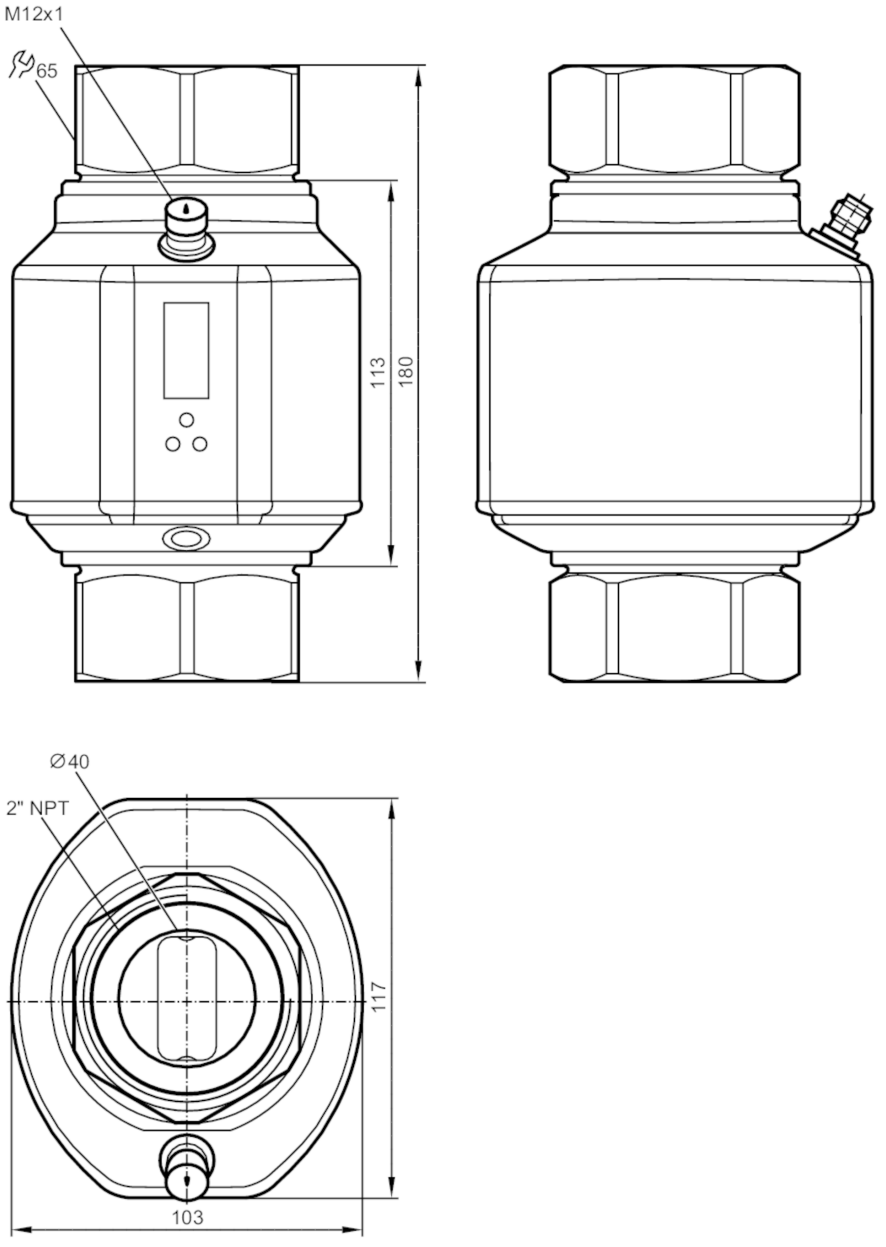
SM2604

Magnetic-inductive flow meter

SMN21XGX50KG/US-100



Product characteristics				
Number of inputs and outputs	Number of analog 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 2" NPT DN50			

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Application					
System		gold-plated contacts			
Application		empty pipe detection; for industrial applications			
Media		Conductive liquids; water; water-based media			
Note on media		conductivity: ≥ 20 µS/cm viscosity: < 70 mm²/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 analog outputs: 2			
Outputs					
Total number of outputs		2			
Output signal		analog signal; IO-Link; (configurable)			
Number of analog outputs		2			
Analog current output	[mA]	4...20; (≤ 22 mA)			
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
Analog start point ASP		0...480 l/min	0...28.8 m³/h	0...7610 gph	0...126.8 gpm
Analog 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	
Analog start point		-20...60 °C		-4...140 °F	
Analog 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)		± (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)	
Reaction 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	
Profiles		Smart Sensor: Process Data Variable; Device Identification	
SIO mode		no	
Required master port class		A	
Process data analogue		3	
Process data binary		2	
Min. process cycle time	[ms]	5	
Supported DeviceIDs		Type of operation	DeviceID
		default	532
Operating conditions			
Ambient temperature		-10...60 °C	14...140 °F
Storage temperature		-25...80 °C	-13...176 °F
Protection		IP 65; IP 67	

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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
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]	2728	
Material		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, 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		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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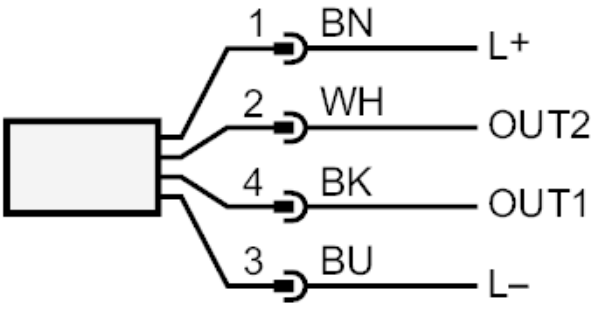
Connection



	Colours to DIN EN 60947-5-2
OUT1:	analog output Temperature monitoring
OUT2:	analog output Volumetric flow quantity monitoring
	Core colors :
BK =	black
BN =	brown
BU =	blue
WH =	white

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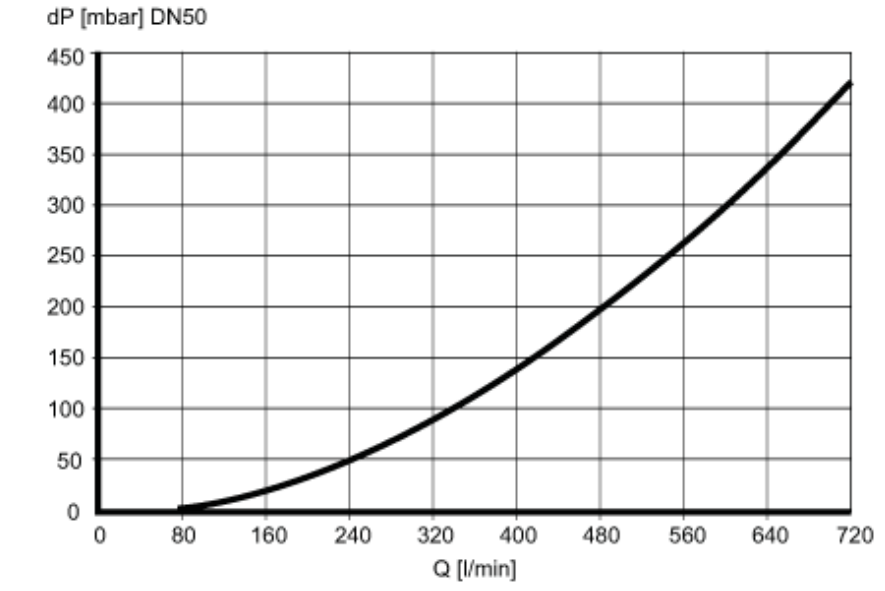
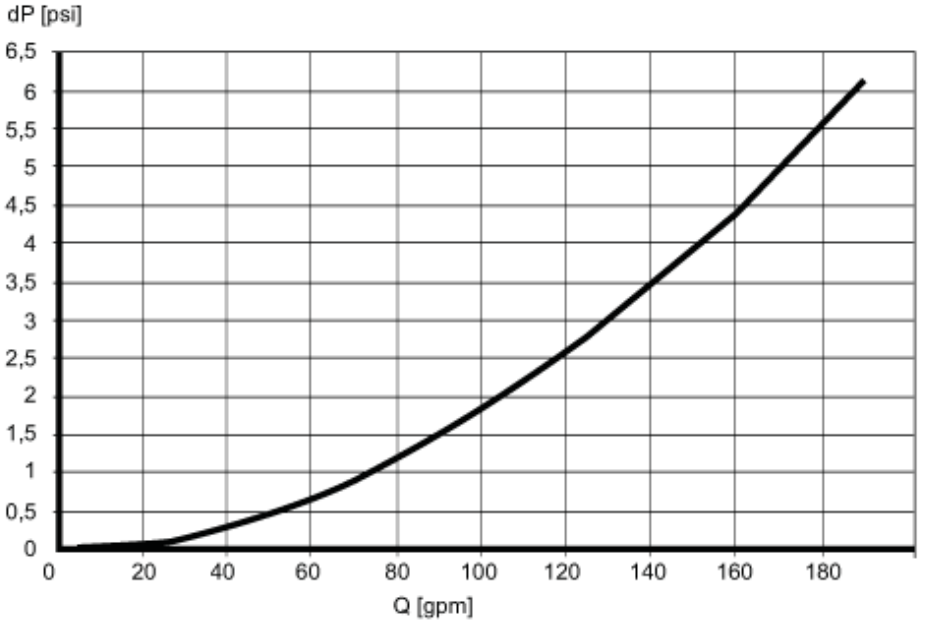
Diagrams and graphs

Pressure loss





dP Pressure loss

Q volumetric flow quantity