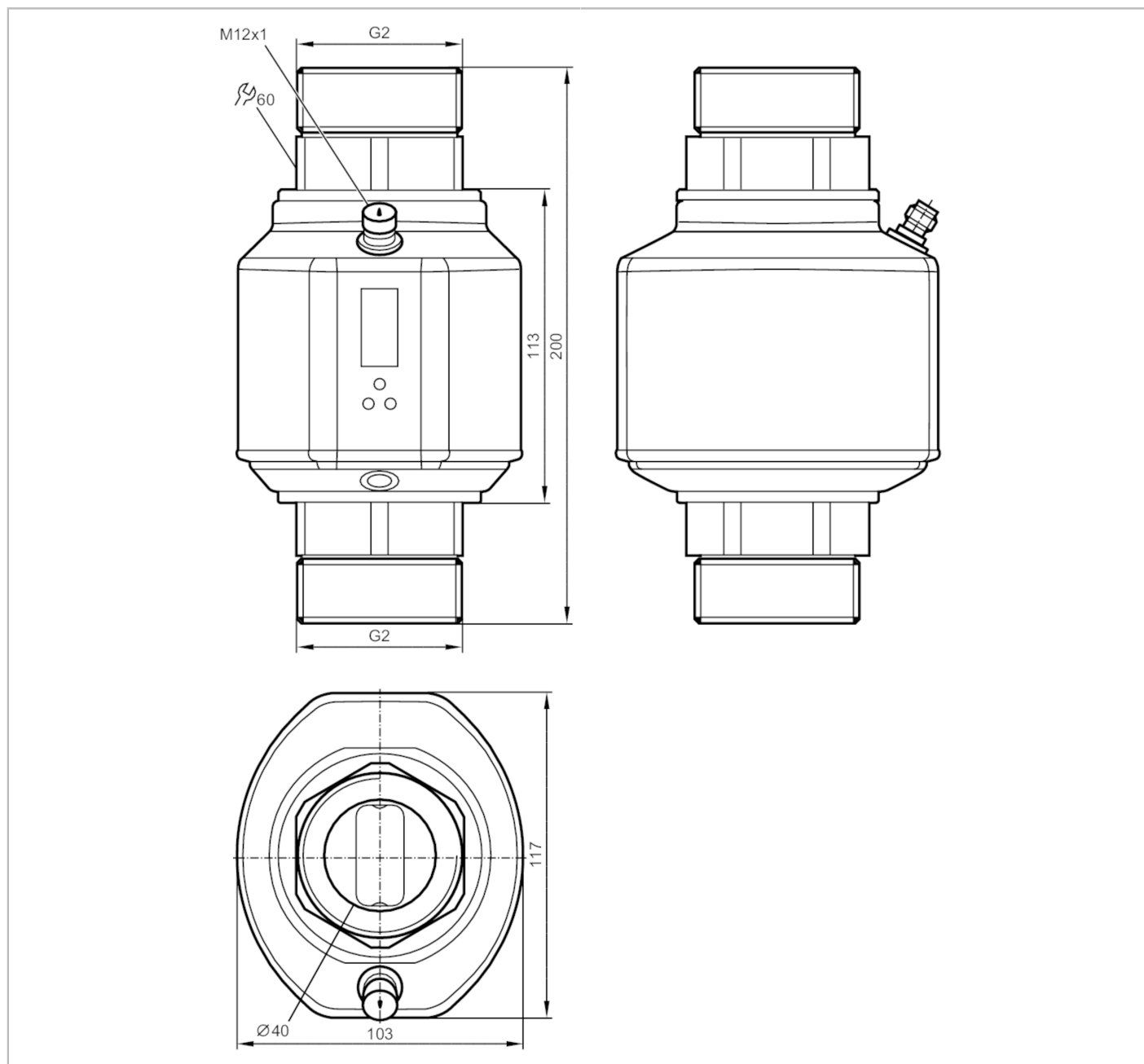


# SM2004



## Magnetic-inductive flow meter

SMR21XGX50KG/US



### Product characteristics

Number of inputs and outputs	Number of analogue outputs: 2			
Measuring range	5...600 l/min	0.3...36 m <sup>3</sup> /h	80...9510 gph	1.3...158.5 gpm
Process connection	threaded connection G 2 DN50 flat seal			

# SM2004



## Magnetic-inductive flow meter

SMR21XGX50KG/US

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			
Note on media	conductivity: $\geq 20 \mu\text{S/cm}$ viscosity: $< 70 \text{ mm}^2/\text{s}$ (40 °C)			
Medium temperature	-10...70 °C		14...158 °F	
Pressure rating	[bar]	16		
Pressure rating	[Mpa]	1.6		
Pressure rating	[psi]	232		
MAWP (for applications according to CRN)	[bar]	16.5		
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		
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; ( $\leq 22 \text{ mA}$ ; scalable)		
Max. load	[ $\Omega$ ]	500		
Measuring/setting range				
Measuring range	5...600 l/min	0.3...36 m <sup>3</sup> /h	80...9510 gph	1.3...158.5 gpm
Display range	-720...720 l/min	-43.2...43.2 m <sup>3</sup> /h	-11410...11410 gph	-190.2...190.2 gpm
Resolution	0.5 l/min	0.02 m <sup>3</sup> /h	5 gph	0.1 gpm
Analogue start point ASP	0...480 l/min	0...28.8 m <sup>3</sup> /h	0...7610 gph	0...126.8 gpm
Analogue end point AEP	120...600 l/min	7.2...36 m <sup>3</sup> /h	1900...9510 gph	31.7...158.5 gpm
Low flow cut-off LFC	$< 15 \text{ l/min}$	$< 0.9 \text{ m}^3/\text{h}$	$< 240 \text{ gph}$	$< 4 \text{ gpm}$
In steps of	0.5 l/min	0.02 m <sup>3</sup> /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	

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## Magnetic-inductive flow meter

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Accuracy / deviations		
Flow monitoring		
Accuracy (in the measuring range)	$\pm (0,8 \% MW + 0,5 \% MEW)$	
Repeatability	$\pm 0,2\% MEW$	
Temperature monitoring		
Temperature drift	$\pm 0,0333 \text{ }^\circ\text{C} / \text{K}; \pm 0,0599 \text{ }^\circ\text{F} / \text{K}$	
Accuracy [K]	$\pm 1 (25 \text{ }^\circ\text{C}; Q > 15 \text{ l/min}) / \pm 1 (77 \text{ }^\circ\text{F}; Q > 4 \text{ gpm})$	
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	-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	$\pm 1,5 \% FS$
	Q (min)	0,3 m³/h
	Q (t)	-
Shock resistance	Q (max)	36 m³/h
	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]	3147	
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; NBR reinforced fibre; FKM	
Process connection	threaded connection G 2 DN50 flat seal	

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## Magnetic-inductive flow meter

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Displays / operating elements		
Display	Display unit	6 x LED, green (l/min, m <sup>3</sup> /h, gpm, gph, °C, °F)
	function display	1 x LED, yellow (10 <sup>3</sup> )
	measured values	alphanumeric display, 4-digit
	programming	alphanumeric display, 4-digit
Display unit	l/min; m <sup>3</sup> /h; gpm; gph; °C; °F	

Accessories	
Items 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



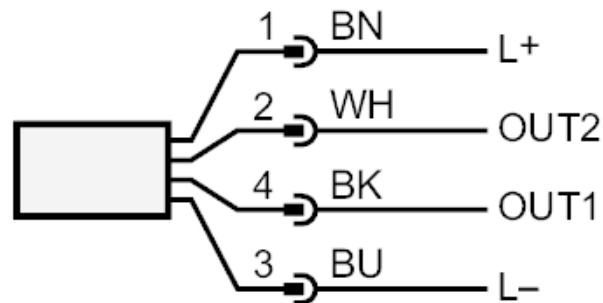
# SM2004



## Magnetic-inductive flow meter

SMR21XGX50KG/US

### 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



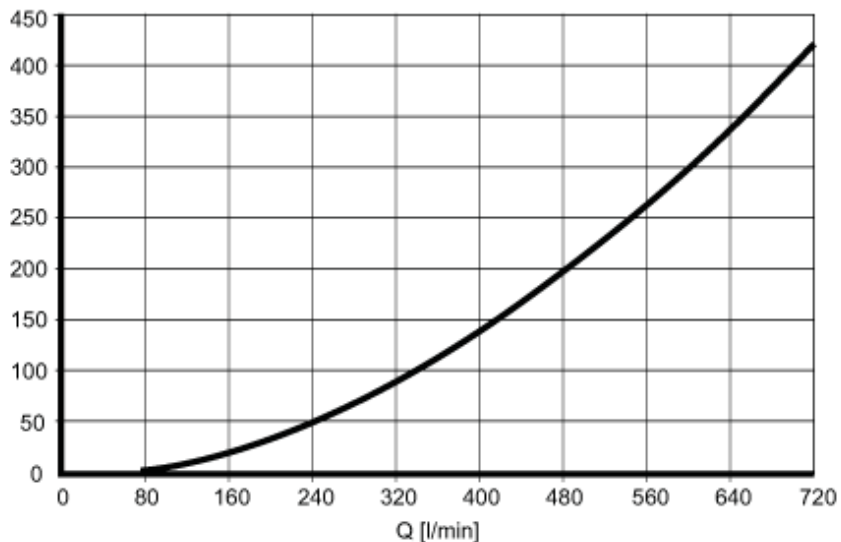
## Magnetic-inductive flow meter

SMR21XGX50KG/US

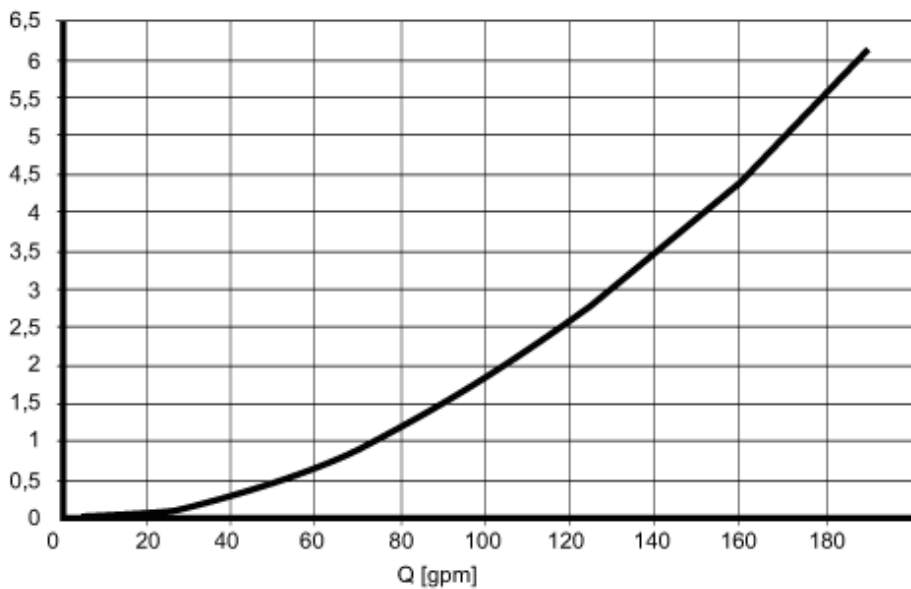
### Diagrams and graphs

#### Pressure loss

dP [mbar] DN50



dP [psi]



dP Pressure loss

Q volumetric flow quantity