

# SU8010



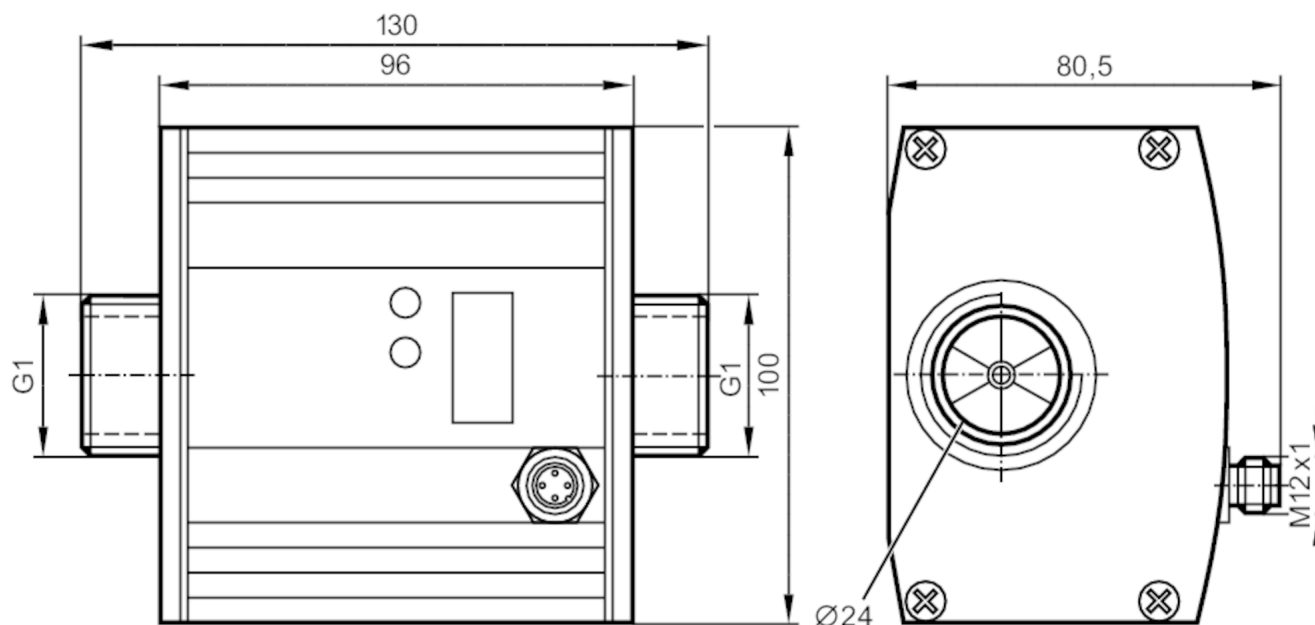
## Ultrasonic flow meter

SUR11HGBFRKG/W/US-100-IPF

Article no longer available - archive entry

Alternative articles: SU8000

When selecting an alternative article and accessories please note that technical data may differ!



installation length with pipe adapter E40152 / E40155: 205 mm  
installation length with pipe adapter E40153 / E40156: 215 mm



### Product characteristics

|                              |                                                           |                         |
|------------------------------|-----------------------------------------------------------|-------------------------|
| Number of inputs and outputs | Number of digital outputs: 2; Number of analog outputs: 1 |                         |
| Measuring range              | 0...100 l/min                                             | 0...6 m <sup>3</sup> /h |
| Process connection           | threaded connection G 1 flat seal                         |                         |

### Application

|                    |                                           |          |
|--------------------|-------------------------------------------|----------|
| System             | gold-plated contacts                      |          |
| Application        | Totalizer function                        |          |
| Installation       | connection to pipe by means of an adapter |          |
| Media              | Liquids; water; glycol solutions; oils    |          |
| Medium temperature | [°C]                                      | -10...80 |
| Pressure rating    | [bar]                                     | 16       |

### Electrical data

|                             |      |                            |
|-----------------------------|------|----------------------------|
| Operating voltage           | [V]  | 19...30 DC; (to SELV/PELV) |
| Current consumption         | [mA] | 100                        |
| Min. insulation resistance  | [MΩ] | 100; (500 V DC)            |
| Protection class            |      | III                        |
| Reverse polarity protection |      | yes                        |
| Power-on delay time         | [s]  | 10                         |



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| 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; (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] | 250; (per output)                                             |               |
| Number of analog outputs                             | 1                                                             |               |
| Analog current output [mA]                           | 4...20; (scalable)                                            |               |
| Max. load [Ω]                                        | 500                                                           |               |
| Analog 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                     | yes (non-latching)                                            |               |
| Overload protection                                  | yes                                                           |               |
| Measuring/setting range                              |                                                               |               |
| Measuring range                                      | 0...100 l/min                                                 | 0...6 m³/h    |
| Display range                                        | 0...120 l/min                                                 | 0...7.2 m³/h  |
| Resolution                                           | 0.1 l/min                                                     | 0.005 m³/h    |
| Set point SP                                         | 0.2...100 l/min                                               | 0.01...6 m³/h |
| Reset point rP                                       | 0...99.8 l/min                                                | 0...5.99 m³/h |
| Analog start point ASP                               | 0...80 l/min                                                  | 0...4.8 m³/h  |
| Analog end point AEP                                 | 20...100 l/min                                                | 1.2...6 m³/h  |
| Max. flow rate                                       | 110 l/min                                                     | 6.6 m³/h      |
| In steps of                                          | 0.1 l/min                                                     | 0.005 m³/h    |
| Volumetric flow quantity monitoring                  |                                                               |               |
| Pulse value                                          | 0.1 l...10000 m³                                              |               |
| Pulse length [s]                                     | 0,025...2                                                     |               |
| Temperature monitoring                               |                                                               |               |
| Measuring range [°C]                                 | -10...80                                                      |               |
| Resolution [°C]                                      | 0.2                                                           |               |
| Set point SP [°C]                                    | -9.8...80                                                     |               |
| Reset point rP [°C]                                  | -10...79.8                                                    |               |
| Analog start point [°C]                              | -10...62                                                      |               |
| Analog end point [°C]                                | 8...80                                                        |               |
| In steps of [°C]                                     | 0.2                                                           |               |



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| Accuracy / deviations             |                                                                                                                |                                              |
|-----------------------------------|----------------------------------------------------------------------------------------------------------------|----------------------------------------------|
| Flow monitoring                   |                                                                                                                |                                              |
| Accuracy (in the measuring range) | < ± (3 % MW + 0,2 % MEW) / < ± (5 % MW + 0,5 % MEW);<br>(water; glycol: 35%; oil: viscosity 68 mm²/s at 40 °C) |                                              |
| Repeatability                     | 0,2 l/min; 12 l/h; 0,012 m³ /h                                                                                 |                                              |
| Temperature monitoring            |                                                                                                                |                                              |
| Accuracy                          | [K]                                                                                                            | ± 3 (Q > 1 l/min)                            |
| Reaction times                    |                                                                                                                |                                              |
| Flow monitoring                   |                                                                                                                |                                              |
| Response time                     | [s]                                                                                                            | 0.25; (dAP = 0)                              |
| Delay time programmable dS, dr    | [s]                                                                                                            | 0...50                                       |
| Damping process value dAP         | [s]                                                                                                            | 0...5                                        |
| Temperature monitoring            |                                                                                                                |                                              |
| Dynamic response T05 / T09        | [s]                                                                                                            | T09 = 70 (Q > 5 l/min); (water)              |
| Software / programming            |                                                                                                                |                                              |
| Parameter setting options         | Flow monitoring; quantity meter; Preset counter; Temperature monitoring                                        |                                              |
| Operating conditions              |                                                                                                                |                                              |
| Ambient temperature               | [°C]                                                                                                           | -10...60                                     |
| Storage temperature               | [°C]                                                                                                           | -25...80                                     |
| Protection                        | IP 67                                                                                                          |                                              |
| Tests / approvals                 |                                                                                                                |                                              |
| EMC                               | EN 61000-4-2 ESD                                                                                               | 4 kV CD / 8 kV AD                            |
|                                   | EN 61000-4-3 HF radiated                                                                                       | 10 V/m                                       |
|                                   | EN 61000-4-4 Burst                                                                                             | 2 kV                                         |
|                                   | EN 61000-4-5 Surge                                                                                             | 0,5 kV                                       |
|                                   | EN 61000-4-6 HF conducted                                                                                      | 10 V                                         |
| Shock resistance                  | DIN IEC 68-2-27                                                                                                | 20 g (11 ms)                                 |
| Vibration resistance              | DIN IEC 68-2-6                                                                                                 | 5 g (10...2000 Hz)                           |
| Mechanical data                   |                                                                                                                |                                              |
| Material                          | housing: AlMgSi0.5 anodized; sealing: FKM; PA 6.6; cover film: PA                                              |                                              |
| Materials (wetted parts)          | stainless steel (1.4404 / 316L); FKM; PES; Centellen 200                                                       |                                              |
| Process connection                | threaded connection G 1 flat seal                                                                              |                                              |
| 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                |
| Accessories                       |                                                                                                                |                                              |
| Items supplied                    | sealings: 2, Centellen                                                                                         |                                              |
| Accessories (optional)            | adapter for pipe: 1 x R 1/2, stainless steel, E40179                                                           |                                              |
|                                   | adapter for pipe: 1 x R 3/4, stainless steel, E40180                                                           |                                              |
|                                   | adapter for pipe: 1 x R 1/2, brass, E40152                                                                     |                                              |
|                                   | adapter for pipe: 1 x R 3/4, brass, E40153                                                                     |                                              |

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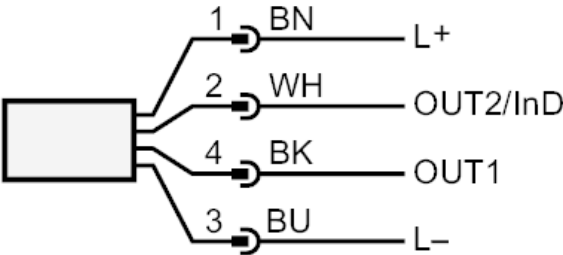
| Remarks       |                                             |
|---------------|---------------------------------------------|
| Remarks       | MW = Measured value                         |
|               | MEW = Final value of the measuring range    |
|               | sealing: only with supplied Centellen seals |
| Pack quantity | 1 pcs.                                      |

Electrical connection

Connector: 1 x M12; coding: A; Moulded body: brass, Optalloy-plated; Contacts: gold-plated



Connection



|           |                                                                                                                                                                                    |
|-----------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| OUT1:     | Switching output Volumetric flow quantity monitoring<br>Pulse output quantity meter<br>signal output Preset counter                                                                |
| OUT2/InD: | Switching output Volumetric flow quantity monitoring / Temperature monitoring<br>analog output Volumetric flow quantity monitoring / Temperature monitoring<br>Input counter reset |

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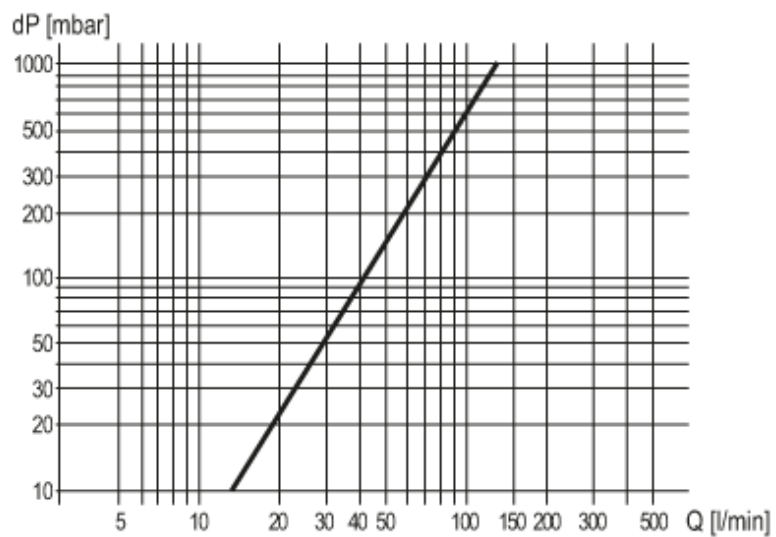
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### Diagrams and graphs

Pressure loss



dP Pressure loss

Q volumetric flow quantity