Armstrong automatic differential condensate controllers (DC) are designed to function on applications where condensate must be lifted from a drain point or in gravity drainage applications where increased velocity will aid in condensate drainage.

When lifting from the drain point, often referred to as syphon drainage, the reduction in pressure that occurs when the condensate is elevated causes a portion of it to flash back into steam.

Ordinary steam traps, unable to differentiate between flash steam and live steam, close and impede drainage. Increased velocity with gravity drainage will aid in drawing the condensate and air to the DC. This increased velocity is caused by an internal steam by-pass, controlled by a manual metering valve, so the condensate controller will automatically vent the by-pass or secondary steam. This is then directed to the condensate return line or collected for use in other heat exchangers.

**Maximum Operating Conditions**

- **Maximum allowable pressure** (vessel design)†: 17 bar @ 232°C
- **Maximum operating pressure**: 17 bar
- **Maximum back pressure**: 99% of inlet pressure

**Connections**

- Screwed BSPT and NPT
- Flanged DIN or ANSI (screw on)

**Materials**

- **Body**: ASTM A48 Class 30
- **Internals**: All stainless steel – 304
- **Valve and seat**: Stainless Steel 17-4PH
- **Fittings metering valve**: Stainless steel.
- **Fittings**: 250# malleable iron.

**Specification**

Automatic differential condensate controller, type ... in cast iron. Maximum allowable back pressure 99% of inlet pressure.

**How to Order**

- Specify model number
- Specify size and type of pipe connection
- Specify maximum working pressure that will be encountered or orifice size
- Specify any options required

<table>
<thead>
<tr>
<th>Model No.</th>
<th>81-DC</th>
<th>82-DC</th>
<th>83-DC</th>
<th>84-DC</th>
<th>85-DC</th>
<th>86-DC</th>
</tr>
</thead>
<tbody>
<tr>
<td>Inlet &amp; Outlet Connections</td>
<td>20</td>
<td>20</td>
<td>25</td>
<td>32</td>
<td>50</td>
<td>50</td>
</tr>
<tr>
<td>Secondary Steam Connection</td>
<td>3/8&quot;</td>
<td>1/2&quot;</td>
<td>1/2&quot;</td>
<td>3/4&quot;</td>
<td>1&quot;</td>
<td>1 1/2&quot;</td>
</tr>
<tr>
<td>&quot;B&quot; Height</td>
<td>203</td>
<td>267</td>
<td>330</td>
<td>381</td>
<td>445</td>
<td>584</td>
</tr>
<tr>
<td>&quot;D&quot; Height (valve included)</td>
<td>337</td>
<td>445</td>
<td>476</td>
<td>552</td>
<td>610</td>
<td>813</td>
</tr>
<tr>
<td>&quot;C&quot; Face-to-Face (screwed)</td>
<td>127</td>
<td>165</td>
<td>197</td>
<td>229</td>
<td>260</td>
<td>330</td>
</tr>
<tr>
<td>&quot;CC&quot; Face-to-Face (flanged PN40*)</td>
<td>191</td>
<td>229</td>
<td>261</td>
<td>355</td>
<td>398</td>
<td>468</td>
</tr>
</tbody>
</table>

Weight in kg (screwed)

| 3.4 | 7.9 | 13.7 | 21.3 | 34.0 | 63.0 |

Weight in kg (flanged PN40*)

| 5.3 | 9.4 | 15.3 | 25.5 | 39.0 | 69.0 |

* Other flange sizes, ratings and face-to-face dimensions are available on request. Shade indicates products that are CE Marked according to the PED (2014/68/UE), but PMA for 86-DC is 15 bar. All the other models comply with the Article 4.3 of the same directive.

† May be derated depending on flange rating and type.

All dimensions and weights are approximate. Use certified print for exact dimensions. Design and materials are subject to change without notice.
80-DC Series Automatic Differential Condensate Controllers
Cast Iron for Horizontal Installation
For Pressures to 17 bar…Capacities to 9 000 kg/h

Table ST-121-1. Model 81-DC Capacity

Table ST-121-2. Model 82-DC Capacity

Table ST-121-3. Model 83-DC Capacity

Table ST-121-4. Model 84-DC Capacity

Table ST-121-5. Model 85-DC Capacity

Table ST-121-6. Model 86-DC Capacity

All dimensions and weights are approximate. Use certified print for exact dimensions. Design and materials are subject to change without notice.