Electric Distributor Expansion Valve
for Air Conditioning and Heat Pump Applications
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The Sporlan EDEV (Electric Distributor Expansion Valve) is a cartridge EEV with an integrated refrigerant distributor. The directly coupled EEV and distributor provides more benefits than just a compact and robust package. By modulating refrigerant expansion directly into a distributor, there is no opportunity for refrigerant stratification, eliminating the need for a secondary pressure drop (such as a distributor orifice or venturi). Sporlan’s EDEV achieves **superior distribution and maintains high velocity flow across all load conditions**, resulting in higher system efficiency.

Designed with the requirements of air conditioning and heat pump applications in mind, the EDEV features an internal (wet) unipolar stepper motor that provides up to **320% more resolution than competing designs**. Currently available with two port sizes, it is possible to cover a product line up to 6T (21 kW) with only one or two expansion valves. And without the need to size a distributor orifice, SKU proliferation and development time are dramatically reduced.

Featuring up to 300% more corrosion resistance than competing designs, the Sporlan EDEV is perfect for indoor or outdoor installation. This protection level includes an industry standard, removable M12 connection (A-coded), which is rated IP67. The Sporlan cable is offered standard with a JST XARP-05V connector.

**Features**

- Unipolar stepper motor
- High resolution actuator
- Superior refrigerant distribution
- Unmatched corrosion resistance
- Removable IP67 cable
- Optional robust internal check valve
- Brass/Copper or Aluminum construction
- Two-wrench installation / service
- No mounting orientation restrictions

![EDEV Flow Curve Capacity](image_url)

*(EDEV capacity does not include the effect of distributor tubes.)*
To further reduce package size and eliminate multiple braze joints, the EDEV is offered with an optional internal spring-loaded check valve, which makes it perfect for split system heat pumps, as well as bi-flow applications. Regardless of whether you require a check valve or not, the Sporlan EDEV can be mounted in any position, with no mounting orientation restrictions, and no concerns about refrigerant hammering or protective coverings. And with two-wrench installation of the EEV, the risk of overheating during brazing is eliminated, the required skill set for service contractors is reduced, and it is now possible to clean the check valve of any foreign debris.

Available in typical brass/copper construction, the Sporlan EDEV is available in all aluminum construction as well. It has never been easier to integrate an aluminum evaporator with an expansion device, as the distributor can be brazed in controlled conditions, and the EEV can be installed and serviced without the use of a torch, eliminating the risk associated with hand brazing aluminum.

Be sure to ask us about our advanced superheat control algorithms and controls!

**Specifications**

<table>
<thead>
<tr>
<th><strong>Motor Type</strong></th>
<th>Permanent magnet unipolar wet motor</th>
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</thead>
<tbody>
<tr>
<td><strong>Compatible Refrigerant</strong></td>
<td>All common HCFC and HFC refrigerants, including R-410A</td>
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<tr>
<td><strong>Compatible Oil</strong></td>
<td>All common mineral, polyester and alkylbenzene oils</td>
</tr>
<tr>
<td><strong>Supply Voltage</strong></td>
<td>12 volts DC +/-10%</td>
</tr>
<tr>
<td><strong>Cable Type</strong></td>
<td>IP67 removable M12 connection (A-coded)</td>
</tr>
<tr>
<td><strong>Phase Resistance</strong></td>
<td>100 ohms +/- 10%</td>
</tr>
<tr>
<td><strong>Stepping Current</strong></td>
<td>120 mA / winding</td>
</tr>
<tr>
<td><strong>Holding Current</strong></td>
<td>Not recommended</td>
</tr>
<tr>
<td><strong>Number of Steps</strong></td>
<td>1600 half steps</td>
</tr>
</tbody>
</table>

**Step Rate**

200/second

**Full Stroke Transit Time**

8 seconds

**Initialization**

2500 steps closing

**Overdriving**

Recommend one 10% overdrive closed per day (overdriving open not permitted)

**MRP**

700 psig (48 bar)

**MOPD**

580 psid (40 bar)

**Maximum Internal Leakage**

300 cc/min @ 100 psid (6.9 bar) dry air

**Maximum External Leakage**

.10 oz/yr at 300 psig (2.8 gram/yr @ 20 bar)

**Fluid Temperature Range**

-40°F to 155°F (-40°C to 68°C)

**Ambient Temperature Range**

-40°F to 140°F (-40°C to 60°C)

**Installation Maximum Temperature**

250°F (60°C) for 15 minutes

**Relative Humidity**

0-100% (Condensing)

**Mounting Orientation**

No restrictions

**Flow Direction**

Side Inlet (with check valve) Bio-flow available

**Materials of Construction**

Brass body with copper connections or all aluminum

**Number of Circuits**

3/16" - 2 to 9
1/4" - 2 to 8

**Circuit Tube Lengths**

Up to 36"
Ordering Instructions / Nomenclature

Accessories

A/C and Heat Pump Superheat Controller

Thermistor
M12 Cable
Pressure Transducer

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Failure or improper selection or improper use of the products described herein or related items can cause death, personal injury and property damage.

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FOR USE ON AIR CONDITIONING and HEAT PUMP SYSTEMS ONLY