## Model code
(also example order)

<table>
<thead>
<tr>
<th>Code</th>
<th>Type</th>
<th>Nominal size</th>
<th>Pressure range</th>
<th>Connection</th>
<th>Seal</th>
<th>Control</th>
<th>Supply voltage</th>
<th>Version</th>
</tr>
</thead>
<tbody>
<tr>
<td>CX DBV</td>
<td>Pressure relief valve</td>
<td>10 = DN 10, 12 = DN 12, 15 = DN 15, 20 = DN 20</td>
<td>040 = 3 - 40 bar, 064 = 5 - 64 bar, 080 = 3 - 80 bar, 120 = 10 - 120 bar, 140 = 5 - 140 bar, 160 = 12 - 160 bar, 200 = 10 - 200 bar</td>
<td>G1 = Female threaded connection G1”</td>
<td>F = FKM (Viton)</td>
<td>E = Electrical proportional control of pilot pressure reducing valve, P = Stepless, manually adjustable control via solenoid valve to limit system pressure, H = Stepless, manually adjustable control of pilot pressure reducing valve</td>
<td>24 V = 24V DC (not with CX DBV – H)</td>
<td>EK = single piston, DK = double piston</td>
</tr>
</tbody>
</table>
Technical data

Design E: Stepless closed loop pressure control via electrical setpoints 0 - 10 V  
P: Stepless, manually adjustable control via solenoid valve which limits system pressure  
H: Stepless, manually adjustable control of pressure

Media Contaminated fluids (50µm)

Nominal size DN 10, DN 12, DN 15, DN 20

Pressure range up to max. 200 bar

Flow rate See table

Housing material 1.4305

Seal material FKM

Temperature of medium 0 to +60 °C

Ambient temperature 0 to +50 °C

Ports Female threaded connection G1

Electrical connection E: male connection M12 x 1  
P: Female connector to industry standard Form B, for AC operation with integrated rectifier

Supply voltage E: 24 V DC (max. residual ripple 10 %)  
P: 24 V DC, 230 V AC, special voltages

Voltage tolerance E / P: ± 10 % to VDE 0580

Power consumption E: 2.5 Watt  
P: 230 V 50 Hz: 9.2 VA  |  24 V DC: 6 W

Duty cycle E / P: 100 %

IP class E / P: IP 65 when connector is fitted

Installation position E: M12 connection preferably on top  
H / P: pressure gauge preferably on top

Control air 40 µ filtered, max. 8 bar

NOTE: Further options and accessories available on request.

<table>
<thead>
<tr>
<th>DN [mm]</th>
<th>Version</th>
<th>Pressure control range [bar]</th>
<th>Connection</th>
<th>Max. flow rate [m³/h]</th>
</tr>
</thead>
<tbody>
<tr>
<td>10</td>
<td>SP</td>
<td>12 – 160</td>
<td>G 1</td>
<td>3.0</td>
</tr>
<tr>
<td>12</td>
<td>SP</td>
<td>10 – 120</td>
<td>G 1</td>
<td>6.0</td>
</tr>
<tr>
<td>15</td>
<td>SP</td>
<td>5 – 64</td>
<td>G 1</td>
<td>8.3</td>
</tr>
<tr>
<td>20</td>
<td>SP</td>
<td>3 – 40</td>
<td>G 1</td>
<td>14.1</td>
</tr>
<tr>
<td>12</td>
<td>DP</td>
<td>10 – 200</td>
<td>G 1</td>
<td>6.0</td>
</tr>
<tr>
<td>15</td>
<td>DP</td>
<td>5 – 140</td>
<td>G 1</td>
<td>8.3</td>
</tr>
<tr>
<td>20</td>
<td>DP</td>
<td>3 – 80</td>
<td>G 1</td>
<td>14.1</td>
</tr>
</tbody>
</table>

Pressure minimization

Design

Essentially this valve consists of a valve body with integrated valve seat, and a hardened and ground cone poppet. The pre-set force is produced by a spring and a pressurised piston.

Functional description

The compressed air with the spring exerts a force on the cone poppet and this is pressed onto the valve seat. The hydraulic force is applied to the opposing side of the cone poppet. If this is below the pre-set force, the valve will be closed. If the hydraulic force exceeds the pre-set force, then the cone poppet will be lifted away from the valve seat and operating fluid will flow from pressure port P to tank port T. This has the effect of limiting the pressure at port P. The hydraulic energy used is converted to heat and the operating fluid is drained to tank.

Piping

To prevent turbulence reaching the valve, straight pipe sections are required in the following minimum lengths:

Upstream of the valve (P side): A length equivalent to 3 times the pipe diameter.

Downstream of the valve (T side): A length equivalent to 5 times the pipe diameter.

At outlet T there must be no restriction, no pressure head and as little flow resistance as possible.
Series CX DBV-E

Switching function

NC (closed when de-energised)

Electrical connection (M12x1)

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Supply</td>
</tr>
<tr>
<td>2</td>
<td>Setpoint (-)</td>
</tr>
<tr>
<td>3</td>
<td>GND (-)</td>
</tr>
<tr>
<td>4</td>
<td>Setpoint (+) 0-10V</td>
</tr>
</tbody>
</table>

Single piston version (EK)

Dimensions

Control pressure graphs

- **DN 10**
  - **Setpoint [V]**
  - **Pilot pressure (bar)**
  - **Pressure of medium [bar]**
  - Permitted pilot pressure range

- **DN 12**
  - **Setpoint [V]**
  - **Pilot pressure (bar)**
  - **Pressure of medium [bar]**
  - Permitted pilot pressure range

- **DN 15**
  - **Setpoint [V]**
  - **Pilot pressure (bar)**
  - **Pressure of medium [bar]**
  - Permitted pilot pressure range

- **DN 20**
  - **Setpoint [V]**
  - **Pilot pressure (bar)**
  - **Pressure of medium [bar]**
  - Permitted pilot pressure range
Double piston version (DK)

Dimensions

Control pressure graphs

DN 10 not available in double piston version DK

DN 12

DN 15

permitted pilot pressure range

Setpoint [V]

Pressure of medium [bar]

DN 20

permitted pilot pressure range

Setpoint [V]

Pressure of medium [bar]
Series CX DBV-P

Switching function

NC (closed when de-energised)

Single piston version (EK)

Dimensions

Control pressure graphs

DN 10

Pilot pressure (bar)

Pressure of medium [bar]

permitted pilot pressure range

DN 12

Pilot pressure (bar)

Pressure of medium [bar]

permitted pilot pressure range

DN 15

Pilot pressure (bar)

Pressure of medium [bar]

permitted pilot pressure range

DN 20

Pilot pressure (bar)

Pressure of medium [bar]

permitted pilot pressure range
Double piston version (DK)

Control pressure graphs

**DN 10** not available in double piston version DK

**DN 12**

**DN 15**

**DN 20**

Permitted pilot pressure range

Dimensions

Pressure of medium [bar]
Series CX DBV-H

Switching function

![Switching function diagram]

NC
(closed when de-energised)

Single piston version (EK)

Control pressure graphs

**DN 10**
- Permitted pilot pressure range

**DN 12**
- Permitted pilot pressure range

**DN 15**
- Permitted pilot pressure range

**DN 20**
- Permitted pilot pressure range
Double piston version (DK)

Control pressure graphs

NOTE
The information in this brochure relates to the operating conditions and applications described. For applications or operating conditions not described, please contact the relevant technical department. Subject to technical modifications.

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