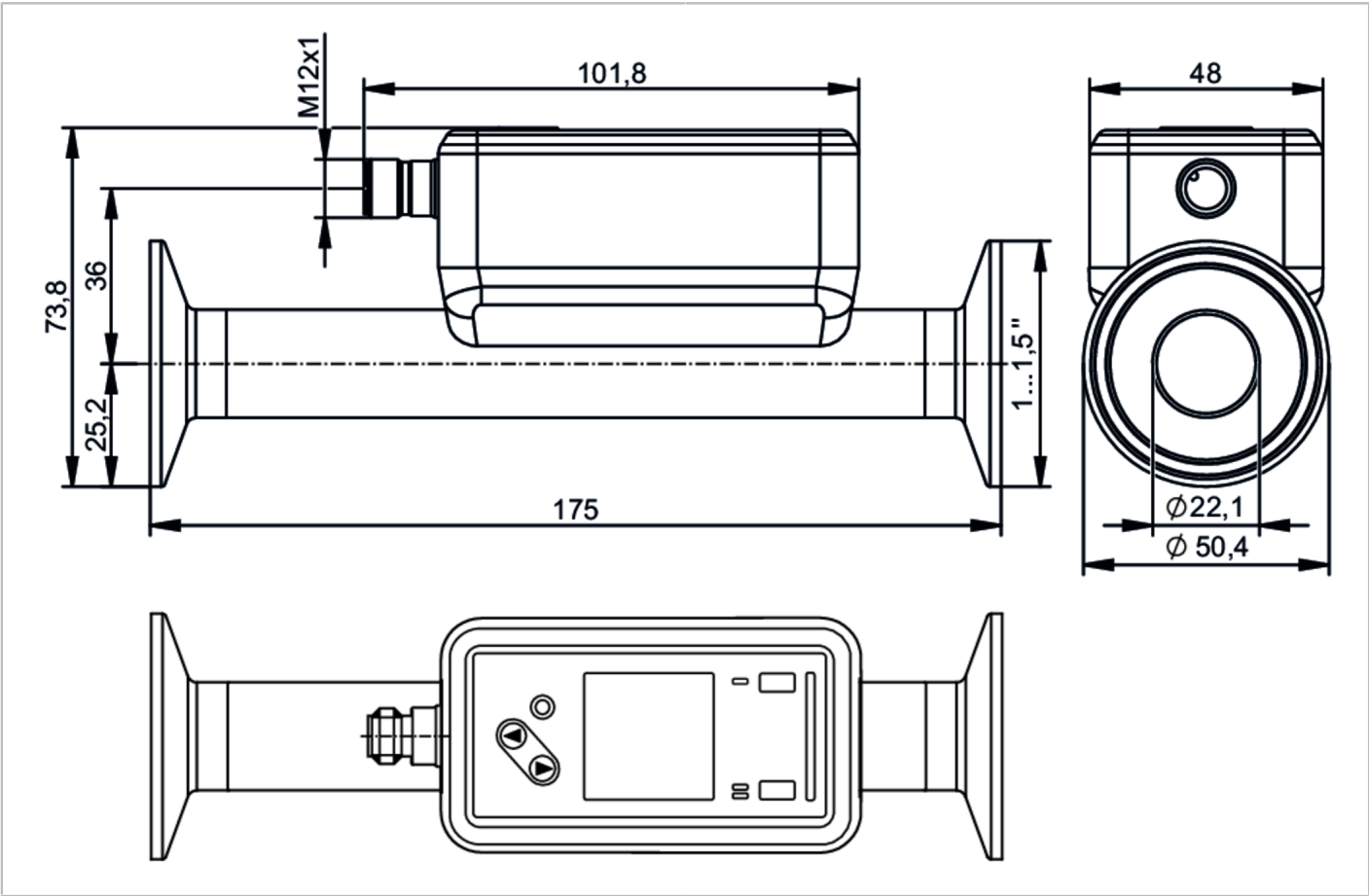


SUH201

Ultrasonic flow meter

SUC251JBFRKG/US



Product characteristics

Measuring range	1...240 l/min	0.06...14.4 m³/h	16...3804 gph	0.26...63.4 gpm
Process connection	Clamp 1" DIN 32676 series C			

Application

System	gold-plated contacts	
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	-20...100 °C	-4...212 °F
Min. bursting pressure	75 bar	7.5 MPa
Pressure rating	25 bar	2.5 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; totalizer switching signal; frequency signal; IO-Link		
	OUT2	switching signal; pulse signal; diagnostic signal; totalizer switching signal; analog signal		
Electrical design	PNP/NPN			
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
Display range	-288...288 l/min	-17.28...17.28 m³/h	-4565...4565 gph	-76.08...76.08 gpm
Resolution	0.1 l/min	0.001 m³/h	1 gph	0.02 gpm
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	17...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			
Pulse value	0.02...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	



Ultrasonic flow meter

SUC251JBFRKG/US

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
Analog start point	-20...76 °C	-4...168.8 °F
Analog 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)		± (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	Function class	Description
	0x0030	BLOB transfer
	0x4000	Identification and Diagnosis
Required master port class	A	
Process data analog	3	
Process data binary	2	
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



Ultrasonic flow meter

SUC251JBFRKG/US

Supported DeviceIDs		Type of operation	DeviceID
		default	1463
Operating conditions			
Ambient temperature	[°C]	-20...60	
Storage temperature	[°C]	-25...80	
Protection		IP 69K	
Tests / approvals			
EMC	DIN 61326-1:2021		
Shock resistance	DIN IEC 68-2-27		20 g (11ms)
Vibration resistance	DIN IEC 68-2-6		5 g (10...2000Hz)
MTTF	[years]	160	
UL approval	UL approval number		I034
Pressure equipment directive	can be used for group 2 fluids; group 1 fluids on request		
Mechanical data			
Weight	[g]	639.4	
Inlet pipe length		5 x DN	
Outlet pipe length		1 x DN	
Material	housing: stainless steel (1.4404 / 316L); Display: PFA; sealing Display: FKM; connector: POKAN		
Materials (wetted parts)	Pipe section: stainless steel (1.4404 / 316L)		
Nominal diameter	DN25 (1")		
Process connection	Clamp 1" DIN 32676 series C		
Process connection suitable for pipe standard	1" / Ø 25,4 mm x 1,65 mm (DIN 11866 series C; ASME BPE)		
Surface characteristics Ra/Rz of the wetted parts	≤ 0.8 µm / 32 µin		
Displays / operating elements			
Display		Color display 1,44", 128 x 128 pixels	
	Switching function	2 x LED, yellow	
	diagnosis	1 x LED, three-color	
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 accuracy indications are adhered to over the entire application area		
Pack quantity	1 pcs.		
Electrical connection			
Connector: 1 x M12; coding: A; Contacts: gold-plated			
			



SUH201



Ultrasonic flow meter

SUC251JBFRKG/US

Connection



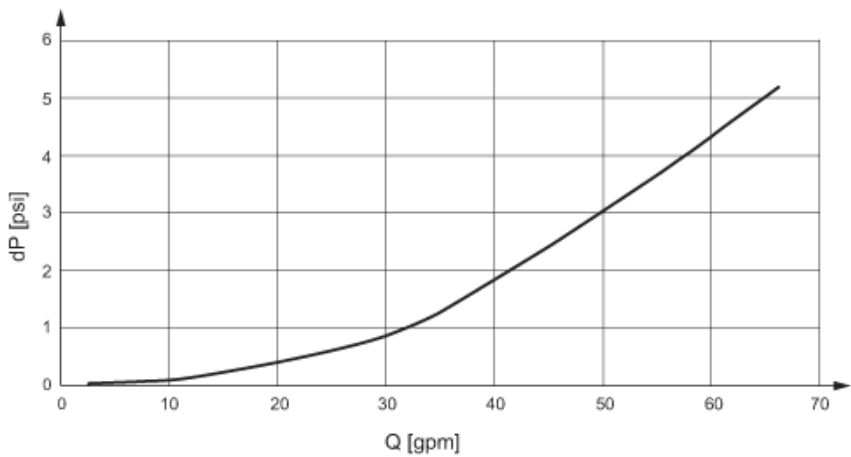
- OUT1/IO-Link:
- Switching output Volumetric flow quantity monitoring
 - Switching output Temperature monitoring
 - Pulse output quantity meter
 - Frequency output Volumetric flow quantity monitoring
 - Frequency output Temperature monitoring
 - Diagnostic output direction of flow detection
 - Diagnostic output signal quality
 - signal output Preset counter
- OUT2/InD:
- Switching output Volumetric flow quantity monitoring
 - Switching output Temperature monitoring
 - Pulse output quantity meter
 - analog output flow
 - analog output temperature
 - Diagnostic output direction of flow detection
 - Diagnostic output signal quality
 - signal output Preset counter
 - Input counter reset

Colors to DIN EN 60947-5-2

- Core colors
- BK= black
 - BN= brown
 - BU= blue
 - WH= white

Diagrams and graphs

Note on pressure loss



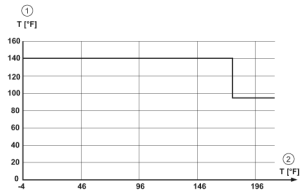
SUH201

Ultrasonic flow meter

SUC25IJBFRKG/US



derating ambient temperature



- 1 Ambient temperature
- 2 Medium temperature