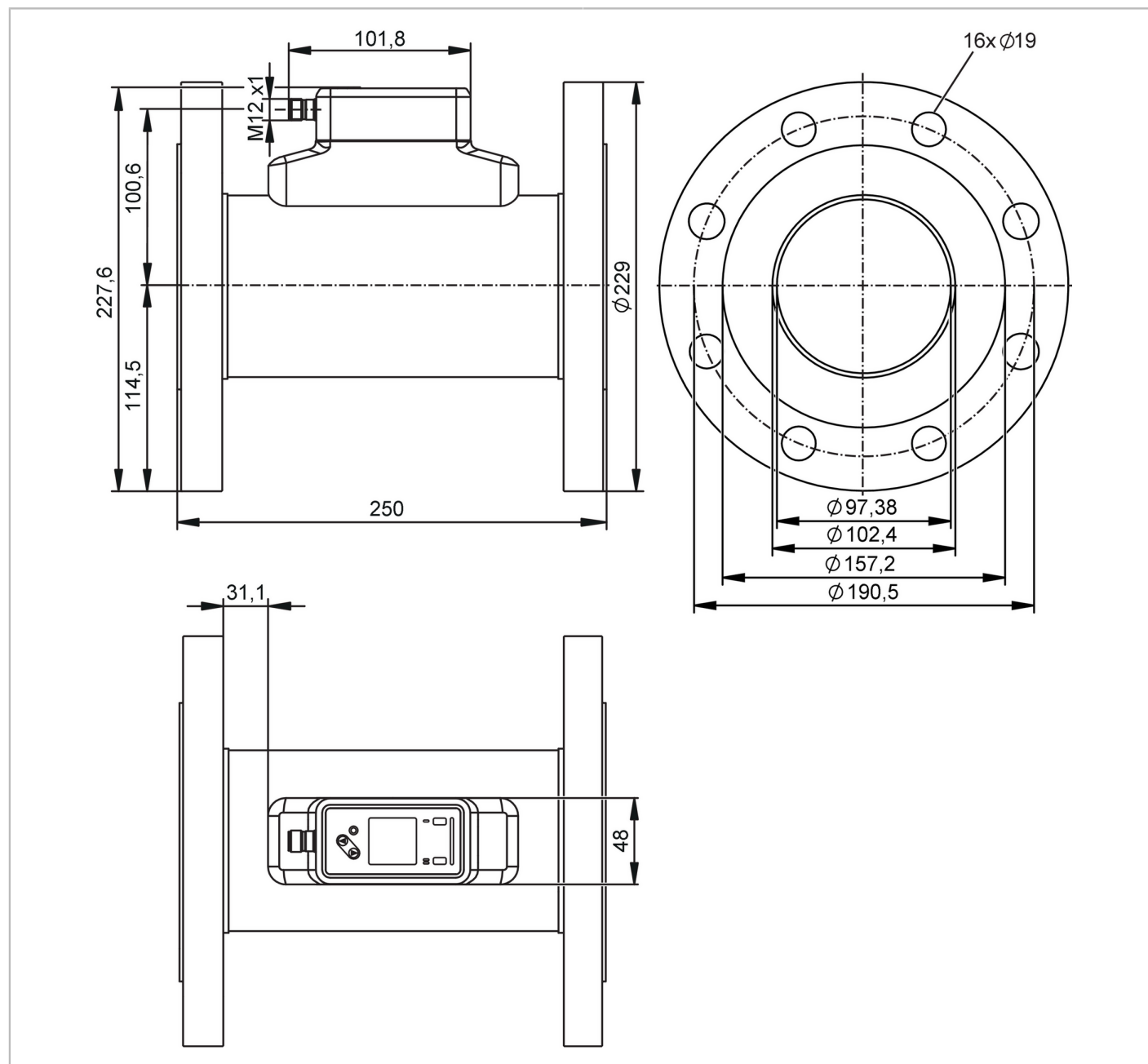


SUW711

Ultrasonic flow meter

SUFX0IGBFRKG/US



Product characteristics

Measuring range	45...6000 l/min	2.7...360 m³/h	714...95102 gph	11.9...1585 gpm
Nominal diameter	DN100 (4")			
Process connection	4" ASME B16.5 Class 150 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	[°C]	-20...100		

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Min. burst pressure	40 bar	928 psi	4 MPa
Pressure rating	16 bar	232 psi	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	45...6000 l/min	2.7...360 m³/h	714...95102 gph	11.9...1585 gpm
Display range	-7200...7200 l/min	-432...432 m³/h	-114122...114122 gph	-1902.04...1902.04 gpm
Resolution	0.1 l/min	0.001 m³/h	1 gph	0.01 gpm
Note on factory setting	gpm, °F			



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Set point SP	78...6000 l/min	4.7...360 m³/h	1236...95102 gph	20.6...1585 gpm
Reset point rP	46.8...5968.8 l/min	2.8...358.1 m³/h	742...94607 gph	12.4...1576.8 gpm
Analogue start point ASP	-6000...4800 l/min	-360...288 m³/h	-95102...76082 gph	-1585...1268 gpm
Analogue end point AEP	-4800...6000 l/min	-288...360 m³/h	-76082...95102 gph	-1268...1585 gpm
Low flow cut-off LFC	45...300 l/min	2.7...18 m³/h	713...4755 gph	11.9...79.3 gpm
Frequency end point, FEP	1203.7...6000 l/min	72.2...360 m³/h	19079...95102 gph	318...1585 gpm
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; 0.026...26414563.515 gal

Temperature monitoring

Measuring range	-20...100 °C	-4...212 °F
Display range	-44...124 °C	-47.2...255.2 °F
Resolution	0.1 °C	0.1 °F
Set point SP	-19.6...100 °C	-3.2...212 °F
Reset point rP	-20...99.6 °C	-4...211.2 °F
Analogue start point	-20...76 °C	-4...168.8 °F
Analogue end point	4...100 °C	39.2...212 °F
Frequency start point, FSP	-20...76 °C	4...168.8 °F
Frequency end point, FEP	4...100 °C	39.2...212 °F
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
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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
SDCI standard	IEC 61131-9



Ultrasonic flow meter

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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	2016

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]		14.15
Housing		rectangular
Inlet pipe length		15 x DN
Outlet pipe length		3 x DN
Dimensions [mm]		250 x 229 x 229
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		4" ASME B16.5 Class 150 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; gpm; gph; ft/s

Accessories	
Items supplied	package insert



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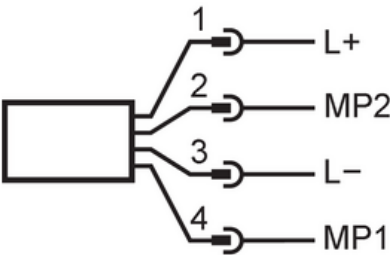
Remarks	
Remarks	MW = measured value
	MEW = Final value of the measuring range
	pulse and totaliser signal are only available for one of the two outputs
	the specified Ra surface characteristics of the wetted surfaces do not apply to the weld seam.
Pack quantity	1 pcs.

Electrical connection - plug

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



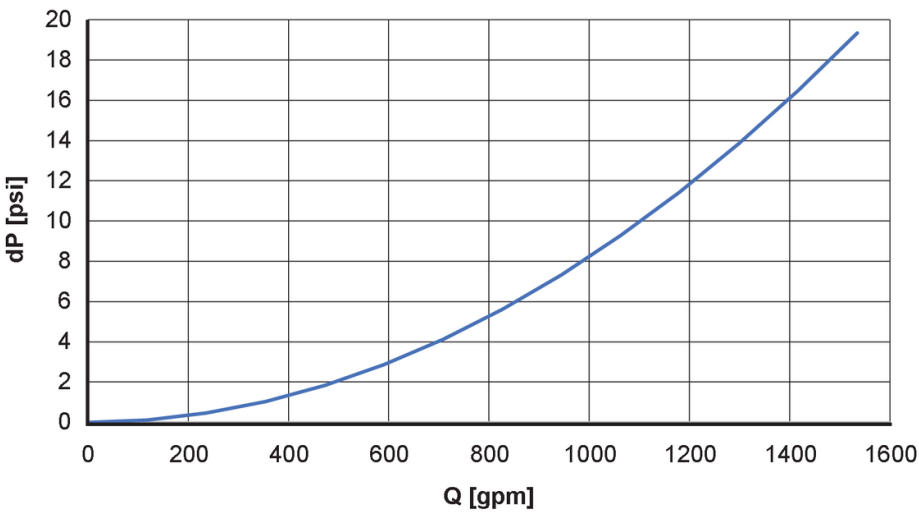
Connection



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 Pressure loss
[psi]
Q volumetric flow quantity
[gpm]