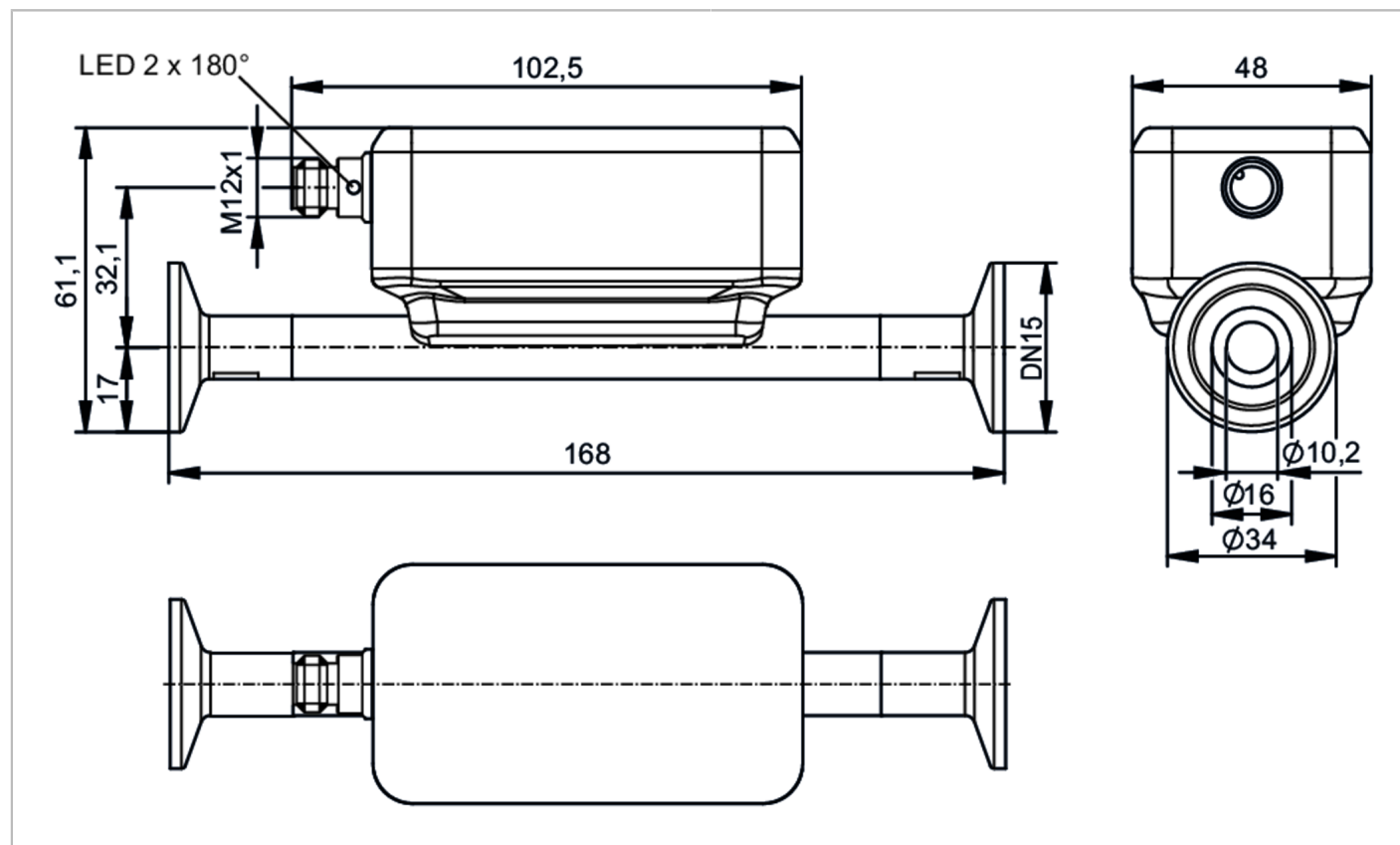


SUH120

Ultrasonic flow meter

SUC15XJBFRKG/US



EC 1935/2004

FCM



Product characteristics

Measuring range	1...65 l/min	0.06...3.9 m³/h	16...1030 gph	0.26...17.17 gpm
Nominal diameter	DN15 (1/2")			
Process connection	Clamp DN15 DIN 32676 series A			

Application

Special feature	Gold-plated contacts		
Application	food and beverage industry		
Media	ultra-pure water; water; hydrous media		
Note on media	hydrous media: for media with >10 % additives, the repeatability is the only available value		
Medium temperature [°C]	-40...125; (< 1 h: 150)		
Min. bursting pressure	40 bar	4 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			

SUH120

Ultrasonic flow meter

SUC15XJBFRKG/US



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; totaliser switching signal; frequency signal; IO-Link		
	OUT2	switching signal; pulse signal; diagnostic signal; totaliser switching signal; analogue signal		
Electrical design	PNP/NPN			
Pulse output	flow rate meter			
Short-circuit protection	yes			
Type of short-circuit protection	pulsed			
Overload protection	yes			
Analogue				
Number of analogue outputs	1			
Analogue current output [mA]	4...20			
Max. load [Ω]	500			
Digital				
Number of digital outputs	2			
Output function	normally open / normally closed; (parameterisable)			
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...65 l/min	0.06...3.9 m³/h	16...1030 gph	0.26...17.17 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	1.4...65 l/min	0.082...3.9 m³/h	22...1030 gph	0.36...17.17 gpm
Reset point rP	1...64.7 l/min	0.062...3.88 m³/h	16...1025 gph	0.27...17.08 gpm
Analogue start point ASP	-65...52 l/min	-3.9...3.12 m³/h	-1030...824 gph	-17.17...13.74 gpm
Analogue end point AEP	-52...65 l/min	-3.12...3.9 m³/h	-824...1030 gph	-13.74...17.17 gpm
Low flow cut-off LFC	1...3.2 l/min	0.06...0.195 m³/h	16...52 gph	0.26...0.86 gpm
Frequency end point, FEP	13...65 l/min	0.782...3.9 m³/h	207...1030 gph	3.44...17.17 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 / 0.026...26414563.515 gal			

SUH120



Ultrasonic flow meter

SUC15XJBFRKG/US

Temperature monitoring		
Measuring range	-40...125 °C	-40...257 °F
Resolution	0.1 °C	0.1 °F
Set point SP	-39.4...125 °C	-38.9...257 °F
Reset point rP	-40...124.4 °C	-40...255.9 °F
Analogue start point	-40...92 °C	-40...197.6 °F
Analogue end point	-7...125 °C	19.4...257 °F
Frequency start point, FSP	-40...92 °C	-40...197.6 °F
Frequency end point, FEP	-7...125 °C	19.4...257 °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.	
Flow monitoring		
Accuracy (in the measuring range)	water	± (2,0 % 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	
Response 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	
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	BLOB	Binary Large Object transfer
	Common - I&D	Identification and Diagnosis
Required master port type	A	
Process data analogue	3	
Process data binary	2	
Min. process cycle time [ms]	9.6	

SUH120



Ultrasonic flow meter

SUC15XJBFRKG/US

IO-Link process data (cyclical)	function	bit length
	totaliser	32
	Flow monitoring	32
	Temperature monitoring	32
	status	4
	Output 1	1
Supported DeviceIDs	Output 2	1
	Type of operation	DeviceID
	default	1907

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 no.	I038
	File number UL	E174189
Pressure Equipment Directive	can be used for group 2 fluids; group 1 fluids on request	

Mechanical data		
Weight	[g]	523.1
Housing		rectangular
Inlet pipe length		5 x DN
Outlet pipe length		1 x DN
Dimensions	[mm]	168 x 48 x 61.1
Materials		housing: stainless steel (316L/1.4404); connector: PEI, FKM
Materials (wetted parts)		Pipe section: stainless steel (316L/1.4435); Process connection: stainless steel (316L/1.4404)
Nominal diameter		DN15 (1/2")
Process connection		Clamp DN15 DIN 32676 series A
Process connection suitable for pipe standard		DN15 / Ø 19 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 totaliser 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.

SUH120



Ultrasonic flow meter

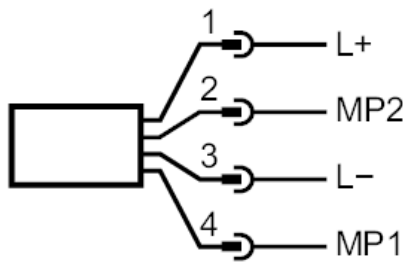
SUC15XJBFRKG/US

Electrical connection - plug

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



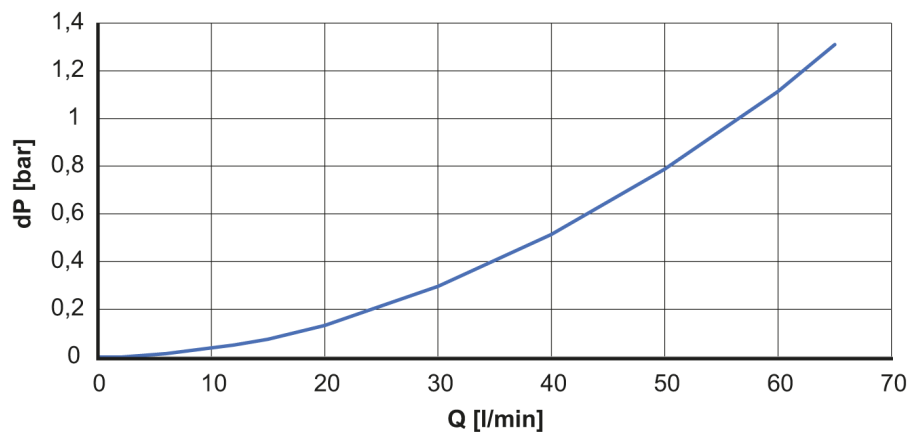
Connection



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

AO: analogue output; DI: digital input; DO: digital output; FO: frequency output; MP: multi-function connection

Diagrams and graphs

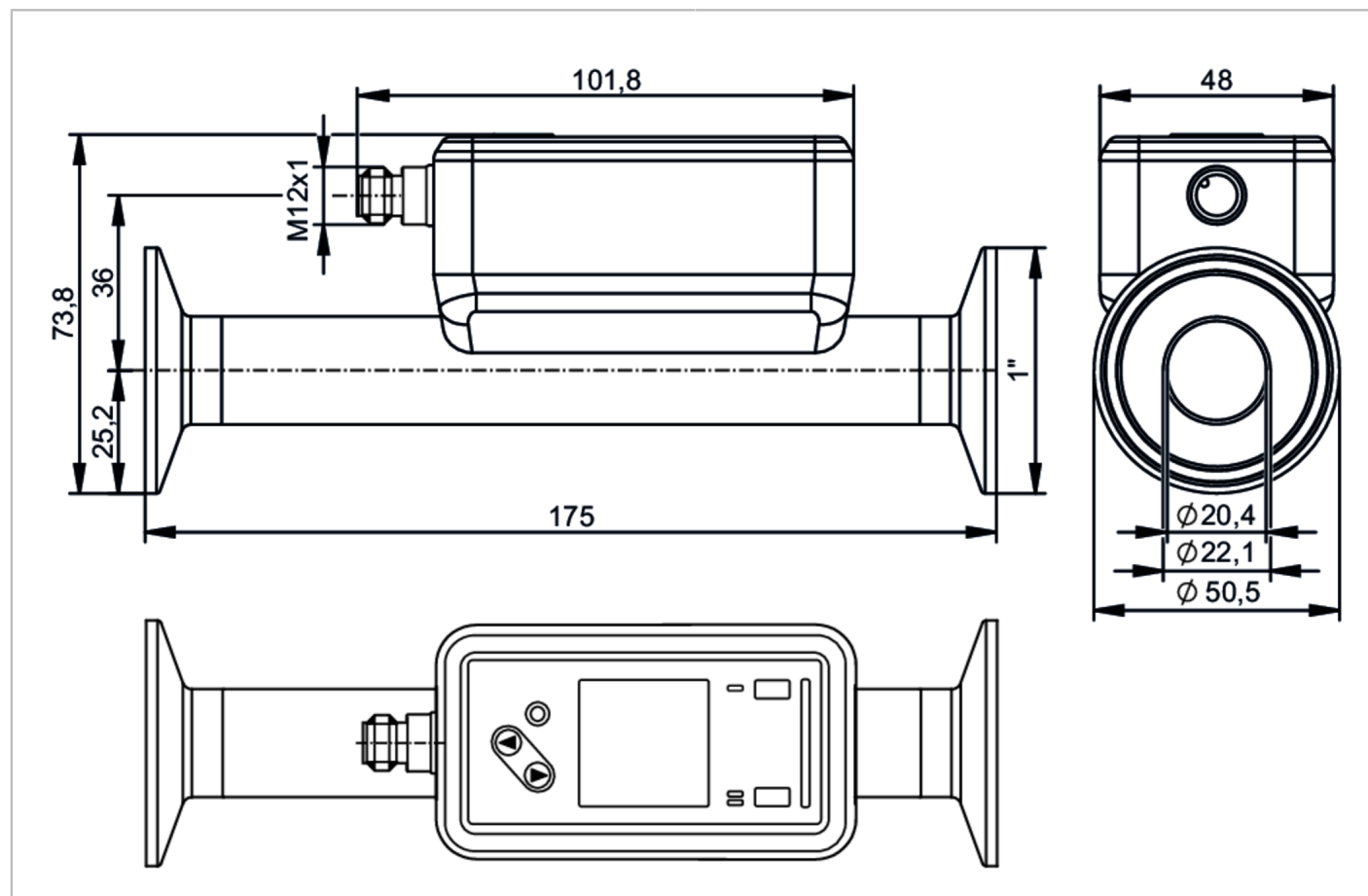


dP [bar] Pressure loss
Q [l/min] volumetric flow quantity

SUH201

Ultrasonic flow meter

SUC251JBFRKG/US



ACS



EC 1935/2004

FCM



IO-Link

KTW/W270



Reg31

Product characteristics

Measuring range	1...240 l/min	0.06...14.4 m³/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; hydrous media; edible oils	
Note on media	hydrous 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. bursting pressure	75 bar	7.5 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			



Ultrasonic flow meter

SUC251JBFRKG/US

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; totaliser switching signal; frequency signal; IO-Link		
		OUT2	switching signal; pulse signal; diagnostic signal; totaliser switching signal; analogue signal		
Electrical design		PNP/NPN			
Min. load resistance [Ω]		2000			
Pulse output		flow rate meter			
Short-circuit protection		yes			
Type of short-circuit protection		pulsed			
Overload protection		yes			
Analogue					
Number of analogue outputs		1			
Analogue current output [mA]		4...20			
Max. load [Ω]		500			
Digital					
Number of digital outputs		2			
Output function		normally open / normally closed; (parameterisable)			
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
Analogue start point ASP		-240...192 l/min	-14.4...11.522 m³/h	-3804...3044 gph	-63.4...50.73 gpm
Analogue 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; 0.0053...26414563.515 gal			



Ultrasonic flow meter

SUC251JBFRKG/US

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
Analogue start point	-20...76 °C	-4...168.8 °F
Analogue 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)	edible oils	± (5,0 % MW + 1,0 % MEW)
	water	± (1,0 % MW + 0,5 % MEW)
Repeatability	± 0,2 % MEW	
Temperature monitoring		
Accuracy	[K]	± 2,5 (Q > 5 % MEW)
Temperature coefficient	0,2	
	[% of the span / 10 K]	
Response 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	BLOB	Binary Large Object transfer
	Common - I&D	Identification and Diagnosis
Required master port type	A	
Process data analogue	3	
Process data binary	2	
Min. process cycle time	[ms]	9.6



Ultrasonic flow meter

SUC251JBFRKG/US

IO-Link process data (cyclical)	function	bit length
	totaliser	32
	Flow monitoring	32
	Temperature monitoring	32
	status	4
	Output 1	1
Supported DeviceIDs	Output 2	1
	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 no.	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
Materials	housing: stainless steel (316L/1.4404); Display: PFA; Sealing Display: FKM; connector: PBT	
Materials (wetted parts)	Pipe section: stainless steel (316L/1.4404)	
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		colour display 1,44", 128 x 128 pixels
	Switching function	2 x LED, yellow
	diagnosis	1 x LED, three-colour

Remarks

Remarks	MW = measured value	
	MEW = Final value of the measuring range	
	pulse and totaliser 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.	

SUH201



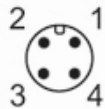
Ultrasonic flow meter

SUC251JBFRKG/US

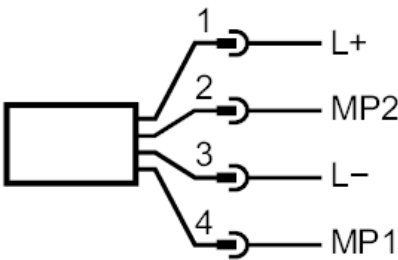
Electrical connection

Connector: 1 x M12; Contacts: gold-plated

Electrical connection - plug



Connection

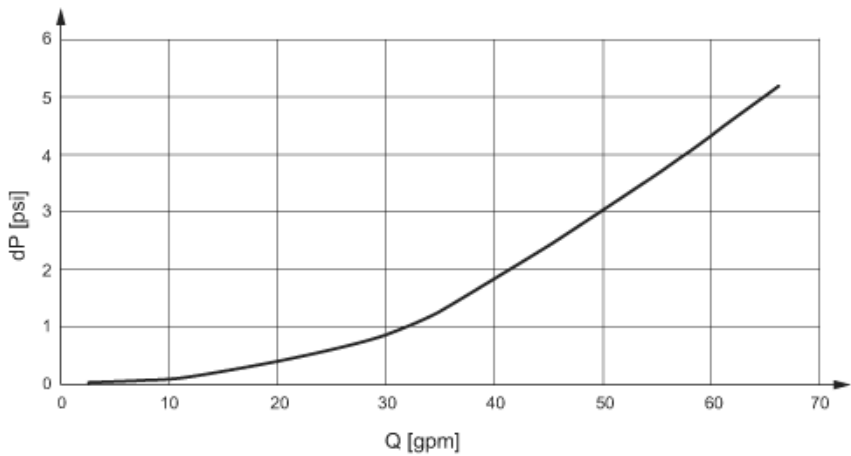


1 (L+)	L+	
2 (OUT2)	MP2	DO2, AO, DI
3 (L-)	L-	
4 (OUT1)	MP1	DO1, FO, IO-Link

AO: analogue output; DI: digital input; DO: digital output; FO: frequency output; MP: multi-function connection

Diagrams and graphs

Note on pressure loss



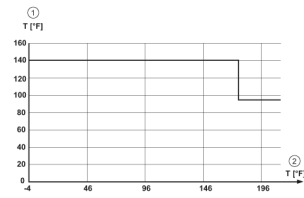
SUH201

Ultrasonic flow meter

SUC251JBFRKG/US



derating ambient temperature

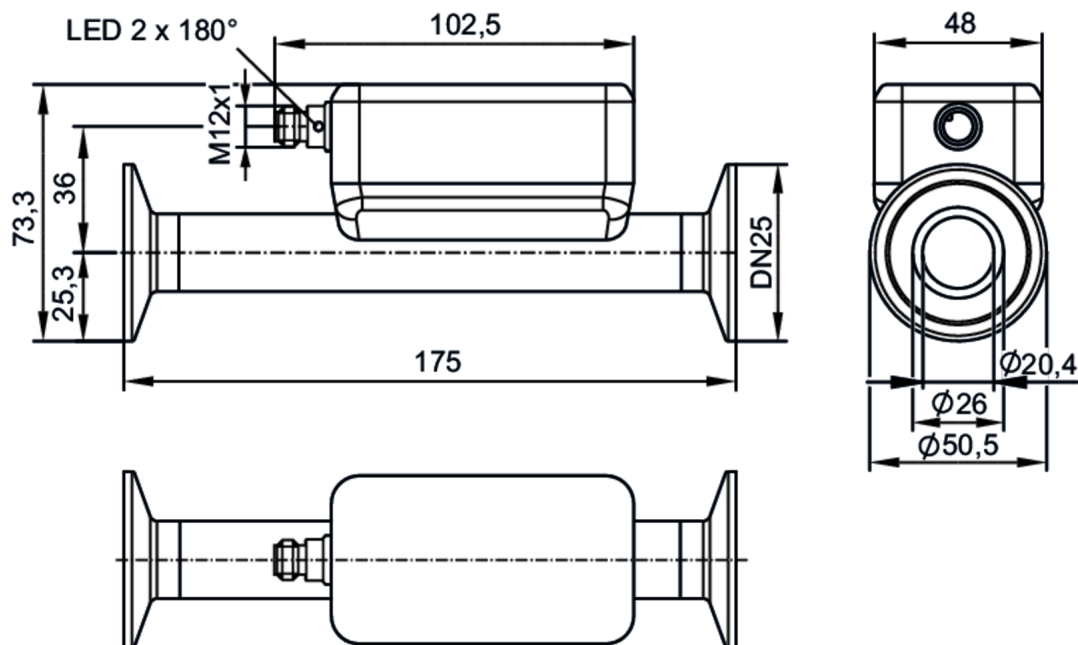


- 1 Ambient temperature
- 2 Medium temperature

SUH220

Ultrasonic flow meter

SUC25XJBFRKG/US



EC 1935/2004

FCM



Product characteristics

Measuring range	1...240 l/min	0.06...14.4 m³/h	16...3804 gph	0.26...63.4 gpm
Nominal diameter	DN25 (1")			
Process connection	Clamp DN25 DIN 32676 series A			

Application

Special feature	Gold-plated contacts		
Application	food and beverage industry		
Media	ultra-pure water; water; hydrous media; edible oils		
Note on media	hydrous 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 [°C]	-40...130; (< 1 h: 150)		
Min. bursting pressure	40 bar	4 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			

SUH220

Ultrasonic flow meter

SUC25XJBFRKG/US



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; totaliser switching signal; frequency signal; IO-Link		
		OUT2	switching signal; pulse signal; diagnostic signal; totaliser switching signal; analogue signal		
Electrical design		PNP/NPN			
Pulse output		flow rate meter			
Short-circuit protection		yes			
Type of short-circuit protection		pulsed			
Overload protection		yes			
Analogue					
Number of analogue outputs		1			
Analogue current output [mA]		4...20			
Max. load [Ω]		500			
Digital					
Number of digital outputs		2			
Output function		normally open / normally closed; (parameterisable)			
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
Resolution		0.1 l/min	0.001 m³/h	1 gph	0.01 gpm
Note on factory setting		l/min, °C			
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	16...3784 gph	0.28...63.07 gpm
Analogue start point ASP		-240...192 l/min	-14.4...11.522 m³/h	-3804...3044 gph	-63.4...50.73 gpm
Analogue 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; 0.0053...26414563.515 gal			



Ultrasonic flow meter

SUC25XJBFRKG/US

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
Analogue start point	-40...96 °C	-40...204.8 °F
Analogue end point	-6...130 °C	21.2...266 °F
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.	
Flow monitoring		
Accuracy (in the measuring range)	edible oils	± (5,0 % MW + 1,0 % MEW)
	water	± (1,0 % MW + 0,5 % MEW)
Repeatability	± 0,2 % MEW	
Temperature monitoring		
Accuracy	[K]	± 2,5 (Q > 5 % MEW)
Temperature coefficient	0,2	
[% of the span / 10 K]		
Response 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	BLOB	Binary Large Object transfer
	Common - I&D	Identification and Diagnosis
Required master port type	A	
Process data analogue	3	
Process data binary	2	
Min. process cycle time	[ms]	9.6

SUH220



Ultrasonic flow meter

SUC25XJBFRKG/US

IO-Link process data (cyclical)	function	bit length
	totaliser	32
	Flow monitoring	32
	Temperature monitoring	32
	status	4
	Output 1	1
	Output 2	1
Supported DeviceIDs	Type of operation	DeviceID
	default	1908

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 no.	I039
	File number UL	E174189
Pressure Equipment Directive	can be used for group 2 fluids; group 1 fluids on request	

Mechanical data		
Weight	[g]	608.3
Housing		rectangular
Inlet pipe length		5 x DN
Outlet pipe length		1 x DN
Dimensions	[mm]	175 x 50.5 x 73.3
Materials		housing: stainless steel (316L/1.4404); connector: PEI, FKM
Materials (wetted parts)		Pipe section: stainless steel (316L/1.4435); Process connection: stainless steel (316L/1.4404)
Nominal diameter		DN25 (1")
Process connection		Clamp DN25 DIN 32676 series A
Process connection suitable for pipe standard		DN25 / Ø 29 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 totaliser 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.

SUH220



Ultrasonic flow meter

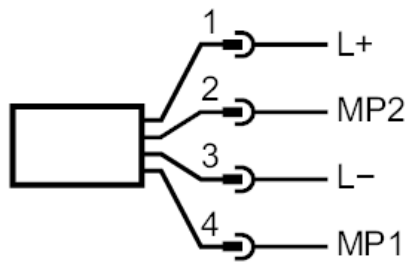
SUC25XJBFRKG/US

Electrical connection - plug

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



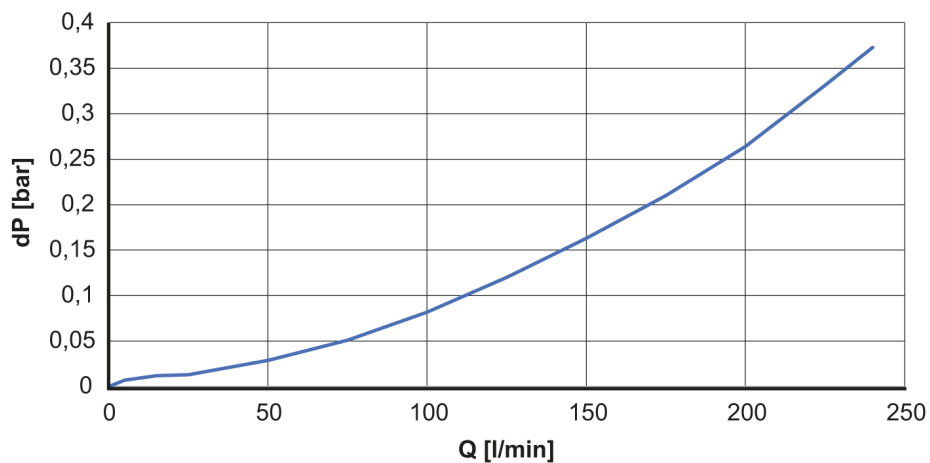
Connection



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

AO: analogue output; DI: digital input; DO: digital output; FO: frequency output; MP: multi-function connection

Diagrams and graphs



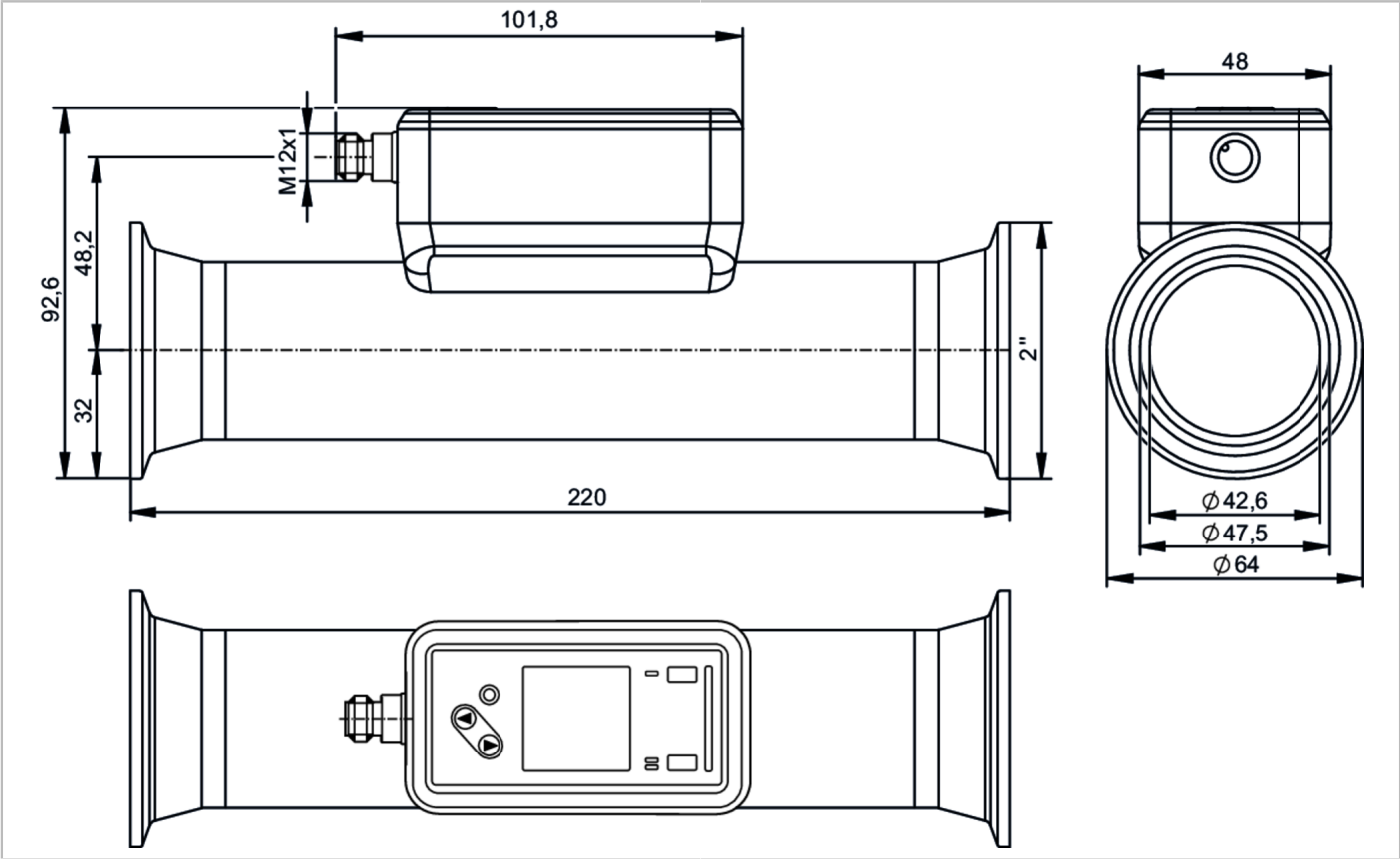
dP Pressure loss
[bar]
Q [l/min] volumetric flow quantity

SUH401



Ultrasonic flow meter

SUC501JBFRKG/US



Product characteristics

Measuring range	5...1000 l/min	0.3...60 m³/h	79...15850 gph	1.32...264.18 gpm
Nominal diameter	DN50 (2")			
Process connection	Clamp 2" DIN 32676 series C (ASME BPE)			

Application

Special feature	Gold-plated contacts	
Media	ultra-pure water; water; hydrous media; edible oils	
Note on media	hydrous 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. 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

SUH401



Ultrasonic flow meter

SUC501JBFRKG/US

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; totaliser switching signal; frequency signal; IO-Link		
		OUT2	switching signal; pulse signal; diagnostic signal; totaliser switching signal; analogue signal		
Electrical design		PNP/NPN			
Min. load resistance [Ω]		2000			
Pulse output		flow rate meter			
Short-circuit protection		yes			
Type of short-circuit protection		pulsed			
Overload protection		yes			
Analogue					
Number of analogue outputs		1			
Analogue current output [mA]		4...20			
Max. load [Ω]		500			
Digital					
Number of digital outputs		2			
Output function		normally open / normally closed; (parameterisable)			
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
Analogue start point ASP		-1000...800 l/min	-60...48 m³/h	-15850...12680 gph	-264.17...211.34 gpm
Analogue 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		0.1...99990000 l; 0.026...26414563.515 gal			

SUH401



Ultrasonic flow meter

SUC501JBFRKG/US

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
Analogue start point	-20...76 °C	-4...168.8 °F
Analogue 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)	edible oils	± (5,0 % MW + 1,0 % MEW)
	water	± (1,0 % MW + 0,5 % MEW)
Repeatability	± 0,2 % MEW	
Temperature monitoring		
Accuracy	[K]	± 2,5 (Q > 5 % MEW)
Temperature coefficient	0,2	
	[% of the span / 10 K]	
Response 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	BLOB	Binary Large Object transfer
	Common - I&D	Identification and Diagnosis
Required master port type	A	
Process data analogue	3	
Process data binary	2	
Min. process cycle time	[ms]	9.6

SUH401



Ultrasonic flow meter

SUC501JBFRKG/US

IO-Link process data (cyclical)	function	bit length
	totaliser	32
	Flow monitoring	32
	Temperature monitoring	32
	status	4
	Output 1	1
Supported DeviceIDs	Output 2	1
	Type of operation	DeviceID
	default	1753

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 no.	I033
	File number UL	E174189
Pressure Equipment Directive	can be used for group 2 fluids; group 1 fluids on request	

Mechanical data		
Weight	[g]	936.1
Housing		rectangular
Inlet pipe length		5 x DN
Outlet pipe length		1 x DN
Dimensions	[mm]	220 x 63.9 x 92.6
Materials	housing: stainless steel (316L/1.4404); Display: PFA; Sealing Display: FKM; connector: PBT	
Materials (wetted parts)	Pipe section: stainless steel (316L/1.4404)	
Nominal diameter	DN50 (2")	
Process connection	Clamp 2" DIN 32676 series C (ASME BPE)	
Process connection suitable for pipe standard	2" / Ø 50,8 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		colour display 1,44", 128 x 128 pixels
	Switching function	2 x LED, yellow
	diagnosis	1 x LED, three-colour

Remarks	
Remarks	MW = measured value
	MEW = Final value of the measuring range
	pulse and totaliser 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.

SUH401



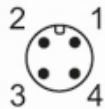
Ultrasonic flow meter

SUC501JBFRKG/US

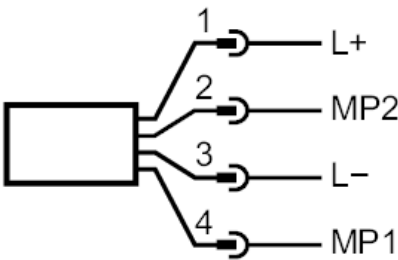
Electrical connection

Connector: 1 x M12; Contacts: gold-plated

Electrical connection - plug



Connection

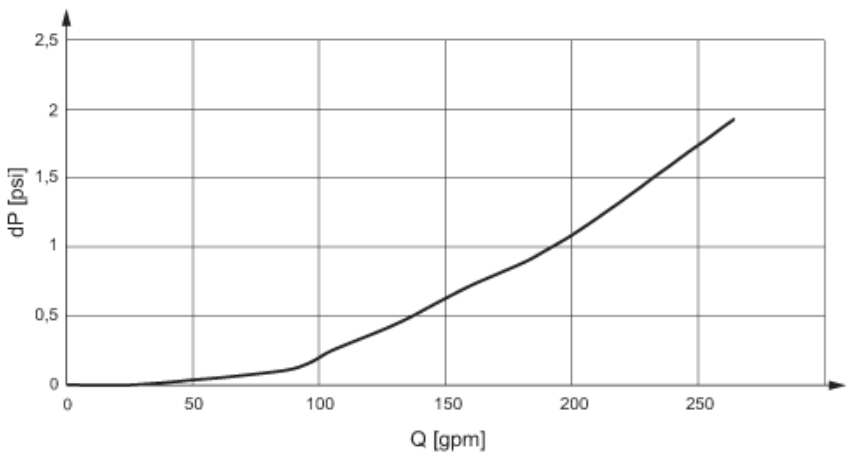


1 (L+)	L+	
2 (OUT2)	MP2	DO2, AO, DI
3 (L-)	L-	
4 (OUT1)	MP1	DO1, FO, IO-Link

AO: analogue output; DI: digital input; DO: digital output; FO: frequency output; MP: multi-function connection

Diagrams and graphs

Note on pressure loss



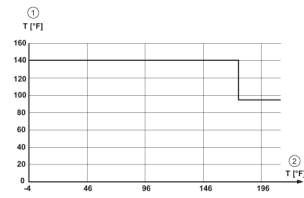
SUH401

Ultrasonic flow meter

SUC501JBFRKG/US



derating ambient temperature



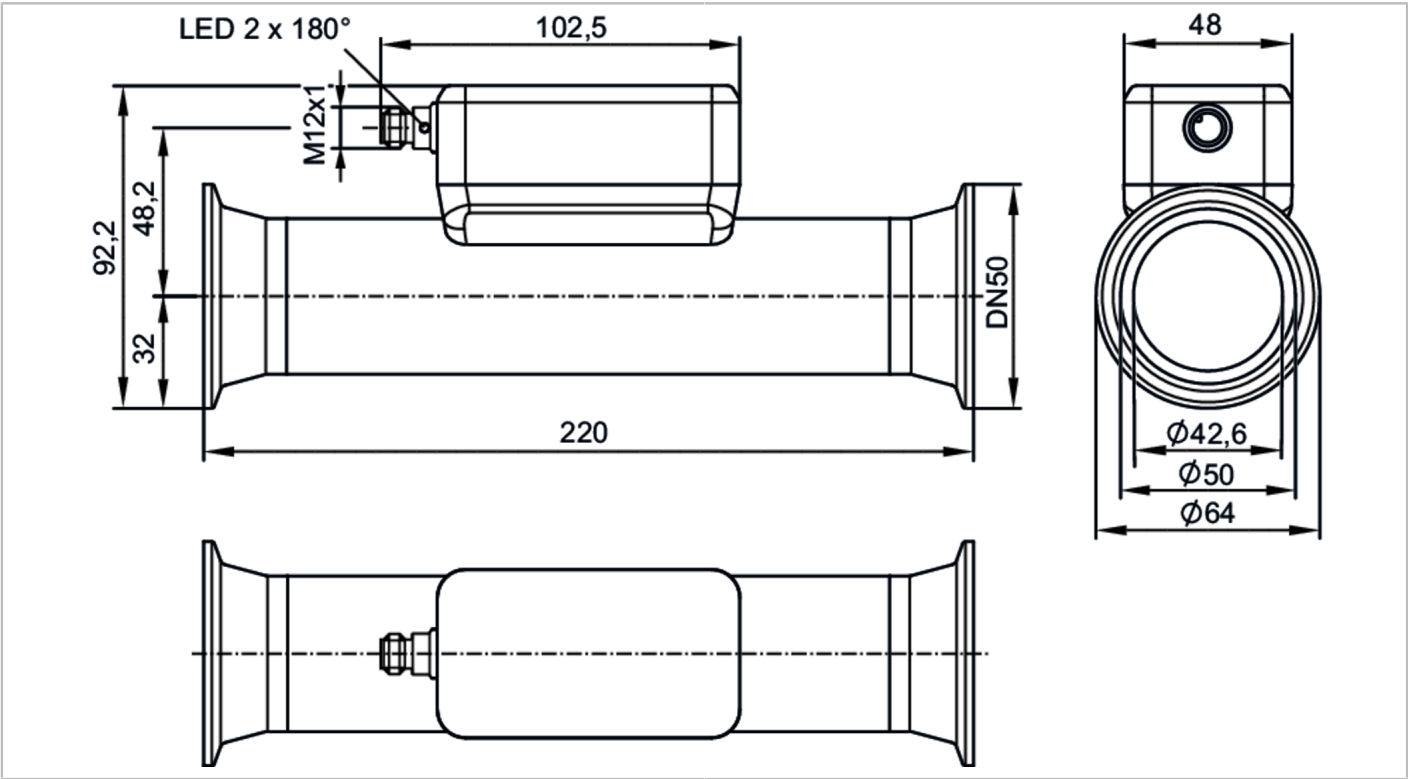
- 1 Ambient temperature
- 2 Medium temperature

SUH420



Ultrasonic flow meter

SUC50XJBFRKG/US



Product characteristics

Measuring range	5...1000 l/min	0.3...60 m³/h	79...15850 gph	1.32...264.18 gpm
Nominal diameter	DN50 (2")			
Process connection	Clamp DN50 DIN 32676 series A			

Application

Special feature	Gold-plated contacts		
Application	food and beverage industry		
Media	ultra-pure water; water; hydrous media; edible oils		
Note on media	hydrous 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 [°C]	-40...130; (< 1 h: 150)		
Min. bursting pressure	40 bar	4 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			



Ultrasonic flow meter

SUC50XJBFRKG/US

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; totaliser switching signal; frequency signal; IO-Link		
		OUT2	switching signal; pulse signal; diagnostic signal; totaliser switching signal; analogue signal		
Electrical design		PNP/NPN			
Pulse output		flow rate meter			
Short-circuit protection		yes			
Type of short-circuit protection		pulsed			
Overload protection		yes			
Analogue					
Number of analogue outputs		1			
Analogue current output [mA]		4...20			
Max. load [Ω]		500			
Digital					
Number of digital outputs		2			
Output function		normally open / normally closed; (parameterisable)			
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
Resolution		0.1 l/min	0.001 m³/h	1 gph	0.01 gpm
Note on factory setting		l/min, °C			
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
Analogue start point ASP		-1000...800 l/min	-60...48 m³/h	-15850...12680 gph	-264.17...211.34 gpm
Analogue 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		0.1...99990000 l; 0.026...26414563.515 gal			



Ultrasonic flow meter

SUC50XJBFRKG/US

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
Analogue start point	-40...96 °C	-40...204.8 °F
Analogue end point	-6...130 °C	21.2...266 °F
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.	
Flow monitoring		
Accuracy (in the measuring range)	edible oils	± (5,0 % MW + 1,0 % MEW)
	water	± (1,0 % MW + 0,5 % MEW)
Repeatability	± 0,2 % MEW	
Temperature monitoring		
Accuracy	[K]	± 2,5 (Q > 5 % MEW)
Temperature coefficient	0,2	
	[% of the span / 10 K]	
Response 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	BLOB	Binary Large Object transfer
	Common - I&D	Identification and Diagnosis
Required master port type	A	
Process data analogue	3	
Process data binary	2	
Min. process cycle time	[ms]	9.6

SUH420



Ultrasonic flow meter

SUC50XJBFRKG/US

IO-Link process data (cyclical)	function	bit length
	totaliser	32
	Flow monitoring	32
	Temperature monitoring	32
	status	4
	Output 1	1
Supported DeviceIDs	Output 2	1
	Type of operation	DeviceID
	default	1911

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 no.	I039
	File number UL	E174189
Pressure Equipment Directive	can be used for group 2 fluids; group 1 fluids on request	

Mechanical data		
Weight	[g]	921
Housing		rectangular
Inlet pipe length		5 x DN
Outlet pipe length		1 x DN
Dimensions	[mm]	220 x 64 x 92.2
Materials		housing: stainless steel (316L/1.4404); connector: PEI, FKM
Materials (wetted parts)		Pipe section: stainless steel (316L/1.4435); Process connection: stainless steel (316L/1.4404)
Nominal diameter		DN50 (2")
Process connection		Clamp DN50 DIN 32676 series A
Process connection suitable for pipe standard		DN50 / Ø 53 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 totaliser 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.

SUH420



Ultrasonic flow meter

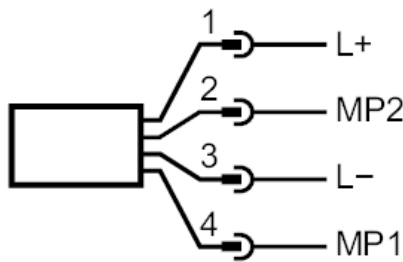
SUC50XJBFRKG/US

Electrical connection - plug

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



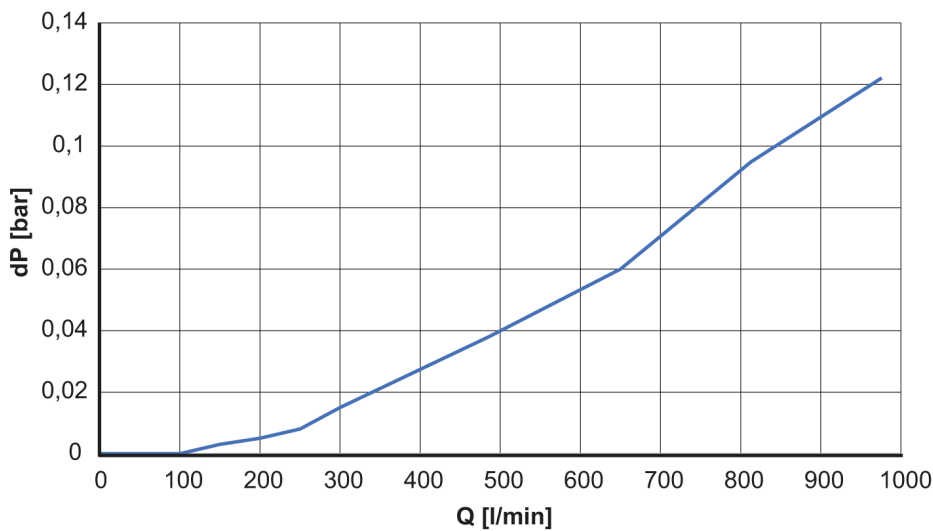
Connection



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

AO: analogue output; DI: digital input; DO: digital output; FO: frequency output; MP: multi-function connection

Diagrams and graphs



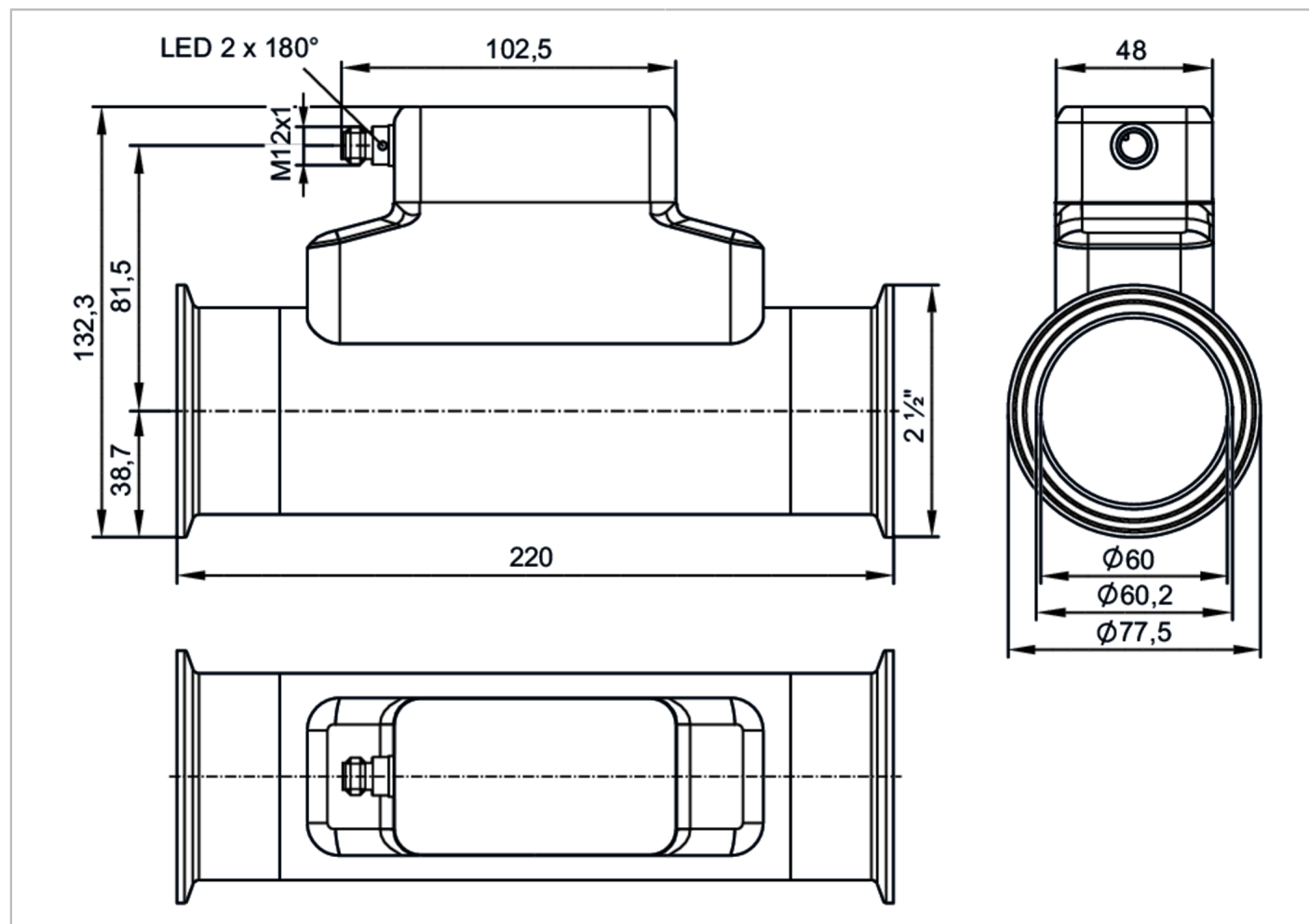
dP Pressure loss
[bar]
Q [l/min] volumetric flow quantity

SUH501



Ultrasonic flow meter

SUC65XJBFRKG/US



EC 1935/2004

FCM



Product characteristics

Measuring range	20...2400 l/min	1.2...144 m³/h	320...38040 gph	5.2...634 gpm
Nominal diameter	DN65 (2 1/2")			
Process connection	Clamp 2,5" DIN 32676 series C (ASME BPE)			

Application

Special feature	Gold-plated contacts		
Application	food and beverage industry		
Media	ultra-pure water; water; hydrous media		
Note on media	hydrous media: for media with >10 % additives, the repeatability is the only available value		
Medium temperature [°C]	-40...120; (< 1 h: 150)		
Min. bursting pressure	40 bar	4 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			



Ultrasonic flow meter

SUC65XJBFRKG/US

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; totaliser switching signal; frequency signal; IO-Link		
		OUT2	switching signal; pulse signal; diagnostic signal; totaliser switching signal; analogue signal		
Electrical design		PNP/NPN			
Pulse output		flow rate meter			
Short-circuit protection		yes			
Type of short-circuit protection		pulsed			
Overload protection		yes			
Analogue					
Number of analogue outputs		1			
Analogue current output	[mA]	4...20			
Max. load	[Ω]	500			
Digital					
Number of digital outputs		2			
Output function		normally open / normally closed; (parameterisable)			
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		gpm, °F			
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
Analogue start point ASP		-2400...1920 l/min	-144...115.2 m³/h	-38041...30433 gph	-634...507.2 gpm
Analogue 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
Frequency end point, FEP		481.5...2400 l/min	28.89...144 m³/h	7630...38040 gph	127.2...634 gpm
Frequency at the end point FRP	[Hz]	1...10000			
Volumetric flow quantity monitoring					
Pulse length	[s]	0.002...2			



Ultrasonic flow meter

SUC65XJBFRKG/US

Pulse value	0.1...99990000 l; 0.026...26414563.515 gal	
Temperature monitoring		
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
Analogue start point	-40...88 °C	-40...190.4 °F
Analogue 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	
Accuracy / deviations		
Accuracy (in the measuring range)	only up to 100 °C; at higher temperatures, only the repeatability is within the specification.	
Flow monitoring		
Accuracy (in the measuring range)	water	± (2,0 % 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	
Response times		
Flow monitoring		
Response time [s]	< 0.5; (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	BLOB	Binary Large Object transfer
	Common - I&D	Identification and Diagnosis
Required master port type	A	
Process data analogue	3	
Process data binary	2	
Min. process cycle time [ms]	9.6	

SUH501



Ultrasonic flow meter

SUC65XJBFRKG/US

IO-Link process data (cyclical)	function	bit length
	totaliser	32
	Flow monitoring	32
	Temperature monitoring	32
	status	4
	Output 1	1
	Output 2	1
Supported DeviceIDs	Type of operation	DeviceID
	default	1853

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 no.	I039
	File number UL	E174189
Pressure Equipment Directive	can be used for group 2 fluids; group 1 fluids on request	

Mechanical data		
Weight	[g]	1689.05
Housing		rectangular
Inlet pipe length		15 x DN
Outlet pipe length		3 x DN
Dimensions	[mm]	220 x 77.5 x 132.3
Materials		housing: stainless steel (316L/1.4404); connector: PEI, FKM
Materials (wetted parts)		Pipe section: stainless steel (316L/1.4435); Process connection: stainless steel (316L/1.4404)
Nominal diameter		DN65 (2 1/2")
Process connection		Clamp 2,5" DIN 32676 series C (ASME BPE)
Process connection suitable for pipe standard		2,5" / Ø 63,5 mm x 1,65 mm; (DIN 11866 series C); (DIN EN 10357 Series D)
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 totaliser 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.

SUH501



Ultrasonic flow meter

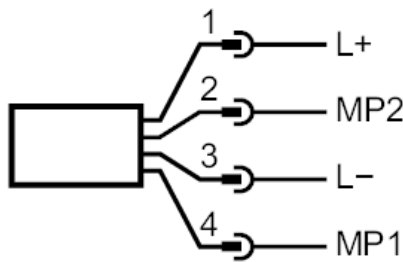
SUC65XJBFRKG/US

Electrical connection - plug

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



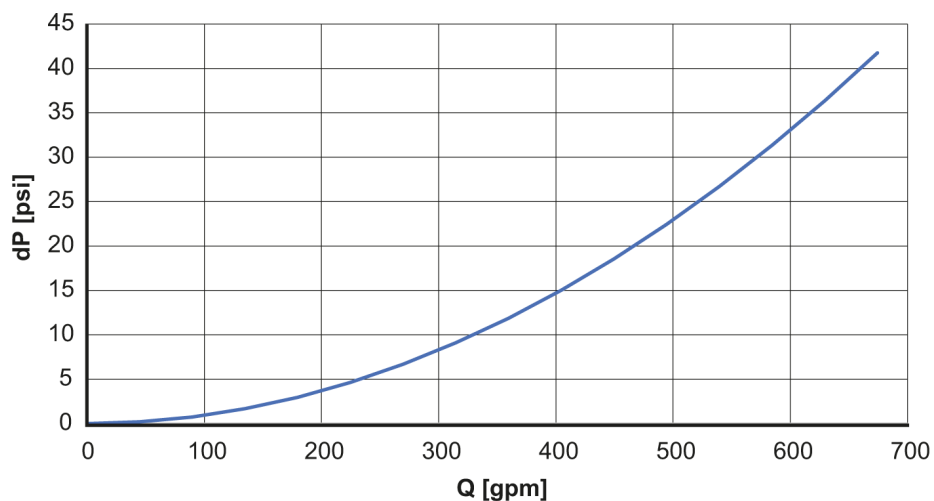
Connection



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

AO: analogue output; DI: digital input; DO: digital output; FO: frequency output; MP: multi-function connection

Diagrams and graphs

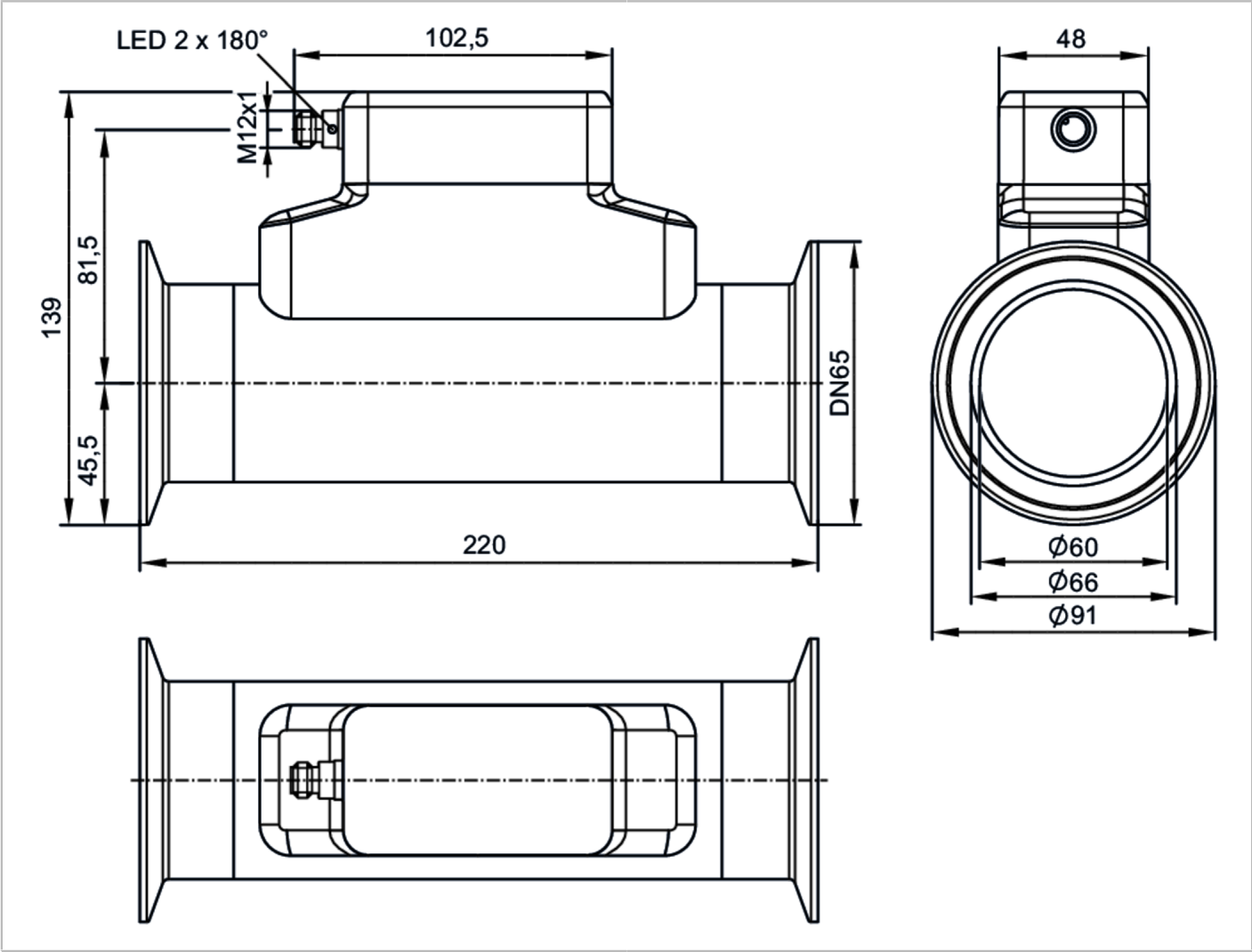


dP Pressure loss
[psi]
Q volumetric flow quantity
[gpm]

SUH520

Ultrasonic flow meter

SUC65XJBFRKG/US



Product characteristics

Measuring range	20...2400 l/min	1.2...144 m³/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; hydrous media	
Note on media	hydrous media: for media with >10 % additives, the repeatability is the only available value	
Medium temperature [°C]	-40...120; (< 1 h: 150)	
Min. bursting pressure	40 bar	4 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			

SUH520



Ultrasonic flow meter

SUC65XJBFRKG/US

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; totaliser switching signal; frequency signal; IO-Link		
	OUT2	switching signal; pulse signal; diagnostic signal; totaliser switching signal; analogue signal		
Electrical design	PNP/NPN			
Pulse output	flow rate meter			
Short-circuit protection	yes			
Type of short-circuit protection	pulsed			
Overload protection	yes			
Analogue				
Number of analogue outputs	1			
Analogue current output [mA]	4...20			
Max. load [Ω]	500			
Digital				
Number of digital outputs	2			
Output function	normally open / normally closed; (parameterisable)			
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
Analogue start point ASP	-2400...1920 l/min	-144...115.2 m³/h	-38041...30433 gph	-634...507.2 gpm
Analogue 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
Frequency end point, FEP	481.5...2400 l/min	28.89...144 m³/h	7630...38040 gph	127.2...634 gpm
Frequency at the end point FRP [Hz]	1...10000			



Ultrasonic flow meter

SUC65XJBFRKG/US

Volumetric flow quantity monitoring		
Pulse length	[s]	0.002...2
Pulse value		0.1...99990000 l; 0.026...26414563.515 gal
Temperature monitoring		
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
Analogue start point	-40...88 °C	-40...190.4 °F
Analogue 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
Accuracy / deviations		
Accuracy (in the measuring range)	only up to 100 °C; at higher temperatures, only the repeatability is within the specification.	
Flow monitoring		
Accuracy (in the measuring range)	water	± (2,0 % 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	
Response times		
Flow monitoring		
Response time	[s]	< 0.5; (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	BLOB	Binary Large Object transfer
	Common - I&D	Identification and Diagnosis
Required master port type	A	
Process data analogue	3	
Process data binary	2	
Min. process cycle time	[ms]	9.6

SUH520



Ultrasonic flow meter

SUC65XJBFRKG/US

IO-Link process data (cyclical)	function	bit length
	totaliser	32
	Flow monitoring	32
	Temperature monitoring	32
	status	4
	Output 1	1
Supported DeviceIDs	Output 2	1
	Type of operation	DeviceID
	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 no.	I039
	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
Materials		housing: stainless steel (316L/1.4404); connector: PEI, FKM
Materials (wetted parts)		Pipe section: stainless steel (316L/1.4435); Process connection: stainless steel (316L/1.4404)
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 totaliser 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.

SUH520

Ultrasonic flow meter

SUC65XJBFRKG/US

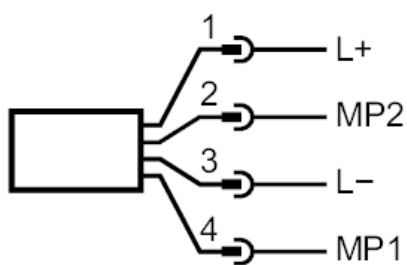


Electrical connection - plug

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: analogue output; DI: digital input; DO: digital output; FO: frequency output; MP: multi-function connection

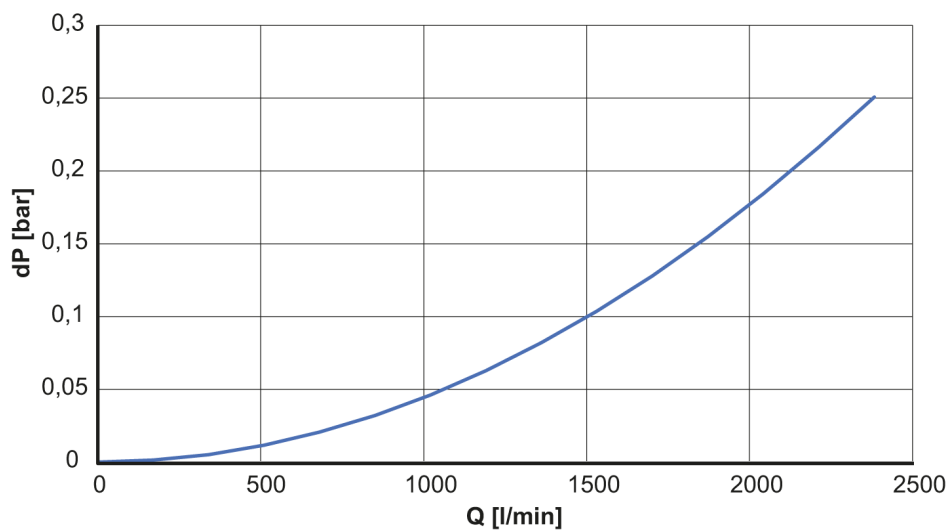
SUH520

Ultrasonic flow meter

SUC65XJBFRKG/US



Diagrams and graphs



dP
[bar] Pressure loss

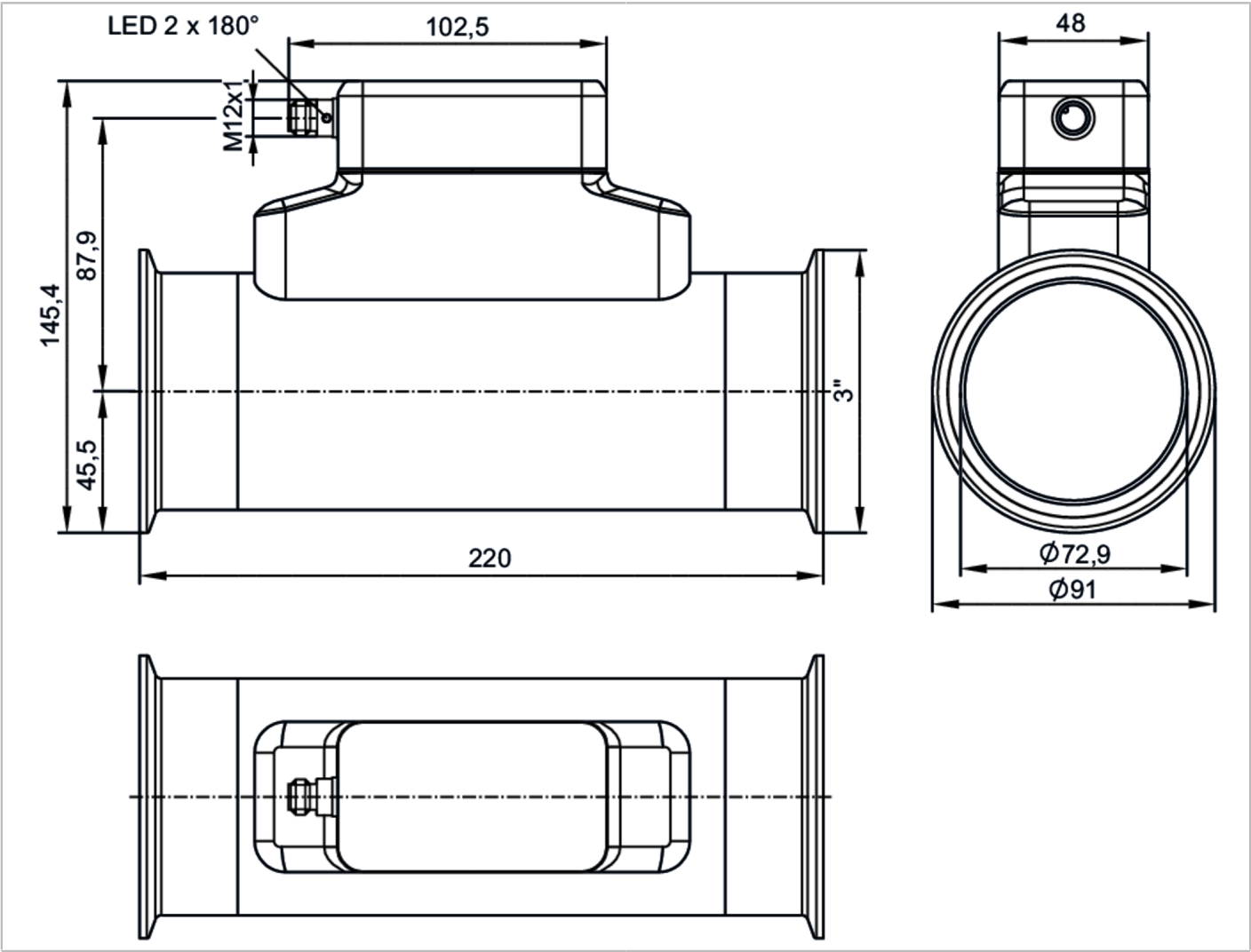
Q [l/
min] volumetric flow quantity

SUH601



Ultrasonic flow meter

SUC80XJBFRKG/US



Product characteristics				
Measuring range	25...3600 l/min	1.5...216 m³/h	400...57061 gph	6.6...951 gpm
Nominal diameter	DN80 (3")			
Process connection	Clamp 3" DIN 32676 series C (ASME BPE)			
Application				
Special feature	Gold-plated contacts			
Application	food and beverage industry			
Media	ultra-pure water; water; hydrous media			
Note on media	hydrous media: for media with >10 % additives, the repeatability is the only available value			
Medium temperature [°C]	-40...120; (< 1 h: 150)			
Min. bursting pressure	40 bar		4 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			

SUH601



Ultrasonic flow meter

SUC80XJBFRKG/US

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; totaliser switching signal; frequency signal; IO-Link		
	OUT2	switching signal; pulse signal; diagnostic signal; totaliser switching signal; analogue signal		
Electrical design	PNP/NPN			
Pulse output	flow rate meter			
Short-circuit protection	yes			
Type of short-circuit protection	pulsed			
Overload protection	yes			
Analogue				
Number of analogue outputs	1			
Analogue current output [mA]	4...20			
Max. load [Ω]	500			
Digital				
Number of digital outputs	2			
Output function	normally open / normally closed; (parameterisable)			
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	25...3600 l/min	1.5...216 m³/h	400...57061 gph	6.6...951 gpm
Resolution	0.1 l/min	0.001 m³/h	1 gph	0.01 gpm
Note on factory setting	gpm, °F			
Set point SP	44.8...3600 l/min	2.7...216 m³/h	710...57061 gph	11.8...951 gpm
Reset point rP	26.1...3581.3 l/min	1.6...214.9 m³/h	413...56764 gph	6.9...946.1 gpm
Analogue start point ASP	-3600...2880 l/min	-216...172.8 m³/h	-57060...45650 gph	-951...760.8 gpm
Analogue end point AEP	-2880...3600 l/min	-172.8...216 m³/h	-45650...57060 gph	-760.8...951 gpm
Low flow cut-off LFC	25...180 l/min	1.5...10.8 m³/h	400...2850 gph	6.6...47.6 gpm
Frequency end point, FEP	722.2...3600 l/min	43.3...216 m³/h	11450...57060 gph	190.8...951 gpm
Frequency at the end point FRP [Hz]	1...10000			



Ultrasonic flow meter

SUC80XJBFRKG/US

Volumetric flow quantity monitoring		
Pulse length	[s]	0.002...2
Pulse value		0.1...99990000 l; 0.026...26414563.515 gal
Temperature monitoring		
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
Analogue start point	-40...88 °C	-40...190.4 °F
Analogue 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
Accuracy / deviations		
Accuracy (in the measuring range)	only up to 100 °C; at higher temperatures, only the repeatability is within the specification.	
Flow monitoring		
Accuracy (in the measuring range)	water	± (2,0 % 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	
Response times		
Flow monitoring		
Response time	[s]	< 0.5; (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	BLOB	Binary Large Object transfer
	Common - I&D	Identification and Diagnosis
Required master port type	A	
Process data analogue	3	
Process data binary	2	
Min. process cycle time	[ms]	9.6

SUH601



Ultrasonic flow meter

SUC80XJBFRKG/US

IO-Link process data (cyclical)	function	bit length
	totaliser	32
	Flow monitoring	32
	Temperature monitoring	32
	status	4
	Output 1	1
Supported DeviceIDs	Output 2	1
	Type of operation	DeviceID
	default	1855

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 no.	I039
	File number UL	E174189
Pressure Equipment Directive	can be used for group 2 fluids; group 1 fluids on request	

Mechanical data		
Weight	[g]	1863.8
Housing		rectangular
Inlet pipe length		15 x DN
Outlet pipe length		3 x DN
Dimensions	[mm]	220 x 91 x 145.4
Materials		housing: stainless steel (316L/1.4404); connector: PEI, FKM
Materials (wetted parts)		Pipe section: stainless steel (316L/1.4435); Process connection: stainless steel (316L/1.4404)
Nominal diameter		DN80 (3")
Process connection		Clamp 3" DIN 32676 series C (ASME BPE)
Process connection suitable for pipe standard		3" / Ø 76,2 mm x 1,65 mm; (DIN 11866 series C); (DIN EN 10357 Series D)
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 totaliser 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.

SUH601



Ultrasonic flow meter

SUC80XJBFRKG/US

Electrical connection - plug

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

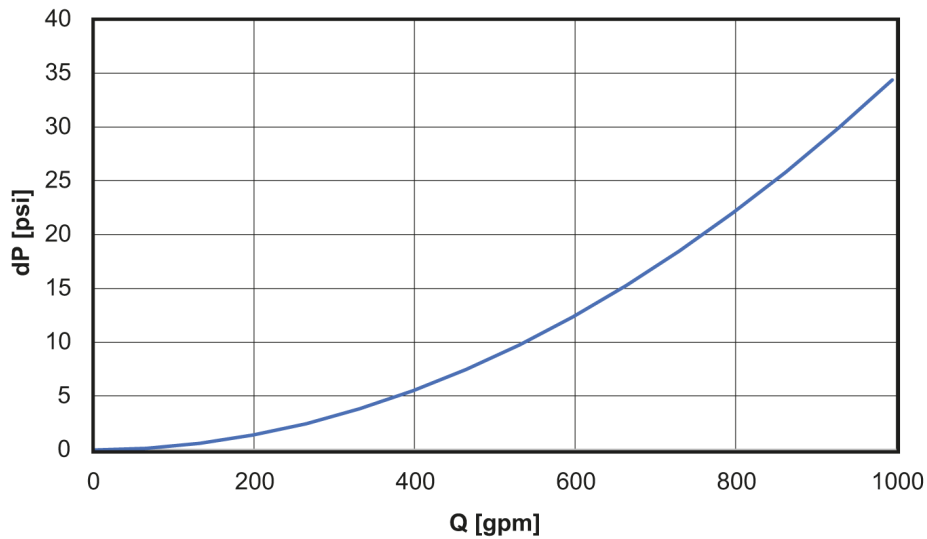


Connection

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

AO: analogue output; DI: digital input; DO: digital output; FO: frequency output; MP: multi-function connection

Diagrams and graphs



dP
[psi] Pressure loss

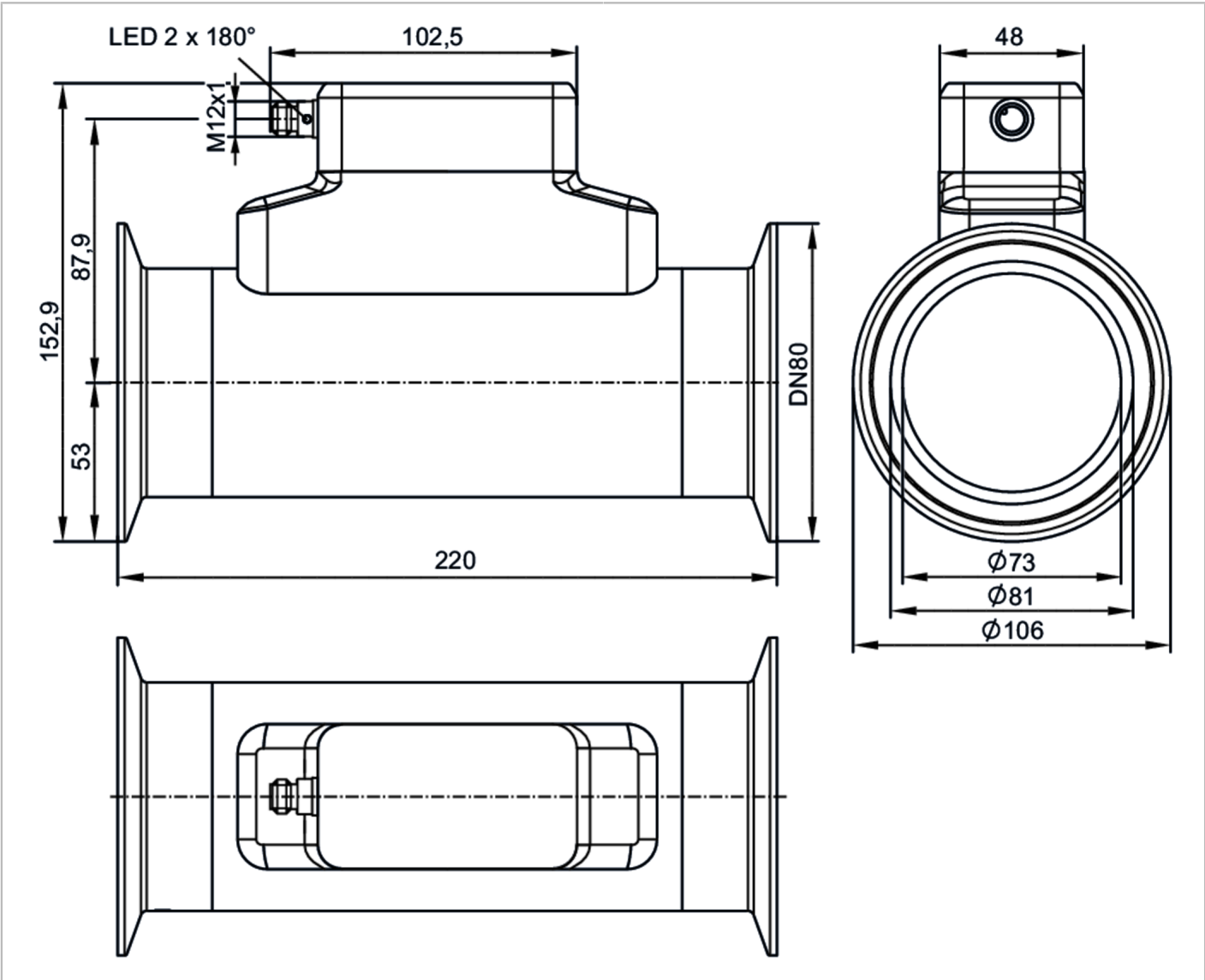
Q
[gpm] volumetric flow quantity

SUH620



Ultrasonic flow meter

SUC80XJBFRKG/US



EC 1935/2004

FCM



Product characteristics

Measuring range	25...3600 l/min	1.5...216 m³/h	400...57061 gph	6.6...951 gpm
Nominal diameter	DN80 (3")			
Process connection	Clamp DN80 DIN 32676 series A			

Application

Special feature	Gold-plated contacts	
Application	food and beverage industry	
Media	ultra-pure water; water; hydrous media	
Note on media	hydrous media: for media with >10 % additives, the repeatability is the only available value	
Medium temperature [°C]	-40...120; (< 1 h: 150)	
Min. bursting pressure	40 bar	4 MPa
Pressure rating	16 bar	1.6 MPa
Vacuum resistance [mbar]	-1000	



Ultrasonic flow meter

SUC80XJBFRKG/US

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; totaliser switching signal; frequency signal; IO-Link	
		OUT2	switching signal; pulse signal; diagnostic signal; totaliser switching signal; analogue signal	
Electrical design		PNP/NPN		
Pulse output		flow rate meter		
Short-circuit protection		yes		
Type of short-circuit protection		pulsed		
Overload protection		yes		
Analogue				
Number of analogue outputs		1		
Analogue current output	[mA]	4...20		
Max. load	[Ω]	500		
Digital				
Number of digital outputs		2		
Output function		normally open / normally closed; (parameterisable)		
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		25...3600 l/min	1.5...216 m³/h	400...57061 gph 6.6...951 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		44.8...3600 l/min	2.7...216 m³/h	710...57061 gph 11.8...951 gpm
Reset point rP		26.1...3581.3 l/min	1.6...214.9 m³/h	413...56764 gph 6.9...946.1 gpm
Analogue start point ASP		-3600...2880 l/min	-216...172.8 m³/h	-57060...45650 gph -951...760.8 gpm
Analogue end point AEP		-2880...3600 l/min	-172.8...216 m³/h	-45650...57060 gph -760.8...951 gpm
Low flow cut-off LFC		25...180 l/min	1.5...10.8 m³/h	400...2850 gph 6.6...47.6 gpm



Ultrasonic flow meter

SUC80XJBFRKG/US

Frequency end point, FEP	722.2...3600 l/min	43.3...216 m³/h	11450...57060 gph	190.8...951 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; 0.026...26414563.515 gal			
Temperature monitoring				
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	
Analogue start point	-40...88 °C		-40...190.4 °F	
Analogue 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			
Accuracy / deviations				
Accuracy (in the measuring range)	only up to 100 °C; at higher temperatures, only the repeatability is within the specification.			
Flow monitoring				
Accuracy (in the measuring range)	water		± (2,0 % 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			
Response times				
Flow monitoring				
Response time [s]	< 0.5; (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	BLOB		Binary Large Object transfer	
	Common - I&D		Identification and Diagnosis	
Required master port type	A			
Process data analogue	3			
Process data binary	2			

SUH620



Ultrasonic flow meter

SUC80XJBFRKG/US

Min. process cycle time	[ms]	9.6
IO-Link process data (cyclical)	function	bit length
	totaliser	32
	Flow monitoring	32
	Temperature monitoring	32
	status	4
	Output 1	1
Supported DeviceIDs	Output 2	1
	Type of operation	DeviceID
	default	1856

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 no.	I039
	File number UL	E174189
Pressure Equipment Directive	can be used for group 2 fluids; group 1 fluids on request	

Mechanical data		
Weight	[g]	1975.15
Housing		rectangular
Inlet pipe length		15 x DN
Outlet pipe length		3 x DN
Dimensions	[mm]	220 x 106 x 152.9
Materials		housing: stainless steel (316L/1.4404); connector: PEI, FKM
Materials (wetted parts)		Pipe section: stainless steel (316L/1.4435); Process connection: stainless steel (316L/1.4404)
Nominal diameter		DN80 (3")
Process connection		Clamp DN80 DIN 32676 series A
Process connection suitable for pipe standard		DN80 / Ø 85 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 totaliser 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.	

SUH620



Ultrasonic flow meter

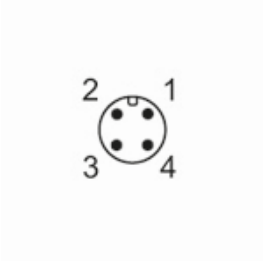
SUC80XJBFRKG/US

Pack quantity

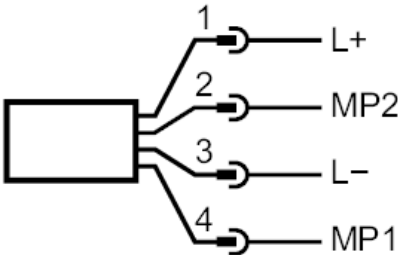
1 pcs.

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: analogue output; DI: digital input; DO: digital output; FO: frequency output; MP: multi-function connection

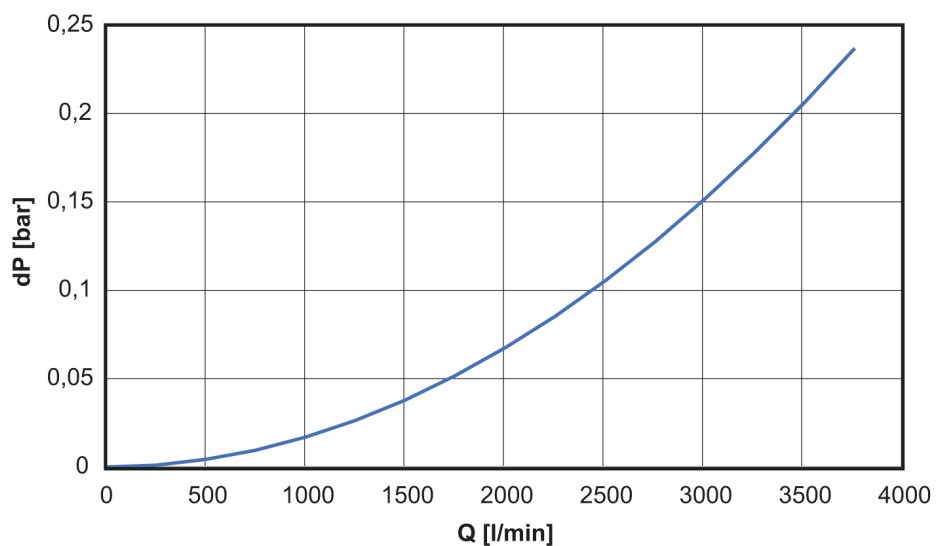
SUH620

Ultrasonic flow meter

SUC80XJBFRKG/US



Diagrams and graphs

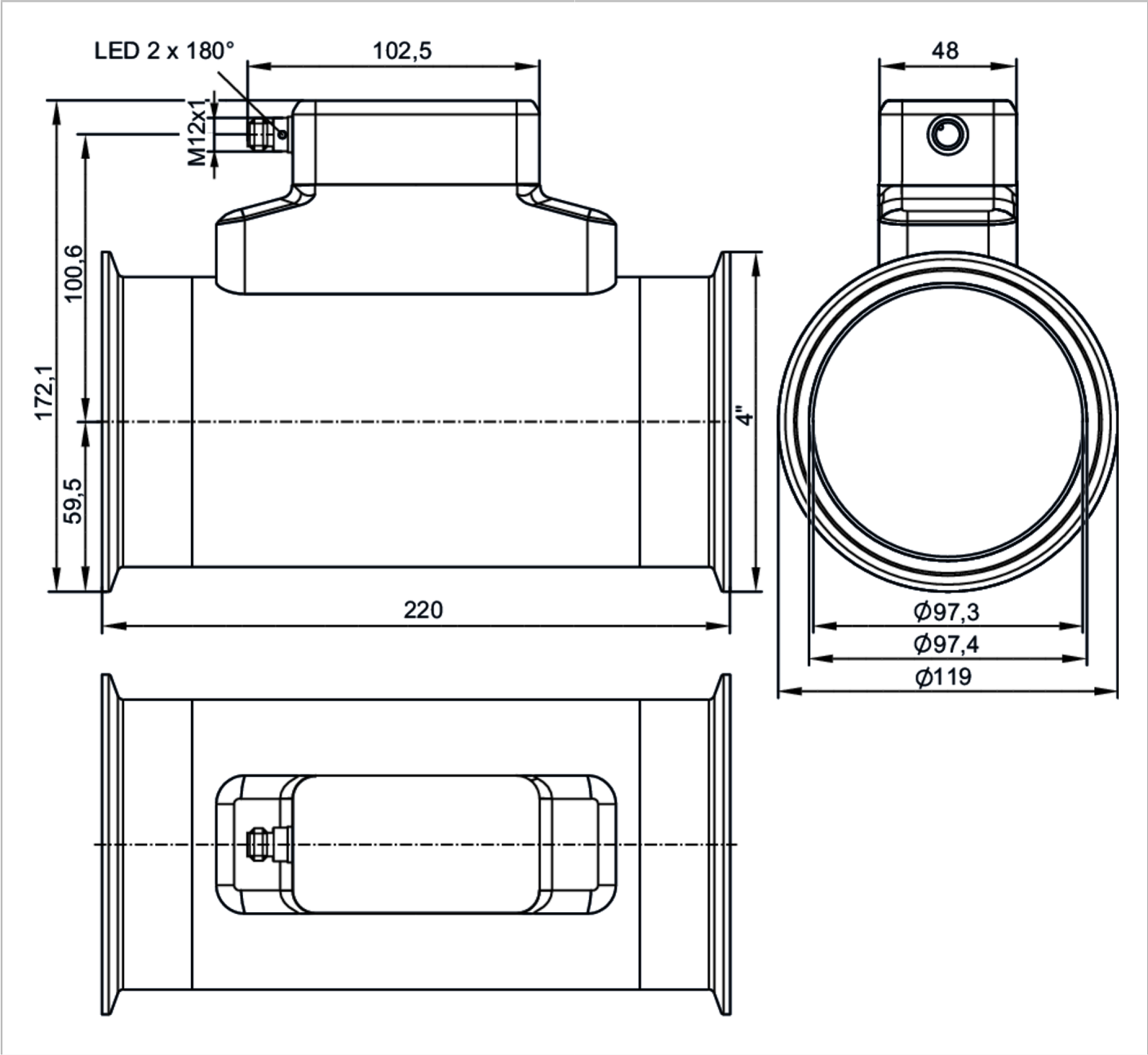


dP [bar] Pressure loss
Q [l/min] volumetric flow quantity

SUH701

Ultrasonic flow meter

SUCX0XJBFRKG/US



Product characteristics				
Measuring range	45...6000 l/min	2.7...360 m³/h	714...95102 gph	11.9...1585 gpm
Nominal diameter	DN100 (4")			
Process connection	Clamp 4" DIN 32676 series C (ASME BPE)			
Application				
Special feature	Gold-plated contacts			
Application	food and beverage industry			
Media	ultra-pure water; water; hydrous media			
Note on media	hydrous media: for media with >10 % additives, the repeatability is the only available value			
Medium temperature	[°C]	-40...120; (< 1 h: 150)		
Min. bursting pressure	40 bar	4 MPa		



Ultrasonic flow meter

SUCX0XJBFRKG/US

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

Outputs		
Total number of outputs	2	
Output signal	OUT1	switching signal; pulse signal; diagnostic signal; totaliser switching signal; frequency signal; IO-Link
	OUT2	switching signal; pulse signal; diagnostic signal; totaliser switching signal; analogue signal
Electrical design	PNP/NPN	
Pulse output	flow rate meter	
Short-circuit protection	yes	
Type of short-circuit protection	pulsed	
Overload protection	yes	

Analogue		
Number of analogue outputs	1	
Analogue current output [mA]	4...20	
Max. load [Ω]	500	

Digital		
Number of digital outputs	2	
Output function	normally open / normally closed; (parameterisable)	
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	45...6000 l/min	2.7...360 m³/h	714...95102 gph	11.9...1585 gpm
Resolution	0.1 l/min	0.001 m³/h	1 gph	0.01 gpm
Note on factory setting	gpm, °F			
Set point SP	78...6000 l/min	4.7...360 m³/h	1236...95102 gph	20.6...1585 gpm
Reset point rP	46.8...5968.8 l/min	2.8...358.1 m³/h	742...94607 gph	12.4...1576.8 gpm
Analogue start point ASP	-6000...4800 l/min	-360...288 m³/h	-95102...76082 gph	-1585...1268 gpm

SUH701



Ultrasonic flow meter

SUCX0XJBFRKG/US

Analogue end point AEP	-4800...6000 l/min	-288...360 m³/h	-76082...95102 gph	-1268...1585 gpm
Low flow cut-off LFC	45...300 l/min	2.7...18 m³/h	713...4755 gph	11.9...79.3 gpm
Frequency end point, FEP	1203.7...6000 l/min	72.2...360 m³/h	19079...95102 gph	318...1585 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; 0.026...26414563.515 gal			
Temperature monitoring				
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	
Analogue start point	-40...88 °C		-40...190.4 °F	
Analogue 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			
Accuracy / deviations				
Accuracy (in the measuring range)	only up to 100 °C; at higher temperatures, only the repeatability is within the specification.			
Flow monitoring				
Accuracy (in the measuring range)	water		± (2,0 % 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			
Response times				
Flow monitoring				
Response time [s]	< 0.5; (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	BLOB		Binary Large Object transfer	
	Common - I&D		Identification and Diagnosis	
Required master port type	A			

SUH701



Ultrasonic flow meter

SUCX0XJBFRKG/US

Process data analogue		3
Process data binary		2
Min. process cycle time	[ms]	9.6
IO-Link process data (cyclical)	function	bit length
	totaliser	32
	Flow monitoring	32
	Temperature monitoring	32
	status	4
	Output 1	1
	Output 2	1
Supported DeviceIDs	Type of operation	DeviceID
	default	1857

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 no.	I039
	File number UL	E174189
Pressure Equipment Directive	can be used for group 2 fluids; group 1 fluids on request	

Mechanical data		
Weight	[g]	2370.6
Housing		rectangular
Inlet pipe length		15 x DN
Outlet pipe length		3 x DN
Dimensions	[mm]	220 x 119 x 172.1
Materials		housing: stainless steel (316L/1.4404); connector: PEI, FKM
Materials (wetted parts)		Pipe section: stainless steel (316L/1.4435); Process connection: stainless steel (316L/1.4404)
Nominal diameter		DN100 (4")
Process connection		Clamp 4" DIN 32676 series C (ASME BPE)
Process connection suitable for pipe standard		4" / Ø 101,6 mm x 2,11 mm; (DIN 11866 series C); (DIN EN 10357 Series D)
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

SUH701



Ultrasonic flow meter

SUCX0XJBFRKG/US

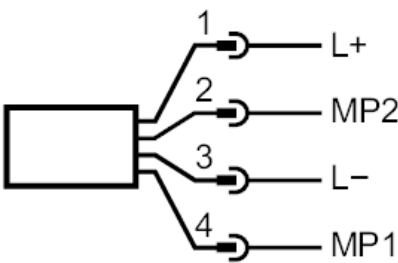
Remarks	
Remarks	MW = measured value
	MEW = Final value of the measuring range
	pulse and totaliser signal are only available for one of the two outputs
	the specified surface characteristics Ra/Rz of the wetted surfaces do not apply to the weld seam.
Pack quantity	1 pcs.

Electrical connection - plug

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



Connection



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

AO: analogue output; DI: digital input; DO: digital output; FO: frequency output; MP: multi-function connection

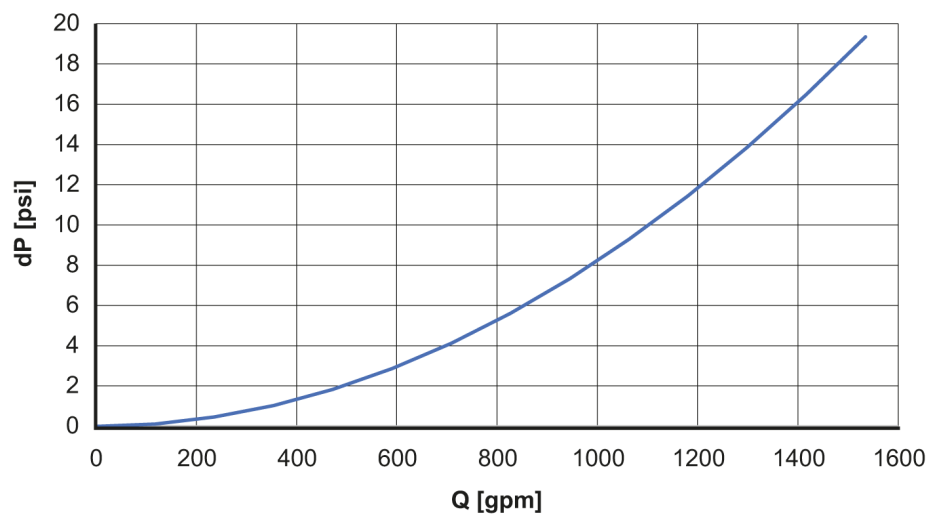
SUH701

Ultrasonic flow meter

SUCX0XJBFRKG/US



Diagrams and graphs



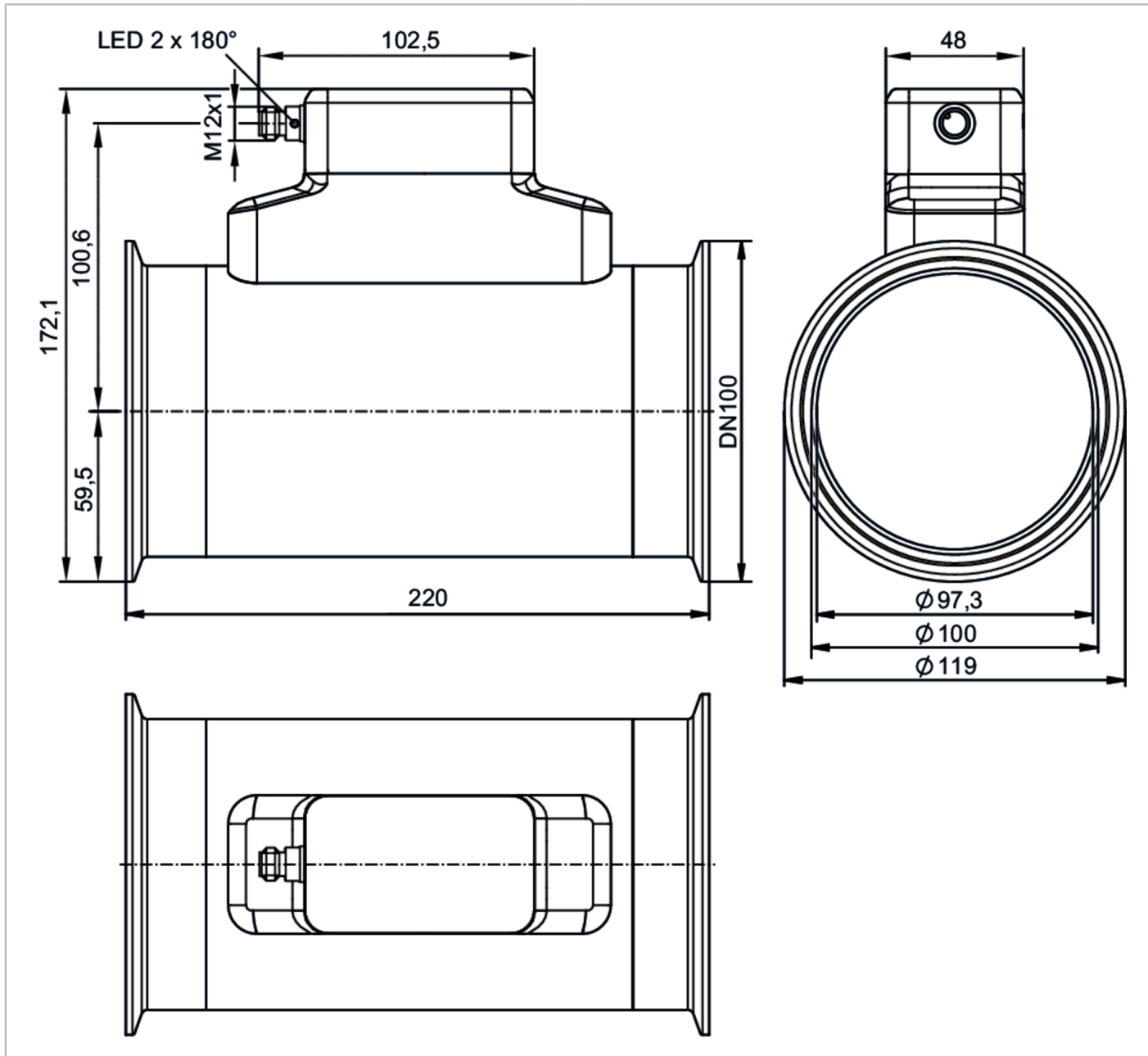
dP
[psi] Pressure loss

Q
[gpm] volumetric flow quantity

SUH720

Ultrasonic flow meter

SUCX0XJBFRKG/US



EC 1935/2004

FCM



Product characteristics

Measuring range	45...6000 l/min	2.7...360 m³/h	714...95102 gph	11.9...1585 gpm
Nominal diameter	DN100 (4")			
Process connection	Clamp DN100 DIN 32676 series A			

Application

Special feature	Gold-plated contacts	
Application	food and beverage industry	
Media	ultra-pure water; water; hydrous media	
Note on media	hydrous media: for media with >10 % additives, the repeatability is the only available value	
Medium temperature [°C]	-40...120; (< 1 h: 150)	
Min. bursting pressure	40 bar	4 MPa

SUH720



Ultrasonic flow meter

SUCX0XJBFRKG/US

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		
Outputs				
Total number of outputs	2			
Output signal	OUT1	switching signal; pulse signal; diagnostic signal; totaliser switching signal; frequency signal; IO-Link		
	OUT2	switching signal; pulse signal; diagnostic signal; totaliser switching signal; analogue signal		
Electrical design	PNP/NPN			
Pulse output	flow rate meter			
Short-circuit protection	yes			
Type of short-circuit protection	pulsed			
Overload protection	yes			
Analogue				
Number of analogue outputs	1			
Analogue current output [mA]	4...20			
Max. load [Ω]	500			
Digital				
Number of digital outputs	2			
Output function	normally open / normally closed; (parameterisable)			
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	45...6000 l/min	2.7...360 m³/h	714...95102 gph	11.9...1585 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	78...6000 l/min	4.7...360 m³/h	1236...95102 gph	20.6...1585 gpm
Reset point rP	46.8...5968.8 l/min	2.8...358.1 m³/h	742...94607 gph	12.4...1576.8 gpm
Analogue start point ASP	-6000...4800 l/min	-360...288 m³/h	-95102...76082 gph	-1585...1268 gpm

SUH720



Ultrasonic flow meter

SUCX0XJBFRKG/US

Analogue end point AEP	-4800...6000 l/min	-288...360 m³/h	-76082...95102 gph	-1268...1585 gpm
Low flow cut-off LFC	45...300 l/min	2.7...18 m³/h	713...4755 gph	11.9...79.3 gpm
Frequency end point, FEP	1203.7...6000 l/min	72.2...360 m³/h	19079...95102 gph	318...1585 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; 0.026...26414563.515 gal			
Temperature monitoring				
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	
Analogue start point	-40...88 °C		-40...190.4 °F	
Analogue 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			
Accuracy / deviations				
Accuracy (in the measuring range)	only up to 100 °C; at higher temperatures, only the repeatability is within the specification.			
Flow monitoring				
Accuracy (in the measuring range)	water		± (2,0 % 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			
Response times				
Flow monitoring				
Response time [s]	< 0.5; (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	BLOB		Binary Large Object transfer	
	Common - I&D		Identification and Diagnosis	
Required master port type	A			

SUH720



Ultrasonic flow meter

SUCX0XJBFRKG/US

Process data analogue	3	
Process data binary	2	
Min. process cycle time [ms]	9.6	
IO-Link process data (cyclical)	function	bit length
	totaliser	32
	Flow monitoring	32
	Temperature monitoring	32
	status	4
	Output 1	1
	Output 2	1
Supported DeviceIDs	Type of operation	DeviceID
	default	1858

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 no.	I039
	File number UL	E174189
Pressure Equipment Directive	can be used for group 2 fluids; group 1 fluids on request	

Mechanical data		
Weight [g]		2328.25
Housing		rectangular
Inlet pipe length		15 x DN
Outlet pipe length		3 x DN
Dimensions [mm]		220 x 119 x 172.1
Materials	housing: stainless steel (316L/1.4404); connector: PEI, FKM	
Materials (wetted parts)	Pipe section: stainless steel (316L/1.4435); Process connection: stainless steel (316L/1.4404)	
Nominal diameter		DN100 (4")
Process connection		Clamp DN100 DIN 32676 series A
Process connection suitable for pipe standard	DN100 / Ø 104 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

SUH720



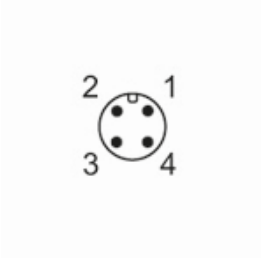
Ultrasonic flow meter

SUCX0XJBFRKG/US

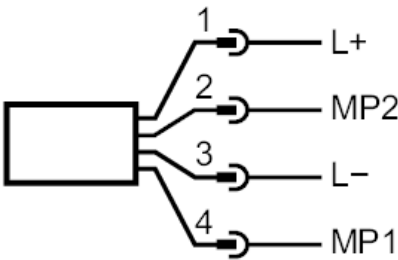
Remarks	
Remarks	MW = measured value
	MEW = Final value of the measuring range
	pulse and totaliser signal are only available for one of the two outputs
	the specified surface characteristics Ra/Rz of the wetted surfaces do not apply to the weld seam.
Pack quantity	1 pcs.

Electrical connection - plug

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



Connection



1 (L+)	L+	
2 (OUT2)	MP2	DO2, AO, DI
3 (L-)	L-	
4 (OUT1)	MP1	DO1, FO, IO-Link
AO: analogue output; DI: digital input; DO: digital output; FO: frequency output; MP: multi-function connection		

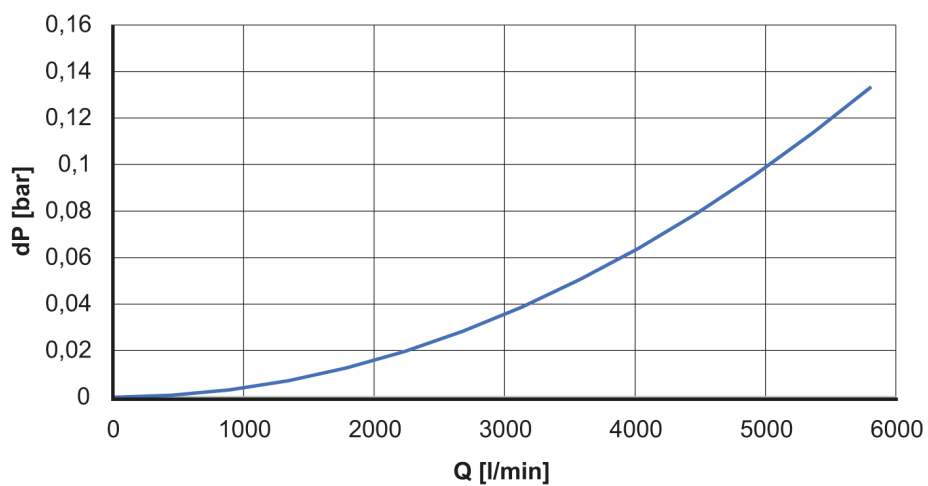
SUH720

Ultrasonic flow meter

SUCX0XJBFRKG/US



Diagrams and graphs



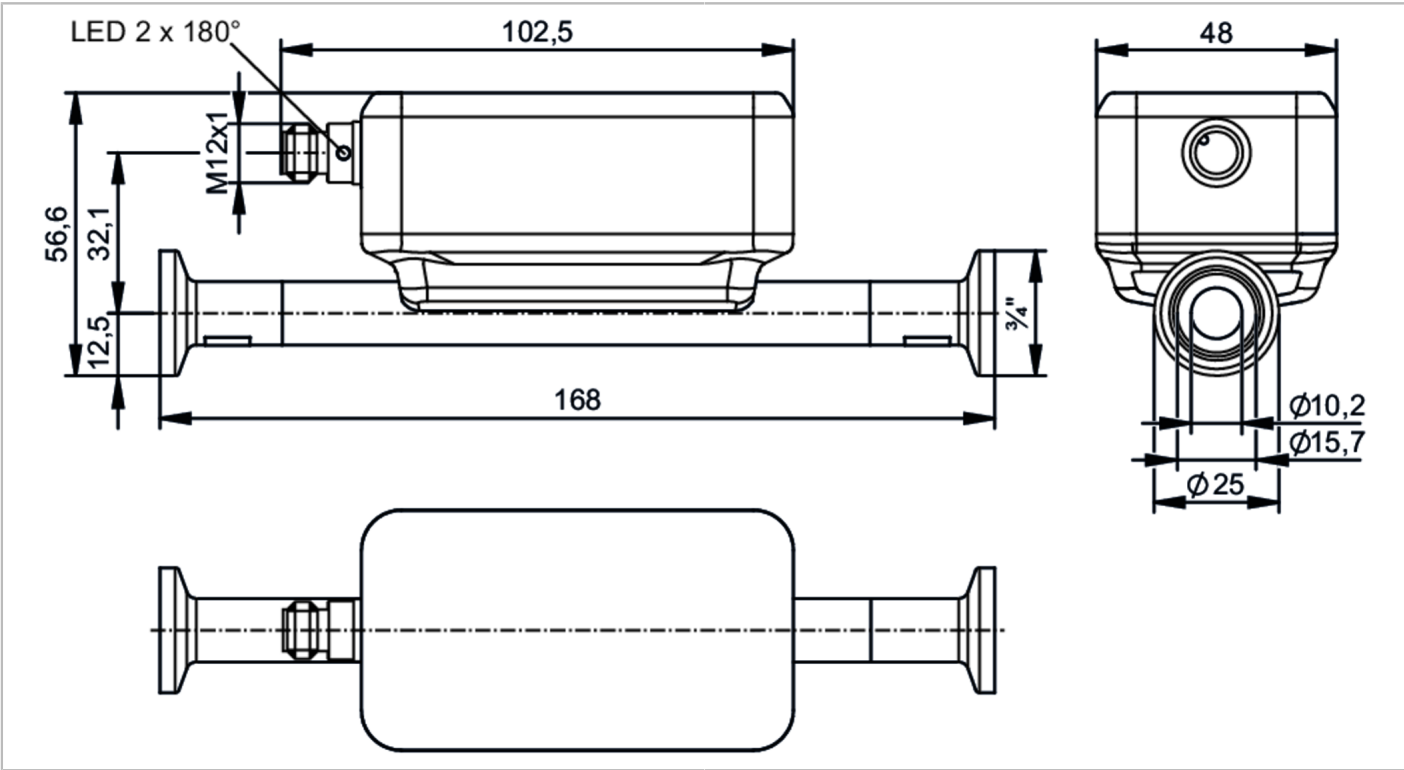
dP [bar] Pressure loss
Q [l/min] volumetric flow quantity

SUH801



Ultrasonic flow meter

SUC20XJBFRKG/US



Product characteristics				
Measuring range	1...75 l/min	0.06...4.5 m³/h	16...1189 gph	0.26...19.81 gpm
Nominal diameter	DN20 (3/4")			
Process connection	Clamp 3/4" DIN 32676 series C (ASME BPE)			
Application				
Special feature	Gold-plated contacts			
Application	food and beverage industry			
Media	ultra-pure water; water; hydrous media			
Note on media	hydrous media: for media with >10 % additives, the repeatability is the only available value			
Medium temperature [°C]	-40...125; (< 1 h: 150)			
Min. bursting pressure	40 bar	4 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			

SUH801



Ultrasonic flow meter

SUC20XJBFRKG/US

Inputs				
Inputs	OUT2		counter reset	
Outputs				
Total number of outputs	2			
Output signal	OUT1	switching signal; pulse signal; diagnostic signal; totaliser switching signal; frequency signal; IO-Link		
	OUT2	switching signal; pulse signal; diagnostic signal; totaliser switching signal; analogue signal		
Electrical design	PNP/NPN			
Pulse output	flow rate meter			
Short-circuit protection	yes			
Type of short-circuit protection	pulsed			
Overload protection	yes			
Analogue				
Number of analogue outputs	1			
Analogue current output [mA]	4...20			
Max. load [Ω]	500			
Digital				
Number of digital outputs	2			
Output function	normally open / normally closed; (parameterisable)			
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...75 l/min	0.06...4.5 m³/h	16...1189 gph	0.26...19.81 gpm
Resolution	0.1 l/min	0.001 m³/h	1 gph	0.01 gpm
Note on factory setting	gpm, °F			
Set point SP	1.4...75 l/min	0.085...4.5 m³/h	23...1189 gph	0.38...19.81 gpm
Reset point rP	1...74.6 l/min	0.062...4.477 m³/h	16...1183 gph	0.27...19.71 gpm
Analogue start point ASP	-75...60 l/min	-4.5...3.6 m³/h	-1189...951 gph	-19.81...15.85 gpm
Analogue end point AEP	-60...75 l/min	-3.6...4.5 m³/h	-951...1189 gph	-15.85...19.81 gpm
Low flow cut-off LFC	1...3.8 l/min	0.06...0.225 m³/h	16...59 gph	0.26...0.99 gpm
Frequency end point, FEP	15...75 l/min	0.903...4.5 m³/h	238...1189 gph	3.97...19.81 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; 0.0026...26414563.515 gal			
Temperature monitoring				
Measuring range	-40...125 °C		-40...257 °F	
Resolution	0.1 °C		0.1 °F	
Set point SP	-39.4...125 °C		-38.9...257 °F	

SUH801



Ultrasonic flow meter

SUC20XJBFRKG/US

Reset point rP	-40...124.4 °C	-40...255.9 °F
Analogue start point	-40...92 °C	-40...197.6 °F
Analogue end point	-7...125 °C	19.4...257 °F
Frequency start point, FSP	-40...92 °C	-40...197.6 °F
Frequency end point, FEP	-7...125 °C	19.4...257 °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	± (2,0 % 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	

Response 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 type	A	
Process data analogue	3	
Process data binary	2	
Min. process cycle time [ms]	9.6	
IO-Link process data (cyclical)	function	bit length
	totaliser	32
	Flow monitoring	32
	Temperature monitoring	32
	status	4
	Output 1	1
	Output 2	1
Supported DeviceIDs	Type of operation	DeviceID
	default	1912

SUH801



Ultrasonic flow meter

SUC20XJBFRKG/US

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 no.	I038
	File number UL	E174189
Pressure Equipment Directive		can be used for group 2 fluids; group 1 fluids on request
Mechanical data		
Weight	[g]	493.6
Housing		rectangular
Inlet pipe length		5 x DN
Outlet pipe length		1 x DN
Dimensions	[mm]	168 x 48 x 56.6
Materials		housing: stainless steel (316L/1.4404); connector: PEI, FKM
Materials (wetted parts)		Pipe section: stainless steel (316L/1.4435); Process connection: stainless steel (316L/1.4404)
Nominal diameter		DN20 (3/4")
Process connection		Clamp 3/4" DIN 32676 series C (ASME BPE)
Process connection suitable for pipe standard		3/4" / Ø 19,05 mm x 1,65 mm; (DIN 11866 series C)
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 totaliser 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.

SUH801



Ultrasonic flow meter

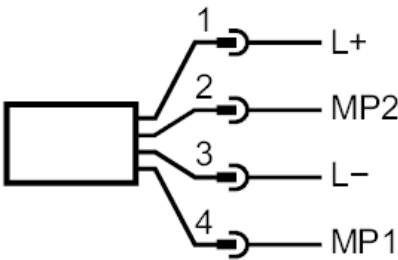
SUC20XJBFRKG/US

Electrical connection - plug

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



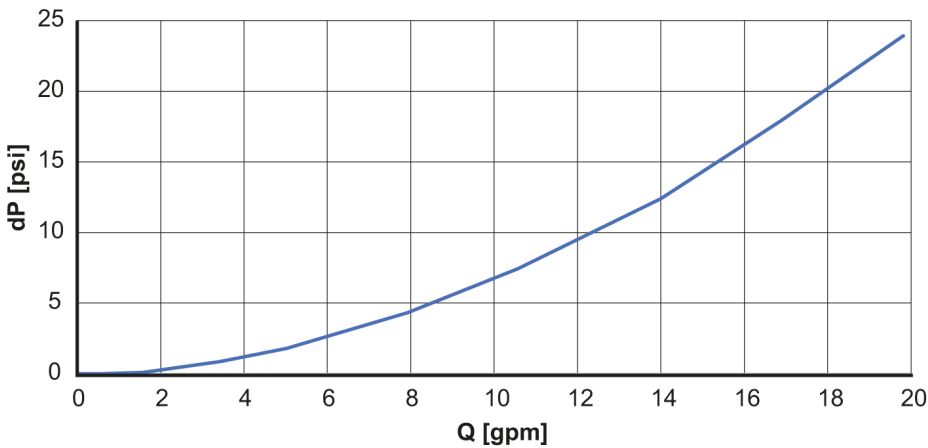
Connection



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

AO: analogue output; DI: digital input; DO: digital output; FO: frequency output; MP: multi-function connection

Diagrams and graphs



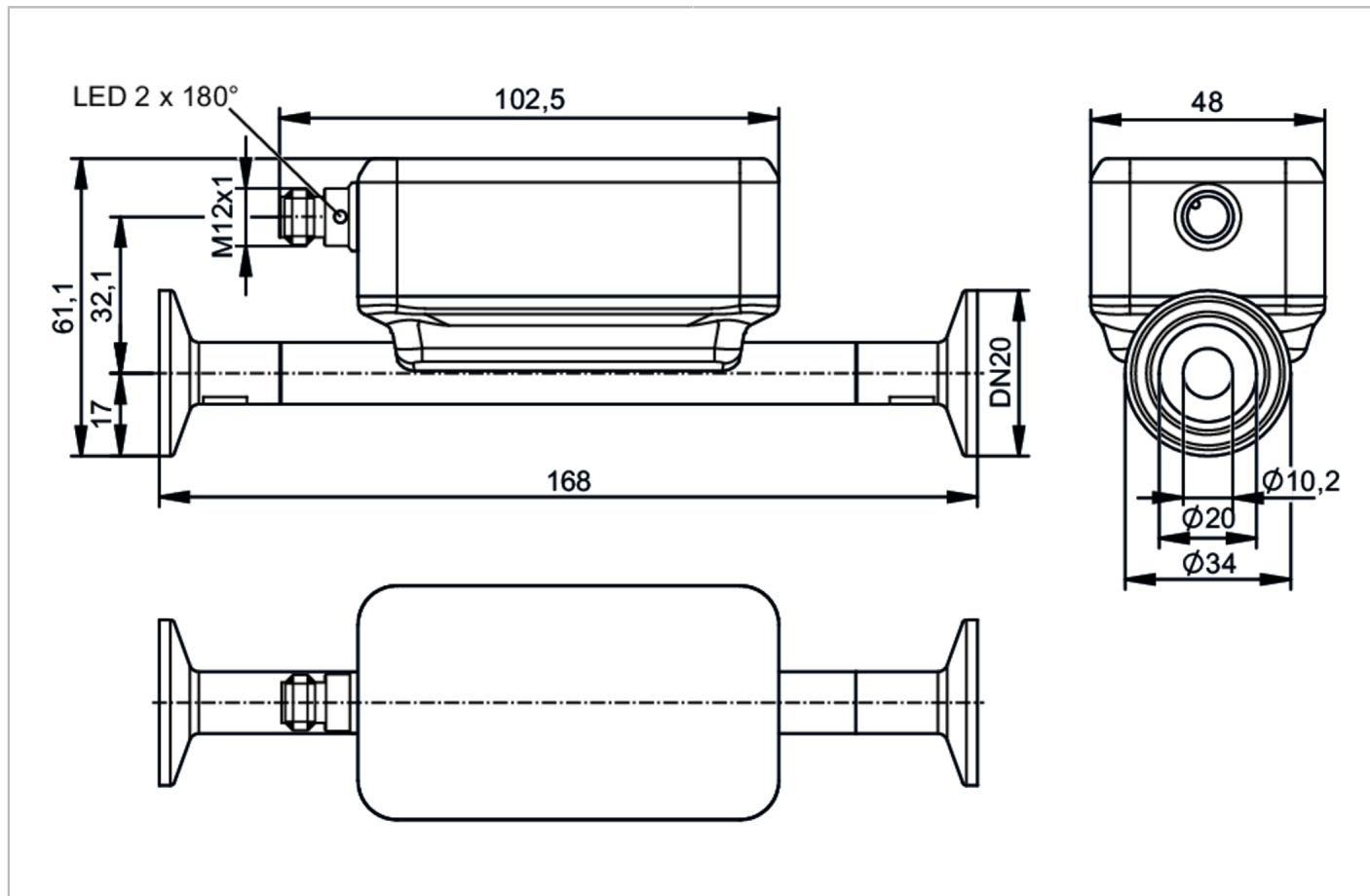
dP Pressure loss
[psi]
Q volumetric flow quantity
[gpm]

SUH820



Ultrasonic flow meter

SUC20XJBFRKG/US

**EC 1935/2004**

FCM



Product characteristics

Measuring range	1...75 l/min	0.06...4.5 m³/h	16...1189 gph	0.26...19.81 gpm
Nominal diameter	DN20 (3/4")			
Process connection	Clamp DN20 DIN 32676 series A			

Application

Special feature	Gold-plated contacts	
Application	food and beverage industry	
Media	ultra-pure water; water; hydrous media	
Note on media	hydrous media: for media with >10 % additives, the repeatability is the only available value	
Medium temperature [°C]	-40...125; (< 1 h: 150)	
Min. bursting pressure	40 bar	4 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



Ultrasonic flow meter

SUC20XJBFRKG/US

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; totaliser switching signal; frequency signal; IO-Link		
	OUT2	switching signal; pulse signal; diagnostic signal; totaliser switching signal; analogue signal		
Electrical design	PNP/NPN			
Pulse output	flow rate meter			
Short-circuit protection	yes			
Type of short-circuit protection	pulsed			
Overload protection	yes			
Analogue				
Number of analogue outputs	1			
Analogue current output	[mA]	4...20		
Max. load	[Ω]	500		
Digital				
Number of digital outputs	2			
Output function	normally open / normally closed; (parameterisable)			
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...75 l/min	0.06...4.5 m³/h	16...1189 gph	0.26...19.81 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	1.4...75 l/min	0.085...4.5 m³/h	23...1189 gph	0.38...19.81 gpm
Reset point rP	1...74.6 l/min	0.062...4.477 m³/h	16...1183 gph	0.27...19.71 gpm
Analogue start point ASP	-75...60 l/min	-4.5...3.6 m³/h	-1189...951 gph	-19.81...15.85 gpm
Analogue end point AEP	-60...75 l/min	-3.6...4.5 m³/h	-951...1189 gph	-15.85...19.81 gpm
Low flow cut-off LFC	1...3.8 l/min	0.06...0.225 m³/h	16...59 gph	0.26...0.99 gpm
Frequency end point, FEP	15...75 l/min	0.903...4.5 m³/h	238...1189 gph	3.97...19.81 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; 0.0026...26414563.515 gal			



Ultrasonic flow meter

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Temperature monitoring		
Measuring range	-40...125 °C	-40...257 °F
Resolution	0.1 °C	0.1 °F
Set point SP	-39.4...125 °C	-38.9...257 °F
Reset point rP	-40...124.4 °C	-40...255.9 °F
Analogue start point	-40...92 °C	-40...197.6 °F
Analogue end point	-7...125 °C	19.4...257 °F
Frequency start point, FSP	-40...92 °C	-40...197.6 °F
Frequency end point, FEP	-7...125 °C	19.4...257 °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.	
Flow monitoring		
Accuracy (in the measuring range)	water	± (2,0 % 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	
Response 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
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	BLOB	Binary Large Object transfer
	Common - I&D	Identification and Diagnosis
Required master port type	A	
Process data analogue	3	
Process data binary	2	
Min. process cycle time	[ms]	9.6

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Ultrasonic flow meter

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IO-Link process data (cyclical)	function	bit length
	totaliser	32
	Flow monitoring	32
	Temperature monitoring	32
	status	4
	Output 1	1
Supported DeviceIDs	Output 2	1
	Type of operation	DeviceID
	default	1913

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 no.	I038
	File number UL	E174189
Pressure Equipment Directive	can be used for group 2 fluids; group 1 fluids on request	

Mechanical data		
Weight	[g]	513.8
Housing		rectangular
Inlet pipe length		5 x DN
Outlet pipe length		1 x DN
Dimensions	[mm]	168 x 48 x 61.1
Materials	housing: stainless steel (316L/1.4404); connector: PEI, FKM	
Materials (wetted parts)	Pipe section: stainless steel (316L/1.4435); Process connection: stainless steel (316L/1.4404)	
Nominal diameter		DN20 (3/4")
Process connection		Clamp DN20 DIN 32676 series A
Process connection suitable for pipe standard		DN20 / Ø 23 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 totaliser 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.

SUH820



Ultrasonic flow meter

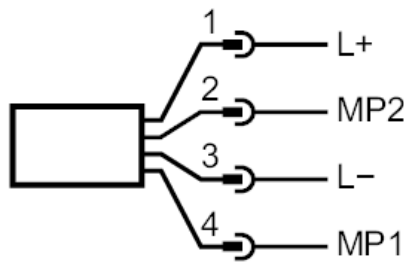
SUC20XJBFRKG/US

Electrical connection - plug

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



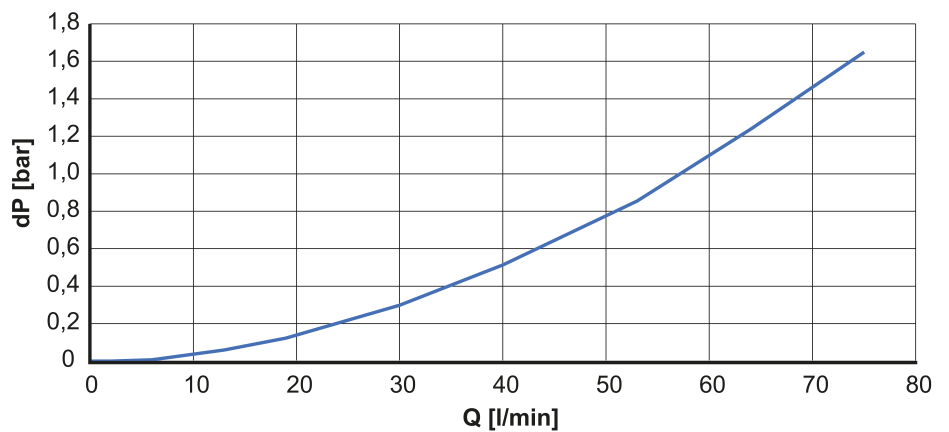
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Diagrams and graphs



dP
[bar] Pressure loss

Q [l/
min] volumetric flow quantity