EVU solenoid valves are designed to fit into compact refrigeration systems. Available in direct and pilot operated versions, they can be applied in liquid, suction, and hot gas lines with fluorinated refrigerants.

EVU solenoid valves can be used in many different refrigeration systems and are specially designed for:
- commercial refrigeration systems
- refrigeration appliances
- liquid coolers
- ice cube machines
- mobile refrigeration systems
- heat pump systems
- air conditioning units

EVU valves are available in straightway or angleway design. All valves are semi hermetically sealed and are not serviceable. The standard coil is available with 3-core cable connection, DIN plug and 0.25 US spade.

EVU valve bodies and coils are ordered separately in industrial pack.

**Features**

- Compact construction small dimensions, low weight for both valve and coil.
- Semi-hermetic construction. Metallic sealing between armature tube and valve body. Bimetal connections to the brass housing Benefits:
  - high strength of joints and high vibration resistance
  - maximum external tightness within the whole temperature and pressure operation range
- Bimetal connections simple, fast soldering without the need of wet cloth or refrigeration pliers.
- Direct and servo operated mini piston compact solenoid valve.
- Universal application for
  - liquid, suction, and hot gas applications
  - reduced power consumption
- Simple and fast mounting of coil
  - clip-on/off
- Small encapsulated coils with long life time under extreme conditions.
  For other refrigerants, please contact Danfoss.
- Large MOPD range – up to 36 bar.
Data sheet | Product name, Solenoid valve, type EVU for fluorinated refrigerants

Approvals
- UL Recognized Component (Canadian and US)
- PED (97/23/EC A3.P3)
- Low Voltage Directive (LVD) 2006/95/EC

Technical data

Refrigerants
For other refrigerants, please contact Danfoss.

Ambient temperature
-40 – 140 °F

MOPD operating range
EVU 1: 0 psi up to 275 psi
EVU 2 – 8: 0.029 psi up to 522 psi

Temperature of medium
-40 – 221 °F

Humidity
0 – 100% R.H. (0-97% R.H. non-condensation condition if IP level is below IPX5).

<table>
<thead>
<tr>
<th>Type</th>
<th>Opening differential pressure with standard coil Δp [psi]</th>
<th>Temperature of medium</th>
<th>Max. working pressure Ps [psi]</th>
<th>Cv – value [gal/min]</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Min. Max. (=MOPD) liquid 8 W AC</td>
<td>[°F]</td>
<td></td>
<td></td>
</tr>
<tr>
<td>EVU 1</td>
<td>0.000 348</td>
<td>-40 – 221</td>
<td>1015</td>
<td>0.11</td>
</tr>
<tr>
<td>EVU 2</td>
<td>0.029 522</td>
<td>-40 – 221</td>
<td>1015</td>
<td>0.23</td>
</tr>
<tr>
<td>EVU 3</td>
<td>0.029 522</td>
<td>-40 – 221</td>
<td>1015</td>
<td>0.35</td>
</tr>
<tr>
<td>EVU 4</td>
<td>0.029 522</td>
<td>-40 – 221</td>
<td>1015</td>
<td>0.58</td>
</tr>
<tr>
<td>EVU 5</td>
<td>0.029 522</td>
<td>-40 – 221</td>
<td>1015</td>
<td>0.76</td>
</tr>
<tr>
<td>EVU 6</td>
<td>0.029 522</td>
<td>-40 – 221</td>
<td>1015</td>
<td>0.93</td>
</tr>
<tr>
<td>EVU 8</td>
<td>0.029 522</td>
<td>-40 – 221</td>
<td>1015</td>
<td>1.15</td>
</tr>
</tbody>
</table>

1) Cv value is the water flow in [gal/min] at a pressure drop across valve Δp = 1 psi, p = 10 lbs/gal
2) MOPD for media in gas form is approximately 14 psi greater
3) For coil 208 – 240V, 60 Hz, MOPD is 250 psi

MOPD (Max. Opening Pressure Differential) is measured with highest media and ambient temperature and 15% below nominal voltage

Rated liquid and suction vapor capacity are based on:
- Evaporating temperature t_e = 40 °F
- Liquid temperature ahead of valve t_l = 100 °F
- Pressure drop Δp across valve – with liquid Δp = 2 psi for R134a, Δp = 3 psi for R22/R407C, R404A and R507, – with suction vapor Δp = 1 psi

Rated hot gas capacity is based on:
- Condensing temperature t_c = 100 °F
- Hot gas temperature t_h = 140 °F
- Pressure drop across valve Δp = 2 psi

Metric conversions
- 1 psi = 0.07 bar
- 5/4 (t; °F -32) = 12 °C
- 1 TR = 3.5 Kw
- 1 in = 25.4 mm
- 1 ft = 0.3 m
- 1 lb = 0.454 kg
- 1 oz = 28.35 gram
- US gal/min = 0.86 m³/h

Refrigerants
For other refrigerants, please contact Danfoss.

Ambient temperature
-40 – 140 °F

MOPD operating range
EVU 1: 0 psi up to 275 psi
EVU 2 – 8: 0.029 psi up to 522 psi

Temperature of medium
-40 – 221 °F

Humidity
0 – 100% R.H. (0-97% R.H. non-condensation condition if IP level is below IPX5).

<table>
<thead>
<tr>
<th>Type</th>
<th>Rated capacity 1/ [TR] Liquid</th>
<th>Suction vapour</th>
<th>Hot gas</th>
<th>R22/ R407C</th>
<th>R134a</th>
<th>R404A/ R507</th>
<th>R410A</th>
<th>R22/ R407C</th>
<th>R134a</th>
<th>R404A/ R507</th>
<th>R410A</th>
</tr>
</thead>
<tbody>
<tr>
<td>EVU 1</td>
<td>0.64</td>
<td>0.48</td>
<td>0.44</td>
<td>0.64</td>
<td>0.55</td>
<td>0.04</td>
<td>0.05</td>
<td>0.06</td>
<td>0.12</td>
<td>0.10</td>
<td>0.10</td>
</tr>
<tr>
<td>EVU 2</td>
<td>1.27</td>
<td>0.96</td>
<td>0.87</td>
<td>1.27</td>
<td>0.11</td>
<td>0.08</td>
<td>0.09</td>
<td>0.13</td>
<td>0.24</td>
<td>0.19</td>
<td>0.19</td>
</tr>
<tr>
<td>EVU 3</td>
<td>1.90</td>
<td>1.45</td>
<td>1.31</td>
<td>1.90</td>
<td>0.16</td>
<td>0.12</td>
<td>0.14</td>
<td>0.19</td>
<td>0.35</td>
<td>0.29</td>
<td>0.28</td>
</tr>
<tr>
<td>EVU 4</td>
<td>3.19</td>
<td>2.41</td>
<td>2.18</td>
<td>3.17</td>
<td>0.26</td>
<td>0.20</td>
<td>0.23</td>
<td>0.32</td>
<td>0.59</td>
<td>0.48</td>
<td>0.47</td>
</tr>
<tr>
<td>EVU 5</td>
<td>4.12</td>
<td>3.13</td>
<td>2.83</td>
<td>4.12</td>
<td>0.34</td>
<td>0.26</td>
<td>0.30</td>
<td>0.42</td>
<td>0.76</td>
<td>0.62</td>
<td>0.61</td>
</tr>
<tr>
<td>EVU 6</td>
<td>5.07</td>
<td>3.86</td>
<td>3.49</td>
<td>5.07</td>
<td>0.42</td>
<td>0.32</td>
<td>0.37</td>
<td>0.51</td>
<td>0.94</td>
<td>0.77</td>
<td>0.76</td>
</tr>
<tr>
<td>EVU 8</td>
<td>6.34</td>
<td>4.83</td>
<td>4.36</td>
<td>6.34</td>
<td>0.53</td>
<td>0.40</td>
<td>0.46</td>
<td>0.64</td>
<td>1.18</td>
<td>0.96</td>
<td>0.95</td>
</tr>
</tbody>
</table>

Metric conversions
- 1 psi = 0.07 bar
- 5/4 (t; °F -32) = 12 °C
- 1 TR = 3.5 Kw
- 1 in = 25.4 mm
- 1 ft = 0.3 m
- 1 lb = 0.454 kg
- 1 oz = 28.35 gram
- US gal/min = 0.86 m³/h
Ordering valve

Normally closed NC

<table>
<thead>
<tr>
<th>Type</th>
<th>Connection</th>
<th>Code no.</th>
</tr>
</thead>
<tbody>
<tr>
<td>EVU 1</td>
<td>¼&quot;</td>
<td>032F7005</td>
</tr>
<tr>
<td></td>
<td>—</td>
<td>032F7004</td>
</tr>
<tr>
<td>EVU 2</td>
<td>¼&quot;</td>
<td>032F5053</td>
</tr>
<tr>
<td>EVU 3</td>
<td>¼&quot;</td>
<td>032F5024</td>
</tr>
<tr>
<td>EVU 4</td>
<td>¼&quot;</td>
<td>032F5025</td>
</tr>
<tr>
<td>EVU 5</td>
<td>¼&quot;</td>
<td>032F5026</td>
</tr>
<tr>
<td>EVU 6</td>
<td>¼&quot;</td>
<td>032F5027</td>
</tr>
<tr>
<td>EVU 8</td>
<td>¼&quot;</td>
<td>032F5037</td>
</tr>
<tr>
<td></td>
<td>¼&quot;</td>
<td>032F7000</td>
</tr>
<tr>
<td></td>
<td>¼&quot;</td>
<td>032F7001</td>
</tr>
<tr>
<td></td>
<td>¼&quot;</td>
<td>032F5046</td>
</tr>
<tr>
<td></td>
<td>¼&quot;</td>
<td>032F5047</td>
</tr>
<tr>
<td></td>
<td>¼&quot;</td>
<td>032F5049</td>
</tr>
<tr>
<td></td>
<td>¼&quot;</td>
<td>032F5048</td>
</tr>
<tr>
<td></td>
<td>¼&quot;</td>
<td>032F8009</td>
</tr>
</tbody>
</table>

The valve code numbers on above are with coil sealing O-ring. This should be removed for US-coils with the external frame.

Ordering Coils

Alternating current AC

<table>
<thead>
<tr>
<th>Type</th>
<th>Voltage [V]</th>
<th>Frequency [Hz]</th>
<th>Power consumption</th>
<th>Code no.</th>
</tr>
</thead>
<tbody>
<tr>
<td>EVU 1, EVU 2, EVU 3, EVU 4, EVU 5, EVU 6, EVU 8</td>
<td>208 – 240</td>
<td>50 / 60</td>
<td>Holding: 8 W 16 VA</td>
<td>042N8230</td>
</tr>
<tr>
<td></td>
<td>110 – 120</td>
<td>50 / 60</td>
<td>Inrush: 32 VA</td>
<td>042N8233</td>
</tr>
<tr>
<td></td>
<td>24</td>
<td>50 / 60</td>
<td></td>
<td>042N8236</td>
</tr>
</tbody>
</table>

Accessories

<table>
<thead>
<tr>
<th>Part</th>
<th>Description</th>
<th>Code no.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Bracket for fixing of valve, Industrial pack</td>
<td>032F8036</td>
</tr>
</tbody>
</table>
### Capacities are based on:
- liquid temperature $t_l = 100 \, ^\circ F$
- evaporating temperature $t_e = 40 \, ^\circ F$
- superheat temperature $(t_e + 10 \, ^\circ F) = 50 \, ^\circ F$

### Metric conversions
1 psi = 0.07 bar
$\frac{7}{8} (t_l, ^\circ F - 32) = t_l, ^\circ C$
1 TR = 3.5 kW

### Correction factors
When liquid temperature $t_l$ ahead of the expansion valve is other than 100°F, adjust the table capacities by multiplying them by the appropriate correction factor found in the following table.

### Correction factors for liquid temperature $t_l$

<table>
<thead>
<tr>
<th>$t_l[°F]$</th>
<th>80</th>
<th>90</th>
<th>100</th>
<th>110</th>
<th>120</th>
</tr>
</thead>
<tbody>
<tr>
<td>Factor</td>
<td>1.10</td>
<td>1.05</td>
<td>1.00</td>
<td>0.95</td>
<td>0.90</td>
</tr>
</tbody>
</table>
### Capacity

#### Suction vapour capacity

<table>
<thead>
<tr>
<th>Type</th>
<th>Pressure drop ∆p [psi]</th>
<th>Suction vapour capacity Q_e [TR] at evaporating temperature t_e [°F]</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>-40</td>
<td>-20</td>
</tr>
<tr>
<td>EVU 1</td>
<td>1.00</td>
<td>0.02</td>
</tr>
<tr>
<td></td>
<td>2.00</td>
<td>0.03</td>
</tr>
<tr>
<td></td>
<td>3.00</td>
<td>0.04</td>
</tr>
<tr>
<td>EVU 2</td>
<td>1.00</td>
<td>0.05</td>
</tr>
<tr>
<td></td>
<td>2.00</td>
<td>0.06</td>
</tr>
<tr>
<td></td>
<td>3.00</td>
<td>0.06</td>
</tr>
<tr>
<td>EVU 3</td>
<td>1.00</td>
<td>0.06</td>
</tr>
<tr>
<td></td>
<td>2.00</td>
<td>0.08</td>
</tr>
<tr>
<td></td>
<td>3.00</td>
<td>0.09</td>
</tr>
<tr>
<td>EVU 4</td>
<td>1.00</td>
<td>0.10</td>
</tr>
<tr>
<td></td>
<td>2.00</td>
<td>0.13</td>
</tr>
<tr>
<td></td>
<td>3.00</td>
<td>0.16</td>
</tr>
<tr>
<td>EVU 5</td>
<td>1.00</td>
<td>0.13</td>
</tr>
<tr>
<td></td>
<td>2.00</td>
<td>0.17</td>
</tr>
<tr>
<td></td>
<td>3.00</td>
<td>0.20</td>
</tr>
<tr>
<td>EVU 6</td>
<td>1.00</td>
<td>0.16</td>
</tr>
<tr>
<td></td>
<td>2.00</td>
<td>0.21</td>
</tr>
<tr>
<td></td>
<td>3.00</td>
<td>0.25</td>
</tr>
<tr>
<td>EVU 8</td>
<td>1.00</td>
<td>0.20</td>
</tr>
<tr>
<td></td>
<td>2.00</td>
<td>0.26</td>
</tr>
<tr>
<td></td>
<td>3.00</td>
<td>0.31</td>
</tr>
</tbody>
</table>

**R22/R407C**

The table values refer to evaporator capacity and are given as a function of evaporating temperature t_e and pressure drop ∆p across the valve. Capacities are based on liquid temperature t_l = 100 °F ahead of the expansion valve and superheat t_s = 7 °F. For each additional 10 °F of superheat, the table capacities must be reduced by 2%.

**Metric conversions**

1 psi = 0.07 bar

\[
\frac{1}{2} (t_1 °F - 32) = t_2 °C
\]

1 TR = 3.5 kW

**Correction factors**

When liquid temperature t_l ahead of the expansion valve is other than 100 °F, adjust the table capacities by multiplying them by the appropriate correction factor found in the following table.

**Correction factors for liquid temperature t_l**

<table>
<thead>
<tr>
<th>t_l[°F]</th>
<th>80</th>
<th>90</th>
<th>100</th>
<th>110</th>
<th>120</th>
</tr>
</thead>
<tbody>
<tr>
<td>Factor</td>
<td>1.10</td>
<td>1.05</td>
<td>1.00</td>
<td>0.95</td>
<td>0.90</td>
</tr>
</tbody>
</table>
### Capacity

**Suction vapour capacity (continued)**

<table>
<thead>
<tr>
<th>Type</th>
<th>Pressure drop ∆p [psi]</th>
<th>Suction vapour capacity Q_e [TR] at evaporating temperature t_e [°F]</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>-40</td>
<td>-20</td>
</tr>
<tr>
<td>EVU 1</td>
<td>1.00</td>
<td>0.01</td>
</tr>
<tr>
<td></td>
<td>2.00</td>
<td>0.02</td>
</tr>
<tr>
<td></td>
<td>3.00</td>
<td>0.02</td>
</tr>
<tr>
<td>EVU 2</td>
<td>1.00</td>
<td>0.02</td>
</tr>
<tr>
<td></td>
<td>2.00</td>
<td>0.03</td>
</tr>
<tr>
<td></td>
<td>3.00</td>
<td>0.03</td>
</tr>
<tr>
<td>EVU 3</td>
<td>1.00</td>
<td>0.04</td>
</tr>
<tr>
<td></td>
<td>2.00</td>
<td>0.05</td>
</tr>
<tr>
<td></td>
<td>3.00</td>
<td>0.05</td>
</tr>
<tr>
<td>EVU 4</td>
<td>1.00</td>
<td>0.06</td>
</tr>
<tr>
<td></td>
<td>2.00</td>
<td>0.08</td>
</tr>
<tr>
<td></td>
<td>3.00</td>
<td>0.09</td>
</tr>
<tr>
<td>EVU 5</td>
<td>1.00</td>
<td>0.08</td>
</tr>
<tr>
<td></td>
<td>2.00</td>
<td>0.10</td>
</tr>
<tr>
<td></td>
<td>3.00</td>
<td>0.11</td>
</tr>
<tr>
<td>EVU 6</td>
<td>1.00</td>
<td>0.10</td>
</tr>
<tr>
<td></td>
<td>2.00</td>
<td>0.13</td>
</tr>
<tr>
<td></td>
<td>3.00</td>
<td>0.14</td>
</tr>
<tr>
<td>EVU 8</td>
<td>1.00</td>
<td>0.13</td>
</tr>
<tr>
<td></td>
<td>2.00</td>
<td>0.16</td>
</tr>
<tr>
<td></td>
<td>3.00</td>
<td>0.18</td>
</tr>
</tbody>
</table>

**R134a**

The table values refer to evaporator capacity and are given as a function of evaporating temperature t_e and pressure drop ∆p across the valve. Capacities are based on liquid temperature t_l = 100 °F ahead of the expansion valve and superheat t_s = 7 °F. For each additional 10 °F of superheat, the table capacities must be reduced by 2%.

**Metric conversions**

1 psi = 0.07 bar

\( \frac{1}{3} (t_e - 32) = t_s \) °C

1 TR = 3.5 kW

**Correction factors**

When liquid temperature t_l ahead of the expansion valve is other than 100 °F, adjust the table capacities by multiplying them by the appropriate correction factor found in the following table.

**Correction factors for liquid temperature t_l**

<table>
<thead>
<tr>
<th>t_l [°F]</th>
<th>80</th>
<th>90</th>
<th>100</th>
<th>110</th>
<th>120</th>
</tr>
</thead>
<tbody>
<tr>
<td>Factor</td>
<td>1.10</td>
<td>1.05</td>
<td>1.00</td>
<td>0.95</td>
<td>0.90</td>
</tr>
</tbody>
</table>
**Correction factors for liquid temperature $t_l$**

<table>
<thead>
<tr>
<th>$t_l$ [°F]</th>
<th>80</th>
<th>90</th>
<th>100</th>
<th>110</th>
<th>120</th>
</tr>
</thead>
<tbody>
<tr>
<td>Factor</td>
<td>1.10</td>
<td>1.05</td>
<td>1.00</td>
<td>0.95</td>
<td>0.90</td>
</tr>
</tbody>
</table>

The table values refer to evaporator capacity and are given as a function of evaporating temperature $t_e$ and pressure drop $\Delta p$ across the valve. Capacities are based on liquid temperature $t_l = 100$ °F ahead of the expansion valve and superheat $t_s = 7$ °F. For each additional 10 °F of superheat, the table capacities must be reduced by 2%.

**Metric conversions**

1 psi = 0.07 bar

$\frac{5}{9}(t_1 - 32) = t_2$ °C

1 TR = 3.5 kW
**Capacity**  
**Suction vapour capacity (continued)**

<table>
<thead>
<tr>
<th>Type</th>
<th>Pressure drop Δp [psi]</th>
<th>Suction vapour capacity Qe [TR] at evaporating temperature t_e [°F]</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>-40</td>
<td>-20</td>
</tr>
<tr>
<td>EVU 1</td>
<td>1.00</td>
<td>0.03</td>
</tr>
<tr>
<td></td>
<td>2.00</td>
<td>0.04</td>
</tr>
<tr>
<td></td>
<td>3.00</td>
<td>0.05</td>
</tr>
<tr>
<td>EVU 2</td>
<td>1.00</td>
<td>0.07</td>
</tr>
<tr>
<td></td>
<td>2.00</td>
<td>0.09</td>
</tr>
<tr>
<td></td>
<td>3.00</td>
<td>0.11</td>
</tr>
<tr>
<td>EVU 3</td>
<td>1.00</td>
<td>0.14</td>
</tr>
<tr>
<td></td>
<td>2.00</td>
<td>0.18</td>
</tr>
<tr>
<td></td>
<td>3.00</td>
<td>0.22</td>
</tr>
<tr>
<td>EVU 4</td>
<td>1.00</td>
<td>0.22</td>
</tr>
<tr>
<td></td>
<td>2.00</td>
<td>0.30</td>
</tr>
<tr>
<td></td>
<td>3.00</td>
<td>0.35</td>
</tr>
<tr>
<td>EVU 5</td>
<td>1.00</td>
<td>0.28</td>
</tr>
<tr>
<td></td>
<td>2.00</td>
<td>0.38</td>
</tr>
<tr>
<td></td>
<td>3.00</td>
<td>0.44</td>
</tr>
</tbody>
</table>

**Metric conversions**

1 psi = 0.07 bar  
5/9 (t₁ °F - 32) = t₂ °C  
1 TR = 3.5 kW

**Correction factors**

When liquid temperature t_l ahead of the expansion valve is other than 100 °F, adjust the table capacities by multiplying them by the appropriate correction factor found in the following table.

<table>
<thead>
<tr>
<th>t_l [°F]</th>
<th>80</th>
<th>90</th>
<th>100</th>
<th>110</th>
<th>120</th>
</tr>
</thead>
<tbody>
<tr>
<td>Factor</td>
<td>1.10</td>
<td>1.05</td>
<td>1.00</td>
<td>0.95</td>
<td>0.90</td>
</tr>
</tbody>
</table>
### Capacity

**Hot gas capacity**

<table>
<thead>
<tr>
<th>Type</th>
<th>Pressure drop across valve $\Delta p$ [psi]</th>
<th>Hot gas capacity $Q$ [TR]</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Evaporating temp. $t_e = 40 , ^\circ F$, hot gas temp. $t_h = t_e + 40 , ^\circ F$, subcooling $\Delta t_u = 10 , ^\circ F$</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Condensing temp. $t_c$ [$^\circ F$]</td>
</tr>
<tr>
<td></td>
<td></td>
<td>R22/R407C</td>
</tr>
<tr>
<td></td>
<td></td>
<td>70</td>
</tr>
<tr>
<td>EVU 1</td>
<td>2</td>
<td>0.11</td>
</tr>
<tr>
<td></td>
<td>5</td>
<td>0.17</td>
</tr>
<tr>
<td></td>
<td>10</td>
<td>0.24</td>
</tr>
<tr>
<td></td>
<td>15</td>
<td>0.29</td>
</tr>
<tr>
<td></td>
<td>20</td>
<td>0.33</td>
</tr>
<tr>
<td></td>
<td>25</td>
<td>0.37</td>
</tr>
<tr>
<td>EVU 2</td>
<td>2</td>
<td>0.21</td>
</tr>
<tr>
<td></td>
<td>5</td>
<td>0.34</td>
</tr>
<tr>
<td></td>
<td>10</td>
<td>0.47</td>
</tr>
<tr>
<td></td>
<td>15</td>
<td>0.57</td>
</tr>
<tr>
<td></td>
<td>20</td>
<td>0.66</td>
</tr>
<tr>
<td></td>
<td>25</td>
<td>0.73</td>
</tr>
<tr>
<td>EVU 3</td>
<td>2</td>
<td>0.32</td>
</tr>
<tr>
<td></td>
<td>5</td>
<td>0.51</td>
</tr>
<tr>
<td></td>
<td>10</td>
<td>0.71</td>
</tr>
<tr>
<td></td>
<td>15</td>
<td>0.86</td>
</tr>
<tr>
<td></td>
<td>20</td>
<td>0.99</td>
</tr>
<tr>
<td></td>
<td>25</td>
<td>1.10</td>
</tr>
<tr>
<td>EVU 4</td>
<td>2</td>
<td>0.53</td>
</tr>
<tr>
<td></td>
<td>5</td>
<td>0.85</td>
</tr>
<tr>
<td></td>
<td>10</td>
<td>1.18</td>
</tr>
<tr>
<td></td>
<td>15</td>
<td>1.43</td>
</tr>
<tr>
<td></td>
<td>20</td>
<td>1.64</td>
</tr>
<tr>
<td></td>
<td>25</td>
<td>1.83</td>
</tr>
</tbody>
</table>

---

**Correction factors**

When the valve is used in a hot gas defrost circuit, evaporator temperature affects the capacity. When the evaporator temperature differs from 40 °F, adjust the table capacities by multiplying them by the appropriate correction factor found in the following table.

<table>
<thead>
<tr>
<th>$t_c$ [$^\circ F$]</th>
<th>-40</th>
<th>-20</th>
<th>0</th>
<th>20</th>
<th>40</th>
<th>50</th>
</tr>
</thead>
<tbody>
<tr>
<td>Factor</td>
<td>1.18</td>
<td>1.14</td>
<td>1.09</td>
<td>1.04</td>
<td>1</td>
<td>0.97</td>
</tr>
</tbody>
</table>
**Data sheet | Product name, Solenoid valve, type EVU for fluorinated refrigerants**

**Correction factors**

When the valve is used in a hot gas defrost circuit, evaporator temperature affects the capacity. When the evaporator temperature differs from 40 °F, adjust the table capacities by multiplying them by the appropriate correction factor found in the following table.

The table values refer to hot gas capacity and are given as a function of condensing temperature \( t_c \) and pressure drop \( \Delta p \) across the valve. Capacities are based on a hot gas temperature superheated 40 °F above condensing temperature \( (t_h = t_c + 40 \, ^{°}F) \). For each additional 10 °F of superheat above 40 °F, the table capacities must be reduced by 1%.

### Capacity

**Hot gas capacity**

<table>
<thead>
<tr>
<th>Type</th>
<th>Pressure drop across valve ( \Delta p ) [psi]</th>
<th>Hot gas capacity ( Q ) [TR]</th>
</tr>
</thead>
<tbody>
<tr>
<td>EVU 5</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>( 2 )</td>
<td>( \frac{1}{9} )</td>
</tr>
<tr>
<td></td>
<td>( 5 )</td>
<td>( 1.18 )</td>
</tr>
<tr>
<td></td>
<td>( 10 )</td>
<td>( 1.14 )</td>
</tr>
<tr>
<td></td>
<td>( 15 )</td>
<td>( 1.10 )</td>
</tr>
<tr>
<td></td>
<td>( 20 )</td>
<td>( 1.09 )</td>
</tr>
<tr>
<td></td>
<td>( 25 )</td>
<td>( 1.04 )</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>EVU 6</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>( 2 )</td>
<td>( 1.16 )</td>
</tr>
<tr>
<td></td>
<td>( 5 )</td>
<td>( 1.14 )</td>
</tr>
<tr>
<td></td>
<td>( 10 )</td>
<td>( 1.10 )</td>
</tr>
<tr>
<td></td>
<td>( 15 )</td>
<td>( 1.09 )</td>
</tr>
<tr>
<td></td>
<td>( 20 )</td>
<td>( 1.09 )</td>
</tr>
<tr>
<td></td>
<td>( 25 )</td>
<td>( 1.04 )</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>EVU 8</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>( 2 )</td>
<td>( 1.18 )</td>
</tr>
<tr>
<td></td>
<td>( 5 )</td>
<td>( 1.14 )</td>
</tr>
<tr>
<td></td>
<td>( 10 )</td>
<td>( 1.10 )</td>
</tr>
<tr>
<td></td>
<td>( 15 )</td>
<td>( 1.09 )</td>
</tr>
<tr>
<td></td>
<td>( 20 )</td>
<td>( 1.09 )</td>
</tr>
<tr>
<td></td>
<td>( 25 )</td>
<td>( 1.09 )</td>
</tr>
</tbody>
</table>

**Correction factors for \( t_h \) and \( t_c \)**

<table>
<thead>
<tr>
<th>( t_c ) [°F]</th>
<th>-40</th>
<th>-20</th>
<th>0</th>
<th>20</th>
<th>40</th>
<th>50</th>
</tr>
</thead>
<tbody>
<tr>
<td>Factor</td>
<td>1.09</td>
<td>1.11</td>
<td>1.09</td>
<td>1.04</td>
<td>1</td>
<td>0.97</td>
</tr>
</tbody>
</table>

**Metric conversions**

1 psi = 0.07 bar

\( \frac{1}{9} \) \((t_1 \, ^{°}F - 32) = t_2 \, ^{°}C\)

1 TR = 3.5 kW
Data sheet | Product name, Solenoid valve, type EVU for fluorinated refrigerants

Design / Function

Direct operated
EVU 1 is direct operated. The valve opens directly for full flow when the armature (9) moves up into the magnetic field of the coil.

This means that the valve can operate a 0 bar differential pressure. Thus, inlet pressure and spring force act to close the valve when the coil is currentless.

Servo operated
EVU 2 - 8 are servo operated piston solenoid valves. The servo piston principle results in a fast operating and compact valve that is able to open against a high differential pressure. The valve closes rather soft, because the pilot system does not fully close before the main orifice has closed. This minimizes liquid hammer.

When the coil is currentless, the main orifice, seat plate (12) and pilot orifice (on the pilot plate (11)) are closed. The pilot orifice and main orifice are held closed by the armature spring force and the differential pressure between inlet and outlet sides.

When current is applied to the coil, the armature (9) is drawn up into the magnetic field and thus lifts the pilot plate (11) and opens for the pilot orifice so that the de-energising of the servo chamber (A) starts and the pressure is relieved to the level of the outlet side. As the inlet pressure that acts on the bottom of the piston (13) now is higher than the pressure in the servo chamber (A), the piston is moved upwards and lifts both the pilot plate (11) and the seat plate (12). When the seat plate is lifted, the main orifice opens for full flow.

Therefore a minimum differential pressure of 0.02 bar is necessary to open the valve and keep it open.

When the current to the coil is switched off, the spring (8) forces the armature (9) down towards the pilot plate (11). The pressure in the servo chamber (A) increases and the piston will no longer be able to hold the seat plate (12) in lifted position, by which the main orifice closes. The armature (9) continues its downwards movement until the pilot orifice on the pilot plate (11) is fully closed.

Material specifications

<table>
<thead>
<tr>
<th>No.</th>
<th>Description</th>
<th>Material</th>
<th>Alloys</th>
<th>W.no.</th>
<th>DIN</th>
<th>EN</th>
</tr>
</thead>
<tbody>
<tr>
<td>1, 5</td>
<td>Bi-metallic tube</td>
<td>Stainless steel/Cu</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>2, 4</td>
<td>Solder ring</td>
<td>Silver</td>
<td>L-Ag 15P</td>
<td>2.0402</td>
<td>1044</td>
<td>1044</td>
</tr>
<tr>
<td>3</td>
<td>Valve body</td>
<td>Brass</td>
<td>CuZn40Pb2</td>
<td>2.0380</td>
<td>17672-1</td>
<td>12165</td>
</tr>
<tr>
<td>6</td>
<td>Union nut</td>
<td>Brass</td>
<td>CuZn39Pb2</td>
<td>2.0182</td>
<td>17672-1</td>
<td>12164</td>
</tr>
<tr>
<td>7</td>
<td>Armature tube</td>
<td>Stainless steel</td>
<td>X6CrMoS17</td>
<td>1.4105</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>8</td>
<td>Spring</td>
<td>Spring wire stainless</td>
<td>X10CrNi18-8</td>
<td>1.4105</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>9</td>
<td>Armature</td>
<td>Stainless steel</td>
<td>X4CrMoS18</td>
<td>1.410SI</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>10</td>
<td>Support ring</td>
<td>Teflon</td>
<td>PTFE</td>
<td>—</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>11</td>
<td>Pilot plate</td>
<td>Thermoplast</td>
<td>PEEK</td>
<td>—</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>12</td>
<td>Seat plate</td>
<td>Teflon</td>
<td>PTFE</td>
<td>—</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>13</td>
<td>Piston</td>
<td>Brass</td>
<td>CuZn39Pb2</td>
<td>2.0380</td>
<td>17672-1</td>
<td>12164</td>
</tr>
</tbody>
</table>
**Dimensions [in.] and weights [lbs]**

**EVU 1, EVU 2, EVU 3, EVU 4, EVU 5, EVU 6 mounted with coil with 0.25 in. US spade**

- Net weight of coil: approx. 0.22 lbs
- Net weight of valve: approx. 0.22 lbs

**EVU 8**

Note:
The drawings are only representative.