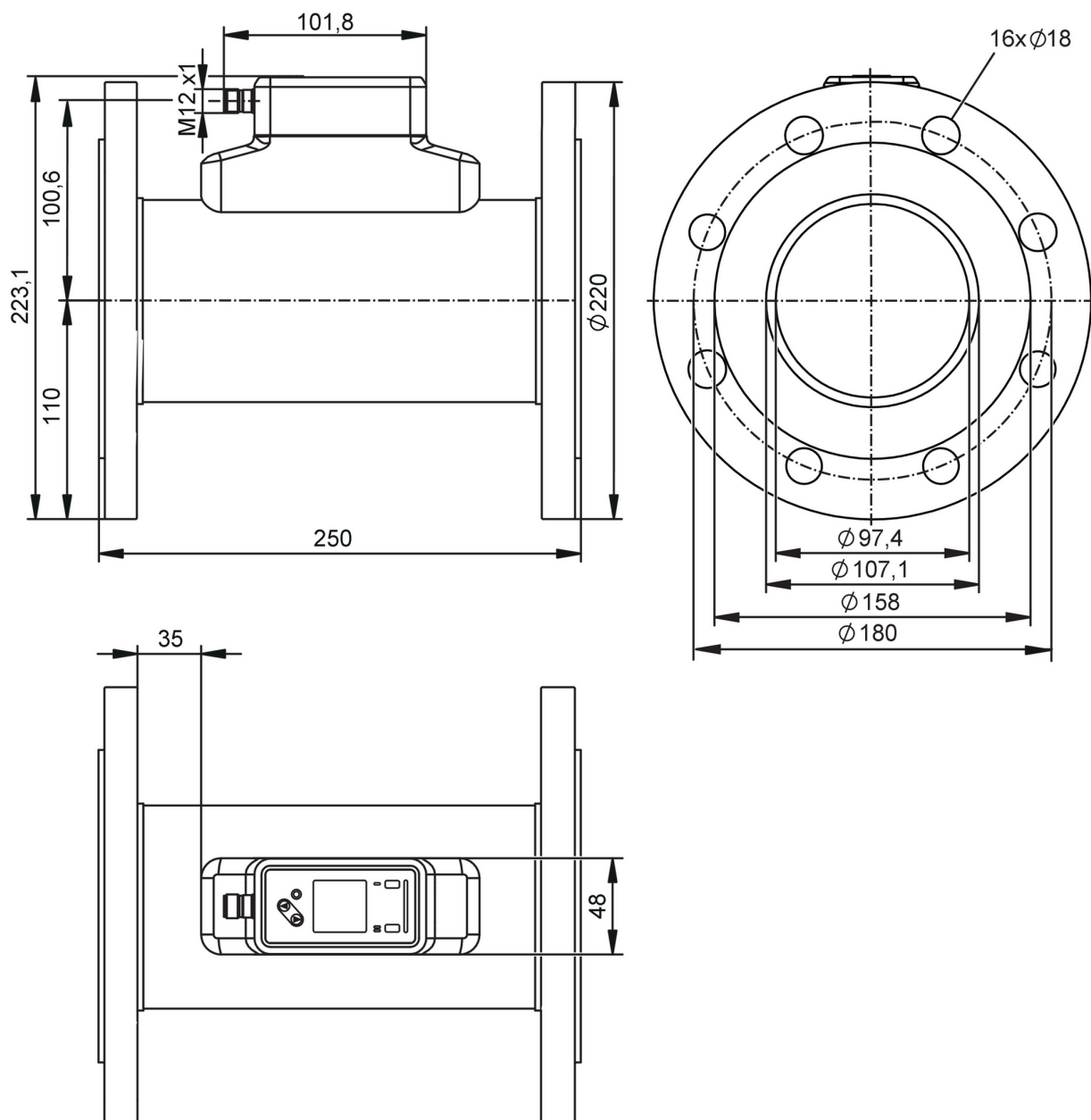


SUW700



Ultrasonic flow meter

SUFX0IGBFRKG/US



Product characteristics

Measuring range	45...6000 l/min	2700...360000 l/h	0.101...13.435 m/s	2.7...360 m³/h
Nominal diameter	DN100 (4")			
Process connection	DN100 EN1092-1 PN16 Flange			

Application

Special feature	gold-plated contacts
Application	Use in industrial applications
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

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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; totalizer switching signal; frequency signal; IO-Link	
		OUT2	switching signal; pulse signal; diagnostic signal; totalizer switching signal; analog signal	
Electrical design		PNP/NPN		
Pulse output		flow rate meter		
Short-circuit protection		yes		
Type of short-circuit protection		yes (non-latching)		
Overload protection		yes		
Analog				
Number of analog outputs		1		
Analog current output	[mA]	4...20		
Max. load	[Ω]	500		
Digital				
Number of digital outputs		2		
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		
Measuring/setting range				
Measuring range		45...6000 l/min	2700...360000 l/h	0.101...13.435 m/s 2.7...360 m³/h
Display range		-7200...7200 l/min	-432000...432000 l/h	-16.122...16.122 m/s -432...432 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	78...6000 l/min	4700...360000 l/h	0.175...13.435 m/s	4.7...360 m³/h
Reset point rP	46.8...5968.8 l/min	2800...358100 l/h	0.105...13.365 m/s	2.8...358.1 m³/h
Analog start point ASP	-6000...4800 l/min	-360000...288000 l/h	-13.435...10.748 m/s	-360...288 m³/h
Analog end point AEP	-4800...6000 l/min	-288000...360000 l/h	-10.748...13.435 m/s	-288...360 m³/h
Low flow cut-off LFC	45...300 l/min	2700...18000 l/h	0.101...0.672 m/s	2.7...18 m³/h
Frequency end point, FEP	1203.7...6000 l/min	72200...360000 l/h	2.695...13.425 m/s	72.2...360 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)	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			
Reaction 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)			



Ultrasonic flow meter

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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 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	2015

Operating conditions

Ambient temperature [°C]	-20...60
Storage temperature [°C]	-25...80
Protection	IP 69; 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 number	I033
	File number UL	E174189
Pressure equipment directive	can be used for group 2 fluids; group 1 fluids on request	

Mechanical data

Weight [g]	10960
Housing	rectangular
Inlet pipe length	15 x DN
Outlet pipe length	3 x DN
Dimensions [mm]	250 x 220 x 223.1
Material	housing: stainless steel (1.4404 / 316L); Display: PFA; sealing Display: FKM; connector: PBT
Materials (wetted parts)	Pipe section: stainless steel (1.4435 / 316L); Process connection: stainless steel (1.4404 / 316L)
Nominal diameter	DN100 (4")
Process connection	DN100 EN1092-1 PN16 Flange
Surface characteristics Ra/Rz of the wetted parts	Ra < 0.76 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

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Display unit	l/min; l/h; m³/h; m/s
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Accessories

Items supplied	package insert
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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 specified Ra surface characteristics of the wetted surfaces do not apply to the weld seam.

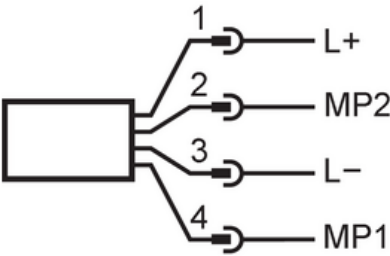
Pack quantity	1 pcs.
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Electrical connection - plug

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: analog output; DI: digital input; DO: digital output; FO: Frequency output; MP: multi-function connection

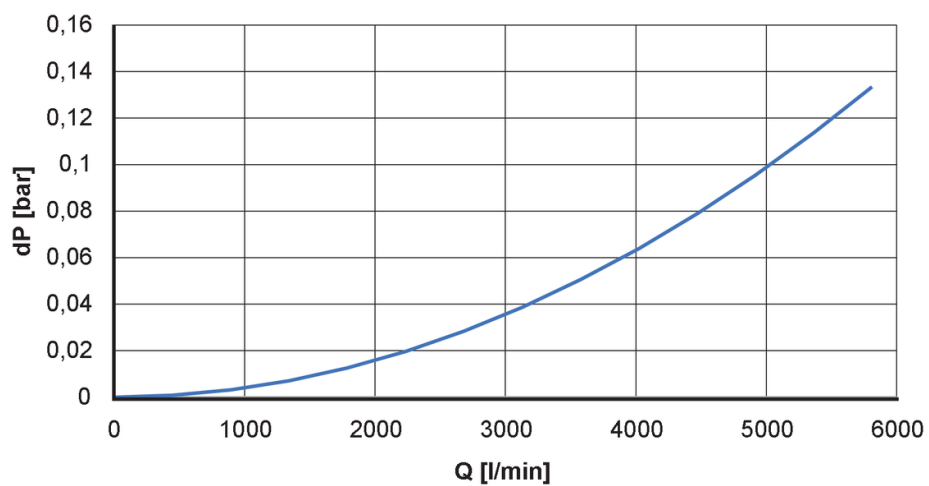
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Diagrams and graphs



dP [bar] Pressure loss
Q [l/min] volumetric flow quantity