

# 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:** D1FPE50HB9NB00  
**SEAL MATERIAL:** NBR  
**MARKING:** Standard  
**PORT CONNECTION:** NG06 / CETOP 03  
**SIGNAL INPUT:**  $\pm 10$  V  
**SPOOL POSITION:** P to B  
**SENSOR TYPE:** omit  
**CONNECTION TYPE:** 6 + PE  
**FLOW RATE:** 25 L/min  
**SIGNAL OUTPUT:**  $\pm 10$  V  
**SPOOL CODE:** E50H

## 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  $\pm 5$  % 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

|                                    |                                              |
|------------------------------------|----------------------------------------------|
| <b>INGRESS PROTECTION RATING</b>   | IP65 in accordance with EN 60529             |
| <b>LEAK RATE</b>                   | < 400 ml/min                                 |
| <b>MINIMUM FLUID TEMPERATURE</b>   | -25 °C                                       |
| <b>MAXIMUM KINEMATIC VISCOSITY</b> | 400 cSt                                      |
| <b>MOUNTING POSITION</b>           | Unrestricted                                 |
| <b>FUNCTION</b>                    | 3-Way                                        |
| <b>FOR FLUID TYPE</b>              | Hydraulic Oil according to DIN 51524 ... 535 |
| <b>FLOW RATE</b>                   | 25 L/min                                     |
| <b>POWER SUPPLY VOLTAGE</b>        | 24 V Nominal (tolerance range 22 ... 30)     |
| <b>FUNCTION</b>                    | Proportional                                 |
| <b>HYSTERESIS</b>                  | < 0.05 %                                     |
| <b>DIVISION</b>                    | Hydraulic Valve Systems Division Europe      |
| <b>FILTER EFFICIENCY RATING</b>    | ISO 4406 18/16/13                            |

|                                    |                                                                 |
|------------------------------------|-----------------------------------------------------------------|
| <b>VIBRATION RESISTANCE</b>        | 10 Sinus 5...2000 Hz Acc. IEC 60068-2-6                         |
| <b>DIVISION</b>                    | Hydraulic Valve Systems Division Europe                         |
| <b>TECHNOLOGY</b>                  | Hydraulics                                                      |
| <b>VIBRATION RESISTANCE</b>        | 20 (RMS) Random Noise 20...2000 Hz Acc. IEC 60068-2-64          |
| <b>VALVE TYPE</b>                  | Proportional DC Valve                                           |
| <b>POWER SUPPLY VOLTAGE</b>        | Electric Shut-off at < 19 V Nominal (tolerance range 22 ... 30) |
| <b>PORT CONNECTION</b>             | NG06 / CETOP 03                                                 |
| <b>MEDIA</b>                       | Hydraulic Oil                                                   |
| <b>MOUNTING STYLE</b>              | NFPA                                                            |
| <b>MOUNTING STYLE</b>              | DIN 24340                                                       |
| <b>OPERATION TYPE</b>              | Direct                                                          |
| <b>MAXIMUM AMBIENT TEMPERATURE</b> | 60 °C                                                           |
| <b>APPLICATION</b>                 | Industrial Hydraulic                                            |
| <b>PRODUCT SERIES</b>              | Proportional DC Valve                                           |
| <b>MOUNTING STYLE</b>              | CETOP RP121                                                     |
| <b>POWER SUPPLY VOLTAGE</b>        | Surge Free V % Eff.                                             |
| <b>SEAL MATERIAL</b>               | NBR                                                             |
| <b>BODY MATERIAL</b>               | Cast Iron                                                       |
| <b>BRAND</b>                       | Parker                                                          |
| <b>VIBRATION RESISTANCE</b>        | 15 Shock Acc. IEC 60068-2-27                                    |
| <b>MINIMUM AMBIENT TEMPERATURE</b> | -20 °C                                                          |
| <b>WEIGHT</b>                      | 3.6 kg                                                          |
| <b>POWER SUPPLY VOLTAGE</b>        | Ripple < 5 V % Eff.                                             |
| <b>MOUNTING STYLE</b>              | ISO 4401                                                        |

|                                    |               |
|------------------------------------|---------------|
| <b>MINIMUM KINEMATIC VISCOSITY</b> | 20 cSt        |
| <b>RESPONSE TIME</b>               | < 3.5 ms      |
| <b>ACTUATION TYPE</b>              | VCD®-actuator |
| <b>MAXIMUM FLUID TEMPERATURE</b>   | 60 °C         |
| <b>PRESSURE DIFFERENTIAL</b>       | 35 bar        |
| <b>ELECTRONICS TYPE</b>            | Onboard       |
| <b>MAXIMUM OPERATING PRESSURE</b>  | 350 bar       |
| <b>MOUNTING TYPE</b>               | Subplate      |
| <b>MAXIMUM FLOW RATE</b>           | 90 L/min      |