Direct Operated Proportional DC Valve with Position Feedback
Series D1FC / D3FC
Admittedly: the idea of placing highly valuable content in a sturdy and compact enclosure is not entirely new.

We’ve simply adopted it for industrial hydraulics and refined it with the latest technology. The result: the new D1FC/D3FC series.

Full range: the proportional DC valves from Parker

With the new D1FC/D3FC series of direct operated proportional DC valves Parker is adding a highly innovative version with digital electronics to its range of proportional valves. As such our portfolio meets all the industrial hydraulics requirements related to efficient and customized control.
In good shape and with innovative technology: the new D1FC/D3FC series

The D1FC direct operated proportional DC valve in nominal size NG06 and D3FC in nominal size NG10 combine highly compact external dimensions with modern digital control technology.

The position feedback system connected directly to the spool and fully integrated into the enclosure is unique for this performance category.

Both the D1FC as well as the D3FC are among the shortest position-controlled proportional DC valves on the market. The absence of any exposed cable increases reliability, and the connection to the position control can not be disconnected unintentionally as a result.

Modern, high-resolution position feedback system. The sensor measures the position of the spool on a continuous basis. Direct fastening to the spool increases the measurement accuracy.

Each chamber body. The premium mechanical design is based on the established D*FB series with spool/body design.

6 + PE or 11 + PE connection

Parameterization connection

Latest generation of digital onboard electronics. The parameters of the valve electronics can be accessed where required via the free, user-friendly ProPxD software. The integrated diagnostics function makes optimal configuration easier.

Optional: EtherCAT interface. Sophisticated control tasks can also be carried out within the fieldbus system as a result of the high data-transmission rate and the short cycle times (not shown).

Either with overlap spools or now also with zero lap spools for closed loop controls.

Short and flush: compact dimensions

D1FC

D3FC
Because the inner values count: the technical data.

The new D1FC/D3FC series from Parker provides the optimum conditions for economic operation in demanding applications. They provide a high level of dynamics combined with high flow.

Technical characteristics
- Direct operated proportional DC valves with position feedback system in two nominal sizes: NG06 and NG10
- Body based on D*FB with spool/body design
- Progressive flow characteristics for precise control of flow
- Low hysteresis
- Compact dimensions
- Onboard electronics are parameterizable via the free software
- EtherCAT interface (optional)
- Solenoid disable (optional)

Hydraulic specifications

<table>
<thead>
<tr>
<th></th>
<th>D1FC</th>
<th>D3FC</th>
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<tbody>
<tr>
<td>Max. operating pressure</td>
<td>Ports P, A, B 350; port T max. 35; 210 (external drain); port Y max. 35 bar</td>
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<tr>
<td>Nominal flow at Δp = 5 bar per control edge</td>
<td>5 / 10 / 20 / 30 l/min</td>
<td>35 / 55 / 75 l/min</td>
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<tr>
<td>Step response at 100 % step</td>
<td>20 ms</td>
<td>40 ms</td>
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<tr>
<td>Hysteresis</td>
<td>&lt; 0.1 %</td>
<td></td>
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<tr>
<td>Leakage at 100 bar</td>
<td>&lt; 800 ml/min (zero lap spool)</td>
<td>&lt; 1000 ml/min (zero lap spool)</td>
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<tr>
<td></td>
<td>&lt; 300 ml/min (overlap spool)</td>
<td>500 ml/min (overlap spool)</td>
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Electrical specifications

<table>
<thead>
<tr>
<th></th>
<th>D1FC / D3FC</th>
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<tbody>
<tr>
<td>Command</td>
<td>Code B</td>
</tr>
<tr>
<td></td>
<td>Code E</td>
</tr>
<tr>
<td>0...+10 V P→A</td>
<td>0...+20 mA P→A</td>
</tr>
<tr>
<td>12...+20 mA P→A</td>
<td></td>
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<tr>
<td>Electrical connection</td>
<td>6 + PE or 11 + PE acc. to EN 175201-804</td>
</tr>
<tr>
<td>Adjustment ranges</td>
<td>Min 0...50 % Max 50...100 % Ramp 0...32.5 s</td>
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Strength points:
- Fully integrated position feedback system
- Position feedback sensor positioned directly on the spool
- Digital electronics
- High level of dynamics and flows
- Very good repeatability
- NEW: With zero lap spools
- Short delivery times
- With EtherCAT interface upon request

Benefits for users:
- Protection from mechanical external influences, resulting in lower down times
- Very precise measurements, resulting in improved process accuracy
- Can be easily adapted to the application, resulting in flexible use
- Optimized process speed
- Improved process and product accuracy
- For closed loop controls
- No storage necessary
- High data speeds, short cycle times

More detailed information? With pleasure!

Want to know more about the new D1FC/D3FC series? Just write to us at the following email address: valveshcd@parker.com. We’ll be happy to give you more information about the technology, show you application examples and send you the relevant documentation.

You can find further details on our website at www.parker.com/euro_hcd. Our ProPxD software can be downloaded from www.parker.com/propxd.

The QR Code provided here leads you directly to the catalog data sheets with detailed depiction of the technical data.