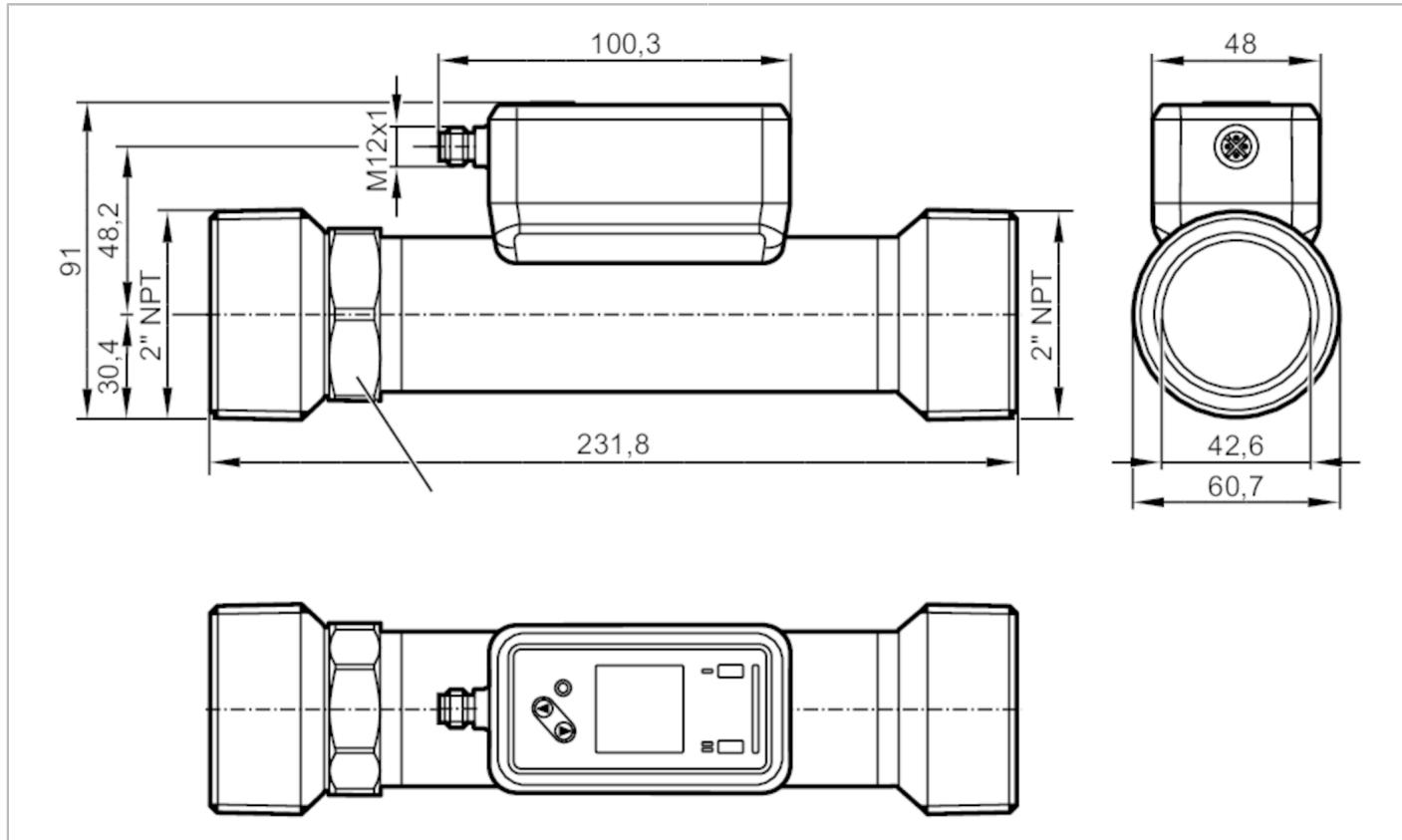


SU2621



Ultrasonic flow meter

SUN21XFBFRKG/US



ACS CE PA cULus IO-Link KTW/W270 Reg31

Product characteristics

Measuring range	5...1000 l/min	0.3...60 m³/h	79...15850 gph	1.32...264.18 gpm
Process connection	2" NPT DN50 external thread			

Application

Special feature	Gold-plated contacts
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	-20...100 °C
Min. bursting pressure	150 bar
Pressure rating	100 bar
Vacuum resistance [mbar]	-1000
MAWP (for applications according to CRN) [bar]	100

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
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Outputs

Total number of outputs		2
Output signal		switching signal; pulse signal; analogue signal; IO-Link; frequency signal; diagnostic signal; totaliser switching signal
Electrical design		PNP/NPN
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
Analogue current output [mA]		4...20
Max. load [Ω]		500
Pulse output		flow rate meter
Short-circuit protection		yes
Type of short-circuit protection		pulsed
Overload protection		yes

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...48000 m³/h	-15850...12680 gph	-264.18...211.34 gpm
Analogue end point AEP	-800...1000 l/min	-48000...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

Temperature monitoring

Measuring range	-20...100 °C	-4...212 °F
Display range	-44...124 °C	-47.2...255.2 °F
Resolution	[°C]	0.1
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

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Accuracy / deviations

Flow monitoring

Accuracy (in the measuring range)		± (1,0 % MW + 0,5 % MEW)
Repeatability		± 0,2 % MEW

Temperature monitoring

Accuracy	[K]	± 2,5 (Q > 5 % MEW)
Temperature coefficient [% of the span / 10 K]		0,2

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
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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		Identification and Diagnosis (0x4000)

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	1461

Operating conditions

Ambient temperature	[°C]	-20...60
Storage temperature	[°C]	-25...80
Protection		IP 67

Tests / approvals

EMC	DIN 61326-1:2021
CPA approval	model number accuracy class
Shock resistance	DIN IEC 68-2-27 20 g (11ms)

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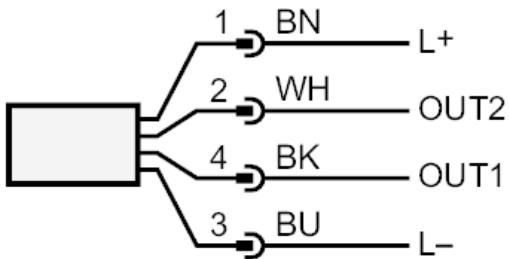
Vibration resistance	DIN IEC 68-2-6	5 g (10...2000Hz)		
MTTF [years]		160		
UL approval	UL Approval no.	I033		
	File number UL	E174189		
Pressure Equipment Directive	can be used for group 2 fluids; group 1 fluids on request			
Mechanical data				
Weight [g]		1384.5		
Type of mounting	inlet pipe length 5xDN; outlet pipe length 1xDN			
Materials	housing: stainless steel (316L/1.4404); Display: PFA; Sealing Display: FKM; connector: POKAN			
Materials (wetted parts)	Pipe section: stainless steel (316L/1.4404)			
Process connection	2" NPT DN50 external thread			
Surface characteristics Ra/Rz of the wetted parts	49.21 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		
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 accuracy indications are adhered to over the entire application area			
Pack quantity	1 pcs.			
Electrical connection				
Connector: 1 x M12; coding: A; Contacts: gold-plated				



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Connection



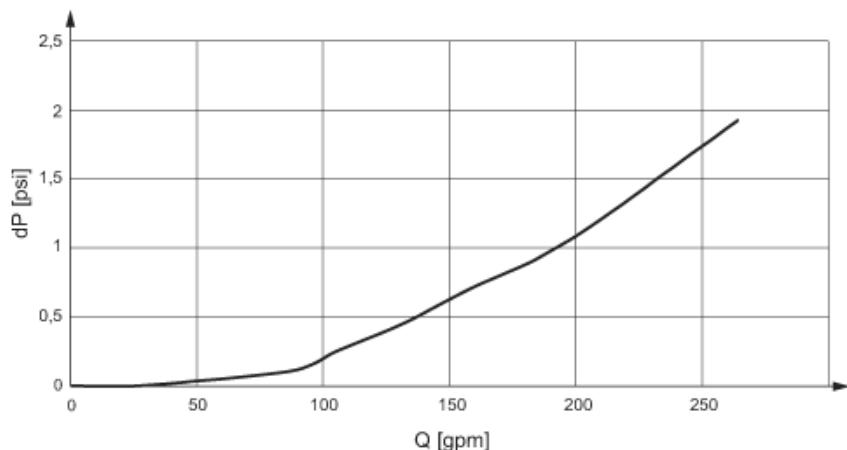
- OUT1/IO-Link:
switching output volumetric flow quantity monitoring
switching output Temperature monitoring
Pulse output quantity meter
frequency output volumetric flow quantity monitoring
frequency output Temperature monitoring
signal output Preset counter
- OUT2/InD:
switching output volumetric flow quantity monitoring
switching output Temperature monitoring
Pulse output quantity meter
analogue output flow
analogue output temperature
signal output Preset counter
input counter reset

colours to DIN EN
60947-5-2

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

Diagrams and graphs

Note on pressure loss



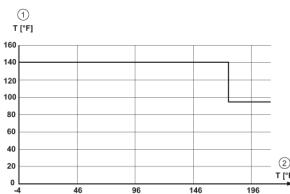
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derating ambient temperature



- 1 Ambient temperature
- 2 Medium temperature