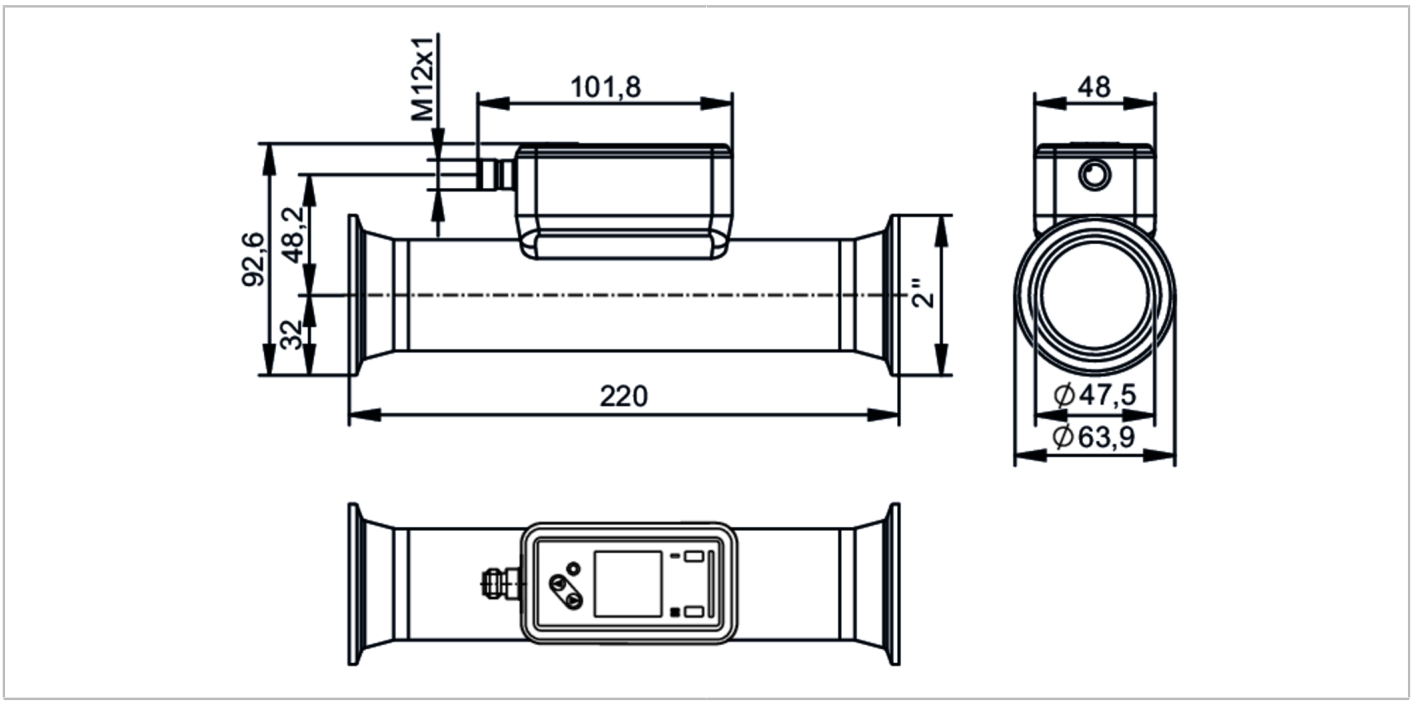
SUH401

Ultrasonic flow meter

SUC50IJBFRKG/US



ACS EC 1935/2004 FDA KTW/W270 Reg31

Product characteristics				
Measuring range	5...1000 l/min	0.3...60 m³/h	79...15850 gph	1.32...264.18 gpm
Process connection	Clamp 2" 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	50 bar		5 MPa	
Pressure rating	16 bar		1.6 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	

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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	5...1000 l/min	0.3...60 m³/h	79...15850 gph	1.32...264.18 gpm
Display range	-1200...1200 l/min	-72...72 m³/h	-19020...19020 gph	-317...317 gpm
Resolution	0.1 l/min	0.001 m³/h	1 gph	0.01 gpm
Set point SP	10.5...1000 l/min	0.63...60 m³/h	166...15850 gph	2.77...264.17 gpm
Reset point rP	5.3...994.8 l/min	0.318...59.688 m³/h	84...15768 gph	1.4...262.8 gpm
Analog start point ASP	-1000...800 l/min	-60...48 m³/h	-15850...12680 gph	-264.17...211.34 gpm
Analog end point AEP	-800...1000 l/min	-48...60 m³/h	-12680...15850 gph	-211.34...264.17 gpm
Low flow cut-off LFC	5...50 l/min	0.3...3 m³/h	79...793 gph	1.32...13.21 gpm
Frequency end point, FEP	200.6...1000 l/min	12.037...60 m³/h	3180...15850 gph	53...264.17 gpm
Frequency at the end point FRP [Hz]	1...10000			
Volumetric flow quantity monitoring				
Pulse length [s]	0.002...2			
Pulse value	0.01...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	
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	

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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
Supported DeviceIDs		**Type of operation**	**DeviceID**
		default	1461
Operating conditions			
Ambient temperature	[°C]	-20...60	
Storage temperature	[°C]	-25...80	

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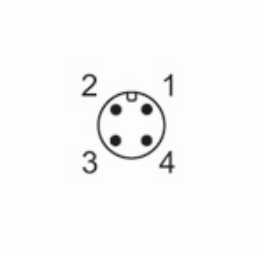
Protection		IP 69K	
Tests / approvals			
EMC		DIN 61326-1:2021	
Shock resistance		DIN IEC 68-2-27	20 g (11ms)
Vibration resistance		DIN IEC 68-2-6	5 g (10...2000Hz)
MTTF	[years]	160	
UL approval		UL approval number	I033
Pressure equipment directive		can be used for group 2 fluids; group 1 fluids on request	
Mechanical data			
Weight	[g]	936.1	
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		DN50 (2“)	
Process connection		Clamp 2" DIN 32676 series C	
Process connection suitable for pipe standard		2" / Ø 50,8 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



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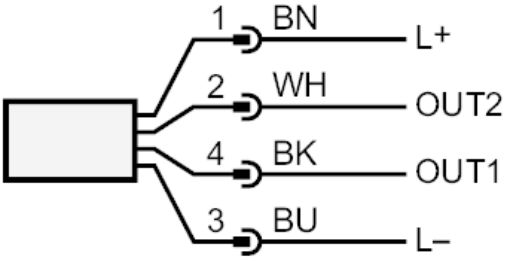
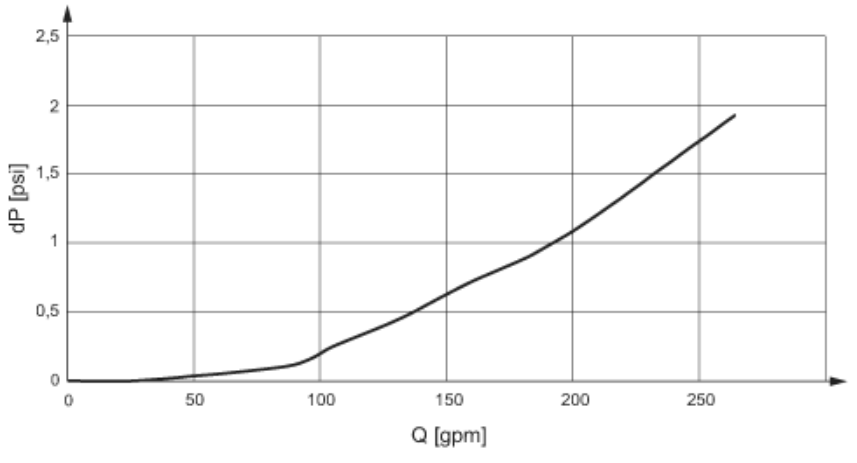
Connection

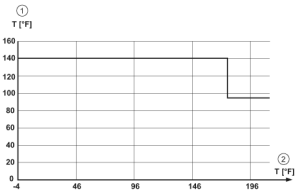


OUT1/IO-Link:	Switching output Volumetric flow quantity monitoring Switching output Temperature monitoring Pulse output quantity meter Frequency output Volumetric flow quantity monitoring Frequency output Temperature monitoring Diagnostic output direction of flow detection Diagnostic output signal quality 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



derating ambient temperature	 1 Ambient temperature 2 Medium temperature