

SM2004



Magnetic-inductive flow meter

SMR21XGX50KG/US



Application		
Application		empty pipe detection; for industrial applications
Installation		connection to pipe by means of an adapter
Media		conductive liquids; water; hydrous media
Medien		conductivity: $\geq 20 \mu\text{S/cm}$ viscosity: $< 70 \text{ mm}^2/\text{s}$ (40 °C)
Medium temperature	[°C]	-10...70
Medium temperature	[°F]	14...158
Pressure rating	[bar]	16
Pressure rating	[psi]	232



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Electrical data					
Operating voltage	[V]	18...32 DC; (according to EN 50178 SELV/PELV)			
Current consumption	[mA]	< 150			
Protection class		III			
Reverse polarity protection		yes			
Power-on delay time	[s]	5			
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		80...9510 gph	1.3...158.5 gpm	5...600 l/min	0.3...36 m³/h
Display range		-11410...11410 gph	-190.2...190.2 gpm	-720...720 l/min	-43.2...43.2 m³/h
Resolution		5 gph	0.1 gpm	0.5 l/min	0.02 m³/h
Analogue start point ASP		0...7610 gph	0...126.8 gpm	0...480 l/min	0...28.8 m³/h
Analogue end point AEP		1900...9510 gph	31.7...158.5 gpm	120...600 l/min	7.2...36 m³/h
Low flow cut-off LFC		< 240 gph	< 4 gpm	< 15 l/min	< 0.9 m³/h
Measuring dynamics		1:120			
In steps of		5 gph	0.1 gpm	0.5 l/min	0.02 m³/h
Temperature monitoring					
Measuring range	[°C]	-20...80			
Measuring range	[°F]	-4...176			
Display range	[°C]	-40...100			
Display range	[°F]	-40...212			
Resolution	[°C]	0.2			
Resolution	[°F]	0.5			
Analogue start point	[°C]	-20...60			
Analogue start point	[°F]	-4...140			
Analogue end point	[°C]	0...80			
Analogue end point	[°F]	32...176			
In steps of	[°C]	0.2			
In steps of	[°F]	0.5			
Accuracy / deviations					
Flow monitoring					
Accuracy (in the measuring range)		± (0,8 % MW + 0,5 % MEW); (Q > 15 l/min; medium and operating temperature: 22 °C ± 4 K / +72 °F ± 7 °F)			
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 for the switching output 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	[°C]	-10...60
Ambient temperature	[°F]	14...140
Storage temperature	[°C]	-25...80
Storage temperature	[°F]	-13...176
Protection	IP 65; IP 67	
Tests / approvals		
EMC	DIN EN 60947-5-9	
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]	78
Pressure Equipment Directive	Sound Engineering Practice; can be used for group 2 fluids; group 1 fluids on request	
Mechanical data		
Weight	[g]	3065.4
Materials	stainless steel (1.4404 / 316L); stainless steel (1.4571/316Ti); PEI; FKM; PBT-GF20; TPE-U	
Materials (wetted parts)	stainless steel (1.4404 / 316L); stainless steel (1.4571/316Ti); PEEK; Centellen; FKM	
Process connection	threaded connection G 2 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		
Accessories (supplied)	sealings: 2, Centellen	
	Label	
Remarks		
Remarks	MW = measured value	
	MEW = Final value of the measuring range	
Pack quantity	1 pcs.	
Electrical connection		
Connector: 1 x M12; Contacts: gold-plated		

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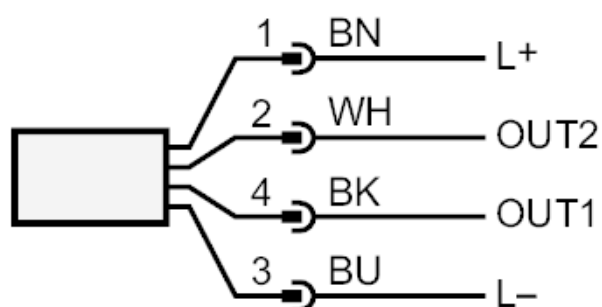


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Connection



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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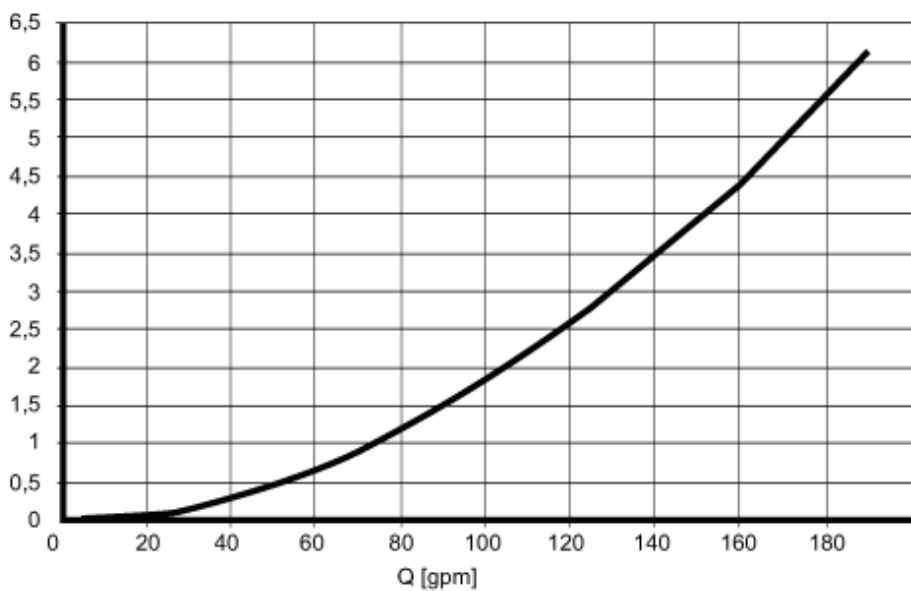
Diagrams and graphs

Pressure loss

dP [mbar] DN50



dP [psi]



dP Pressure loss

Q volumetric flow quantity