SD5800
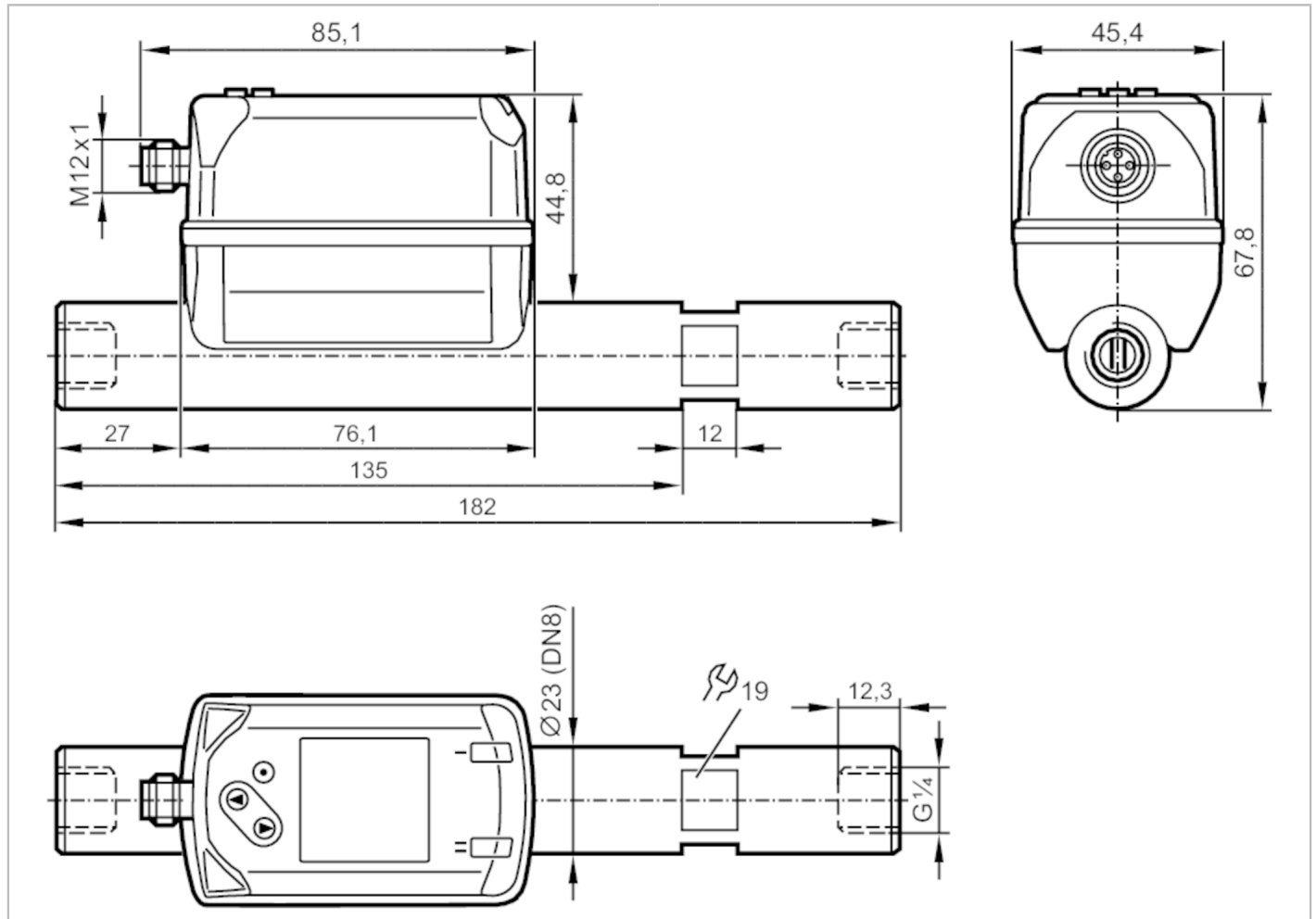
Industrial gas counter

SDR14DGXFRKG/US-100

Product characteristics

Number of inputs and outputs	Number of digital outputs: 2; Number of analog outputs: 1		
Measuring range	0.8...83.4 l/min	0.3...27.6 m/s	0.05...5 m³/h
Process connection	threaded connection G 1/4 DN8		

Application

Application		for industrial applications
Media		helium
Medium temperature	[°C]	-10...60
Min. bursting pressure	[bar]	64
Pressure rating	[bar]	16
Pressure rating	[MPa]	1.6
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

SD5800

Industrial gas counter

SDR14DGXFRKG/US-100

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	0.8...83.4 l/min	0.3...27.6 m/s	0.05...5 m³/h
Display range	0...100 l/min	0...33.1 m/s	0...6 m³/h
Resolution	0.2 l/min	0.1 m/s	0.01 m³/h
Set point SP	1.3...83.3 l/min	0.4...27.6 m/s	0.08...5 m³/h
Reset point rP	0.9...82.9 l/min	0.3...27.5 m/s	0.05...4.97 m³/h
Analog start point ASP	0...66.6 l/min	0...22.1 m/s	0...4 m³/h
Analog end point AEP	16.7...83.3 l/min	5.5...27.6 m/s	1...5 m³/h
Low flow cut-off LFC	0.6...0.8 l/min	0.2...0.3 m/s	0.04...0.05 m³/h
In steps of	0.1 l/min	0.1 m/s	0.01 m³/h

Pressure monitoring

Measuring range	[bar]	-1...16
Display range	[bar]	-1...20
Resolution	[bar]	0.05
Set point SP	[bar]	-0.92...16
Reset point rP	[bar]	-1...15.92
Analog start point	[bar]	-1...12.8
Analog end point	[bar]	2.2...16
In steps of	[bar]	0.01

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

SD5800

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SDR14DGXFRKG/US-100

In steps of		0.0001 m³	0.005 scf
Pulse length	[s]	0.01...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)		± (6 % MW + 0,6 % MEW); at medium temperature 23 °C
Repeatability		0,8 % MW + 0,2 % MEW

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]		± 0,15
Greatest TEMPCO of the zero point [% MEW / 10 K]		± 0,25

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

SD5800

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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	1301

Operating conditions

Ambient temperature [°C]		0...60
Storage temperature [°C]		-20...85
Max. relative air humidity [%]		90
Protection		IP 65; IP 67

Tests / approvals

EMC	DIN EN 60947-5-9	
CPA approval	model number	003TG
	accuracy class	-
	maximum allowable error	± 7 % FS
	Q (min)	0,05 m³/h (He)
	Q (t)	-
	Q (max)	5 m³/h (He)
Vibration resistance	DIN EN 68000-2-6	5 g (10...2000 Hz)
MTTF [years]		180
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]		554
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)		EN AW-6082 (aluminium); stainless steel (1.4305 / 303); FKM; ceramics glass passivated; PPS GF40; Al2O3 (ceramics); acrylate
Process connection		threaded connection G 1/4 DN8

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
	Standard conditions: 1013.25 mbar / 15 °C / 0 % relative humidity
	For information about installation and operation please see the operating instructions.
Pack quantity	1 pcs.

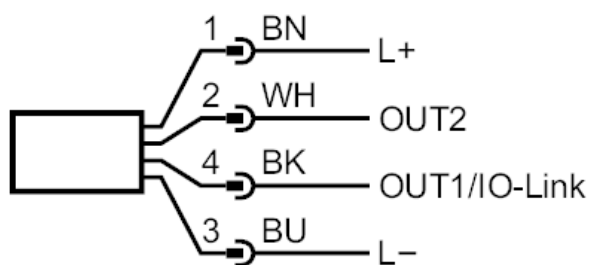# SD5800

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Electrical connection

Connector: 1 x M12; coding: A

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