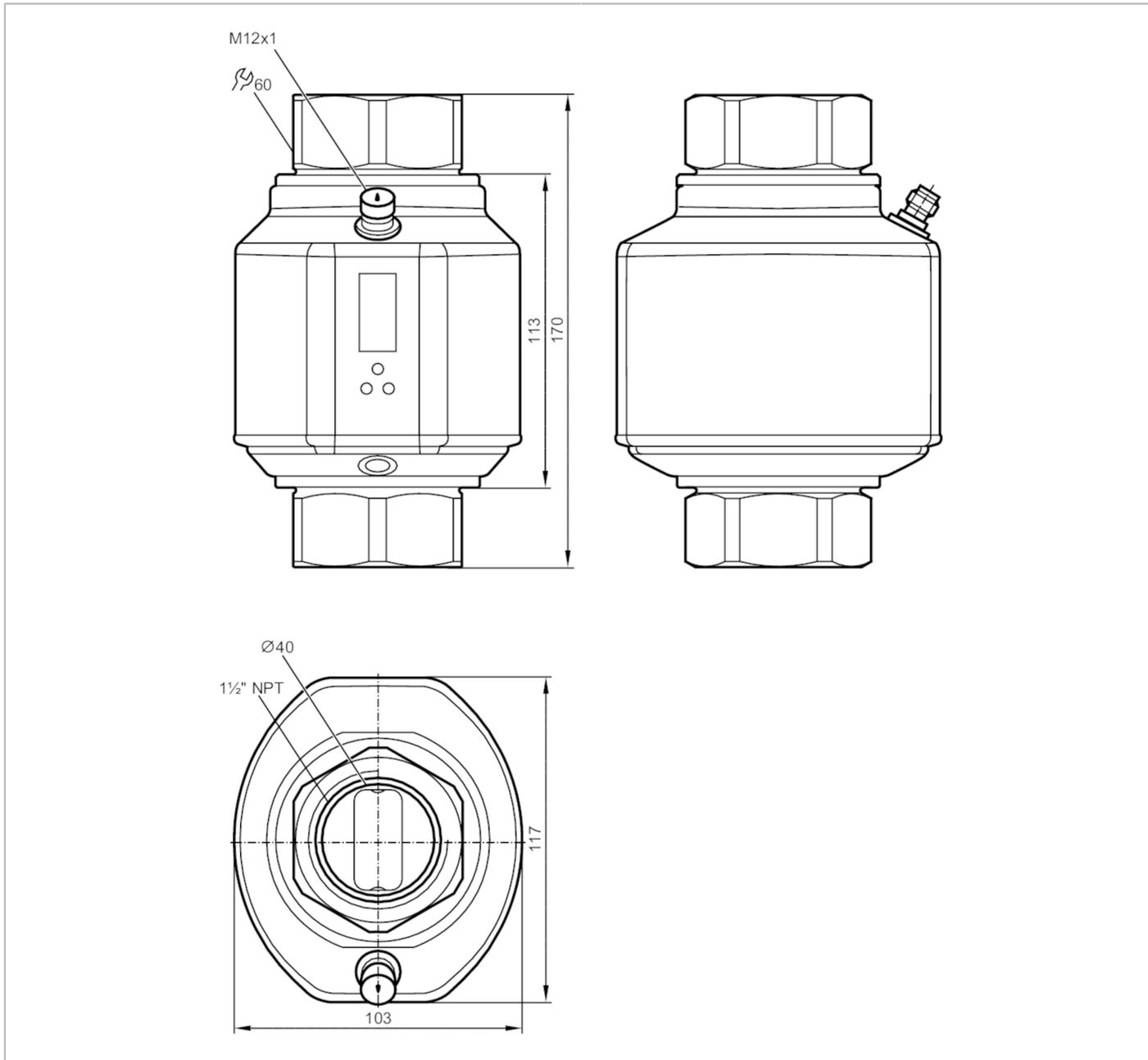


# SM9604



## Magnetic-inductive flow meter

SMN32XGX50KG/US-100



### Product characteristics

Number of inputs and outputs	Number of analogue outputs: 2			
Measuring range	5...300 l/min	0.3...18 m <sup>3</sup> /h	80...4755 gph	1.3...79.3 gpm
Process connection	threaded connection 1 1/2" NPT internal thread DN40			

### 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)

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Medium temperature	-10...80 °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

### Inputs / outputs

Number of inputs and outputs	Number of analogue outputs: 2
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### Outputs

Total number of outputs	2
Output signal	analogue signal
Number of analogue outputs	2
Analogue current output [mA]	4...20; ( $\leq 22$ mA)
Max. load [ $\Omega$ ]	500

### Measuring/setting range

Measuring range	5...300 l/min	0.3...18 m <sup>3</sup> /h	80...4755 gph	1.3...79.3 gpm
Display range	-360...360 l/min	-21.6...21.6 m <sup>3</sup> /h	-5705...5705 gph	-95.1...95.1 gpm
Resolution	0.5 l/min	0.02 m <sup>3</sup> /h	5 gph	0.1 gpm
Analogue start point ASP	0...240 l/min	0...14.4 m <sup>3</sup> /h	0...3800 gph	0...63.4 gpm
Analogue end point AEP	60...300 l/min	3.6...18 m <sup>3</sup> /h	955...4755 gph	15.9...79.3 gpm
Low flow cut-off LFC	< 15 l/min	< 0.9 m <sup>3</sup> /h	< 240 gph	< 4 gpm
In steps of	0.5 l/min	0.02 m <sup>3</sup> /h	5 gph	0.1 gpm
Measuring dynamics	1:60			

### 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)	$\pm (0,8 \% MW + 0,5 \% MEW)$
Repeatability	$\pm 0,2\% MEW$

#### Temperature monitoring

Temperature drift	$\pm 0,0333$ °C / K; $\pm 0,0599$ °F / K
Accuracy [K]	$\pm 1$ (25 °C; Q > 15 l/min) / $\pm 1$ (77 °F; Q > 4 gpm)

### Response times

#### Flow monitoring

Response time [s]	0.35; (dAP = 0)
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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)	
<b>Software / programming</b>		
Parameter setting options	display can be deactivated; Display unit; empty pipe detection	
<b>Operating conditions</b>		
Ambient temperature	-10...60 °C	14...140 °F
Storage temperature	-25...80 °C	-13...176 °F
Protection	IP 65; IP 67	
<b>Tests / approvals</b>		
EMC	DIN EN 60947-5-9	
	DIN EN 61000-6-2	
CPA approval	model number	003MI
	accuracy class	-
	maximum allowable error	± 1,5 % FS
	Q (min)	0,3 m³/h
	Q (t)	-
	Q (max)	18 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	
<b>Mechanical data</b>		
Weight [g]	2745	
Housing	rectangular	
Dimensions [mm]	170 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; FKM	
Process connection	threaded connection 1 1/2" NPT internal thread DN40	
<b>Displays / operating elements</b>		
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	
<b>Accessories</b>		
Items supplied	Label	
<b>Remarks</b>		
Remarks	MW = measured value	
	MEW = Final value of the measuring range	
Pack quantity	1 pcs.	

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## Magnetic-inductive flow meter

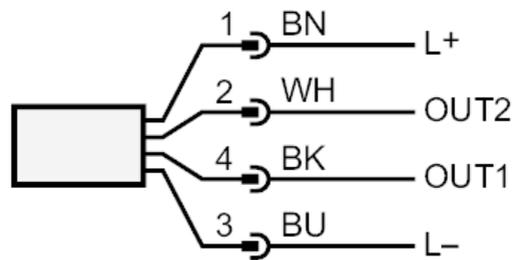
SMN32XGX50KG/US-100

### Electrical connection

Connector: 1 x M12; coding: A; Contacts: gold-plated



### Connection



OUT1: analogue output Temperature monitoring  
OUT2: analogue output volumetric flow quantity monitoring  
Core colours :  
BK = black  
BN = brown  
BU = blue  
WH = white

# SM9604



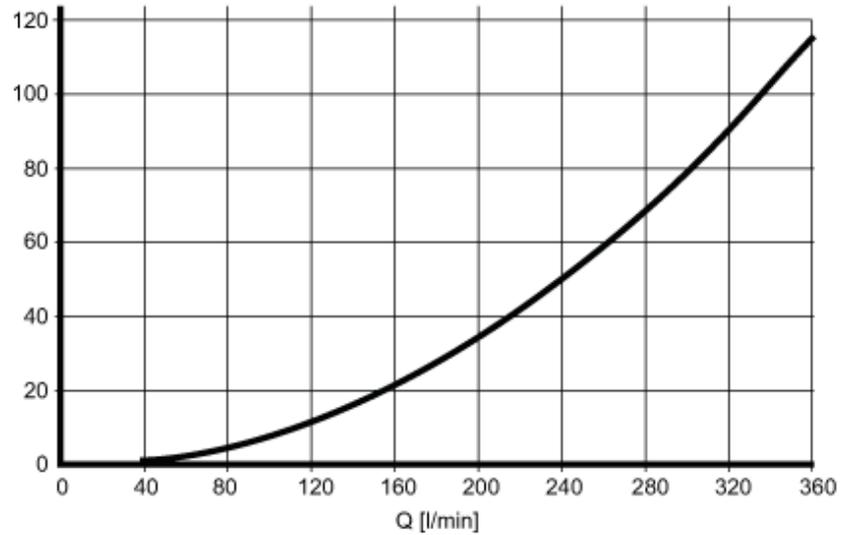
## Magnetic-inductive flow meter

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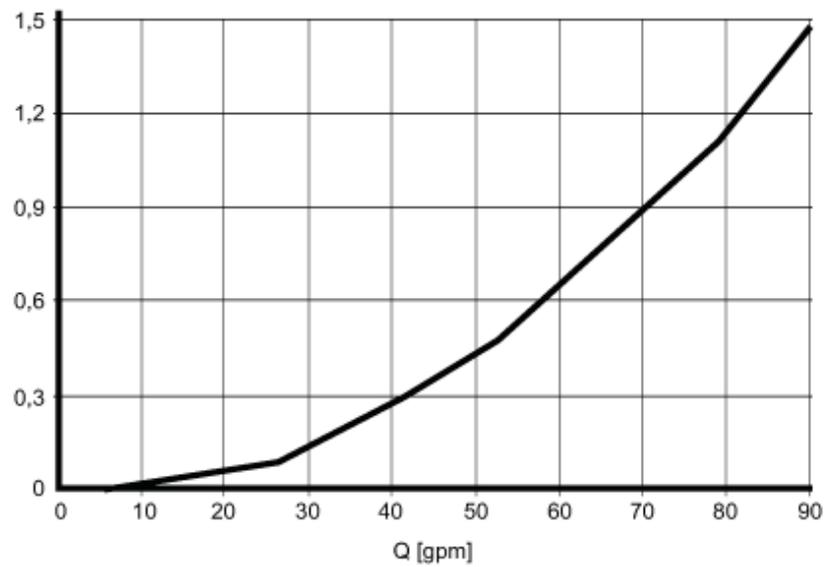
### Diagrams and graphs

#### Pressure loss

dP [mbar] DN50



dP [psi]



dP Pressure loss

Q volumetric flow quantity