

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

TV2-043/M

Size 04 (D02) • Q_{max} 20 l/min (4 GPM) • p_{max} 320 bar (4600 PSI)



Technical Features

- › 3-way pressure compensator, spool-type, built in a modular block for vertical grouping with mounting interface acc. to ISO 4401 (size 04), DIN 24340 (CETOP 02)
- › High flow capacity
- › 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
- › Pressure sensing in the both pipelines of actuator with the help of integrated load shuttle valve (model C)
- › 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 5 to 40 bar (72.5 – 580 PSI)
- › 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 3-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 releasing excess flow back to the tank. In the basic position the compensator is closed. 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. The three-way pressure compensator is connected parallel to the flow control valve. It maintains a constant pressure drop on the valve by dividing the flow from the pump. When the actuator is stopped, the pressure compensator opens and allows full fluid flow from the pump to the tank at low pressure losses. It takes over the function of unloading valve and protects the circuit against overheating. The three-way pressure compensator is very often used for system pressure regulation depending of the load (LS-regulation) in the circuits with a constant displacement pump.

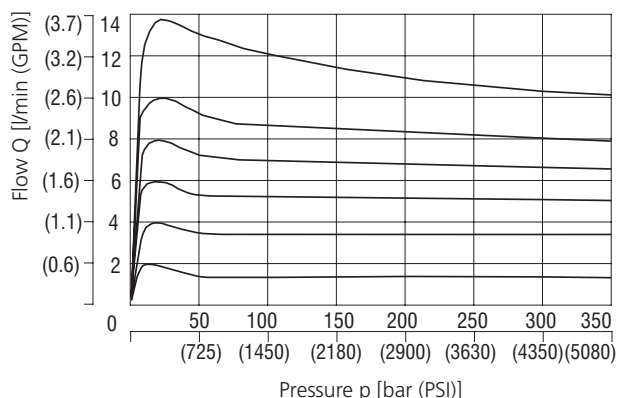
Technical Data

Valve size	04 (D02)	
Max. operating pressure	bar (PSI)	320 (4640)
Max. flow	l/min (GPM)	20 (4.2)
Control pressure differential	bar (PSI)	5 ... 40 (72.5 ... 580)
Fluid temperature range (NBR)	°C (°F)	-30 ... +100 (-22 ... +212)
Fluid temperature range (FPM)	°C (°F)	-20 ... +120 (-4 ... +248)
Weight (All models)	kg (lbs)	0.6 (1.32)
	Data Sheet	Type
General information	GI_0060	Products and operating conditions
Mounting interface	SMT_0019	Size 04
Spare parts	SP_8010	

Characteristics measured at $v = 32 \text{ mm}^2/\text{s}$ (156 SUS)

Regulated flow related to input pressure

TV2-043/MC Meter-in compensator

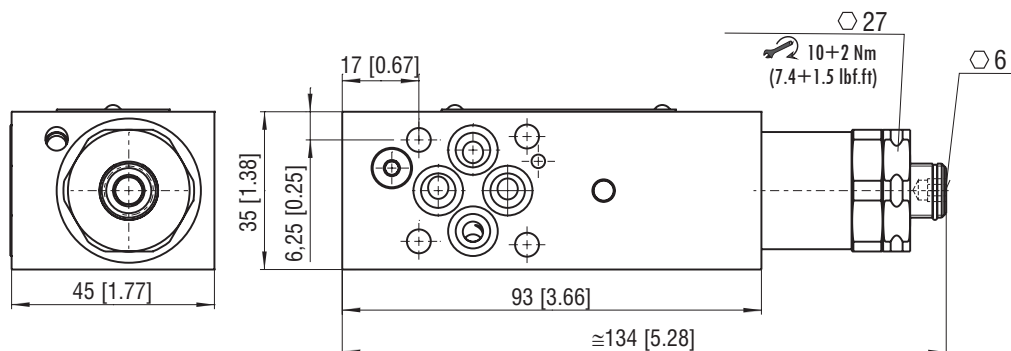


The characteristic of the pressure compensator corresponds to the flow rate of a PRM2-043Z11/12 proportional directional valve.

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

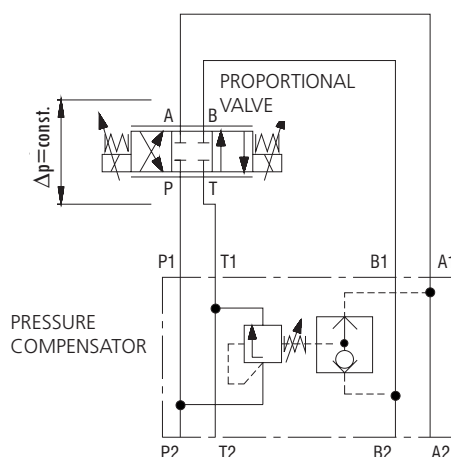
Dimensions in millimeters (inches)

TV2-043/MA (B, C) - Meter-in compensator



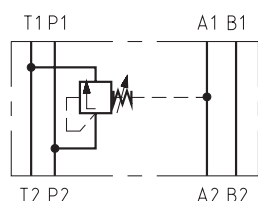
Application Example

Meter-in compensator

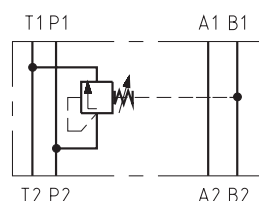


Functional Symbols

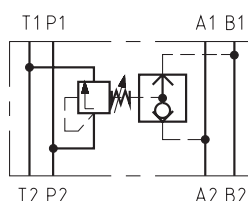
A



B



C



- ① valve side
 ② subplate or manifold side

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**

Nominal size 04
 ISO 4401-02-01-0-05, DIN 24340 (CETOP 02)

3-Way pressure compensator

Sandwich plate

Model

Meter-in compensator in port A
 Meter-in compensator in port B
 Meter-in compensator in port A and B

Control pressure differential
 5 - 40 bar (72.5 - 580 PSI)

TV2-043/M

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

Seals
No designation NBR
V FPM (Viton)

Adjustment option
S allen head (hex.6), without protective cap