

Characteristics

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.

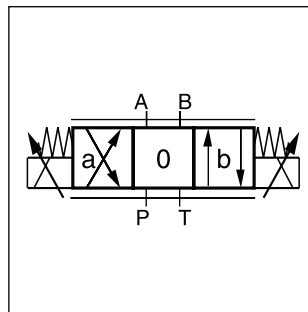
Download: www.parker.com/euro_hcd - see "Literature"



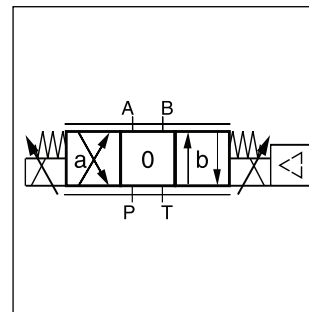
D1FB



D1FB OBE



D1FB

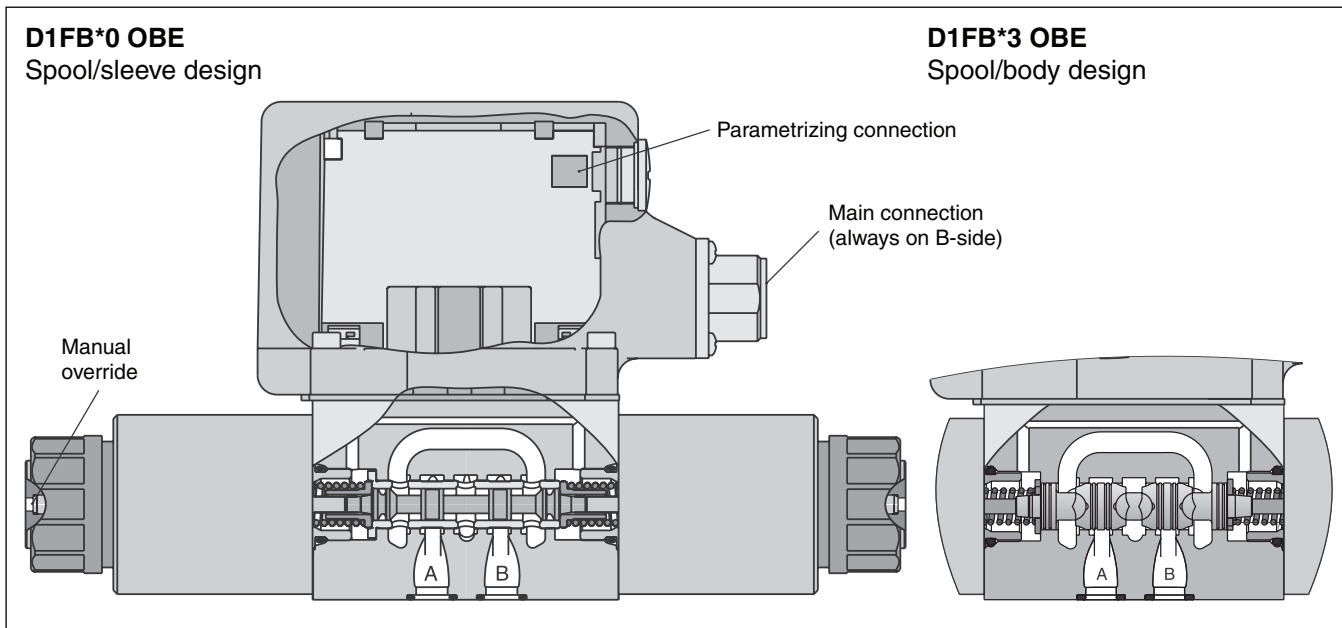


D1FB OBE

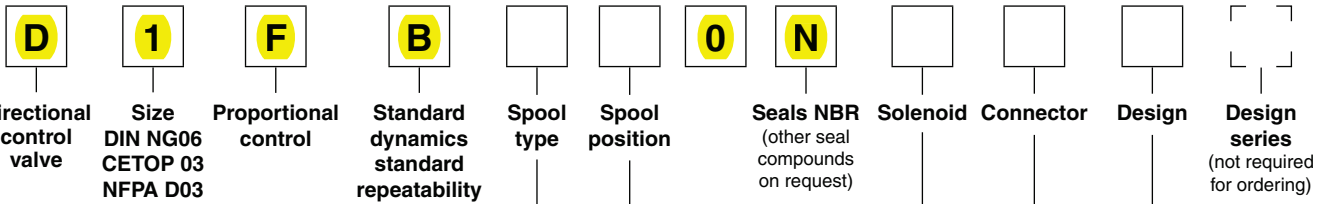
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Features

- 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
- Zero lap spools for the usage in simple closed loop systems



D1FB



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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	$Q_B = Q_A / 2$ 	12 / 6
B31H		20 / 10
B32F	$Q_B = Q_A / 2$ 	12 / 6
B32H		20 / 10
Zero lap ¹⁾		
Code	Spool type	Flow [l/min] at Δp 35 bar per metering edge
E50C		6
E50F		12
E50H		20
B60F	$Q_B = Q_A / 2$ 	12 / 6
B60H		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	$Q_B = Q_A / 2$ 	10 / 5
B31H		20 / 10
B31K		30 / 15
B32F	$Q_B = Q_A / 2$ 	10 / 5
B32H		20 / 10
B32K		30 / 15

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

Code	Connector
W ²⁾	Connector as per EN 175301-803
J ^{2) 3)}	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⁾ Only for spool position code C. No defined spool positioning at power down.
²⁾ Please order connector separately, see chapter 3 accessories.
³⁾ Not for spool/sleeve design.

Technical Data

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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 _D value ¹⁾	[years]	150	
Weight (OBE)	[kg]	2.2 (2.9)	
Vibration resistance	[g]	10 Sinus 5...2000 Hz acc. IEC 68-2-6 30 Random noise 20...2000 Hz acc. IEC 68-2-36 15 Shock acc. IEC 68-2-27	
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 ² /s]	20...400	
Viscosity recommended	[cSt] / [mm ² /s]	30...80	
Filtration	ISO 4406 (1999); 18/16/13		
Nominal flow at Δp = 5 bar per control edge ²⁾	[l/min]	D1FB*0 (Spool/sleeve)	D1FB*3 (Spool/body)
		6 / 12 / 20	10 / 20 / 30
Leakage at 100 bar	[ml/min]	<50 (overlapped spool); <400 (zerolapped spool)	<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) DT04-2P "Deutsch" IP69K (with correctly mounted plug-in connector)		
Solenoid		Code "M"	Code "K" Code "J" (Spool/sleeve)
Supply voltage	[V]	9	12 24
Current consumption	[A]	2.7	2.2 1.1 (0.8)
Resistance	[Ohm]	2.7	4.4 18.6
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 ²]	3x1.5 (AWG 16) overall braid shield (Code W), "Deutsch" connector DP4 2-Pin (Code J)	
Wiring length max.	[m]	50	

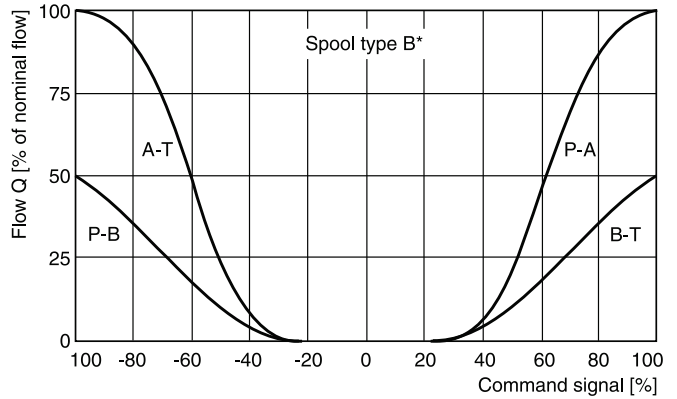
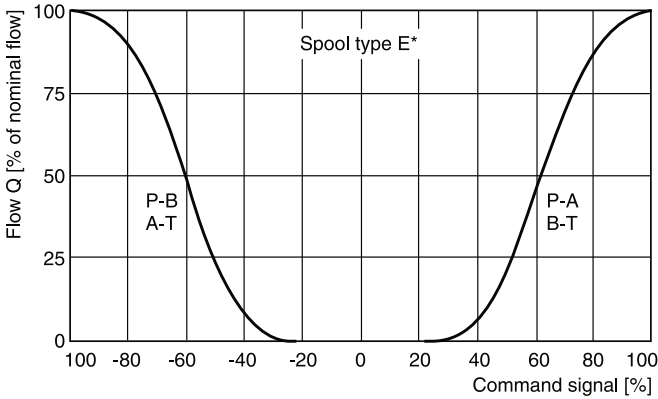
¹⁾ If valves with onboard electronics are used in safety-related parts of control systems, in case the safety function is requested, the valve electronics voltage supply is to be switched off by a suitable switching element with sufficient reliability.

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

Electrical characteristics OBE		
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 < 3.6 mA = enable off, > 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) 11 for terminal D and E against 0V (terminal B)
Code W5	[V]	30 for terminal 4 and 5 against PE (terminal PE) 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 ²]	7 x 1.0 (AWG16) overall braid shield
Code W5	[mm ²]	11 x 1.0 (AWG16) overall braid shield
Wiring length max.		50

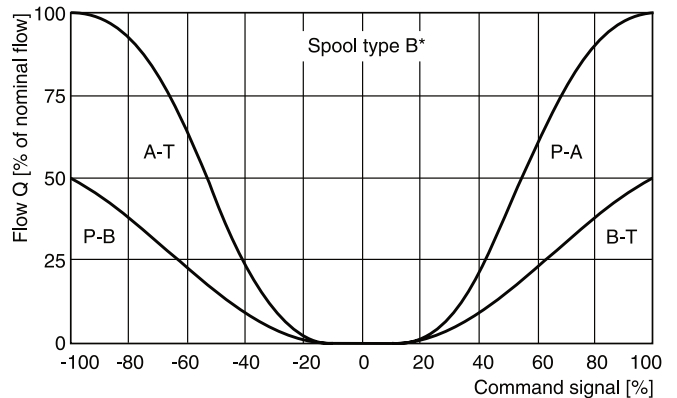
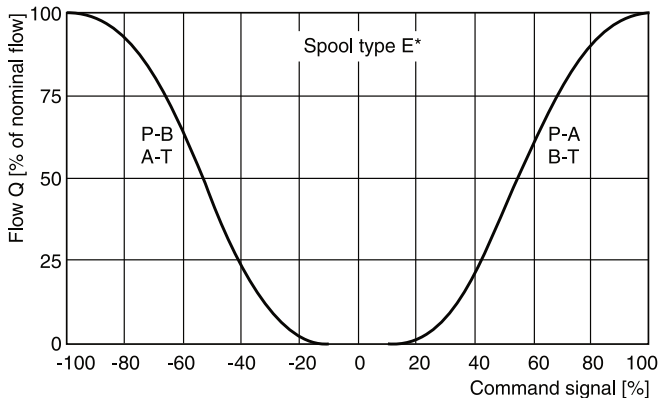
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Flow characteristics
D1FB*3 external electronics
 at $\Delta p = 5$ bar per metering edge
 Spool type E01/02/03, B31/32



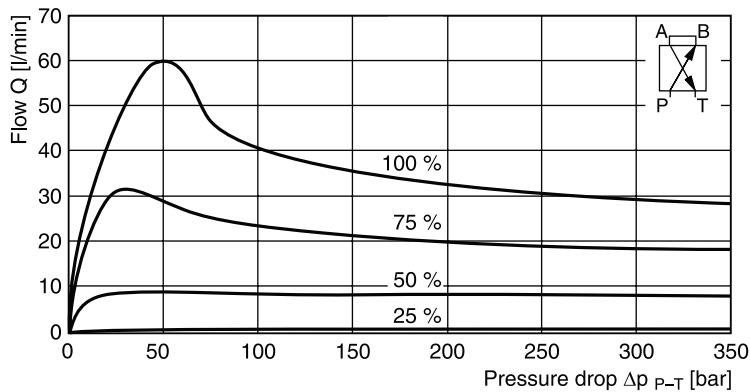
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D1FB*3 OBE
 (set to opening point 10 %)
 at $\Delta p = 5$ bar per metering edge
 Spool type E01/02



Functional limits
 at 25 %, 50 %, 75 % and 100 % command signal
 (symmetric flow)
Spool type E01K

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

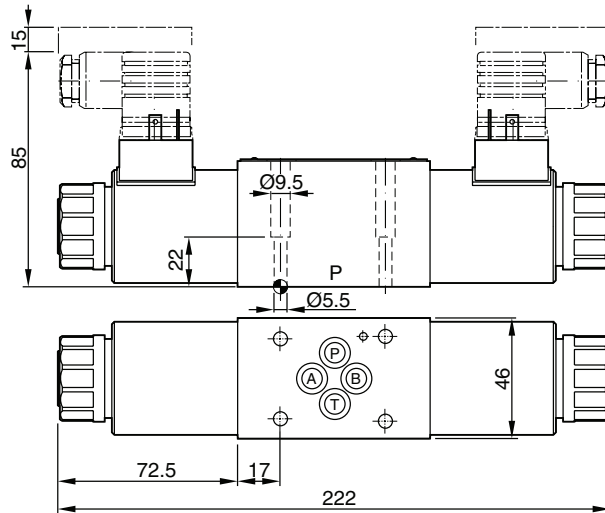


All characteristic curves measured with HLP46 at 50 °C.

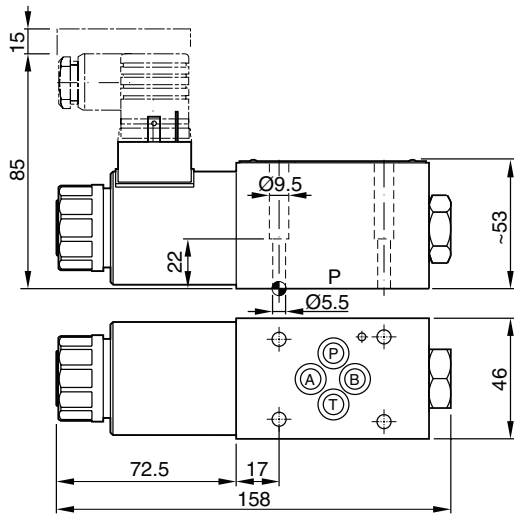
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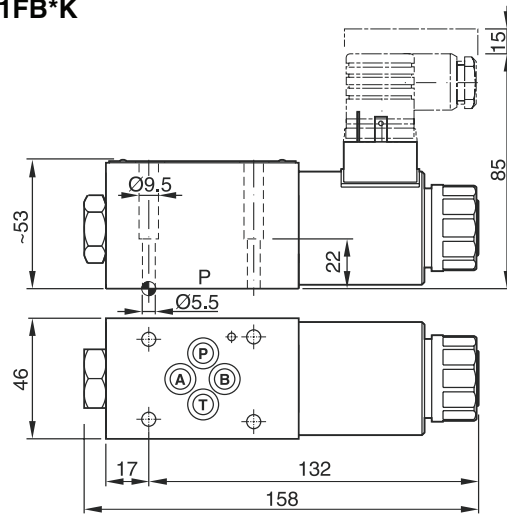
D1FB*C



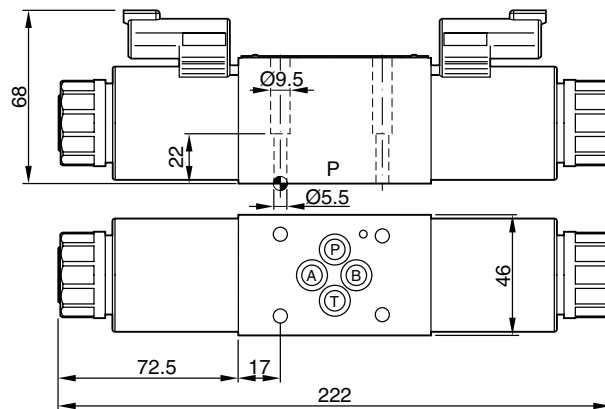
D1FB*E



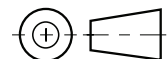
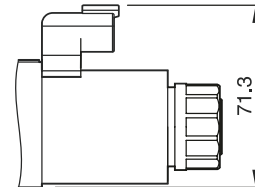
D1FB*K





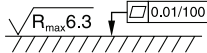


D1FB*C*0 with DT04-2P "Deutsch" connector
 (only C style shown)



D1FB*C*3



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