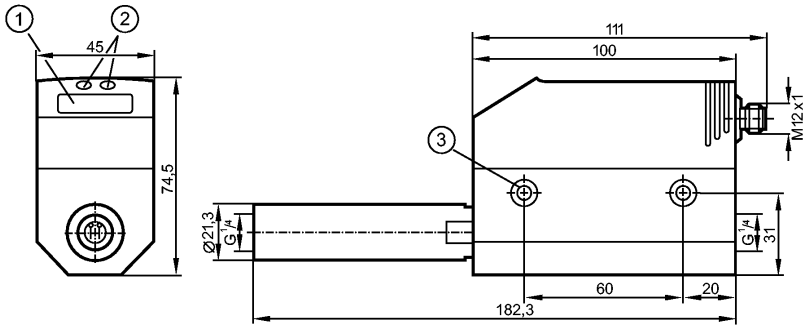
SD5100

SDR14DGXFPKG/US-100

Flow sensors



1: 4-digit alphanumeric display
2: Programming buttons
3: hole for M5 fixing screw

Product characteristics		
Flow rate meter for gases		
Quick disconnect		
Process connection: G ¼ (DN8)		
Function programmable		
2 outputs OUT1 = flow monitoring (binary), flow rate meter (pulse), preset meter (binary) OUT2 = flow monitoring (analog or binary)		
Application		
Application		argon (Ar), carbon dioxide (CO2), nitrogen (N2)
Pressure rating	[bar]	16
Medium temperature	[°C]	0...60
Electrical data		
Electrical design		DC PNP
Operating voltage	[V]	18...30 DC *)
Current consumption	[mA]	< 100
Protection class		III
Reverse polarity protection		yes
Outputs		
Output function		OUT1: normally open / closed programmable or pulse OUT2: normally open / closed programmable or analog (4...20 mA scaleable)
Current rating	[mA]	2 x 250
Voltage drop	[V]	< 2
Short-circuit protection		yes (non-latching)
Overload protection		yes
Analog output		4...20 mA
Max. load	[Ω]	< 500
Pulse output		consumed quantity meter
Measuring / setting range		
Flow monitoring		
Measuring range	[Nm³/h]	[] N2: 0.04...15.00 Ar: 0.08...24.04 CO2: 0.04...14.36 |

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Display range	[Nm³/h]	[] N2: 0.00...18.00 Ar: 0.00...28.84 CO2: 0.00...17.24 |
Resolution	[Nm³/h]	[] N2: 0.02 Ar: 0.02 CO2: 0.02 |
Set point, SP	[Nm³/h]	[] N2: 0.14...15.00 Ar: 0.22...24.04 CO2: 0.14...14.36 |
Reset point, rP	[Nm³/h]	[] N2: 0.08...14.94 Ar: 0.12...23.94 CO2: 0.08...14.30 |
Analog start point, ASP	[Nm³/h]	[] N2: 0.00...12.00 Ar: 0.00...19.24 CO2: 0.00...11.48 |
Analog end point, AEP	[Nm³/h]	[] N2: 3.00...15.00 Ar: 4.80...24.04 CO2: 2.88...14.36 |
Low flow cut-off, LFC	[Nm³/h]	0.05...0.26
in steps of	[Nm³/h]	[] N2: 0.02 Ar: 0.02 CO2: 0.02 |
Measuring dynamics		1:300
Volumetric flow quantity monitoring		
Pulse value		0.001...1 000 000 m³
in steps of		0.001...1000 m³
Pulse length	[s]	0.062...2
Temperature monitoring		
Measuring range	[°C]	0...60
Display range	[°C]	-12...72
Resolution	[°C]	0.2
Set point, SP	[°C]	0.4...60
Reset point, rP	[°C]	0...59.8
Analog start point, ASP	[°C]	0...48
Analog end point, AEP	[°C]	12...60
in steps of	[°C]	0.2

Accuracy / deviations

Flow monitoring		
Accuracy	(within measuring range)	± (6% MW + 0.6% MEW) ***)
Repeatability	[% of the measured value]	± 1.5
Temperature monitoring		
Accuracy	[K]	± 2 **)

Reaction times

Power-on delay time	[s]	1
Flow monitoring		

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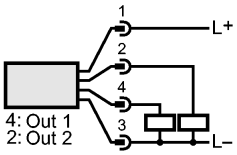
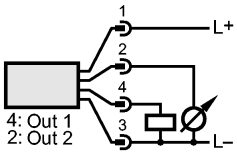
Response time	[s]	< 0.1 (dAP = 0)
Damping, dAP	[s]	0 - 0.2 - 0.4 - 0.6 - 0.8 - 1
Software / programming		
Programming options		hysteresis / window function; NO / NC; current / pulse output; display can be rotated / deactivated; display unit, medium
Interfaces		
IO-Link Device		
Transfer type		COM2
IO-Link revision		1.1
SDCI standard		IEC 61131-9
IO-Link Device ID		263 d / 00 01 07 h
Profiles		Smart Sensor: Process Data Variable; Device Identification, Device Diagnosis
SIO mode		yes
Required master port class		A
Process data analogue		3
Process data binary		2
Min. process cycle time	[ms]	4.1
Environment		
Ambient temperature	[°C]	0...60
Storage temperature	[°C]	-20...85
Max. relative air humidity	[%]	90
Protection		IP 65
Tests / approvals		
Pressure equipment directive		article 3, section 3 - sound engineering practice
EMC		EN 61000-4-2 ESD: 4 kV CD / 8 kV AD EN 61000-4-3 HF radiated: 10 V/m EN 61000-4-4 Burst: 2 kV EN 61000-4-6 HF conducted: 10 V
Vibration resistance		DIN IEC 68-2-6: 5 g (55...2000 Hz)
MTTF	[Years]	227
Mechanical data		
Process connection		G ¼ (DN8)
Materials (wetted parts)		stainless steel (304S15); ceramics glass passivated; PEEK (polyether ether ketone); polyester; Viton; aluminum anodized
Housing materials		PBT-GF 20; PC (APEC); Makrolon; stainless steel (304S15); Viton
Weight	[kg]	0.97
Displays / operating elements		
Display		Display unit 4 x LED green (Nl/min, Nm³/h, Nm³, °C) Function display 1 x LED yellow Switching status 2 x LED yellow Measured values 4-digit alphanumeric display Programming 4-digit alphanumeric display
Electrical connection		
Connection		M12 connector

Wiring

Programming of the output function
----------OUT1----------
- Switching output
Hno = hysteresis / normally open
Hnc = hysteresis / normally closed
Fno = window function / normally open
Fnc = window function / normally closed
- ImP = pulse output for flow rate meter / signal output
for preset meter
----------OUT2----------
- Switching output
Hno = hysteresis / normally open
Hnc = hysteresis / normally closed
Fno = window function / normally open
Fnc = window function / normally closed
- Analog output
I = current output (4...20 mA)





Remarks

Remarks	*) to EN50178, SELV, PELV **) medium flow in the limit area of the flow measurement range ***) under conditions acc. to DIN ISO 2533 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 [piece]	1