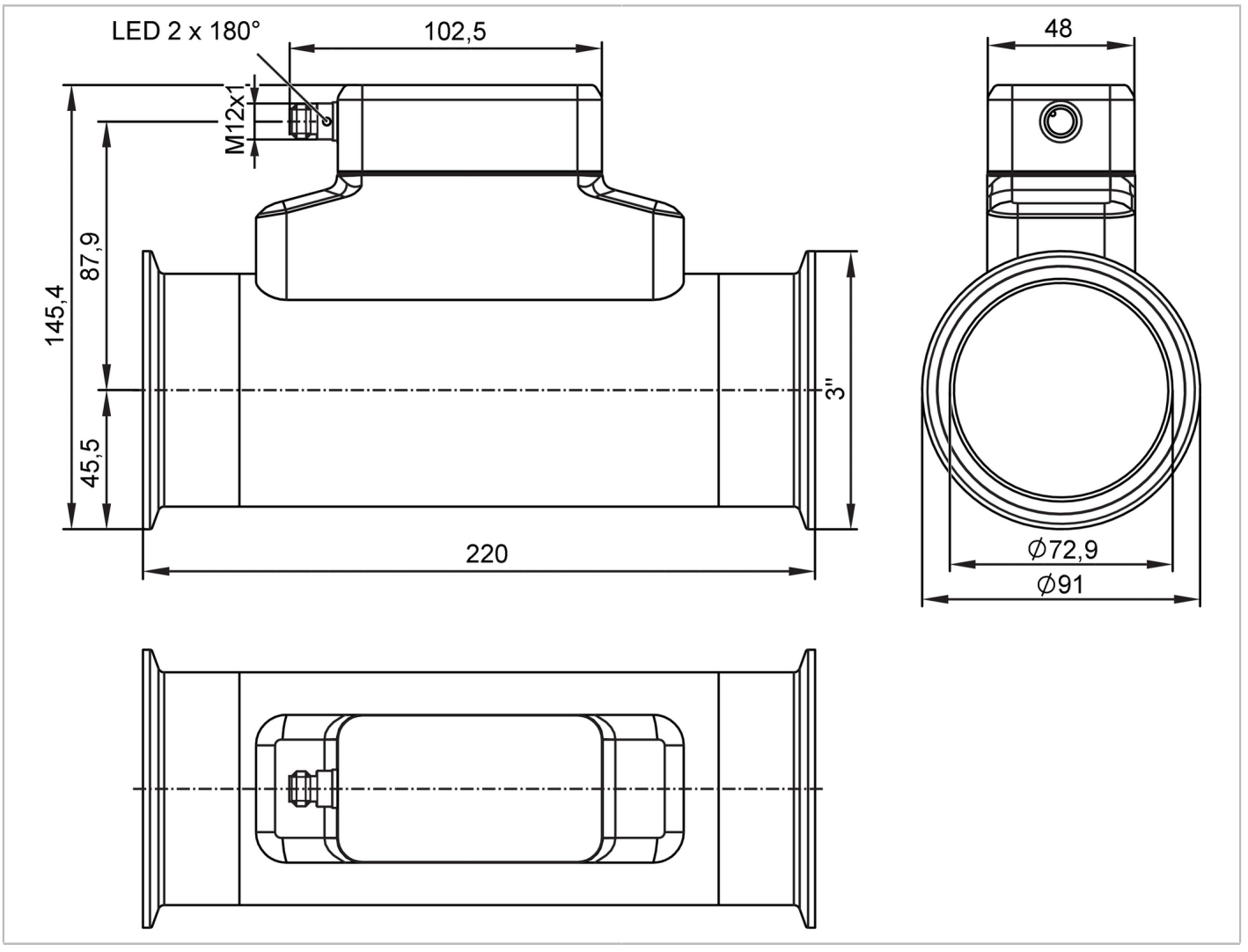
SUH601

Ultrasonic flow meter

SUC80XJBFRKG/US



ACS CE cULus LISTED EC 1935/2004 FCM FDA IO-Link KTW/W270 Reg31

Product characteristics					
Measuring range		25...3600 l/min	1.5...216 m³/h	400...57061 gph	6.6...951 gpm
Nominal diameter		DN80 (3“)			
Process connection		Clamp 3" DIN 32676 series C (ASME BPE)			
Application					
Special feature		gold-plated contacts			
Application		food and beverage industry			
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			
Medium temperature	[°C]	-40...120; (< 1 h: 150)			
Min. burst pressure		40 bar		4 MPa	
Pressure rating		25 bar		2.5 MPa	
Note on pressure rating		take into account the pressure resistance of the bracket and the seal used for clamp connection			
Vacuum resistance	[mbar]	-1000			

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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		25...3600 l/min	1.5...216 m³/h	400...57061 gph	6.6...951 gpm
Resolution		0.1 l/min	0.001 m³/h	1 gph	0.01 gpm
Note on factory setting		gpm, °F			
Set point SP		44.8...3600 l/min	2.7...216 m³/h	710...57061 gph	11.8...951 gpm
Reset point rP		26.1...3581.3 l/min	1.6...214.9 m³/h	413...56764 gph	6.9...946.1 gpm
Analog start point ASP		-3600...2880 l/min	-216...172.8 m³/h	-57060...45650 gph	-951...760.8 gpm
Analog end point AEP		-2880...3600 l/min	-172.8...216 m³/h	-45650...57060 gph	-760.8...951 gpm
Low flow cut-off LFC		25...180 l/min	1.5...10.8 m³/h	400...2850 gph	6.6...47.6 gpm

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Frequency end point, FEP	722.2...3600 l/min	43.3...216 m³/h	11450...57060 gph	190.8...951 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	-40...120 °C	-40...248 °F		
Resolution	0.1 °C	0.1 °F		
Set point SP	-39.4...120 °C	-39...248 °F		
Reset point rP	-40...119.4 °C	-40...247 °F		
Analog start point	-40...88 °C	-40...190.4 °F		
Analog end point	-8...120 °C	17.6...248 °F		
Frequency start point, FSP	-40...88 °C	-40...190.4 °F		
Frequency end point, FEP	-8...120 °C	17.6...248 °F		
Frequency at the end point FRP [Hz]	1...10000			
Accuracy / deviations				
Accuracy (in the measuring range)	only up to 100 °C; at higher temperatures, only the repeatability is within the specification.			
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)			
IO-Link revision	1.1.3			
SDCI standard	IEC 61131-9: 2013-07			
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			

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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	1855
Operating conditions			
Ambient temperature	[°C]	-20...60	
Storage temperature	[°C]	-25...80	
Protection		IP 69; (DIN EN 60529)	
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)
MTTF	[years]	136	
UL approval		UL approval number	I038
		File number UL	E174189
Pressure equipment directive		can be used for group 2 fluids; group 1 fluids on request	
Mechanical data			
Weight	[g]	1863.8	
Housing		rectangular	
Inlet pipe length		15 x DN	
Outlet pipe length		3 x DN	
Dimensions	[mm]	220 x 91 x 145.4	
Material		housing: stainless steel (1.4404 / 316L); connector: PEI, FKM	
Materials (wetted parts)		Pipe section: stainless steel (1.4435 / 316L); Process connection: stainless steel (1.4404 / 316L)	
Nominal diameter		DN80 (3“)	
Process connection		Clamp 3" DIN 32676 series C (ASME BPE)	
Process connection suitable for pipe standard		3" / Ø 76,2 mm x 1,65 mm; (DIN 11866 series C); (DIN EN 10357 Series D)	
Surface characteristics Ra/Rz of the wetted parts		Ra < 0.4 µm (16 µin); Rz = 4 µm (157 µin)	
Displays / operating elements			
Display		operating status	1 x LED, green
Accessories			
Items supplied		package insert	
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 surface characteristics Ra/Rz of the wetted surfaces do not apply to the weld seam.	

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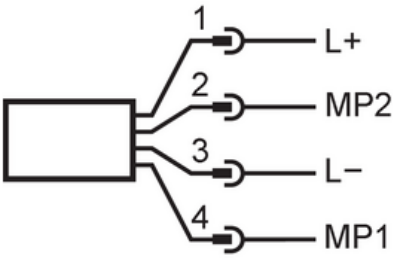
Pack quantity	1 pcs.

Electrical connection - plug

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

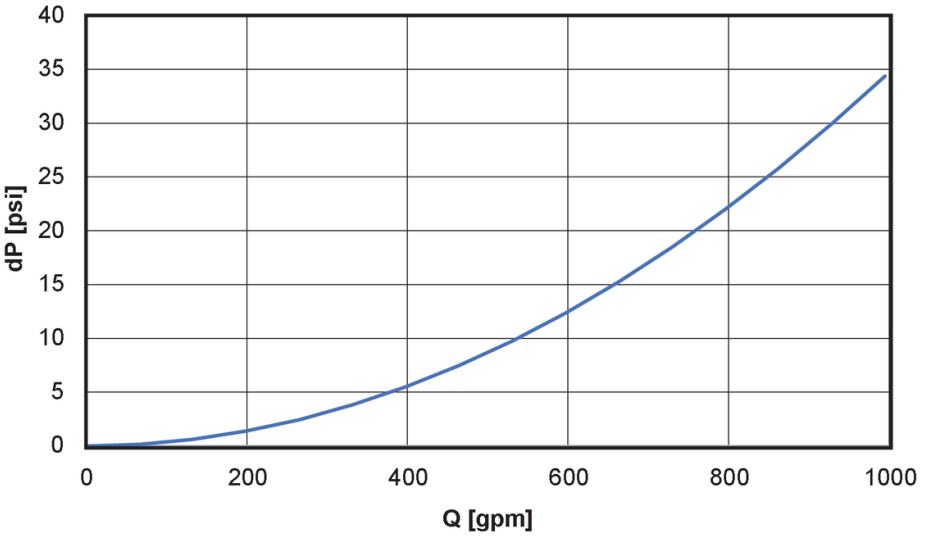
Connection



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

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

Diagrams and graphs



dP [psi] Pressure loss

Q [gpm] volumetric flow quantity