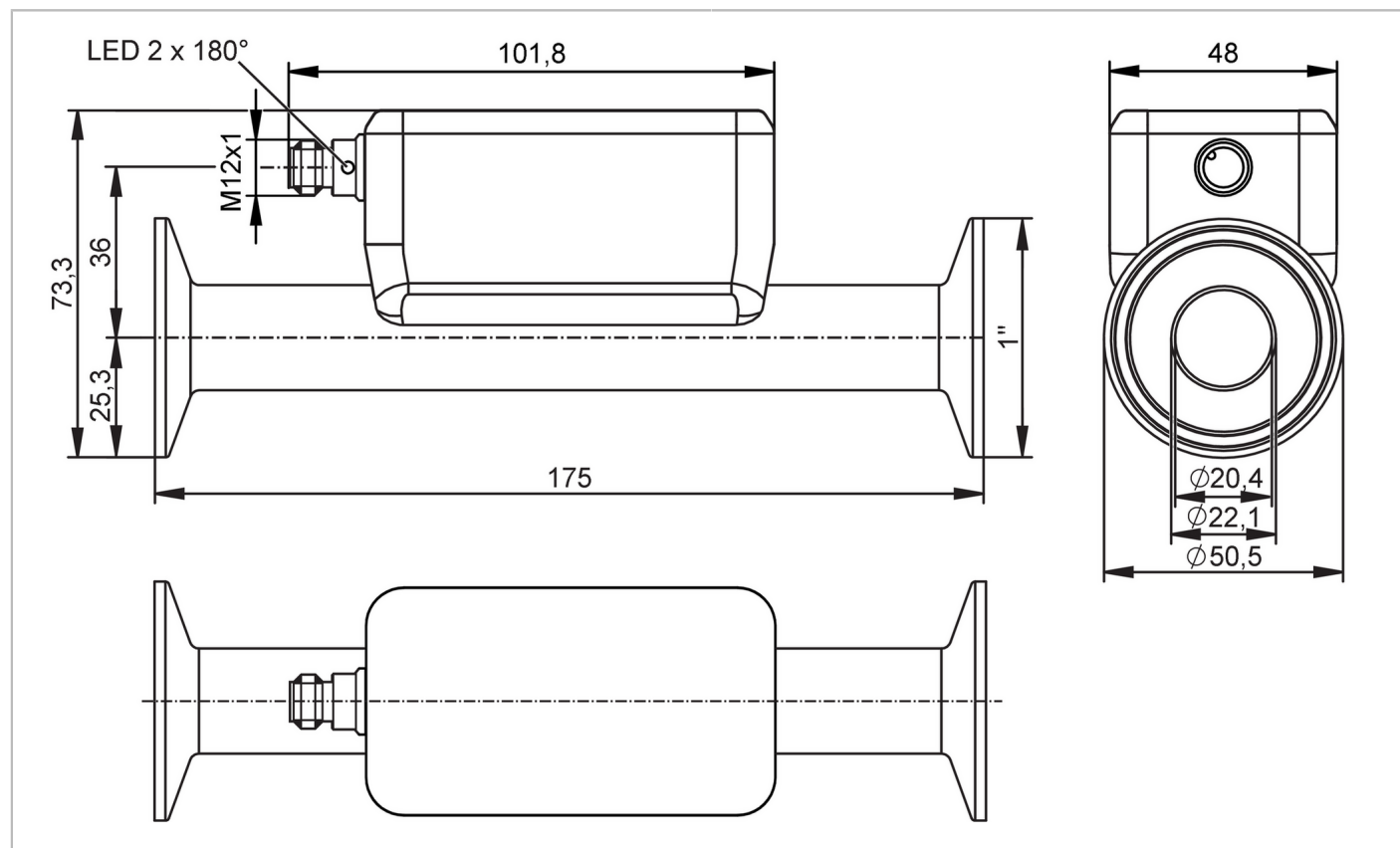


SUH251



Ultrasonic flow meter

SUC25XGBFRKG/US



Product characteristics

Measuring range	1...240 l/min	0.06...14.4 m³/h	16...3804 gph	0.26...63.4 gpm
Nominal diameter	DN25 (1")			
Process connection	Clamp 1" 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; edible oils	
Note on media	water-based media: for media with >10 % additives, the repeatability is the only available value	
	edible oils: palm oil, soy oil, rapeseed oil, sunflower oil, peanut oil, olive oil and others	
Medium temperature [°C]	-40...130; (< 1 h: 150)	
Min. burst pressure	75 bar	7.5 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			
Protection class	III			
Reverse polarity protection	yes			

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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		1...240 l/min	0.06...14.4 m³/h	16...3804 gph	0.26...63.4 gpm
Resolution		0.1 l/min	0.001 m³/h	1 gph	0.01 gpm
Note on factory setting		gpm, °F			
Set point SP		2.3...240 l/min	0.139...14.4 m³/h	37...3804 gph	0.61...63.4 gpm
Reset point rP		1.1...238.8 l/min	0.064...14.325 m³/h	16...3784 gph	0.28...63.07 gpm
Analog start point ASP		-240...192 l/min	-14.4...11.522 m³/h	-3804...3044 gph	-63.4...50.73 gpm
Analog end point AEP		-191.9...240 l/min	-11.511...14.4 m³/h	-3041...3804 gph	-50.68...63.4 gpm
Low flow cut-off LFC		1...12 l/min	0.06...0.72 m³/h	16...190 gph	0.26...3.17 gpm
Frequency end point, FEP		48.1...240 l/min	2.889...14.4 m³/h	763...3804 gph	12.72...63.4 gpm
Frequency at the end point FRP	[Hz]	1...10000			
Volumetric flow quantity monitoring					
Pulse length	[s]	0.002...2			

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Pulse value	0.02...99990000 l; 0.0053...26414563.515 gal	
Temperature monitoring		
Measuring range	-40...130 °C	-40...266 °F
Resolution	0.1 °C	0.1 °F
Set point SP	-39.4...130 °C	-38.9...266 °F
Reset point rP	-40...129.4 °C	-40...264.9 °F
Analog start point	-40...96 °C	-40...204.8 °F
Analog end point	-6...130 °C	21.2...266 °F
Frequency start point, FSP	-40...96 °C	-40...204.8 °F
Frequency end point, FEP	-6...130 °C	21.2...266 °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)	edible oils	± (5,0 % MW + 1,0 % MEW)
	water	± (1,0 % 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]	< 0.25; (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
Supported DeviceIDs	Output 2	1
	Type of operation	DeviceID
	default	1951

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]	618.2
Housing		rectangular
Inlet pipe length		5 x DN
Outlet pipe length		1 x DN
Dimensions	[mm]	175 x 50.5 x 73.3
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		DN25 (1")
Process connection		Clamp 1" DIN 32676 series C (ASME BPE)
Process connection suitable for pipe standard		1" / Ø 25,4 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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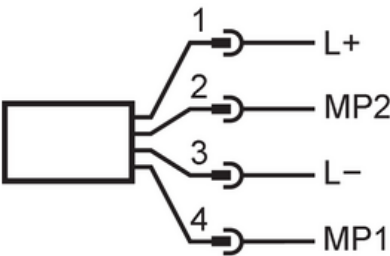
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Electrical connection - plug

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



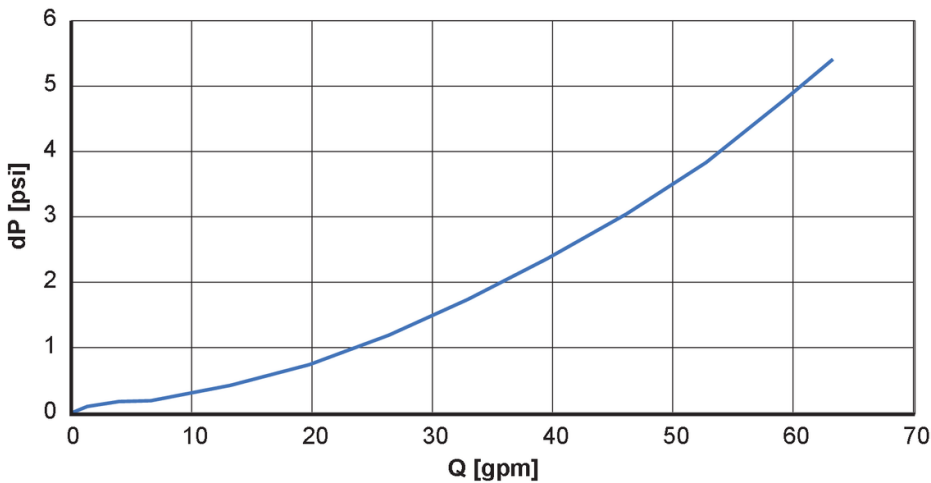
Connection



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