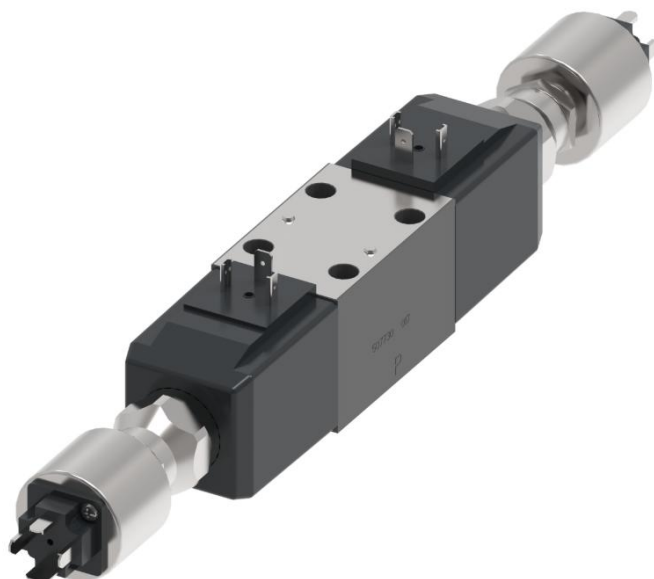


EN ISO 13849 Data Sheet

Direction Control Valve Size 03 with Spool Position Monitoring Function

DG4V-3-**-S9**-**-60

The DG4V-3-**-60 is a spool type direction control, single stage, solenoid operated, 3-position, 4-way hydraulic valve. The mounting interface is ISO-4401-03 (CETOP-3). DG4V-3-**-S9**-**-60 is DG4V-3 valve with spool position monitor switch, used in working conditions requiring real-time monitoring of spool position with strict reliability requirements for solenoid directional valves, and are widely used in industries with high requirements of safety, such as machine tools, hydropower, metallurgy, mining, ships and ports. These valves are equipped with non-contact electromagnetic induction proximity switches. After the spool reaches the monitoring position, the switch signal is triggered, and the spool status is fed back to the PLC for processing, thereby enhancing the safety level of the equipment. Position switch with two connector options are offered, DIN 43650 & M12, which are selectable through model code.



Features

- Part of the DG4V**- Direction control valve family.
- No mechanical contact for position switch, ensuring long service life.
- High precision, good repeatability.
- IP65 (DIN) / IP67(M12) rated position switch.
- Position switch with polarity protection, short circuit protection, overload protection and surge suppression.

Applications

- Industrial

Comprehensive technical literature is
online at www.danfoss.com



Parameter	Value
Maximum operating pressure	350 bar [5076 psi]
Max oil flow (at 10 bar ΔP across valve)	80 l/min [21.13 US gal/min]
Oil temperature	-20°C to 70°C [-4° to 158°F]
Viscosity	500 to 13 cSt
Cleanliness acc. ISO 4406	20/18/15
Sensor Parameter	Value
Supply Voltage	24 V $\pm$ 20 % DC
Voltage drop	$\leq$ 2.5 V
No-load current	$\leq$ 40 mA
Load capacity	$\leq$ 400 mA
Allowable residual voltage	$\leq$ 1 V
Repeatability precision (at +25°C)	$\leq$ 0.02 mm
Hysteresis loop (at +25°C)	$\leq$ 0.05 mm
Thermal drift (0 to +80°C)	$\leq \pm$ 0.15 mm

Note

The valve has painted body. The O-rings are Viton/Nitrile. This offers limited protection to extreme environmental conditions, e.g. high humidity, temperature and pollution.

Silting may occur when left in the actuated position for a long period of time. It is highly recommended that the valves are periodically cycled to limit these effects.

The products must be used in accordance with the installation instructions and operating conditions published in the relevant product user guide.

This data sheet contains supplementary performance data that is not contained in the valve product data sheet. It has been produced specifically to support the requirement of the harmonized standard EN ISO 13849.

Additionally, for products intended to be sold in the European Economic Area:

“Safety Devices” or other safety functions mentioned in any product literature are not necessarily “Safety Components” as defined by the Machinery Directive 2006/42/EC, unless otherwise stated together with the CE mark and specific reference to said directive.

Determination of MTTFd

Evaluation of Mean Time to Dangerous Failure (MTTFd) for DG4V-3-**-S9-**-60 valve assembly is based on part count method and for each component based on “Good Engineering Practice Method” using annexure for assessments as per ISO 13849-2:2012.

Reliability data

Model code	MTTFd acc. ISO 13849:2015	
DG4V-3-*-M-S9D/M0/1/3/4/5/6*-U-*7-60-(EN***) (Valves with position switch only on one side)	Power removed (Switch off)	150 years
	Power applied	86.1 years
DG4V-3-*C-M-S9D/M2-U-*7-60-(EN***) (Valves with position switch on both sides)	Power removed (Switch off)	150 years
	Power applied	60.3 years

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