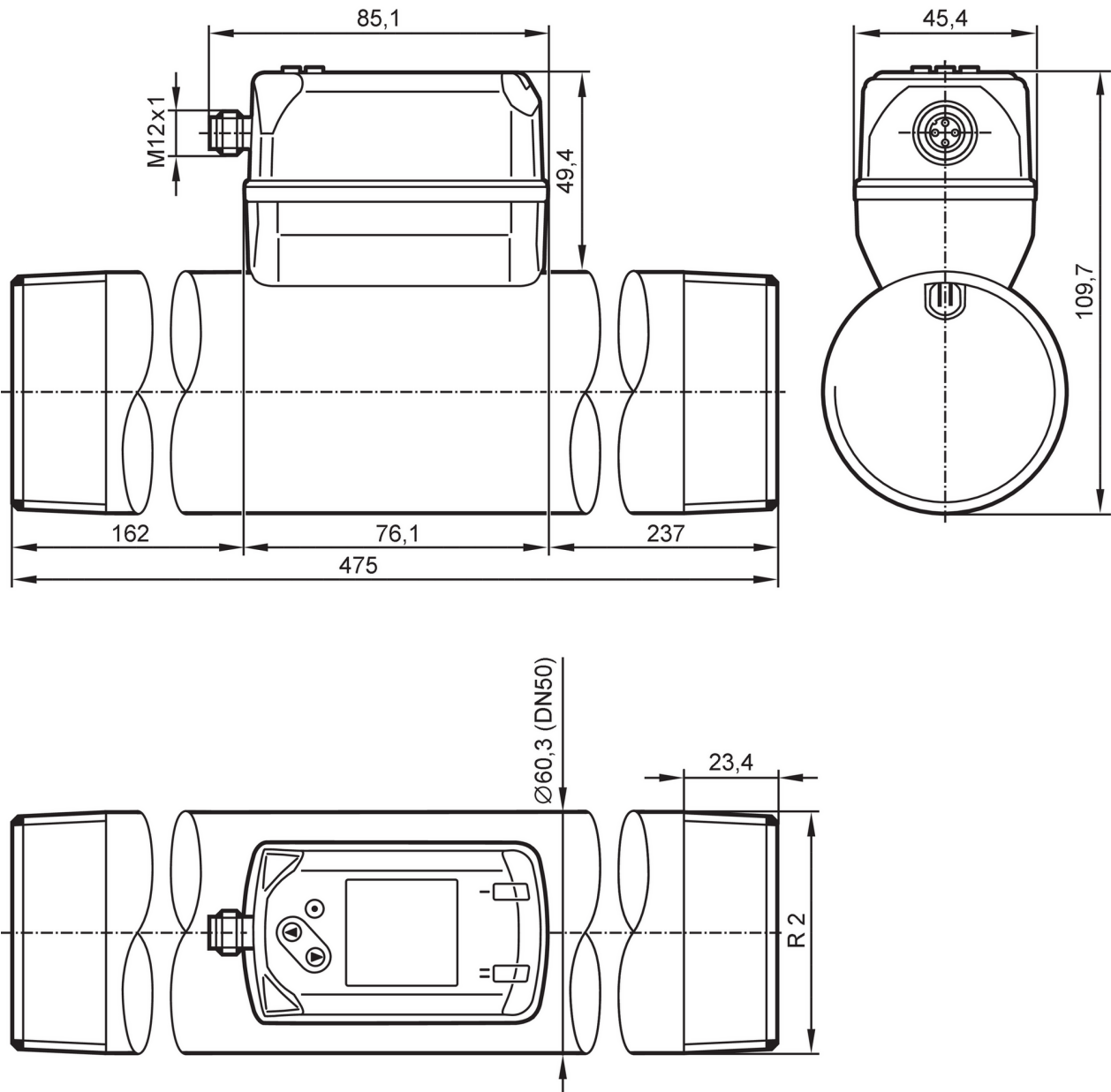


# SD2500



## Compressed air meter

SDR21DGXFRKG/US-100



CRN



DNV  
DNV.COM/AF



UK  
CA

### Product characteristics

|                              |                                                           |              |                |
|------------------------------|-----------------------------------------------------------|--------------|----------------|
| Number of inputs and outputs | Number of digital outputs: 2; Number of analog outputs: 1 |              |                |
| Measuring range              | 40...11670 l/min                                          | 0.3...84 m/s | 2.5...700 m³/h |
| Process connection           | threaded connection R 2 external thread DN50              |              |                |

### Application

|                         |                             |         |  |
|-------------------------|-----------------------------|---------|--|
| Application             | for industrial applications |         |  |
| Media                   | compressed air              |         |  |
| Medium temperature [°C] | -10...60                    |         |  |
| Min. burst pressure     | 64 bar                      | 6.4 MPa |  |
| Pressure rating         | 16 bar                      | 1.6 MPa |  |

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|                                          |       |     |
|------------------------------------------|-------|-----|
| MAWP (for applications according to CRN) | [bar] | 9.5 |
|------------------------------------------|-------|-----|

### Electrical data

|                             |      |                            |
|-----------------------------|------|----------------------------|
| Operating voltage           | [V]  | 18...30 DC; (to SELV/PELV) |
| Current consumption         | [mA] | < 80                       |
| Protection class            |      | III                        |
| Reverse polarity protection |      | yes                        |
| Power-on delay time         | [s]  | 1                          |

### Inputs / outputs

|                              |                                                           |
|------------------------------|-----------------------------------------------------------|
| Number of inputs and outputs | Number of digital outputs: 2; Number of analog outputs: 1 |
|------------------------------|-----------------------------------------------------------|

### Inputs

|        |               |
|--------|---------------|
| Inputs | counter reset |
|--------|---------------|

### Outputs

|                                                 |                                                                        |
|-------------------------------------------------|------------------------------------------------------------------------|
| Output signal                                   | switching signal; analog signal; pulse signal; IO-Link; (configurable) |
| Electrical design                               | PNP/NPN                                                                |
| Number of digital outputs                       | 2                                                                      |
| Output function                                 | normally open / closed; (configurable)                                 |
| Max. voltage drop switching output DC           | [V]<br>2.5                                                             |
| Permanent current rating of switching output DC | [mA]<br>150; (per output)                                              |
| Number of analog outputs                        | 1                                                                      |
| Analog current output                           | [mA]<br>4...20; (scalable)                                             |
| Max. load                                       | [Ω]<br>500                                                             |
| Pulse output                                    | consumed quantity meter                                                |
| Short-circuit protection                        | yes                                                                    |
| Type of short-circuit protection                | yes (non-latching)                                                     |
| Overload protection                             | yes                                                                    |

### Measuring/setting range

|                        |                    |                |                  |
|------------------------|--------------------|----------------|------------------|
| Measuring range        | 40...11670 l/min   | 0.3...84 m/s   | 2.5...700 m³/h   |
| Display range          | 0...14000 l/min    | 0...100.8 m/s  | 0...840 m³/h     |
| Resolution             | 10 l/min           | 0.1 m/s        | 0.5 m³/h         |
| Set point SP           | 100...11660 l/min  | 0.7...84 m/s   | 5.9...699.7 m³/h |
| Reset point rP         | 40...11600 l/min   | 0.3...83.6 m/s | 2.5...696.3 m³/h |
| Analog start point ASP | 0...9330 l/min     | 0...67.2 m/s   | 0...560 m³/h     |
| Analog end point AEP   | 2330...11670 l/min | 16.8...84 m/s  | 140...700 m³/h   |
| Low flow cut-off LFC   | 30...120 l/min     | 0.2...0.8 m/s  | 2...7 m³/h       |
| In steps of            | 1 l/min            | 0.1 m/s        | 0.1 m³/h         |

### Pressure monitoring

|                    |       |            |
|--------------------|-------|------------|
| Measuring range    | [bar] | -1...16    |
| Display range      | [bar] | -1...20    |
| Resolution         | [bar] | 0.05       |
| Set point SP       | [bar] | -0.92...16 |
| Reset point rP     | [bar] | -1...15.92 |
| Analog start point | [bar] | -1...12.8  |

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|                                     |                                 |                                                                                                                                     |
|-------------------------------------|---------------------------------|-------------------------------------------------------------------------------------------------------------------------------------|
| Analog end point                    | [bar]                           | 2.2...16                                                                                                                            |
| In steps of                         | [bar]                           | 0.01                                                                                                                                |
| Volumetric flow quantity monitoring |                                 |                                                                                                                                     |
| Measuring range                     | 0...100000000 m <sup>3</sup>    | 0...353146667.2 scf                                                                                                                 |
| Display range                       | 0...100000000 m <sup>3</sup>    | 0...353146667.2 scf                                                                                                                 |
| Set point SP                        | 0.001...10000000 m <sup>3</sup> | 0.05...353146667.2 scf                                                                                                              |
| Pulse value                         | 0.001...10000000 m <sup>3</sup> | 0.05...353146667.2 scf                                                                                                              |
| In steps of                         | 0.0001 m <sup>3</sup>           | 0.005 scf                                                                                                                           |
| Pulse length                        | [s]                             | 0.002...2                                                                                                                           |
| Temperature monitoring              |                                 |                                                                                                                                     |
| Measuring range                     | -10...60 °C                     | 14...140 °F                                                                                                                         |
| Display range                       | -24...74 °C                     | -11.2...165.2 °F                                                                                                                    |
| Resolution                          | 0.2 °C                          | 0.5 °F                                                                                                                              |
| Set point SP                        | -9.7...60 °C                    | 14.6...140 °F                                                                                                                       |
| Reset point rP                      | -10...59.7 °C                   | 14...139.4 °F                                                                                                                       |
| Analog start point                  | -10...46 °C                     | 14...114.8 °F                                                                                                                       |
| Analog end point                    | 4...60 °C                       | 39.2...140 °F                                                                                                                       |
| In steps of                         | 0.1 °C                          | 0.1 °F                                                                                                                              |
| Accuracy / deviations               |                                 |                                                                                                                                     |
| Temperature coefficient             | [1/K]                           | ± 0,07 % MW                                                                                                                         |
| Accuracy (in the measuring range)   |                                 | class 141: ± (2 % MW + 0,5 % MEW); class 344: ± (6 % MW + 0,6 % MEW) ; air quality to ISO 8573-1:2010; at medium temperature 23 °C  |
| Repeatability                       |                                 | ± (0,4 % MW + 0,1 % MEW)                                                                                                            |
| Pressure monitoring                 |                                 |                                                                                                                                     |
| Repeatability                       | [% of the final value]          | ± 0,2                                                                                                                               |
| Characteristics deviation           | [% of the final value]          | < ± 0,5; (BFSL = Best Fit Straight Line)                                                                                            |
| Greatest TEMPCO of the span         | [% MEW / 10 K]                  | ± 0,3                                                                                                                               |
| Greatest TEMPCO of the zero point   | [% MEW / 10 K]                  | ± 0,1                                                                                                                               |
| Temperature monitoring              |                                 |                                                                                                                                     |
| Accuracy                            | [K]                             | ± 0,5; (medium flow in the limit area of the flow measurement range)                                                                |
| Reaction times                      |                                 |                                                                                                                                     |
| Response time                       | [s]                             | < 0.1; (dAP = 0, T09)                                                                                                               |
| Damping process value dAP           | [s]                             | 0...5                                                                                                                               |
| Pressure monitoring                 |                                 |                                                                                                                                     |
| Response time                       | [s]                             | 0.05                                                                                                                                |
| Temperature monitoring              |                                 |                                                                                                                                     |
| Dynamic response T05 / T09          | [s]                             | T09 = 0,5                                                                                                                           |
| Software / programming              |                                 |                                                                                                                                     |
| Parameter setting options           |                                 | hysteresis / window; normally open / closed; current/pulse output; display can be rotated and switched off; Display unit; totalizer |

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| Interfaces                     |                                                                                                                                                |                                       |
|--------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------|
| Communication interface        | IO-Link                                                                                                                                        |                                       |
| Transmission type              | COM2 (38,4 kBaud)                                                                                                                              |                                       |
| IO-Link revision               | 1.1                                                                                                                                            |                                       |
| SDCI standard                  | IEC 61131-9 CDV                                                                                                                                |                                       |
| Profiles                       | Common - I&D                                                                                                                                   | Identification and Diagnosis          |
|                                | Function                                                                                                                                       | Measurement data, standard resolution |
| SIO mode                       | yes                                                                                                                                            |                                       |
| Required master port class     | A                                                                                                                                              |                                       |
| Process data analog            | 8                                                                                                                                              |                                       |
| Process data binary            | 2                                                                                                                                              |                                       |
| Min. process cycle time [ms]   | 7.2                                                                                                                                            |                                       |
| Supported DeviceIDs            | Type of operation                                                                                                                              | DeviceID                              |
|                                | default                                                                                                                                        | 870                                   |
| Operating conditions           |                                                                                                                                                |                                       |
| Ambient temperature [°C]       | 0...60                                                                                                                                         |                                       |
| Storage temperature [°C]       | -20...85                                                                                                                                       |                                       |
| Max. relative air humidity [%] | 90                                                                                                                                             |                                       |
| Protection                     | IP 65; IP 67                                                                                                                                   |                                       |
| Tests / approvals              |                                                                                                                                                |                                       |
| EMC                            | DIN EN 60947-5-9                                                                                                                               |                                       |
| CPA approval                   | model number                                                                                                                                   | 001TG                                 |
|                                | accuracy class                                                                                                                                 | -                                     |
|                                | maximum allowable error                                                                                                                        | ± 2,5 % FS                            |
|                                | Q (min)                                                                                                                                        | 0,05 m³/h                             |
|                                | Q (t)                                                                                                                                          | -                                     |
|                                | Q (max)                                                                                                                                        | 700 m³/h                              |
| Vibration resistance           | DIN EN 68000-2-6                                                                                                                               | 5 g (10...2000 Hz)                    |
| MTTF [years]                   | 183                                                                                                                                            |                                       |
| UL approval                    | UL approval number                                                                                                                             | I012                                  |
|                                | File number UL                                                                                                                                 | E174189                               |
| Pressure equipment directive   | sound engineering practice; can be used for stable gases fluid group 2                                                                         |                                       |
| Mechanical data                |                                                                                                                                                |                                       |
| Weight [g]                     | 2650.5                                                                                                                                         |                                       |
| Housing                        | rectangular                                                                                                                                    |                                       |
| Dimensions [mm]                | 475 x 60.3 x 109.7                                                                                                                             |                                       |
| Material                       | PBT+PC-GF30; PPS GF40; stainless steel (1.4301 / 304); stainless steel (1.4305 / 303); steel (1.5523) galvanized; 2.0401 (brass / CW614N); FKM |                                       |
| Materials (wetted parts)       | stainless steel (1.4301 / 304); stainless steel (1.4305 / 303); FKM; ceramics glass passivated; PPS GF40; Al2O3 (ceramics); acrylate           |                                       |
| Process connection             | threaded connection R 2 external thread DN50                                                                                                   |                                       |
| Displays / operating elements  |                                                                                                                                                |                                       |
| Display                        |                                                                                                                                                | Color display 1,44", 128 x 128 pixels |
|                                |                                                                                                                                                | 2 x LED, yellow                       |

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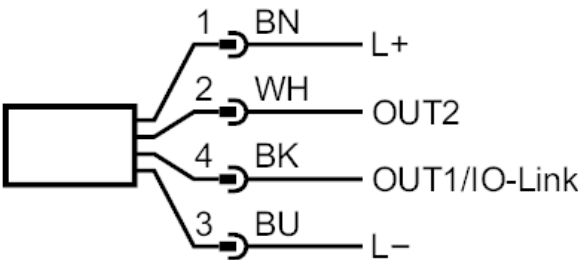
| Remarks       |                                                                                                |
|---------------|------------------------------------------------------------------------------------------------|
| Remarks       | MW = Measured value                                                                            |
|               | MEW = Final value of the measuring range                                                       |
|               | Measuring, display and setting ranges refer to standard volume flow according to DIN ISO 2533. |
|               | For information about installation and operation please see the operating instructions.        |
| Pack quantity | 1 pcs.                                                                                         |

Electrical connection

Connector: 1 x M12; coding: A; Contacts: 4



Connection



|               |                                                                                                                                                                                                                                                       |
|---------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| OUT1/IO-Link: | Switching output flow<br>Switching output temperature<br>Switching output pressure<br>Pulse output quantity meter<br>signal output Preset counter                                                                                                     |
| OUT2/InD:     | Switching output flow<br>Switching output temperature<br>Switching output pressure<br>analog output flow<br>analog output temperature<br>analog output pressure<br>signal output Preset counter<br>Pulse output quantity meter<br>Input counter reset |