



Product characteristics

Ultrasonic flow meter

Quick disconnect

Process connection: G $\frac{3}{4}$ flat seal

Function programmable

Totalizer function

2 outputs

OUT1 = flow monitoring (binary), flow rate meter (pulse), preset meter (binary)

OUT2 = flow monitoring or temperature monitoring (analog or binary)

Input for counter reset

Measuring range

0...50 l/min

-10...80 °C

Maximum permissible flow rate

60 l/min (3.6 m 3 /h)

connection to pipe by means of an adapter

Application

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Liquids of the fluid group 2 according to the Pressure Equipment Directive (PED):
water, glycol solutions, oils
(low-viscosity oils with viscosity 7...40 mm 2 /s at 40°C;
high-viscosity oils with viscosity 30...68 mm 2 /s at 40°C)

Pressure rating [bar]

16

Medium temperature [°C]

-10...80

Electrical data

Electrical design

DC PNP/NPN

Operating voltage [V]

19...30 DC ¹⁾

Current consumption [mA]

100

Insulation resistance [MΩ]

> 100 (500 V DC)

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 / 0...10 V, 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; 0...10 V

Max. load [Ω]

500

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Min. load	[Ω]	2000
Pulse output		flow rate meter
Measuring / setting range		
Flow monitoring		
Measuring range		0.0...50.0 l/min 0.000...3.000 m³/h
Display range		0.0...60.0 l/min 0.000...3.600 m³/h
Resolution		0.1 l/min 0.005 m³/h
Set point, SP		0.1...50.0 l/min 0.005...3.000 m³/h
Reset point, rP		0.0...49.9 l/min 0.000...2.995 m³/h
Analog start point, ASP		0.0...40.0 l/min 0.000...2.400 m³/h
Analog end point, AEP		10.0...50.0 l/min 0.600...3.000 m³/h
in steps of		0.1 l/min 0.005 m³/h
Volumetric flow quantity monitoring		
Pulse value		0.1 l...1 000 000 m³
Pulse length	[s]	0.05...2
Temperature monitoring		
Measuring range	[°C]	-10...80.0
Resolution	[°C]	0.2
Set point, SP	[°C]	-9.8...80.0
Reset point, rP	[°C]	-10.0...79.8
Analog start point, ASP	[°C]	-10.0...62.0
Analog end point, AEP	[°C]	8.0...80.0
in steps of	[°C]	0.2
Accuracy / deviations		
Flow monitoring		
Accuracy		$< \pm (3\% MW + 0.2\% MEW) ^*) / < \pm (5\% MW + 0.5\% MEW) ^**)$
Repeatability		0.1 l/min; 6 l/h; 0.006 m³/h
Pressure loss (dP) / flow rate (Q)		
Temperature monitoring		
Accuracy	[K]	$\pm 3 (Q > 1 \text{ l/min})$
Reaction times		
Power-on delay time	[s]	10
Flow monitoring		
Start-up delay	[s]	0...50
Response time	[s]	$< 0.250 (dAP = 0)$
Damping, dAP	[s]	0.0...1.0
Temperature monitoring		
Response time	[s]	$T09 = 70 (Q > 5 \text{ l/min}) ^*)$
Environment		
Ambient temperature	[°C]	-10...60
Storage temperature	[°C]	-25...80
Protection		IP 67
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 61000-4-5 Surge: 0.5 kV

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	EN 61000-4-6 HF conducted: 10 V
Shock resistance	DIN IEC 68-2-27: 20 g (11 ms)
Vibration resistance	DIN IEC 68-2-6: 5 g (10...2000 Hz)
MTTF [Years]	175
Mechanical data	
Process connection	G $\frac{3}{4}$ flat seal
Materials (wetted parts)	stainless steel 316L / 1.4404; Viton; PES; Centellen 200
Housing materials	housing: AlMgSi0.5 anodized; sealing: Viton; connector housing: brass Optalloy-plated; PA 6.6; cover film: polyamide
Weight [kg]	1.555
Displays / operating elements	
Display	Display unit 6 x LED green (l/min, m ³ /h, l, m ³ , 10 ³ , °C) Switching status 2 x LED yellow Measured values 4-digit alphanumeric display Programming 4-digit alphanumeric display
Electrical connection	
Connection	M12 connector; gold-plated contacts
Wiring	
OUT1: 3 selection options	
- switching output volumetric flow monitoring	
- pulse output volumetric flow	
- switching output preset counter	
OUT2/InD: 5 selection options	
- switching output volumetric flow monitoring	
- switching output temperature monitoring	
- analog output volumetric flow	
- analog output temperature	
- input for an external reset signal	
Accessories	
Accessories (included)	2 x packing washer (Centellen)
Accessories (optional)	adapter; order no. E40178 (for R $\frac{1}{2}$ pipe, high-grade stainless steel); order no. E40151 (for R $\frac{1}{2}$ pipe, brass)
Remarks	
Remarks	1) to EN50178, SELV, PELV *) for water **) for glycol solutions (35%) and oils (viscosity: 68 mm ² /s at 40°C) MW = measured value MEW = final value of the measuring range sealing: only with supplied Centellen seals
Pack quantity [piece]	1

