

The proportional directional valves D1FB (NG06) are available with and without onboard electronics (OBE).

**D1FB OBE:**

The digital onboard electronics is situated in a robust metal housing, which allows the usage under rough environmental conditions.

The nominal values are factory set. The cable connection to a serial RS232 interface is available as accessory.

**D1FB for external electronics:**

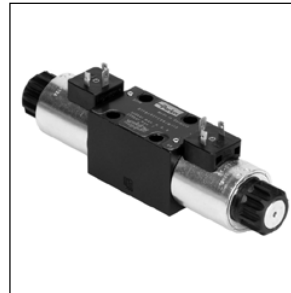
The parameters can be saved, changed and duplicated in combination with the digital power amplifier PWD00A-400.

The valve parameters can be edited with the common ProPxD software for both versions.

The D1FB valves can be ordered with spool/sleeve design (D1FB\*0) for maximum precision as well as spool/body design (D1FB\*3) for high nominal flow - see functional limit curves for maximum flow capability.

Valves with explosion proof solenoids Ex e mb II see catalogue HY11-3343.

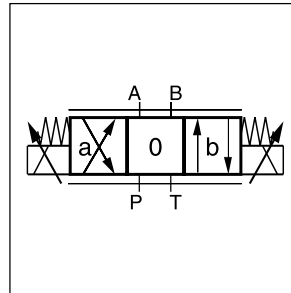
Download: [www.parker.com/euro\\_hcd](http://www.parker.com/euro_hcd) - see "Literature"



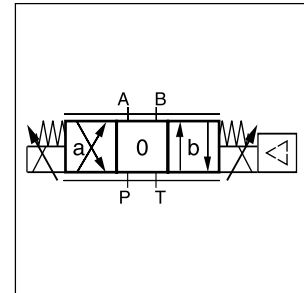
D1FB



D1FB OBE



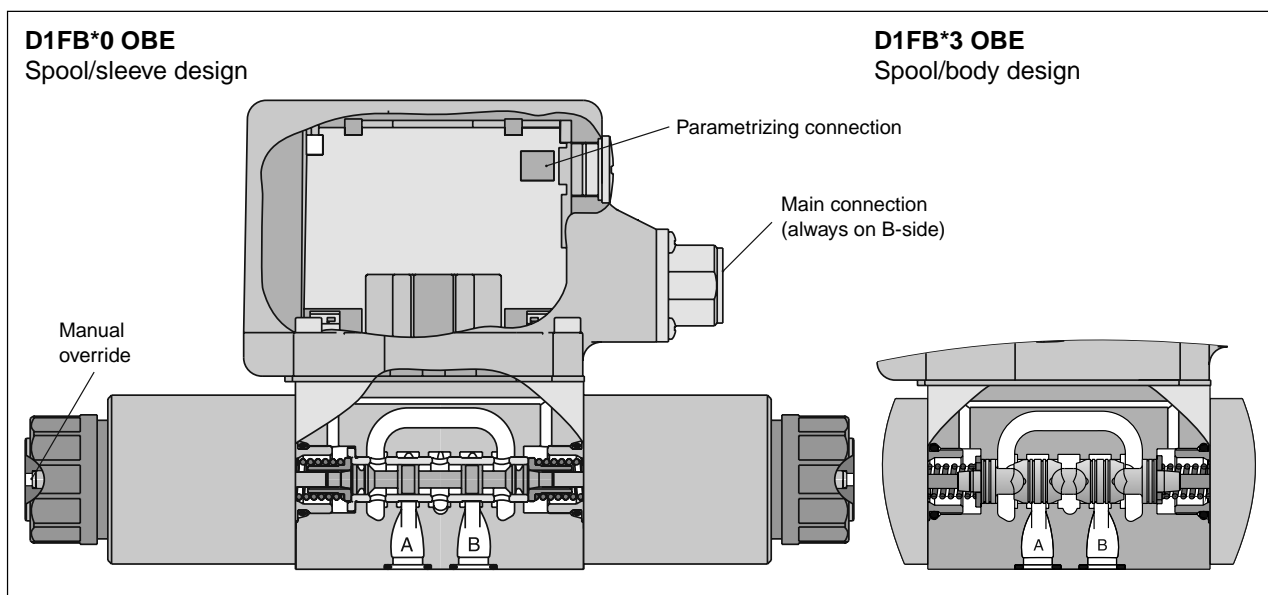
D1FB



D1FB OBE

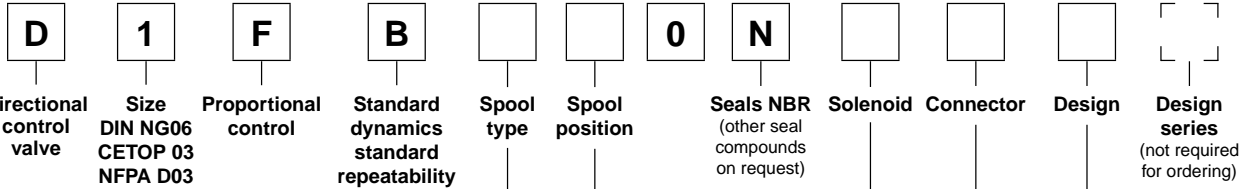
**3**
**Features**

- Spool/sleeve and spool/body
- 3 command options for D1FB OBE:  
+/- 10 V, 4...20 mA, +/- 20 mA
- High repeatability from valve to valve
- Low hysteresis
- Manual override
- Digital onboard electronics



D1FB UK.indd 21.02.2019

**D1FB**



**3**

**D1FB\*0: Spool/sleeve design**

| Code    | Spool type          | Flow [l/min] at Δp 5 bar per metering edge |
|---------|---------------------|--------------------------------------------|
| Overlap |                     |                                            |
| E01C    |                     | 6                                          |
| E01F    |                     | 12                                         |
| E01H    |                     | 20                                         |
| E02C    |                     | 6                                          |
| E02F    |                     | 12                                         |
| E02H    |                     | 20                                         |
| E03C    |                     | 6                                          |
| E03F    |                     | 12                                         |
| E03H    |                     | 20                                         |
| B31F    | $Q_B = Q_A / 2$<br> | 12 / 6                                     |
| B31H    |                     | 20 / 10                                    |
| B32F    | $Q_B = Q_A / 2$<br> | 12 / 6                                     |
| B32H    |                     | 20 / 10                                    |

**D1FB\*3: Spool/body design**

| Code    | Spool type          | Flow [l/min] at Δp 5 bar per metering edge |
|---------|---------------------|--------------------------------------------|
| Overlap |                     |                                            |
| E01F    |                     | 10                                         |
| E01H    |                     | 20                                         |
| E01K    |                     | 30                                         |
| E02F    |                     | 10                                         |
| E02H    |                     | 20                                         |
| E02K    |                     | 30                                         |
| B31F    | $Q_B = Q_A / 2$<br> | 10 / 5                                     |
| B31H    |                     | 20 / 10                                    |
| B31K    |                     | 30 / 15                                    |
| B32F    | $Q_B = Q_A / 2$<br> | 10 / 5                                     |
| B32H    |                     | 20 / 10                                    |
| B32K    |                     | 30 / 15                                    |

| Code | Design              |
|------|---------------------|
| 0    | Spool/sleeve design |
| 3    | Spool/body design   |

| Code    | Connector                      |
|---------|--------------------------------|
| W 1)    | Connector as per EN 175301-803 |
| J 1) 2) | Connector DT04-2P "Deutsch"    |

**D1FB\*0: Spool/sleeve design**

| Code | Solenoid     |
|------|--------------|
| M    | 9 V / 2.7 A  |
| J    | 24 V / 0.8 A |

**D1FB\*3: Spool/body design**

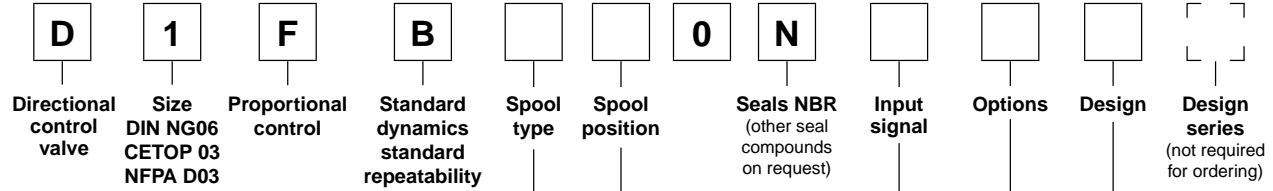
| Code | Solenoid     |
|------|--------------|
| K    | 12 V / 2.2 A |
| J    | 24 V / 1.1 A |

| Code | Design |
|------|--------|
| C    |        |
| E    |        |
| K    |        |

Short delivery time for all variations

1) Please order connector separately, see chapter 3 accessories.  
 2) Not for spool/sleeve design.

**D1FB OBE (with onboard electronics)**



| D1FB*0: Spool/sleeve design |                     |                                            |
|-----------------------------|---------------------|--------------------------------------------|
| Code                        | Spool type          | Flow [l/min] at Δp 5 bar per metering edge |
| Overlap                     |                     |                                            |
| E01C<br>E01F<br>E01H        |                     | 6<br>12<br>20                              |
| E02C<br>E02F<br>E02H        |                     | 6<br>12<br>20                              |
| E03C<br>E03F<br>E03H        |                     | 6<br>12<br>20                              |
| B31F<br>B31H                | $Q_B = Q_A / 2$<br> | 12 / 6<br>20 / 10                          |
| B32F<br>B32H                | $Q_B = Q_A / 2$<br> | 12 / 6<br>20 / 10                          |

| D1FB*3: Spool/body design |                     |                                            |
|---------------------------|---------------------|--------------------------------------------|
| Code                      | Spool type          | Flow [l/min] at Δp 5 bar per metering edge |
| Overlap                   |                     |                                            |
| E01F<br>E01H<br>E01K      |                     | 10<br>20<br>30                             |
| E02F<br>E02H<br>E02K      |                     | 10<br>20<br>30                             |
| B31F<br>B31H<br>B31K      | $Q_B = Q_A / 2$<br> | 10 / 5<br>20 / 10<br>30 / 15               |
| B32F<br>B32H<br>B32K      | $Q_B = Q_A / 2$<br> | 10 / 5<br>20 / 10<br>30 / 15               |

| Code | Design              |
|------|---------------------|
| 0    | Spool/sleeve design |
| 3    | Spool/body design   |

**3**

| Code             | Input signal <sup>2)</sup> | Function                            | Port    | Options                                |
|------------------|----------------------------|-------------------------------------|---------|----------------------------------------|
| F0               | 0...+/-10 V                | 0...+10 V > P-A                     | 6 + PE  | Potentiometer supply                   |
| G0               | 0...+/-20 mA               | 0...+20 mA > P-A                    | 6 + PE  | —                                      |
| S0               | 4...20 mA                  | 12...20 mA > P-A                    | 6 + PE  | —                                      |
| W5 <sup>1)</sup> | 0...+/-10 V<br>4...20 mA   | 0...+10 V > P-A<br>12...20 mA > P-A | 11 + PE | Command channel & potentiometer supply |

| Code | Design |
|------|--------|
| C    |        |
| E    |        |
| K    |        |

Please order connector separately, see chapter 3 accessories.  
 Parametrizing cable OBE → RS232: Item no. 40982923

Short delivery time  
 for all variations

<sup>1)</sup> Factory set ± 10 V on delivery.  
<sup>2)</sup> Single solenoid always 0...+10 V respectively 4...20 mA.

**3**

| General                                                   |                                                                                                                                                                                   |                                                                                      |                     |
|-----------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|---------------------|
| Design                                                    | Direct operated proportional DC valve                                                                                                                                             |                                                                                      |                     |
| Actuation                                                 | Proportional solenoid                                                                                                                                                             |                                                                                      |                     |
| Size                                                      | NG06/CETOP 03/NFPA D03                                                                                                                                                            |                                                                                      |                     |
| Mounting interface                                        | DIN 24340 / ISO 4401 / CETOP RP121 / NFPA                                                                                                                                         |                                                                                      |                     |
| Mounting position                                         | unrestricted                                                                                                                                                                      |                                                                                      |                     |
| Ambient temperature                                       | [°C]                                                                                                                                                                              | -20...+60                                                                            |                     |
| MTTF <sub>D</sub> value <sup>1)</sup>                     | [years]                                                                                                                                                                           | 150                                                                                  |                     |
| Weight (OBE)                                              | [kg]                                                                                                                                                                              | 2.2 (2.9)                                                                            |                     |
| Hydraulic                                                 |                                                                                                                                                                                   |                                                                                      |                     |
| Max. operating pressure                                   | [bar]                                                                                                                                                                             | Ports P, A, B 350; Port T 210                                                        |                     |
| Max. pressure drop PABT / PBAT                            | [bar]                                                                                                                                                                             | 350                                                                                  |                     |
| Fluid                                                     | Hydraulic oil according to DIN 51524 ... 535, other on request                                                                                                                    |                                                                                      |                     |
| Fluid temperature                                         | [°C]                                                                                                                                                                              | -25...+60                                                                            |                     |
| Viscosity                                                 | permitted                                                                                                                                                                         | [cSt] / [mm <sup>2</sup> /s]                                                         | 20...400            |
|                                                           | recommended                                                                                                                                                                       | [cSt] / [mm <sup>2</sup> /s]                                                         | 30...80             |
| Filtration                                                | ISO 4406; 18/16/13                                                                                                                                                                |                                                                                      |                     |
| Nominal flow at Δp = 5 bar per control edge <sup>2)</sup> | [l/min]                                                                                                                                                                           | D1FB*0 (Spool/sleeve)                                                                | D1FB*3 (Spool/body) |
|                                                           |                                                                                                                                                                                   | 6/12/20                                                                              | 10/20/30            |
| Leakage at 100 bar                                        | [ml/min]                                                                                                                                                                          | <50                                                                                  | <60                 |
| Opening point (OBE)                                       | [%]                                                                                                                                                                               | see flow characteristics (set to 10 command signal)                                  |                     |
| Static / Dynamic                                          |                                                                                                                                                                                   |                                                                                      |                     |
| Step response at 100 % step                               | [ms]                                                                                                                                                                              | 30                                                                                   | 30                  |
| Hysteresis                                                | [%]                                                                                                                                                                               | <4                                                                                   | <6                  |
| Temperature drift solenoid current                        | [%/K]                                                                                                                                                                             | <0.02                                                                                |                     |
| Electrical characteristics                                |                                                                                                                                                                                   |                                                                                      |                     |
| Duty ratio                                                | [%]                                                                                                                                                                               | 100 ED; CAUTION: Coil temperature up to 150 °C possible                              |                     |
| Protection class                                          | Standard (as per EN 175301-803) IP65 in accordance with EN 60529 (with correctly mounted plug-in connector)<br>DT04-2P "Deutsch" IP69K (with correctly mounted plug-in connector) |                                                                                      |                     |
| Solenoid                                                  |                                                                                                                                                                                   | Code "M"                                                                             | Code "K"            |
| Supply voltage                                            | [V]                                                                                                                                                                               | 9                                                                                    | 12                  |
| Current consumption                                       | [A]                                                                                                                                                                               | 2.7                                                                                  | 2.2                 |
| Resistance                                                | [Ohm]                                                                                                                                                                             | 2.7                                                                                  | 4.4                 |
| Solenoid connection                                       | Connector as per EN 175301-803 (code W), DT04-2P "Deutsch" connector (code J). Solenoid identification as per ISO 9461.                                                           |                                                                                      |                     |
| Wiring min.                                               | [mm <sup>2</sup> ]                                                                                                                                                                | 3x1.5 (AWG 16) overall braid shield (Code W), "Deutsch" connector DP4 2-Pin (Code J) |                     |
| Wiring length max.                                        | [m]                                                                                                                                                                               | 50                                                                                   |                     |

<sup>1)</sup> If valves with onboard electronics are used in safety-related parts of control systems, in case the safety function is requested, the valve electronics voltage supply is to be switched off by a suitable switching element with sufficient reliability.

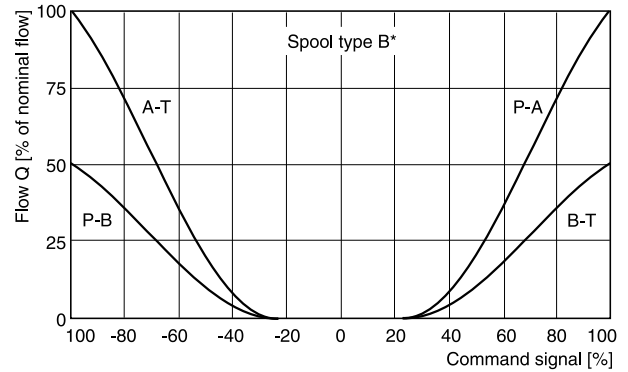
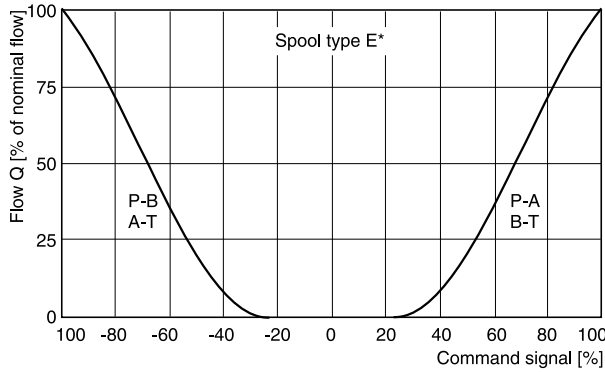
<sup>2)</sup> Flow rate for different Δp per control edge:  $Q_x = Q_{Nom.} \cdot \sqrt{\frac{\Delta p_x}{\Delta p_{Nom.}}}$

| Electrical characteristics OBE |                    |                                                                                                                                                          |
|--------------------------------|--------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------|
| Vibration resistance           | [g]                | 10 Sinus 5...2000 Hz acc. IEC 68-2-6<br>10 (RMS) Random noise 20...2000 Hz acc. IEC 68-2-36<br>15 Shock acc. IEC 68-2-27                                 |
| Duty ratio                     | [%]                | 100 ED; CAUTION: Coil temperature up to 150 °C possible                                                                                                  |
| Protection class               |                    | IP65 in accordance with EN 60529 (with correctly mounted plug-in connector)                                                                              |
| Supply voltage/ripple DC       | [V]                | 18...30, ripple < 5 % eff., surge free                                                                                                                   |
| Current consumption max.       | [A]                | 2.0                                                                                                                                                      |
| Pre fusing medium lag          | [A]                | 2.5                                                                                                                                                      |
| Input signal                   |                    |                                                                                                                                                          |
| Codes F0 & W5 voltage          | [V]                | +10...0...-10, ripple < 0.01 % eff., surge free, Ri = 100 kOhm, 0...+10 V ⇒ P -> A                                                                       |
| Codes S0 & W5 current          | [mA]               | 4...12...20, ripple < 0.01 % eff., surge free, Ri = <250 Ohm, 12...20 mA ⇒ P -> A<br>< 3.6 mA = enable off,<br>> 3.8 mA = enable on (acc. to NAMUR NE43) |
| Code G0                        | [mA]               | +20...0...-20, ripple < 0.01 % eff., surge free, Ri = <250 Ohm, 0...+20 mA ⇒ P -> A                                                                      |
| Differential input max.        |                    |                                                                                                                                                          |
| Codes F0, G0 & S0              | [V]                | 30 for terminal D and E against PE (terminal G)<br>11 for terminal D and E against 0V (terminal B)                                                       |
| Code W5                        | [V]                | 30 for terminal 4 and 5 against PE (terminal PE)<br>11 for terminal 4 and 5 against 0V (terminal 2)                                                      |
| Channel recall signal          | [V]                | 0...2.5: off / 5...30: on / Ri = 100 kOhm                                                                                                                |
| Adjustment ranges              |                    |                                                                                                                                                          |
| Min                            | [%]                | 0...50                                                                                                                                                   |
| Max                            | [%]                | 50...100                                                                                                                                                 |
| Ramp                           | [s]                | 0...32.5                                                                                                                                                 |
| Interface                      |                    | RS 232, parametrizing connection 5pole                                                                                                                   |
| EMC                            |                    | EN 61000-6-2, EN 61000-6-4                                                                                                                               |
| Central connection             |                    |                                                                                                                                                          |
| Codes F0, G0 & S0              |                    | 6 + PE acc. to EN 175201-804                                                                                                                             |
| Code W5                        |                    | 11 + PE acc. to EN 175201-804                                                                                                                            |
| Wiring min.                    |                    |                                                                                                                                                          |
| Codes F0, G0 & S0              | [mm <sup>2</sup> ] | 7 x 1.0 (AWG16) overall braid shield                                                                                                                     |
| Code W5                        | [mm <sup>2</sup> ] | 11 x 1.0 (AWG16) overall braid shield                                                                                                                    |
| Wiring length max.             |                    | 50                                                                                                                                                       |

**3**
**Flow characteristics**
**D1FB\*0 external electronics**

 at  $\Delta p = 5$  bar per metering edge

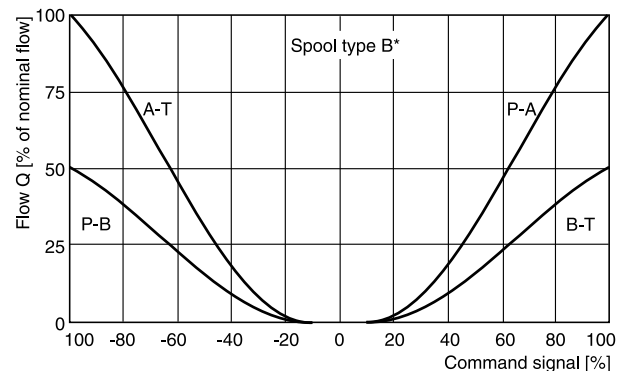
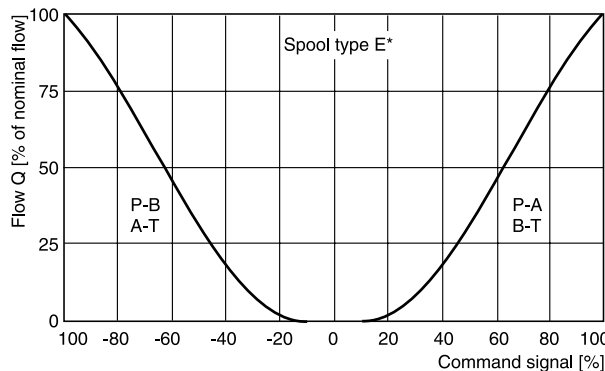
Spool type E01/02/03, B31/32


**D1FB\*0 OBE**

(set to opening point 10 %)

 at  $\Delta p = 5$  bar per metering edge

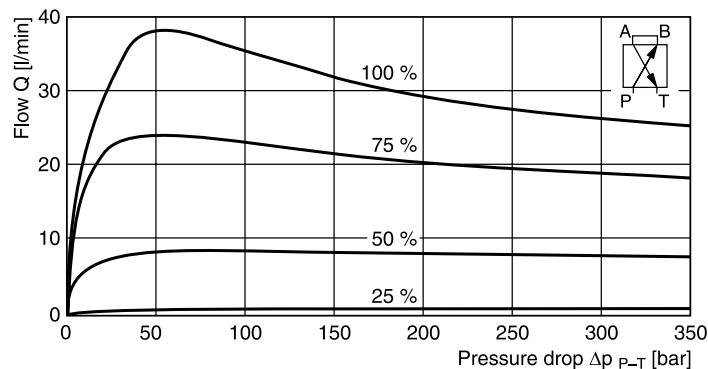
Spool type E01/02/03, B31/32


**Functional limits**

 at 25 %, 50 %, 75 % and 100 % command signal  
 (symmetric flow)

**Spool type E01H**

At asymmetric flow a reduced flow limit has to be considered.



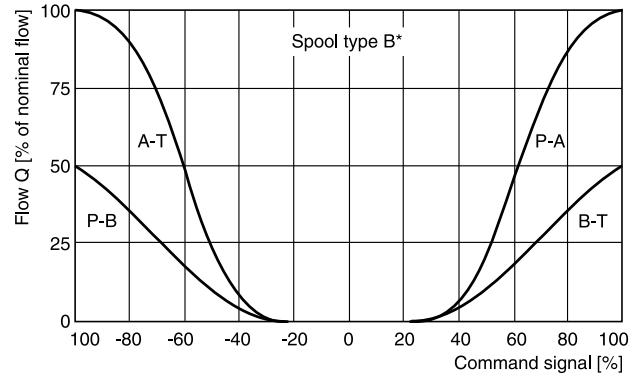
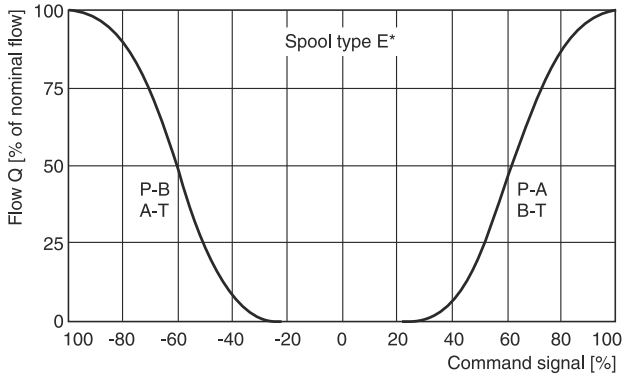
All characteristic curves measured with HLP46 at 50 °C.

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**Flow characteristics**
**D1FB\*3 external electronics**

 at  $\Delta p = 5$  bar per metering edge

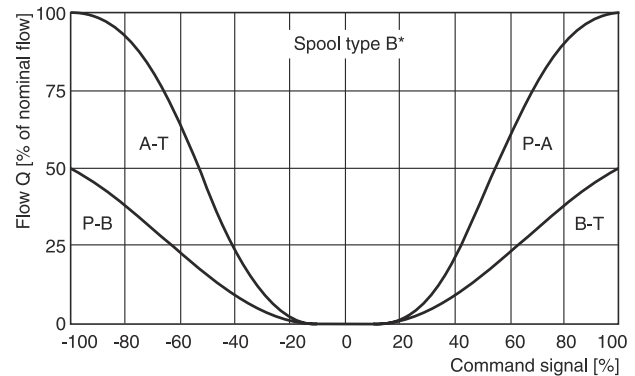
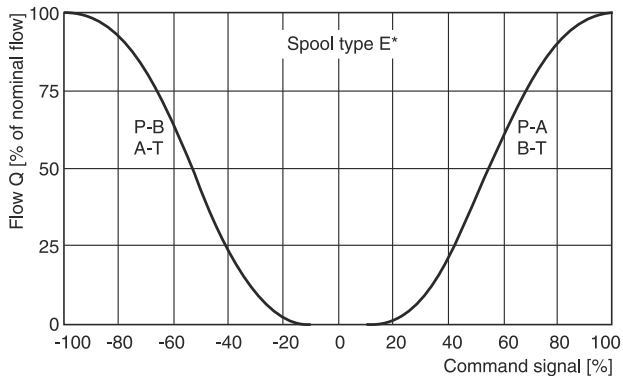
Spool type E01/02/03, B31/32


**3**
**D1FB\*3 OBE**

(set to opening point 10 %)

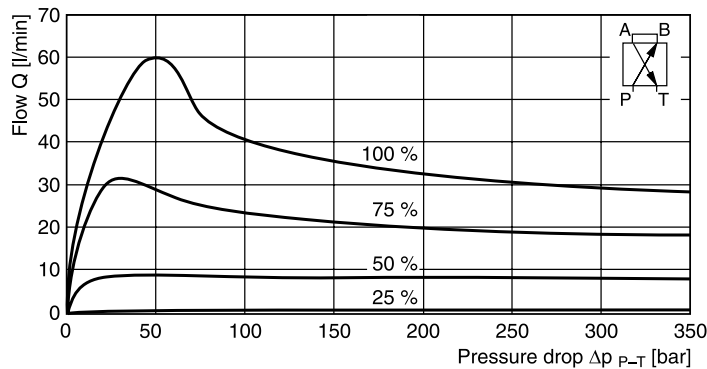
 at  $\Delta p = 5$  bar per metering edge

Spool type E01/02


**Functional limits**

 at 25 %, 50 %, 75 % and 100 % command signal  
 (symmetric flow)

At asymmetric flow a reduced flow limit has to be considered.

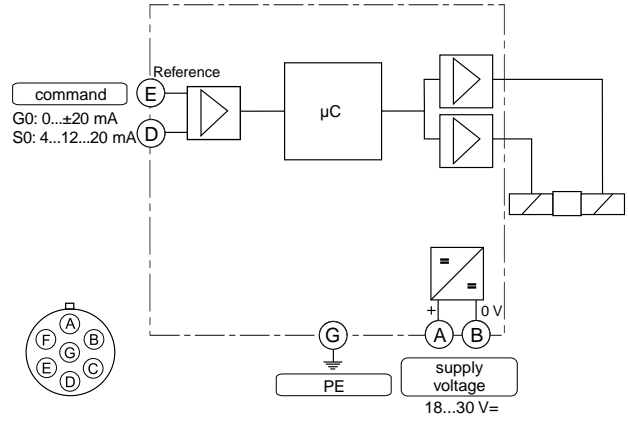
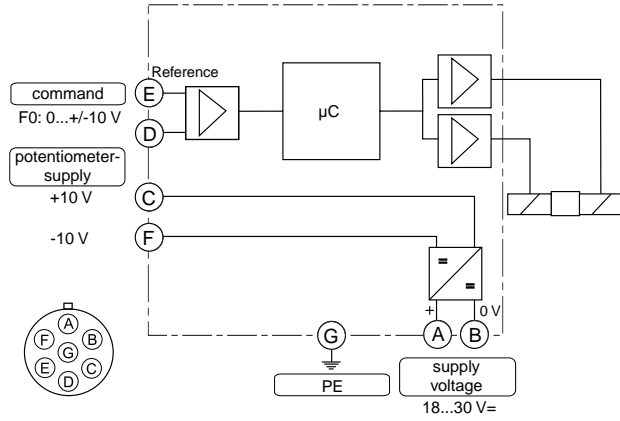
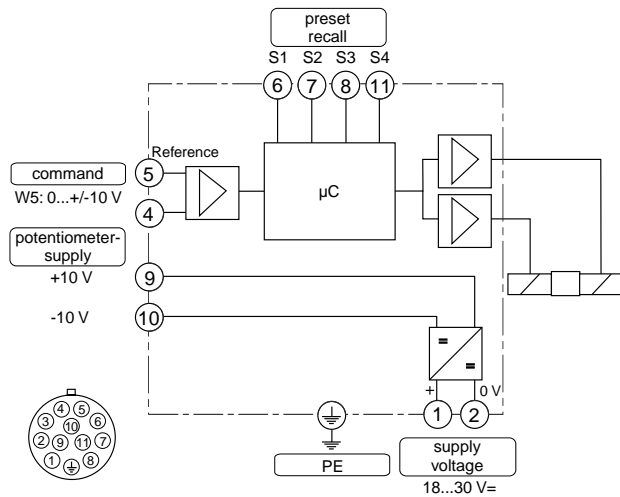
**Spool type E01K**


All characteristic curves measured with HLP46 at 50 °C.

D1FB UK.indd 21.02.2019

Catalogue MSG11-3500/UK  
**Block Diagrams**
**Direct Operated Proportional DC Valve  
 Series D1FB OBE**
**Code F0**  
 6 + PE acc. to EN 175201-804

**Code G0, S0**  
 6 + PE acc. to EN 175201-804

**3**

**Code W5**  
 11 + PE acc. to EN 175201-804




**ProPxD interface program**

The ProPxD software permits comfortable parameter setting for the module electronics. Via the clearly arranged entry mask the parameters can be noticed and modified. Storage of complete parameter sets is possible as well as printout or record as a text file for further documentation. Stored parameter sets may be loaded anytime and transmitted to other valves. Inside the electronics a non-volatile memory stores the data with the option for recalling or modification.

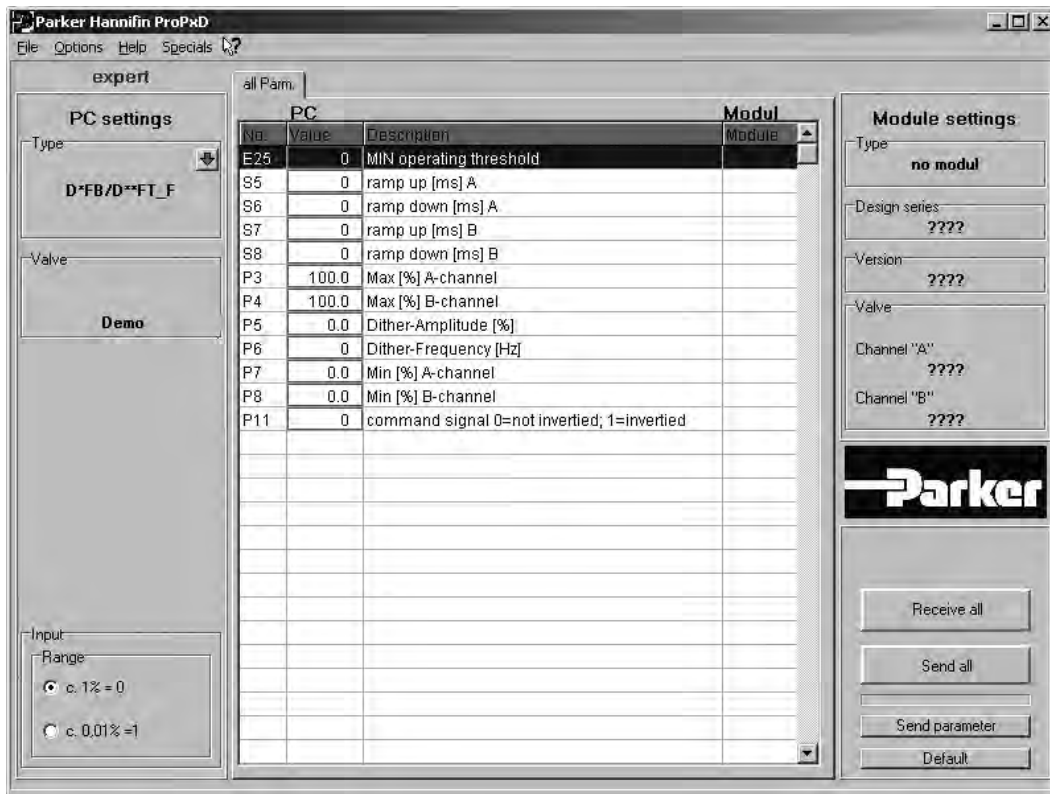
The PC software can be downloaded free of charge at [www.parker.com/isde](http://www.parker.com/isde) – see page "Support" or directly at [www.parker.com/propxd](http://www.parker.com/propxd).

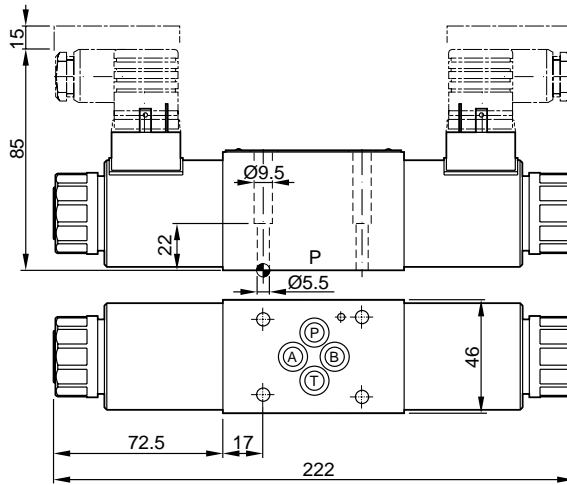
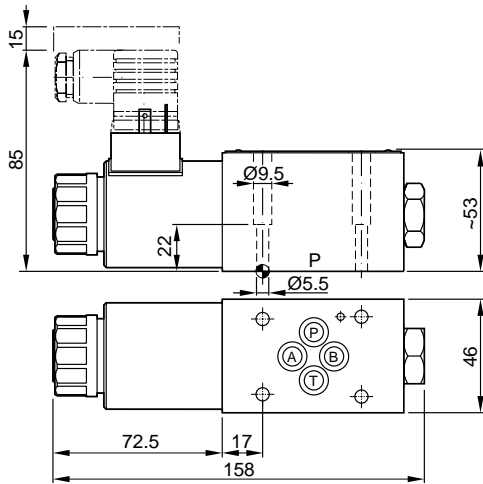
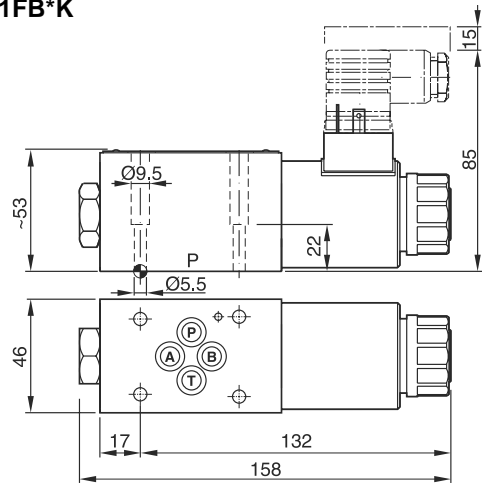
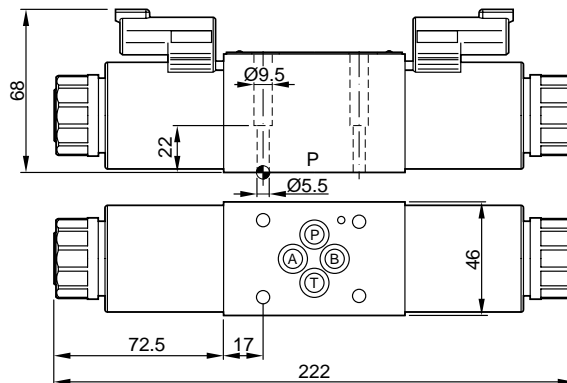
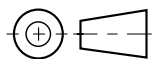
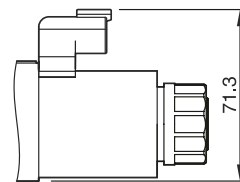
**Features**





- Comfortable editing of all parameters
- Depiction and documentation of parameter sets
- Storage and loading of optimized parameter adjustments
- Executable with all actual Windows® operating systems from Windows® XP upwards
- Plain communication between PC and electronics via serial interface RS232C

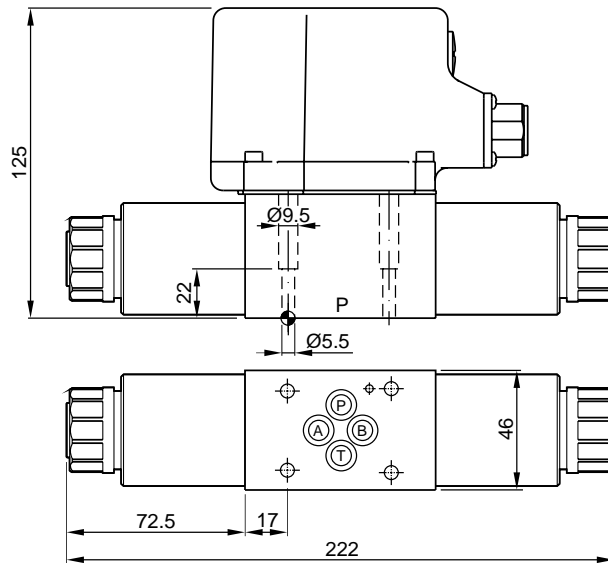
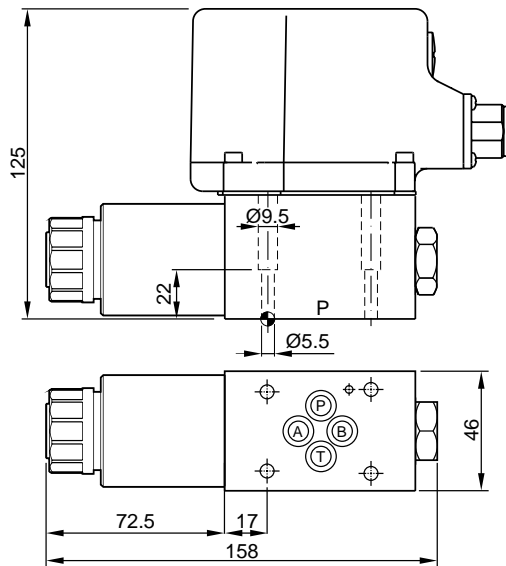
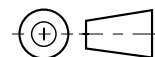
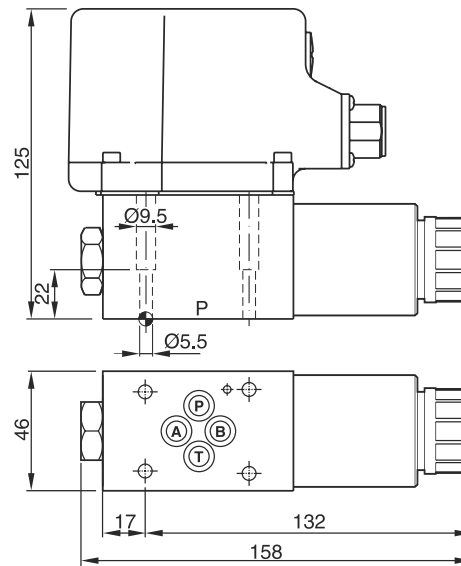
**The parametrizing cable may be ordered under item no. 40982923.**

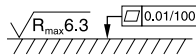
**3**



**3**
**D1FB\*C**

**D1FB\*E**

**D1FB\*K**

**D1FB\*C\*0 with DT04-2P "Deutsch" connector  
 (only C style shown)**

**D1FB\*C\*3**


| Surface finish                           |  Kit |  Kit |  Kit |  Kit |
|------------------------------------------|-----------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------|
| $\sqrt{R_{max}6.3}$ $\square_{0.01/100}$ | BK375                                                                                   | 4x M5x30<br>ISO 4762-12.9                                                               | 7.6 Nm<br>±15 %                                                                          | SK-D1FB                                                                                   |

**D1FB\*C OBE**

**3**
**D1FB\*E OBE**

**D1FB\*K OBE**


| Surface finish                                                                      | Kit   | Kit                       | Kit             | Kit NBR |
|-------------------------------------------------------------------------------------|-------|---------------------------|-----------------|---------|
|  | BK375 | 4x M5x30<br>ISO 4762-12.9 | 7.6 Nm<br>±15 % | SK-D1FB |