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-play 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\textsubscript{DC} supply voltage
• ON/OFF actuators with fixed 12 VDC or 24 VDC supply voltage
• Ratiometric input signal control
• Fixed 0-10 V\textsubscript{DC} 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\textsubscript{F})
•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>
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<tbody>
<tr>
<td></td>
<td></td>
<td>Range</td>
<td>11 to 15 V_{DC}</td>
<td>22 to 30 V_{DC}</td>
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<tr>
<td></td>
<td></td>
<td>Maximum ripple</td>
<td>5%</td>
<td></td>
</tr>
<tr>
<td>PVEM/A/H/S</td>
<td></td>
<td>Rated</td>
<td>11 to 32 V_{DC}</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Range</td>
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<tr>
<td></td>
<td></td>
<td>Maximum ripple</td>
<td>5%</td>
<td></td>
</tr>
<tr>
<td>Signal Voltage (U_{S})</td>
<td>PVEM/A/H/S</td>
<td>Neutral</td>
<td>(U_S = 0.5 * U_{DC})</td>
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<tr>
<td></td>
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<td>Q: P to A</td>
<td>(U_S = (0.5 \text{ to } 0.25) * U_{DC})</td>
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</tr>
<tr>
<td></td>
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<td>Q: P to B</td>
<td>(U_S = (0.5 \text{ to } 0.75) * U_{DC})</td>
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<tr>
<td></td>
<td>PVEMH-U/PVES-U</td>
<td>Neutral</td>
<td>(U_S = 5 \text{ V}_{DC})</td>
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<tr>
<td></td>
<td></td>
<td>Q: P to A</td>
<td>(U_S = 5 \text{ V}<em>{DC} \text{ to } 2.5 \text{ V}</em>{DC})</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Q: P to B</td>
<td>(U_S = 5 \text{ V}<em>{DC} \text{ to } 7.5 \text{ V}</em>{DC})</td>
<td></td>
</tr>
<tr>
<td>Signal voltage PWM (U_{S})</td>
<td>PVEM/A/H/S</td>
<td>Neutral</td>
<td>(U_S = 50% \text{ DUT})</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Q: P to A</td>
<td>(U_S = 50% \text{ to } 25% \text{ DUT})</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Q: P to B</td>
<td>(U_S = 50% \text{ to } 75% \text{ DUT})</td>
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</tr>
<tr>
<td>PWM Frequency (U_{S})</td>
<td>PVEM</td>
<td>Recommended</td>
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<tr>
<td></td>
<td>PVEA/H/S</td>
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<td>&gt;1000 Hz</td>
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</tr>
</tbody>
</table>

#### Operating conditions

| Pilot pressure | PVEO/M/A/H/S | Nominal | 13.5 bar | [196 psi] |
|               |             | Minimum  | 10.0 bar | [145 psi] |
|               |             | Maximum  | 15.0 bar | [218 bar] |
|               | PVEO-HP     | Nominal  | 25.0 bar | [363 psi] |
|               |             | Minimum  | 21.0 bar | [305 psi] |
|               |             | Maximum  | 25.0 bar | [363 psi] |
| 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) | |