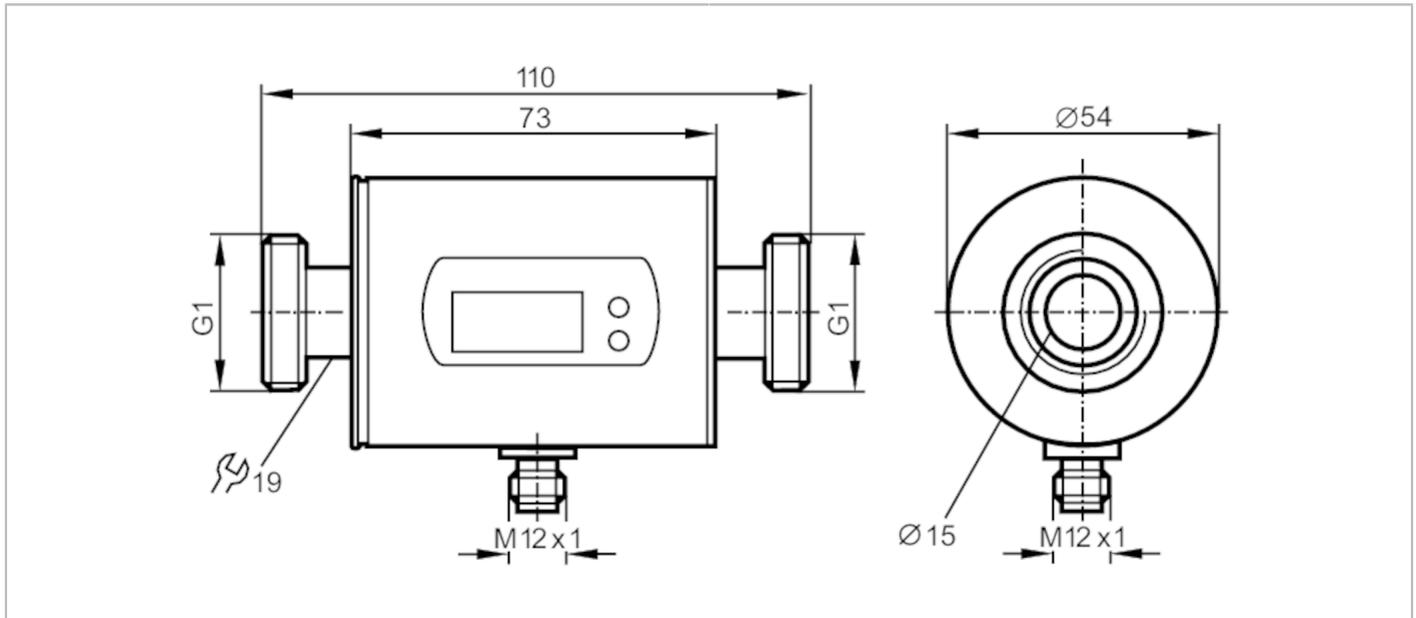


SM8001



Magnetic-inductive flow meter

SMR11GGXFRKG/US-100



Product characteristics

| | | | |
|------------------------------|---|----------------|--|
| Number of inputs and outputs | Number of digital outputs: 2; Number of analogue outputs: 1 | | |
| Measuring range | 6...1584 gph | 0.1...26.4 gpm | |
| Process connection | threaded connection G 1 external thread DN25 flat seal | | |

Application

| | | | |
|--|---|----------|---------|
| Special feature | Gold-plated contacts | | |
| Application | totaliser function; for industrial applications | | |
| Installation | connection to pipe by means of an adapter | | |
| 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 [°F] | 14...158 | | |
| Pressure rating | 16 bar | 232 psi | 1.6 MPa |
| MAWP for applications according to CRN | 10.4 bar | 1.04 MPa | |

Electrical data

| | | | |
|-----------------------------|----------------------------|--|--|
| Operating voltage [V] | 18...30 DC; (to SELV/PELV) | | |
| Current consumption [mA] | 95; (24 V) | | |
| 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 digital outputs: 2; Number of analogue outputs: 1 | | |
|------------------------------|---|--|--|

Inputs

| | | | |
|--------|---------------|--|--|
| Inputs | counter reset | | |
|--------|---------------|--|--|

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| Outputs | | |
|--|--|------------------|
| Total number of outputs | 2 | |
| Output signal | switching signal; analogue signal; pulse signal; IO-Link; (configurable) | |
| Electrical design | PNP/NPN | |
| Number of digital outputs | 2 | |
| Output function | normally open / normally closed; (parameterisable) | |
| Max. voltage drop switching output DC [V] | 2 | |
| Permanent current rating of switching output DC [mA] | 200 | |
| Number of analogue outputs | 1 | |
| Analogue current output [mA] | 4...20; (scalable) | |
| Max. load [Ω] | 500 | |
| Analogue voltage output [V] | 0...10; (scalable) | |
| Min. load resistance [Ω] | 2000 | |
| Pulse output | flow rate meter | |
| Short-circuit protection | yes | |
| Type of short-circuit protection | pulsed | |
| Overload protection | yes | |
| Measuring/setting range | | |
| Measuring range | 6...1584 gph | 0.1...26.4 gpm |
| Display range | -1902...1902 gph | -31.7...31.7 gpm |
| Resolution | 2 gph | 0.05 gpm |
| Set point SP | 14...1586 gph | 0.25...26.4 gpm |
| Reset point rP | 6...1578 gph | 0.1...26.25 gpm |
| Analogue start point ASP | 0...1272 gph | 0...21.2 gpm |
| Analogue end point AEP | 312...1586 gph | 5.2...26.4 gpm |
| In steps of | 2 gph | 0.05 gpm |
| Volumetric flow quantity monitoring | | |
| Pulse value | 0.01...100 000 000 gal | |
| Pulse length [s] | 0,0025...2 | |
| Temperature monitoring | | |
| Measuring range [°F] | -4...176 | |
| Resolution [°F] | 0.5 | |
| Set point SP [°F] | -2.5...176 | |
| Reset point rP [°F] | -3.5...175 | |
| Analogue start point [°F] | -4...140.5 | |
| Analogue end point [°F] | 31.5...176 | |
| In steps of [°F] | 0.5 | |
| Accuracy / deviations | | |
| Flow monitoring | | |
| Accuracy (in the measuring range) | ± (0,8 % MW + 0,5 % MEW) | |
| Repeatability | ± 0,2% MEW | |

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| | | |
|--------------------------------|--|-------------------------|
| Temperature monitoring | | |
| Accuracy | [K] | ± 2,5 (Q > 0,26 gpm) |
| Response times | | |
| Flow monitoring | | |
| Response time | [s] | 0.15; (dAP = 0, T19) |
| Delay time programmable dS, dr | [s] | 0...50 |
| Damping process value dAP | [s] | 0...5 |
| Temperature monitoring | | |
| Dynamic response T05 / T09 | [s] | T09 = 20 (Q > 0,26 gpm) |
| Software / programming | | |
| Parameter setting options | Flow monitoring; quantity meter; Preset counter; Temperature monitoring; hysteresis / window; normally open / normally closed; switching logic; current/voltage/pulse output; start-up delay; display can be deactivated; Display unit | |
| Interfaces | | |
| Communication interface | IO-Link | |
| Transmission type | COM2 (38,4 kBaud) | |
| IO-Link revision | 1.1 | |
| SDCI standard | IEC 61131-9 | |
| Profiles | Smart Sensor - SSP 0 | Generic Profiled Sensor |
| | Function | Device identification |
| | Function | Process data variable |
| | Function | Device diagnosis |
| SIO mode | yes | |
| Required master port type | A | |
| Process data analogue | 3 | |
| Process data binary | 2 | |
| Min. process cycle time | [ms] | 5 |
| Supported DeviceIDs | Type of operation | DeviceID |
| | default | 576 |
| Operating conditions | | |
| Ambient temperature | [°F] | 14...140 |
| Storage temperature | [°F] | -13...176 |
| Protection | IP 67 | |
| Tests / approvals | | |
| EMC | DIN EN 60947-5-9 | |
| Shock resistance | DIN IEC 68-2-27 | 20 g (11 ms) |
| Vibration resistance | DIN IEC 68-2-6 | 5 g (10...2000 Hz) |
| MTTF | [years] | 145 |
| Pressure Equipment Directive | Sound engineering practice; can be used for group 2 fluids; group 1 fluids on request | |
| Mechanical data | | |
| Weight | [g] | 26 |
| Housing | cylindrical | |
| Dimensions | [mm] | Ø 54 / L = 110 |
| Materials | stainless steel (316L/1.4404); PBT-GF20; PC; FKM; TPE | |

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| | |
|--------------------------|--|
| Materials (wetted parts) | stainless steel (316L/1.4404); PEEK; FKM |
| Process connection | threaded connection G 1 external thread DN25 flat seal |

Displays / operating elements

| | | |
|---------|------------------|---|
| Display | Display unit | 6 x LED, green (gpm, gph, gal, °F, 10 ³ , 1000 x 10 ³) |
| | switching status | 2 x LED, yellow |
| | measured values | alphanumeric display, 4-digit |
| | programming | alphanumeric display, 4-digit |

Remarks

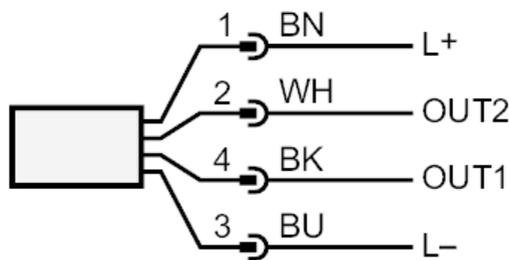
| | |
|---------------|--|
| Remarks | MW = measured value |
| | MEW = Final value of the measuring range |
| Pack quantity | 1 pcs. |

Electrical connection

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



Connection



- OUT1: colours to DIN EN 60947-5-2
 switching output volumetric flow quantity monitoring
 Pulse output quantity meter
 signal output Preset counter
 IO-Link
- OUT2: switching output volumetric flow quantity monitoring
 switching output Temperature monitoring
 analogue output volumetric flow quantity monitoring
 analogue output Temperature monitoring
 input counter reset
 Core colours :
- BK = black
 BN = brown
 BU = blue
 WH = white

SM8001

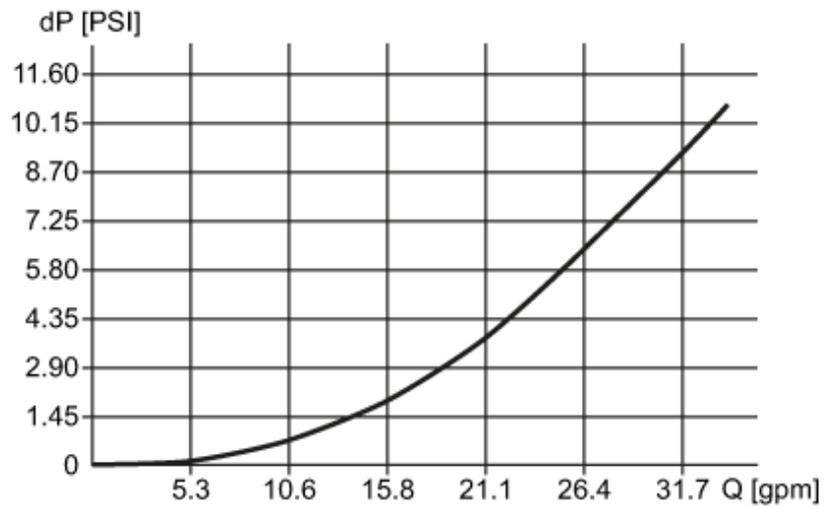


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Diagrams and graphs

Pressure loss



dP Pressure loss

Q volumetric flow quantity