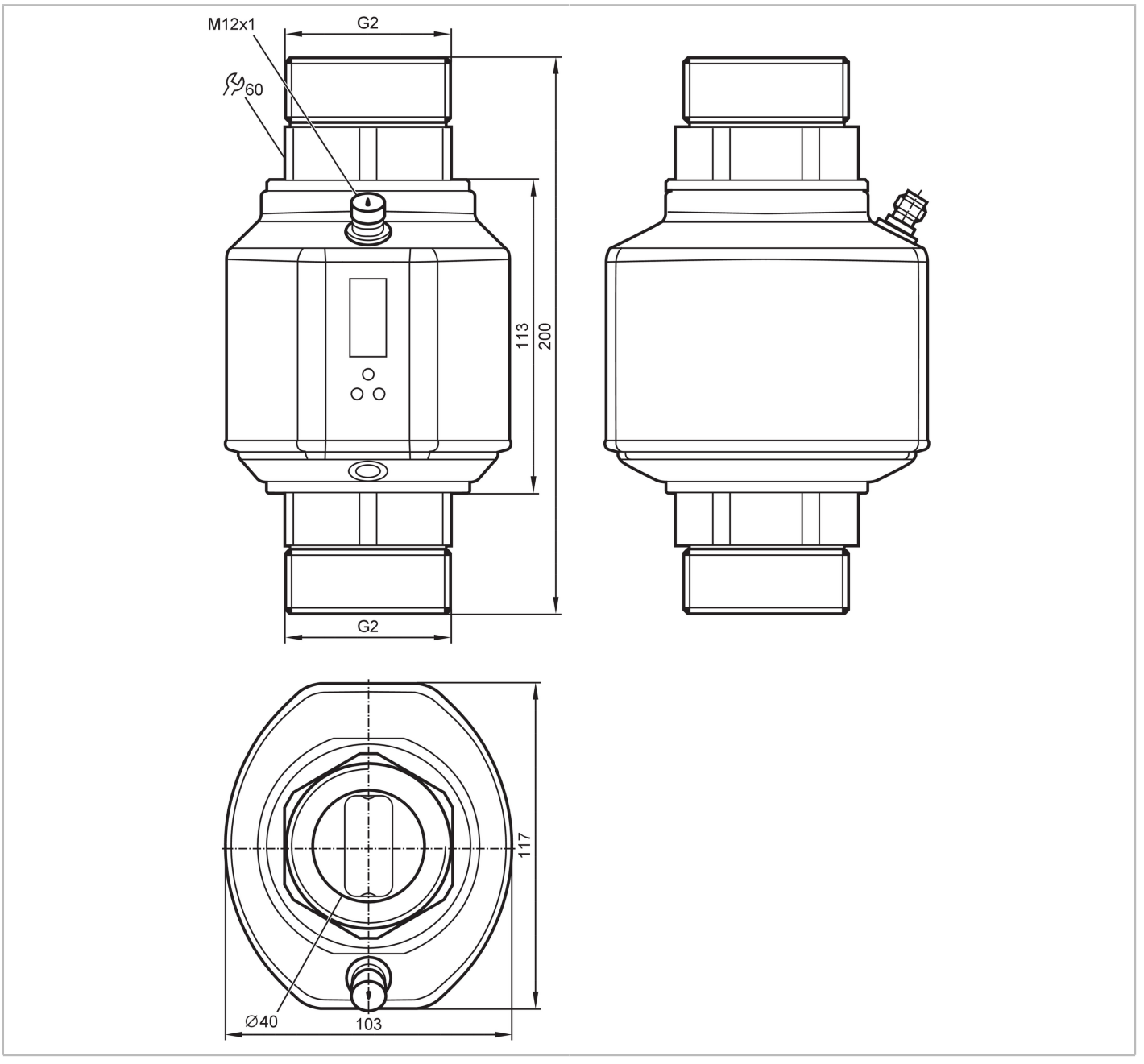
# SM9004

## Magnetic-inductive flow meter

SMR21XGX50KG/US




| | | | | |
|---|---|---|---|---|
| **Product characteristics** | | | | |
| Number of inputs and outputs | Number of analogue outputs: 2 | | | |
| Measuring range | 5...300 l/min | 0.3...18 m³/h | 80...4755 gph | 1.3...79.3 gpm |
| Process connection | threaded connection G 2 external thread DN50 flat seal | | | |
| **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 | | | |

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| | | | | |
|---|---|---|---|---|
| Note on media | conductivity: ≥ 20 µS/cm | | | |
| | viscosity: < 70 mm²/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 analogue outputs: 2 | | | |
| **Outputs** | | | | |
| Total number of outputs | 2 | | | |
| Output signal | analogue signal | | | |
| Number of analogue outputs | 2 | | | |
| Analogue current output [mA] | 4...20; (≤ 22 mA; scalable) | | | |
| Max. load [Ω] | 500 | | | |
| **Measuring/setting range** | | | | |
| Measuring range | 5...300 l/min | 0.3...18 m³/h | 80...4755 gph | 1.3...79.3 gpm |
| Display range | -360...360 l/min | -21.6...21.6 m³/h | -5705...5705 gph | -95.1...95.1 gpm |
| Resolution | 0.5 l/min | 0.02 m³/h | 5 gph | 0.1 gpm |
| Analogue start point ASP | 0...240 l/min | 0...14.4 m³/h | 0...3800 gph | 0...63.4 gpm |
| Analogue end point AEP | 60...300 l/min | 3.6...18 m³/h | 955...4755 gph | 15.9...79.3 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 | 1:60 | | | |
| 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) | ± (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) | | | |

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| | | | |
|---|---|---|---|
| **Response 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 | |
| Materials | | stainless steel (316L/1.4404); stainless steel (316Ti/1.4571); PEI; FKM; PBT-GF20; TPE-U | |
| Materials (wetted parts) | | Pipe section: stainless steel (316L/1.4404); Process connection sealing: NBR reinforced fibre Flat seal; FKM; stainless steel (316Ti/1.4571); 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 | |
| **Accessories** | | | |
| Items supplied | | sealings: 2, Centellen | |
| | | Label | |

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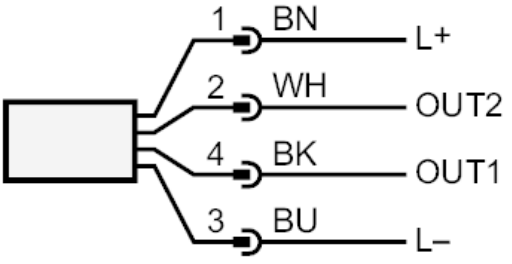
| Remarks | |
|---|---|
| Remarks | MW = measured value |
| | MEW = Final value of the measuring range |
| Pack quantity | 1 pcs. |

## Electrical connection

Connector: 1 x M12; coding: A; Contacts: 4, gold-plated




### 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 |

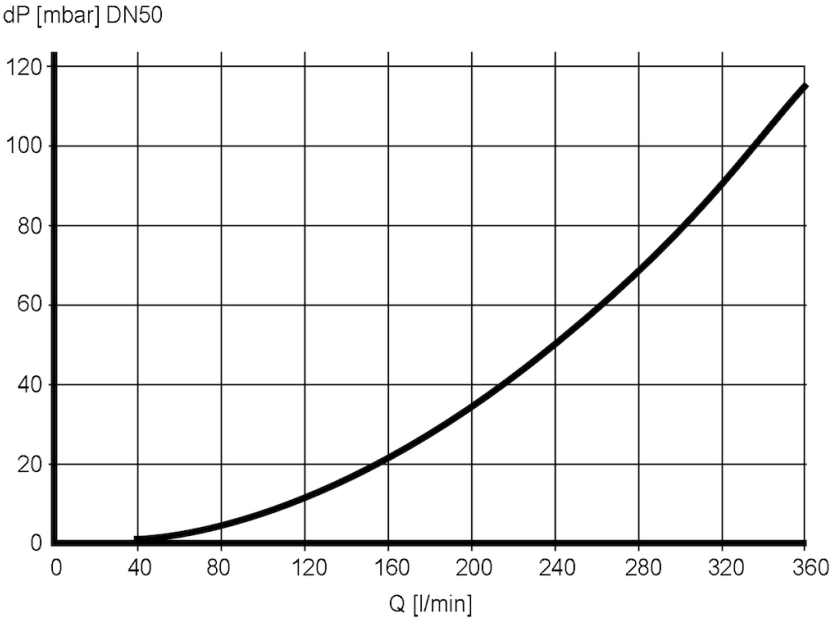
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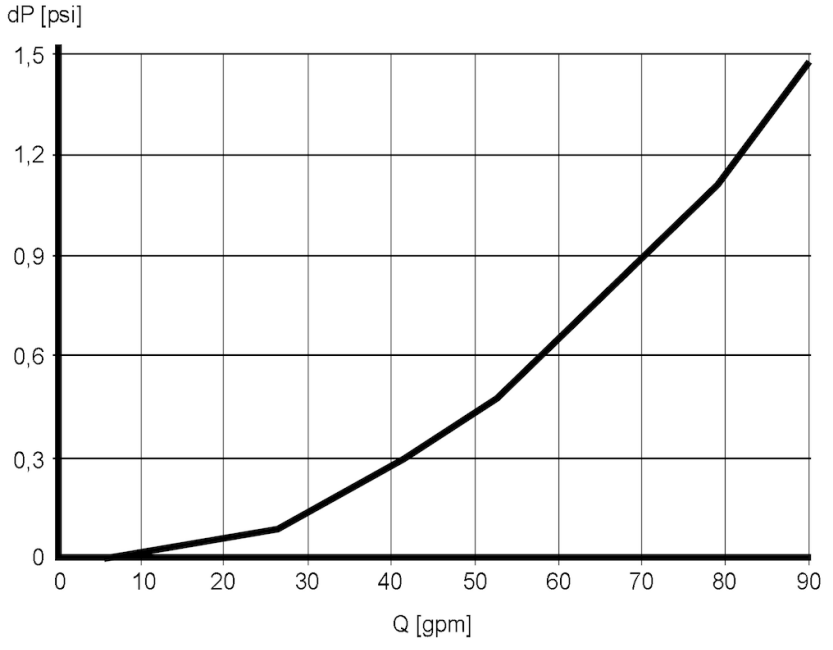
## Magnetic-inductive flow meter

**SMR21XGX50KG/US**

## Diagrams and graphs

Pressure loss




dP Pressure loss

Q volumetric flow quantity