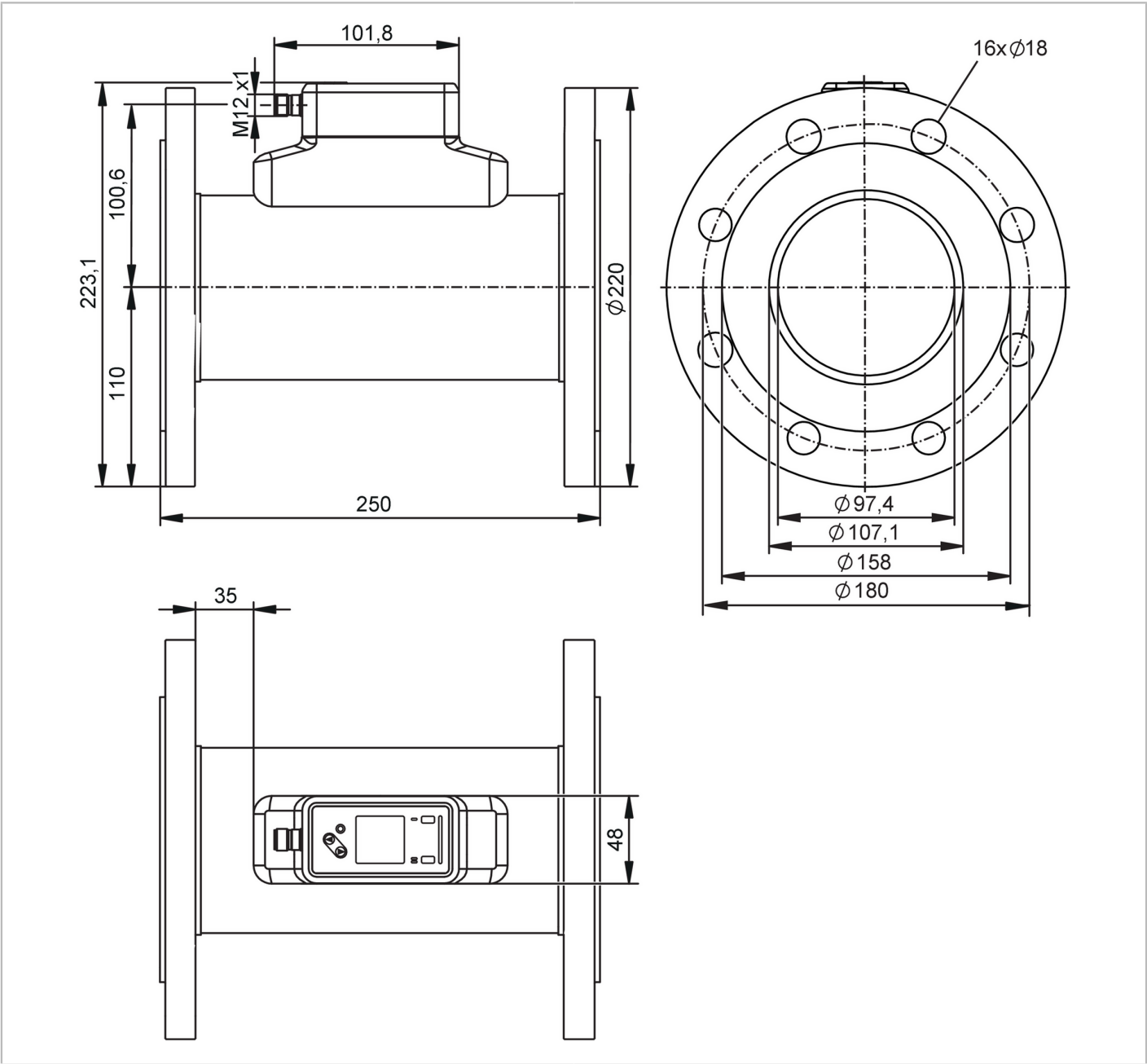


SUW700

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; hydrous media; glycol solutions
Note on media	hydrous media: for media with >10 % additives, the repeatability is the only available value
Medium temperature	-20...100 [°C]

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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	
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Inputs

Inputs	OUT2	counter reset
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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	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
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



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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
Analogue start point ASP	-6000...4800 l/min	-360000...288000 l/h	-13.435...10.748 m/s	-360...288 m³/h
Analogue 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			
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)			
IO-Link revision	1.1			
SDCI standard	IEC 61131-9			



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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	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 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]		10960
Housing		rectangular
Inlet pipe length		15 x DN
Outlet pipe length		3 x DN
Dimensions [mm]		250 x 220 x 223.1
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		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		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	package insert

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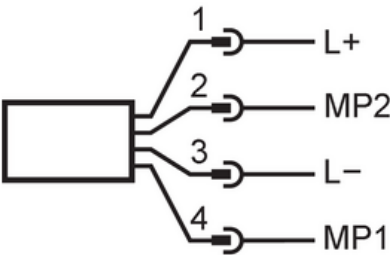
Remarks	
Remarks	MW = measured value
	MEW = Final value of the measuring range
	pulse and totaliser signal are only available for one of the two outputs
	the specified Ra surface characteristics of the wetted surfaces do not apply to the weld seam.
Pack quantity	1 pcs.

Electrical connection - plug

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



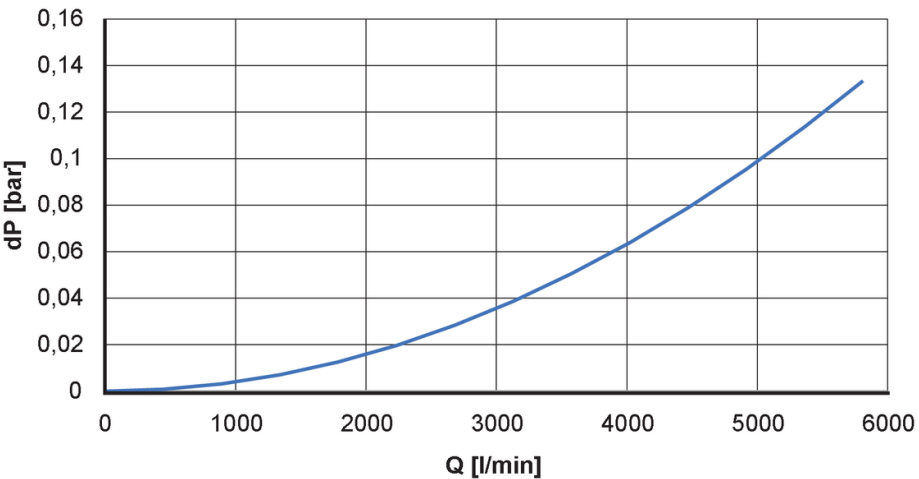
Connection



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

Diagrams and graphs



dP [bar] Pressure loss

Q [l/min] volumetric flow quantity