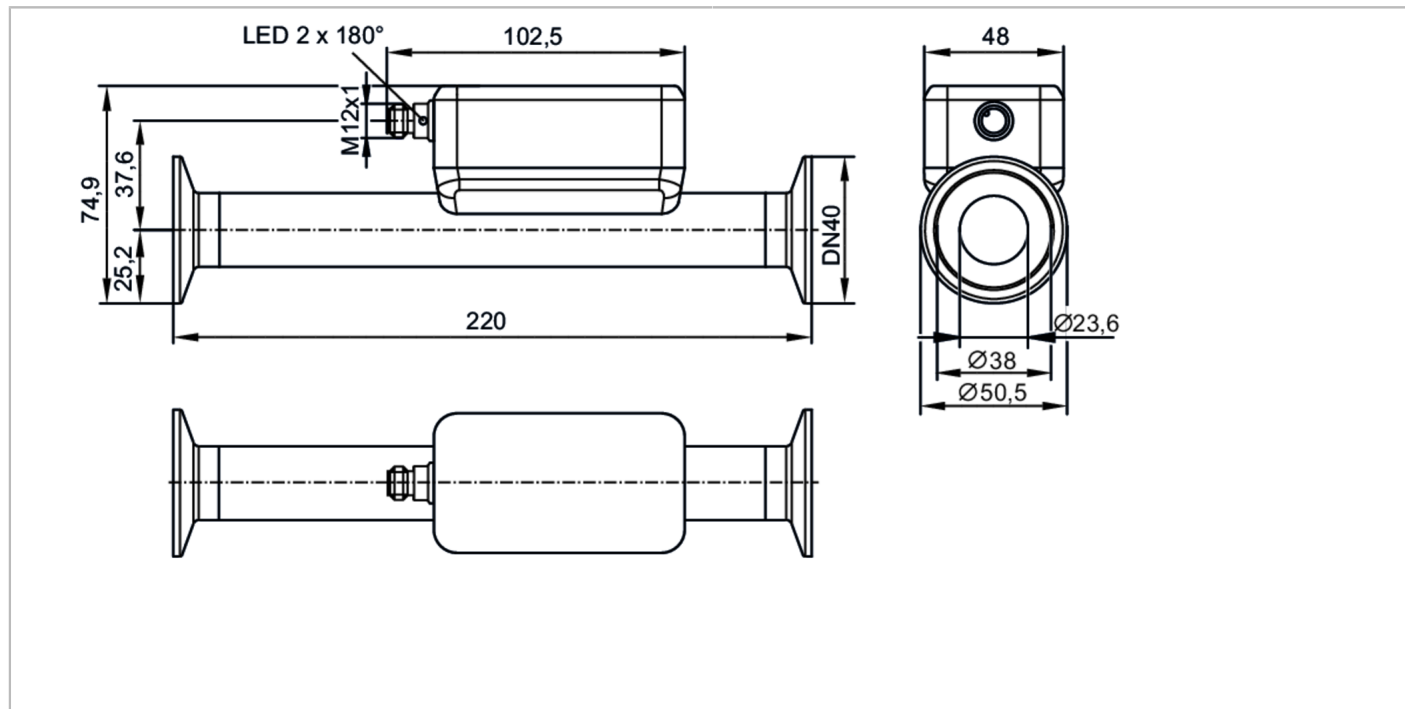


SUH320

Ultrasonic flow meter

SUC40XJBFRKG/US



ACS



EC 1935/2004

FCM



KTW/W270 Reg31

Product characteristics

Measuring range	3...375 l/min	0.18...22.5 m³/h	48...5944 gph	0.8...99.06 gpm
Nominal diameter	DN40 (1 1/2")			
Process connection	Clamp DN40 DIN 32676 series A			

Application

System	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...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			
Power-on delay time [s]	5			
Measuring principle	ultrasonic			

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			
Output function	normally open / closed; (configurable)			
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			
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	3...375 l/min	0.18...22.5 m³/h	48...5944 gph	0.8...99.06 gpm
Resolution	0.1 l/min	0.001 m³/h	1 gph	0.01 gpm
Note on factory setting	l/min, °C			
Set point SP	5.1...375 l/min	0.304...22.5 m³/h	80...5944 gph	1.34...99.06 gpm
Reset point rP	3.1...373.1 l/min	0.187...22.383 m³/h	49...5913 gph	0.82...98.55 gpm
Analog start point ASP	-375...300 l/min	-22.5...18 m³/h	-5944...4755 gph	-99.06...79.25 gpm
Analog end point AEP	-300...375 l/min	-18...22.5 m³/h	-4755...5944 gph	-79.25...99.06 gpm
Low flow cut-off LFC	3...18.8 l/min	0.18...1.125 m³/h	48...297 gph	0.79...4.95 gpm
Frequency end point, FEP	75.2...375 l/min	4.514...22.5 m³/h	1192...5944 gph	19.87...99.06 gpm
Frequency at the end point FRP	[Hz]	1...10000		
Volumetric flow quantity monitoring				
Pulse length	[s]	0.002...2		
Pulse value	0.1...99990000 l; 0.03...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	

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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.	
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Flow monitoring

Accuracy (in the measuring range)	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]	< 0.3; (dAP = 0, T09)	
Damping process value dAP [s]	0...5	

Temperature monitoring

Dynamic response T05 / T09 [s]	5,7 / 86	
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Software / programming

Diagnostic functions	direction of flow detection; signal quality	
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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	
IO-Link process data (cyclical)	Function	bit length
	totalizer	32
	Flow monitoring	32
	Temperature monitoring	32
	status	4
	Output 1	1
	Output 2	1
	Type of operation	DeviceID
Supported DeviceIDs	default	1910

Operating conditions

Ambient temperature [°C]	-20...60	
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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]	160
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]	835.5
Housing		rectangular
Inlet pipe length		5 x DN
Outlet pipe length		1 x DN
Dimensions	[mm]	220 x 50.5 x 74.9
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		DN40 (1 1/2")
Process connection		Clamp DN40 DIN 32676 series A
Process connection suitable for pipe standard		DN40 / Ø 41 mm x 1.5 mm; (DIN 11866 series A); (DIN EN 10357 series A)
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.

Electrical connection - plug

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



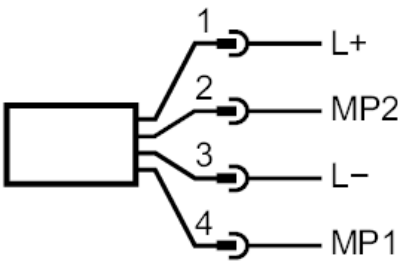
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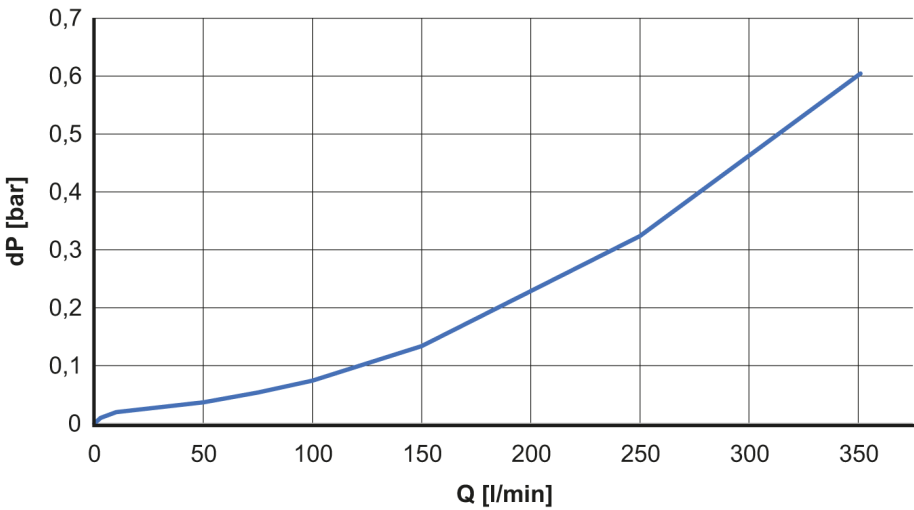
Connection



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 [bar] Pressure loss
Q [l/min] volumetric flow quantity