

Parker Product Datasheet



Direct operated DFplus control valves D1FP in NG06 (CETOP 03) and D3FP in NG10 (CETOP 05) meet highest requirements in terms of dynamics combined with high flow. Optionally with IO-Link Class B or EtherCAT interface.

PART NUMBER: D3FPE50YA9NB00
SPOOL CODE: E50Y
SIGNAL OUTPUT: ± 10 V
SEAL MATERIAL: NBR
SPOOL POSITION: P to A
CONNECTION TYPE: 6 + PE
SENSOR TYPE: omit
PORT CONNECTION: NG10 / CETOP 05
SIGNAL INPUT: ± 10 V
MARKING: Standard
FLOW RATE: 100 L/min

PRODUCT OVERVIEW

The direct operated control valves D1FP and D3FP show extremely high dynamics combined with maximum flow. It is the preferred choice for highest accuracy in positioning of hydraulic axis and controlling of pressure and velocity.

Driven by the patented VCD actuator, the D1FP / D3FP reach the frequency response of real servo valves. At power-down the spool moves in a defined position. All common input signals are available. All valves have an IO-Link Class A interface as standard.

Version with IO-Link Class B interface

D1FP and F3FP with IO-Link class B interface meets the requirements for a modern and cost-effective interface that enables power supply and digital actuation and/or communications via an M12 interface.

Version with EtherCAT interface

The D1FP / D3FP with EtherCAT interface fulfills the requirements of modern communication between valve and main control. Due to high data transmission speed and short cycle times, the high dynamics of the DFplus valves can be also utilized within the fieldbus system.

Version with freely configurable secondary control loop

DFplus valves D1FP*D and D3FP*D with a freely configurable secondary control loop provide highly dynamic control without the need for an additional external controller. Using integrated electronics in combination with an analog sensor, the valves ensure precise pressure or position control. Actuation and communication can be performed either via analog signals or digitally through an IO-Link Class A or Class B interface.

Markets:

- Industrial
- Machine tools
- Molding
- Marine (non-military)

Features/benefits:

- Real servovalve dynamics (-3 dB / 350 Hz at ± 5 % input signal) - ideal for demanding applications, ensures optimized cycle times
- Very good repeatability - improved process and product accuracy
- Robust valve design - minimized failure
- Digital electronics - can be easily adapted to the application, resulting in flexible use
- Short delivery time - no storage necessary
- Defined spool positioning at power-down - optional P-A/B-T or P-B/A-T or center position (for overlapped spools)
- IO-Link interface for parametrizing
- RGB diode for optical status check
- NFC interface
- With EtherCAT interface upon request - high data speeds, short cycle times
- Optionally with freely configurable supervising control circuit (D1FP*D, D3FP*D)

Applications:

- General presses

- Machine tool
- Blow molding
- Marine Diesel fuel injection/exhaust valve control

Additional information EtherCAT version

The valve is actuated and monitored by the EtherCAT interface. Actual value (spool position), temperature, operating hours and different error messages are available as diagnostic signals. The valve parameters are factory set and can be adapted with the Parker ProPxD software via the parametrizing interface.

In addition to the fieldbus communication, the valves provide the range of functions of the standard version including analogue command signal and diagnostic spare stroke. Thus they can be operated independent of the fieldbus control, particularly during commissioning and maintenance.

Note: The version with explosion protection is no longer available.

TECH SPECIFICATIONS

MOUNTING TYPE	Subplate
FOR FLUID TYPE	Hydraulic Oil according to DIN 51524 ... 535
FUNCTION	Proportional
SEAL MATERIAL	NBR
VIBRATION RESISTANCE	20 (RMS) Random Noise 20...2000 Hz Acc. IEC 60068-2-64
FUNCTION	3-Way
VIBRATION RESISTANCE	15 Shock Acc. IEC 60068-2-27
PRODUCT SERIES	Proportional DC Valve
DIVISION	Hydraulic Valve Systems Division Europe
WEIGHT	6.5 kg
MOUNTING STYLE	ISO 4401
POWER SUPPLY VOLTAGE	Surge Free V % Eff.
FILTER EFFICIENCY RATING	ISO 4406 18/16/13

MOUNTING POSITION	Unrestricted
ELECTRONICS TYPE	Onboard
MOUNTING STYLE	NFPA
POWER SUPPLY VOLTAGE	Electric Shut-off at < 19 V Nominal (tolerance range 22 ... 30)
MAXIMUM OPERATING PRESSURE	350 bar
LEAK RATE	< 400 ml/min
MAXIMUM FLOW RATE	150 L/min
MOUNTING STYLE	CETOP RP121
POWER SUPPLY VOLTAGE	Ripple < 5 V % Eff.
MINIMUM AMBIENT TEMPERATURE	-20 °C
MAXIMUM KINEMATIC VISCOSITY	400 cSt
INGRESS PROTECTION RATING	IP65 in accordance with EN 60529
BRAND	Parker
VIBRATION RESISTANCE	10 Sinus 5...2000 Hz Acc. IEC 60068-2-6
MEDIA	Hydraulic Oil
MAXIMUM FLUID TEMPERATURE	60 °C
FLOW RATE	100 L/min
RESPONSE TIME	< 6 ms
VALVE TYPE	Proportional DC Valve
MAXIMUM AMBIENT TEMPERATURE	60 °C
MINIMUM FLUID TEMPERATURE	-25 °C
BODY MATERIAL	Cast Iron
TECHNOLOGY	Hydraulics
PORT CONNECTION	NG10 / CETOP 05
DIVISION	Hydraulic Valve Systems Division Europe

PRESSURE DIFFERENTIAL	35 bar
HYSTERESIS	< 0.05 %
OPERATION TYPE	Direct
MOUNTING STYLE	DIN 24340
APPLICATION	Industrial Hydraulic
POWER SUPPLY VOLTAGE	24 V Nominal (tolerance range 22 ... 30)
MINIMUM KINEMATIC VISCOSITY	20 cSt
ACTUATION TYPE	VCD®-actuator