DR08

Paddle wheel flow sensor for low viscosity liquids

- High accuracy and resolution
- Very low deviation in series production
- Models in PP, brass or stainless steel
- Pressure resistant up to 300 bar
- High temperature version available
- Small installation dimensions
- Low-Cost alternatives available

**Description:**
The DR08 flowmeters are manufactured according to the turbine wheel technology.
The liquid turns a turbine wheel strictly proportional to the liquids flow. This rotation is detected either by an inductive proximity switch or a Hall sensor. An attached electronic unit computes from this a frequency output or a 4...20 mA analogue output signal. As alternative build-on electronic devices a limit transducer, programmable with up to 16 limit switching points, or a digital display unit is available. An advantage of the turbine flowmeters type DR08 is the very small deviation in series production. Therefore it is no longer necessary to recalibrate each device individually. The DR08 flowmeter is highly recommended in large series.

**Applications:**
Due to the compact design, the wide measuring range, and the high accuracy these turbine wheel flowmeters type DR08 are applicable for:
- Monitoring heat exchange water
- Medical engineering devices
- Synthetic materials industry
- Solar energy plants
- Machine tools
- Photographic laboratory devices
- Dispensing systems
- Coolants
- Heat quantity measurement
...and many other applications more
**Technology**

**DR08.15** : Measuring range 2…20 (2…40) l/min  
Axial turbine flowmeter with inlet guide vanes.

The liquid is divided in the inlet of the flowmeter in four parts by the guide vanes. These partial flows hit the turbine wheel at four directions with nearly equal force. Therefore the rotation of the turbine is very uniform and the mechanical wear is very low. The extreme hardness of the materials used to manufacture the bearing, sapphire and ARCAP AP1D, assure a remarkable life time and less maintenance.

**DR08.25**: Measuring range 4…160 l/min  
Axial turbine flowmeter

The liquid streaming into the flowmeter is turning the turbine wheel. Due to sapphire bearings of highest quality and very low rotational speed a remarkable life time of the turbine is achieved. The rotation of the turbine is converted to a pulsating signal generating a frequency output.

**DR08.40**: Measuring range 0,4…25 m³/h  
Axial turbine flowmeter with partial flow measurement

In the center of the turbine housing made of brass a polyamide turbine system is located. At the outside there is an annular gap. The liquid is divided between these two channels and the part entering the center of the housing is turning the turbine, while the other part is passing through. The rotational speed is converted to an electrical signal which frequency is strictly proportional to the flow rate. Due to sapphire bearings of highest quality a remarkable life time of the turbine is achieved.

**Dimensions**
## Measuring ranges, Materials, and Versions DR08.15

<table>
<thead>
<tr>
<th>DR08.15</th>
<th>x. x. x. x. x. x. x. xxx</th>
</tr>
</thead>
<tbody>
<tr>
<td>Measuring range:</td>
<td>2…40 l/min S</td>
</tr>
<tr>
<td>Materials:</td>
<td>housing of PPO Noryl (not for high pressure version) K</td>
</tr>
<tr>
<td></td>
<td>housing of brass M</td>
</tr>
<tr>
<td></td>
<td>housing of brass V</td>
</tr>
<tr>
<td>Version:</td>
<td>with inductive sensor I</td>
</tr>
<tr>
<td></td>
<td>with Hall sensor H</td>
</tr>
<tr>
<td></td>
<td>with Hall sensor, 300 bar, 150 °C P</td>
</tr>
<tr>
<td>Output signal:</td>
<td>PNP (only with inductive sensor) P</td>
</tr>
<tr>
<td></td>
<td>NPN N</td>
</tr>
<tr>
<td>Electrical connection:</td>
<td>without (only with option …T) 0</td>
</tr>
<tr>
<td></td>
<td>1,5 m PVC cable P</td>
</tr>
<tr>
<td></td>
<td>plug connector M12x1, 4 pin S</td>
</tr>
<tr>
<td>Additional temperature sensor:</td>
<td>without 0</td>
</tr>
<tr>
<td></td>
<td>PT-100 in brass shaft 1</td>
</tr>
<tr>
<td></td>
<td>PT-100 in stainless steel shaft 2</td>
</tr>
<tr>
<td></td>
<td>PT-1000 in brass shaft 3</td>
</tr>
<tr>
<td></td>
<td>PT-1000 in stainless steel shaft 4</td>
</tr>
<tr>
<td>Process connection:</td>
<td>G 3/4 male (standard) A</td>
</tr>
<tr>
<td></td>
<td>G 3/4 female (only for high pressure version in stainless steel) I</td>
</tr>
<tr>
<td></td>
<td>connection fitting according to table &quot;Connection Fittings&quot; x</td>
</tr>
<tr>
<td>Options:</td>
<td>with integrated filter 0,5 mm (Tmax. 60 °C) H</td>
</tr>
<tr>
<td></td>
<td>with build-on transmitter 4…20 mA (x = full scale value 5, 10, 20 or 40 l/min) Ax</td>
</tr>
<tr>
<td></td>
<td>with build-on limit switch VE</td>
</tr>
<tr>
<td></td>
<td>with build-on limit switch and additional pulse output (with 5 pin plug) VEP</td>
</tr>
<tr>
<td></td>
<td>prepared for build-on electronic unit TD325 (please order separately) T</td>
</tr>
</tbody>
</table>

### Technical Data

#### Materials:
- **DR08.15.x.K:** Housing and sensor: PPO Noryl GFN3
turbine: PEI ULTEM
O-ring: NBR, hard metal pins and sapphire bearing
equipment of turbine wheel: hard ferrite
and Hall sensor, stainless steel in case of inductive sensor

- **DR08.15.x.M:** Housing: brass
sensor: PPO Noryl GFN3,
brass in case of high pressure version
O-ring: NBR, optional Viton bearing / axle: ARCAP AP1D with hard metal pins and sapphire bearing
equipment of turbine wheel: hard ferrite
and Hall sensor, stainless steel in case of inductive sensor

- **DR08.15.x.V:** Housing: stainless steel 1.4571
sensor: stainless steel 1.4571
Turbineneinsatz: PEI ULTEM
O-ring: Viton bearing / axle: ARCAP AP1D with hard metal pins and sapphire bearing
equipment of turbine wheel: hard ferrite

#### Output signal:
- **DR08.15.x.x.H / P:** square wave pulse
  - 855 (H) / 915 (P) ppl
  - NPN open collector
- **DR08.15.x.x.I:** square wave pulse, 1795 ppl
  - NPN or PNP open collector

#### max. particle size:
- 0,5 mm
### Measuring ranges, Materials, and Versions DR08.25

<table>
<thead>
<tr>
<th>Measuring range:</th>
<th><strong>DR08.25</strong> x.x.x.x.x.xxx</th>
</tr>
</thead>
<tbody>
<tr>
<td>4…160 l/min (permanent load 80 l/min)</td>
<td>S</td>
</tr>
</tbody>
</table>

### Materials:
- Housing of PPO (not for high pressure version): K
- Housing of brass: M
- Housing of stainless steel: V

### Version:
- With inductive sensor: I
- With Hall-Sensor: H
- With Hall-Sensor up to 50 bar: M

### Output signal:
- PNP (only with inductive sensor): P
- NPN: N

### Electrical connection:
- Without (only with option …T): 0
- 2 m PVC cable (only DR08.25.S.K.H or …M.H): P
- Plug connection M12x1.4 pin: S

### Additional temperature sensor:
- Without: 0
- PT-100 in brass shaft for DR08.25.K: 1
- PT-100 in stainless steel shaft for DR08.25.K: 2
- PT-1000 in brass shaft for DR08.25.K: 3
- PT-1000 in stainless steel shaft for DR08.25.K: 4
- PT-100 or PT-1000 for DR08.25.M / V see table "Connection Fittings": 5

### Process connections:
- G 1 1/4 male (Standard): A
- Connection fitting according to table "Connection Fittings": x

### Options:
- With filter 0,63 mm, made of stainless steel, incl. O ring EPDM: H
- With build-on transmitter 4…20 mA (x = full scale value 60, 100 or 160 l/min): Ax
- With build-on limit switch: V E
- With build-on limit switch and additional pulse output: V E P
- Prepared for build-on electronic unit TD325 (please order separately): T

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### Technical Data

#### Materials:
- **DR08.25.x.K:** Housing and turbine: PP
  - Sensor shaft: POM
  - Turbine: PA Grivory HTV4X1
  - O ring: NBR
  - Bearing / axle: PA, sapphire, stainless steel equipment of turbine wheel: permanent magnet Recona 28, nickel plated, stainless steel in case of inductive sensor

- **DR08.25.x.M:** Housing: brass
  - Turbine: PP
  - Sensor: POM, brass in case of high pressure version
  - Turbine: PA Grivory HTV4X1
  - O ring: NBR, optional Viton
  - Bearing / axle: PA, sapphire, stainless steel equipment of turbine wheel: permanent magnet Recona 28, nickel plated stainless steel in case of inductive sensor

- **DR08.25.x.V:** Housing: stainless steel 1.4571
  - Sensor: stainless steel 1.4571
  - Turbine: PA Grivory HTV4X1
  - O ring: NBR, optional Viton
  - Bearing / axle: PA, sapphire, stainless steel equipment of turbine wheel: permanent magnet Recona 28, nickel plated

#### max. Pressure:
- **DR08.25.x.K:** 10 bar
- **DR08.25.x.M.I / H:** 10 bar
- **DR08.25.x.M.M:** 50 bar
- **DR08.25.x.V:** 50 bar

#### max. Temperature:
- **DR08.25.x.K:** 80 °C at 2 bar, 60 °C at 5 bar,
  - 30 °C at 10 bar
- **DR08.25.x.M.I / H:** 60 °C at 5 bar, 30 °C at 10 bar
- **DR08.25.x.M.M:** 85 °C
- **DR08.25.x.V:** 60 °C

#### Accuracy:
- ± 3 % of actual FS

#### Power supply:
- **DR08.25.x.x.H / M:** 4,5…24 VDC
- **DR08.25.x.x.I:** 10…30 VDC

#### Output signal:
- Square wave pulse, 65 ppm
  - NPN open collector for Hall-sensor
  - PNP open collector for inductive sensor

#### max. Particle size:
- 0,5 mm
### Measuring ranges, Materials, and Versions DR08.40

<table>
<thead>
<tr>
<th>DR08.40 x.x.x.x.xxx</th>
<th>Measuring range:</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.4...25 m³/h (7...420 l/min)</td>
<td>S</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>DR08.40.x.M</th>
<th>Materials:</th>
</tr>
</thead>
<tbody>
<tr>
<td>DR08.40.x.M:H / M</td>
<td>Housing: brass</td>
</tr>
<tr>
<td>DR08.40.x.M:H / M</td>
<td>turbine wheel: PP</td>
</tr>
<tr>
<td>DR08.40.x.M:H / M</td>
<td>sensor: POM, brass in case of high pressure version</td>
</tr>
<tr>
<td>DR08.40.x.M:H / M</td>
<td>Turbine system: PA Grivory HTV4X1</td>
</tr>
<tr>
<td>DR08.40.x.M:H / M</td>
<td>O ring: NBR</td>
</tr>
<tr>
<td>DR08.40.x.M:H / M</td>
<td>bearing / axle: PA, saphire, stainless steel turbine wheel equipment: Permanent magnets Recona 28, nickel plated, stainless steel in case of inductive sensor</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>DR08.40.x.x.H / M</th>
<th>max. Pressure:</th>
</tr>
</thead>
<tbody>
<tr>
<td>DR08.40.x.x.H / M</td>
<td>10 bar</td>
</tr>
<tr>
<td>DR08.40.x.x.I:</td>
<td>50 bar</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>DR08.40.x.x.H / M</th>
<th>max. Temperature:</th>
</tr>
</thead>
<tbody>
<tr>
<td>DR08.40.x.x.H / M</td>
<td>85 °C</td>
</tr>
<tr>
<td>DR08.40.x.x.I:</td>
<td>60 °C</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>DR08.40.x.x.H / M</th>
<th>Accuracy:</th>
</tr>
</thead>
<tbody>
<tr>
<td>DR08.40.x.x.H / M</td>
<td>5 % of measured value</td>
</tr>
<tr>
<td>DR08.40.x.x.H / M</td>
<td>range 0.4...3 m³/h</td>
</tr>
<tr>
<td>DR08.40.x.x.H / M</td>
<td>± 3 % of measured value</td>
</tr>
<tr>
<td>DR08.40.x.x.H / M</td>
<td>range &gt;3...25 m³/h</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>DR08.40.x.x.H / M</th>
<th>Power supply:</th>
</tr>
</thead>
<tbody>
<tr>
<td>DR08.40.x.x.H / M</td>
<td>4.5...20 VDC</td>
</tr>
<tr>
<td>DR08.40.x.x.I:</td>
<td>10...30 VDC</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>DR08.40.x.x.H / M</th>
<th>Output signal:</th>
</tr>
</thead>
<tbody>
<tr>
<td>DR08.40.x.x.H / M</td>
<td>square wave pulse, 65 ppl</td>
</tr>
<tr>
<td>DR08.40.x.x.I:</td>
<td>NPN open collector for Hall sensor, PNP open collector for inductive sensor</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>DR08.40.x.x.H / M</th>
<th>max. Particle size:</th>
</tr>
</thead>
<tbody>
<tr>
<td>DR08.40.x.x.H / M</td>
<td>0.5 mm</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>DR08.40.x.x.H / M</th>
<th>Filter:</th>
</tr>
</thead>
<tbody>
<tr>
<td>DR08.40.x.x.H / M</td>
<td>0.63 mm, included in delivery</td>
</tr>
</tbody>
</table>

### Technical Data

- **Materials:**
  - Housing: brass
  - Turbine wheel: PP
  - Sensor: POM, brass in case of high pressure version
  - Turbine system: PA Grivory HTV4X1
  - O ring: NBR
  - Bearing / axle: PA, saphire, stainless steel turbine wheel equipment: Permanent magnets Recona 28, nickel plated, stainless steel in case of inductive sensor

- **Max. Pressure:**
  - DR08.40.x.M.H / M: 10 bar
  - DR08.40.x.M.M: 50 bar

- **Max. Temperature:**
  - DR08.40.x.M.H / M: 85 °C
  - DR08.40.x.M.I: 60 °C

- **Accuracy:**
  - 5 % of measured value
  - Range 0.4...3 m³/h
  - ± 3 % of measured value
  - Range >3...25 m³/h

- **Power Supply:**
  - DR08.40.x.x.H / M: 4.5...20 VDC
  - DR08.40.x.x.I: 10...30 VDC

- **Output Signal:**
  - Square wave pulse, 65 ppl
  - NPN open collector for Hall sensor, PNP open collector for inductive sensor

- **Max. Particle Size:**
  - 0.5 mm

- **Filter:**
  - 0.63 mm, included in delivery
Connection Fittings
(inclusive corresponding seal)

<table>
<thead>
<tr>
<th>Type</th>
<th>Description:</th>
<th>fits</th>
<th>Tmax. / Pmax.</th>
</tr>
</thead>
<tbody>
<tr>
<td>A15ST10K</td>
<td>hose nozzle, PA 6.6, d = 10 mm</td>
<td>DR08.15</td>
<td>20 °C at 10 bar, 60 °C at 2.5 bar</td>
</tr>
<tr>
<td>A15ST12K</td>
<td>hose nozzle, PP, d = 12 mm</td>
<td>DR08.15</td>
<td>20 °C at 10 bar, 60 °C at 2.5 bar</td>
</tr>
<tr>
<td>A15ST15K</td>
<td>hose nozzle, HDPE, d = 15 mm</td>
<td>DR08.15</td>
<td>20 °C at 10 bar, 60 °C at 2.5 bar</td>
</tr>
<tr>
<td>A15ST19K</td>
<td>hose nozzle, HDPE, d = 19 mm</td>
<td>DR08.15</td>
<td>20 °C at 10 bar, 60 °C at 2.5 bar</td>
</tr>
<tr>
<td>A15STW13K</td>
<td>hose nozzle, PP, bent, d = 13 mm</td>
<td>DR08.15</td>
<td>60 °C, PN10</td>
</tr>
<tr>
<td>A15STW13M</td>
<td>hose nozzle, MS, bent, d = 13 mm</td>
<td>DR08.15</td>
<td>90 °C, PN10</td>
</tr>
<tr>
<td>A15KM22K</td>
<td>glue-in connection, PVC</td>
<td>DR08.15</td>
<td>20 °C at 6 bar, 60 °C at 2.5 bar</td>
</tr>
<tr>
<td>A15SN20K</td>
<td>weld-on connection, PP</td>
<td>DR08.15</td>
<td>20 °C at 6 bar, 60 °C at 2.5 bar</td>
</tr>
<tr>
<td>A15VA10M</td>
<td>thread brass, G 3/8 male</td>
<td>DR08.15</td>
<td>110 °C, PN16</td>
</tr>
<tr>
<td>A15VA15M</td>
<td>thread brass, G 1 1/2 male</td>
<td>DR08.15</td>
<td>110 °C, PN16</td>
</tr>
<tr>
<td>A15VI10M</td>
<td>thread brass nickel plated G 3/8 female</td>
<td>DR08.15</td>
<td>110 °C, PN16</td>
</tr>
<tr>
<td>A15VI15M</td>
<td>thread brass nickel plated G 3/8 female</td>
<td>DR08.15</td>
<td>110 °C, PN16</td>
</tr>
<tr>
<td>A15KL18M</td>
<td>compression fitting brass</td>
<td>DR08.15</td>
<td>110 °C, PN6</td>
</tr>
<tr>
<td>A15KL22M</td>
<td>compression fitting brass</td>
<td>DR08.15</td>
<td>110 °C, PN6</td>
</tr>
<tr>
<td>A15LA15M</td>
<td>solder connection brass</td>
<td>DR08.15</td>
<td>90 °C, PN16</td>
</tr>
<tr>
<td>A15LA18M</td>
<td>solder connection brass</td>
<td>DR08.15</td>
<td>90 °C, PN16</td>
</tr>
</tbody>
</table>

Accessories

<table>
<thead>
<tr>
<th>Type</th>
<th>Description</th>
<th>DR08.Z.5</th>
<th>DR08.Z.L3</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>cable with extruded mating connector</td>
<td>M 12x1, 4 pin, shielded, L = 3 m</td>
<td></td>
</tr>
<tr>
<td></td>
<td>like L3 above, but L = 5 m</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>like L3 above, but L = 10 m</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>mating connector M 12x1, 4 pin, without cable</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

DR08.Z.25 K hose nozzle, PP, d = 25 mm
DR08.Z.30 K hose nozzle, PP, d = 30 mm
DR08.Z.32 K hose nozzle, PP, d = 32 mm
A25SM25K weld-on connection, PP, d = 25 mm, d_a = 33 mm
A25KM25K glue-in connection PP, d = 25 mm, d_a = 33 mm
A25VA25M-PT100 thread brass, with PT-100 in brass shaft, G 1 male
A25VA25M-PT1000 thread brass, with PT-100 in brass shaft G 1 male
A25VA25M thread brass, G 1 male
A25VA32M* thread brass, G 1 1/4 male
A25LA28M solder connection brass for copper pipe d = 28 mm
A25VA25V thread stainless steel, G 1 male
A40VA40M-PT100 thread brass, with PT-100 in brass shaft, G 1 1/2 male
A40VA40M-PT1000 thread brass, with PT-100 in brass shaft, G 1 1/2 male
A40VA40M thread brass, G 1 1/2 male
A40VA50M thread brass, G 2 male
A40LA42M solder connection brass, for copper pipe d = 42 mm

* fitting consists of one piece only
DR08…Ax
F/I-Converter with analogue output

All turbine flowmeter type DR08 can be equipped with a build-on F/I converter to deliver directly a standard sensor output of 4…20 mA instead of a pulse square wave signal.

Technical Data

**Output:**
4…20 mA, current limit at 26 mA

**Scaling:**
according to model code
DR08.15, DR08.25, DR08.40,
other scaling at special order

**Power supply:**
18…30 VDC

**max. Current:**
30 mA

**max. Load:**
250 Ohm

**electr. Connection:**
4 pin plug, M12x1,

**max. Medium temperature:**
80 °C
DR08…VE(P)
Limit switch with 16 programmable switching points

- wide switching range, only 1 flow switch suitable for many applications.
- reliable monitoring of low flow rate
- absolute exactly programming of switching point
- self monitoring
- excellent price performance ratio

Description:

The core of the turbine wheel flow monitor DR08…-VE is the extremely robust miniature turbine DR08, which is applied for many years in a huge variety of large-scale production. The turbine provides a frequency signal proportional to the flow. These electrical pulses are fed into a microprocessor based electronic unit. This monitors the programmed minimal flow and if the flow falls below this limit it activates a potential free alarm contact. Even in the case of a blocked turbine wheel the electronic unit recognises this error condition and signalises it. An additional pulse signal is also available, so the actual flow can be measured and monitored by another unit, too.

Applications:

Supervision of heat exchange systems of high grade devices like:
- Laser equipments
- HF-generators etc.

Electrical connections

<table>
<thead>
<tr>
<th>switching contact only</th>
<th>switching contact and pulse output</th>
</tr>
</thead>
<tbody>
<tr>
<td>+U</td>
<td>alarm out</td>
</tr>
<tr>
<td>alarm contact</td>
<td>+U</td>
</tr>
<tr>
<td>GND</td>
<td>pulse output</td>
</tr>
</tbody>
</table>

The switching points given in the table are measured with water at 20 °C. Custom specific switching points can be factory programmed from a sales volume of 25 devices and higher.

Technical Data

Switching range: see table above

Switching accuracy:
- DR08.15: ± 0,2 l/min ± 2 % of switching point
- DR08.25: ± 0,8 l/min ± 4 % of switching point
- DR08.40: ± 2,0 l/min ± 6 % of switching point

Switching point setup: with 16 position rotary switch

Output:
- switch: connecting to +Ub
  max load: 100 mA
- pulse: frequency signal proportional to flow rate, NPN open collector, max. 10 mA

Display:
- 2 LED
  yellow: flow OK
  red: alarm

Electrical connection: 4 pin plug, M12x1

Power supply: 12…24 VDC, max. 10 mA

max. Media temperature: 80 °C
TD325
Display and Control unit to build-on at turbine flowmeter DR08

The display and control unit is suitable to evaluate the signals of the turbine flowmeter DR08. Normally it will be delivered directly mounted on a DR08 (option DR08…T).

The TD325 provides various display and control functions:

- 2 line LCD display for
  - Flow rate
  - Total (resetable)
  - Total (not resetatable)
  - Temperature (optional)
  - Bargraph display 0…100 % for flow rate, Volumene (resetable) oder Temperature
- menu based programming by 2 light reflex buttons (protection index IP65)
- Keylock against unintentional operation
- Menu language german, english, french
- rotatable housing made of stainless steel
- optional analogue output, assigned to flow rate, totaliser, or temperature
- optional with 2 limit switches, assigned to flow rate, totaliser, or temperature
- optional pulse output, also with frequency divider available

The TD325 can be mounted to any DR08 flow sensor. Optional there is also a version for panel mounting available.

The electrical connection is made by an extruded cable or one (resp. two) plugs M12 x 1.

Order Code

<table>
<thead>
<tr>
<th>TD325 Display and control unit for DR08</th>
<th>X.</th>
<th>XX.</th>
<th>XX.</th>
<th>X.</th>
<th>X.</th>
</tr>
</thead>
<tbody>
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<td>Input signal:</td>
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<td>Analogue output:</td>
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<td>4…20 mA</td>
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<td>0…20 mA</td>
<td>A2</td>
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<td>0…10 V</td>
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<td>Frequency output:</td>
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<td>please indicate</td>
<td>9</td>
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</tbody>
</table>

Technical Data

Signal input:
- flow:
- temperature:
Anzeige:
Programmable units:

Power supply: 12…24 VDC with integrated sensor supply 12 VDC

Ambient temperature: -20…+60 °C
Medium temperature: -20…+90 °C

Analogue output: 0/4…20 mA, max. load 800 Ohm or 0…10 V

Alarm output: 2 transistor switches, PNP open collector programmable as Min. or Max. alarm, adjustable hysteresis, quiescent or operation current function

Frequency output: PNP open collector, TTL, divisor programmable stainless steel, d = 80 mm, h = 55 mm, 350° rotatable
Pressure drop:

**DR08.15**

- **Pressure drop dp [bar]**
  - Flow rate Q [l/min]
  - Pressure drop dp [bar]

**DR08.25**

- **Pressure drop dp [bar]**
  - Flow rate Q [l/min]
  - Pressure drop dp [bar]

**DR08.40**

- **Pressure drop dp [bar]**
  - Flow rate Q [m³/h]

Pulse rates:

**DR08.15**

- **Pulse rate [1/l]**
  - Flow rate Q [l/min]

**DR08.25**

- **Pulse rate [1/l]**
  - Flow rate Q [l/min]

**DR08.40**

- **Pulse rate [1/l]**
  - Flow rate Q [m³/h]