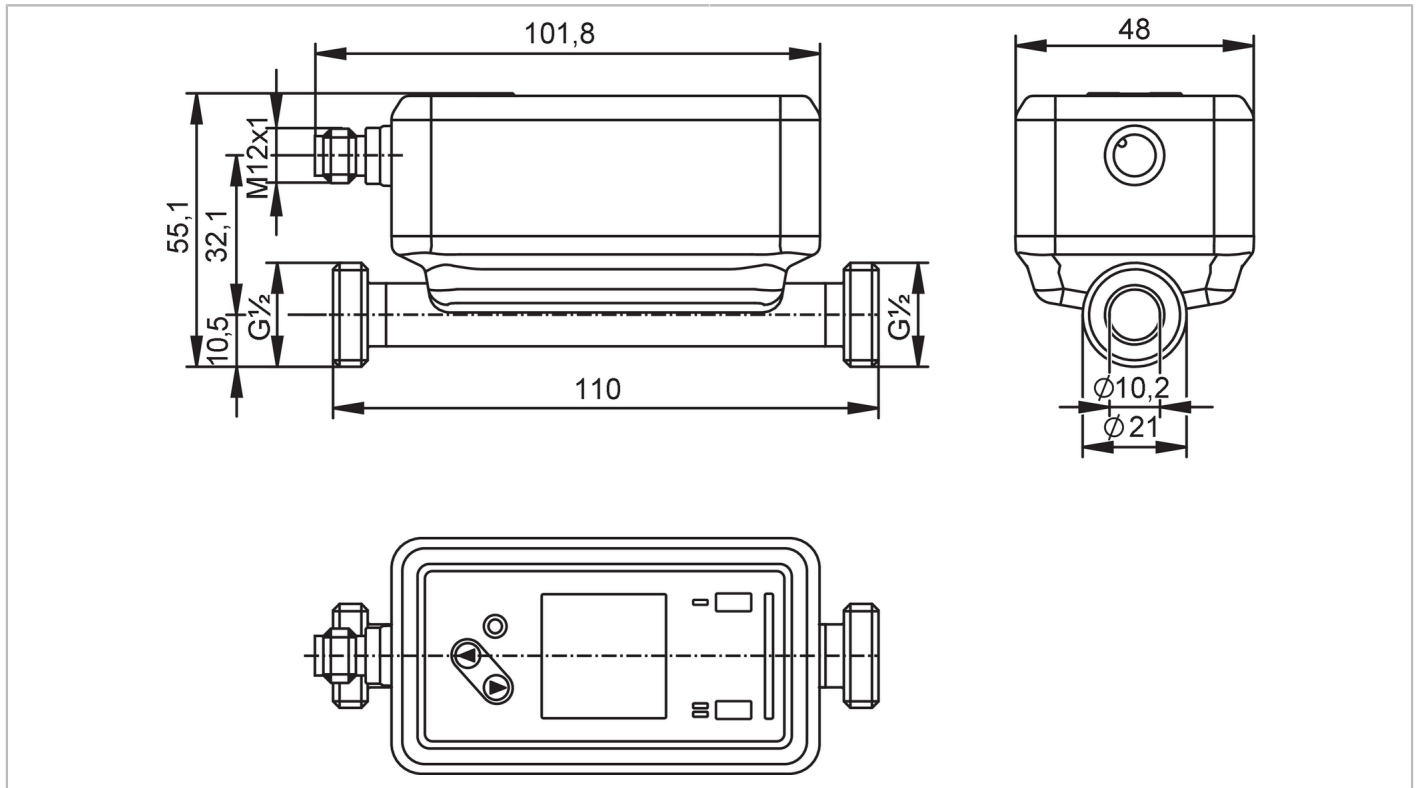


SU6021



Ultrasonic flow meter

SUR12XXBFRKG/US



ACS KTW/W270 Reg31

Product characteristics	
Measuring range	0.5...65 l/min 0.03...3.9 m³/h 8...1030 gph 0.13...17.17 gpm
Process connection	threaded connection G 1/2 external thread DN15
Application	
Special feature	gold-plated contacts
Media	ultra-pure water; water; water-based media
Note on media	water-based media: for media with >10 % additives, the repeatability is the only available value
Medium temperature	-20...100 °C -4...212 °F
Min. burst pressure	150 bar 15 MPa
Pressure rating	100 bar 10 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	
Inputs	counter reset
Outputs	
Total number of outputs	2

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Output signal	switching signal; pulse signal; analog signal; IO-Link; frequency signal; diagnostic signal; totalizer switching signal
Electrical design	PNP/NPN
Output function	normally open / closed; (configurable)
Max. voltage drop switching output DC [V]	2
Permanent current rating of switching output DC [mA]	100
Switching frequency DC [Hz]	0...10000
Analog current output [mA]	4...20
Max. load [Ω]	500
Pulse output	flow rate meter
Short-circuit protection	yes
Type of short-circuit protection	yes (non-latching)
Overload protection	yes

Measuring/setting range

Measuring range	0.5...65 l/min	0.03...3.9 m ³ /h	8...1030 gph	0.13...17.17 gpm
Display range	-78...78 l/min	-4.68...4.68 m ³ /h	-1236...1236 gph	-20.61...20.61 gpm
Resolution	0.1 l/min	0.002 m ³ /h	1 gph	0.01 gpm
Set point SP	0.9...65 l/min	0.052...3.9 m ³ /h	14...1030 gph	0.23...17.17 gpm
Reset point rP	0.5...64.7 l/min	0.032...3.88 m ³ /h	8...1025 gph	0.14...17.08 gpm
Analog start point ASP	-65...52 l/min	-3.9...3.12 m ³ /h	-1030...824 gph	-17.17...13.74 gpm
Analog end point AEP	-52...65 l/min	-3.12...3.9 m ³ /h	-824...1030 gph	-13.74...17.17 gpm
Low flow cut-off LFC	0.5...3.2 l/min	0.03...0.195 m ³ /h	8...52 gph	0.13...0.86 gpm
Frequency end point, FEP	13...65 l/min	0.782...3.9 m ³ /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	0.02...99990000 l; 0.005...26414563.515 gal

Temperature monitoring

Measuring range	-20...100 °C	-4...212 °F
Display range	-44...124 °C	-47.2...255.2 °F
Resolution	0.1 °C	0.1 °F
Set point SP	-19.6...100 °C	-3.2...212 °F
Reset point rP	-20...99.6 °C	-4...211.2 °F
Analog start point	-20...76 °C	-4...168.8 °F
Analog end point	4...100 °C	39.2...212 °F
Frequency start point, FSP	-20...76 °C	4...168.8 °F
Frequency end point, FEP	4...100 °C	4...212 °F
Frequency at the end point FRP [Hz]	1...10000	

Accuracy / deviations

Flow monitoring	
Accuracy (in the measuring range)	± (2,0 % MW + 0,5 % MEW)
Repeatability	± 0,2 % MEW

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Temperature monitoring		
Accuracy	[K]	± 2,5 (Q > 5 % MEW)
Temperature coefficient	[% of the span / 10 K]	0,2
Reaction times		
Flow monitoring		
Response time	[s]	< 0.25; (dAP = 0, T09)
Damping process value dAP	[s]	0...5
Temperature monitoring		
Dynamic response T05 / T09	[s]	5,7 / 86
Software / programming		
Diagnostic functions		direction of flow detection; signal quality
Interfaces		
Communication interface		IO-Link
Transmission type		COM2 (38,4 kBaud)
IO-Link revision		1.1.3
SDCI standard		IEC 61131-9: 2013-07
Profiles	BLOB	Binary Large Object transfer
	Common - I&D	Identification and Diagnosis
Required master port class		A
Process data analog		3
Process data binary		2
Min. process cycle time	[ms]	9.6
IO-Link process data (cyclical)	Function	bit length
	totalizer	32
	Flow monitoring	32
	Temperature monitoring	32
	status	4
	Output 1	1
	Output 2	1
Supported DeviceIDs	Type of operation	DeviceID
	default	1462
Operating conditions		
Ambient temperature	[°C]	-20...60
Storage temperature	[°C]	-25...80
Protection		IP 65; IP 67
Tests / approvals		
EMC	DIN 61326-1:2021	
Shock resistance	DIN IEC 68-2-27	20 g (11ms)
Vibration resistance	DIN IEC 68-2-6	20 g (10...2000Hz)
MTTF	[years]	160
UL approval	UL approval number	I034
Pressure equipment directive		can be used for group 2 fluids; group 1 fluids on request

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Mechanical data	
Weight [g]	476.9
Housing	rectangular
Type of mounting	inlet pipe length 5xDN; outlet pipe length 1xDN
Dimensions [mm]	110 x 48 x 55.1
Material	housing: stainless steel (1.4404 / 316L); Display: PFA; sealing Display: FKM; connector: PBT
Materials (wetted parts)	Pipe section: stainless steel (1.4404 / 316L); Process connection sealing: NBR fiber-reinforced Gasket
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	Color display 1,44", 128 x 128 pixels
Switching function	2 x LED, yellow
diagnosis	1 x LED, three-color

Accessories	
Items supplied	Gasket 2, Centellen package insert

Remarks	
Remarks	MW = Measured value MEW = Final value of the measuring range pulse and totalizer signal are only available for one of the two outputs the accuracy indications are adhered to over the entire application area
Pack quantity	1 pcs.

Electrical connection

Connector: 1 x M12; coding: A; Contacts: 4, gold-plated



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Connection



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

OUT2/InD:
Switching output Volumetric flow quantity monitoring
Switching output Temperature monitoring
Pulse output quantity meter
analog output flow
analog output temperature
Diagnostic output direction of flow detection / signal quality
signal output Preset counter
Input counter reset

Colors to DIN EN
60947-5-2

Core colors
BK= black
BN= brown
BU= blue
WH= white

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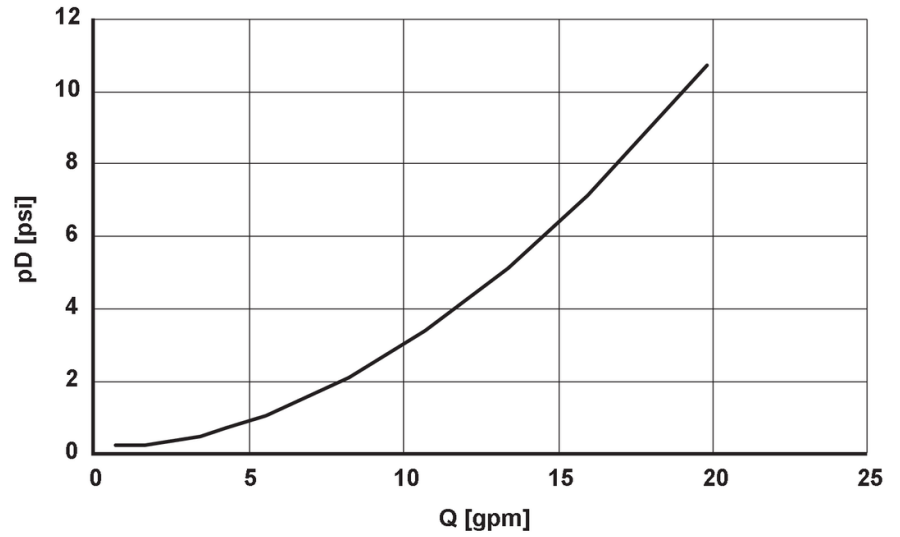
Ultrasonic flow meter

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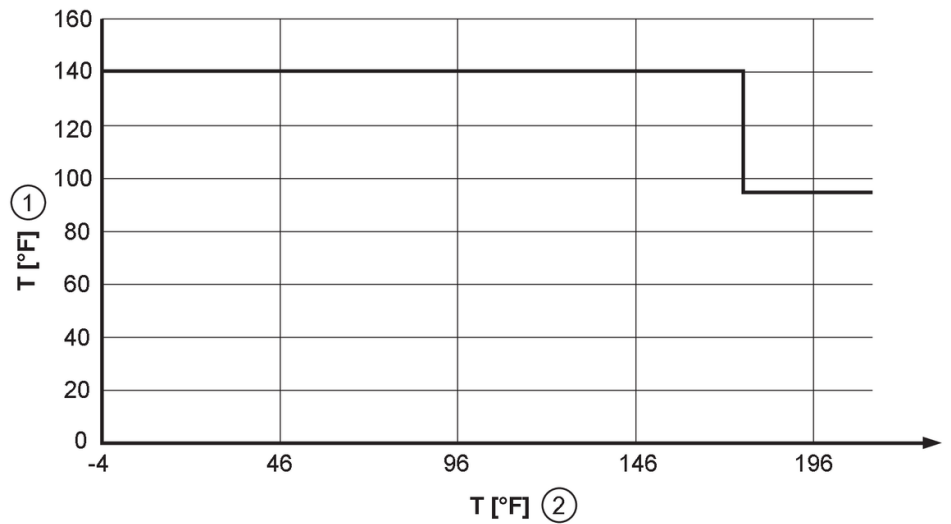


Diagrams and graphs

Note on pressure loss



derating ambient temperature



- 1 Ambient temperature
- 2 Medium temperature