Data sheet
ERHARD TWIN-AIR®
air valves
ERHARD TWIN-AIR®
AIR VALVES

The valve for automatic air release and air admission of pipelines
Thanks to its large cross-section and the very high ventilation speeds, the ERHARD TWIN-AIR air valve is ideal for use in larger pipe networks and guarantees safe pipe ventilation during the filling process, operational air release being in service and during the draining process. Notwithstanding the high performance, the construction is compact and space-saving.

The ERHARD TWIN-AIR Air Valve has two nozzles. Air can first escape via both orifices in the pipe filling process which means high ventilation performance. Both orifices will be shut once the water level has reached the floating point of the balls. If air should however accumulate during ongoing operation, only the float ball of the small orifice will drop thus releasing the small valve until the air volume has escaped. The small orifice is being purged by a cleaning device with every switching action.

Operating instruction
BA69E010_TW1N_AIR_DN50-200
**THE OVERVIEW**

**Brief specifications:**
- Body and body cover made of ductile cast iron EN-JS 1050
- Body inside enamelled and outside epoxy, or
- Body inside and outside epoxy
- Body cover: inside and outside EKB fusion bonded epoxy
- Float ball for DN 50 to DN 100 made of multichamber GRP (optional of austenitic CrNi steel 1.4571)
- Float ball for DN 150 and DN 200 made of austenitic CrNi steel (1.4571)
- Float guide and float assembly for evacuation under pressure made of austenitic CrNi steel (1.4571)
- Body seat made of EPDM, W270
- Connecting bolts made of stainless steel A4

**Range of application**
- Automatic air release and air admission of pipelines for potable water
- Special designs on request, e.g. with protective screen, with surge check valve, with air lock, etc.

**Operating conditions**
- Minimum working pressure: 0.2 bar
- Maximum working pressure: up to 40 bars
- Maximum working temperature: 60 °C

**Dimensions and weights**

<table>
<thead>
<tr>
<th>DN</th>
<th>Height H (mm)</th>
<th>Flange Ø D</th>
<th>External dim. L x B (mm)</th>
<th>Orifice cross section mm²</th>
<th>Threaded connection A</th>
<th>Weight kg</th>
<th>Volume m³</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>PN10</td>
<td>PN16</td>
<td>PN25</td>
<td>PN40</td>
<td>large orifice</td>
<td>small orifice</td>
<td>PN10-25</td>
</tr>
<tr>
<td>50</td>
<td>317</td>
<td>165</td>
<td>165</td>
<td>165</td>
<td>240 x 191</td>
<td>3850</td>
<td>5</td>
</tr>
<tr>
<td>80</td>
<td>317</td>
<td>200</td>
<td>200</td>
<td>200</td>
<td>240 x 191</td>
<td>3850</td>
<td>5</td>
</tr>
<tr>
<td>100</td>
<td>333</td>
<td>220</td>
<td>220</td>
<td>235</td>
<td>240 x 191</td>
<td>3850</td>
<td>5</td>
</tr>
<tr>
<td>150</td>
<td>385</td>
<td>285</td>
<td>300</td>
<td>300</td>
<td>316 x 222</td>
<td>9500</td>
<td>5</td>
</tr>
<tr>
<td>200</td>
<td>385</td>
<td>340</td>
<td>340</td>
<td>360</td>
<td>316 x 222</td>
<td>9500</td>
<td>5</td>
</tr>
</tbody>
</table>

**Pressure ratings and flanges**

<table>
<thead>
<tr>
<th>Nominal size DN</th>
<th>Pressure rating PN</th>
<th>Hydrost. test pressure in bars for [DIN EN 12266]</th>
<th>Design dimensions of the flanges</th>
</tr>
</thead>
<tbody>
<tr>
<td>Body Water</td>
<td>Seat Water</td>
<td>Flange B, DN 50 - 200, PN 25, EN 1092-2</td>
<td>Flange B, DN 50 - 200, PN 40, EN 1092-2</td>
</tr>
<tr>
<td>50-200</td>
<td>25</td>
<td>37,5</td>
<td>0,2/25</td>
</tr>
<tr>
<td>50-200</td>
<td>40</td>
<td>60,0</td>
<td>0,2/40</td>
</tr>
</tbody>
</table>
AIR OUTFLOW AND INFLOW CAPACITIES

The suitable valve size is selected on the basis of the actual working conditions.

Air capacity
For air capacities, see diagrams on the right:
1. Air evacuation via the large orifice [filling the pipeline]. The air flow rate $Q$ is identical with the inflowing water rate.
2. Air evacuation via the small orifice [under working pressure].
3. Air admission via the large orifice [emptying the pipeline]. The air flow rate $Q$ is identical with the outflowing water rate.

Extreme air rate demand
If one single air valve cannot comply with the specified outflow and inflow requirements, air valves can be fitted in clusters. For large air inflow rates [valves larger than DN 200], ERHARD Disc Type Air Inlet Valves are the appropriate solution.

Recommended limit values
Filling the pipeline
During the closing process of the ERHARD TWIN-AIR Air Valve, for safety reasons the maximum admissible water hammer should not exceed $P = 3$ bars. This is based on filling the pipeline at a velocity of 0.25 m/sec.

Recommended limit values
Emptying the pipeline
The recommended air velocity when emptying the pipeline is $V_{max} = 80$ m/sec. [referred to the clear air inflow cross section].
PERFECT ENGINEERING TO THE LAST DETAIL

1. Air outflow (large orifice)

   ![Graph showing air outflow capacity Q (m³/s)]

   Air outflow capacity Q (m³/s)

2. Air evacuation under pressure (small orifice Ø 2.5 mm), PN 10 to PN 25

   ![Graph showing air evacuation capacity Q (m³/h)]

   Air evacuation capacity Q (m³/h)
Air inflow (large orifice)

![Diagram showing air inflow capacity Q (m³/s) vs. working pressure P (bar abs)](image-url)

- Air inflow capacity Q (m³/s)
- Working pressure P (bar abs)
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