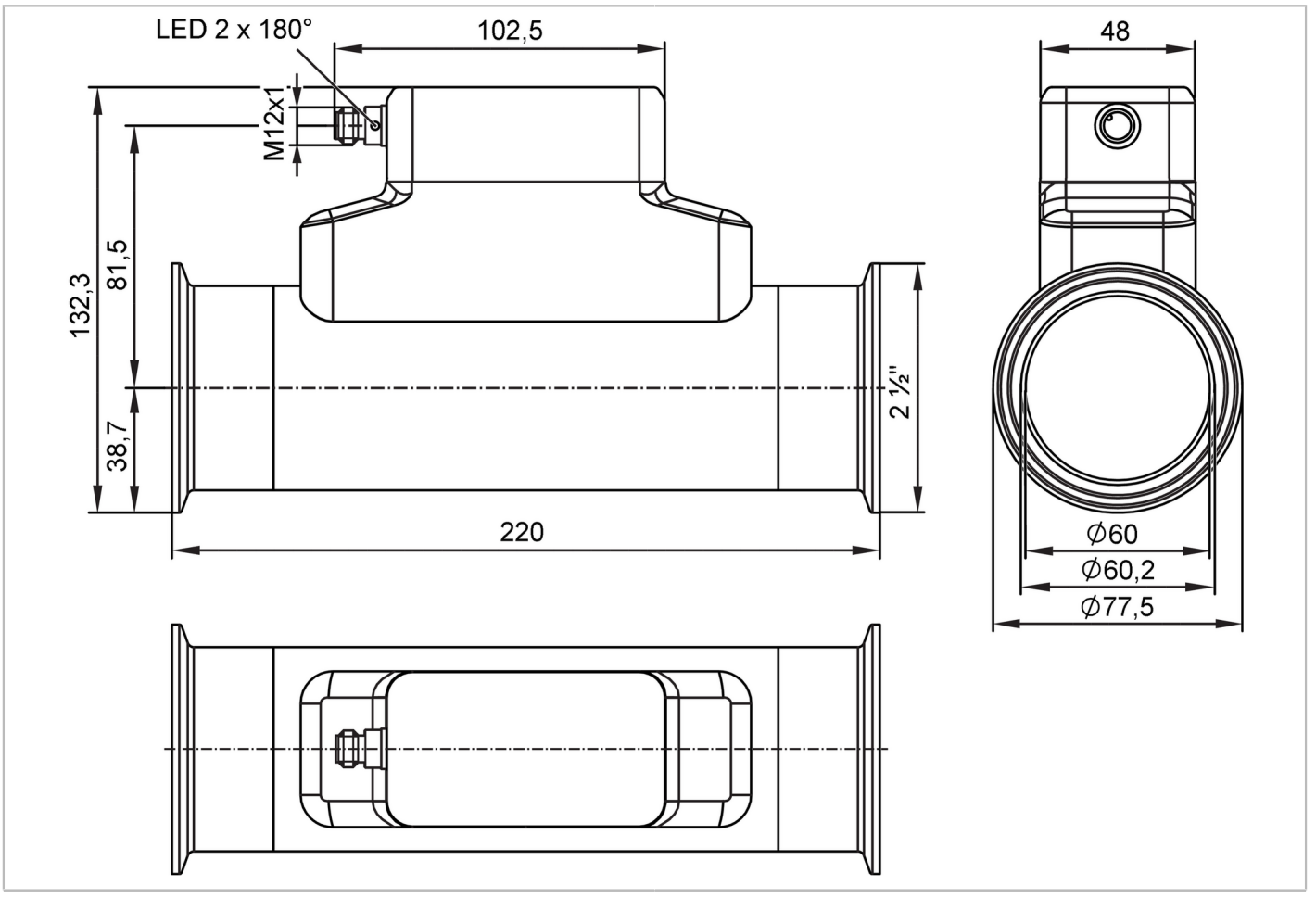
SUH501

Ultrasonic flow meter

SUC65XJBFRKG/US



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

Product characteristics					
Measuring range		20...2400 l/min	1.2...144 m³/h	320...38040 gph	5.2...634 gpm
Nominal diameter		DN65 (2 1/2“)			
Process connection		Clamp 2,5" 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			
Electrical data					
Operating voltage	[V]	18...32 DC; (to SELV/PELV)			
Current consumption	[mA]	< 75			

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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		20...2400 l/min	1.2...144 m³/h	320...38040 gph	5.2...634 gpm
Resolution		0.1 l/min	0.001 m³/h	1 gph	0.01 gpm
Note on factory setting		gpm, °F			
Set point SP		33.2...2400 l/min	1.99...144 m³/h	526...38041 gph	8.8...634 gpm
Reset point rP		20.7...2387.5 l/min	1.24...143.25 m³/h	328...37843 gph	5.5...630.7 gpm
Analog start point ASP		-2400...1920 l/min	-144...115.2 m³/h	-38041...30433 gph	-634...507.2 gpm
Analog end point AEP		-1920...2400 l/min	-115.2...144 m³/h	-30433...38041 gph	-507.2...634 gpm
Low flow cut-off LFC		20...120 l/min	1.2...7.2 m³/h	317...1902 gph	5.3...31.7 gpm
Frequency end point, FEP		481.5...2400 l/min	28.89...144 m³/h	7630...38040 gph	127.2...634 gpm
Frequency at the end point FRP	[Hz]	1...10000			

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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	
Min. process cycle time	[ms]	9.6	

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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	1853
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]	1689.05	
Housing		rectangular	
Inlet pipe length		15 x DN	
Outlet pipe length		3 x DN	
Dimensions	[mm]	220 x 77.5 x 132.3	
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		DN65 (2 1/2“)	
Process connection		Clamp 2,5" DIN 32676 series C (ASME BPE)	
Process connection suitable for pipe standard		2,5" / Ø 63,5 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.	
Pack quantity		1 pcs.	

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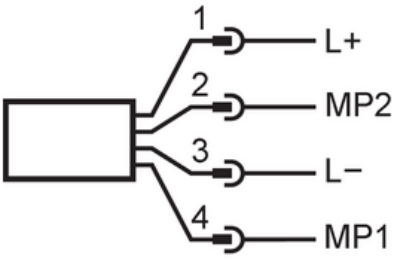
Electrical connection - plug

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

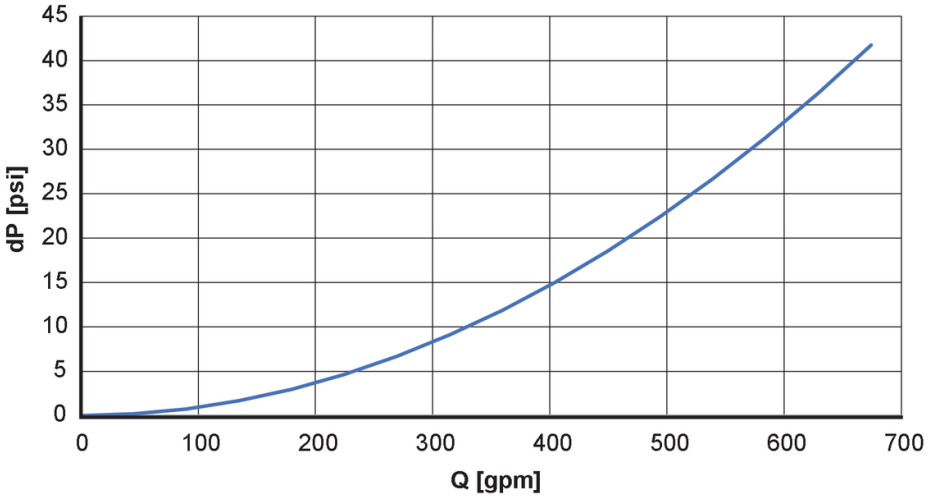
Connection



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