

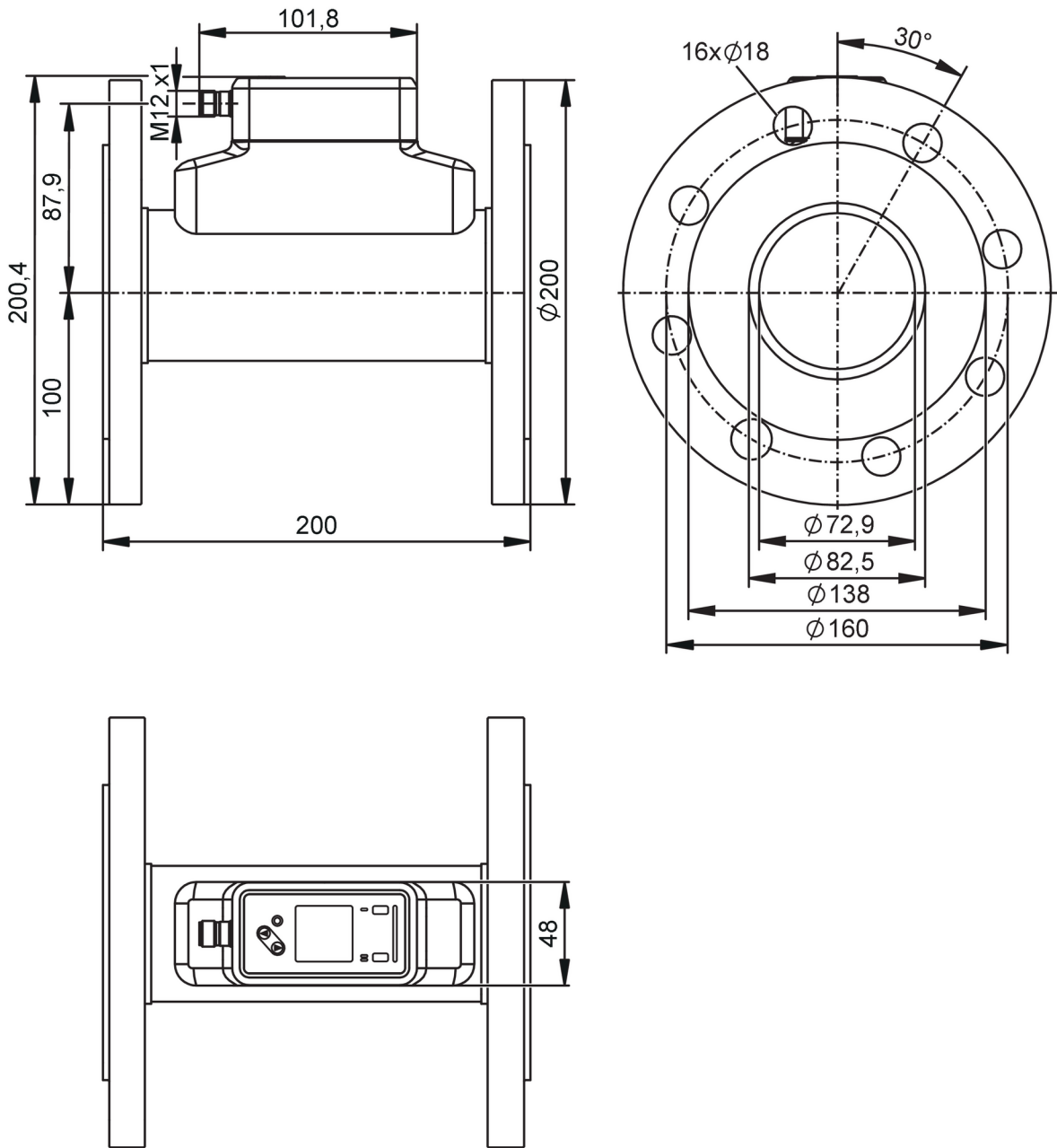
SUW600



Ultrasonic flow meter

SUF80IGBFRKG/US

note: on the sensor side, the article can only be connected using an angled cable – see accessories



Product characteristics

Measuring range	25...3600 l/min	1500...216000 l/h	0.099...14.325 m/s	1.5...216 m³/h
Nominal diameter	DN80 (3")			
Process connection	DN80 EN1092-1 PN16 flange			

Application

Special feature	Gold-plated contacts
Application	Use in industrial applications
Media	ultra-pure water; water; hydrous media; glycol solutions
Note on media	hydrous media: for media with >10 % additives, the repeatability is the only available value

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Medium temperature	[°C]	-20...100			
Min. burst pressure		64 bar	6.4 MPa		
Pressure rating		16 bar	1.6 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 / outputs					
Total number of inputs and outputs		2			
Inputs					
Inputs		OUT2	counter reset		
Outputs					
Total number of outputs		2			
Output signal		OUT1	switching signal; pulse signal; diagnostic signal; totaliser switching signal; frequency signal; IO-Link		
		OUT2	switching signal; pulse signal; diagnostic signal; totaliser switching signal; analogue signal		
Electrical design		PNP/NPN			
Pulse output		flow rate meter			
Short-circuit protection		yes			
Type of short-circuit protection		pulsed			
Overload protection		yes			
Analogue					
Number of analogue outputs		1			
Analogue current output	[mA]	4...20			
Max. load	[Ω]	500			
Digital					
Number of digital outputs		2			
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			
Measuring/setting range					
Measuring range		25...3600 l/min	1500...216000 l/h	0.099...14.325 m/s	1.5...216 m³/h
Display range		-4320...4320 l/min	-259200...259200 l/h	-17.19...17.19 m/s	-259.2...259.2 m³/h
Resolution		0.1 l/min	10 l/h	0.001 m/s	0.001 m³/h



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Note on factory setting	l/min, °C			
Set point SP	44.8...3600 l/min	2688...216000 l/h	0.178...14.325 m/s	2.688...216 m³/h
Reset point rP	26.1...3581.3 l/min	1565...214877 l/h	0.103...14.251 m/s	1.565...214.9 m³/h
Analogue start point ASP	-3600...2880 l/min	-216000...172800 l/h	-14.325...11.46 m/s	-216...172.8 m³/h
Analogue end point AEP	-2880...3600 l/min	-172800...216000 l/h	-11.46...14.325 m/s	-172.8...216 m³/h
Low flow cut-off LFC	25...180 l/min	1500...10800 l/h	0.099...0.716 m/s	1.5...10.8 m³/h
Frequency end point, FEP	722.2...3600 l/min	43300...216000 l/h	2.874...14.325 m/s	43.3...216 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)	water	± (2,0 % 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]	< 0.5; (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)			



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IO-Link revision	1.1	
SDCI standard	IEC 61131-9	
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	2013

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)
UL approval	UL approval no.	I033
	File number UL	E174189
Pressure Equipment Directive	can be used for group 2 fluids; group 1 fluids on request	

Mechanical data

Weight [g]	9762
Housing	rectangular
Inlet pipe length	15 x DN
Outlet pipe length	3 x DN
Dimensions [mm]	200 x 200 x 200.4
Materials	housing: stainless steel (316L/1.4404); Display: PFA; Sealing Display: FKM; connector: PBT
Materials (wetted parts)	Pipe section: stainless steel (316L/1.4435); Process connection: stainless steel (316L/1.4404)
Nominal diameter	DN80 (3")
Process connection	DN80 EN1092-1 PN16 flange
Surface characteristics Ra/Rz of the wetted parts	Ra < 0.76 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	

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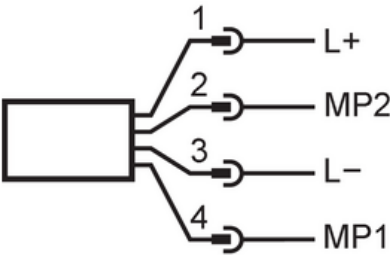
Accessories	
Items supplied	package insert
Remarks	
Remarks	MW = measured value MEW = Final value of the measuring range pulse and totaliser signal are only available for one of the two outputs the specified Ra surface characteristics of the wetted surfaces do not apply to the weld seam.
Notes	note: on the sensor side, the article can only be connected using an angled cable – see accessories
Pack quantity	1 pcs.

Electrical connection - plug

Connector: 1 x M12; coding: A; Contacts: 4, gold-plated



Connection



1 (L+)	L+	
2 (OUT2)	MP2	DO2, AO, DI
3 (L-)	L-	
4 (OUT1)	MP1	DO1, FO, IO-Link

AO: analogue output; DI: digital input; DO: digital output; FO: frequency output; MP: multi-function connection