The PVE Series 7 is the newest actuator series to join the successful Danfoss PVE portfolio, which has evolved from a solid foundation of technical expertise dating back more than 40 years.

The Danfoss PVE platform offers customers fast, accurate and intelligent operation with plug-and-perform design and works in conjunction with Danfoss high performance proportional valves — PVG 32, PVG 100, PVG 120 and the new PVG 128 and PVG 256, as well as steering valves EHPS, EH, EHi and OSPE.

The PVE Series 7 seamlessly replaces PVE Series 4 actuators, while providing customers with all the new benefits.

The analog PVE Series 7 actuator program has a number of proven-in-use features that deliver the high reliability expected of a Danfoss Power Solutions product.

**Features**

**Benefits**
- Increased robustness with new encapsulation standard and corrosion protection of metal parts
- Increased environmental capabilities with increased temperature range of -40 to +90 °C
- Enhanced event diagnostics with dual demodulator LVDT principle
- Increased power efficiency with the introduction of Power Save
- Improved EMC robustness with increased high frequency (HF) immunity field strength
- Easy to comply to on-road legislation with the introduction of the E-mark certificate
- Easier installation and service with new and more compact envelope design

**Control Options**
- Proportional actuators with multi-voltage 11-32 V<sub>DC</sub> supply voltage
- ON/OFF actuators with fixed 12 VDC or 24 VDC supply voltage
- Ratiometric input signal control
- Fixed 0-10 V<sub>DC</sub> input signal control (-U)
- PWM input signal control

**Compliance and certification**
- Compliant with European Directive 2004/108/EC
- Compliant with Machinery Directive 2006/42/EC
- E-mark certified acc. to UNECE regulation no. 10
- Certificates are available upon request

**General**
- Performance variants PVEO, PVEM, PVEA, PVEH and PVES
- Proportional closed loop control with integrated spool position feedback
- ON/OFF open loop control
- Integrated microcontroller with embedded software algorithms
- Event monitoring with active or passive event reaction and recovery
- Integrated LED indicating status
- Power Save
- Spool direction indication (-DI)
- Spool position feedback (-SP)
- Dedicated float pin (U<sub>F</sub>)
- Neutral Power-OFF (-NP)
- DEUTSCH, AMP and DIN/Hirschmann connector types

Comprehensive technical literature is online at powersolutions.danfoss.com
### Technical data

#### Control specification

<table>
<thead>
<tr>
<th>Supply Voltage (U_{DC})</th>
<th>PVEO</th>
<th>Rated</th>
<th>12 V_{DC}</th>
<th>24 V_{DC}</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Range</td>
<td>11 to 15 V_{DC}</td>
<td>22 to 30 V_{DC}</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Maximum ripple</td>
<td>5%</td>
<td></td>
</tr>
<tr>
<td>PVEM/A/H/S</td>
<td>Rated</td>
<td>11 to 32 V_{DC}</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Range</td>
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<td></td>
</tr>
<tr>
<td></td>
<td>Maximum ripple</td>
<td>5%</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Signal Voltage (U_S)**

- **PVEM/A/H/S**
  - Neutral: \( U_S = 0.5 \times U_{DC} \)
  - Q: P to A: \( U_S = (0.5 \text{ to } 0.25) \times U_{DC} \)
  - Q: P to B: \( U_S = (0.5 \text{ to } 0.75) \times U_{DC} \)

- **PVEH-U/PVES-U**
  - Neutral: \( U_S = 5 \times U_{DC} \)
  - Q: P to A: \( U_S = 5 \times U_{DC} \) to 2.5 \( U_{DC} \)
  - Q: P to B: \( U_S = 5 \times U_{DC} \) to 7.5 \( U_{DC} \)

**Signal voltage PWM (U_{ PWM})**

- **PVEM/A/H/S**
  - Neutral: \( U_S = 50\% \text{ DUT} \)
  - Q: P to A: \( U_S = 50\% \text{ to } 25\% \text{ DUT} \)
  - Q: P to B: \( U_S = 50\% \text{ to } 75\% \text{ DUT} \)

**PWM Frequency (U_{ PWM})**

- **PVEM**
  - Recommended: \( >200 \text{ Hz} \)
- **PVEA/H/S**
  - \( >1000 \text{ Hz} \)

#### Operating conditions

<table>
<thead>
<tr>
<th>Pilot pressure</th>
<th>PVEO/M/A/H/S</th>
<th>Nominal</th>
<th>13.5 bar</th>
<th>[196 psi]</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Minimum</td>
<td>10.0 bar</td>
<td>[145 psi]</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Maximum</td>
<td>15.0 bar</td>
<td>[218 psi]</td>
<td></td>
</tr>
<tr>
<td>PVEO-HP</td>
<td>Nominal</td>
<td>25.0 bar</td>
<td>[363 psi]</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Minimum</td>
<td>21.0 bar</td>
<td>[305 psi]</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Maximum</td>
<td>25.0 bar</td>
<td>[363 psi]</td>
<td></td>
</tr>
</tbody>
</table>

**Storage temperature**

- **PVEO/M/A/H/S**
  - Ambient: -50 to +90°C [-58 to +194°F]

**Operating temperature**

- **PVEO/M/A/H/S**
  - Ambient: -40 to +90°C [-40 to +194°F]

**Oil viscosity**

- **PVEO/M/A/H/S**
  - Operating range: 12 to 75 cSt [65 to 347 SUS]
  - Minimum: 4 cSt [36 SUS]
  - Maximum: 469 cSt [2128 SUS]

**Oil cleanliness**

- **PVEO/M/A/H/S**
  - Maximum: 18/16/13 (according to ISO 4406)