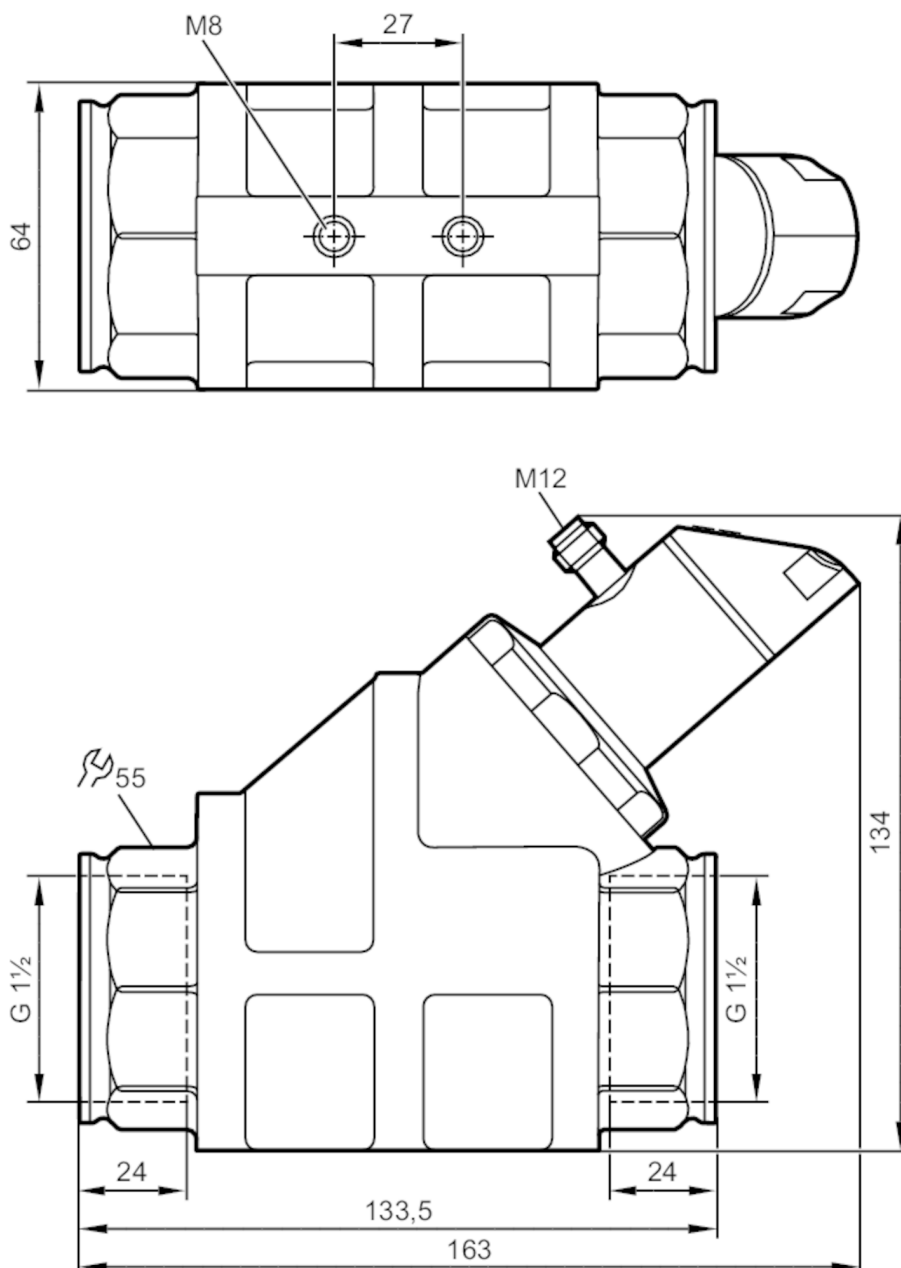


# SB7257



## Flow meter with fast response and display

SBG32KM0FRKG



### Product characteristics

|                    |                                             |                |                |                |
|--------------------|---------------------------------------------|----------------|----------------|----------------|
| Measuring range    | 8...200 l/min                               | 0.48...12 m³/h | 130...3170 gph | 2.1...52.8 gpm |
| Process connection | threaded connection G 1 1/2 Internal thread |                |                |                |

### Application

|                         |                                              |         |  |
|-------------------------|----------------------------------------------|---------|--|
| System                  | gold-plated contacts                         |         |  |
| Media                   | Liquids; oils (viscosity 320 mm²/s at 40 °C) |         |  |
| Medium temperature [°C] | -10...100                                    |         |  |
| Pressure rating         | 63 bar                                       | 6.3 MPa |  |
| Note on pressure rating | at medium temperature >70°C: 50 bar / 5 MPa  |         |  |



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| Electrical data                       |      |                                                                               |                |                  |
|---------------------------------------|------|-------------------------------------------------------------------------------|----------------|------------------|
| Operating voltage                     | [V]  | 18...30 DC; (to SELV/PELV ; cULus - Class 2 source required)                  |                |                  |
| Current consumption                   | [mA] | < 50                                                                          |                |                  |
| Protection class                      |      | III                                                                           |                |                  |
| Reverse polarity protection           |      | yes                                                                           |                |                  |
| Power-on delay time                   | [s]  | < 3                                                                           |                |                  |
| Outputs                               |      |                                                                               |                |                  |
| Total number of outputs               |      | 2                                                                             |                |                  |
| Output signal                         |      | switching signal; analog signal; frequency signal; IO-Link                    |                |                  |
| Output function                       |      | normally open / closed; (configurable)                                        |                |                  |
| Max. voltage drop switching output DC | [V]  | 2                                                                             |                |                  |
| Max. current load per output          | [mA] | 150; (200: ...60 °C; Ambient temperature; 250: ...40 °C; Ambient temperature) |                |                  |
| Analog current output                 | [mA] | 4...20                                                                        |                |                  |
| Max. load                             | [Ω]  | 500                                                                           |                |                  |
| Short-circuit protection              |      | yes                                                                           |                |                  |
| Overload protection                   |      | yes                                                                           |                |                  |
| Frequency of the output               | [Hz] | 0...10000                                                                     |                |                  |
| Measuring/setting range               |      |                                                                               |                |                  |
| Measuring range                       |      | 8...200 l/min                                                                 | 0.48...12 m³/h | 130...3170 gph   |
| Display range                         |      | 0...240 l/min                                                                 | 0...14.4 m³/h  | 0...3805 gph     |
| Resolution                            |      | 0.1 l/min                                                                     | 0.01 m³/h      | 1 gph            |
| Set point SP                          |      | 1.4...200 l/min                                                               | 0.08...12 m³/h | 20...3170 gph    |
| Reset point rP                        |      | 0...198.6 l/min                                                               | 0...11.92 m³/h | 0...3150 gph     |
| Frequency end point, FEP              |      | 13.4...200 l/min                                                              | 0.8...12 m³/h  | 210...3170 gph   |
| In steps of                           |      | 0.02 l/min                                                                    | 0.02 m³/h      | 5 gph            |
| Frequency at the end point FRP        | [Hz] | 10...10000                                                                    |                |                  |
| In steps of                           | [Hz] | 10                                                                            |                |                  |
| Measuring dynamics                    |      | 1:50                                                                          |                |                  |
| Temperature monitoring                |      |                                                                               |                |                  |
| Measuring range                       |      | -10...100 °C                                                                  |                | 14...212 °F      |
| Display range                         |      | -32...122 °C                                                                  |                | -25.6...251.6 °F |
| Resolution                            |      | 0.1 °C                                                                        |                | 0.1 °F           |
| Set point SP                          |      | -9.3...100 °C                                                                 |                | 15.2...212 °F    |
| Reset point rP                        |      | -10...99.3 °C                                                                 |                | 14...210.8 °F    |
| In steps of                           |      | 0.1 °C                                                                        |                | 0.2 °F           |
| Frequency start point, FSP            |      | -10...78 °C                                                                   |                | 14...172.4 °F    |
| Frequency end point, FEP              |      | 12...100 °C                                                                   |                | 53.6...212 °F    |
| Frequency at the end point FRP        | [Hz] | 10...10000                                                                    |                |                  |
| In steps of                           | [Hz] | 10                                                                            |                |                  |
| Accuracy / deviations                 |      |                                                                               |                |                  |
| Flow monitoring                       |      |                                                                               |                |                  |
| Accuracy (in the measuring range)     |      | ± 5 % MEW; (Q > 1 l/min; 20...70 °C Medium temperature)                       |                |                  |



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|                                   |                                                                                                                                                                                                                                                          |                         |
|-----------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------|
| Repeatability                     | ± 1 % MEW                                                                                                                                                                                                                                                |                         |
| Temperature monitoring            |                                                                                                                                                                                                                                                          |                         |
| Temperature drift                 | 0,029 °C / K                                                                                                                                                                                                                                             |                         |
| Accuracy                          | [K]                                                                                                                                                                                                                                                      | 3 K (25°C; Q > 1 l/min) |
| Reaction times                    |                                                                                                                                                                                                                                                          |                         |
| Flow monitoring                   |                                                                                                                                                                                                                                                          |                         |
| Response time                     | [s]                                                                                                                                                                                                                                                      | 0.01                    |
| Damping process value dAP         | [s]                                                                                                                                                                                                                                                      | 0...5                   |
| In steps of                       | [s]                                                                                                                                                                                                                                                      | 0.1                     |
| Damping for the analog output dAA | [s]                                                                                                                                                                                                                                                      | 0...5                   |
| In steps of                       | [s]                                                                                                                                                                                                                                                      | 0.1                     |
| Temperature monitoring            |                                                                                                                                                                                                                                                          |                         |
| Dynamic response T05 / T09        | [s]                                                                                                                                                                                                                                                      | T09 = 120 (Q > 1 l/min) |
| Software / programming            |                                                                                                                                                                                                                                                          |                         |
| Parameter setting options         | hysteresis / window; normally open / closed; switching logic; current/frequency output; damping for the switching output / analog output; display can be rotated and switched off; standard unit of measurement; process value color; calibration factor |                         |
| Interfaces                        |                                                                                                                                                                                                                                                          |                         |
| Communication interface           | IO-Link                                                                                                                                                                                                                                                  |                         |
| Transmission type                 | COM2 (38,4 kBaud)                                                                                                                                                                                                                                        |                         |
| IO-Link revision                  | 1.1                                                                                                                                                                                                                                                      |                         |
| SDCI standard                     | IEC 61131-9 CDV                                                                                                                                                                                                                                          |                         |
| Profiles                          | Smart Sensor: Process Data Variable; Device Identification, Device Diagnosis                                                                                                                                                                             |                         |
| SIO mode                          | yes                                                                                                                                                                                                                                                      |                         |
| Required master port class        | A                                                                                                                                                                                                                                                        |                         |
| Process data analog               | 2                                                                                                                                                                                                                                                        |                         |
| Process data binary               | 2                                                                                                                                                                                                                                                        |                         |
| Min. process cycle time           | [ms]                                                                                                                                                                                                                                                     | 3.2                     |
| Supported DeviceIDs               | Type of operation                                                                                                                                                                                                                                        | DeviceID                |
|                                   | default                                                                                                                                                                                                                                                  | 1047                    |
| Operating conditions              |                                                                                                                                                                                                                                                          |                         |
| Ambient temperature               | [°C]                                                                                                                                                                                                                                                     | 0...60                  |
| Note on ambient temperature       | medium temperature < 80 °C                                                                                                                                                                                                                               |                         |
|                                   | medium temperature < 100 °C: 0...40 °C                                                                                                                                                                                                                   |                         |
| Storage temperature               | [°C]                                                                                                                                                                                                                                                     | -15...80                |
| Protection                        | IP 65; IP 67                                                                                                                                                                                                                                             |                         |
| Tests / approvals                 |                                                                                                                                                                                                                                                          |                         |
| EMC                               | DIN EN 61000-6-2                                                                                                                                                                                                                                         |                         |
|                                   | DIN EN 61000-6-3                                                                                                                                                                                                                                         |                         |
| 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]                                                                                                                                                                                                                                                  | 145                     |
| UL approval                       | UL approval number                                                                                                                                                                                                                                       | I007                    |
|                                   | File number UL                                                                                                                                                                                                                                           | E174189                 |



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|                              |                            |
|------------------------------|----------------------------|
| Pressure equipment directive | sound engineering practice |
|------------------------------|----------------------------|

## Mechanical data

|                             |                                                                                                                                      |        |
|-----------------------------|--------------------------------------------------------------------------------------------------------------------------------------|--------|
| Weight                      | [g]                                                                                                                                  | 2810.2 |
| Material                    | stainless steel (1.4404 / 316L); PBT+PC-GF30;<br>PBT-GF20; PC; brass chemically nickel-plated                                        |        |
| Materials (wetted parts)    | stainless steel (1.4401 / 316); stainless steel (1.4404 / 316L);<br>brass (2.0371); brass chemically nickel-plated; PPS; O-ring: FKM |        |
| Process connection          | threaded connection G 1 1/2 Internal thread                                                                                          |        |
| Switching cycles mechanical | 10 million                                                                                                                           |        |

## Displays / operating elements

|         |                  |                                                                   |
|---------|------------------|-------------------------------------------------------------------|
| Display | Display unit     | 6 x LED, green                                                    |
|         | Switching status | 2 x LED, yellow                                                   |
|         | Measured values  | alphanumeric display, red/green alternating<br>indication 4-digit |
|         | Programming      | alphanumeric display, 4-digit                                     |

## Remarks

|               |                                                                                  |  |
|---------------|----------------------------------------------------------------------------------|--|
| Remarks       | Use of 200 micron filtration is recommended.                                     |  |
|               | All data refer to oil with the following nominal viscosity: 320 cSt, 40 °C ± 3 K |  |
|               | 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





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### Connection



#### OUT1:

- Switching output Volumetric flow quantity monitoring
- Switching output Temperature monitoring
- Frequency output Volumetric flow quantity monitoring
- Frequency output Temperature monitoring
- IO-Link

#### OUT2:

- Switching output Volumetric flow quantity monitoring
- Switching output Temperature monitoring
- analog output Volumetric flow quantity monitoring
- analog output Temperature monitoring
- Colors to DIN EN 60947-5-2

Core colors :

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

### Diagrams and graphs

