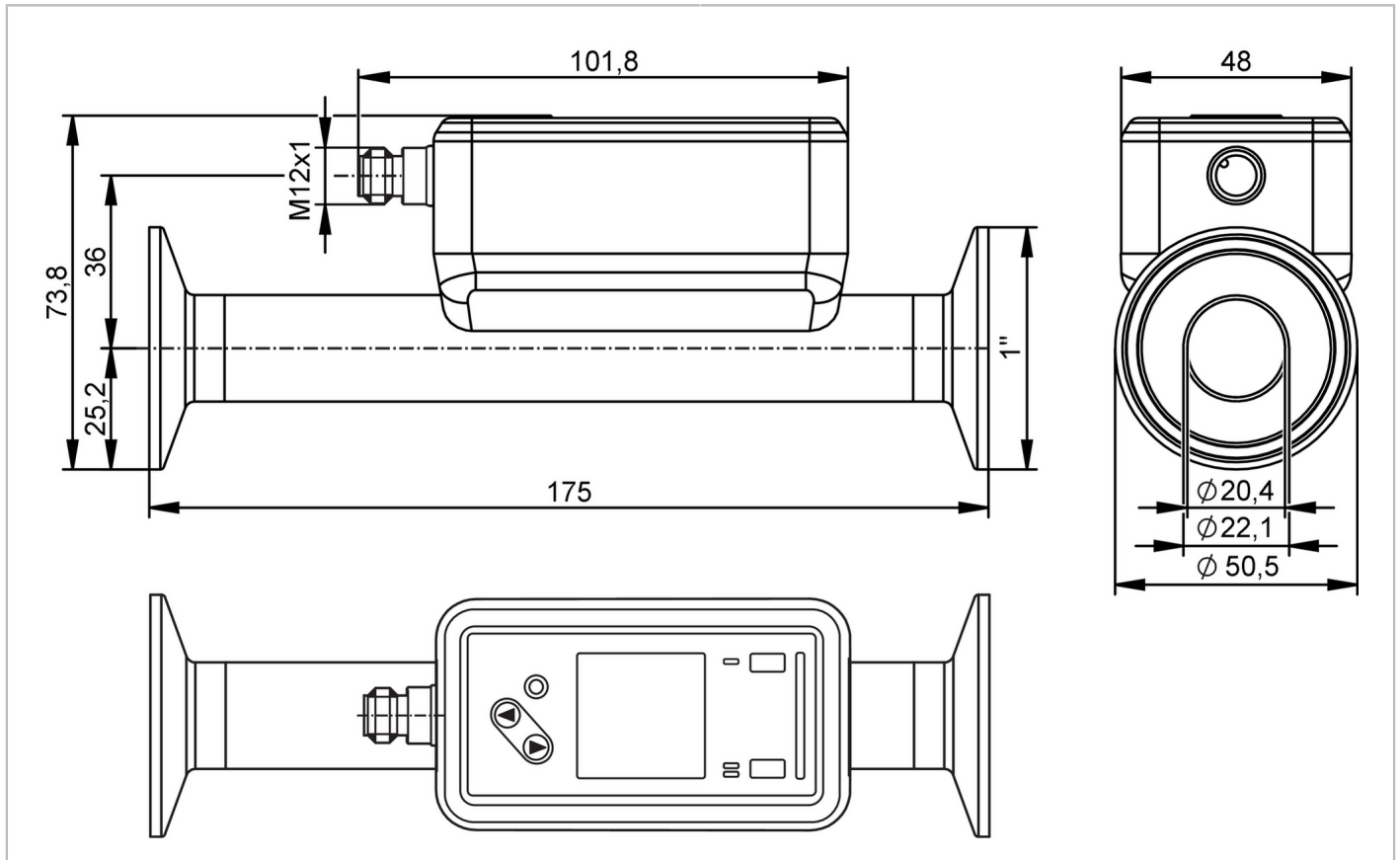


# SUH201



## Ultrasonic flow meter

SUC251JBFRKG/US



ACS



EC 1935/2004

FCM



KTW/W270



Reg31

### Product characteristics

Measuring range	1...240 l/min	0.06...14.4 m <sup>3</sup> /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			
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	-20...100 °C	-4...212 °F		
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			
Power-on delay time [s]	5			

# SUH201



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SUC251JBFRKG/US

Measuring principle	ultrasonic			
<b>Inputs / outputs</b>				
Total number of inputs and outputs	2			
<b>Inputs</b>				
Inputs	OUT2	counter reset		
<b>Outputs</b>				
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			
Min. load resistance [Ω]	2000			
Pulse output	flow rate meter			
Short-circuit protection	yes			
Type of short-circuit protection	yes (non-latching)			
Overload protection	yes			
<b>Analog</b>				
Number of analog outputs	1			
Analog current output [mA]	4...20			
Max. load [Ω]	500			
<b>Digital</b>				
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			
<b>Measuring/setting range</b>				
Measuring range	1...240 l/min	0.06...14.4 m <sup>3</sup> /h	16...3804 gph	0.26...63.4 gpm
Display range	-288...288 l/min	-17.28...17.28 m <sup>3</sup> /h	-4565...4565 gph	-76.08...76.08 gpm
Resolution	0.1 l/min	0.001 m <sup>3</sup> /h	1 gph	0.02 gpm
Set point SP	2.3...240 l/min	0.139...14.4 m <sup>3</sup> /h	37...3804 gph	0.61...63.4 gpm
Reset point rP	1.1...238.8 l/min	0.064...14.325 m <sup>3</sup> /h	17...3784 gph	0.28...63.07 gpm
Analog start point ASP	-240...192 l/min	-14.4...11.522 m <sup>3</sup> /h	-3804...3044 gph	-63.4...50.73 gpm
Analog end point AEP	-191.9...240 l/min	-11.511...14.4 m <sup>3</sup> /h	-3041...3804 gph	-50.68...63.4 gpm
Low flow cut-off LFC	1...12 l/min	0.06...0.72 m <sup>3</sup> /h	16...190 gph	0.26...3.17 gpm
Frequency end point, FEP	48.1...240 l/min	2.889...14.4 m <sup>3</sup> /h	763...3804 gph	12.72...63.4 gpm
Frequency at the end point FRP [Hz]	1...10000			
<b>Volumetric flow quantity monitoring</b>				
Pulse length [s]	0.002...2			

# SUH201



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Pulse value	0.02...99990000 l; 0.0053...26414563.515 gal	
<b>Temperature monitoring</b>		
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
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
<b>Accuracy / deviations</b>		
<b>Flow monitoring</b>		
Accuracy (in the measuring range)	edible oils	± (5,0 % MW + 1,0 % MEW)
	water	± (1,0 % MW + 0,5 % MEW)
Repeatability	± 0,2 % MEW	
<b>Temperature monitoring</b>		
Accuracy	[K]	± 2,5 (Q > 5 % MEW)
Temperature coefficient	[% of the span / 10 K]	0,2
<b>Reaction times</b>		
<b>Flow monitoring</b>		
Response time	[s]	< 0.25; (dAP = 0, T09)
Damping process value dAP	[s]	0...5
<b>Temperature monitoring</b>		
Dynamic response T05 / T09	[s]	5,7 / 86
<b>Software / programming</b>		
Diagnostic functions	direction of flow detection; signal quality	
<b>Interfaces</b>		
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

# SUH201



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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	1751

Operating conditions		
Ambient temperature	[°C]	-20...60
Storage temperature	[°C]	-25...80
Protection		IP 69K

Tests / approvals		
EMC	DIN 61326-1:2021	
CPA approval	model number	003US
	accuracy class	1,5
Shock resistance	DIN IEC 68-2-27	20 g (11ms)
Vibration resistance	DIN IEC 68-2-6	20 g (10...2000Hz)
MTTF	[years]	160
UL approval	UL approval number	I034
	File number UL	E174189
Pressure equipment directive	can be used for group 2 fluids; group 1 fluids on request	

Mechanical data		
Weight	[g]	639.4
Housing		rectangular
Inlet pipe length		5 x DN
Outlet pipe length		1 x DN
Dimensions	[mm]	175 x 50.4 x 73.8
Material		housing: stainless steel (1.4404 / 316L); Display: PFA; sealing Display: FKM; connector: PBT
Materials (wetted parts)		Pipe section: 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 < 0.8 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	

# SUH201



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Pack quantity

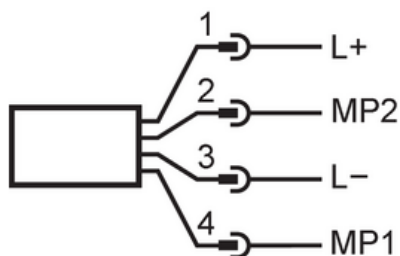
1 pcs.

### Electrical connection - plug

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



### Connection

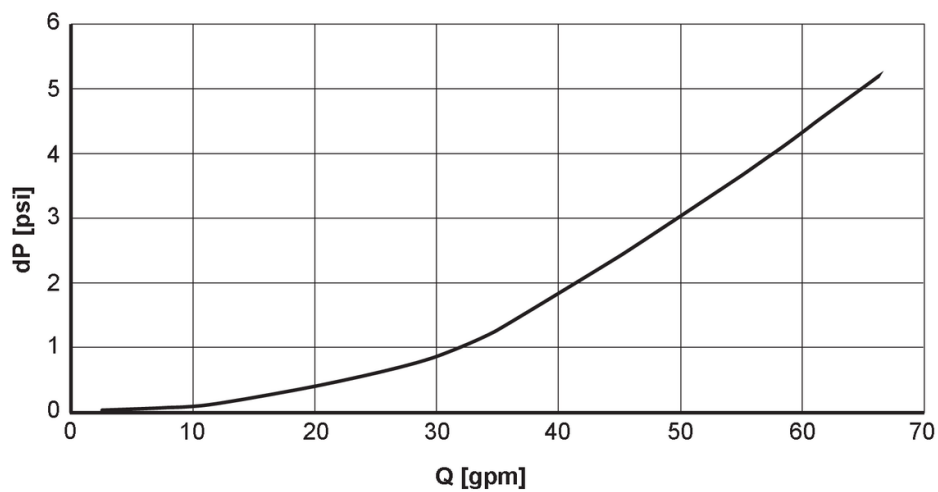


1 (L+)	L+	
2 (OUT2)	MP2	DO2, AO, DI
3 (L-)	L-	
4 (OUT1)	MP1	DO1, FO, IO-Link

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

### Diagrams and graphs

Note on pressure loss



dP Pressure loss  
[psi]

Q volumetric flow quantity  
[gpm]

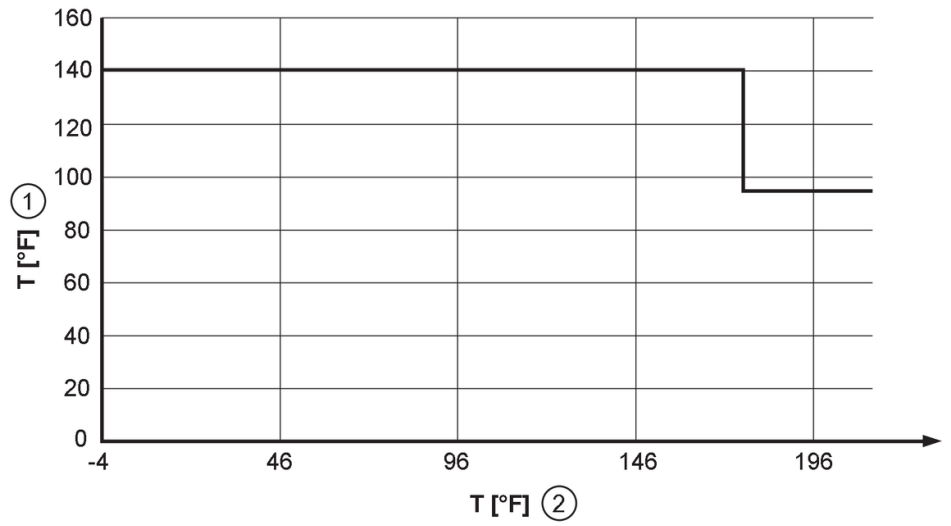
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## Ultrasonic flow meter

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derating ambient temperature



- 1 Ambient temperature
- 2 Medium temperature