**Overview**

**Description**

The ehpr98-g38xx is a direct-acting, spool-type, proportional, pressure reducing relieving valve. It is a 3rd generation HydraForce drop-in, flange mounted cartridge type valve for use with mineral based or synthetic (with lubricating properties) hydraulic fluids. The coil is an integral part of the valve and is not serviceable the regulated pressure is proportional to the input electrical current in the pressure ranges shown.

**Operation**

The EHPR98-G33 allows free flow from 1 to 3 when no current is applied to the coil. When the coil is energized, 2 is connected to 1. Increasing current applied to the coil will increase the control (reduced) pressure proportionally. If pressure at 1 exceeds the setting induced by the coil, pressure from 1 is relieved to 3.

**Features**

- Economical drop-in style.
- Mounting plate option.
- Several regulated pressure ranges.
- Retrofit option for EHPR98-T38.
- Quick response time.
- Screen option.
- Top-mounted connector.
- Low leakage.

**Ratings**

**Pressure Ratings**

<table>
<thead>
<tr>
<th>Pressure rating</th>
<th>34.5 bar (500 psi) - Note: At all ports</th>
</tr>
</thead>
<tbody>
<tr>
<td>Proof pressure</td>
<td>207 bar (3000 psi) - Note: Port 1</td>
</tr>
<tr>
<td></td>
<td>207 bar (3000 psi) - Note: Port 2</td>
</tr>
<tr>
<td></td>
<td>54 bar (780 psi) - Note: Port 3</td>
</tr>
<tr>
<td>Burst pressure</td>
<td>249 bar (3625 psi) - Note: All ports pressurized</td>
</tr>
<tr>
<td>Control pressure at maximum control current</td>
<td>21 bar (305 psi) - Note: EHPR98-G38A</td>
</tr>
<tr>
<td></td>
<td>25 bar (363 psi) - Note: EHPR98-G38B</td>
</tr>
<tr>
<td></td>
<td>30 bar (435 psi) - Note: EHPR98-G38C</td>
</tr>
</tbody>
</table>

**Flow Ratings**
**Flow rating**  
23 lpm (6 gpm)

**Maximum internal leakage**  
50 ml/min (3.1 in³/min)  
*Note: At 34.5 bar (500 psi) de-energized*

**Other Ratings**

- **Cycle life**: 10 million cycles
- **Environmental rating**: Ip69k
- **Corrosion protection**: 1000 hour salt spray per ASTM b117

**Temperature Ratings**

- **Operating fluid temperature**:  
  -40 to 149 °C (-40 to 300 °F)  
  *Note: HNBR*
  
  -26 to 204 °C (-15 to 400 °F)  
  *Note: Fluorocarbon*

- **Storage temperature**:  
  -40 to 70 °C (-40 to 158 °F)

- **Ambient temperature**:  
  -40 to 120 °C (-40 to 248 °F)

**Operating Parameters**

- **Fluids**: Mineral based or synthetic hydraulic fluid with lubricating properties

- **Fluid viscosity range**: 7.4 to 420 cSt

**Properties**

- **Unit weight**: 0.27 kg (0.60 lb)

- **Internal wetted surface area**: 148 cm² (23.0 in²)

**Electrical Parameters**

- **Maximum control current**:  
  1.050 A  
  *Note: At 10 V*
  
  0.0880 A  
  *Note: At 12 V*

  0.720 A  
  *Note: At 14 V*

  0.525 A  
  *Note: At 20 V*

  0.440 A  
  *Note: At 24 V*

  0.360 A  
  *Note: At 28 V*

- **Valve inductance**: 77 mH  
  *Note: 10 V coil*
EHPR98-G38

PROPORTIONAL PRESSURE REDUCING / RELIEVING CARTRIDGE VALVE

118 mH - Note: 12 V coil
165 mH - Note: 14 V coil
301 mH - Note: 20 V coil
446 mH - Note: 24 V coil
680 mH - Note: 28 V coil

Performance

Typical Relieving/Reducing Pressure vs. Flow Characteristic
Typical Relieving Pressure at Various %s of Maximum Control Current
Data Shown for EHPR98-G38

Relieving Pressure Port 1 to 3
Reducing Pressure Port 2 to 1

Typical Step Response Curve - ON TIME
Inlet Pressure 34.5 bar/500 psi
DC Current; Regulated Port Blocked

Typical Step Response Curve - OFF TIME
Inlet Pressure 34.5 bar/500 psi
DC Current; Regulated Port Blocked
PROPORTIONAL PRESSURE REDUCING / RELIEVING CARTRIDGE VALVE

Pressure Drop vs. Flow
Cartridge Only

FLOW lpm/gpm

FLOW lpm/gpm

Reducing Pressure vs. Current
12V Coil  100 Hz PWM
Reduced Pressure Port 2

% of MAX CONTROL CURRENT amps

Dimensions
**Materials**

**Cartridge Including Coil:** Weight: 0.27 kg. (0.60 lbs.) Steel with hardened work surfaces. Zinc-nickel plated exposed surfaces. HNBR seals standard. Coil is encapsulated, Class M high-temperature magnet wire, with zinc-nickel plated shell.

**Ported Test Body:** Part No. 7161210

**Mounting Screws:** Must be ordered separately; M5 x 0.8 x 12 mm Long, Part No. 4002609 (with standard VC-G028 cavity); M4 x 0.7 x 12 Long; Part No. 4001015 (with retrofit application VC-T011 cavity).
EHPR98-G38

PROPORTIONAL PRESSURE REDUCING / RELIEVING CARTRIDGE VALVE

Installation Specifications

Cavity                      VC-G028
Installation type           Flange mounted
Orientation restriction     None
Mounting screw torque       3 to 4 N-m (2.2 to 3 ft-lb)

Note                        For retro-fitting into older drop-in cavities and other mounting options, see "g3_mounting_options" technical reference

Accessories

Mounting plate              Hf p/n 4595096
Mounting screw              M5 - 0.8 x 12mm long, hf p/n: 4002609 (sold separately)
Valve body                  Hf p/n 71612x0 (sold separately) for retro-fitting into older drop-in cavities and other mounting options, see "g3_mounting_options" outline drawing.
Seal kit                    SK-G028-X - Note: X = seal option

Order Code

<table>
<thead>
<tr>
<th>POSITION</th>
<th>CODE</th>
<th>DESCRIPTION</th>
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<tbody>
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<td>EHPR98-G38HG-J-KL-U</td>
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<tr>
<td>D</td>
<td>A</td>
<td>Max Regulated Pressure</td>
</tr>
<tr>
<td>D</td>
<td>B</td>
<td>21 bar (305 psi)</td>
</tr>
<tr>
<td>D</td>
<td>C</td>
<td>25 bar (363 psi)</td>
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<tr>
<td>D</td>
<td></td>
<td>30 bar (435 psi)</td>
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<tr>
<td>G</td>
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<td>Screen</td>
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<td>J</td>
<td>G</td>
<td>HBNR (Hydrogenated Nitrile Butadiene Rubber)</td>
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<tr>
<td>J</td>
<td>V</td>
<td>Fluorocarbon</td>
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<tr>
<td>J</td>
<td>P</td>
<td>Polyurethane</td>
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<tr>
<td>K</td>
<td></td>
<td>Coil Voltage</td>
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</table>
# EHPR98-G38: Proportional Pressure Reducing / Relieving Cartridge Valve

## Specifications

<table>
<thead>
<tr>
<th>Control Type</th>
<th>Voltage</th>
<th>Description</th>
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<tbody>
<tr>
<td>K</td>
<td>10 VDC</td>
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<tr>
<td>K</td>
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<tr>
<td>K</td>
<td>14 VDC</td>
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<td>E-Coil, AMP Jr. with Zener Diode</td>
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<tr>
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<td>ER</td>
<td>E-Coil, Deutsch</td>
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<td>ER/Z</td>
<td>E-Coil, Deutsch with Zener Diode</td>
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<td>EY2A</td>
<td>E-Coil, Metri-Pack 150.2</td>
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<td>U</td>
<td>G</td>
<td>Standard Single Valve Plate</td>
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<tr>
<td>U</td>
<td>T</td>
<td>Retro-Fit Plate</td>
</tr>
</tbody>
</table>

## Diagram

- **Maximum Regulated Pressure**
  - 21 bar (305 psi)
  - 25 bar (363 psi)
  - 30 bar (435 psi)

- **Screen Option**
  - None (Blank)
  - 142µm on Inlet Port 2

- **Porting**
  - Cartridge Only
  - SAE 6
  - 6T

- **Seals**
  - G Hydrogenated Nitrile (HNBR)
  - V Fluorocarbon

- **Termination**
  - Deutsch DT04-2P Amp Junior Timer
  - Metripack 150.2

- **Diode**
  - Zener Diode, Bidirectional

- **Voltage**
  - 10 VDC
  - 12 VDC
  - 14 VDC
  - 20 VDC
  - 24 VDC
  - 28 VDC

- **Mounting Plate**
  - Blank
  - Standard Single Valve Plate
  - Retro-Fit Plate