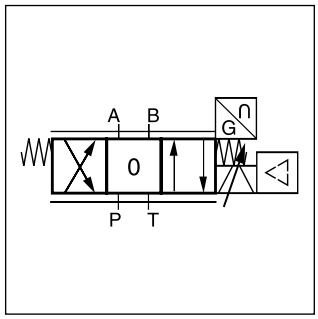
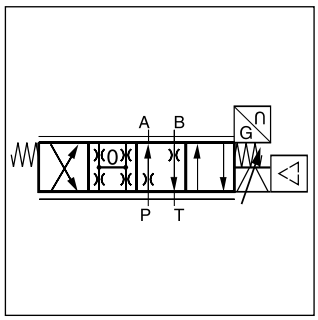
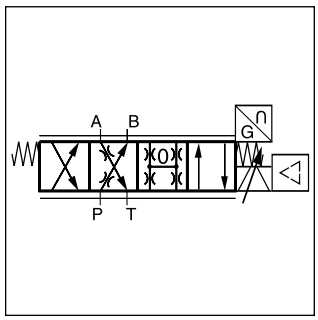
The direct operated control valve D3FP of the nominal size NG10 (CETOP 05) shows extremly high dynamics combined with high flow. It is the preferred choice for highest accuracy in positioning of hydraulic axis and controlling of pressure and velocity.

Driven by the patented VCD® actuator the D3FP reaches the frequency response of real servovalves.

At power-down the spool moves in a defined position. All common input signals are available.



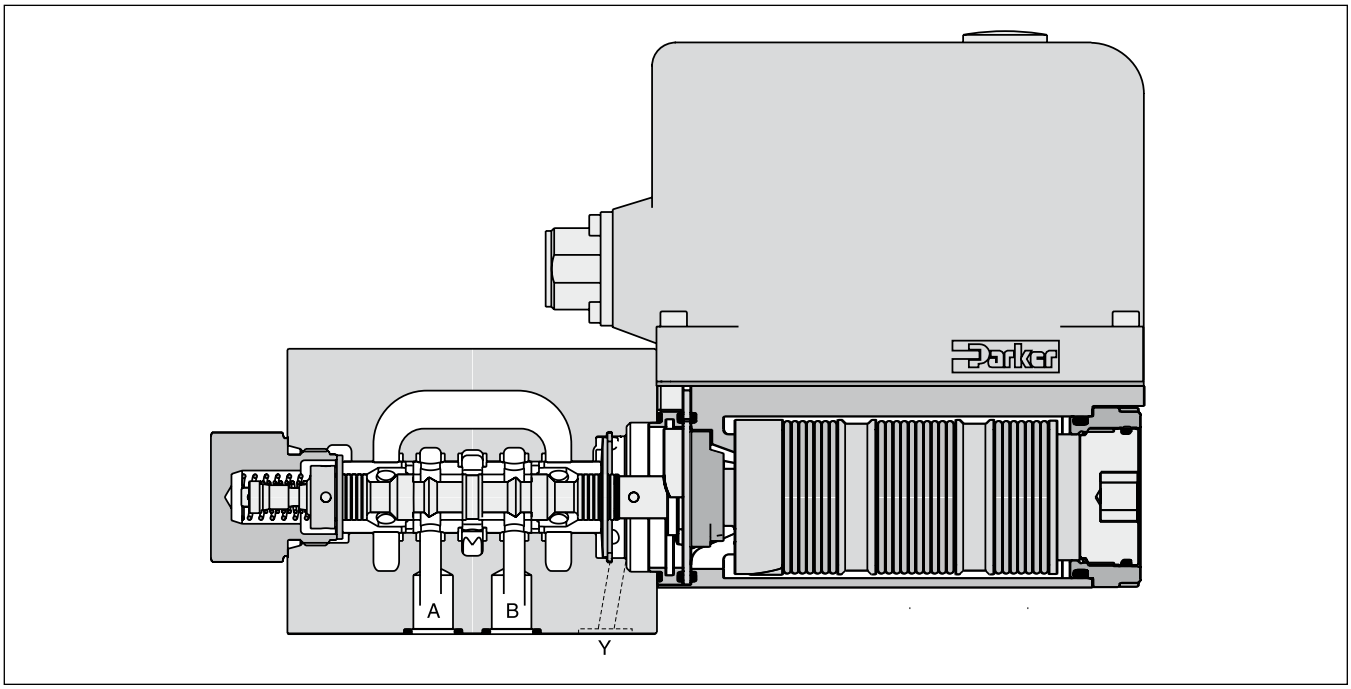




**Features**

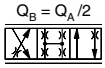
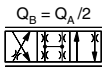
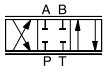
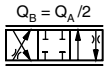
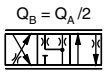
- Real servovalve dynamics
  (-3 dB / 350 Hz at ±5 % input signal)
- Max. tank pressure 250 bar
  (with external drain port Y)
- Defined spool positioning at power-down - optional
  P-A/B-T or P-B/A-T or center position
  (for overlapped spools)
- Onboard electronics
- Spool / sleeve design

CE



| D | 3 | F | P | | | 9 | | | | 0 | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Direct. control valve** | **Size DIN NG10 CETOP 05 NFPA D05** | **Proportional control** | **VCD** | **Spool type** | **Spool position on power down [1]** | **Y-port (plugged) [4]** | **Seals** | **Command signal** | **Acces-sories** | **Spool/ sleeve design** | **Design series** (not required for ordering) |

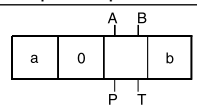
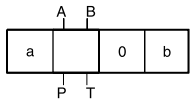
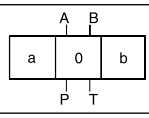


| Code | Spool type | Flow [l/min] at Δp 35 bar per metering edge |
|---|---|---|
| | Zerolap | |
| **E50P** |  | **50** |
| **E50Y** |  | **100** |
| **B60P** | $Q_B = Q_A/2$  | **50** |
| **B60Y** | $Q_B = Q_A/2$  | **100** |
| | Underlap approx. -0.5 % | |
| **E55P** |  | **50** |
| **E55Y** |  | **100** |
| | Overlap | |
| **E01P E01Y** | A B P T  | **50 100** |
| **E02P E02Y** |  | **50 100** |
| **B31P B31Y** | $Q_B = Q_A/2$  | **50 / 25 100 / 50** |
| **B32P B32Y** | $Q_B = Q_A/2$  | **50 / 25 100 / 50** |

| Code | Connection type |
|---|---|
| **0** | **6 + PE acc. EN175201-804** |
| **5** | **11 + PE acc. EN175201-804** |
| **7** | **6 + PE + Enable** |

| Code | Signal | Function |
|---|---|---|
| **B** | **+/- 10 V** | **0...+10 V -> P-A** |
| **E** | **+/- 20 mA** | **0...+20 mA -> P-A** |
| **S** | **4...20 mA** | **12...20 mA -> P-A** |

| Code | Seals |
|---|---|
| **N** | **NBR** |
| **V** | **FPM** |
| **H** | **for HFC fluid** |

| Code | Spool pos. at power down |
|---|---|
| **A [2]** |   |
| **B [2]** |   |
| **C [3]** |   |

Short delivery time for all variations

For regenerative and hybrid function at D31FB (NG10) please refer solutions with sandwich- and adaptor plates "A10-1664 / A10-1665L / H10-1662 / H10-1666L" in chapter 12.

Please order connector separately, see chapter 3 accessories.

Parametrizing cable OBE -> RS232, item no. 40982923

[1] On power down the spool moves in a defined position. This cannot be guaranteed in case of single flow path on the control edge A – T resp. B – T with pressure drops above 120 bar or contamination in the hydraulic fluid.

[2] Approx. 10 % opening, only zerolapped spools and underlapped spools.

[3] Only for overlapped spools.

[4] Plug in the Y-port needs to be removed at tank pressure >35 bar.

| | | | |
|---|---|---|---|
| **General** | | | |
| Design | | | Direct operated servo proportional DC valve |
| Actuation | | | VCD® actuator |
| Size | | | NG10 / CETOP 05 / NFPA D05 |
| Mounting interface | | | DIN 24340 / ISO 4401 / CETOP RP121 / NFPA |
| Mounting position | | | unrestricted |
| Ambient temperature | | [°C] | -20...+50 |
| $MTTF_D$ value [1] | | [years] | 150 |
| Weight | | [kg] | 6.5 |
| Vibration resistance | | [g] | 10 Sinus 5...2000 Hz acc. IEC 68-2-6<br>30 Random noise 20...2000 Hz acc. IEC 68-2-36<br>15 Shock acc. IEC 68-2-27 |
| **Hydraulic** | | | |
| Max. operating pressure | | [bar] | Ports P, A, B 350, port T 35 for internal drain, 250 for external drain, port Y 35 [2] |
| Fluid | | | Hydraulic oil according to DIN 51524 ... 535, other on request |
| Fluid temperature | | [°C] | -20...+60 (NBR: -25...+60) |
| Viscosity | permitted | [cSt]/[mm²/s] | 20...400 |
| | recommended | [cSt]/[mm²/s] | 30...80 |
| Filtration | | | ISO 4406 (1999); 18/16/13 |
| Flow nominal at Δp=35 bar per control edge [3] | | [l/min] | 50 / 100 |
| Flow maximum | | [l/min] | 150 |
| Leakage at 100 bar | | [ml/min] | <400 (zerolap spool); <100 (overlap spool) |
| Opening point | | [%] | set to 19 command signal (see flow characteristics) |
| **Static / Dynamic** | | | |
| Step response at 100 % step [4] | | [ms] | <6 |
| Frequency response (±5 % signal) [4] | | [Hz] | 200 (amplitude ratio -3 dB), 200 (phase lag -90°) |
| Hysteresis | | [%] | <0.05 |
| Sensitivity | | [%] | <0.03 |
| Temperature drift | | [%/K] | <0.025 |
| **Electrical characteristics** | | | |
| Duty ratio | | [%] | 100 |
| Protection class | | | IP65 in accordance with EN 60529 (with correctly mounted plug-in connector) |
| Supply voltage/ripple | | [V] | 22 ... 30, electric shut-off at < 19, ripple <5 % eff., surge free |
| Current consumption max. | | [A] | 3.5 |
| Pre-fusing | | [A] | 4.0 medium lag |
| Input signal | | | |
| Code B | Voltage | [V] | 10...0...-10, ripple <0.01 % eff., surge free, 0...+10 V P->A |
| | Impedance | [kOhm] | 100 |
| Code E | Current | [mA] | 20...0...-20, ripple <0.01 % eff., surge free, 0...+20 mA P->A |
| | Impedance | [Ohm] | <250 |
| Code S | Current | [mA] | 4...12...20, ripple <0.01 % eff., surge free, 12...20 mA P->A<br><3.6 mA = disable, >3.8 mA = according to NAMUR NE43 |
| | Impedance | [Ohm] | <250 |
| Differential input max. | | | |
| | Code 0 | [V] | 30 for terminal D and E against PE (terminal G) |
| | Code 5 | [V] | 30 for terminal 4 and 5 against PE (terminal ⏚ ) |
| | Code 7 | [V] | 30 for terminal D and E against PE (terminal G) |
| Enable signal | (only code 5/7) | [V] | 5...30, Ri = > 8 kOhm |
| Diagnostic signal | | [V] | +10...0...-10 / +12.5 error detection, rated max. 5 mA |
| EMC | | | EN 61000-6-2, EN 61000-6-4 |
| Electrical connection | | Code 0/7<br>Code 5 | 6 + PE acc. EN 175201-804<br>11 + PE acc. EN 175201-804 |
| Wiring min. | Code 0/7 | [mm²] | 7 x 1.0 (AWG 16) overall braid shield |
| | Code 5 | [mm²] | 8 x 1.0 (AWG 16) overall braid shield |
| Wiring length max. | | [m] | 50 |

[1] 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.

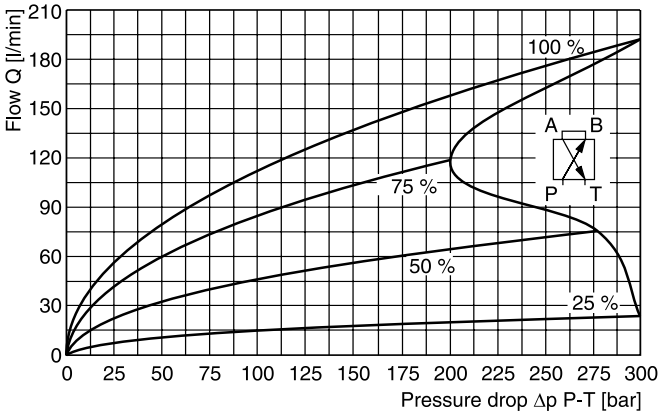
[2] For applications with $p_T$>35 bar (max. 250 bar) the Y-port has to be connected and the plug in the Y-port has to be removed.

[3] Flow rate for different Δp per control edge: $Q_x = Q_{Nom.} \cdot \sqrt{\frac{\Delta p_x}{\Delta p_{Nom.}}}$

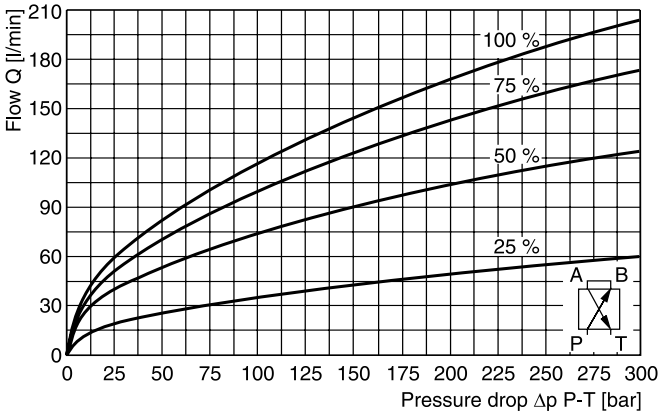
[4] Measured with load (100 bar pressure drop/two control edges).

3

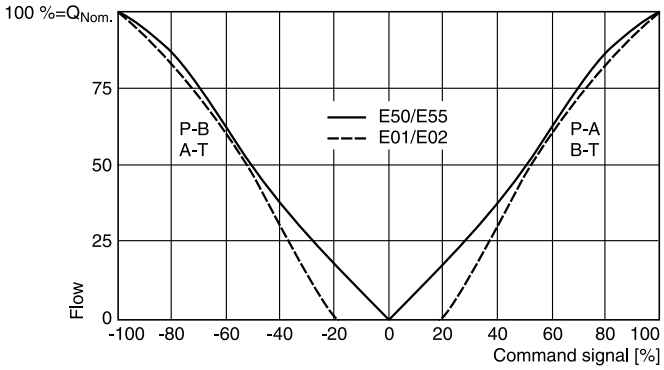
**Functional limits** [1)]
at 25 %, 50 %, 75 % and 100 % command signal
Spool type **E01Y/E02Y**



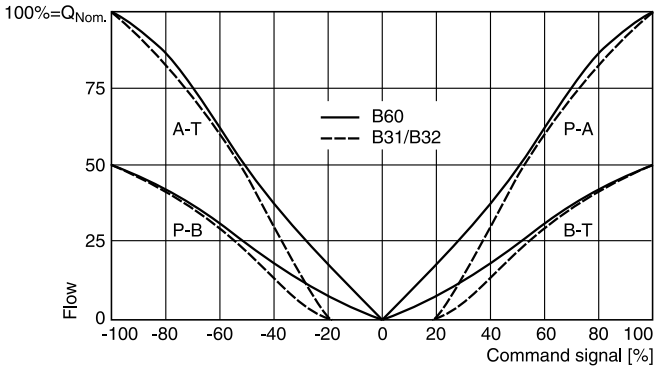

**Functional limits** [1)]
at 25 %, 50 %, 75 % and 100 % command signal
Spool type **E50Y/E55Y**



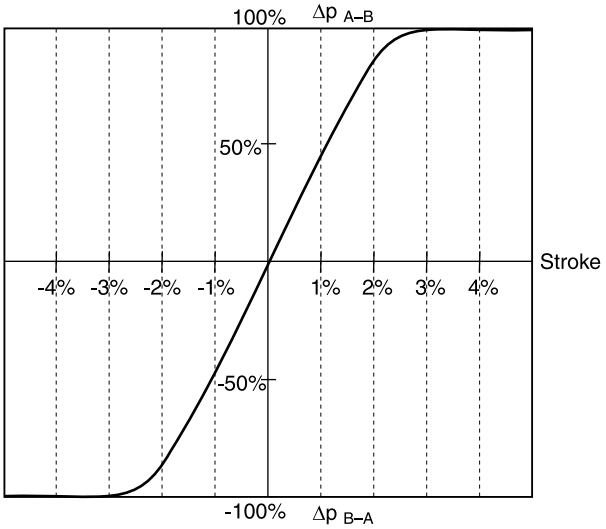

**Flow curves**
(Overlapped spool set to opening point 19 %)
at Δp = 35 bar per metering edge
Spool type **E50/E55, E01/E02**



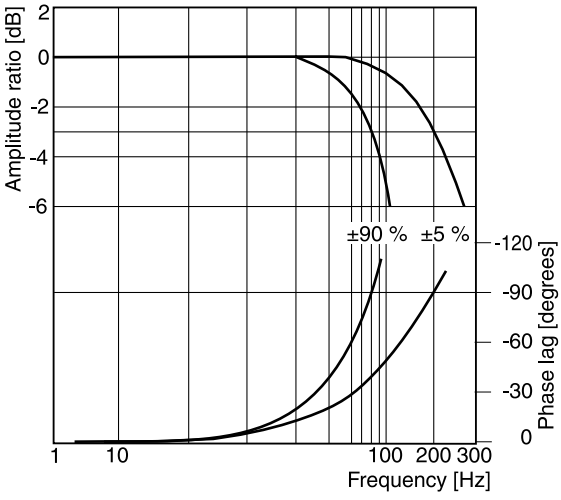

Spool type **B31/B32, B60**




**Pressure gain**

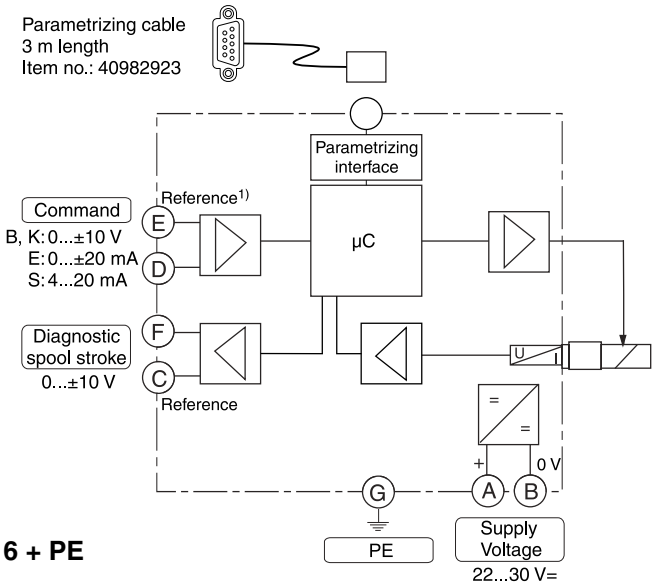



**Frequency response**
±5 % command signal
±90 % command signal

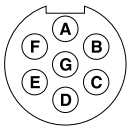



[1)] When exceeding the functional limits, for a period of time the valve will go into fail safe and power supply needs to be switched off/on to re-enable the valve.

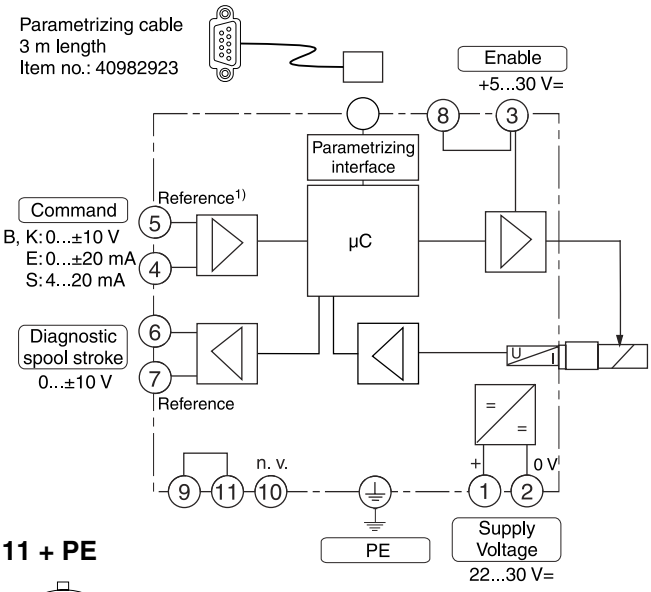
### Code 0




**6 + PE**

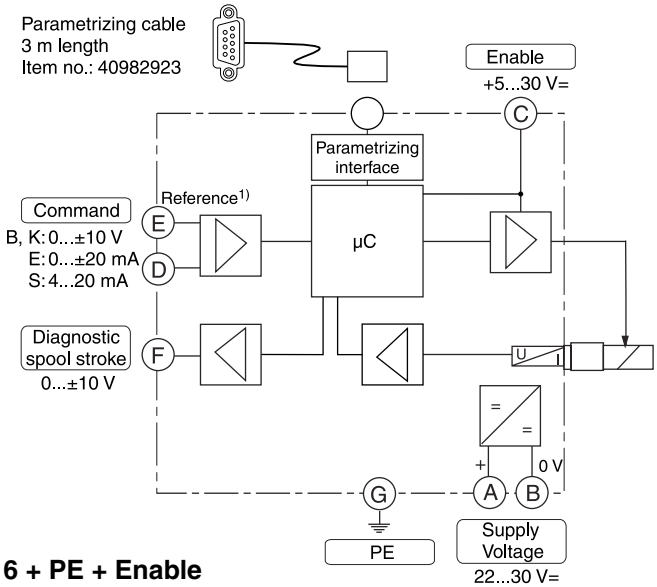



### Code 5

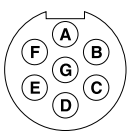



**11 + PE**


### Code 7




**6 + PE + Enable**




[1)] Do not connect with supply voltage zero.

3

### ProPxD interface program

The ProPxD software allows quick and easy setting of the digital valve electronics. Individual parameters as well as complete settings can be viewed, changed and saved via the comfortable user interface. Parameter sets saved in the non-volatile memory can be loaded to other valves of the same type or printed out for documentation purposes.

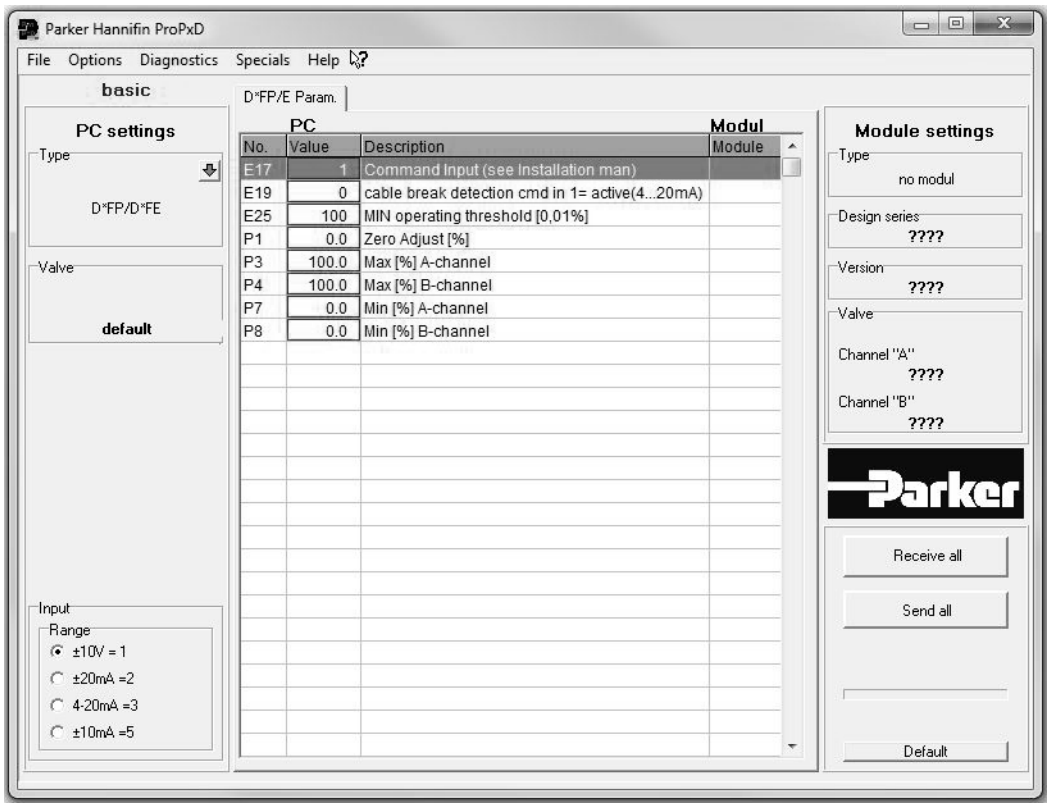
The PC software can be downloaded free of charge at www.parker.com/euro_hcd – see page “Support" or directly at www.parker.com/propxd.

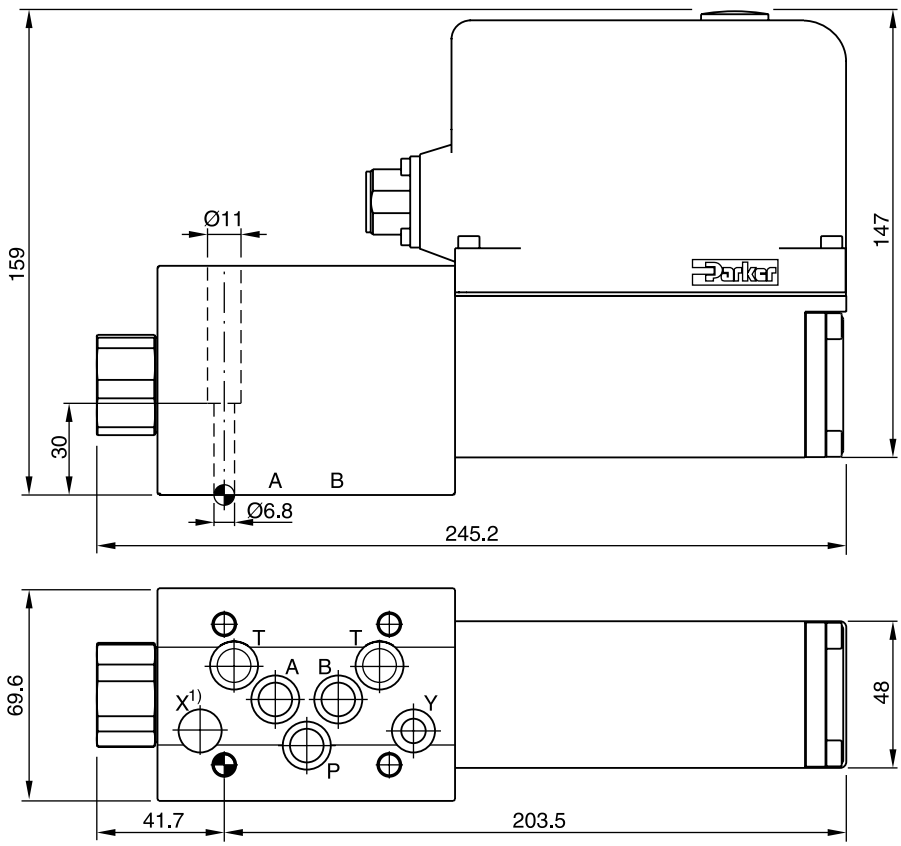
### Features

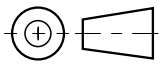
- Comfortable editing of valve parameters
- Saving and loading of customized parameter sets
- Executable with all Windows® operating systems from Windows® XP upwards
- Simple communication between PC and valve electronics via serial interface RS232C

The valve electronics cannot be connected to a PC with a standard USB cable – this can result in damages of PC and/or valve electronics.

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





| Surface finish | Kit | | | Kit |
|---|---|---|---|---|
| $\sqrt{R_{max}6.3}$ 0.01/100 | BK385 | 4xM6x40<br>ISO 4762-12.9 | 13.2 Nm<br>±15 % | NBR: SK-D3FP<br>FPM: SK-D3FP-V<br>HFC: SK-D3FP-H |

1) O-ring recess diameter on valve body.