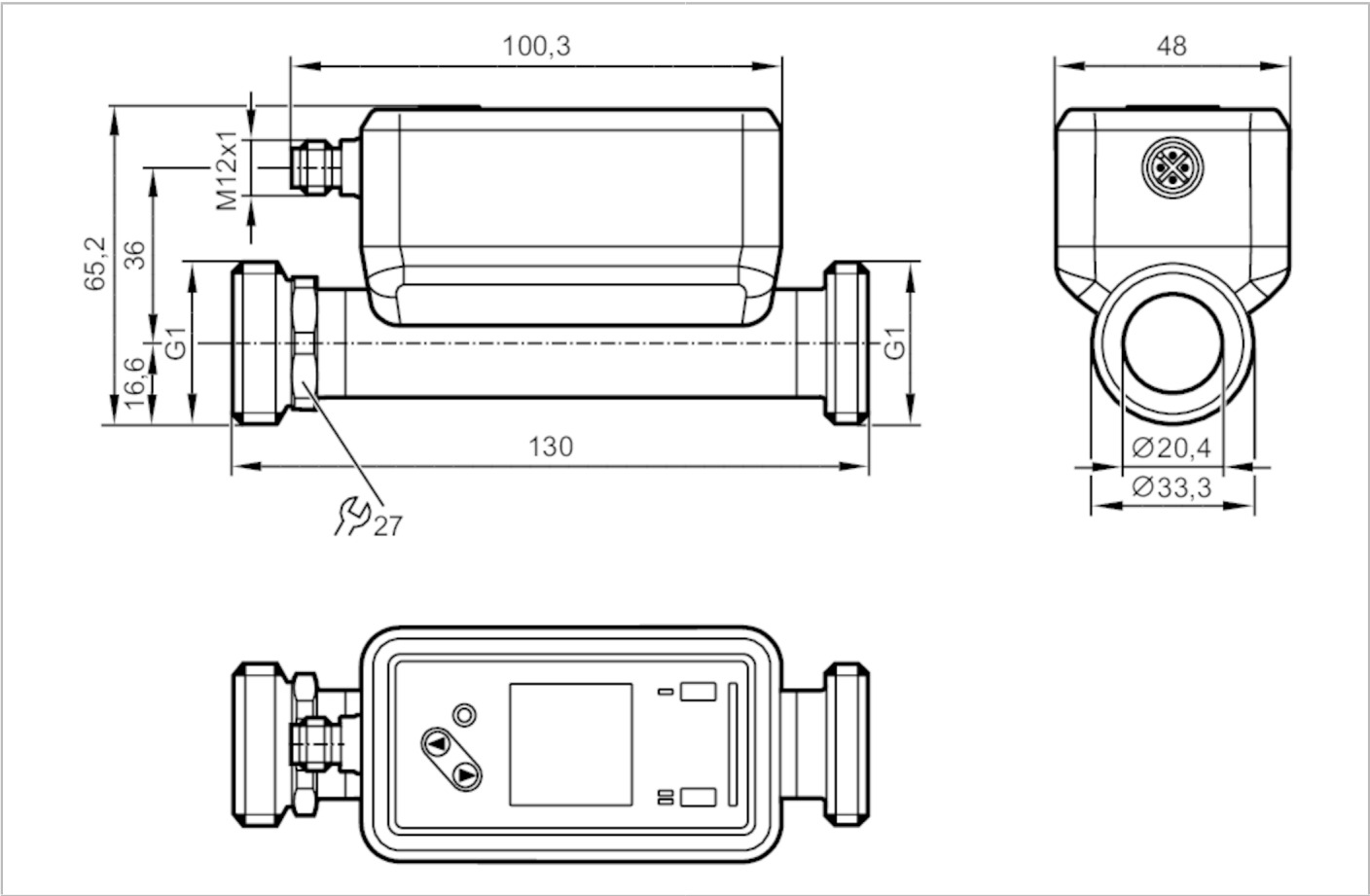


SU8030



Ultrasonic flow meter

SUR11XFBFRKG/US



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	G 1 DN25 external thread			
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. bursting pressure	150 bar		15 MPa	
Pressure rating	100 bar		10 MPa	
Vacuum resistance	[mbar]	-1000		
MAWP (for applications according to CRN)	[bar]	100		
Electrical data				
Operating voltage	[V]	18...32 DC; (to SELV/PELV)		
Current consumption	[mA]	< 75		
Protection class		III		
Reverse polarity protection		yes		



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Power-on delay time	[s]	5			
Measuring principle		ultrasonic			
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			

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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)	glycol solutions (35%)	±(5,0 % MW + 0,5 % MEW)
	high-viscosity oils with viscosity 46mm ² /s (40°C)	±(5,0 % MW + 0,5% MEW)
	low-viscosity oils with viscosity 10mm ² /s (40°C)	±(5,0 % MW + 0,5% MEW)
	water	± (1,0 % MW + 0,5 % MEW)
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
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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	Identification and Diagnosis (0x4000)	
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	1758

Operating conditions

Ambient temperature	[°C]	-20...60
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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)
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
Type of mounting	inlet pipe length 5xDN; outlet pipe length 1xDN	
Materials	housing: stainless steel (316L/1.4404); Display: PFA; Sealing Display: FKM; connector: POKAN	
Materials (wetted parts)	Pipe section: stainless steel (316L/1.4404); Process connection sealing: Centellen Flat seal	
Process connection	G 1 DN25 external thread	
Surface characteristics Ra/Rz of the wetted parts	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: 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

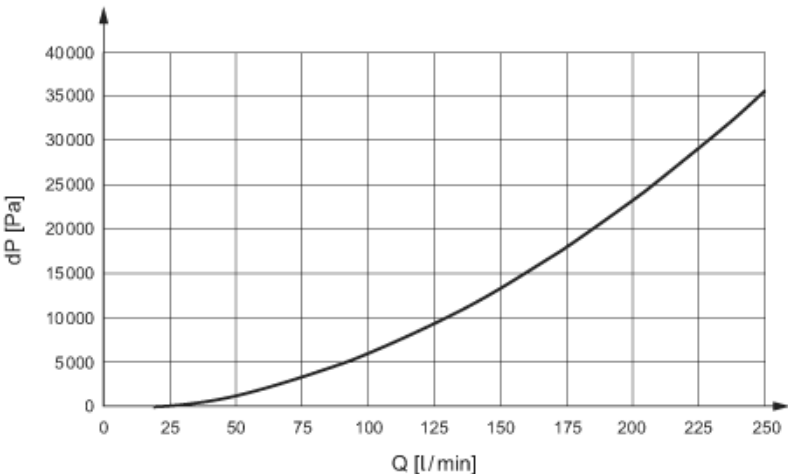
colours to DIN EN 60947-5-2

Core colours

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

Diagrams and graphs

Note on pressure loss



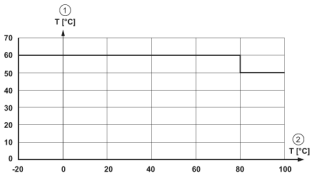
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derating ambient temperature



- 1 Ambient temperature
- 2 Medium temperature