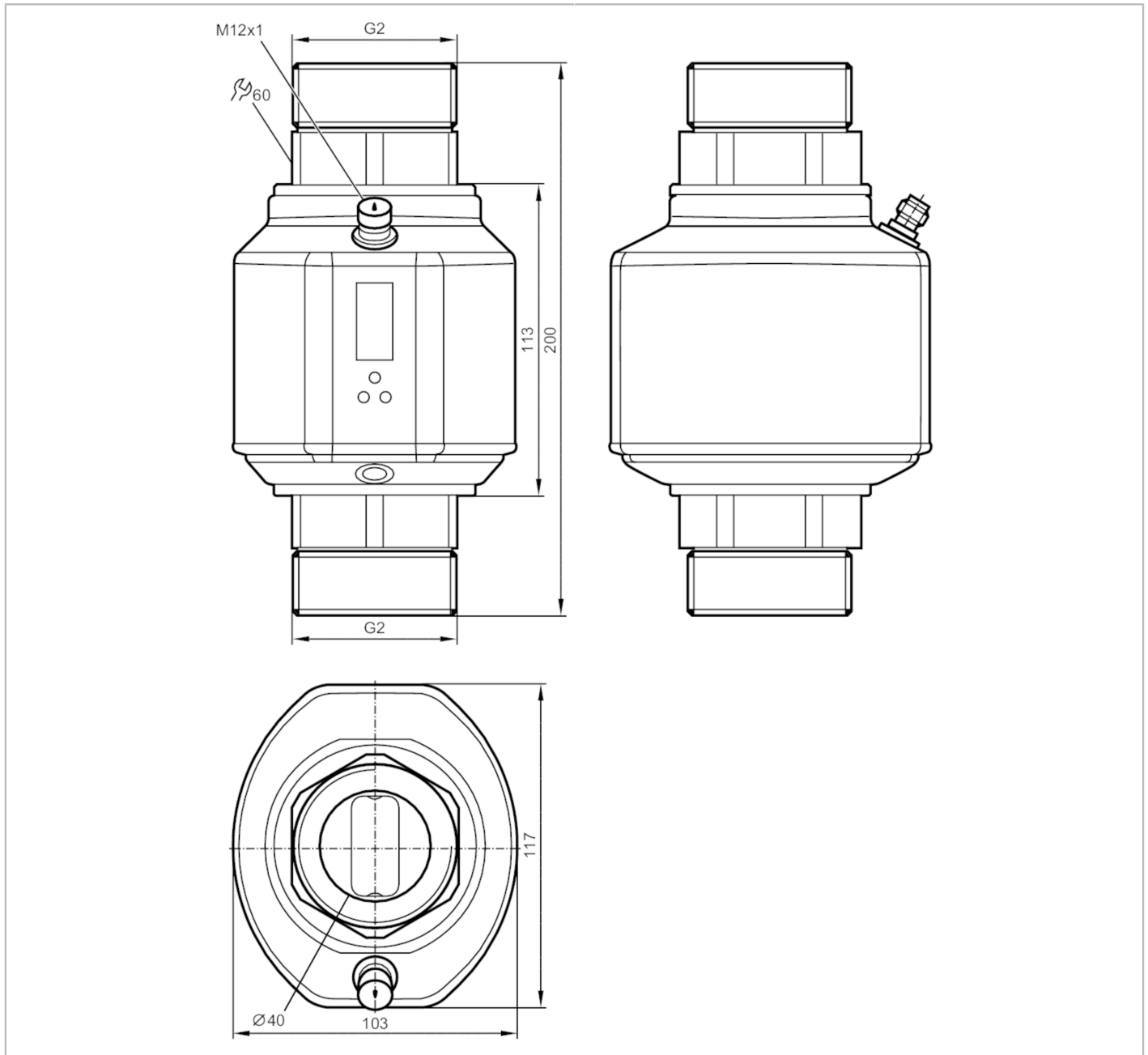


SM9004



Magnetic-inductive flow meter

SMR21XGX50KG/US



| Product characteristics | | | | |
|------------------------------|--|----------------------------|---------------|----------------|
| Number of inputs and outputs | Number of analog outputs: 2 | | | |
| Measuring range | 5...300 l/min | 0.3...18 m ³ /h | 80...4755 gph | 1.3...79.3 gpm |
| Process connection | threaded connection G 2 external thread DN50 flat seal | | | |
| Application | | | | |
| System | gold-plated contacts | | | |
| Application | empty pipe detection; for industrial applications | | | |
| Installation | connection to pipe by means of an adapter | | | |
| Media | Conductive liquids; water; water-based media | | | |

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| | | | |
|--|---|-------------|---------|
| Note on media | conductivity: $\geq 20 \mu\text{S/cm}$ | | |
| | viscosity: $< 70 \text{ mm}^2/\text{s}$ (40 °C) | | |
| Medium temperature | -10...90 °C | 14...194 °F | |
| Pressure rating | 16 bar | 232 psi | 1.6 MPa |
| MAWP (for applications according to CRN) | 8.9 bar | 0.89 MPa | |

| 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 |
| Measuring principle | magnetic-inductive |

| Inputs / outputs | |
|------------------------------|-----------------------------|
| Number of inputs and outputs | Number of analog outputs: 2 |

| Outputs | |
|----------------------------|--|
| Total number of outputs | 2 |
| Output signal | analog signal |
| Number of analog outputs | 2 |
| Analog current output [mA] | 4...20; ($\leq 22 \text{ mA}$; scalable) |
| Max. load [Ω] | 500 |

| Measuring/setting range | | | | |
|-------------------------|----------------------|--------------------------------|---------------------|-------------------|
| Measuring range | 5...300 l/min | 0.3...18 m ³ /h | 80...4755 gph | 1.3...79.3 gpm |
| Display range | -360...360 l/min | -21.6...21.6 m ³ /h | -5705...5705 gph | -95.1...95.1 gpm |
| Resolution | 0.5 l/min | 0.02 m ³ /h | 5 gph | 0.1 gpm |
| Analog start point ASP | 0...240 l/min | 0...14.4 m ³ /h | 0...3800 gph | 0...63.4 gpm |
| Analog end point AEP | 60...300 l/min | 3.6...18 m ³ /h | 955...4755 gph | 15.9...79.3 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 ³ /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 |
| 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 |

| Accuracy / deviations | |
|-----------------------------------|--|
| Flow monitoring | |
| Accuracy (in the measuring range) | $\pm (0,8 \% \text{ MW} + 0,5 \% \text{ MEW})$ |
| Repeatability | $\pm 0,2\% \text{ MEW}$ |
| Temperature monitoring | |
| Temperature drift | $\pm 0,0333 \text{ }^\circ\text{C} / \text{K}; \pm 0,0599 \text{ }^\circ\text{F} / \text{K}$ |
| Accuracy [K] | $\pm 1 (25 \text{ }^\circ\text{C}; Q > 15 \text{ l/min}) / \pm 1 (77 \text{ }^\circ\text{F}; Q > 4 \text{ gpm})$ |

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| Reaction times | | |
|-------------------------------|-------------------------|---|
| Flow monitoring | | |
| Response time | [s] | 0.35; (dAP = 0) |
| 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) |
| 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 | ± 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 |
| Mechanical data | | |
| Weight | [g] | 3050 |
| Housing | | rectangular |
| Inlet pipe length | | 3 x DN |
| Outlet pipe length | | 1 x DN |
| Dimensions | [mm] | 200 x 103 x 117 |
| Material | | stainless steel (1.4404 / 316L); stainless steel (1.4571/316Ti); PEI; FKM; PBT-GF20; TPE-U |
| Materials (wetted parts) | | Pipe section: stainless steel (1.4404 / 316L); Process connection sealing: NBR fiber-reinforced Gasket; FKM; stainless steel (1.4571/316Ti); PEEK |
| Process connection | | threaded connection G 2 external thread DN50 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 |

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Accessories

| | |
|----------------|---------------------------------|
| Items supplied | sealings: 2, Centellen Label |
|----------------|---------------------------------|

Remarks

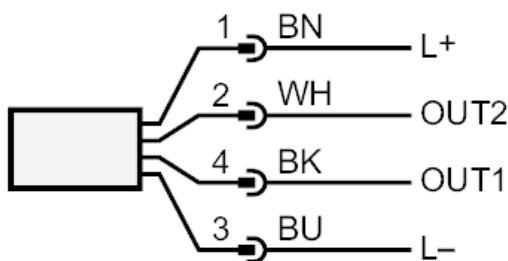
| | |
|---------------|---|
| Remarks | MW = Measured value MEW = Final value of the measuring range |
| Pack quantity | 1 pcs. |

Electrical connection

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



Connection



OUT1: analog output Temperature monitoring
OUT2: analog output Volumetric flow quantity monitoring
Core colors :
BK = black
BN = brown
BU = blue
WH = white

SM9004



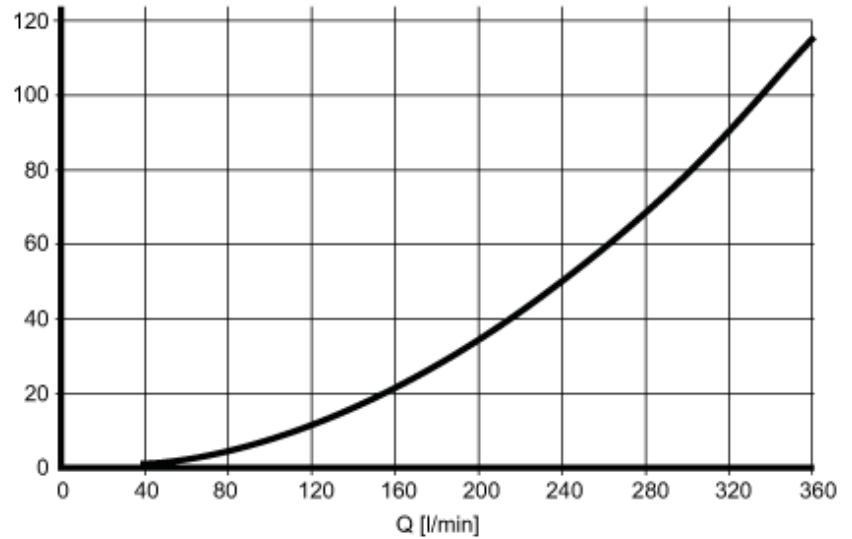
Magnetic-inductive flow meter

SMR21XGX50KG/US

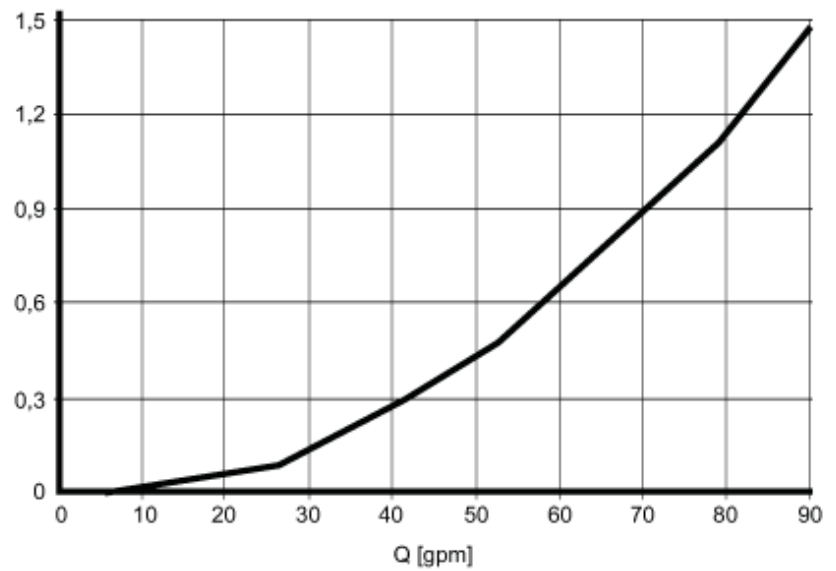
Diagrams and graphs

Pressure loss

dP [mbar] DN50



dP [psi]



dP Pressure loss

Q volumetric flow quantity