Clean and dry air. Prevent the risks, enjoy the benefits.
A compressor takes humidity from the intake air which turns into condensate during the compression process. This will cause wear and corrosion to the downstream equipment, with potential costly interruption to production, and reduction in the efficiency and service life of the equipment used. Adsorption dryers provide a solution to prevent this negative impact.

The Ceccato ADS adsorption dryers will eliminate water vapour that may potentially condensate in your compressed air system and cause damage. These dryers use an adsorption material called “desiccant” in order to absorb and remove (by regeneration phase) the humidity from the compressed air. With this method we can reach a PDP < 3°C ( -40°C or -70°C). This range should also be used when the ambient temperature goes below freezing point, to avoid ice building in pipes and applications. The ADS range is typically used in the chemical, food and pharmaceutical industry and whenever a PDP <3°C is requested.

Adsorption removes the remaining moisture content in the air that will condense out even downstream of a refrigerant dryer. Its technology ‘simulates’ a temperature reduction down to -40°C to -70°C by attracting and retaining moisture with the desiccant media (moisture freezes at +3°C actual temperature reduction) to condense out the very last water content in the air. The moisture is removed from the air flow to your network and released. Adsorption dryers are recommended for the most demanding applications, where no moisture contamination can be accepted.

### Standard features and options

<table>
<thead>
<tr>
<th>Feature</th>
<th>ADS 1 - 10</th>
<th>ADS 20 - 105</th>
<th>ADS 110 - 215</th>
</tr>
</thead>
<tbody>
<tr>
<td>Capacity at 7 bar (-40°C)</td>
<td>114 - 990 l/1'</td>
<td>1920 - 11400 l/1'</td>
<td>10800 - 21600 l/1'</td>
</tr>
<tr>
<td>Dew point</td>
<td>Standard -40°C</td>
<td>Standard -40°C</td>
<td>Standard -40°C</td>
</tr>
<tr>
<td>Maximum working pressure</td>
<td>16 bar</td>
<td>14,5 bar</td>
<td>11 and 14,5 bar</td>
</tr>
<tr>
<td>Working pressure range</td>
<td>4-16 bar</td>
<td>4 - 14,5 bar</td>
<td>4-11 bar &amp; 11-14,5 bar</td>
</tr>
<tr>
<td>Voltages</td>
<td>12 - 24 V - DC 50/60Hz</td>
<td>115 - 230 V - AC 50/60Hz</td>
<td>230 V - AC 50/60Hz</td>
</tr>
<tr>
<td>Easy installation</td>
<td>Multiport inlet and outlet</td>
<td>Forklift slot</td>
<td>Forklift slots</td>
</tr>
<tr>
<td>Dew point sensor</td>
<td>✘</td>
<td>✔</td>
<td>✔</td>
</tr>
<tr>
<td>Dew point -70°C</td>
<td>By derating the air capacity</td>
<td>(-70°C as an option together with derating the air capacity)</td>
<td></td>
</tr>
</tbody>
</table>

- ✔ = available  ✘ = not available

**User benefits**

**Boost quality and productivity**

- Eliminate any residual water from the net for guaranteed clean compressed air
- Ensure your air network is protected against rust avoiding leakages
- Higher final product quality
- Increase your overall productivity

**Save costs**

- Prolong the life span of your operation process (machine/equipment…)
- Reduce potential downtime
- Energy management solution available to minimise energy consumption

**Easy operation and installation**

- Compatible with any compressor technology
- User-friendly communication display providing air quality indication and maintenance requirements
- Ready to install, with an integrated filtration solution (ADS 1 - 10)
- Compact equipment fits in a minimum space

**Risks to avoid**

**Humid, unclean air can cause:**

- A dirty air network increases leakage risk
- High maintenance cost of your air network (corrosion), operation process and potential downtime
- Shorten the life span of your operation process (machine/equipment)
- Risk of water contamination in the air network, with potential freezing in winter time
- Lower quality of the final product causing potential risk of product recalls
- Reduced productivity

**ADS Adsorption Dryers**
Application for ADS dryer

- The chemical and pharmaceutical Industries.
- Petrochemical plants.
- Food industry.
- Transportation of hygroscopic materials.
- Quality painting.
- Textile production.
- Semiconductors.
- Cable pressurization.
- Beer and drinks production.
- Applications in low-temperature environments.
- ... and whenever a pressure dew point less than 3°C is requested.

The drying process

Drying phase:
Wet air from the compressors passes through the inlet filter (1), which removes the oil and enters into tower A. The desiccant contained in it adsorbs the water vapor molecules. After a fixed (STD) or variable time (CD) the inlet valve (2) deviates the airflow from tower A to tower B and it becomes the operative tower.

Regeneration phase:
During the drying phase in the tower A, some dry air is deviated into the top of tower B, extracting the trapped water vapor from the desiccant material. During this phase, tower B is open to the atmosphere, allowing the purge air to expand. The silencers (3) on the outlet ensure quiet operation.

Pressurization phase:
Once regeneration has taken place and tower B is pressurized, the inlet valve (2) changes air flow again.
ADS 1 - 10 STD RANGE

Compact execution

- Versatile installation with multiport system and six possible connections.
- Compact, reduced footprint, simple design.
- This module can be installed horizontally or vertically, can stand on the floor or be mounted on a wall (optional mounting kit available).
- The inlet prefilter C is delivered loose with the dryer but it can be directly fixed on it.
- The outlet postfilters are integrated in the desiccant cartridges.

Components

1. Prefilter removes particulates and coalesced liquids from the air system.
2. Removable front panel allows for easy access for servicing without disconnecting the pipe system.
3. Postfilters, integrated in the dryer, removes particulate in the air stream.
4. Electronic control housed in an IP65 box which enables:
   - regeneration cycle management
   - regulation status
   - default diagnosis
   - remote default report

- Aluminium head, base and cylinders prevent corrosion.
- Easy to maintain:
  - Maintenance operations can be performed without disconnecting tubing.
  - Adsorbent cartridge with built-in postfilter.
- Automatic electronic control to manage the dryer and phase status with an automatic fault diagnosis, including alarms.
- Each tower is fitted with a high efficiency silencer for quiet operation.

MULTIPORT INLET AND OUTLET
THIS ARRANGEMENT ENSURES EASY AND FAST INSTALLATION

Applications for ADS 1 - 215
Energy efficient and solid performance

**ADS 20 - 105 STD RANGE**

*Control dewpoint as option (CD)*

- Reliable operation with standard components tested for continuous service.
- The compact dryer can be installed on the floor (floor mounted kit as standard).
- The inlet prefiltter C and the outlet postfiltter S, have to be mounted on the air distribution line. The filters are included but not pre-mounted.

**Components**

1. Base frame makes it easy to transport by fork lift.
2. Pressure gauge - tower A.
3. Pressure gauge - tower B.
4. Stainless steel purge nozzle.
5. Air outlet connection.
6. Air inlet connection.
7. High efficiency silencers with integrated safety valve.
8. Dew point sensor.
Perfectly clean and dry air system with a clever dew point management

**ADS 110 - 215 RANGE**

Electric timer control (STD) • Control dew point (CD)

- Developed with high quality components.
- ADS dryers guarantee a stable dew point of -40°C.
- The use of an optimised desiccant volume and a wide vessel ensure a low air speed and a longer contact time.
- Purge phases are controlled by an electronic timer on the standard models (ADS / STD).

- There is also a dew point control version (ADS / CD) where the drying phase is dew point dependent and is controlled by our electronic dew point management system.
- The two inlet prefilters G - C and the outlet postfilter S have to be mounted on the air distribution line. The filters are included but not pre-mounted.

### Components

1. Wide vessels for optimum air spread and reliable drying.
2. Air outlet connection.
3. Robust frame, including fork lift slots for easy installation.
5. Pressure dew point digital display (ADS / CD).
6. Two manometers integrated in the control panel to show pressure in the two vessels.
7. Purge nozzle for regeneration.
8. Galvanized piping with flanged connections.
9. High efficiency silencers with integrated safety valve.
10. Air inlet connection.
11. Inlet valves, long service interval.

### How to decrease your energy consumption?

The electronic Pressure Dew Point control (CD) extends the drying phase of the dryer's cycle. It is done by measuring PDP of compressed air on the dryer outlet and only switching the columns when desiccant in the active tower is saturated. The regeneration part of the cycle stays fixed.

As most of the time compressor and dryer run < 100% load, this results in a significant extension of the drying time and a reduction in purge air consumption.

Typically the extra investment in a Pressure Dew Point control is paid back in a few months by savings made on dryer running costs.
### ADSORPTION DRYERS ADS 1 - 215

#### Technical data

<table>
<thead>
<tr>
<th>Type</th>
<th>Max. Working Pressure</th>
<th>Operating Pressure</th>
<th>Air Treatment Capacity</th>
<th>Standard Dew Point</th>
<th>G 0,1 mg/mc</th>
<th>C 0,01 mg/mc</th>
<th>S (MPPS&lt;0.1 µm)</th>
<th>99.99%</th>
<th>Inlet / outlet Connections</th>
<th>Dimensions</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>ADS 1</td>
<td>16 BAR 232 psi</td>
<td>7,0</td>
<td>114 m³/h</td>
<td>4,1</td>
<td>-40</td>
<td>n.a.</td>
<td>C 7</td>
<td>Integrated in the dryer</td>
<td>3/8&quot;</td>
<td>281 92 445</td>
<td>13</td>
</tr>
<tr>
<td>ADS 2</td>
<td>16 BAR 232 psi</td>
<td>7,0</td>
<td>168 m³/h</td>
<td>5,9</td>
<td>-40</td>
<td>n.a.</td>
<td>C 7</td>
<td>3/8&quot;</td>
<td>281 92 504</td>
<td>14</td>
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<tr>
<td>ADS 3</td>
<td>16 BAR 232 psi</td>
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<td>282 m³/h</td>
<td>10</td>
<td>-40</td>
<td>n.a.</td>
<td>C 7</td>
<td>3/8&quot;</td>
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<td>426 m³/h</td>
<td>15,3</td>
<td>-40</td>
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<td>3/8&quot;</td>
<td>281 92 815</td>
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<td>ADS 7</td>
<td>16 BAR 232 psi</td>
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<td>708 m³/h</td>
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<tr>
<td>ADS 10</td>
<td>16 BAR 232 psi</td>
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<td>990 m³/h</td>
<td>34,7</td>
<td>-40</td>
<td>n.a.</td>
<td>C 15</td>
<td>1/2&quot;</td>
<td>281 92 1460</td>
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<tr>
<td>ADS 20</td>
<td>14,5 BAR 210 psi</td>
<td>7,0</td>
<td>1920 m³/h</td>
<td>67,7</td>
<td>-40</td>
<td>n.a.</td>
<td>C 21</td>
<td>S 21</td>
<td>281 92 988</td>
<td>64</td>
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<tr>
<td>ADS 24</td>
<td>14,5 BAR 210 psi</td>
<td>7,0</td>
<td>2400 m³/h</td>
<td>84,8</td>
<td>-40</td>
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<td>C 30</td>
<td>S 30</td>
<td>281 92 988</td>
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<tr>
<td>ADS 27</td>
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<td>2700 m³/h</td>
<td>95,3</td>
<td>-40</td>
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<td>C 30</td>
<td>S 30</td>
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<tr>
<td>ADS 36</td>
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<td>3900 m³/h</td>
<td>138</td>
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<td>S 48</td>
<td>281 92 1611</td>
<td>98</td>
<td></td>
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<tr>
<td>ADS 42</td>
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<td>7,0</td>
<td>4500 m³/h</td>
<td>159</td>
<td>-40</td>
<td>n.a.</td>
<td>C 48</td>
<td>S 48</td>
<td>281 92 1611</td>
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<tr>
<td>ADS 55</td>
<td>14,5 BAR 210 psi</td>
<td>7,0</td>
<td>5400 m³/h</td>
<td>191</td>
<td>-40</td>
<td>n.a.</td>
<td>C 84</td>
<td>S 84</td>
<td>1 1/2 281 92 1611</td>
<td>158</td>
<td></td>
</tr>
<tr>
<td>ADS 60</td>
<td>14,5 BAR 210 psi</td>
<td>7,0</td>
<td>6300 m³/h</td>
<td>222</td>
<td>-40</td>
<td>n.a.</td>
<td>C 84</td>
<td>S 84</td>
<td>1 1/2 281 92 1611</td>
<td>256</td>
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</tr>
<tr>
<td>ADS 80</td>
<td>14,5 BAR 210 psi</td>
<td>7,0</td>
<td>7800 m³/h</td>
<td>275</td>
<td>-40</td>
<td>n.a.</td>
<td>C 84</td>
<td>S 84</td>
<td>1 1/2 281 92 1611</td>
<td>256</td>
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</tr>
<tr>
<td>ADS 95</td>
<td>14,5 BAR 210 psi</td>
<td>7,0</td>
<td>9600 m³/h</td>
<td>339</td>
<td>-40</td>
<td>n.a.</td>
<td>C 114</td>
<td>S 114</td>
<td>1 1/2 281 92 1611</td>
<td>310</td>
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<tr>
<td>ADS 110</td>
<td>14,5 BAR 210 psi</td>
<td>7,0</td>
<td>11400 m³/h</td>
<td>403</td>
<td>-40</td>
<td>n.a.</td>
<td>C 114</td>
<td>S 114</td>
<td>1 1/2 281 92 1611</td>
<td>310</td>
<td></td>
</tr>
<tr>
<td>ADS 114</td>
<td>11,1 BAR 159 psi</td>
<td>7,0</td>
<td>10800 m³/h</td>
<td>381</td>
<td>-40</td>
<td>G 114</td>
<td>C 114</td>
<td>S 114</td>
<td>1 1/2 281 92 1611</td>
<td>445</td>
<td></td>
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<tr>
<td>ADS 130</td>
<td>11,1 BAR 159 psi</td>
<td>7,0</td>
<td>13200 m³/h</td>
<td>466</td>
<td>-40</td>
<td>G 156</td>
<td>C 156</td>
<td>S 156</td>
<td>1 1/2 281 92 1611</td>
<td>445</td>
<td></td>
</tr>
<tr>
<td>ADS 180</td>
<td>11,1 BAR 159 psi</td>
<td>7,0</td>
<td>18000 m³/h</td>
<td>636</td>
<td>-40</td>
<td>G 216</td>
<td>C 216</td>
<td>S 216</td>
<td>2&quot; 1046 894 1876</td>
<td>600</td>
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<tr>
<td>ADS 215</td>
<td>11,1 BAR 159 psi</td>
<td>7,0</td>
<td>21600 m³/h</td>
<td>763</td>
<td>-40</td>
<td>G 216</td>
<td>C 216</td>
<td>S 216</td>
<td>2&quot; 1100 923 1914</td>
<td>650</td>
<td></td>
</tr>
</tbody>
</table>

**Reference conditions:** Operating pressure: see the technical data table / Operating temperature: 35°C / Relative humidity: 100%

**Correction factors**

<table>
<thead>
<tr>
<th>Correction factors</th>
<th>ADS/14,5 or 16 bar (max. working pressure)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Air Inlet Pressure - bar</td>
<td>4</td>
</tr>
<tr>
<td>ADS 1 - ADS 10</td>
<td>0,62</td>
</tr>
<tr>
<td>ADS 20 - ADS 105</td>
<td>0,62</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Correction factors</th>
<th>ADS/11 bar (max. working pressure)</th>
<th>ADS/14,5 bar (max. working pressure)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Air Inlet Pressure - bar</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>ADS 110 - ADS 215</td>
<td>0,47</td>
<td>0,68</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Correction factors</th>
<th>Air Inlet Temperature °C</th>
<th>ADS/14,5 bar (max. working pressure)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Air Inlet Temperature °C</td>
<td>-40</td>
<td>-70</td>
</tr>
<tr>
<td>ADS 1 - ADS 215</td>
<td>1</td>
<td>0,7</td>
</tr>
</tbody>
</table>

**Notes:**

1. Reference conditions: Operating pressure: see the technical data table / Operating temperature: 35°C / Relative humidity: 100%
2. Filters are delivered loose with the dryer; ADS 1-10: the filters can be directly fixed on the dryer. ADS 20-215: the filters have to be mounted on the air distribution line.
3. For conditions differing from the reference conditions, use the below correction factor table.
Adsorption air dryers
Range ADS 1 • 215

- A high quality product and technology you can trust
- Choosing our high performance compressor ensures your compressed air availability
- Our products are simple, easy to use and give strong reliability
- Serviceability and aftermarket are guaranteed
- Original Parts and Services
- Dealers are always nearby and complete the strong partnership you can expect

Increases your profit and improve the image of your company

Contact your local Ceccato representative now!

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