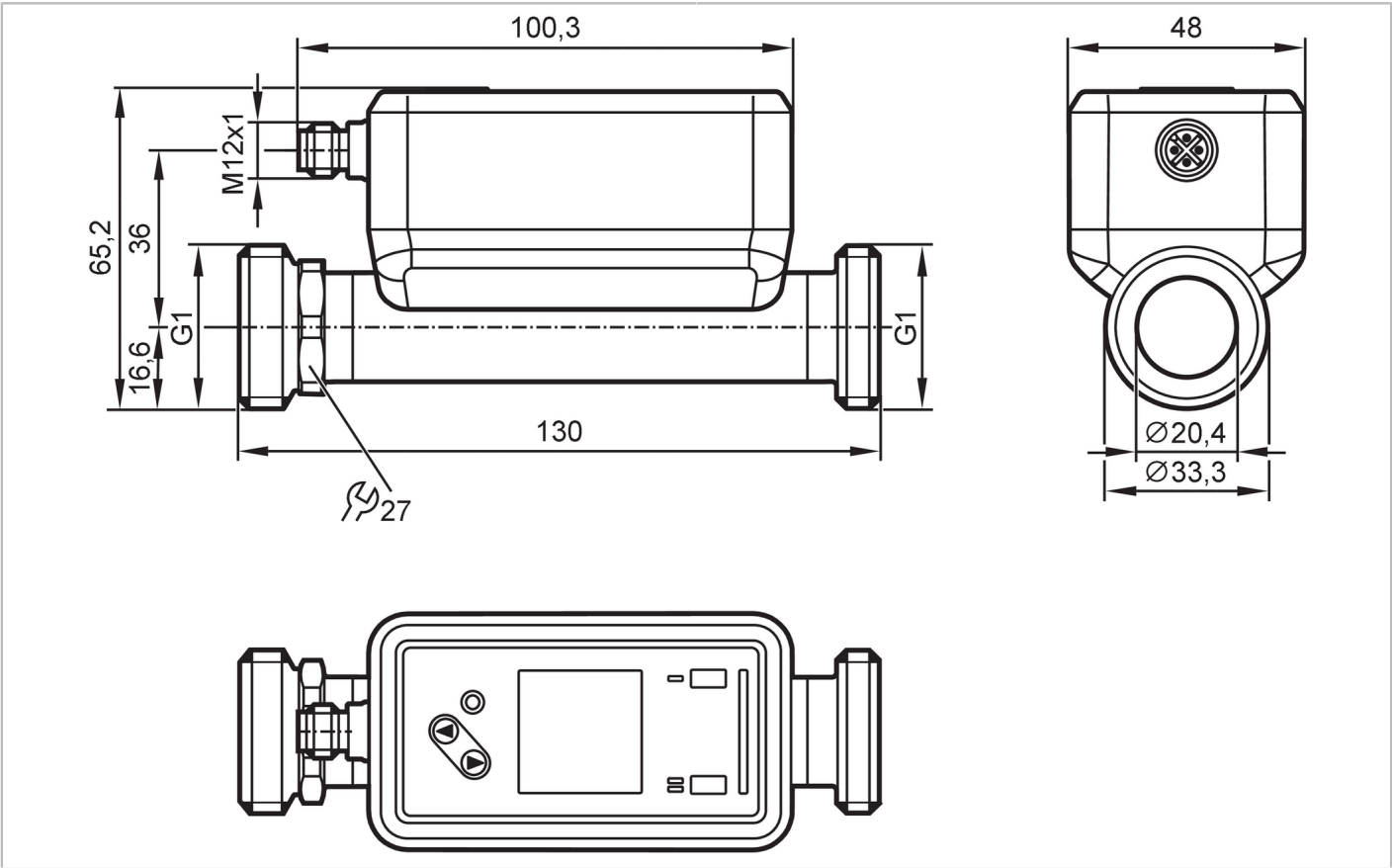


SU8030



Ultrasonic flow meter

SUR11XFBFRKG/US



ACS KTW/W270 Reg31

Product characteristics				
Measuring range	1...240 l/min	60...14400 l/h	0.051...12.202 m/s	0.06...14.4 m³/h
Process connection	threaded connection G 1 external thread DN25			
Application				
Special feature	Gold-plated contacts			
Media	ultra-pure water; water; hydrous media; glycol solutions; oils; coolants			
Note on media	hydrous media: for media with >10 % additives, the repeatability is the only available value			
	low-viscosity oils with viscosity: 7...40 mm²/s (40 °C)			
	high-viscosity oils with viscosity: 30...68 mm²/s (40 °C)			
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		



Ultrasonic flow meter

SUR11XFBFRKG/US

Inputs					
Inputs		counter reset			
Outputs					
Total number of outputs		2			
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		1...240 l/min	60...14400 l/h	0.051...12.202 m/s	0.06...14.4 m³/h
Display range		-288...288 l/min	-17280...17280 l/h	-14.642...14.642 m/s	-17.28...17.28 m³/h
Resolution		0.1 l/min	1 l/h	0.001 m/s	0.002 m³/h
Set point SP		2.3...240 l/min	139...14400 l/h	0.118...12.202 m/s	0.139...14.4 m³/h
Reset point rP		1.1...238.8 l/min	64...14325 l/h	0.055...12.139 m/s	0.064...14.325 m³/h
Analogue start point ASP		-240...192 l/min	-14400...11522 l/h	-12.202...9.763 m/s	-14.4...11.522 m³/h
Analogue end point AEP		-192...240 l/min	-11522...14400 l/h	-9.763...12.202 m/s	-11.522...14.4 m³/h
Low flow cut-off LFC		1...12 l/min	60...720 l/h	0.051...0.61 m/s	0.06...0.72 m³/h
Frequency end point, FEP		48.1...240 l/min	2889...14400 l/h	2.448...12.202 m/s	2.89...14.4 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		
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		



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SUR11XFBFRKG/US

Frequency at the end point FRP	[Hz]	1...10000
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Accuracy / deviations

Flow monitoring		
Accuracy (in the measuring range)	glycol solutions (35%)	$\pm(5,0 \% \text{ MW} + 0,5 \% \text{ MEW})$
	high-viscosity oils with viscosity 46mm ² /s (40°C)	$\pm(5,0 \% \text{ MW} + 0,5\% \text{ MEW})$
	low-viscosity oils with viscosity 10mm ² /s (40°C)	$\pm(5,0 \% \text{ MW} + 0,5\% \text{ MEW})$
	water	$\pm (1,0 \% \text{ MW} + 0,5 \% \text{ MEW})$
Repeatability		$\pm 0,2 \% \text{ MEW}$
Temperature monitoring		
Accuracy	[K]	$\pm 2,5 (Q > 5 \% \text{ MEW})$
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
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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
	Type of operation	DeviceID
Supported DeviceIDs	default	1758

Operating conditions

Ambient temperature	[°C]	-20...60
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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

Mechanical data

Weight	[g]	551.4
Housing		rectangular
Type of mounting		inlet pipe length 5xDN; outlet pipe length 1xDN
Dimensions	[mm]	130 x 48 x 65.2
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 external thread DN25
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
Display unit		l/min; l/h; m³/h; m/s

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

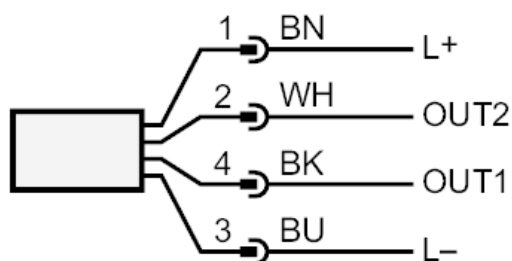




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Connection



- 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
 - 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
 - signal output Preset counter
 - input counter reset

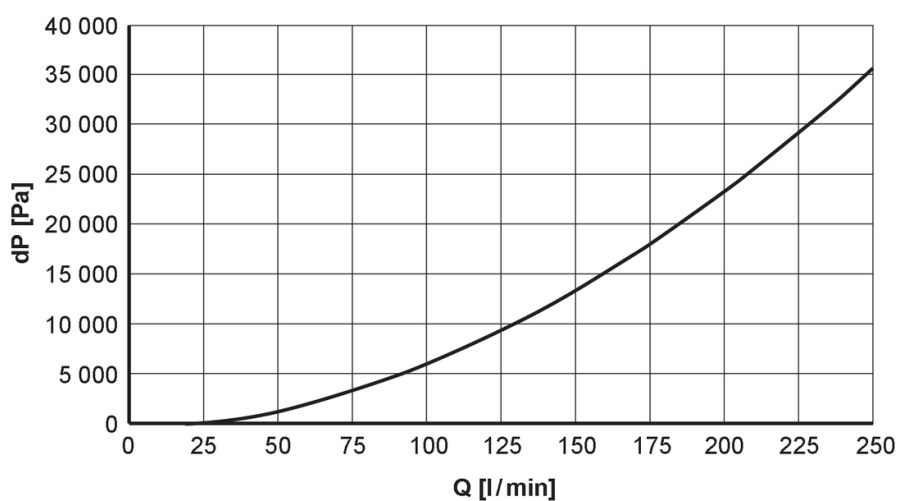
colours to DIN EN 60947-5-2

Core colours

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

Diagrams and graphs

Note on pressure loss



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derating ambient temperature

