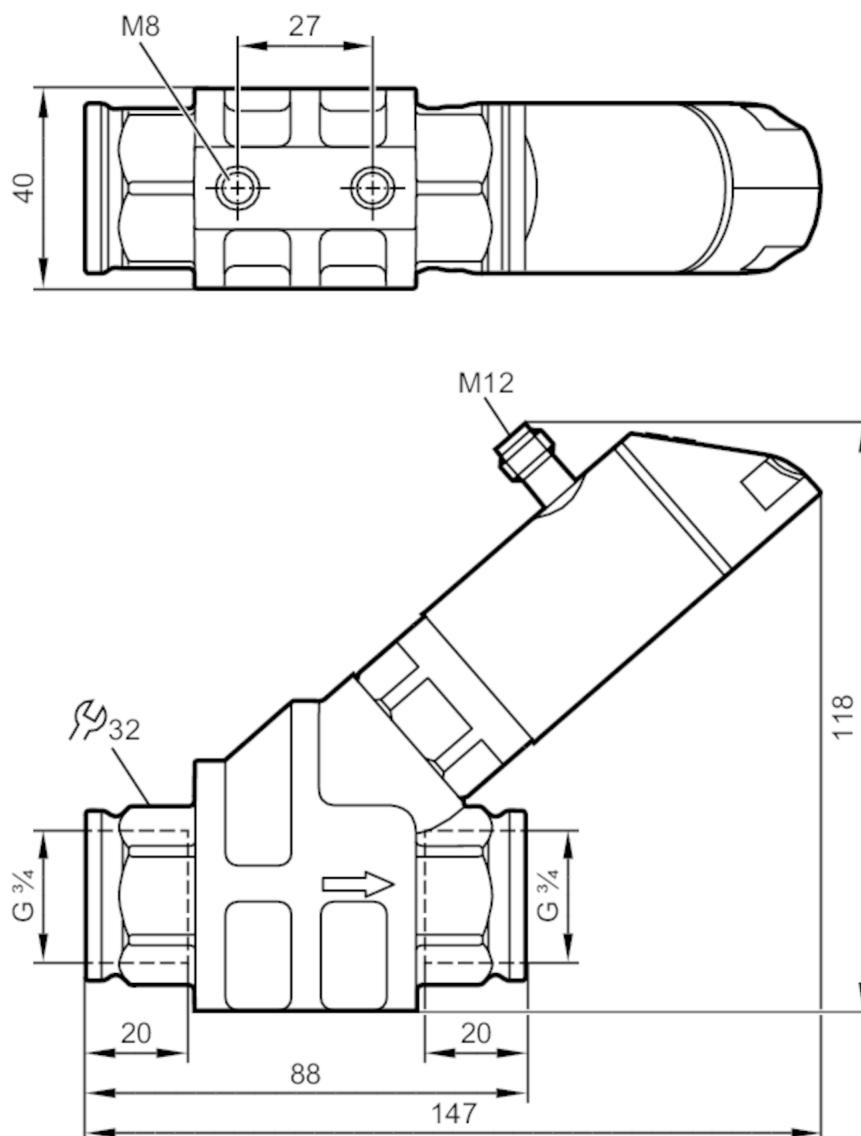


## Flow meter with integrated backflow prevention and display

SBG34KL0FRKG



## Product characteristics

|                    |                                           |                 |               |                |
|--------------------|-------------------------------------------|-----------------|---------------|----------------|
| Measuring range    | 0.5...25 l/min                            | 0.03...1.5 m³/h | 8...396.5 gph | 0.13...6.6 gpm |
| Process connection | threaded connection G 3/4 internal thread |                 |               |                |

## Application

|                         |                                             |        |
|-------------------------|---------------------------------------------|--------|
| Special feature         | Gold-plated contacts                        |        |
| Media                   | Liquids; oils (viscosity 68 mm²/s at 40 °C) |        |
| Medium temperature [°C] | -10...100                                   |        |
| Pressure rating         | 100 bar                                     | 10 MPa |
| Note on pressure rating | at medium temperature >70°C: 80 bar / 8 MPa |        |

## Electrical data

|                          |                            |  |  |  |
|--------------------------|----------------------------|--|--|--|
| Operating voltage [V]    | 18...30 DC; (to SELV/PELV) |  |  |  |
| Current consumption [mA] | < 50                       |  |  |  |



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|                             |     |
|-----------------------------|-----|
| Protection class            | III |
| Reverse polarity protection | yes |
| Power-on delay time [s]     | < 3 |

## Outputs

|                                           |                                                                               |
|-------------------------------------------|-------------------------------------------------------------------------------|
| Total number of outputs                   | 2                                                                             |
| Output signal                             | switching signal; analogue signal; frequency signal; IO-Link                  |
| Output function                           | parameterisable                                                               |
| 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) |
| Analogue 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                     | 0.5...25 l/min  | 0.03...1.5 m³/h | 8...396.5 gph  | 0.13...6.6 gpm |
| Display range                       | 0...30 l/min    | 0...1.8 m³/h    | 0...475.5 gph  | 0...7.93 gpm   |
| Resolution                          | 0.01 l/min      | 0.001 m³/h      | 0.1 gph        | 0.01 gpm       |
| Set point SP                        | 0.16...25 l/min | 0.01...1.5 m³/h | 2.5...396 gph  | 0.04...6.6 gpm |
| Reset point rP                      | 0...24.84 l/min | 0...1.49 m³/h   | 0...393.5 gph  | 0...6.56 gpm   |
| Frequency end point, FEP            | 1.66...25 l/min | 0.1...1.5 m³/h  | 26.5...396 gph | 0.44...6.6 gpm |
| In steps of                         | 0.02 l/min      | 0.002 m³/h      | 0.5 gph        | 0.01 gpm       |
| 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) |
| Repeatability                     | ± 1 % MEW                                               |
| Temperature monitoring            |                                                         |
| Temperature drift                 | 0,029 °C / K                                            |



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|                                     |                                                                                                                                                                                                                                                                      |                         |  |
|-------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------|--|
| Accuracy                            | [K]                                                                                                                                                                                                                                                                  | 3 K (25°C; Q > 1 l/min) |  |
| Response times                      |                                                                                                                                                                                                                                                                      |                         |  |
| Flow monitoring                     |                                                                                                                                                                                                                                                                      |                         |  |
| Response time                       | [s]                                                                                                                                                                                                                                                                  | 0.01                    |  |
| Damping process value dAP           | [s]                                                                                                                                                                                                                                                                  | 0...5                   |  |
| In steps of                         | [s]                                                                                                                                                                                                                                                                  | 0.1                     |  |
| Damping for the analogue 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 / normally closed; switching logic; current/frequency output; damping for the switching output / analogue output; display can be rotated and switched off; standard unit of measurement; process value colour; 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 type           | A                                                                                                                                                                                                                                                                    |                         |  |
| Process data analogue               | 2                                                                                                                                                                                                                                                                    |                         |  |
| Process data binary                 | 2                                                                                                                                                                                                                                                                    |                         |  |
| Min. process cycle time             | [ms]                                                                                                                                                                                                                                                                 | 3.2                     |  |
| Supported DeviceIDs                 | Type of operation                                                                                                                                                                                                                                                    | DeviceID                |  |
|                                     | default                                                                                                                                                                                                                                                              | 1044                    |  |
| 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 no.                                                                                                                                                                                                                                                      | I005                    |  |
|                                     | File number UL                                                                                                                                                                                                                                                       | E174189                 |  |
| Pressure Equipment Directive        | Sound engineering practice                                                                                                                                                                                                                                           |                         |  |
| Mechanical data                     |                                                                                                                                                                                                                                                                      |                         |  |
| Weight                              | [g]                                                                                                                                                                                                                                                                  | 995.5                   |  |



## Flow meter with integrated backflow prevention and display

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|                             |                                                                                                                                    |
|-----------------------------|------------------------------------------------------------------------------------------------------------------------------------|
| Materials                   | stainless steel (316L/1.4404); PBT+PC-GF30;<br>PBT-GF20; PC; brass chemically nickel-plated                                        |
| Materials (wetted parts)    | stainless steel (316 / 1.4401); stainless steel (316L/1.4404);<br>brass (2.0371); brass chemically nickel-plated; PPS; O-ring: FKM |
| Process connection          | threaded connection G 3/4 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       | Recommendation: use a 200-micron filter.                                                 |
|               | All data refer to oil with the following nominal viscosity: 68 mm <sup>2</sup> /s, 40 °C |
|               | MW = measured value                                                                      |
|               | MEW = Final value of the measuring range                                                 |
| Pack quantity | 1 pcs.                                                                                   |

## Electrical connection

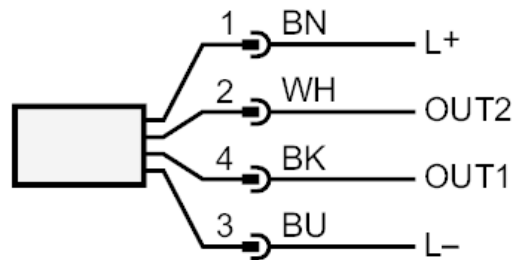
Connector: 1 x M12; coding: A; Contacts: gold-plated



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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
- analogue output volumetric flow quantity monitoring
- analogue output Temperature monitoring
- colours to DIN EN 60947-5-2

Core colours :

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

### Diagrams and graphs

