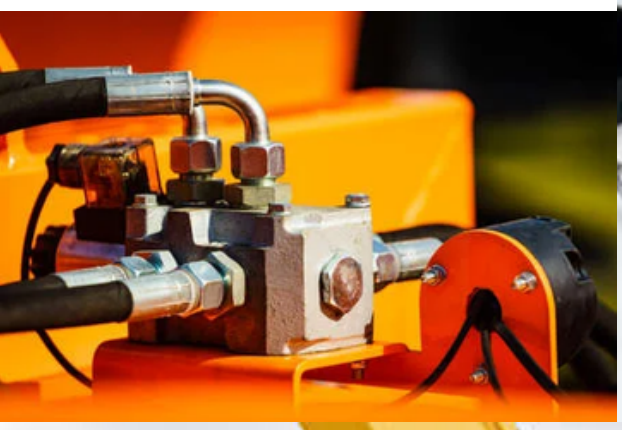


HYDRAULIC VALVES

TRIDENT PRECISION INTERNATIONAL

151, SECTOR-06,IMT MANESAR, GURGAON,HARYANA

122050

0124-4101151 WWW.TRIDENTPRECISION.IN sales@tridentprecision.in

General Description

Series D1FB (NG6) proportional directional valves 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 RS-232 interface is available as an accessory.

D1FB for external electronics:

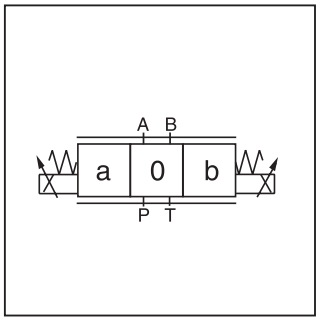
The parameters can be saved, changed and duplicated in combination with the digital power amplifier PWD00A-400.

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

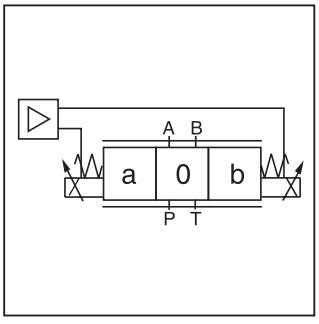
Series D1FB valves can be ordered with spool/sleeve design (D1FB*0) for maximum precision, as well as spool/body design (D1FB*3) for high nominal flow – see functional limit curves for maximum flow capability.

D1FB

D1FB OBE



D1FB

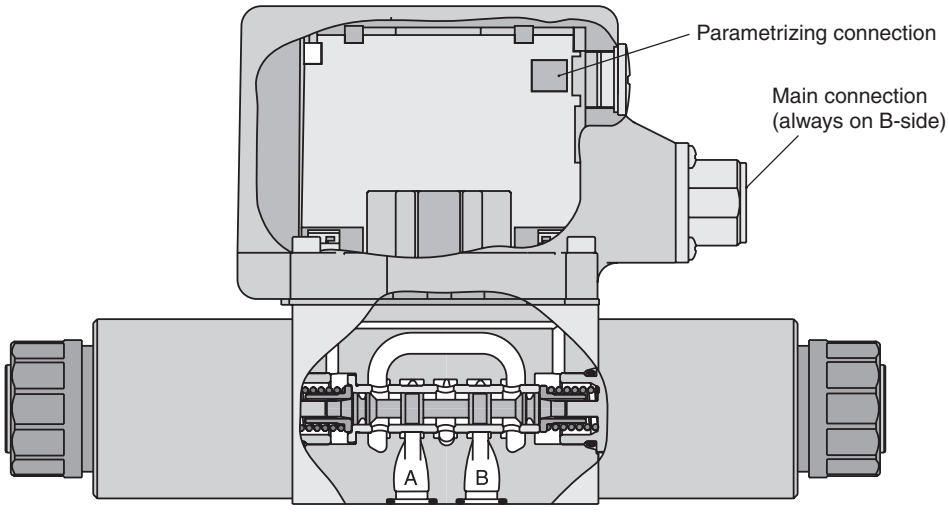


D1FB OBE

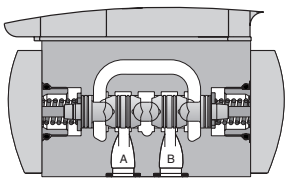
Features

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

D1FB*0 OBE
Spool/Sleeve Design



D1FB*3 OBE
Spool/Body Design



⚠ **WARNING:** This product can expose you to chemicals including Lead, Nickel (Metallic), or 1,3-Butadiene which are known to the State of California to cause cancer, and Lead or 1,3-Butadiene which is known to the State of California to cause birth defects and other reproductive harm. For more information go to www.P65Warnings.ca.gov.

D	1	F	B	☐	☐	0	☐	☐	☐	☐	[ ]
Directional Control Valves	Size	Flow Control	Standard Dynamics Standard Repeatability	Spool	Style		Seal	Solenoid Voltage	Solenoid Accessories	Design	Design Series

NOTE: Not required when ordering.

Code	Description
1	DIN NG6 CETOP 3 NFPA D03

D1FB*0: Spool/Sleeve Design

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

D1FB*3: Spool/Body Design

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

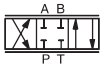
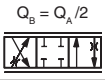
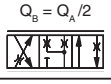
Code	Description
0	Spool/sleeve design
3	Spool/body design

Code	Description
N	Nitrile
V	Fluorocarbon

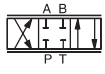
Code	Description
W*	Connector as per DIN 43650 without plug
J*†	Connector DT04-2P "Deutsch"

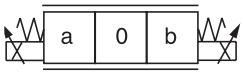
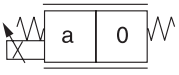
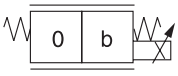
* Please order plugs separately.
† Not for spool/sleeve design.

D1FB*0: Spool/Sleeve Design
Overlap

Code	Spool	Flow LPM (GPM) at Δp 5 Bar (72.5 PSI) per metering edge
E01H E01F E01C		20 (5.3) 12 (3.2) 6 (1.6)
E02H E02F E02C		20 (5.3) 12 (3.2) 6 (1.6)
E03H E03F E03C		20 (5.3) 12 (3.2) 6 (1.6)
B31H B31F		20/10 (5.3/2.6) 12/6 (3.2/1.6)
B32H B32F		20/10 (5.3/2.6) 12/6 (3.2/1.6)

D1FB*3: Spool/Body Design
Overlap

Code	Spool	Flow LPM (GPM) at Δp 5 Bar (72.5 PSI) per metering edge
E01K E01H E01F		30 (7.9) 20 (5.3) 10 (2.6)
E02K E02H E02F		30 (7.9) 20 (5.3) 10 (2.6)

Code	Style
C	
E	
K	

Bolt Kit:

BK209	(4) 10-24x1.25 SHCS
BK375	(4) M5x30

Weight:

D1FB	2.2 kg (4.9 lbs.)

A

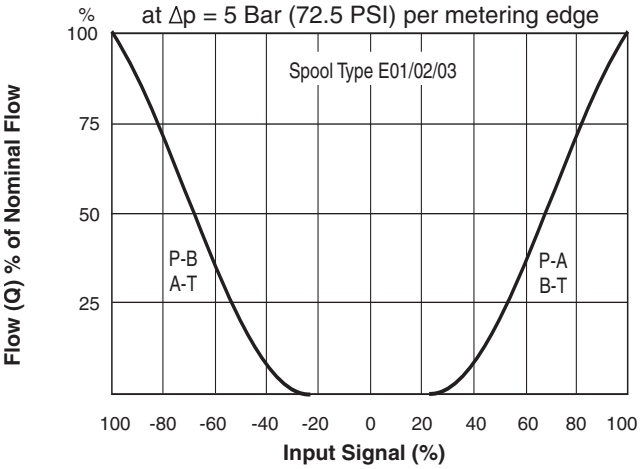
General			
Design		Direct operated proportional DC valve	
Actuation		Proportional solenoid	
Size		NG6 / CETOP 3 / NFPA D03	
Mounting Interface		DIN 24340 / ISO 4401 / CETOP RP121 / NFPA	
Mounting Position		Unrestricted	
Ambient Temperature	**[°C]**	-20...+60; (-4°F...+140°F)	
$MTTF_D$ Value (OBE)	**[years]**	150 (75)	
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			
Maximum Operating Pressure		Ports P, A, B 350 Bar (5075 PSI); Port T 210 Bar (3045 PSI)	
Maximum Pressure Drop PABT / PBAT		350 Bar (5075 PSI)	
Fluid		Hydraulic oil as per DIN 51524...51535, other on request	
Fluid Temperature	**[°C]**	-20...+60; (-4°F...+140°F)	
Viscosity **Permitted** **Recommended**	 **[cSt] / [mm²/s]** **[cSt] / [mm²/s]**	 20...380 (93...1761 SSU) 30...80 (139...371 SSU)	
Filtration		ISO 4406 (1999) 18/16/13 (acc. NAS 1638: 7)	
Nominal Flow at Δp= 5 Bar (72.5 PSI) per Control Edge *		**D1FB*0 (Spool/sleeve)** 6 LPM (1.6 GPM) / 12 LPM (3.2 GPM) / 20 LPM (5.3 GPM)	**D1FB*3 (Spool/body)** 10 LPM (2.6 GPM) / 20 LPM (5.3 GPM) / 30 LPM (7.9 GPM)
Leakage at 100 Bar (1450 PSI) Per Land	**[ml/min]**	<50 (overlap spool)	<60
Overlap	**[%]**	25, electrically normalized at 10 (see flow characteristics for OBE valves)	
Static / Dynamic			
Step Response at 100% Step	**[ms]**	30	30
Hysteresis	**[%]**	<4	<6
Temperature Drift Solenoid Current	**[%/K]**	<0.02	
Electrical			
Duty Ratio	**[%]**	100 ED; CAUTION: Coil temperature up to 150°C (302°F) possible	
Protection Class		Standard (as per EN175301-803) IP65 in accordance with EN60529 (plugged and mounted) DT04-2P "Deutsch" IP69K (plugged and mounted)	
Solenoid		**Code "M"**	**Code "K"**	**Code "J" (Spool/sleeve)**
Supply Voltage	**[V]**	9	12	24
Current Consumption	**[A]**	2.7	2.2	0.8 (1.1)
Resistance	**[Ohm]**	2.7	4.4	18.6
Coil Insulation Class		F (155 °C); (331°F)		
Solenoid Connection		Connector as per EN 175301-803 (code W), DT04-2P "Deutsch" connector (code J). Solenoid identification as per ISO 9461.		
Wiring Minimum	**[mm²]**	3x1.5 (AWG 16) overall braid shield (Code W), "Deutsch" connector DP4 2-Pin (Code J)		
Wiring Length Maximum	**[m]**	50 (164 ft.)		

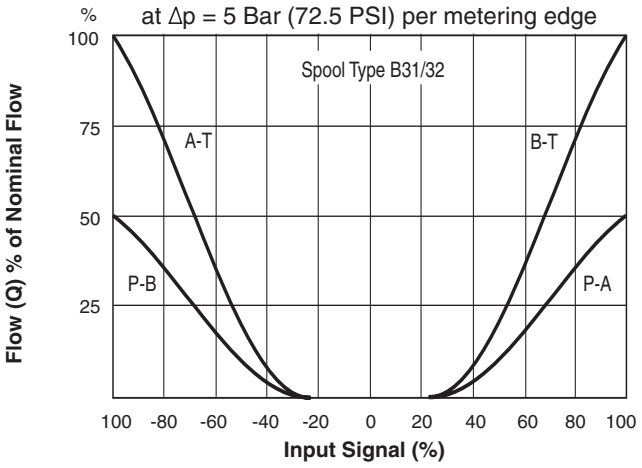
* Flow rate for different Δp per control edge: $Q_x = Q_{Nom.} \cdot \sqrt{\frac{\Delta p_x}{\Delta p_{Nom.}}}$

Continued on the next page

A

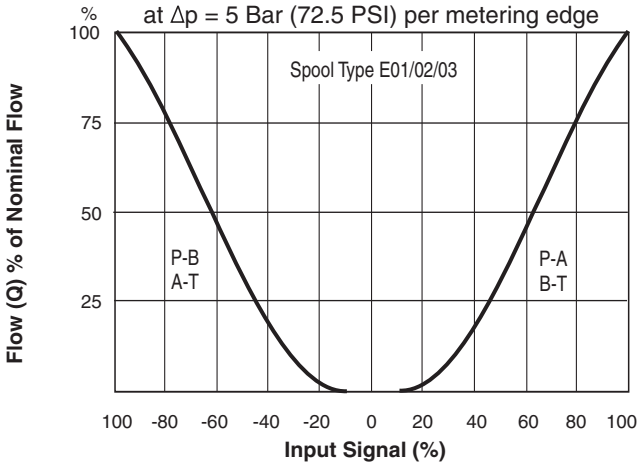
D1FB Flow

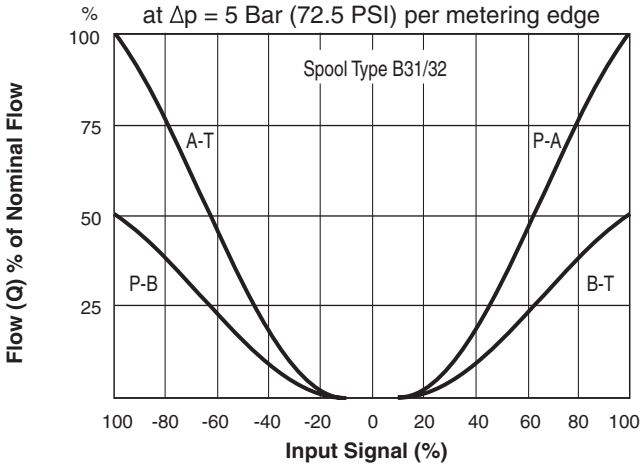




D1FB OBE Flow

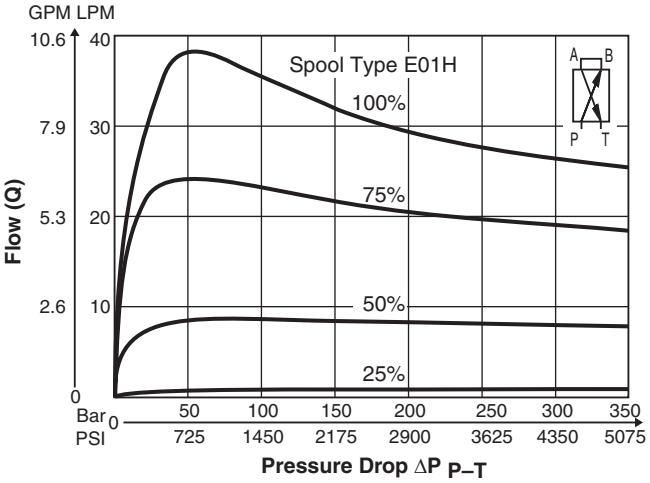
(Electrically set to opening point 10%)

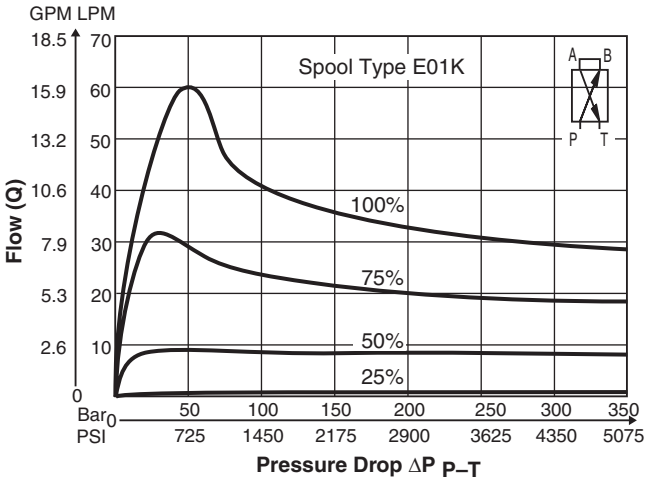




Functional Limits

At 25%, 50%, 75% and 100% command signal (symmetric flow). At asymmetric flow a reduced flow limit has to be considered – typically approx. 10% lower.

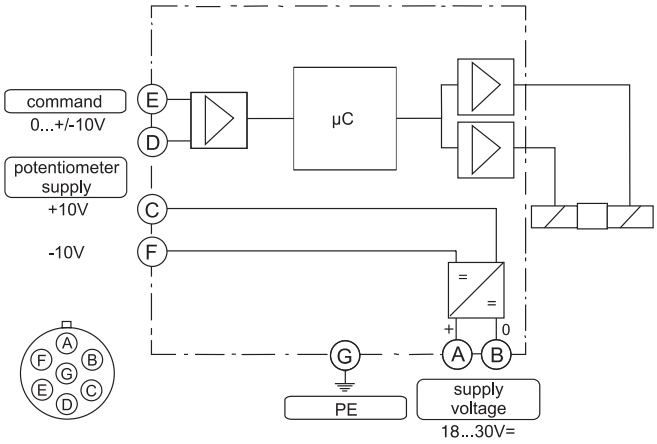




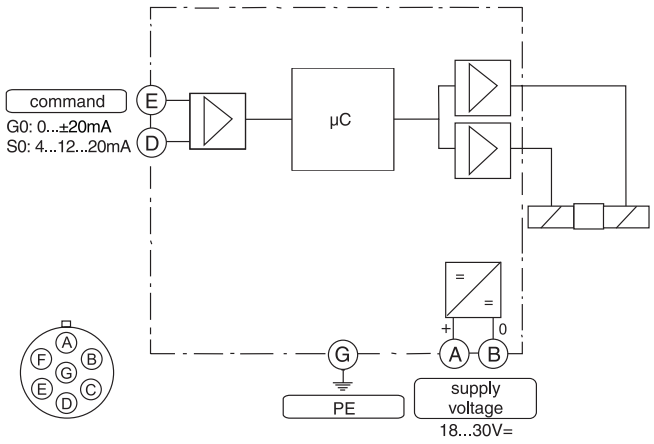
All performance curves measured with HLP46 at 50°C (122°F).

A

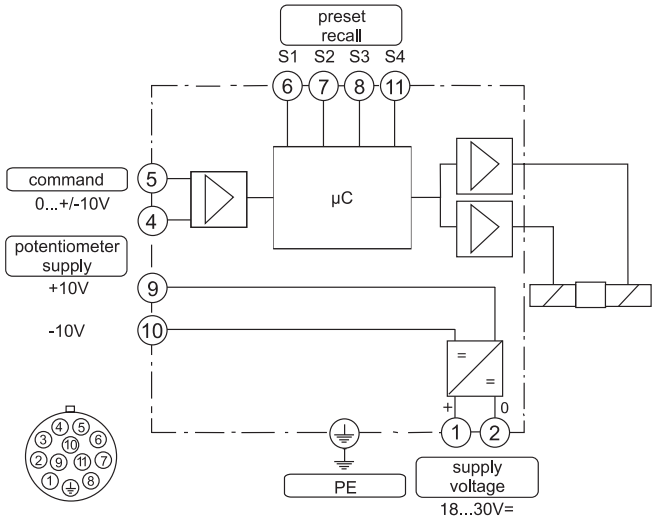
Code F0
6 + PE acc. to EN 175201-804



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



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



A

ProPxD Interface Program

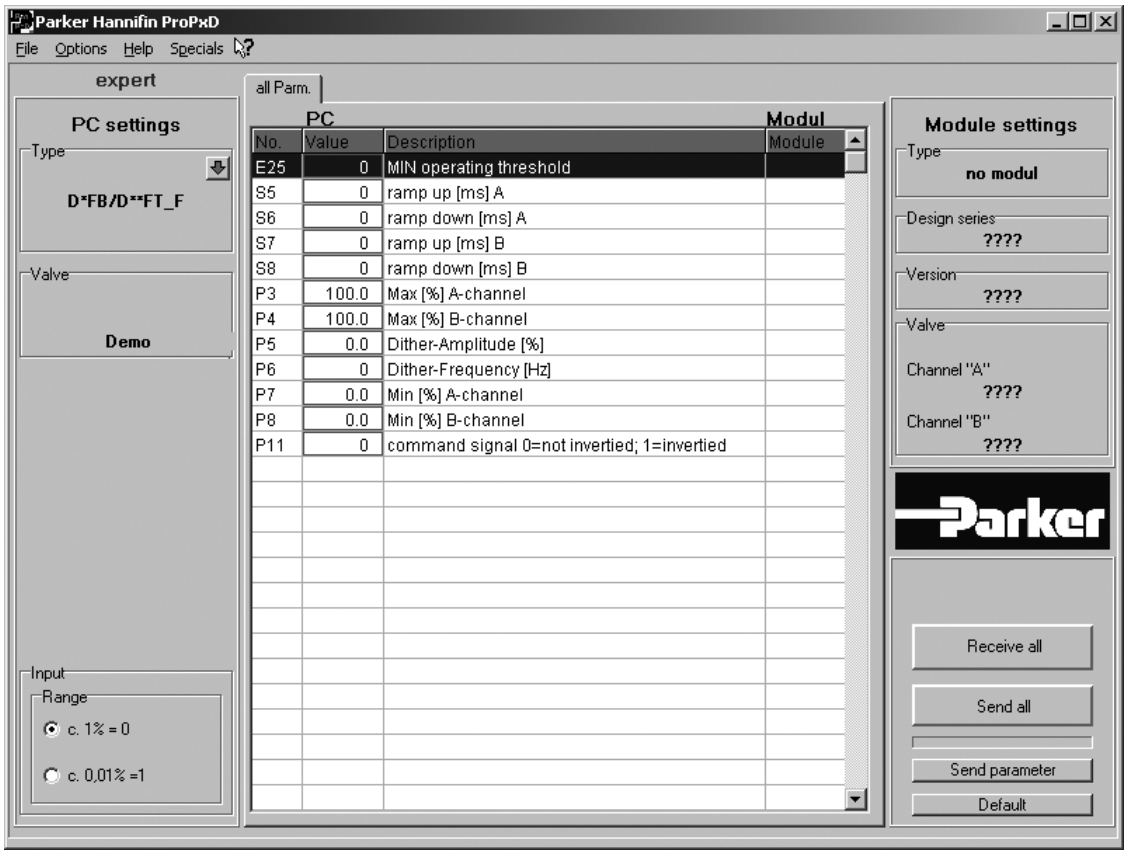
The ProPxD software allows quick and easy setting of the digital valve electronics. Individual parameters as well as complete settings can be viewed, changed and saved via the comfortable user interface. Parameter sets saved in the non-volatile memory can be loaded to other valves of the same type or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

Features

- Simple editing of all parameters.
- Storage and loading of optimized parameter adjustments.
- Executable with all Windows® operating systems from Windows® 95 upwards.
- Communication between PC and electronics via serial interface RS-232.

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.

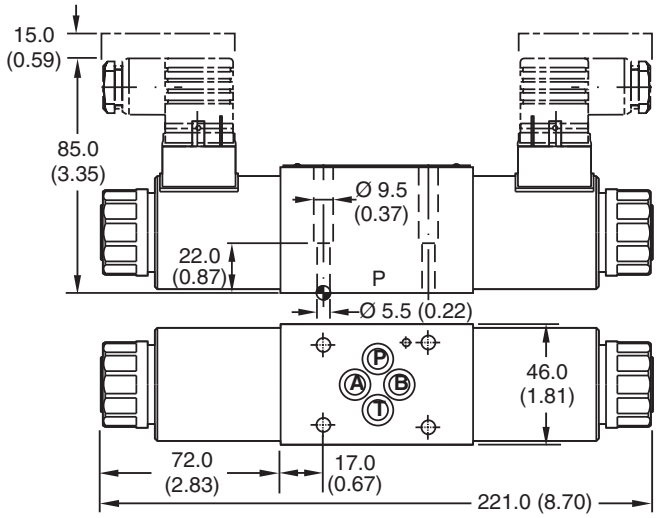
Simple to use interface program. Download free of charge **www.parker.com/propxd**



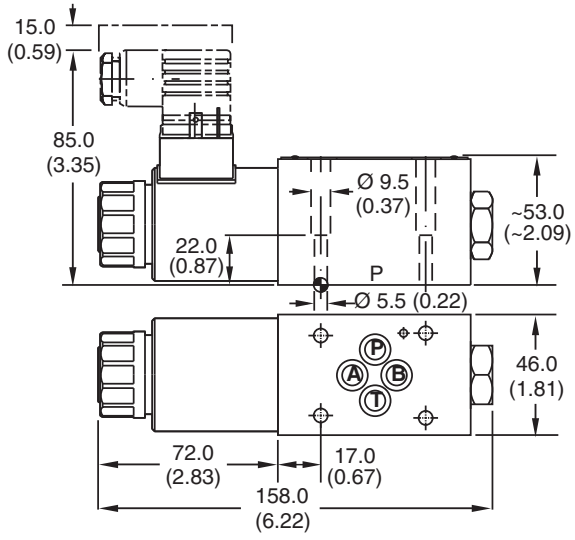
The parametrizing cable may be ordered under item no. 40982923.

Inch equivalents for millimeter dimensions are shown in (**)

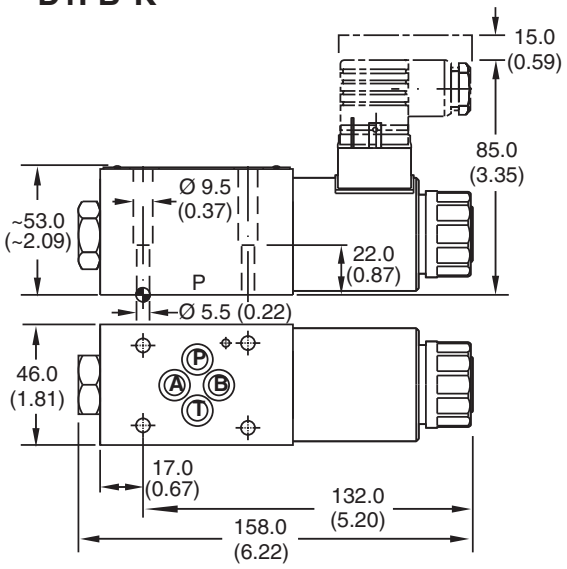
D1FB*C



D1FB*E

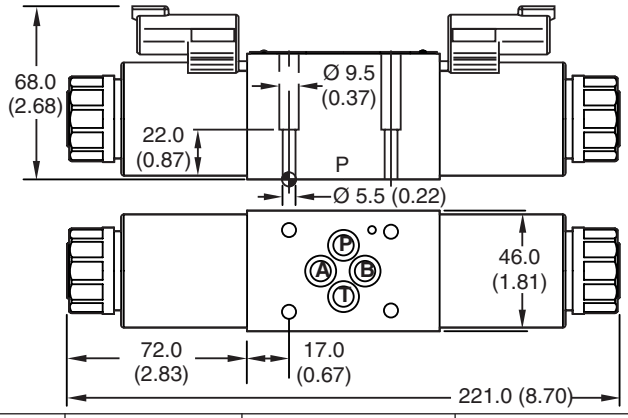


D1FB*K

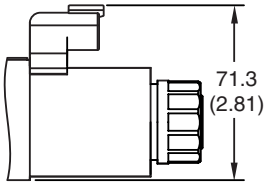


D1FB*C*0 with DT04-2P "Deutsch" Connector

(Only C style shown)



D1FB*C*3



Surface Finish	Kit			Seal Kit
R_{max}6.3 0.01/100	BK375 BK209	4x M5x30 DIN 912 12.9 4x 10-24x1.25	7.6 Nm (5.6 lb.-ft.) ±15 %	Nitrile: SK-D1FB Fluorocarbon: SK-D1FBV