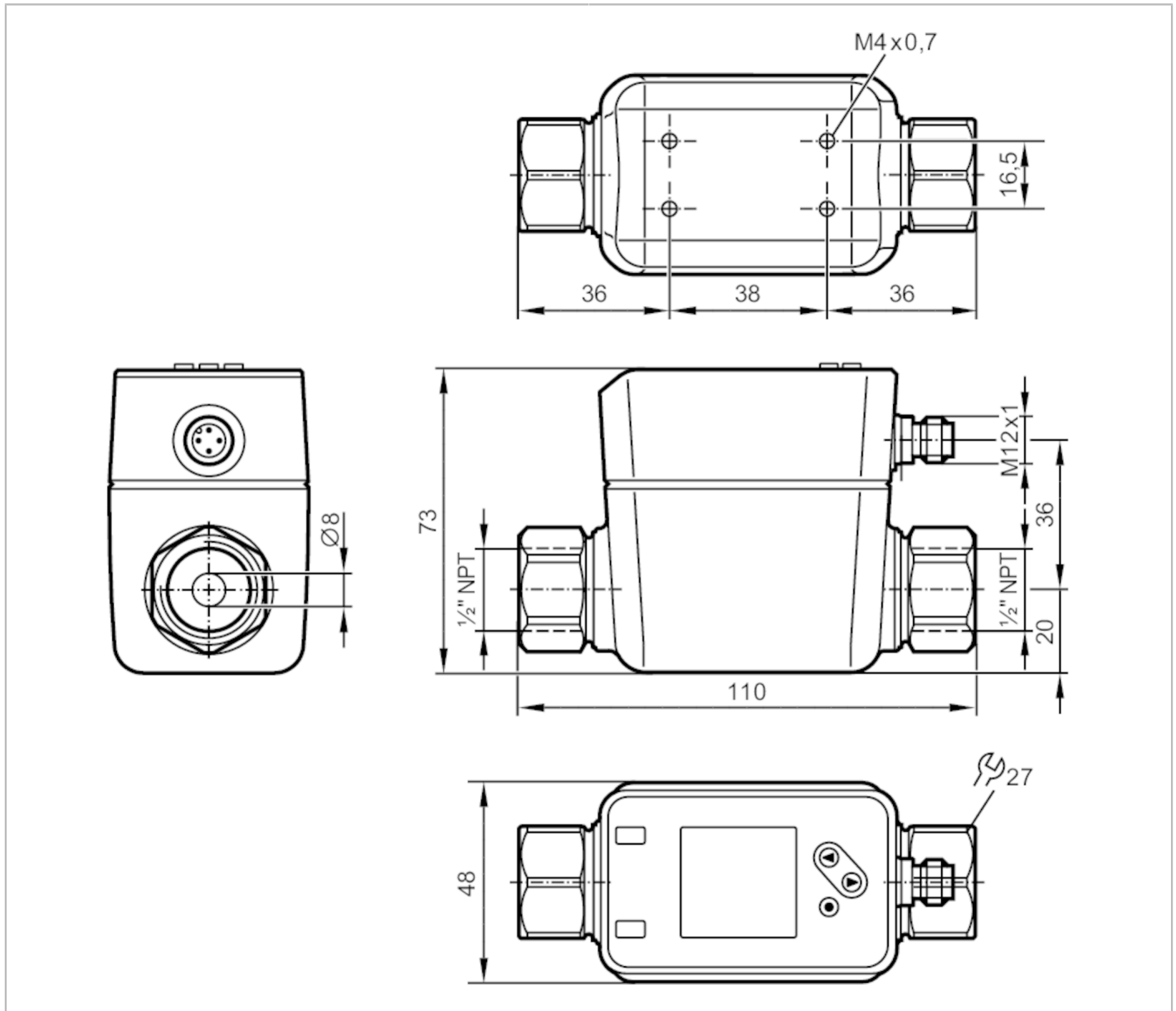


# SM6621



## Magnetic-inductive flow meter

SMN12XGXFRKG/US-100



### Product characteristics

|                              |   |                  |               |                 |
|------------------------------|---|------------------|---------------|-----------------|
| Number of inputs and outputs | Number of digital outputs: 2; Number of analog outputs: 1 |                  |               |                 |
| Measuring range              | 0.05...35 l/min   | 0.003...2.1 m³/h | 0.6...555 gph | 0.01...9.25 gpm |
| Process connection           | 1/2" NPT DN15   |                  |               |                 |

### Application

|                         |   |  |  |  |
|-------------------------|---|--|--|--|
| System                  | gold-plated contacts  |  |  |  |
| Media                   | Conductive liquids; water; water-based media  |  |  |  |
| Note on media           | conductivity: $\geq 20 \mu\text{S/cm}$<br>viscosity: $< 70 \text{ mm}^2/\text{s}$ (40 °C) |  |  |  |
| Medium temperature [°F] | -4...194  |  |  |  |
| Pressure rating [bar]   | 16  |  |  |  |
| Pressure rating [Mpa]   | 1.6   |  |  |  |

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| Electrical data                                 |      |  |                  |                 |                  |
|---|------|--|------------------|-----------------|------------------|
| Operating voltage                               | [V]  | 18...30 DC; (according to EN 50178 SELV/PELV)  |                  |                 |                  |
| Current consumption                             | [mA] | < 80   |                  |                 |                  |
| Protection class                                |      | III  |                  |                 |                  |
| Reverse polarity protection                     |      | yes  |                  |                 |                  |
| Power-on delay time                             | [s]  | 5  |                  |                 |                  |
| Inputs / outputs                                |      |  |                  |                 |                  |
| Number of inputs and outputs                    |      | Number of digital outputs: 2; Number of analog outputs: 1                                |                  |                 |                  |
| Inputs  |      |  |                  |                 |                  |
| Inputs  |      | counter reset  |                  |                 |                  |
| Outputs   |      |  |                  |                 |                  |
| Total number of outputs                         |      | 2  |                  |                 |                  |
| Output signal                                   |      | switching signal; analog signal; pulse signal; IO-Link; frequency signal; (configurable) |                  |                 |                  |
| Electrical design                               |      | PNP/NPN  |                  |                 |                  |
| Number of digital outputs                       |      | 2  |                  |                 |                  |
| Output function                                 |      | normally open / closed; (configurable)   |                  |                 |                  |
| Max. voltage drop switching output DC           | [V]  | 2  |                  |                 |                  |
| Permanent current rating of switching output DC | [mA] | 100  |                  |                 |                  |
| Number of analog outputs                        |      | 1  |                  |                 |                  |
| Analog current output                           | [mA] | 4...20; (scalable)   |                  |                 |                  |
| Max. load                                       | [Ω]  | 500  |                  |                 |                  |
| Pulse output                                    |      | flow rate meter  |                  |                 |                  |
| Short-circuit protection                        |      | yes  |                  |                 |                  |
| Type of short-circuit protection                |      | yes (non-latching)   |                  |                 |                  |
| Overload protection                             |      | yes  |                  |                 |                  |
| Measuring/setting range                         |      |  |                  |                 |                  |
| Measuring range                                 |      | 0.05...35 l/min  | 0.003...2.1 m³/h | 0.6...555 gph   | 0.01...9.25 gpm  |
| Display range                                   |      | -42...42 l/min   | -2.5...2.5 m³/h  | -666...666 gph  | -11.1...11.1 gpm |
| Resolution                                      |      | 0.02 l/min   | 0.002 m³/h       | 0.6 gph         | 0.01 gpm         |
| Set point SP                                    |      | 0.25...35 l/min  | 0.015...2.1 m³/h | 4.2...555 gph   | 0.07...9.25 gpm  |
| Reset point rP                                  |      | 0...34.8 l/min   | 0...2.08 m³/h    | 1.2...552 gph   | 0.02...9.2 gpm   |
| Analog start point ASP                          |      | 0...28 l/min   | 0...1.7 m³/h     | 0...666 gph     | 0...7.4 gpm      |
| Analog end point AEP                            |      | 7...35 l/min   | 0.42...2.1 m³/h  | 111...555 gph   | 1.85...9.25 gpm  |
| Low flow cut-off LFC                            |      | 0.05...1.75 l/min  | 0.003...0.1 m³/h | 0.6...27.6 gph  | 0.01...0.46 gpm  |
| Frequency end point, FEP                        |      | 7...35 l/min   | 0.42...2.1 m³/h  | 111.6...555 gph | 1.86...9.25 gpm  |
| Frequency at the end point FRP                  | [Hz] | 1...10000  |                  |                 |                  |
| Volumetric flow quantity monitoring             |      |  |                  |                 |                  |
| Pulse length                                    | [s]  | 0.001...2  |                  |                 |                  |
| Pulse value                                     |      | 0.001...99990000 l   |                  |                 |                  |

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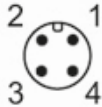
| Temperature monitoring               |                              |  |
|--------------------------------------|------------------------------|--|
| Measuring range                      | [°F]                         | -4...194   |
| Display range                        | [°F]                         | -43.6...233.6  |
| Resolution                           | [°F]                         | 0.1  |
| Set point SP                         | [°F]                         | -3.3...194   |
| Reset point rP                       | [°F]                         | -4...193.3   |
| Analog start point                   | [°F]                         | -4...154.4   |
| Analog end point                     | [°F]                         | 35.6...194   |
| In steps of                          | [°F]                         | 0.1  |
| Accuracy / deviations                |                              |  |
| Flow monitoring                      |                              |  |
| Accuracy (in the measuring range)    |                              | $\pm (0,8 \% MW + 0,2 \% MEW)$   |
| Repeatability                        |                              | $\pm 0,2 \% MEW$   |
| Temperature monitoring               |                              |  |
| Accuracy                             | [K]                          | $\pm 2,5 (Q > 5 \% MEW)$   |
| Reaction times                       |                              |  |
| Flow monitoring                      |                              |  |
| Start-up delay                       | [s]                          | 0...50   |
| Response time                        | [s]                          | $< 0.25; (dAP = 0, T09)$   |
| Damping for the switching output dAP | [s]                          | 0...5  |
| Temperature monitoring               |                              |  |
| Response time                        | [s]                          | 15; $(Q > 10 \% MEW, T09)$   |
| Software / programming               |                              |  |
| Parameter setting options            |                              | hysteresis / window; normally open / closed; switching logic; Frequency output; current/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: Process Data Variable; Device Identification, Device Diagnosis   |
| SIO mode                             |                              | yes  |
| Required master port class           |                              | A  |
| Process data analog                  |                              | 3  |
| Process data binary                  |                              | 2  |
| Min. process cycle time              | [ms]                         | 6  |
| Supported DeviceIDs                  | Type of operation<br>default | DeviceID<br>952  |
| Operating conditions                 |                              |  |
| Ambient temperature                  | [°F]                         | -4...140   |
| Storage temperature                  | [°F]                         | -13...176  |
| Protection                           |                              | IP 65; IP 67   |

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## Magnetic-inductive flow meter

SMN12XGXFRKG/US-100

| 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]  |   | 114  |
| UL approval   | UL approval number  | I014   |
|   | File number UL  | E174189  |
| Pressure equipment directive  | sound engineering practice; can be used for group 2 fluids; group 1 fluids on request |  |
| Mechanical data   |   |  |
| Weight [g]  | 743   |  |
| Material  | stainless steel (1.4408/316); stainless steel (1.4404 / 316L); PC; PBT+PC-GF30        |  |
| Materials (wetted parts)  | stainless steel (1.4404 / 316L); PEEK; carbon fiber PEEK; FKM                         |  |
| Process connection  | 1/2" NPT DN15   |  |
| Displays / operating elements   |   |  |
| Display   |   | Color display 1,44", 128 x 128 pixels<br>2 x LED, yellow |
| Remarks   |   |  |
| Remarks   | MW = Measured value<br>MEW = Final value of the measuring range                       |  |
| Pack quantity   | 1 pcs.  |  |
| Electrical connection   |   |  |
| Connector: 1 x M12; Contacts: gold-plated   |   |  |
|  |   |  |

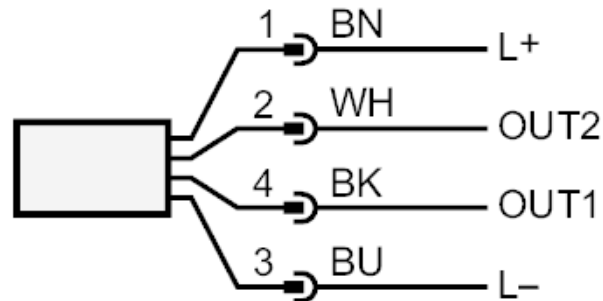
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## Magnetic-inductive flow meter

SMN12XGXFRKG/US-100

### Connection



Colors to DIN EN 60947-5-2

OUT1: Switching output Volumetric flow quantity monitoring  
Switching output Temperature monitoring  
Pulse output quantity meter  
Frequency output volumetric flow monitoring  
Frequency output Temperature monitoring  
signal output Preset counter  
IO-Link

OUT2: Switching output Volumetric flow quantity monitoring  
Switching output Temperature monitoring  
analog output flow  
analog output temperature  
Input counter reset

Core colors :

BK = black  
BN = brown  
BU = blue  
WH = white

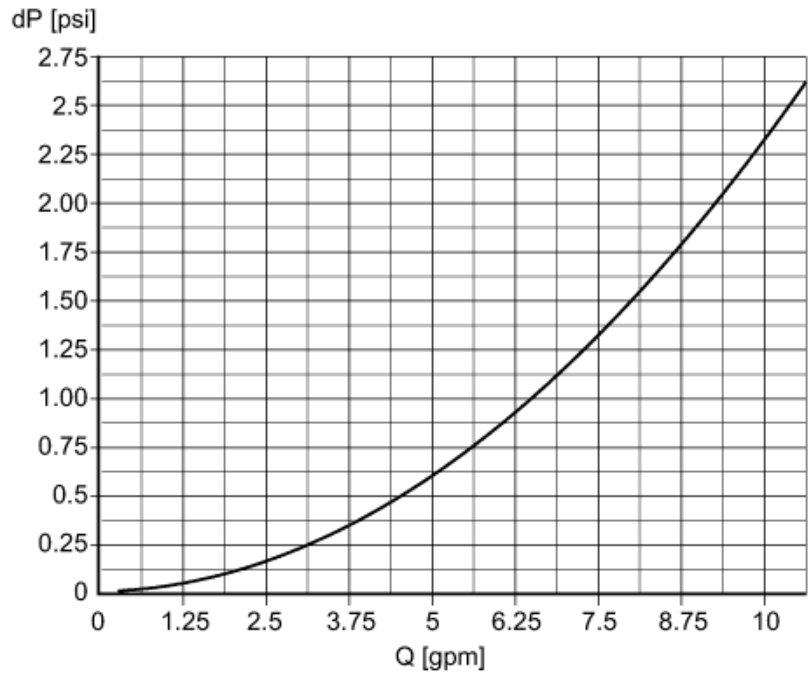
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## Magnetic-inductive flow meter

SMN12XGXFRKG/US-100

### Diagrams and graphs



Pressure loss / volumetric flow quantity