

Product Data Sheet

SD 4100-2E04

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Damcos® VPI total programme

VPI - Valve Position Indicator



General description

The Volumetric Position Indicator type VPI is designed to locally and remotely indicate the position of hydraulically operated Actuators.

The VPI can be placed with the directional valve on a common manifold remote from the Actuator, thus avoiding cables and direct mounted installations in the field and the costs involved. In this way the problems are overcome as to detecting the valve position, when the Actuator is submerged and/or installed in Hazardous Area.

The VPI continuously indicates the position of the valve by measuring the actual quantity of oil flowing to or from its Actuator.

The VPI is preset to match the specific Actuator displacement. The rendered indication is proportional to the displaced oil and thus to the actual actuator position.

The total VPI programme includes pressure and temperature compensation, and the programme is designed for solving indication purposes in any environment. The VPI programme is designed for use with standard CETOP-3 components.

When using the VPI there are some simple rules regarding the valve control, which must be followed in order to obtain the optimal position indication. For further information please contact Emerson Process Management, MTM.

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Technical specifications

Max. working pressure:	135 bar ~ 1958 lbf/in ²
Test pressure:	225 bar ~ 2973 lbf/in ²
Burst pressure:	> 525 bar ~ 7615 lbf/in ²
Temperature range:	-20°C to 80°C ~ 4°F to 176°F
Viscosity range:	15-200cSt
Filtration requirement:	25 µm nominal
Hydraulic medium:	Acid-free hydraulic oil
Max. flow:	100 cm ³ /sec ~ 6 l/min
Min. flow:	3 cm ³ /sec ~ 0.2 l/min
Connection face:	DIN 24340 Cetop 3/VPI connection

Total programme



Basically the valve position indicator is a precision gear motor with a display indicating the flow of a certain oil volume through the unit. The gear wheels rotate according to flow and flow direction of the fluid. A built-in mini gear box with a gear ratio chosen

to suit the actuator displacement in question transfers the gear motor movement to the indicator shaft. There is no mechanical connection between the gear motor and the indicator shaft. The rotary movement of the hydraulic gear wheels is transferred to the indicator shaft by a magnetic clutch.

TC-Block:

Temperature compensating block for indication of end positions (VPI-V and -E). The TC-Block allows the compression/decompression of the oil in the system caused by major temperature and pressure variations,

without influencing the indicator and ensures fixed electrical on/off remote ind. signal. The TC-Block is provided with CETOP-3 connection for mounting of pilot valve (4/2 way).

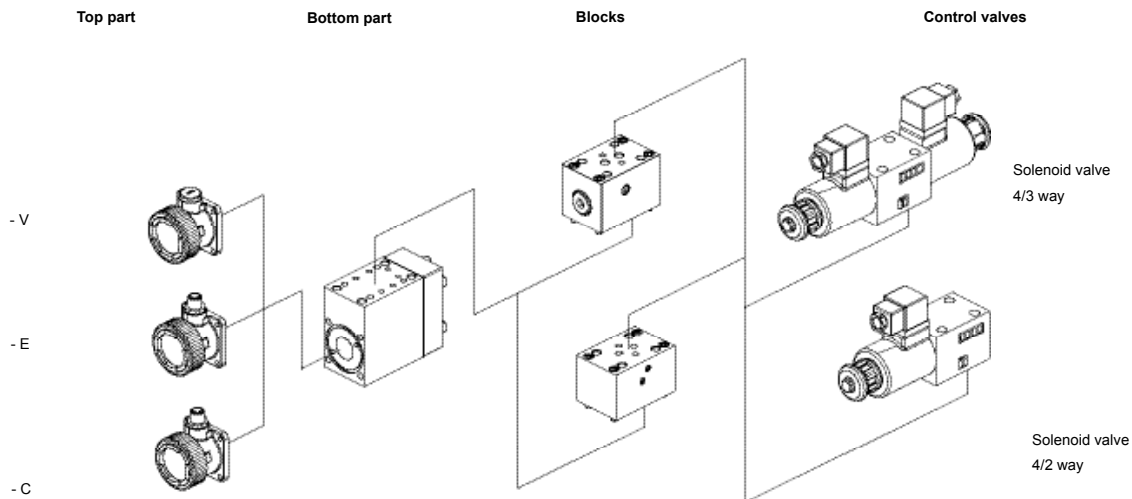
PTC-Block:

Pressure and temperature compensating block primarily for analog indication (VPI-C). The PTC-Block allows the compression/decompression of the oil in the system caused by major temperature and pressure variations, without influencing the indicator, and

ensures precise intermediate positions, as the positioning is always made at constant pressure (5 bar). The PTC-Block is provided with CETOP-3 connection for mounting of solenoid pilot valve (4/3 way spring center).

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Commonly used combinations



The VPI always consists of a VPI top part, a VPI bottom part and a VPI compensator block (TC or PTC).

Commonly used combinations:

1. VPI-V-TC ~ Visual indication.
2. VPI-E-TC ~ Electrical/visual on/off indication.
3. VPI-C-PTC ~ Electrical/visual analog indication.

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