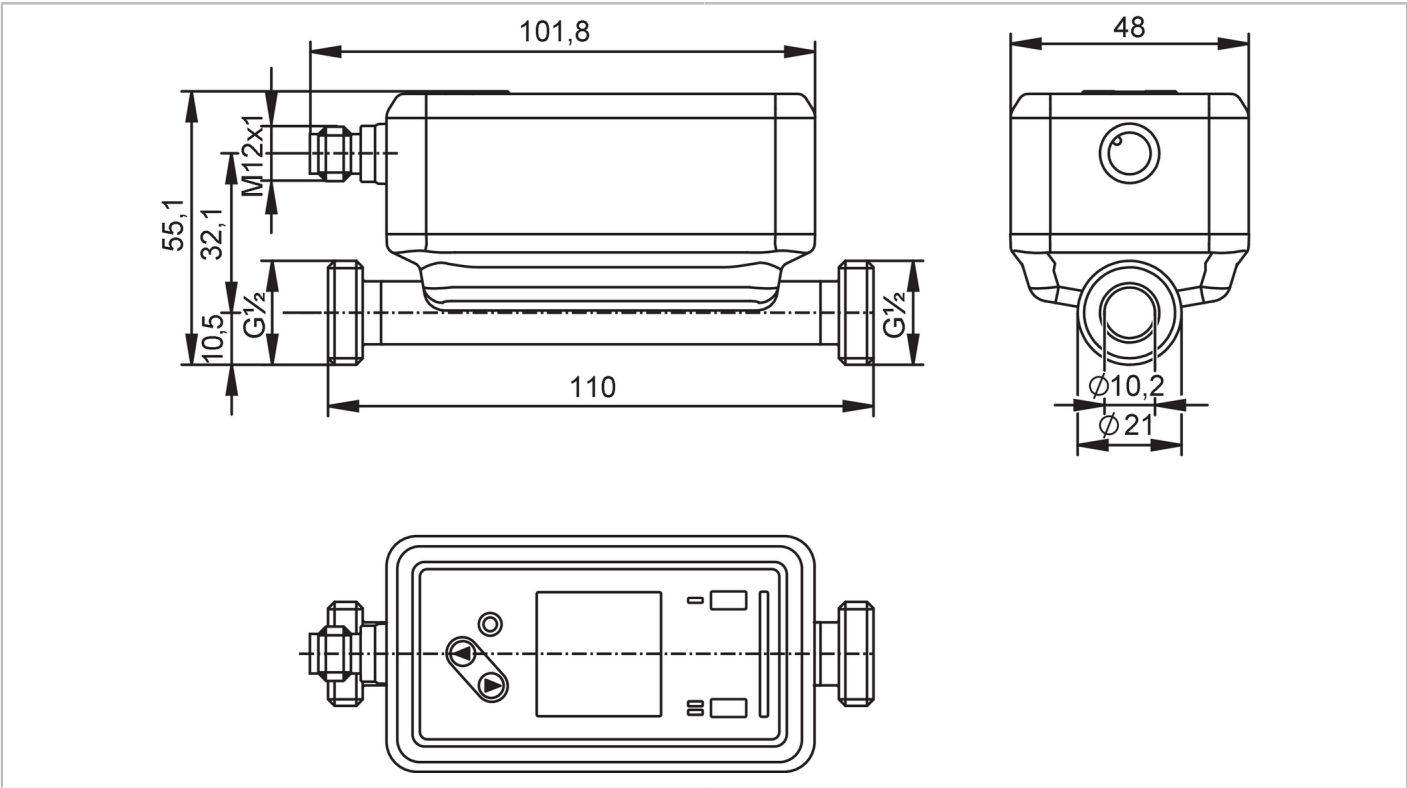


SU6020



Ultrasonic flow meter

SUR12XXBFRKG/US



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 m³/h
Process connection	threaded connection G 1/2 external thread DN15			

Application

Special feature	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. 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
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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		0.1...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		

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



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Repeatability	± 0,2 % MEW	
Temperature monitoring		
Accuracy	[K]	± 2,5 (Q > 5 % MEW)
Temperature coefficient	0,2	
[% of the span / 10 K]		
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	Binary Large Object transfer
	Common - I&D	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	1459
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)
MTTF	[years]	160
UL approval	UL approval number	I034
Pressure equipment directive	can be used for group 2 fluids; group 1 fluids on request	

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Mechanical data		
Weight	[g]	477.9
Housing		rectangular
Type of mounting		inlet pipe length 5xDN; outlet pipe length 1xDN
Dimensions	[mm]	110 x 48 x 55.1
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 1/2 external thread DN15
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: 4, gold-plated		

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Connection



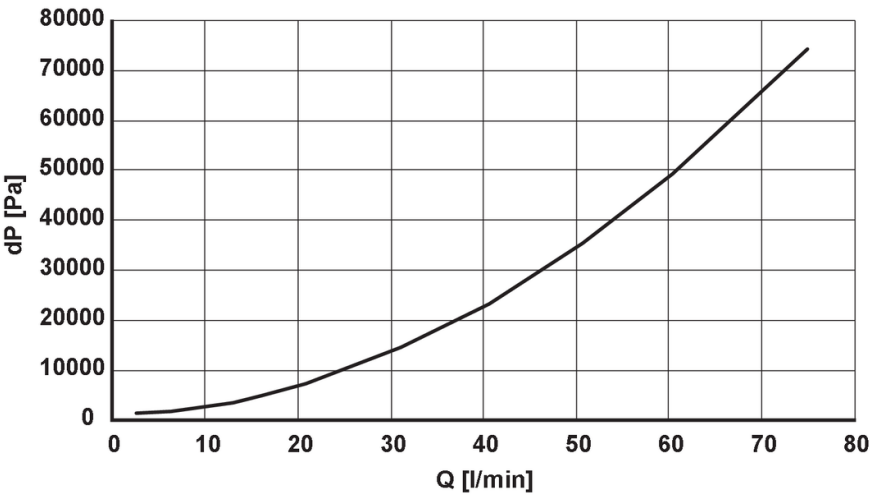
- OUT1/IO-Link:
- Switching output Volumetric flow quantity monitoring
 - Switching output Temperature monitoring
 - Pulse output quantity meter
 - Frequency output Volumetric flow quantity monitoring
 - Frequency output Temperature monitoring
 - Diagnostic output direction of flow detection / signal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



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derating ambient temperature

