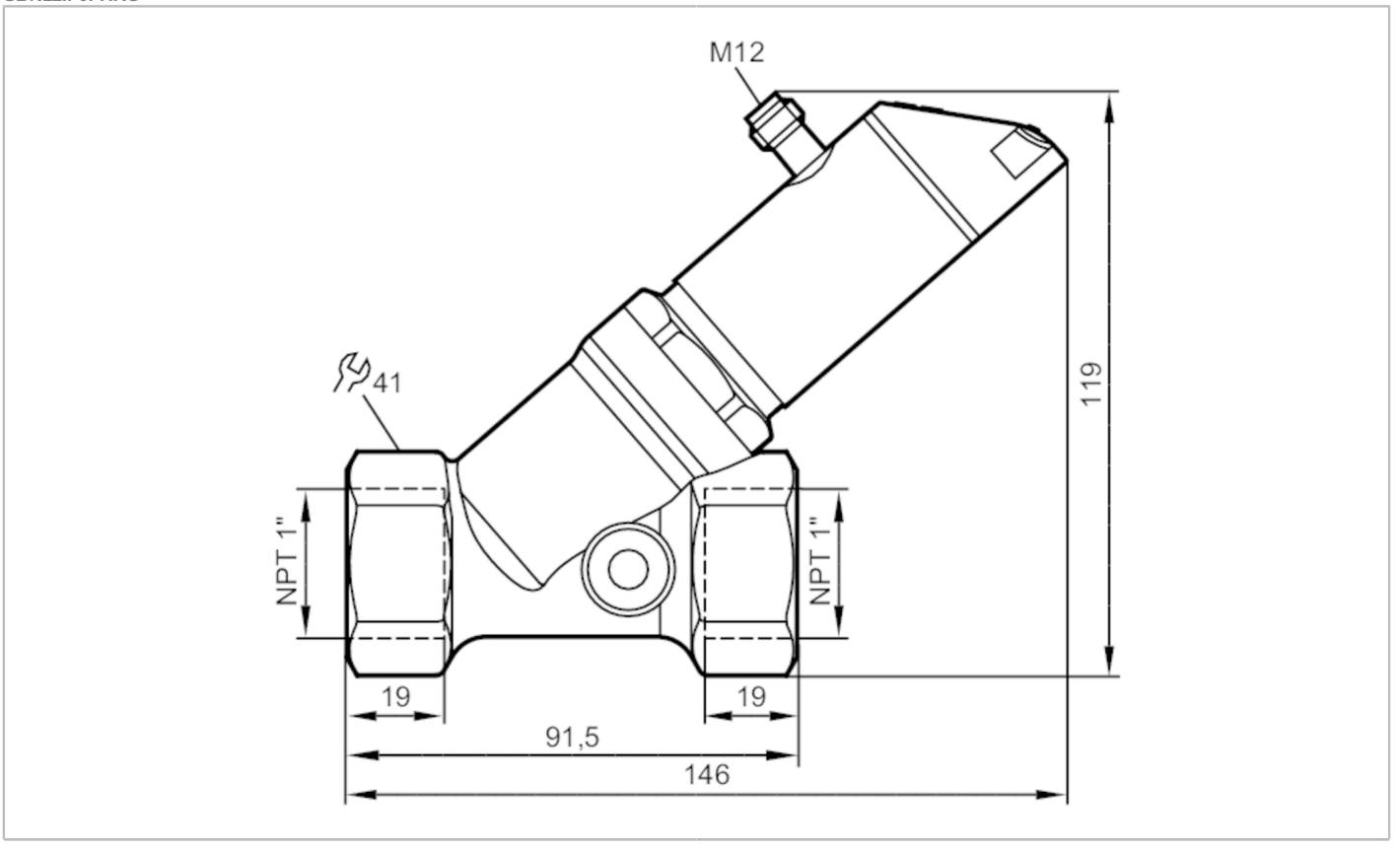
SBN246

Flow meter with integrated backflow prevention and display

SBN11IF0FRKG



Application		
Application		for industrial applications
Media		water; glycol solutions; coolants; oil
Medien		oil 1 with viscosity: 10 mm²/s (40 °C)
		oil 2 with viscosity: 46 mm²/s (40 °C)
Medium temperature	[°F]	14...212
Pressure rating	[bar]	25
Electrical data		
Operating voltage	[V]	18...30 DC; (according to EN 50178 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

SBN246

Flow meter with integrated backflow prevention and display

SBN11IF0FRKG

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	[gph]	30...1620	
Display range		0...32.4 gpm	0...1940 gph
Resolution		0.1 gpm	10 gph
Set point SP		0.2...27 gpm	10...1620 gph
Reset point rP		0...26.8 gpm	0...1610 gph
Measuring dynamics		1:50	
Frequency end point, FEP		1.8...27 gpm	110...1620 gph
Frequency at the end point FRP	[Hz]	10...10000	
In steps of		0.1 gpm	10 gph
Temperature monitoring			
Measuring range	[°F]	14...212	
Display range	[°F]	-26...252	
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 > 2 l/min; medium and operating temperature: +22 °C ± 4K)	
Repeatability		± 1 % MEW	

SBN246

Flow meter with integrated backflow prevention and display

SBN11IF0FRKG

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 for the switching output 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	
IO-Link device ID		568 d / 0238 h	
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	
Operating conditions			
Ambient temperature	[°F]	32...140	
Note on ambient temperature		medium temperature < 176 °F	
		medium temperature < 212 °F: 32...104 °F	
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]	145	
UL approval		UL Approval no.	I006
Pressure Equipment Directive		Sound Engineering Practice; can be used for group 2 fluids; group 1 fluids on request	

SBN246

Flow meter with integrated backflow prevention and display

SBN11IF0FRKG

Mechanical data

Weight [g]		889.9
Materials		stainless steel (1.4404 / 316L); PBT+PC-GF30; PBT-GF20; PC; brass chemically nickel-plated
Materials (wetted parts)		stainless steel (1.4401 / 316); stainless steel (1.4404 / 316L); brass (2.0371); brass chemically nickel-plated; PPS; O-ring: FKM
Process connection		threaded connection 1 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
Pack quantity	1 pcs.

Electrical connection

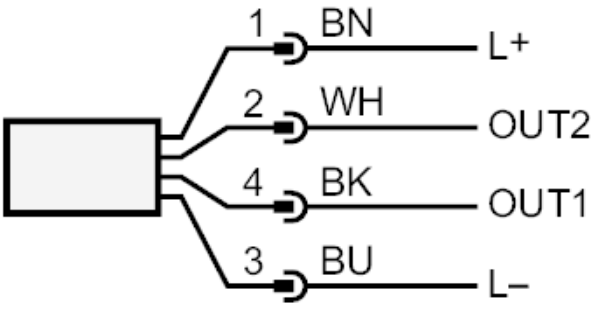
Connector: 1 x M12; Contacts: gold-plated

SBN246

Flow meter with integrated backflow prevention and display

SBN11IF0FRKG

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

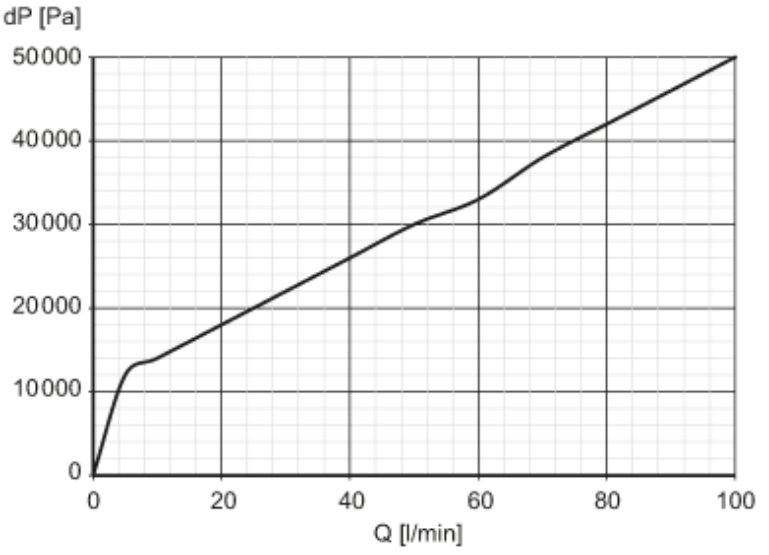
SBN246

Flow meter with integrated backflow prevention and display

SBN11IF0FRKG

Diagrams and graphs

Pressure loss



dP Pressure loss

Q volumetric flow quantity