3-Way Pressure Compensator, Spool-Type, Direct-Acting, Modular

TV2-103/M

Size 10 (D05) • $Q_{\text{max}}$ 80 l/min (21 GPM) • $p_{\text{max}}$ 350 bar (5100 PSI)

Technical Features

› 3-Way pressure compensator, spool-type, direct-acting with subplate interface acc. to ISO 4401, DIN 24340 (CETOP 05)
› Modular design for vertical stacking assemblies with built-in load sensing shuttle valve
› Meter-in flow control models with load sensing from optional consumer ports
› The valve keeps the pressure drop between the inlet and the pilot connection at a constant level
› Used as a load sensing valve with proportional directional and flow valves to control the flow rate independently of pressure variations
› Excellent stability throughout flow range with rapid response to dynamic pressure changes
› Adjustable by Allen key or hand knob, or delivered with fixed setting
› Quiet and modulate response to load changes
› Hardened precision parts
› High flow capacity

› In the standard version, the valve housing is phosphated and steel parts are zinc-coated for 240 h protection acc. to ISO 9227

Functional Description

A normally closed, direct-acting, spring loaded 3-way pressure compensator valve in the form of a sandwich plate. It consists of a body, a 3-way screw-in cartridge compensator TV2-103/S and a load shuttle valve. Ports A and B are always connected through the load shuttle valve with the spring chamber of the pressure compensator cartridge valve.

Typically, 3-way pressure compensators are used as meter-in regulators in parallel with flow restrictor valves when raising or lowering variable loads at the same velocity is required. The pressure compensator valve than keeps the pressure difference between its pressure inlet and the pressure at the output port of the regulated flow valve nearly constant. When the pressure differential exceeds the pre-set value, the pressure compensator opens and releases excessive flow from the main circuit to port B. If there is no flow demand from the consumer, the compensator allows the oil to flow back to tank and therefore vents the whole system. This prevents the hydraulic system from over heating especially in load sensing circuits with a fixed displacement pump.

Technical Data

<table>
<thead>
<tr>
<th>Feature</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Valve size</td>
<td>10 (D05)</td>
</tr>
<tr>
<td>Max. operating pressure bar (PSI)</td>
<td>350 (5100)</td>
</tr>
<tr>
<td>Max. flow l/min (GPM)</td>
<td>80 (21.1)</td>
</tr>
<tr>
<td>Control pressure differential bar (PSI)</td>
<td>4 ... 14 (58 ... 203)</td>
</tr>
<tr>
<td>Fluid temperature range (NBR) °C (°F)</td>
<td>-30 ... +100 (-22 ... +212)</td>
</tr>
<tr>
<td>Fluid temperature range (FPM) °C (°F)</td>
<td>-20 ... +120 (-4 ... +248)</td>
</tr>
<tr>
<td>Mass (all models) kg (lbs)</td>
<td>1.0 (2.2)</td>
</tr>
</tbody>
</table>

Data Sheet

Type General information GL_0060 Products and operating conditions Size 10 Mounting interface SMT_0019 Spare parts SP_8010

Characteristics measured at $v = 32 \text{ mm}^3/s$ (156 SUS)

Regulated flow related to input pressure

TV2-103/MC Meter-in compensator

The characteristic of the pressure compensator corresponds to the flow rate of a PRM2-103Z11/60 proportional directional valve.

If the pressure resistance increases due to a flow rate increase, the pressure differential also has to increase in order to ensure correct regulation.
Application Example

Meter-in compensator

Notice: The orientation of the symbol on the name plate corresponds with the valve function.

Ordering Code

3-Way pressure compensator, spool-type, direct-acting, modular

Sandwich plate

Model
- Meter-in compensator in channel A
- Meter-in compensator in channel B
- Meter-in compensator in channel A and B

Control pressure differential
- 4 - 12 bar (58 - 174 PSI), 10 bar (145 PSI) “C” Model
- 10 - 14 bar (145 - 203 PSI), 14 bar (203 PSI) “C” Model

Surface treatment
- No designation
- housing phosphated, steel parts zinc-coated (ZnCr-3), ISO 9227 (240 h)
- zinc-coated (ZnCr-3), ISO 9227 (240 h)
- zinc-coated (ZnNi), ISO 9227 (520 h)

Seals
- No designation
- NBR
- FPM (Viton)

Adjustment option
- No designation
- fixed setting, not adjustable
- alien key (hex. 5), without protective cap
- hand knob, plastic

Dimensions in millimeters (inches)

Model *RP  Model *S  TV2-103/M* C  Adapter M10x1/G1/4-ED

addition of equipment for external LS connection

Ordering number: 19860700

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Subject to change · TV2-103/M_5170_1en_02/2016