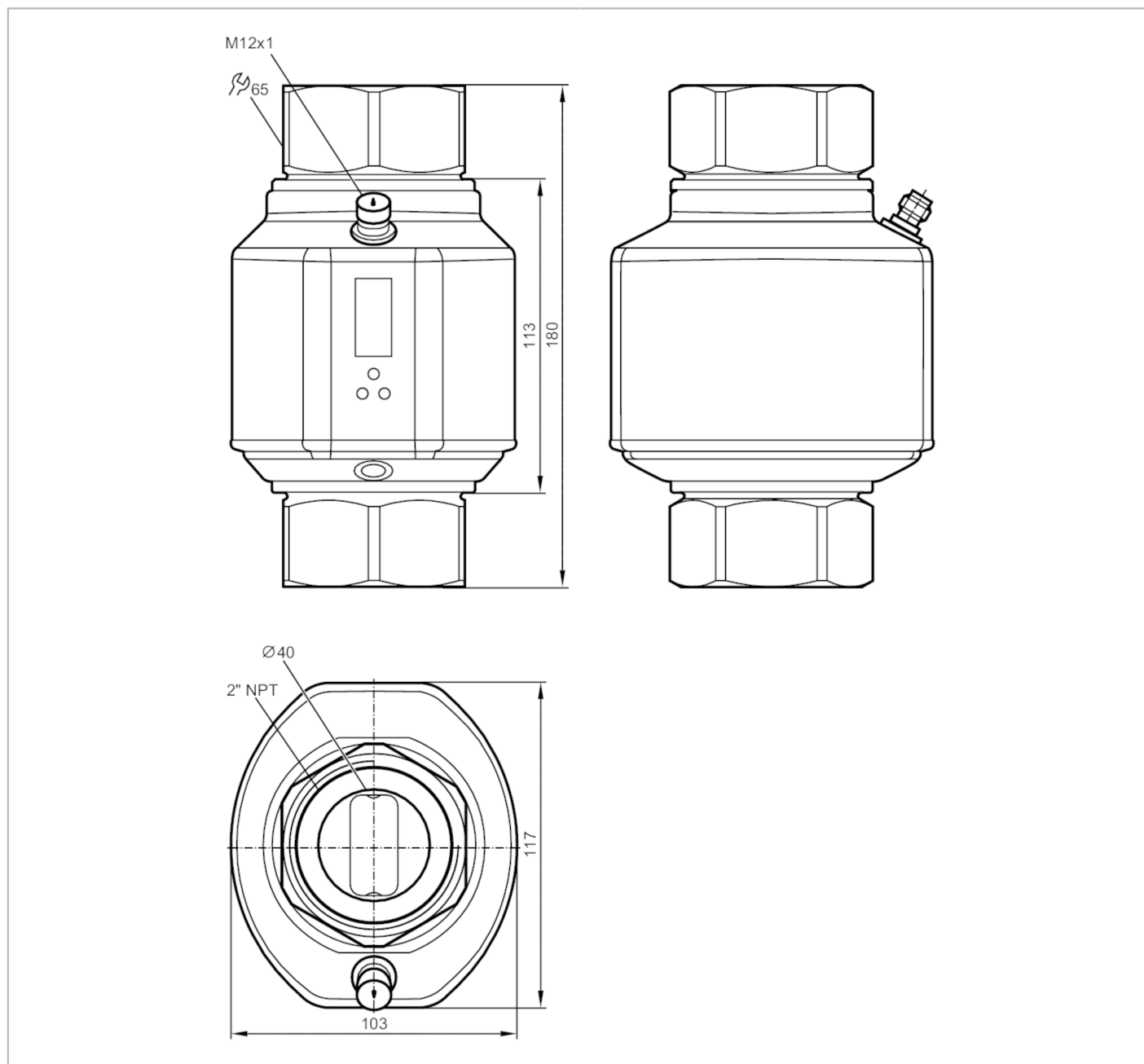


SM2604



Magnetic-inductive flow meter

SMN21XGX50KG/US-100



Product characteristics

Number of inputs and outputs	Number of analogue outputs: 2		
Measuring range	5...600 l/min	0.3...36 m ³ /h	80...9510 gph
Process connection	threaded connection 2 NPT DN50		

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Application				
Special feature	Gold-plated contacts			
Application	empty pipe detection; for industrial applications			
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	[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; IO-Link; (configurable)		
Number of analogue outputs		2		
Analogue current output	[mA]	4...20; ($\leq 22 \text{ mA}$)		
Max. load	[Ω]	500		
Measuring/setting range				
Measuring range	5...600 l/min	0.3...36 m ³ /h	80...9510 gph	1.3...158.5 gpm
Display range	-720...720 l/min	-43.2...43.2 m ³ /h	-11410...11410 gph	-190.2...190.2 gpm
Resolution	0.5 l/min	0.02 m ³ /h	5 gph	0.1 gpm
Analogue start point ASP	0...480 l/min	0...28.8 m ³ /h	0...7610 gph	0...126.8 gpm
Analogue end point AEP	120...600 l/min	7.2...36 m ³ /h	1900...9510 gph	31.7...158.5 gpm
Low flow cut-off LFC	< 15 l/min	< 0.9 m ³ /h	< 240 gph	< 4 gpm
In steps of	0.5 l/min	0.02 m ³ /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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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
Interfaces		
Communication interface		IO-Link
Transmission type		COM2 (38,4 kBaud)
IO-Link revision		1.1
SDCI standard		IEC 61131-9 FDIS
IO-Link device ID		532 d / 00 02 14 h
Profiles		Smart Sensor: Process Data Variable; Device Identification
SIO mode		no
Required master port type		A
Process data analogue		3
Process data binary		2
Min. process cycle time	[ms]	5
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	
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

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Mechanical data	
Weight [g]	2728
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; FKM
Process connection	threaded connection 2 NPT DN50

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

Accessories	
Accessories (supplied)	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



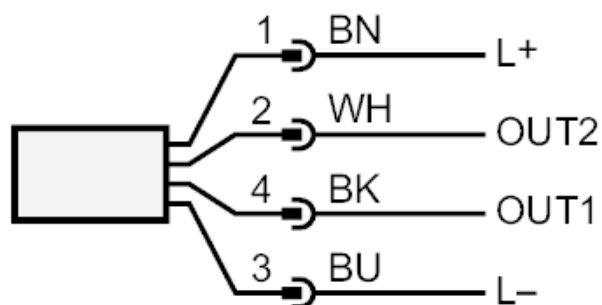
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Magnetic-inductive flow meter

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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



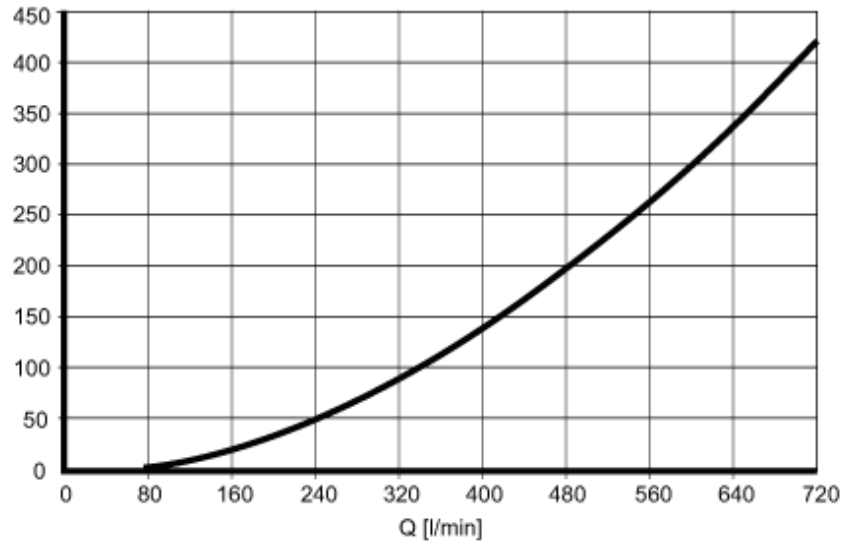
Magnetic-inductive flow meter

SMN21XGX50KG/US-100

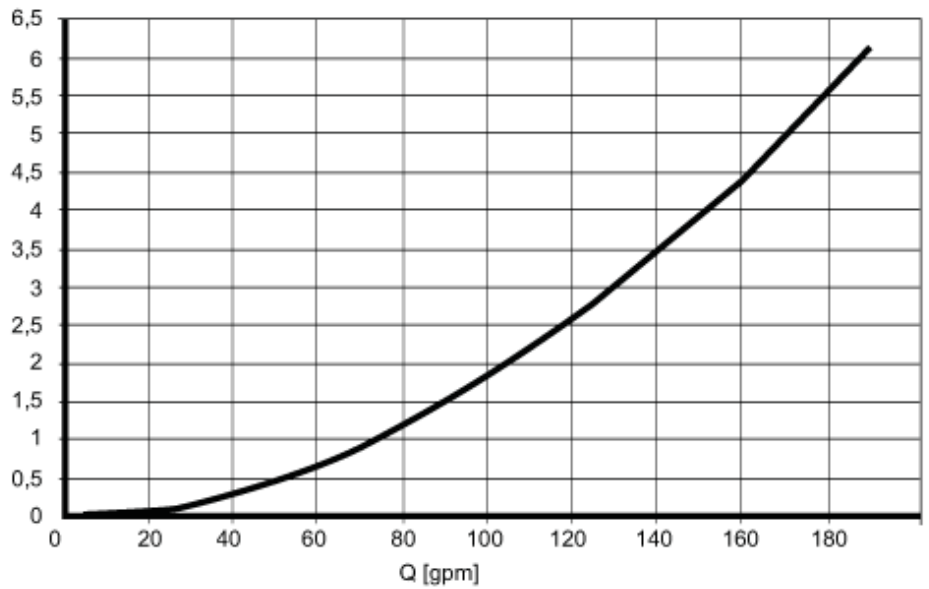
Diagrams and graphs

Pressure loss

dP [mbar] DN50



dP [psi]



dP Pressure loss

Q volumetric flow quantity