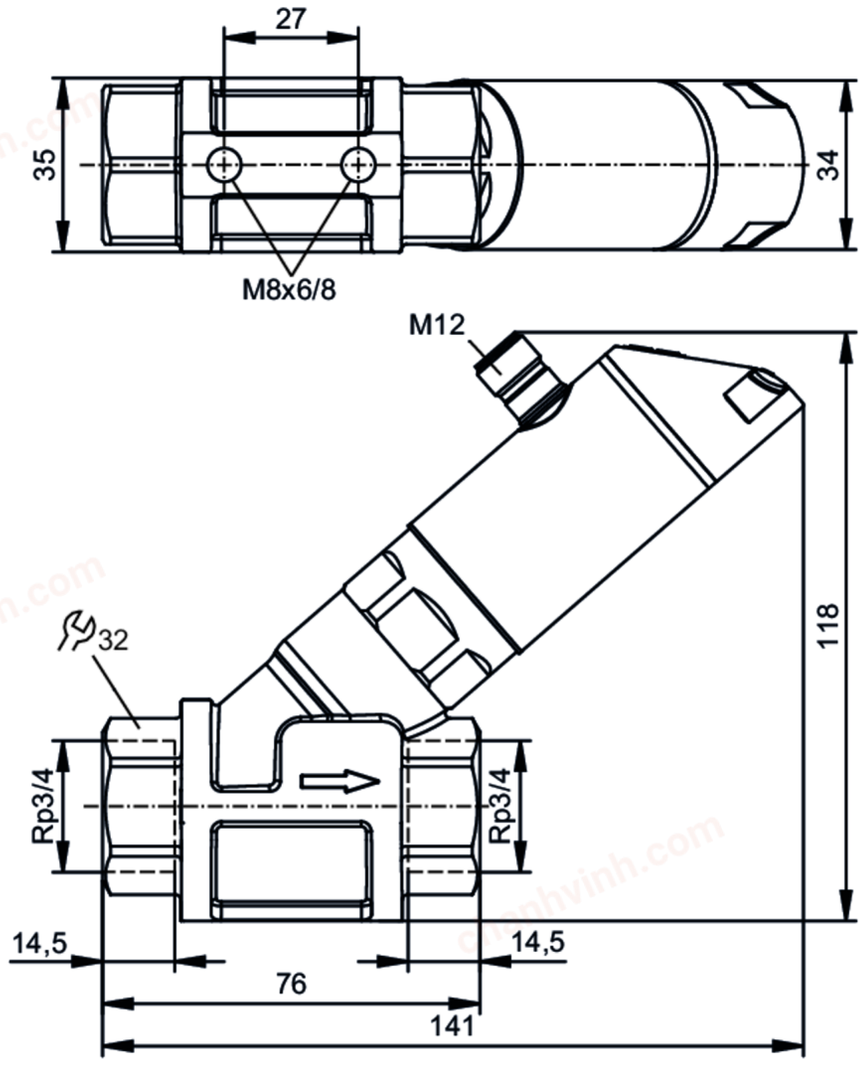
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Flow meter with integrated backflow prevention and display

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Please note the changed housing design!



CE CRN cULus LISTED IO-Link

Product characteristics			
Number of inputs and outputs		Number of digital outputs: 2; Number of analogue outputs: 1	
Measuring range		1...50 l/min	0.06...3 m³/h
Process connection		threaded connection Rp 3/4 internal thread	
Application			
Special feature		Gold-plated contacts	
Application		for industrial applications	
Media		Liquids; water; glycol solutions; coolants	
Note on media		oil 1 with viscosity: 10 mm²/s (40 °C)	
		oil 2 with viscosity: 46 mm²/s (40 °C)	
Medium temperature	[°C]	-10...100	
Pressure rating		40 bar	4 MPa

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MAWP (for applications according to CRN) [bar]	40	
Electrical data		
Operating voltage [V]	18...30 DC; (to SELV/PELV)	
Current consumption [mA]	< 50	
Protection class	III	
Reverse polarity protection	yes	
Power-on delay time [s]	< 3	
Inputs / outputs		
Number of inputs and outputs	Number of digital outputs: 2; Number of analogue outputs: 1	
Outputs		
Total number of outputs	2	
Output signal	switching signal; analogue signal; frequency signal; IO-Link; (configurable)	
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]	150; (per output 2 x 200 (...60 °C); 2 x 250 (...40 °C))	
Switching cycles (mechanical)	10 million	
Number of analogue outputs	1	
Analogue current output [mA]	4...20	
Max. load [Ω]	500	
Short-circuit protection	yes	
Overload protection	yes	
Frequency of the output [Hz]	0...10000	
Measuring/setting range		
Measuring range	1...50 l/min	0.06...3 m³/h
Display range	0...60 l/min	0...3.6 m³/h
Resolution	0.5 l/min	0.01 m³/h
Set point SP	0.5...50 l/min	0.02...3 m³/h
Reset point rP	0...49.5 l/min	0...2.98 m³/h
Frequency end point, FEP	3.5...50 l/min	0.2...3 m³/h
In steps of	0.5 l/min	0.01 m³/h
Frequency at the end point FRP [Hz]	10...10000	
Measuring dynamics	1:50	
Temperature monitoring		
Measuring range [°C]	-10...100	
Display range [°C]	-32...122	
Resolution [°C]	1	
Set point SP [°C]	-9...100	
Reset point rP [°C]	-10...99	
In steps of [°C]	1	
Frequency start point, FSP [°C]	-10...78	

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Frequency end point, FEP	[°C]	12...100
Frequency at the end point FRP	[Hz]	10...10000
Accuracy / deviations		
Flow monitoring		
Accuracy (in the measuring range)		± (4 % MW + 1 % MEW); (Q > 1 l/min; medium and operating temperature: +22 °C ± 4K)
Repeatability		± 1 % MEW
Temperature monitoring		
Temperature drift		0,029 °C / K
Accuracy	[K]	3 K (25°C; Q > 1 l/min)
Response times		
Flow monitoring		
Response time	[s]	0.01
Damping process value dAP	[s]	0...5
Damping for the analogue output dAA	[s]	0...5
Temperature monitoring		
Dynamic response T05 / T09	[s]	T09 = 120 (Q > 1 l/min)
Software / programming		
Parameter setting options		hysteresis / window; normally open / normally closed; switching logic; current/frequency output; medium selection; damping for the switching output / analogue output; display can be rotated and switched off; standard unit of measurement; process value colour
Interfaces		
Communication interface		IO-Link
Transmission type		COM2 (38,4 kBaud)
IO-Link revision		1.1
SDCI standard		IEC 61131-9 CDV
Profiles		Smart Sensor: Process Data Variable; Device Identification
SIO mode		yes
Required master port type		A
Process data analogue		2
Process data binary		2
Min. process cycle time	[ms]	5
Supported DeviceIDs		**Type of operation** / **DeviceID**
		default / 562
Operating conditions		
Ambient temperature	[°C]	0...60
Note on ambient temperature		medium temperature < 80 °C
		medium temperature < 100 °C: 0...40 °C
Storage temperature	[°C]	-15...80
Protection		IP 65; IP 67
Tests / approvals		
EMC		DIN EN 61000-6-2
		DIN EN 61000-6-3

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Shock resistance		DIN EN 60068-2-27	20 g (11 ms)
Vibration resistance		DIN EN 60068-2-6	5 g (10...2000 Hz)
MTTF	[years]	145	
UL approval		UL Approval no.	I005
Pressure Equipment Directive		Sound engineering practice; can be used for group 2 fluids; group 1 fluids on request	

Mechanical data

Weight	[g]	684	
Materials		stainless steel (316L/1.4404); PBT+PC-GF30; PBT-GF20; PC; brass chemically nickel-plated	
Materials (wetted parts)		stainless steel (316 / 1.4401); stainless steel (316L/1.4404); brass (2.0371); brass chemically nickel-plated; PPS; O-ring: FKM	
Process connection		threaded connection Rp 3/4 internal thread	

Displays / operating elements

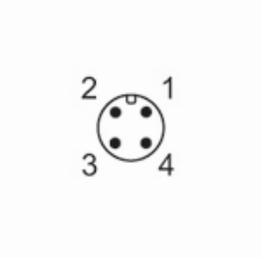
Display		Display unit	3 x LED, green
		switching status	2 x LED, yellow
		measured values	alphanumeric display, red/green 4-digit
		programming	alphanumeric display, 4-digit

Remarks

Remarks	Recommendation: use a 200-micron filter.
	All data refer to water (20 °C).
	MW = measured value
	MEW = Final value of the measuring range
Notes	Please note the changed housing design!
Pack quantity	1 pcs.

Electrical connection

Connector: 1 x M12; coding: A; Contacts: gold-plated



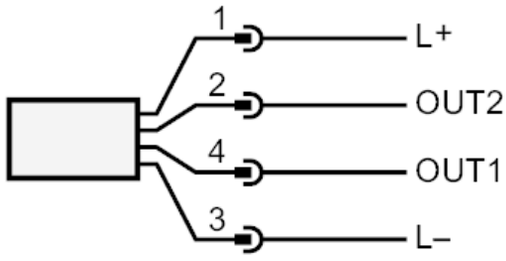
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Connection

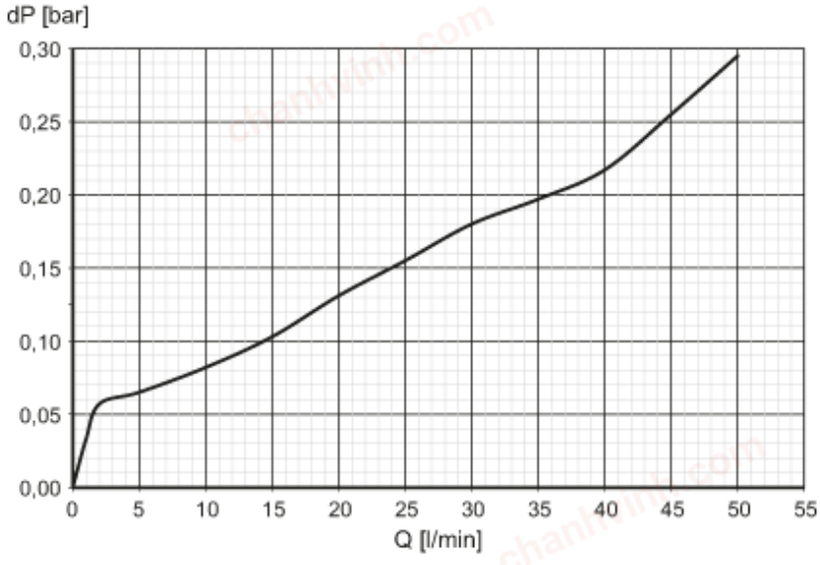


OUT1:
- switching output volumetric flow quantity monitoring
- switching output Temperature monitoring
- frequency output volumetric flow quantity monitoring
- frequency output Temperature monitoring
- IO-Link

OUT2:
- switching output volumetric flow quantity monitoring
- switching output Temperature monitoring
- analogue output volumetric flow quantity monitoring
- analogue output Temperature monitoring

Diagrams and graphs

Pressure loss



dP Pressure loss

Q volumetric flow quantity