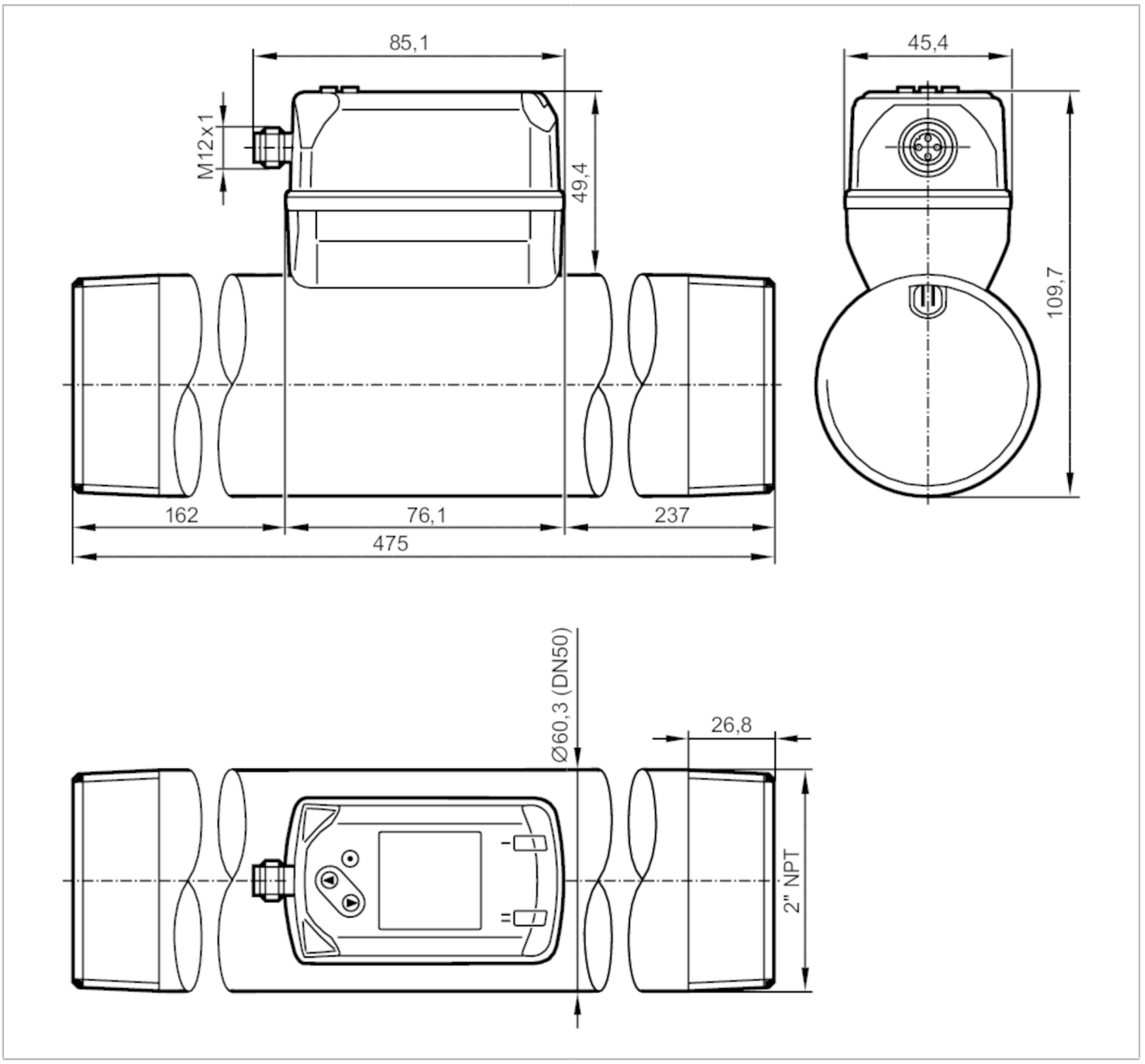
SD2501

Compressed air meter

SDN21DGXFRKG/US-100



Product characteristics		
Number of inputs and outputs		Number of digital outputs: 2; Number of analog outputs: 1
Measuring range	[scfh]	80...24720
Measuring range	[scfm]	1.5...412
Measuring range	[ft/s]	1...275.6
Process connection		threaded connection 2" NPT DN50
Application		
Application		for industrial applications
Media		compressed air
Medium temperature	[°C]	-10...60

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Min. bursting pressure	[psi]	928
Pressure rating	[psi]	232
MAWP (for applications according to CRN)	[bar]	9.5
Electrical data		
Operating voltage	[V]	18...30 DC; (to SELV/PELV)
Current consumption	[mA]	< 80
Protection class		III
Reverse polarity protection		yes
Power-on delay time	[s]	1
Inputs / outputs		
Number of inputs and outputs		Number of digital outputs: 2; Number of analog outputs: 1
Inputs		
Inputs		counter reset
Outputs		
Output signal		switching signal; analog signal; pulse signal; IO-Link; (configurable)
Electrical design		PNP/NPN
Number of digital outputs		2
Output function		normally open / closed; (configurable)
Max. voltage drop switching output DC	[V]	2.5
Permanent current rating of switching output DC	[mA]	150; (per output)
Number of analog outputs		1
Analog current output	[mA]	4...20; (scalable)
Max. load	[Ω]	500
Pulse output		consumed quantity meter
Short-circuit protection		yes
Type of short-circuit protection		yes (non-latching)
Overload protection		yes
Measuring/setting range		
Measuring range	[scfh]	80...24720
Measuring range	[scfm]	1.5...412
Measuring range	[ft/s]	1...275.6
Display range	[scfh]	0...29660
Display range	[scfm]	0...494.5
Display range	[ft/s]	0...330.8
Resolution	[scfh]	20
Resolution	[scfm]	0.5
Resolution	[ft/s]	0.2
Set point SP	[scfh]	210...24710
Set point SP	[scfm]	3.5...411.8
Set point SP	[ft/s]	2.4...275.5
Reset point rP	[scfh]	90...24590

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Reset point rP	[scfm]	1.5...409.8	
Reset point rP	[ft/s]	1...274.1	
Analog start point ASP	[scfh]	0...19780	
Analog start point ASP	[scfm]	0...329.6	
Analog start point ASP	[ft/s]	0...220.5	
Analog end point AEP	[scfh]	4940...24720	
Analog end point AEP	[scfm]	82.4...412	
Analog end point AEP	[ft/s]	55.1...275.6	
Low flow cut-off LFC	[scfh]	70...250	
Low flow cut-off LFC	[scfm]	1.2...4.1	
Low flow cut-off LFC	[ft/s]	0.8...2.8	
In steps of	[scfh]	1	
In steps of	[scfm]	0.1	
In steps of	[ft/s]	0.1	
Pressure monitoring			
Measuring range	[psi]	-15...232	
Display range	[psi]	-15...290	
Resolution	[psi]	1	
Set point SP	[psi]	-13...232	
Reset point rP	[psi]	-15...231	
Analog start point	[psi]	-15...186	
Analog end point	[psi]	32...232	
In steps of	[psi]	1	
Volumetric flow quantity monitoring			
Measuring range		0...100000000 m³	0...353146667.2 scf
Display range		0...100000000 m³	0...353146667.2 scf
Set point SP		0.001...10000000 m³	0.05...353146667.2 scf
Pulse value		0.001...10000000 m³	0.05...353146667.2 scf
In steps of		0.0001 m³	0.005 scf
Pulse length	[s]	0.002...2	
Temperature monitoring			
Measuring range		-10...60 °C	14...140 °F
Display range		-24...74 °C	-11.2...165.2 °F
Resolution		0.2 °C	0.5 °F
Set point SP		-9.7...60 °C	14.6...140 °F
Reset point rP		-10...59.7 °C	14...139.4 °F
Analog start point		-10...46 °C	14...114.8 °F
Analog end point		4...60 °C	39.2...140 °F
In steps of		0.1 °C	0.1 °F

Accuracy / deviations

Temperature coefficient	[1/K]	± 0,07 % MW
Accuracy (in the measuring range)		class 141: ± (2 % MW + 0,5 % MEW); class 344: ± (6 % MW + 0,6 % MEW) ; air quality to ISO 8573-1:2010; at medium temperature 73 °F
Repeatability		± (0,4 % MW + 0,1 % MEW)

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Pressure monitoring			
Repeatability [% of the final value]		± 0,2	
Characteristics deviation [% of the final value]		< ± 0,5; (BFSL = Best Fit Straight Line)	
Greatest TEMPCO of the span [% MEW / 10 K]		± 0,3	
Greatest TEMPCO of the zero point [% MEW / 10 K]		± 0,1	
Temperature monitoring			
Accuracy	[K]	± 0,5; (medium flow in the limit area of the flow measurement range)	
Reaction times			
Response time	[s]	0.1; (dAP = 0)	
Damping process value dAP	[s]	0...5	
Pressure monitoring			
Response time	[s]	0.05	
Temperature monitoring			
Dynamic response T05 / T09	[s]	T09 = 0,5	
Software / programming			
Parameter setting options		hysteresis / window; normally open / closed; current/pulse output; display can be rotated and switched off; Display unit; totalizer	
Interfaces			
Communication interface		IO-Link	
Transmission type		COM2 (38,4 kBaud)	
IO-Link revision		1.1	
SDCI standard		IEC 61131-9 CDV	
Profiles		Digital Measuring Sensor (0x800A), Identification and Diagnosis (0x4000)	
SIO mode		yes	
Required master port class		A	
Process data analog		8	
Process data binary		2	
Min. process cycle time	[ms]	7.2	
Supported DeviceIDs		**Type of operation**	**DeviceID**
		default	871
Operating conditions			
Ambient temperature	[°F]	32...140	
Storage temperature	[°F]	-4...185	
Max. relative air humidity	[%]	90	
Protection		IP 65; IP 67	
Tests / approvals			
EMC		DIN EN 60947-5-9	
Vibration resistance		DIN EN 68000-2-6	5 g (10...2000 Hz)
MTTF	[years]	183	

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UL approval		UL approval number	I012
		File number UL	E174189
Pressure equipment directive		sound engineering practice; can be used for stable gases fluid group 2	

Mechanical data			
Weight	[g]	2681.5	
Material		PBT+PC-GF30; PPS GF40; stainless steel (1.4301 / 304); stainless steel (1.4305 / 303); steel (1.5523) galvanized; 2.0401 (brass / CW614N); FKM	
Materials (wetted parts)		stainless steel (1.4301 / 304); stainless steel (1.4305 / 303); FKM; ceramics glass passivated; PPS GF40; Al2O3 (ceramics); acrylate	
Process connection		threaded connection 2" NPT DN50	

Displays / operating elements			
Display			Color display 1,44", 128 x 128 pixels
			2 x LED, yellow

Remarks	
Remarks	MW = Measured value
	MEW = Final value of the measuring range
	Measuring, display and setting ranges refer to standard volume flow according to DIN ISO 2533.
	For information about installation and operation please see the operating instructions.
Pack quantity	1 pcs.

Electrical connection

Connector: 1 x M12; coding: A

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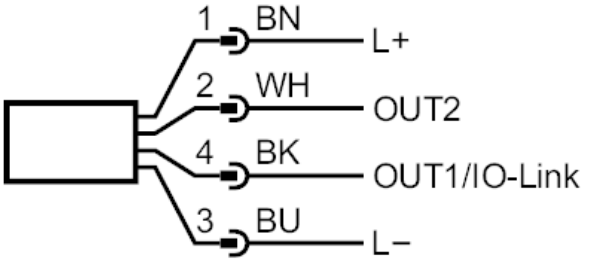
Connection



OUT1/IO-Link:	Switching output flow Switching output temperature Switching output pressure Pulse output quantity meter signal output Preset counter
OUT2/InD:	Switching output flow Switching output temperature Switching output pressure analog output flow analog output temperature analog output pressure signal output Preset counter Pulse output quantity meter Input counter reset