

# SD8100



## Industrial gas counter

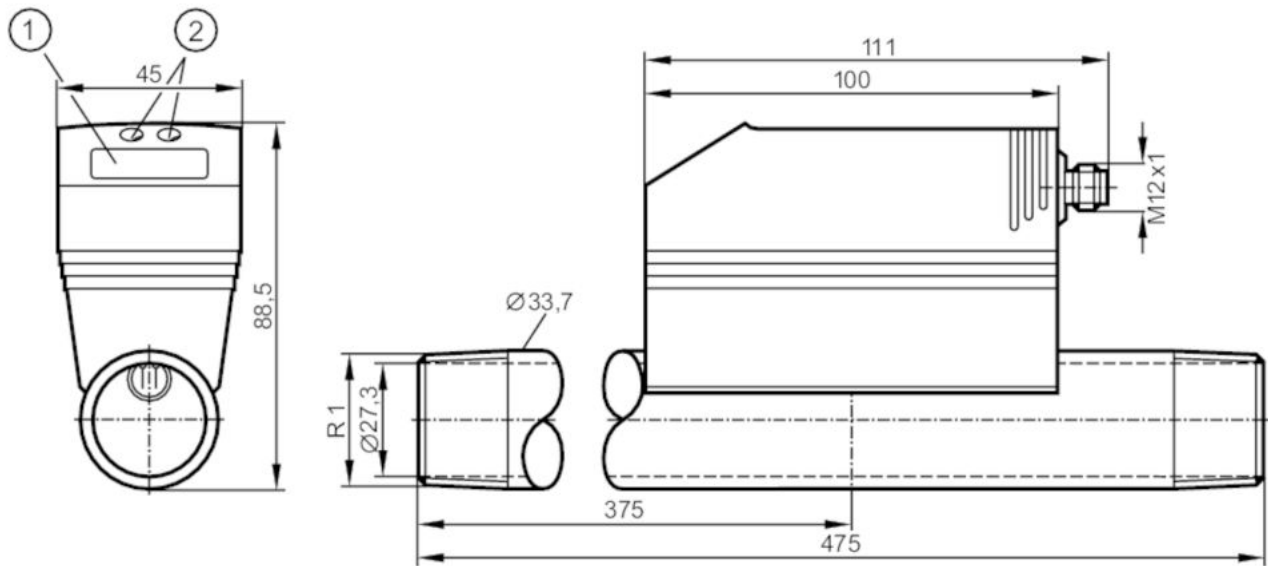
SDR11DGXFPKG/US-100

phase-out article

Discontinuation date: 12/31/2024

Alternative articles: SD8600

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



- 1 alphanumeric display 4-digit  
2 programming buttons



### Product characteristics

|                              |        |                                                             |  |
|------------------------------|--------|-------------------------------------------------------------|--|
| Number of inputs and outputs |        | Number of digital outputs: 2; Number of analogue outputs: 1 |  |
| Process connection           |        | threaded connection R 1 external thread DN25                |  |
| Ar                           |        |                                                             |  |
| Measuring range              | [m³/h] | 1.2...366.6                                                 |  |
| CO2                          |        |                                                             |  |
| Measuring range              | [m³/h] | 0.8...223.6                                                 |  |
| N2                           |        |                                                             |  |
| Measuring range              | [m³/h] | 0.8...225                                                   |  |

### Application

|                    |                                                 |         |
|--------------------|-------------------------------------------------|---------|
| Application        | for industrial applications                     |         |
| Media              | Argon (Ar); carbon dioxide (CO2); nitrogen (N2) |         |
| Medium temperature | [°C]                                            | 0...60  |
| Pressure rating    | 16 bar                                          | 1.6 MPa |

### Electrical data

|                             |      |            |
|-----------------------------|------|------------|
| Operating voltage           | [V]  | 18...30 DC |
| Current consumption         | [mA] | < 100      |
| Protection class            |      | III        |
| Reverse polarity protection |      | yes        |



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|                                                 |        |                                                                          |
|-------------------------------------------------|--------|--------------------------------------------------------------------------|
| Power-on delay time                             | [s]    | 1                                                                        |
| <b>Inputs / outputs</b>                         |        |                                                                          |
| Number of inputs and outputs                    |        | Number of digital outputs: 2; Number of analogue outputs: 1              |
| <b>Outputs</b>                                  |        |                                                                          |
| Total number of outputs                         |        | 2                                                                        |
| Output signal                                   |        | switching signal; analogue signal; pulse signal; IO-Link; (configurable) |
| Electrical design                               |        | PNP                                                                      |
| 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]   | 250; (per output)                                                        |
| Number of analogue outputs                      |        | 1                                                                        |
| Analogue current output                         | [mA]   | 4...20; (scalable)                                                       |
| Max. load                                       | [Ω]    | 500                                                                      |
| Pulse output                                    |        | consumed quantity meter                                                  |
| Short-circuit protection                        |        | yes                                                                      |
| Type of short-circuit protection                |        | pulsed                                                                   |
| Overload protection                             |        | yes                                                                      |
| <b>Measuring/setting range</b>                  |        |                                                                          |
| Low flow cut-off LFC                            | [m³/h] | < 3.8                                                                    |
| <b>Ar</b>                                       |        |                                                                          |
| Measuring range                                 | [m³/h] | 1.2...366.6                                                              |
| Display range                                   | [m³/h] | 0...440                                                                  |
| Resolution                                      | [m³/h] | 0.2                                                                      |
| Set point SP                                    | [m³/h] | 3.4...366.6                                                              |
| Reset point rP                                  | [m³/h] | 1.8...365                                                                |
| Analogue start point ASP                        | [m³/h] | 0...293.2                                                                |
| Analogue end point AEP                          | [m³/h] | 73.4...366.6                                                             |
| In steps of                                     | [m³/h] | 0.2                                                                      |
| <b>CO2</b>                                      |        |                                                                          |
| Measuring range                                 | [m³/h] | 0.8...223.6                                                              |
| Display range                                   | [m³/h] | 0...268.2                                                                |
| Resolution                                      | [m³/h] | 0.2                                                                      |
| Set point SP                                    | [m³/h] | 2...223.6                                                                |
| Reset point rP                                  | [m³/h] | 1...222.6                                                                |
| Analogue start point ASP                        | [m³/h] | 0...178.8                                                                |
| Analogue end point AEP                          | [m³/h] | 44.8...223.6                                                             |
| In steps of                                     | [m³/h] | 0.2                                                                      |
| <b>Volumetric flow quantity monitoring</b>      |        |                                                                          |
| Pulse value                                     |        | 0.001...3 000 000 Nm³                                                    |
| In steps of                                     |        | 0.001...1000 Nm³                                                         |



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|                                    |                                                                                                                                                                                                      |                                                                    |
|------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------|
| Pulse length                       | [s]                                                                                                                                                                                                  | 0,004...2                                                          |
| N2                                 |                                                                                                                                                                                                      |                                                                    |
| Measuring range                    | [m³/h]                                                                                                                                                                                               | 0.8...225                                                          |
| Display range                      | [m³/h]                                                                                                                                                                                               | 0...270                                                            |
| Resolution                         | [m³/h]                                                                                                                                                                                               | 0.2                                                                |
| Set point SP                       | [m³/h]                                                                                                                                                                                               | 2.2...225                                                          |
| Reset point rP                     | [m³/h]                                                                                                                                                                                               | 1...224                                                            |
| Analogue start point ASP           | [m³/h]                                                                                                                                                                                               | 0...180                                                            |
| Analogue end point AEP             | [m³/h]                                                                                                                                                                                               | 45...225                                                           |
| In steps of                        | [m³/h]                                                                                                                                                                                               | 0.2                                                                |
| Temperature monitoring             |                                                                                                                                                                                                      |                                                                    |
| Measuring range                    | [°C]                                                                                                                                                                                                 | 0...60                                                             |
| Display range                      | [°C]                                                                                                                                                                                                 | -12...72                                                           |
| Resolution                         | [°C]                                                                                                                                                                                                 | 0.2                                                                |
| Set point SP                       | [°C]                                                                                                                                                                                                 | 0.4...60                                                           |
| Reset point rP                     | [°C]                                                                                                                                                                                                 | 0...59.8                                                           |
| Analogue start point               | [°C]                                                                                                                                                                                                 | 0...48                                                             |
| Analogue end point                 | [°C]                                                                                                                                                                                                 | 12...60                                                            |
| In steps of                        | [°C]                                                                                                                                                                                                 | 0.2                                                                |
| Accuracy / deviations              |                                                                                                                                                                                                      |                                                                    |
| Flow monitoring                    |                                                                                                                                                                                                      |                                                                    |
| Repeatability                      | [% of the measured value]                                                                                                                                                                            | ± 1,5                                                              |
| Accuracy (in the measuring range)  |                                                                                                                                                                                                      |                                                                    |
| Temperature monitoring             |                                                                                                                                                                                                      |                                                                    |
| Accuracy                           | [K]                                                                                                                                                                                                  | ± 2; (medium flow in the limit area of the flow measurement range) |
| Response times                     |                                                                                                                                                                                                      |                                                                    |
| Flow monitoring                    |                                                                                                                                                                                                      |                                                                    |
| Response time                      | [s]                                                                                                                                                                                                  | 0.1; (dAP = 0)                                                     |
| Damping process value dAP in steps | [s]                                                                                                                                                                                                  | 0 - 0,2 - 0,4 - 0,6 - 0,8 - 1                                      |
| Software / programming             |                                                                                                                                                                                                      |                                                                    |
| Parameter setting options          | Flow monitoring; quantity meter; Preset counter; hysteresis / window; normally open / normally closed; current/pulse output; display can be rotated and switched off; Display unit; medium selection |                                                                    |
| Interfaces                         |                                                                                                                                                                                                      |                                                                    |
| Communication interface            | IO-Link                                                                                                                                                                                              |                                                                    |
| Transmission type                  | COM2 (38,4 kBaud)                                                                                                                                                                                    |                                                                    |
| IO-Link revision                   | 1.1                                                                                                                                                                                                  |                                                                    |
| SDCI standard                      | IEC 61131-9                                                                                                                                                                                          |                                                                    |
| Profiles                           | Smart Sensor: Process Data Variable; Device Identification, Device Diagnosis                                                                                                                         |                                                                    |
| SIO mode                           | yes                                                                                                                                                                                                  |                                                                    |

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|                              |                          |                 |
|------------------------------|--------------------------|-----------------|
| Required master port type    | A                        |                 |
| Process data analogue        | 3                        |                 |
| Process data binary          | 2                        |                 |
| Min. process cycle time [ms] | 4.1                      |                 |
| Supported DeviceIDs          | <b>Type of operation</b> | <b>DeviceID</b> |
|                              | default                  | 443             |

| Operating conditions           |  |          |
|--------------------------------|--|----------|
| Ambient temperature [°C]       |  | 0...60   |
| Storage temperature [°C]       |  | -20...85 |
| Max. relative air humidity [%] |  | 90       |
| Protection                     |  | IP 65    |

| Tests / approvals            |                                                                                       |                    |
|------------------------------|---------------------------------------------------------------------------------------|--------------------|
| EMC                          | DIN EN 61000-6-2                                                                      |                    |
|                              | DIN EN 61000-6-3                                                                      |                    |
| CPA approval                 | model number                                                                          | 003TG              |
|                              | accuracy class                                                                        | -                  |
|                              | maximum allowable error                                                               | ± 7 % FS           |
|                              | Q (min)                                                                               | 0,8 m³/h (N2)      |
|                              |                                                                                       | 0,8 m³/h (CO2)     |
|                              |                                                                                       | 1,2 m³/h (Ar)      |
|                              | Q (t)                                                                                 | -                  |
|                              | Q (max)                                                                               | 225 m³/h (N2)      |
|                              |                                                                                       | 223,6 m³/h (CO2)   |
| Vibration resistance         |                                                                                       | 366,6 m³/h (Ar)    |
|                              | DIN EN 68000-2-6                                                                      | 5 g (55...2000 Hz) |
| MTTF [years]                 |                                                                                       | 224                |
| Pressure Equipment Directive | Sound engineering practice; can be used for group 2 fluids; group 1 fluids on request |                    |

| Mechanical data          |                                                                                                   |                 |
|--------------------------|---------------------------------------------------------------------------------------------------|-----------------|
| Weight [g]               |                                                                                                   | 2029            |
| Dimensions [mm]          |                                                                                                   | 475 x 45 x 88.5 |
| Materials                | PBT-GF20; NBR; PC; stainless steel (304/1.4301); PTFE; brass coated; FKM; aluminium powder-coated |                 |
| Materials (wetted parts) | stainless steel (304/1.4301); FKM; ceramics glass passivated; PEEK-GF30; polyester; aluminium     |                 |
| Process connection       | threaded connection R 1 external thread DN25                                                      |                 |

| Displays / operating elements |                        |                                         |
|-------------------------------|------------------------|-----------------------------------------|
| Display                       | Display unit           | 4 x LED, green (NI/min, Nm³/h, Nm³, °C) |
|                               | function display       | 1 x LED, yellow                         |
|                               | switching status       | 2 x LED, yellow                         |
|                               | measured values        | alphanumeric display, 4-digit           |
|                               | programming            | alphanumeric display, 4-digit           |
| Display unit                  | NI/min; Nm³/h; Nm³; °C |                                         |

| Remarks |                                                                                                    |
|---------|----------------------------------------------------------------------------------------------------|
| Remarks | MW = measured value                                                                                |
|         | MEW = Final value of the measuring range                                                           |
|         | Measuring, display and setting ranges refer to the standard volume flow according to DIN ISO 2533. |

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Pack quantity

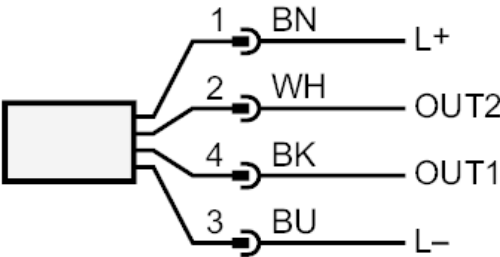
1 pcs.

### Electrical connection

Connector: 1 x M12; coding: A



### Connection



OUT1: switching output  
Pulse output

OUT2: switching output  
analogue output  
colours to DIN EN 60947-5-2  
Core colours :

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