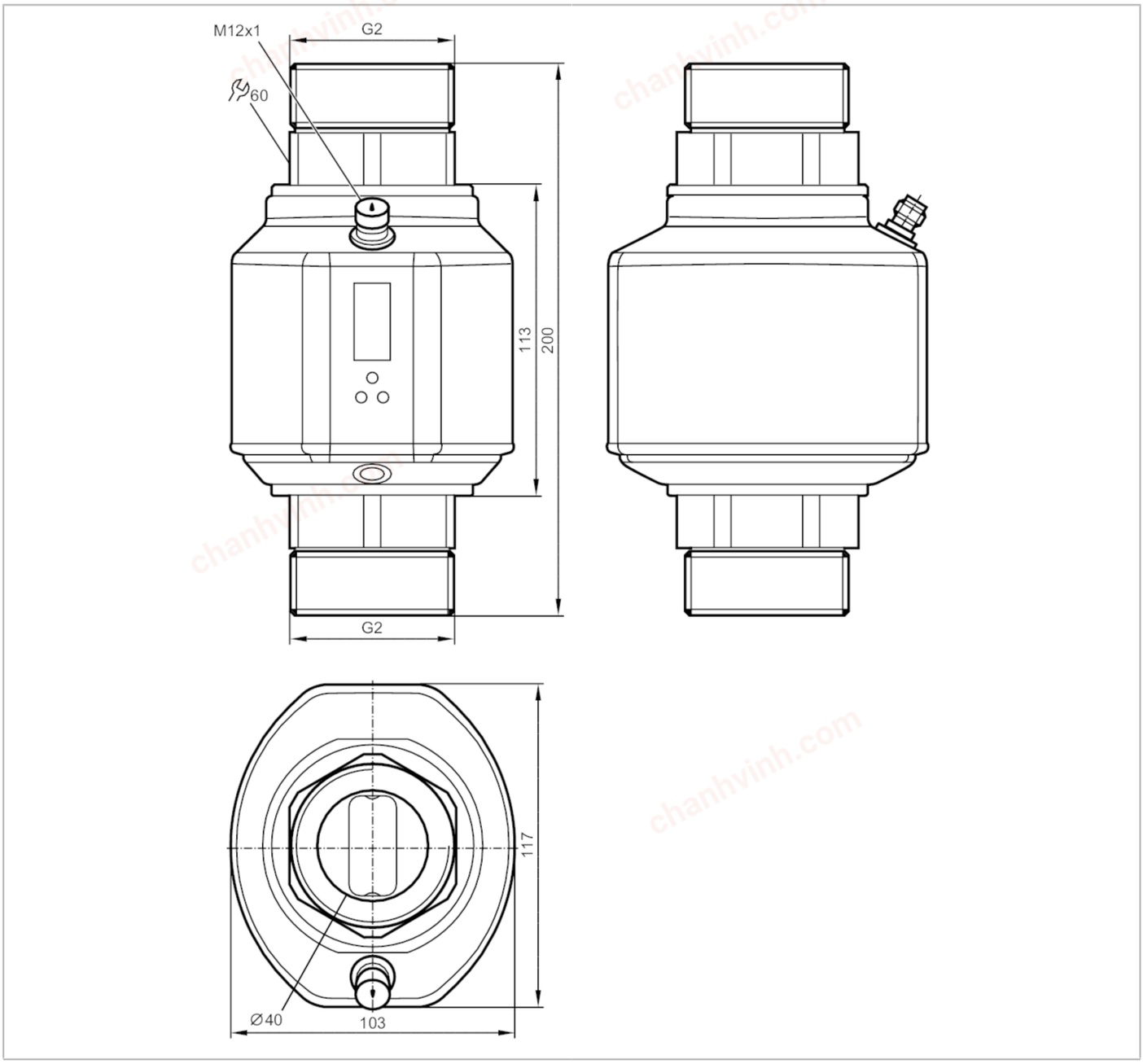
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SM2004

Magnetic-inductive flow meter

SMR21XGX50KG/US



CE PA CRN cULus LISTED EC 1935/2004 UKCA

Product characteristics				
Number of inputs and outputs	Number of analogue outputs: 2			
Measuring range	5...600 l/min	0.3...36 m³/h	80...9510 gph	1.3...158.5 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

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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) [bar]	16			
Electrical data				
Operating voltage [V]	18...32 DC; (to SELV/PELV)			
Current consumption [mA]	< 150			
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...600 l/min	0.3...36 m³/h	80...9510 gph	1.3...158.5 gpm
Display range	-720...720 l/min	-43.2...43.2 m³/h	-11410...11410 gph	-190.2...190.2 gpm
Resolution	0.5 l/min	0.02 m³/h	5 gph	0.1 gpm
Analogue start point ASP	0...480 l/min	0...28.8 m³/h	0...7610 gph	0...126.8 gpm
Analogue end point AEP	120...600 l/min	7.2...36 m³/h	1900...9510 gph	31.7...158.5 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	1:120			
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)			

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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)	36 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]	3147	
Housing		rectangular	
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)		stainless steel (316L/1.4404); stainless steel (316Ti/1.4571); PEEK; NBR reinforced fibre; FKM	
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	

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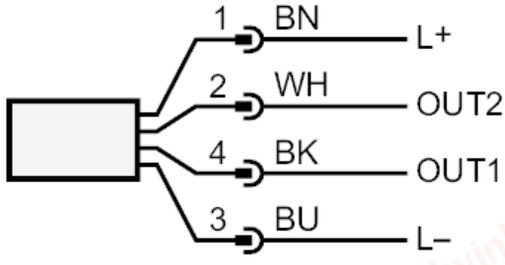
Remarks	
Remarks	MW = measured value
	MEW = Final value of the measuring range
Pack quantity	1 pcs.

Electrical connection

Connector: 1 x M12; coding: A; Contacts: 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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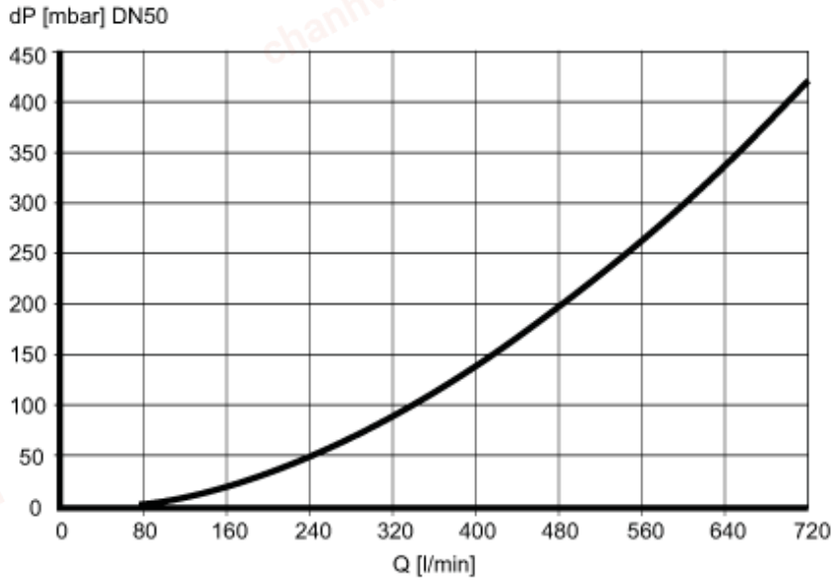
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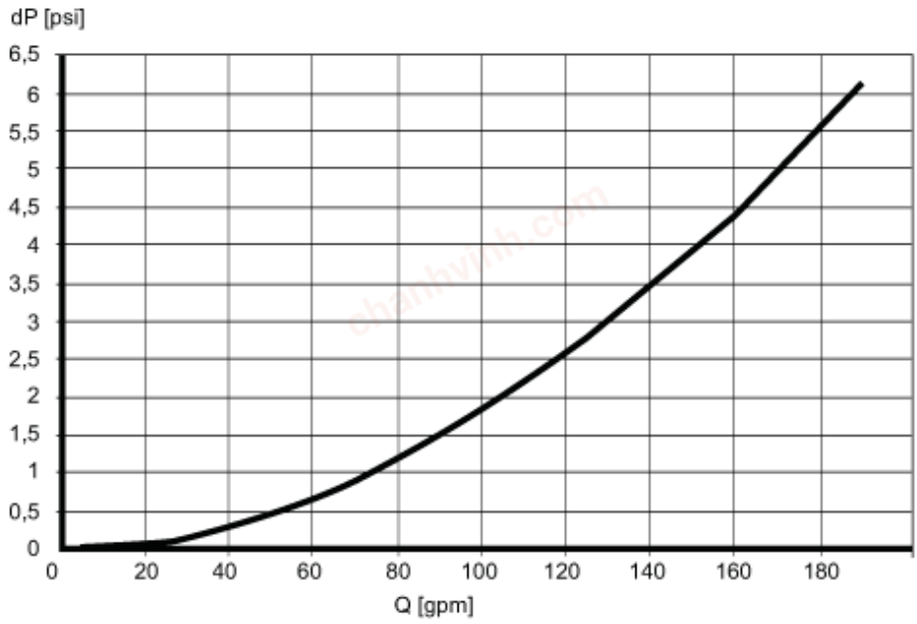
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Diagrams and graphs

Pressure loss





dP Pressure loss

Q volumetric flow quantity