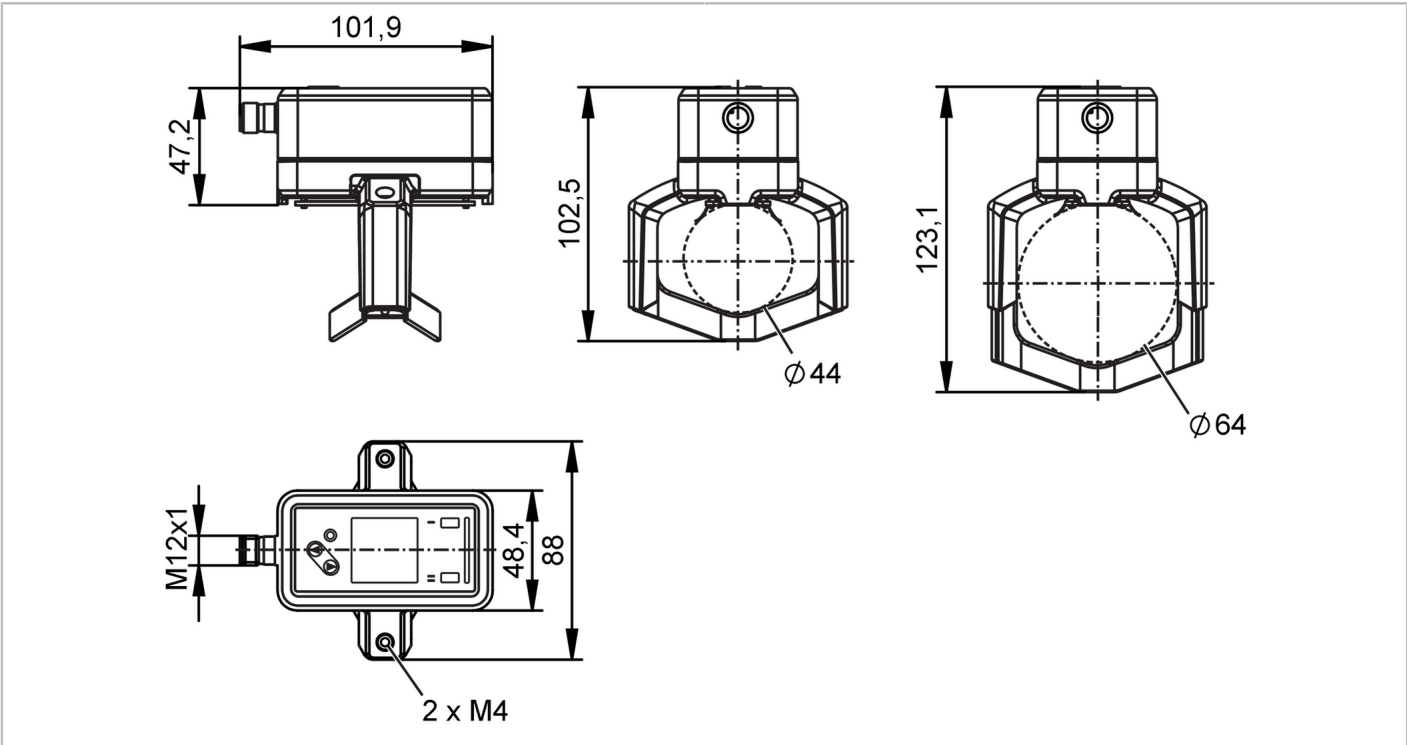


SUC301

Ultrasonic flow meter

SU050IGA FRKG/US



Product characteristics				
Measuring range	20...1000 l/min	1.2...60 m³/h	320...15850 gph	5.2...264.18 gpm
Nominal diameter	DN40 (1 1/2"); DN50 (2")			
Process connection	clamp-on			
Application				
Special feature	Gold-plated contacts			
Application	Use in industrial applications			
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		-4...212 °F	
Note on pipe materials	metal		steel; stainless steel, copper	
	plastics		PVC; CPVC; PP	
External diameter [mm]	44...64			
Wall thickness [mm]	0,1...11,1			
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		



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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...1000 l/min	1.2...60 m³/h	320...15850 gph	5.2...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	25.5...1000 l/min	1.53...60 m³/h	400...15850 gph	6.7...264.17 gpm
Reset point rP	20.3...994.8 l/min	1.22...59.688 m³/h	320...15770 gph	5.4...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	20...50 l/min	1.2...3 m³/h	320...790 gph	5.3...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			
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	

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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			
Flow indication				
Display range	0...1200 l/min	0...72 m³/h	0...19020 gph	0...317 gpm
Volumetric flow quantity monitoring				
Pulse length [s]	0.002...2			
Pulse value	0.1...99990000 l; 0.026...26414563.515 gal			
Accuracy / deviations				
Flow monitoring				
Accuracy (in the measuring range)	water "reference conditions"		± (2,0 % MW + 0,5 % MEW)	
	water		± (5,0 % MW + 0,5 % MEW)	
Repeatability	± 0,2 % MEW			
Temperature monitoring				
Accuracy [K]	temperature reference conditions		± 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]	62 / 263			
Software / programming				
Diagnostic functions	direction of flow detection; signal quality			
Interfaces				
Communication interface	IO-Link			
IO-Link revision	1.1			
SDCI standard	IEC 61131-9			
Required master port type	A			
Process data analogue	3			
Process data binary	2			
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	2002		
Operating conditions				
Ambient temperature [°C]	-20...60			
Storage temperature [°C]	-25...80			

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Max. relative air humidity	[%]	90; (non condensing)
Protection		IP 67; 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)
UL approval	UL approval no.	I040
	File number UL	E174189
Mechanical data		
Weight	[g]	0.001
Housing		rectangular
Inlet pipe length		10 x DN
Outlet pipe length		5 x DN
Dimensions	[mm]	101.9 x 88 x 123.1
Materials		housing: stainless steel (316L/1.4404); clamp: stainless steel (17-4 PH/1.4542); Display: PFA; Sealing Display: FKM; connector: PBT; coupling medium: EPDM
Nominal diameter		DN40 (1 1/2"); DN50 (2")
Process connection		clamp-on
Displays / operating elements		
Display		colour display 1,44", 128 x 128 pixels
	Switching function	2 x LED, yellow
	diagnosis	1 x LED, three-colour
Display unit		l/min; m³/h; gph; gpm; °C; °F
Factory setting		gpm; °F
Language		German; English; Spanish; French; Italian; Japanese; Korean; Portuguese; Chinese
Accessories		
Items supplied		coupling medium, E33911
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
		Installation on a clean pipe (avoid rust, frost and condensation on the surface and weld seams).
		to achieve a measurement accuracy of 2 %, the specified reference conditions must be observed:
		medium water free of gas bubbles, temperature 25°C, nominal diameter DN50 (2"), pipe material stainless steel
		accuracy is achieved with an optimised set-up:
		• 90% hydrous media
		• the pipe material is correctly selected
		• the outer diameter is entered correctly with a tolerance of +/- 0.1 mm
		• the wall thickness is automatically measured or accurately entered
Pack quantity		1 pcs.

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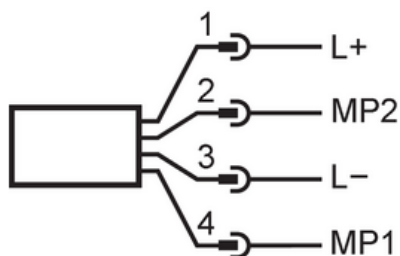


Electrical connection - plug

Connector: 1 x M12; coding: A; Contacts: 4, 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