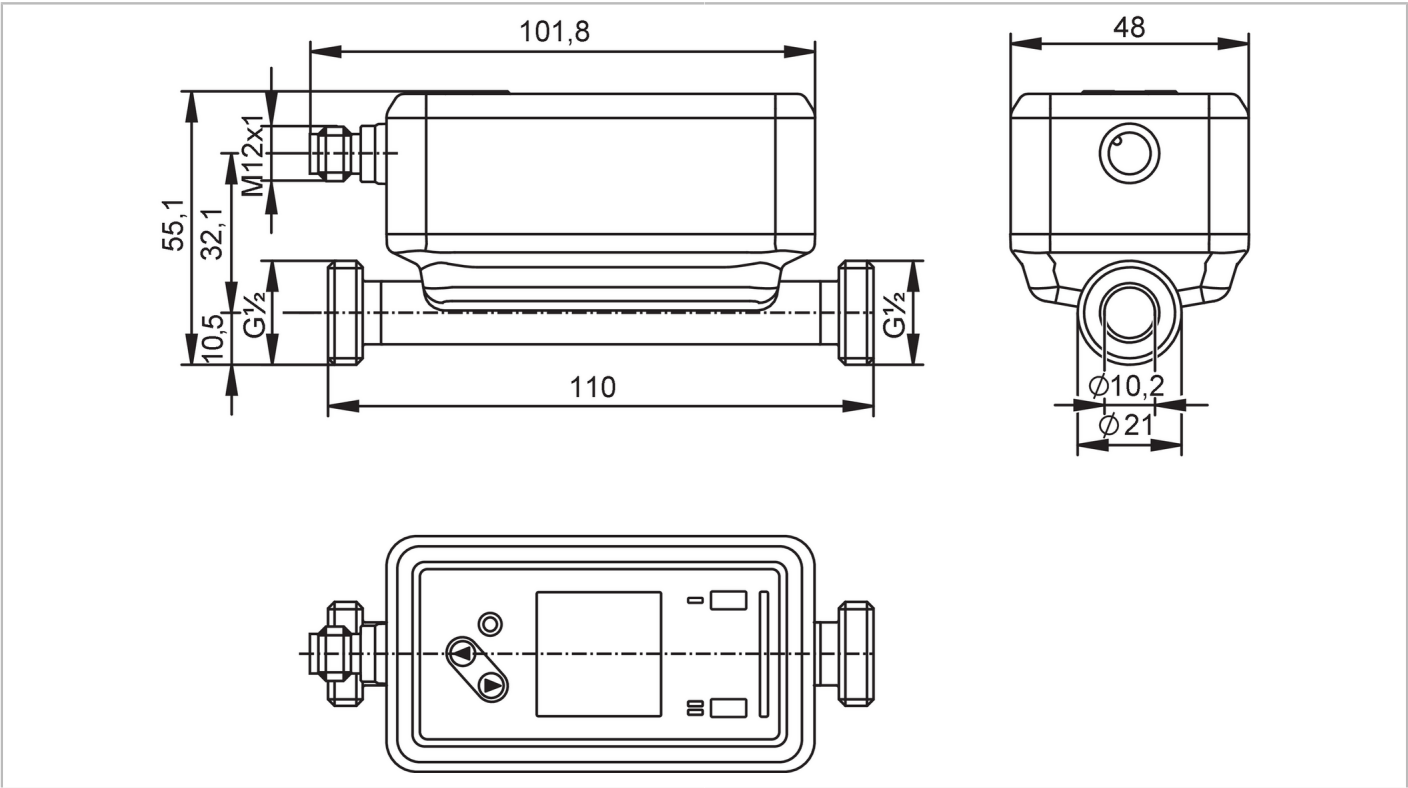


SU6020



Ultrasonic flow meter

SUR12XXBFRKG/US



IO-Link

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; hydrous media		
Note on media	hydrous 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; 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	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
Analogue start point ASP	-65...52 l/min	-3900...3120 l/h	-13.521...10.817 m/s	-3.9...3.12 m³/h
Analogue 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
Analogue start point [°C]	-20...76
Analogue 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 [% 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	BLOB	Binary Large Object transfer
	Common - I&D	Identification and Diagnosis
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	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 no.	I034
Pressure Equipment Directive	can be used for group 2 fluids; group 1 fluids on request	

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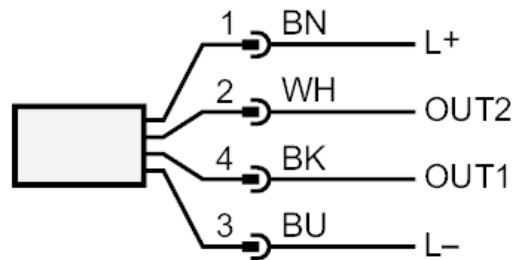
Mechanical data		
Weight	[g]	477.9
Housing		rectangular
Type of mounting		inlet pipe length 5xDN; outlet pipe length 1xDN
Dimensions	[mm]	110 x 48 x 55.1
Materials		housing: stainless steel (316L/1.4404); Display: PFA; Sealing Display: FKM; connector: PBT
Materials (wetted parts)		Pipe section: stainless steel (316L/1.4404); Process connection sealing: NBR reinforced fibre Flat seal
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		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
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: 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

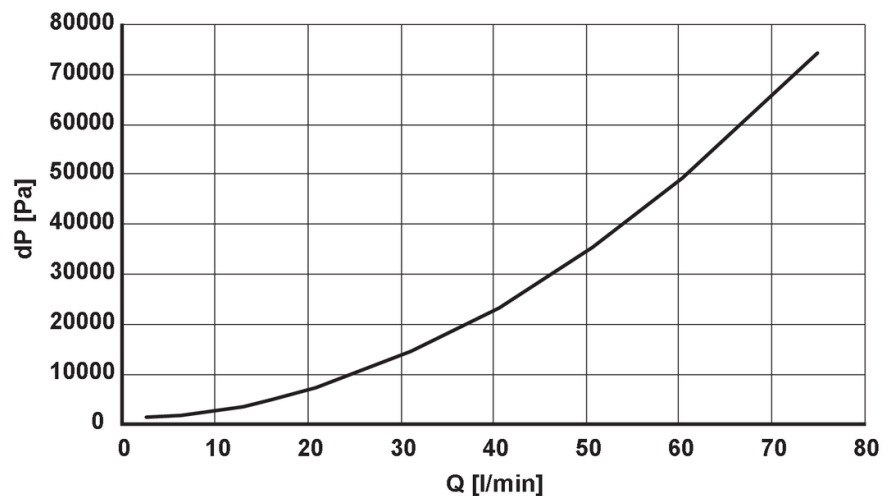
OUT2/InD: switching output volumetric flow quantity monitoring
switching output Temperature monitoring
Pulse output quantity meter
analogue output flow
analogue output temperature
Diagnostic output direction of flow detection / signal quality
signal output Preset counter
input counter reset

colours to DIN EN
60947-5-2

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

Diagrams and graphs

Note on pressure loss



SU6020

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derating ambient temperature

