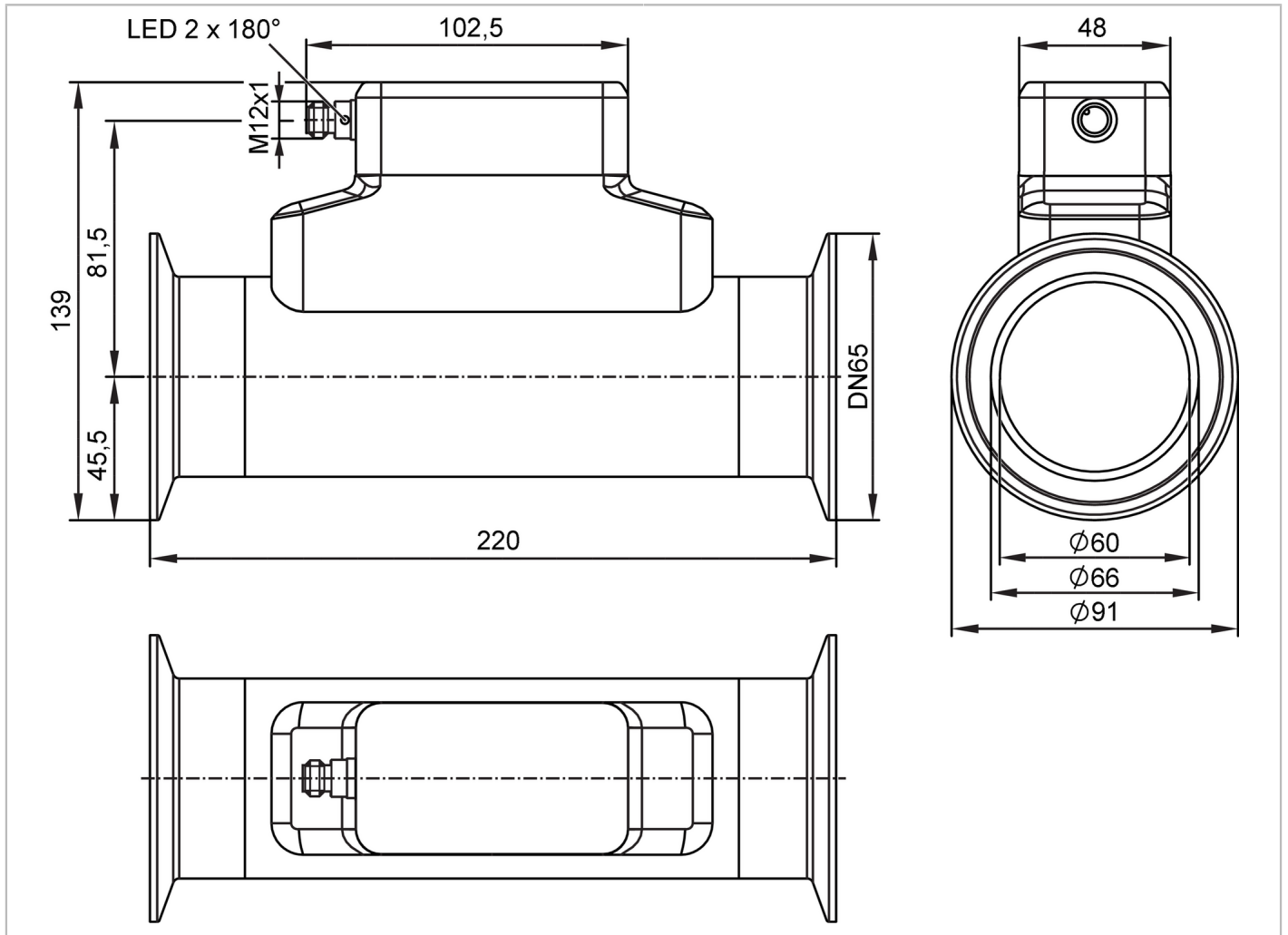


# SUH520



## Ultrasonic flow meter

SUC65XJBFRKG/US



ACS



EC 1935/2004

FCM



IO-Link

KTW/W270 Reg31

### Product characteristics

Measuring range	20...2400 l/min	1.2...144 m <sup>3</sup> /h	320...38040 gph	5.2...634 gpm
Nominal diameter	DN65 (2 1/2")			
Process connection	Clamp DN65 DIN 32676 series A			

### Application

Special feature	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...120; (< 1 h: 150)			
Min. burst pressure	40 bar	4 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			

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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			
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		20...2400 l/min	1.2...144 m³/h	320...38040 gph	5.2...634 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		33.2...2400 l/min	1.99...144 m³/h	526...38041 gph	8.8...634 gpm
Reset point rP		20.7...2387.5 l/min	1.24...143.25 m³/h	328...37843 gph	5.5...630.7 gpm
Analog start point ASP		-2400...1920 l/min	-144...115.2 m³/h	-38041...30433 gph	-634...507.2 gpm
Analog end point AEP		-1920...2400 l/min	-115.2...144 m³/h	-30433...38041 gph	-507.2...634 gpm
Low flow cut-off LFC		20...120 l/min	1.2...7.2 m³/h	317...1902 gph	5.3...31.7 gpm

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Frequency end point, FEP	481.5...2400 l/min	28.89...144 m <sup>3</sup> /h	7630...38040 gph	127.2...634 gpm
Frequency at the end point FRP [Hz]	1...10000			
<b>Volumetric flow quantity monitoring</b>				
Pulse length [s]	0.002...2			
Pulse value	0.1...99990000 l; 0.026...26414563.515 gal			
<b>Temperature monitoring</b>				
Measuring range	-40...120 °C	-40...248 °F		
Resolution	0.1 °C	0.1 °F		
Set point SP	-39.4...120 °C	-39...248 °F		
Reset point rP	-40...119.4 °C	-40...247 °F		
Analog start point	-40...88 °C	-40...190.4 °F		
Analog end point	-8...120 °C	17.6...248 °F		
Frequency start point, FSP	-40...88 °C	-40...190.4 °F		
Frequency end point, FEP	-8...120 °C	17.6...248 °F		
Frequency at the end point FRP [Hz]	1...10000			
<b>Accuracy / deviations</b>				
Accuracy (in the measuring range)	only up to 100 °C; at higher temperatures, only the repeatability is within the specification.			
<b>Flow monitoring</b>				
Accuracy (in the measuring range)	water	± (2,0 % 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]	< 0.5; (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			

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SUC65XJBFKRG/US

Min. process cycle time [ms]	9.6	
IO-Link process data (cyclical)	<b>Function</b>	<b>bit length</b>
	totalizer	32
	Flow monitoring	32
	Temperature monitoring	32
	status	4
	Output 1	1
Supported DeviceIDs	Output 2	1
	<b>Type of operation</b>	<b>DeviceID</b>
	default	1854

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]	1830.4	
Housing	rectangular	
Inlet pipe length	15 x DN	
Outlet pipe length	3 x DN	
Dimensions [mm]	220 x 91 x 139	
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	DN65 (2 1/2")	
Process connection	Clamp DN65 DIN 32676 series A	
Process connection suitable for pipe standard	DN65 / Ø 70 mm x 2 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.	

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Pack quantity

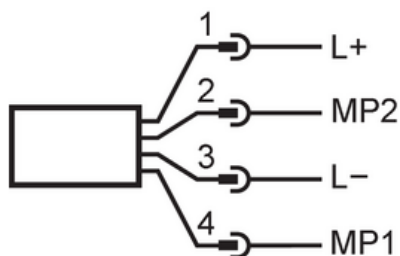
1 pcs.

### Electrical connection - plug

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



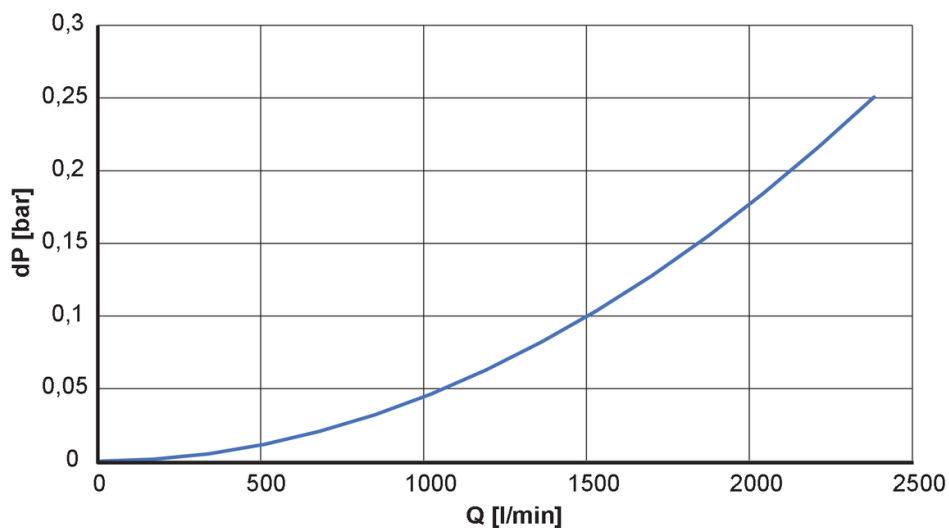
### Connection



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  
[bar] Pressure loss

Q [l/  
min] volumetric flow quantity