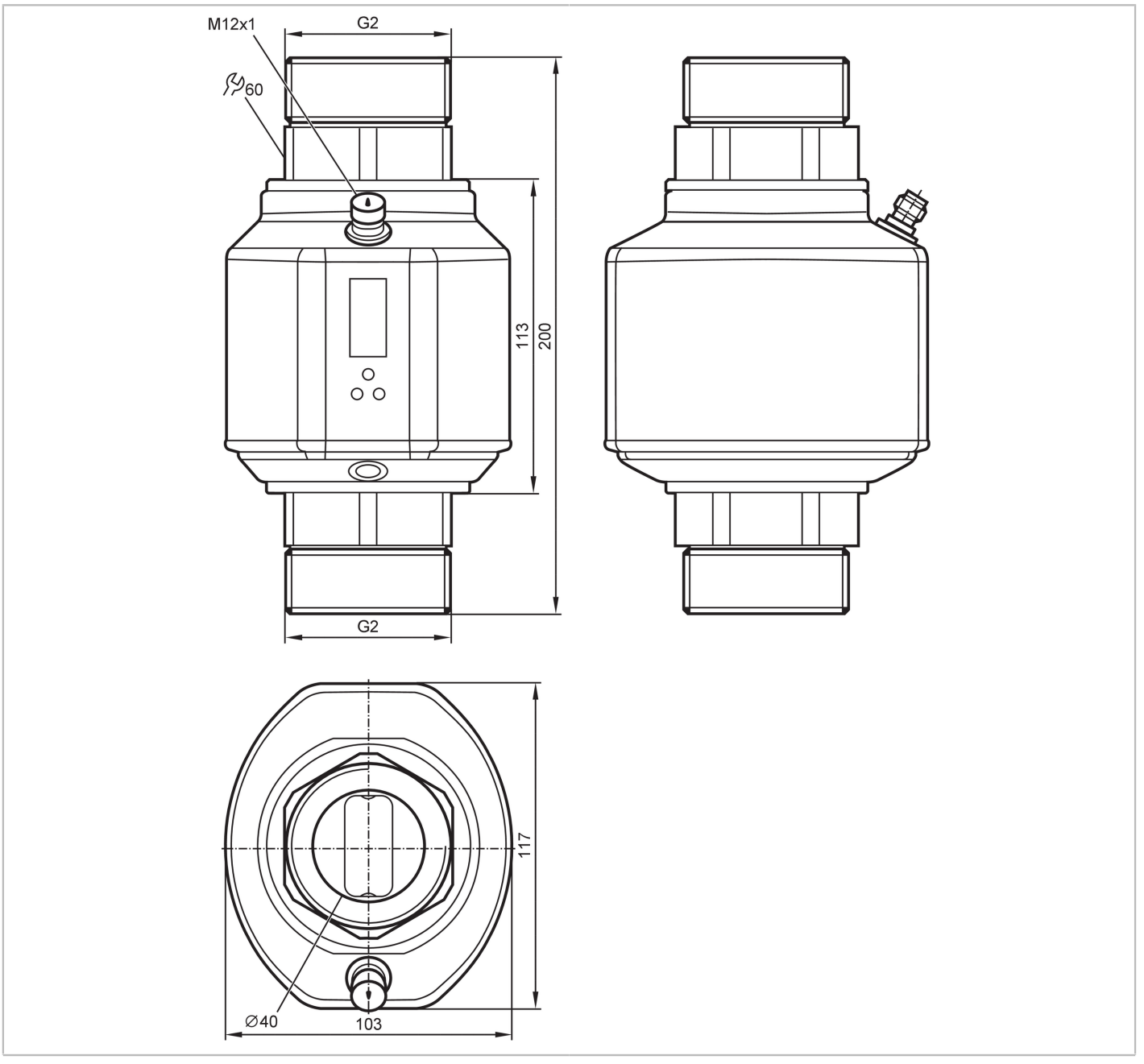
SM9004

Magnetic-inductive flow meter

SMR21XGX50KG/US



Product characteristics				
Number of inputs and outputs	Number of analogue outputs: 2			
Measuring range	5...300 l/min	0.3...18 m³/h	80...4755 gph	1.3...79.3 gpm
Process connection	threaded connection G 2 external thread DN50 flat seal			
Application				
Special feature	Gold-plated contacts			
Application	empty pipe detection; for industrial applications			
Installation	connection to pipe by means of an adapter			
Media	conductive liquids; water; hydrous media			

SM9004

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SMR21XGX50KG/US

Note on media	conductivity: ≥ 20 µS/cm			
	viscosity: < 70 mm²/s (40 °C)			
Medium temperature	-10...90 °C		14...194 °F	
Pressure rating	16 bar	232 psi		1.6 MPa
MAWP for applications according to CRN	8.9 bar		0.89 MPa	

Electrical data		
Operating voltage	[V]	18...32 DC; (to SELV/PELV)
Current consumption	[mA]	< 150
Min. insulation resistance	[MΩ]	100; (500 V DC)
Protection class		III
Reverse polarity protection		yes
Power-on delay time	[s]	5
Measuring principle		magnetic-inductive

Inputs / outputs	
Number of inputs and outputs	Number of analogue outputs: 2

Outputs		
Total number of outputs		2
Output signal		analogue signal
Number of analogue outputs		2
Analogue current output	[mA]	4...20; (≤ 22 mA; scalable)
Max. load	[Ω]	500

Measuring/setting range				
Measuring range	5...300 l/min	0.3...18 m³/h	80...4755 gph	1.3...79.3 gpm
Display range	-360...360 l/min	-21.6...21.6 m³/h	-5705...5705 gph	-95.1...95.1 gpm
Resolution	0.5 l/min	0.02 m³/h	5 gph	0.1 gpm
Analogue start point ASP	0...240 l/min	0...14.4 m³/h	0...3800 gph	0...63.4 gpm
Analogue end point AEP	60...300 l/min	3.6...18 m³/h	955...4755 gph	15.9...79.3 gpm
Low flow cut-off LFC	< 15 l/min	< 0.9 m³/h	< 240 gph	< 4 gpm
In steps of	0.5 l/min	0.02 m³/h	5 gph	0.1 gpm
Measuring dynamics	1:60			
Temperature monitoring				
Measuring range	-20...80 °C		-4...176 °F	
Display range	-40...100 °C		-40...212 °F	
Resolution	0.2 °C		0.5 °F	
Analogue start point	-20...60 °C		-4...140 °F	
Analogue end point	0...80 °C		32...176 °F	
In steps of	0.2 °C		0.5 °F	

Accuracy / deviations		
Flow monitoring		
Accuracy (in the measuring range)		± (0,8 % MW + 0,5 % MEW)
Repeatability		± 0,2% MEW
Temperature monitoring		
Temperature drift		± 0,0333 °C / K; ± 0,0599 °F / K
Accuracy	[K]	± 1 (25 °C; Q > 15 l/min) / ± 1 (77 °F; Q > 4 gpm)

SM9004

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SMR21XGX50KG/US

Response times			
Flow monitoring			
Response time	[s]	0.35; (dAP = 0)	
Damping process value dAP	[s]	0...5	
Temperature monitoring			
Dynamic response T05 / T09	[s]	T09 = 3 (Q > 15 l/min) / T09 = 3 (Q > 4 gpm)	
Software / programming			
Parameter setting options		display can be deactivated; Display unit; empty pipe detection	
Operating conditions			
Ambient temperature		-10...60 °C	14...140 °F
Storage temperature		-25...80 °C	-13...176 °F
Protection		IP 65; IP 67	
Tests / approvals			
EMC		DIN EN 60947-5-9	
CPA approval		model number	004MI
		accuracy class	-
		maximum allowable error	± 1,5 % FS
		Q (min)	0,3 m³/h
		Q (t)	-
		Q (max)	18 m³/h
		Medium temperature	-10...70 °C
		Medium temperature	14...158 °F
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]	85	
Pressure Equipment Directive		Sound engineering practice; can be used for group 2 fluids; group 1 fluids on request	
Mechanical data			
Weight	[g]	3050	
Housing		rectangular	
Inlet pipe length		3 x DN	
Outlet pipe length		1 x DN	
Dimensions	[mm]	200 x 103 x 117	
Materials		stainless steel (316L/1.4404); stainless steel (316Ti/1.4571); PEI; FKM; PBT-GF20; TPE-U	
Materials (wetted parts)		Pipe section: stainless steel (316L/1.4404); Process connection sealing: NBR reinforced fibre Flat seal; FKM; stainless steel (316Ti/1.4571); PEEK	
Process connection		threaded connection G 2 external thread DN50 flat seal	
Displays / operating elements			
Display		Display unit	6 x LED, green (l/min, m³/h, gpm, gph, °C, °F)
		function display	1 x LED, yellow (10³)
		measured values	alphanumeric display, 4-digit
		programming	alphanumeric display, 4-digit
Display unit		l/min; m³/h; gpm; gph; °C; °F	
Accessories			
Items supplied		sealings: 2, Centellen	
		Label	

SM9004

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SMR21XGX50KG/US

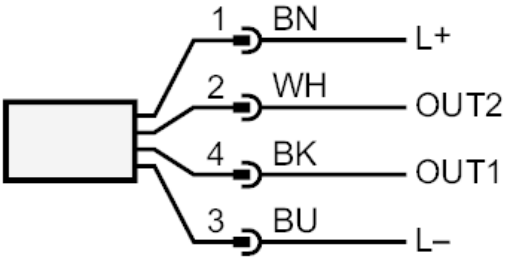
Remarks	
Remarks	MW = measured value
	MEW = Final value of the measuring range
Pack quantity	1 pcs.

Electrical connection

Connector: 1 x M12; coding: A; Contacts: 4, gold-plated



Connection



	colours to DIN EN 60947-5-2
OUT1:	analogue output Temperature monitoring
OUT2:	analogue output volumetric flow quantity monitoring
	Core colours :
BK =	black
BN =	brown
BU =	blue
WH =	white

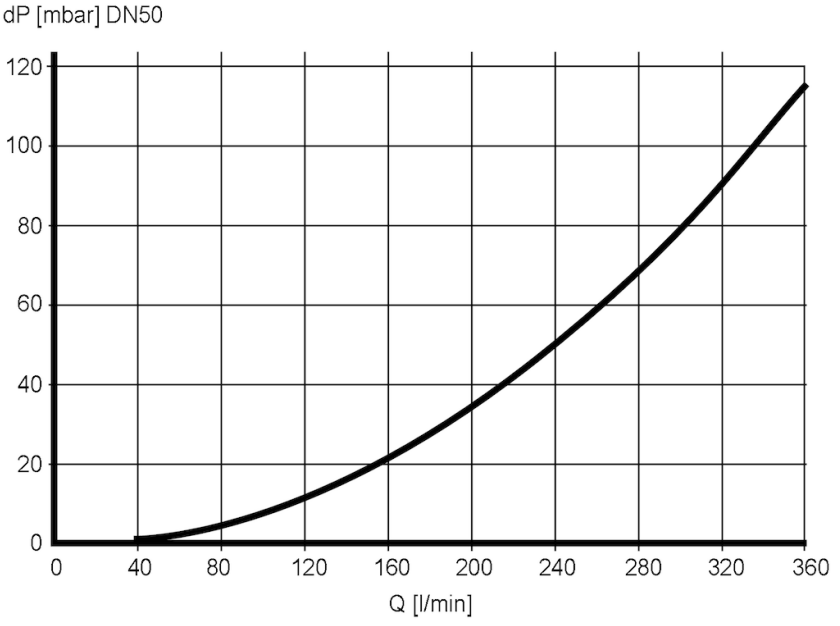
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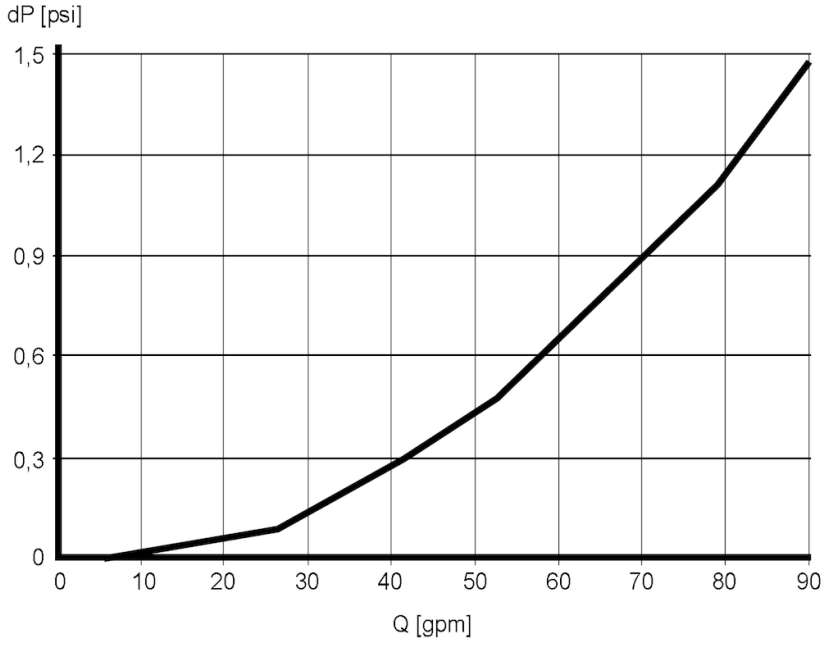
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Diagrams and graphs

Pressure loss





dP Pressure loss

Q volumetric flow quantity