### 9 Specifications

<table>
<thead>
<tr>
<th>Operating Data</th>
<th>DWM-L</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pressure:</td>
<td>brass PN 200 bar</td>
</tr>
<tr>
<td>Pressure drop:</td>
<td>0.62 - 0.4 bar</td>
</tr>
<tr>
<td>Temperature max.</td>
<td>80°C</td>
</tr>
<tr>
<td>Accuracy:</td>
<td>±10% of final value</td>
</tr>
<tr>
<td>Electrical Data:</td>
<td>SPDT N.O.</td>
</tr>
<tr>
<td>IP65 (plug connection DWM-L Form A or C)</td>
<td>max. 250V + 3A + 100VA</td>
</tr>
<tr>
<td>IP67 (with 1 m sealed in cable)</td>
<td>max. 250V + 2A + 60VA</td>
</tr>
<tr>
<td>Ex AX II 2G EEx m II T6</td>
<td>max. 250V + 2A + 60VA</td>
</tr>
<tr>
<td>EEx m II T6 max. 80°C</td>
<td>max. 250V + 2A + 60VA</td>
</tr>
</tbody>
</table>

**Output signal:**
- The contact switches off, if minimum flow is below setpoint
- Power supply: not necessary (reed contacts)
  - Cable diameter for IP65: 6 - 8 mm
  - Grade of pollution: 2 (EN 61058-1)

**Other plug types or cable lengths on request**

**Materials**

- brass
- stainl. steel
- NBR (other on request)
- Viton (other on request)

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### Fault finding hints

1. The instruments, type DWM-L, prove themselves through reliability and simple handling. To use the advantages of the instrument to the full extent, please take notice of the following:

2. Every person, in charge of commissioning and operating this instrument, must have read and understand this operating instruction and specially the safety hints!

3. The instruments, type DWM-L, must only be installed by qualified personnel, which hold a corresponding qualification installation, commissioning and operation of these instruments.

4. The instructions contained in the operating instructions must be followed to ensure a safe operation of the instrument. Further, the additional Legal- and safety-regulations for the individual application must be observed. Accordingly this applies for the use of accessories as well.

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### 2.1 General hints

1. The instrument must be installed vertical in the system.

2. The process connection has to be oriented correctly.

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### 2.2 Application as directed

1. The instruments, type DWM-L, serve as monitors for continuous flow of gaseous media. Any other use counts as nondirected. If not indicated otherwise, the scaling of the instruments refer to air. Special applications, where intermittent loads (e.g. cyclic operation) could occur, should be discussed and checked with our technical staff.

2. With every start up it should be watched that the shut-off valves are opened slowly, this is to avoid line shock, which can damage the instrument.

3. In general should fast changes of the operating conditions (pressure, temperature, flow) be avoided.

4. The instruments, type DWM-L, must not be used as single source to avoid dangerous situations on machinery and in plants.

5. Machinery and plants must be constructed in such way, that faulty conditions do not lead the operators into dangerous situations.

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### 2.3 Qualified personnel

1. The instruments, type DWM-L, must only be installed by qualified personnel, which is capable of using these instruments in a professional manner. Qualified personnel are such persons, which are familiar with the erection, installation, commissioning and operation of these instruments and which hold a corresponding qualification for this function.
5 Electrical connection

The switch contacts are potential free and do not need any supply.

Attention! Switch contact and unit are matched. After the exchange of a switch contact a readjustment must be made. Kindly request the relevant instruction.

Switch position under No flow condition:

- Connection: normally open
  2 — 1

- Connection: change over
  1 — 2 — 3

5.1 Standard switch contact

Pin- allocation of the supplied socket (DIN 43650 Form A or C). The Ground-pin is not used.

The danger of overloads exist by means of:

- inductive loads
- capacitive loads
- resistive loads

Inductive load

This kind of load will be caused by:
- contactors, relais
- solenoid valves
- electric motors

Danger:

Voltage peaks during switch off (up to 10-times of the nominal voltage)

Precautionary measure: (sample)

Capacitive load

This kind of load will be caused by:
- extrem long leads
- capacitive consumption

Danger:

High current peaks during switch on of the switch contact (exceeding the nominal current)

Precautionary measure: (sample)

Resistive load

This kind of load will be caused by:
- incandescent bulbs
- Motor start up

Danger:

High current peaks during switch on of the switch contact, because the filament has low resistance at low temperatures.

Precautionary measure: (sample)

Limiting the current by means of a resistor

6 Switchpoint adjustment

- Loosen the lock screw of the switch contact
- Shift the switch contact until the arrow on the switch contact is in coincidence with the desired switch point.
- Tighten the lock screw of the switch contact.

Hints:

- The adjusted switch point corresponds to the switch off point of the switch contact with decreasing flow.
- The actual switch position can be checked by means of an universal tester.
- The above description of the adjustment refers to the normally open contact.

7 Maintenance

Due to the few moving parts the instruments do not require much service. A functional check and servicing on a regular base will not only increase the lifetime and reliability of the instrument, but of the entire plant.

The service intervals depend on:

- the pollution of the media
- environmental conditions (e.g. vibrations)

During maintenance at least the following points should be checked:

- operation of the switch contact
- leakage test of the instrument
- free movement of the float

It is the obligation of the user to lay down appropriate service intervals depending on the application.

Hints:

- The free movement of the float and the operation of the switch contact can be checked by varying the flow and observing the switch contact status.
- In most cases a purification can be achieved by flushing the instrument with clean media. In obstinate cases (e.g. calcareous deposits) cleaning can be done with commercial purifier, as long as the purifier is not aggressive against the material of the instrument.

8 Fault finding hints

The switch contact does not react:

- The switch contact is permanent in break position
- The switch contact is permanent in make position

1. No flow

- check for medium flow
- Flow to low or switch contact adjusted to high
- Adjust switch point to a lower flow
- Use instrument with different range
- Incorrect reduced (pipe diameter to small)
- reduce according to section 4
- Float got stuck (polluted)
- Clean the instrument and ensure free movement of the float
- Switch contact faulty
- Eliminate the reason for the fault (short circuit, overload)
- Exchange switch contact, refer section 5

2. Flow to high and switch contact adjusted to low

- Reduce flow
- Adjust switch contact to a higher flow

3. Switch contact faulty

- Eliminate the reason for the fault (short circuit, overload)
- Exchange switch contact, refer section 5

4. Float got stuck (polluted)

- Clean the instrument and ensure free movement of the float

5. Switch contact faulty

- Eliminate the reason for the fault (short circuit, overload)
- Exchange switch contact, refer section 5

Switch point does not match with actual flow

1. No medium specific scale

- Request a correction table or medium specific scale

2. Incorrect reduced

- reduce according to section 4

3. Instrument polluted

- clean the instrument

4. Instrument defect

- Return instrument for repair and calibration to manufacturer