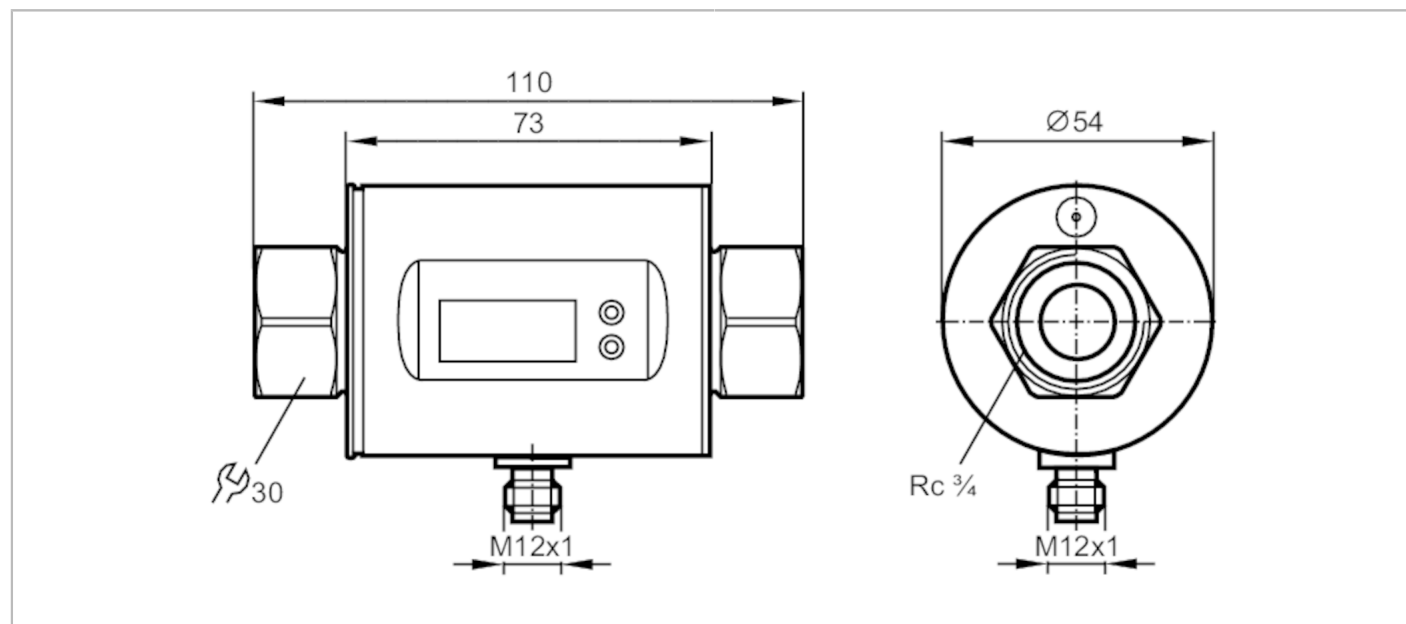


# SM7400



## Magnetic-inductive flow meter

SMK34GGXFRKG/US-100



### Product characteristics

|                              |                                                             |
|------------------------------|-------------------------------------------------------------|
| Number of inputs and outputs | Number of digital outputs: 2; Number of analogue outputs: 1 |
| Process connection           | threaded connection Rc 3/4 internal thread DN20             |
| Temperature monitoring       |                                                             |
| Measuring range              | [°C] -20...80                                               |

### Application

|                    |                                                                                           |
|--------------------|-------------------------------------------------------------------------------------------|
| Special feature    | Gold-plated contacts                                                                      |
| Application        | totaliser function; for industrial applications                                           |
| Media              | conductive liquids; water; hydrous media                                                  |
| Note on media      | conductivity: $\geq 20 \mu\text{S/cm}$<br>viscosity: $< 70 \text{ mm}^2/\text{s}$ (40 °C) |
| Medium temperature | [°C] -10...70                                                                             |
| Pressure rating    | [bar] 16                                                                                  |

### Electrical data

|                             |                                                   |
|-----------------------------|---------------------------------------------------|
| Operating voltage           | [V] 18...30 DC; (according to EN 50178 SELV/PELV) |
| Current consumption         | [mA] 95; (24 V)                                   |
| 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 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                                      | 0.2...50 l/min                                                           | 0.01...3 m³/h      |
| Display range                                        | -60...60 l/min                                                           | -3.6...3.6 m³/h    |
| Resolution                                           | 0.1 l/min                                                                | 0.001 m³/h         |
| Set point SP                                         | 0.5...50 l/min                                                           | 0.027...3 m³/h     |
| Reset point rP                                       | 0.2...49.8 l/min                                                         | 0.012...2.985 m³/h |
| Analogue start point ASP                             | 0...40 l/min                                                             | 0...2.4 m³/h       |
| Analogue end point AEP                               | 10...50 l/min                                                            | 0.6...3 m³/h       |
| In steps of                                          | 0.1 l/min                                                                | 0.001 m³/h         |
| Volumetric flow quantity monitoring                  |                                                                          |                    |
| Pulse value                                          | 0.00001...50 000 m³                                                      |                    |
| Pulse length [s]                                     | 0,005...2                                                                |                    |
| Temperature monitoring                               |                                                                          |                    |
| Measuring range [°C]                                 | -20...80                                                                 |                    |
| Resolution [°C]                                      | 0.2                                                                      |                    |
| Set point SP [°C]                                    | -19.2...80                                                               |                    |
| Reset point rP [°C]                                  | -19.6...79.6                                                             |                    |
| Analogue start point [°C]                            | -20...60                                                                 |                    |
| Analogue end point [°C]                              | 0...80                                                                   |                    |
| In steps of [°C]                                     | 0.2                                                                      |                    |
| 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 > 5 l/min)    |
| Response times                       |                                                                                                                                                                                                                                         |                        |
| Flow monitoring                      |                                                                                                                                                                                                                                         |                        |
| Response time                        | [s]                                                                                                                                                                                                                                     | 0.15; (dAP = 0, T19)   |
| Delay time programmable dS, dr       | [s]                                                                                                                                                                                                                                     | 0...50                 |
| Damping for the switching output dAP | [s]                                                                                                                                                                                                                                     | 0...5                  |
| Temperature monitoring               |                                                                                                                                                                                                                                         |                        |
| Dynamic response T05 / T09           | [s]                                                                                                                                                                                                                                     | T09 = 20 (Q > 5 l/min) |
| 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                                                                                                                                                                                                                             |                        |
| IO-Link device ID                    | 572 / 00 02 3c                                                                                                                                                                                                                          |                        |
| Profiles                             | Smart Sensor: Process Data Variable; Device Identification, Device Diagnosis                                                                                                                                                            |                        |
| SIO mode                             | yes                                                                                                                                                                                                                                     |                        |
| Required master port type            | A                                                                                                                                                                                                                                       |                        |
| Process data analogue                | 3                                                                                                                                                                                                                                       |                        |
| Process data binary                  | 2                                                                                                                                                                                                                                       |                        |
| Min. process cycle time              | [ms]                                                                                                                                                                                                                                    | 5                      |
| Operating conditions                 |                                                                                                                                                                                                                                         |                        |
| Ambient temperature                  | [°C]                                                                                                                                                                                                                                    | -10...60               |
| Storage temperature                  | [°C]                                                                                                                                                                                                                                    | -25...80               |
| 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                    |
| UL approval                          | UL Approval no.                                                                                                                                                                                                                         | I010                   |
| Pressure Equipment Directive         | Sound engineering practice; can be used for group 2 fluids; group 1 fluids on request                                                                                                                                                   |                        |
| Mechanical data                      |                                                                                                                                                                                                                                         |                        |
| Weight                               | [g]                                                                                                                                                                                                                                     | 577.5                  |
| Materials                            | stainless steel (1.4404 / 316L); PBT-GF20; PC; FKM; TPE                                                                                                                                                                                 |                        |
| Materials (wetted parts)             | stainless steel (1.4404 / 316L); PEEK; FKM                                                                                                                                                                                              |                        |
| Process connection                   | threaded connection Rc 3/4 internal thread DN20                                                                                                                                                                                         |                        |

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| Displays / operating elements |                  |                                              |
|-------------------------------|------------------|----------------------------------------------|
| Display                       | Display unit     | 6 x LED, green (l/min, m³/h, l, m³, 10³, °C) |
|                               | 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; Contacts: gold-plated





## Magnetic-inductive flow meter

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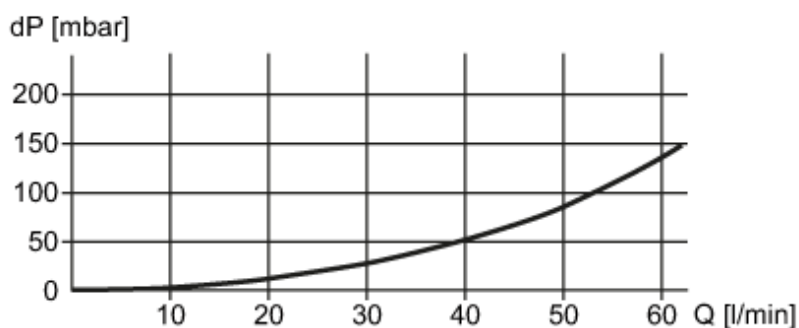
### Connection



|       |                                                      |
|-------|------------------------------------------------------|
|       | colours to DIN EN 60947-5-2                          |
| OUT1: | 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                                                |

### Diagrams and graphs

Pressure loss



dP Pressure loss

Q volumetric flow quantity