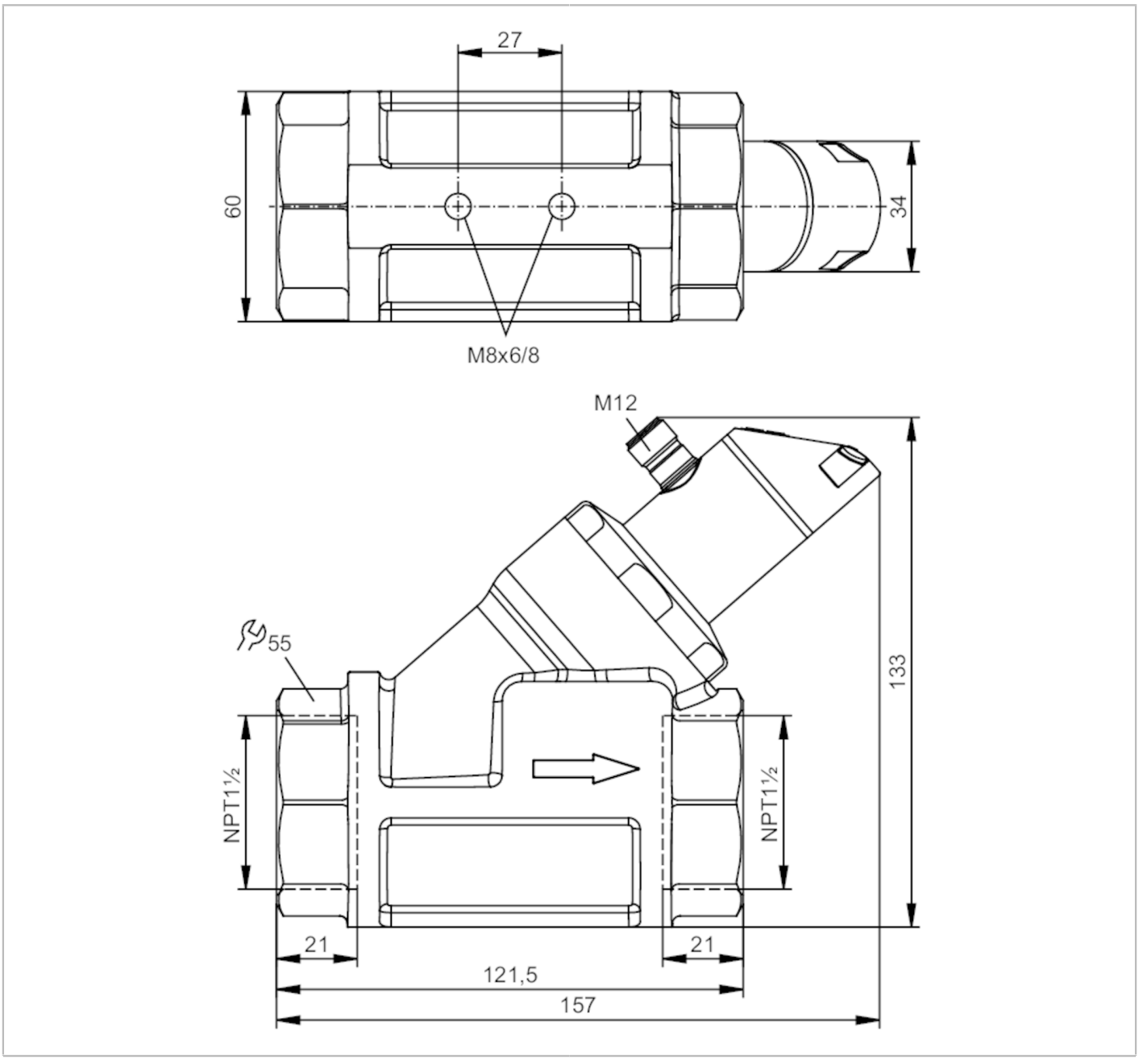
SBN257

Flow meter with integrated backflow prevention and display

SBN32IF0FRKG

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	60...3000 gph	1...50 gpm
Process connection	threaded connection 1 1/2" NPT	

Application	
Special feature	Gold-plated contacts
Application	for industrial applications
Media	Liquids; water; glycol solutions; coolants

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Note on media		oil 1 with viscosity: 10 mm²/s (104 °F) oil 2 with viscosity: 46 mm²/s (104 °F)	
Medium temperature	[°F]	14...212	
Pressure rating	[bar]	25	
Pressure rating	[MPa]	2.5	
MAWP (for applications according to CRN)	[bar]	25	
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 (...140 °F); 2 x 250 (...104 °F))	
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		60...3000 gph	1...50 gpm
Display range		0...3600 gph	0...60 gpm
Resolution		20 gph	0.2 gpm
Set point SP		20...3000 gph	0.4...50 gpm
Reset point rP		0...2980 gph	0...49.6 gpm
Frequency end point, FEP		200...3000 gph	3.4...50 gpm
In steps of		20 gph	0.2 gpm
Frequency at the end point FRP	[Hz]	10...10000	
Measuring dynamics		1:50	
Temperature monitoring			
Measuring range	[°F]	14...212	
Display range	[°F]	-26...252	

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Resolution	[°F]	2
Set point SP	[°F]	16...212
Reset point rP	[°F]	14...210
In steps of	[°F]	2
Frequency start point, FSP	[°F]	14...172
Frequency end point, FEP	[°F]	54...212
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: +71,6 °F ± 4K)
Repeatability		± 1 % MEW
Temperature monitoring		
Temperature drift		0,9802 °F / K
Accuracy	[K]	3 K (77 °F; 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 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	680

Operating conditions

Ambient temperature	[°F]	32...140
Note on ambient temperature		medium temperature < 176 °F
		medium temperature < 212 °F: 32...104 °F

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Storage temperature [°F]		5...176	
Protection		IP 65; IP 67	

Tests / approvals

EMC	DIN EN 61000-6-2	
	DIN EN 61000-6-3	
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]	170	
UL approval	UL Approval no.	I007
Pressure Equipment Directive	Sound engineering practice; can be used for group 2 fluids; group 1 fluids on request	

Mechanical data

Weight [g]	2258.35
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; spacer: POM; O-ring: FKM
Process connection	threaded connection 1 1/2" NPT

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 (68 °F).
	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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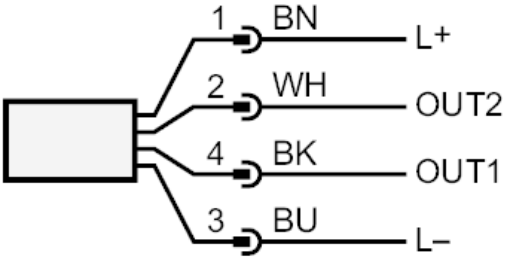
Connection



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

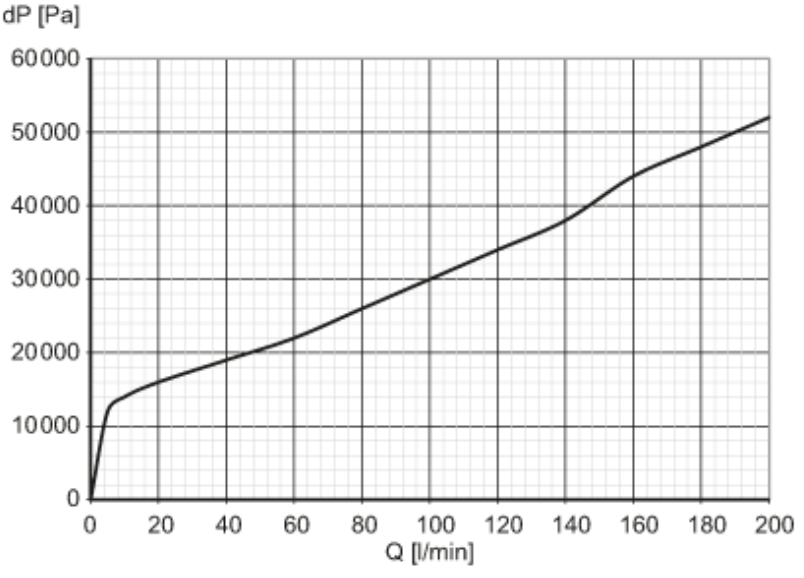
OUT2:
- switching output volumetric flow quantity monitoring
- switching output Temperature monitoring
- analogue output volumetric flow quantity monitoring
- analogue output Temperature monitoring

colours to DIN EN 60947-5-2
Core colours :

BK = black
BN = brown
BU = blue
WH = white

Diagrams and graphs

Pressure loss



dP Pressure loss

Q volumetric flow quantity