SM9604

Magnetic-inductive flow meter

SMN32XG50KG/US-100

Product characteristics

<table>
<thead>
<tr>
<th>Number of inputs and outputs</th>
<th>Number of analog outputs: 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Measuring range</td>
<td>5...300 l/min 0.3...18 m³/h 80...4755 gph 1.3...79.3 gpm</td>
</tr>
<tr>
<td>Process connection</td>
<td>threaded connection 1 1/2 NPT DN40</td>
</tr>
</tbody>
</table>
## SM9604

**Magnetic-inductive flow meter**

SMN32XG50KG/US-100

### Application

<table>
<thead>
<tr>
<th>System</th>
<th>gold-plated contacts</th>
</tr>
</thead>
<tbody>
<tr>
<td>Application</td>
<td>empty pipe detection; for industrial applications</td>
</tr>
<tr>
<td>Media</td>
<td>Conductive liquids; water; water-based media</td>
</tr>
</tbody>
</table>
| Note on media   | conductivity: ≥ 20 µS/cm  
|                 | viscosity: < 70 mm²/s (40 °C) |
| Medium temperature | -10...70 °C  
|                 | 14...158 °F |
| Pressure rating [bar] | 16 |
| Pressure rating [psi] | 232 |
| MAWP (for applications according to CRN) [bar] | 16.5 |

### Electrical data

<table>
<thead>
<tr>
<th>Operating voltage [V]</th>
<th>18...32 DC; (according to EN 50178 SELV/PELV)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Current consumption [mA]</td>
<td>&lt; 150</td>
</tr>
<tr>
<td>Protection class</td>
<td>III</td>
</tr>
<tr>
<td>Reverse polarity protection</td>
<td>yes</td>
</tr>
<tr>
<td>Power-on delay time [s]</td>
<td>5</td>
</tr>
</tbody>
</table>

### 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; (≤ 22 mA) |
| 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 |
| Analog start point ASP | 0...240 l/min  
| Analog end point AEP | 60...300 l/min  
| Low flow cut-off LFC | < 15 l/min  
| In steps of | 5 l/min  
| 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  
| Analog end point | 0...80 °C  
| In steps of | 0.2 °C  
| Measuring dynamics | 1:60 |
### 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)

### Reaction times

**Flow monitoring**
- **Response time**: 0.35 s; (dAP = 0)
- **Damping for the switching output dAP**: 0...5

**Temperature monitoring**
- **Dynamic response T05 / T09**: 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
- DIN EN 61000-6-2
**Shock resistance**
- DIN EN 60068-2-27
- 20 g (11 ms)
**Vibration resistance**
- DIN EN 60068-2-6
- 5 g (10...2000 Hz)
**MTTF**: 78 years
**Pressure equipment directive**
- Sound engineering practice; can be used for group 2 fluids; group 1 fluids on request

### Mechanical data

**Weight**: 2745 g
**Material**
- Stainless steel (1.4404 / 316L); stainless steel (1.4571/316Ti ); PEI; FKM; PBT-GF20; TPE-U
**Materials (wetted parts)**
- Stainless steel (1.4404 / 316L); stainless steel (1.4571/316Ti ); PEEK; FKM
**Process connection**
- Threaded connection 1 1/2 NPT DN40

### Displays / operating elements

**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

**Accessories (supplied)**
- Label
SM9604

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Remarks

<table>
<thead>
<tr>
<th>Remarks</th>
<th>MW = Measured value</th>
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<td></td>
<td>MEW = Final value of the measuring range</td>
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Pack quantity 1 pcs.

Electrical connection

Connector: 1 x M12; Contacts: gold-plated

Connection

Colours to DIN EN 60947-5-2

OUT1: analog output Temperature monitoring

OUT2: analog output Volumetric flow quantity monitoring

Core colors:

BK = black
BN = brown
BU = blue
WH = white
Diagrams and graphs

Pressure loss

\[ dP \text{ [mbar]} \text{ DN50} \]

\[ dP \text{ [psi]} \]

\[ Q \text{ [l/min]} \]

\[ Q \text{ [gpm]} \]

\( dP \) Pressure loss

\( Q \) Volumetric flow quantity