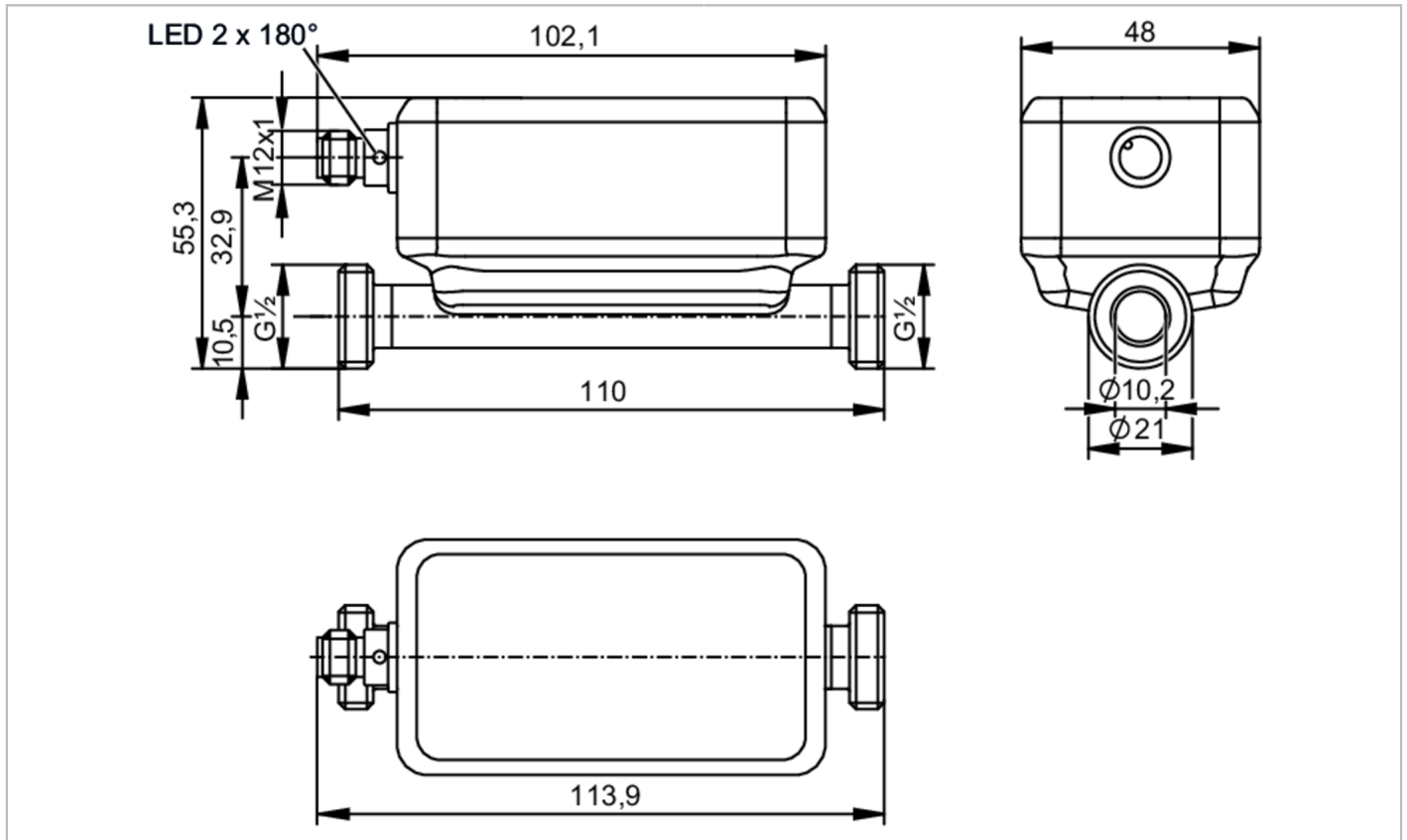


# SU6050



## Ultrasonic flow meter

SUR12XJBFRKG/US



ACS KTW/W270 Reg31

Product characteristics	
Number of inputs and outputs	Number of digital outputs: 2; Number of analogue outputs: 1
Measuring range	0.5...65 l/min    0.03...3.9 m³/h    8...1030 gph    0.13...17.17 gpm
Nominal diameter	DN15 (1/2")
Process connection	threaded connection G 1/2 external thread DN15
Application	
Special feature	Gold-plated contacts
Application	use in mobile and industrial applications
Media	ultra-pure water; water; hydrous media; glycol solutions; oils (of high and low viscosity); coolants
Note on media	hydrous media: for media with >10 % additives, the repeatability is the only available value low-viscosity oils with viscosity: 7...40 mm²/s (40 °C) high-viscosity oils with viscosity: 30...68 mm²/s (40 °C)
Medium temperature	-40...120 °C    -40...248 °F
Min. burst pressure	150 bar    15 MPa
Pressure rating	100 bar    10 MPa
Vacuum resistance [mbar]	-1000
Electrical data	
Operating voltage [V]	8...32 DC; (to SELV/PELV)
Current consumption [mA]	< 175
Protection class	III
Reverse polarity protection	yes

# SU6050



## Ultrasonic flow meter

SUR12XJBFRKG/US

Power-on delay time	[s]	5			
Measuring principle		ultrasonic			
<b>Inputs / outputs</b>					
Total number of inputs and outputs		2			
Number of inputs and outputs		Number of digital outputs: 2; Number of analogue outputs: 1			
<b>Inputs</b>					
Inputs		OUT2		counter reset	
<b>Outputs</b>					
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			
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			
Number of analogue outputs		1			
Analogue current output	[mA]	4...20; (scalable)			
Max. load	[Ω]	500			
Analogue voltage output	[V]	0...10 / 0.5...4.5; (scalable)			
Min. load resistance	[Ω]	2000			
Pulse output		flow rate meter			
Short-circuit protection		yes			
Type of short-circuit protection		pulsed			
Overload protection		yes			
<b>Measuring/setting range</b>					
Measuring range		0.5...65 l/min	0.03...3.9 m³/h	8...1030 gph	0.13...17.17 gpm
Resolution		0.1 l/min	0.002 m³/h	1 gph	0.01 gpm
Note on factory setting		l/min °C			
Set point SP		0.9...65 l/min	0.052...3.9 m³/h	14...1030 gph	0.23...17.17 gpm
Reset point rP		0.5...64.7 l/min	0.032...3.88 m³/h	8...1025 gph	0.14...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		0.5...3.2 l/min	0.03...0.195 m³/h	8...52 gph	0.13...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			

# SU6050



## Ultrasonic flow meter

SUR12XJBFRKG/US

Volumetric flow quantity monitoring		
Pulse length [s]	0.002...2	
Pulse value	0.1...99990000 l; 0.03...26414563.515 gal	
Temperature monitoring		
Measuring range	-40...120 °C	-40...248 °F
Resolution	0.1 °C	0.1 °F
Set point SP	-40...119.4 °C	-40...247 °F
Reset point rP	-40...88 °C	-40...190.4 °F
Analogue start point	-8...120 °C	17.6...248 °F
Analogue end point	-40...88 °C	-40...190.4 °F
Frequency start point, FSP	-8...120 °C	17.6...248 °F
Frequency end point, FEP	-40...119.4 °C	-40...247 °F
Frequency at the end point FRP [Hz]	1...10000	
Accuracy / deviations		
Flow monitoring		
Accuracy (in the measuring range)	only up to 100 °C; at higher temperatures, only the repeatability is within the specification.	
Accuracy (in the measuring range)	glycol solutions (35%)	±(5,0 % MW + 0,5 % MEW)
	high-viscosity oils with viscosity 46mm <sup>2</sup> /s (40°C)	±(5,0 % MW + 1,0 % MEW)
	low-viscosity oils with viscosity 10mm <sup>2</sup> /s (40°C)	±(5,0 % MW + 1,0 % MEW)
	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]	< 0.25; (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	

# SU6050



## Ultrasonic flow meter

SUR12XJBFKRG/US

Process data binary		2
Min. process cycle time [ms]		9.6
IO-Link process data (cyclical)	<b>function</b>	<b>bit length</b>
	totaliser	32
	Flow monitoring	32
	Temperature monitoring	32
	status	4
	Output 1	1
	Output 2	1
Supported DeviceIDs	<b>Type of operation</b>	<b>DeviceID</b>
	default	1835

### Operating conditions

Ambient temperature [°C]		-25...60
Storage temperature [°C]		-40...80
Protection		IP 67; IP 69K

### Tests / approvals

EMC	DIN 61326-1:2021	
Shock resistance	DIN IEC 68-2-27	20 g (11ms)
Vibration resistance	DIN IEC 68-2-6	20 g (10...2000Hz)
MTTF [years]		160
UL approval	UL approval no.	I037
	File number UL	E174189
Pressure Equipment Directive	can be used for group 2 fluids; group 1 fluids on request	

### Mechanical data

Weight [g]		477.9
Housing		rectangular
Inlet pipe length		5 x DN
Outlet pipe length		1 x DN
Dimensions [mm]		113.9 x 48 x 55.3
Materials	housing: stainless steel (316L/1.4404); connector: PEI, FKM	
Materials (wetted parts)	Pipe section: stainless steel (316L/1.4404); Process connection sealing: NBR reinforced fibre	
Nominal diameter		DN15 (1/2")
Process connection		threaded connection G 1/2 external thread DN15
Surface characteristics Ra/Rz of the wetted parts		Ra < 1.25 µm

### Displays / operating elements

Display	operating status	1 x LED, green
---------	------------------	----------------

### Accessories

Items supplied	Flat seal 2, NBR reinforced fibre 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 accuracy indications are adhered to over the entire application area	
---------	---	--

# SU6050



## Ultrasonic flow meter

SUR12XJBFRKG/US

Pack quantity

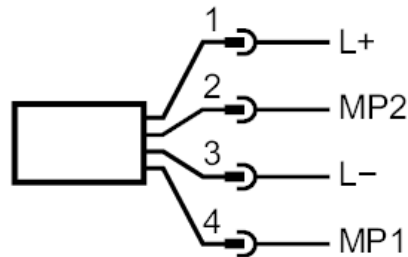
1 pcs.

### Electrical connection

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



### Connection



1 (L+)	L+	
2 (OUT2)	MP2	DO, AO, reset
3 (L-)	L-	
4 (OUT1)	MP1	DO, IO-Link

### Electrical connection - plug

### Diagrams and graphs

Note on pressure loss

