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

TV2-102/M

Technical Features

- 2-way pressure compensator, spool-type, built in a modular block for vertical grouping with mounting interface acc. to ISO 4401 (size 10), DIN 24340 (CETOP 05)
- High flow capacity
- Meter-in design with integrated load shuttle valve
- Meter-out design with integrated by-pass check valve
- The valve maintains a constant pressure drop on a flow control valve (e.g. proportional directional control valve) and thus a constant volumetric flow independent of actuator load
- Rapid and smooth response to load changes
- Stable function throughout the whole flow range
- Precisely manufactured and hardened key parts
- Pressure drop setting by adjusting screw in the range from 4 to 14 bar (58 – 203 PSI)
- Possible external sensing of LS signal by means of an adapter, mounted instead the end plug with adjusting screw on the spring side
- In the standard version, the valve body is phosphated. The steel parts are zinc-coated for corrosion protection 240 h in NSS acc. to ISO 9227

Functional Description

The 2-way pressure compensator, built in a modular block, maintains a constant pressure drop on the flow control valve and thus a constant volumetric flow independent of actuator load changes or pump power fluctuation. The spool position of the compensator is controlled by pressure drop sensed upstream and downstream from the valve. The set pressure drop is defined by spring pressure acting on the spool face and is maintained by flow throttling on the spool control edge. In the basic position the compensator is open. The volumetric flow, and thus the moving velocity of piston rod or hydraulic motor shaft can be regulated by change of flow cross section on the flow control valve or by change of the set pressure drop on the pressure compensator with the adjusting screw.

2-way pressure compensator for meter-in connection (models A, B, C)

Meter-in compensator is connected between the pump and flow control valve in the circuit. This connection can be used in the case of positive acting load on the actuator, it means in the opposite direction to the moving. The model C is equipped with an integrated load shuttle valve for pressure sensing in both actuator pipelines depending of moving direction.

2-way pressure compensator for meter-out connection (models D, E, F)

Meter-out compensator is connected between the flow control valve and actuator in one or both pipelines of actuator. This connection must be used in the case of negative acting load on the actuator, it means in the same direction to the moving, e.g. et lowering the of load. The pressure drop is stabilized in the flow direction A → T and B → T. In the opposite flow direction (to the actuator) the fluid flows freely through the opened integrated bypass check valve.

Regulated flow related to input pressure

TV2-102/MC Meter-in compensator

TV2-102/MD Meter-out 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**
- **SHUTTLE VALVE**
- **PROPORTIONAL DIRECTIONAL VALVE**
- **PRESSURE COMPENSATOR**

**Meter-out compensator**
- **PRESSURE COMPENSATOR**
- **PROPORTIONAL DIRECTIONAL VALVE**

**Functional Symbols**

**Ordering Code**

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

- **Nominal size 10**
  ISO 4401-05-04-0-05, DIN 24340 (CETOP 05)

2-Way pressure compensator

- **Sandwich plate**
- **Model**
  - Meter-in compensator in channel A
  - Meter-in compensator in channel B
  - Meter-in compensator in channel A and B
  - Meter-out compensator in channel A and B
  - Meter-out compensator in channel A
  - Meter-out compensator in channel B

**Surface treatment**

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

- **Seals**
  - NBR
  - FPM (Viton)

- **Adjustment option**
  - fixed setting, non adjustable
  - allen key (hex. 5), without protective cap
  - hand knob, plastic

- **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

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**Dimensions** in millimeters (inches)

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

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**Ordering Code**

TV2-102/M

- No designation
  - Model: A
  - A
  - B
  - C
  - D
  - E
  - F

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

- Seals
  - NBR
  - FPM (Viton)

- Adjustment option
  - Fixed setting, non adjustable
  - Allen key (hex. 5), without protective cap
  - Hand knob, plastic

- Control pressure differential
  - 4 - 12 bar (58 - 174 PSI), 10 bar (145 PSI) "C" Model
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**Application Example**

 Meter-in compensator

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- **PRESSURE COMPENSATOR**

 Meter-out compensator

- **PRESSURE COMPENSATOR**
- **PROPORTIONAL DIRECTIONAL VALVE**

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