Making It Easier To Control DC Motors

DC Digital Drive Feature comparison guide

This guide will show you the features of the PL/PLX range of DC drives when compared to its immediate competition. It is by no means an exhaustive comparison. Please email your feedback to info@sprint-electric.com. Thanks.

KEY:

✓ = yes ✖ = no

👎 = reduced specification £ = extra cost option

Feature	Sprint PL/PLX	Parker SSD 590 +	CT Mentor2	Lenze 48/4900	ABB DCS500
Unique electronic regenerative stopping facility on most 2Q models.	✓	✖	✖	✖	✖
English language display for programmable connection points.	✓	✖	✖	👎	✖
Digital I/P's and O/P's are short circuit proof.	✓	✖	✖	✖	👎
Digital I/P's and O/P's are over-voltage protected.	✓	✖	✓	✖	✖
Main & Auxiliary power ports for quick current release at start.	✓	✖	✖	✓	✖
4 ergonomically designed keys for Up, Down, Left and Right for easy menu navigation.	✓	✖	✖	✖	✖
Motor drive alarms latched for display after power on / off, i.e. message not lost when power turned off.	✓	✖	✖	✖	✖
Unique 'configuration checker' detects shorting of user programmed block diagram outputs.	✓	✖	✖	✖	✖
All analogue I/P's have a programmable voltage range up to +/- 30V with up to 5mv resolution with excellent response time.	✓	✖	👎	👎	👎
All analogue I/P's are over-voltage protected.	✓	✖	✓	✖	✖
Ability to select 2 sets of motor parameters.	✓	✖	£	✖	✓
Windows based on/off line graphical configuration & diagnostic tool (supplied FOC inc. connection lead)	✓	✖	✖	✖	£
Friendly easy to use menu structure with English language parameter names.	✓	👎	✖	✖	✖
Extensive programmable I/O.	✓	👎	£	£	£
Significant panel space savings due to compact design.	✓	👎	👎	✖	✖
In depth diagnostic functionality available from on board display (in-built meter).	✓	👎	👎	👎	✓
Built in oscilloscope output looking at ALL display parameters.	✓	👎	✖	✖	£

KEY:

✔ = yes ✘ = no

🖑 = reduced specification £ = extra cost option

	Sprint PL/PLX	Parker SSD 590 +	CT Mentor2	Lenze 48/4900	ABB DCS500
Ability to store 3 entire drive recipes.	✔	✘	£	✔	✘
Uniform product width across whole range.	✔	✘	✘	✘	✔
Up to 8 preset speeds by 3 inputs (with priority select).	✔	✘	🖑	🖑	🖑
Large Backlit 40 Character Alphanumeric LCD Display.	✔	🖑	✘	✘	✔
All feedback options as standard (Tacho, Encoder etc).	✔	£	✔	✔	✔
16 Motor drive alarms - displayed in English.	✔	✔	🖑	🖑	✔
Real language parameter description & pin number on display.	✔	🖑	✘	✔	✔
Self test message displays.	✔	✔	✘	✘	✔
Self ranging input for main stack supply 12V to 480V.	✔	✘	✘	✘	✘
Self ranging input for auxiliary supplies 100V to 480V.	✔	🖑	✘	✘	✘
Self ranging input for control supply 100V to 240V.	✔	🖑	✘	✘	🖑
In depth fault monitoring and comprehensive system alarms.	✔	✔	✔	✔	✔
Fully digital control loops.	✔	✔	✔	✔	✔
Control circuits fully isolated from power circuit.	✔	✔	✔	✔	✔
Choice of 2 adaptive armature current loop modes (Standard or Superfast).	✔	✘	✘	✘	✘
Self tuning current loop utilising "Autotune" algorithm.	✔	✔	✔	✔	✔
Steady state accuracy of 0.01% using encoder with digital reference. NB. No extra hardware required.	✔	£	£	✔	✔
Adjustable speed PI with integral defeat.	✔	✔	✔	✔	✔
All analogue O/P's short circuit protected.	✔	✔	✔	✔	✔
Drive to drive Total Recipe Exchange via serial link.	✔	✔	✔	✔	£
Drive to host Total Recipe Exchange via serial link.	✔	✔	✔	✔	£
Multiple drive 'daisy chain' data exchange facility via serial link (ideal for digital speed ratioing using encoder feedback – NB no extra hardware needed).	✔	£	£	✔	£
Regeneration up to 1.2 x mains supply.	✔	✔	🖑	✘	✔
Field current programmable from minimum to 100% continuous with fail alarm.	✔	✔	✔	✔	✔

Standard Software functions

With an extensive range of standard software blocks, the PL/X can easily take control of the most demanding motion tasks.

KEY:

✔ = yes ✖ = no

👎 = reduced specification £ = extra cost option

	Sprint PL/PLX	Parker SSD 590 +	CT Mentor2	Lenze 48/4900	ABB DCS500
Full suite of centre winding macro's	✔	✔	£	£	✖
Motorised Pot simulator with memory	✔	👎	👎	👎	✖
2 x PID's (undedicated)	✔	👎	£	👎	✖
2 x Summers (undedicated)	✔	👎	✔	👎	✖
2 x Filters (undedicated)	✔	👎	£	✖	✖
Dual Motor Swap	✔	✖	£	£	✔
Batch Counter	✔	✖	✖	✖	✔
Spindle Orientation	✔	✖	£	✔	✖
Latch	✔	✖	✖	✖	✖
Delay Timer	✔	✖	✖	✖	✖
Linear or S ramp	✔	✔	£	✔	✔
Current Profiling v Speed	✔	✔	✔	✔	✔
Jog / Crawl functions	✔	✔	✔	✔	✔
Slack take up	✔	✔	£	✔	✔
Draw control	✔	✔	✔	✔	✔
Auto Self-tune current loop	✔	✔	✔	✔	✔
8 independent Multi-function blocks	✔	👎	👎	👎	👎
4 independent Comparators	✔	✖	✖	👎	✖
4 independent Change-Over switches	✔	✖	✖	✖	✖
16 Jumpers for interconnection of parameters	✔	👎	👎	✖	✔
Versatile Preset Value Selector	✔	✖	✖	✖	✔
Parameter Profiler	✔	✖	✖	✖	✖
3 User programmable complete drive recipe pages	✔	✖	✖	✔	✖
Copy & paste facility between all recipe pages	✔	✖	✖	✔	✖
'Overwrite lock out' facility on one recipe page	✔	✖	✖	✖	✖

Inputs / Outputs

Numerous inputs and outputs allow you to control a wider range of industrial applications without the need for external equipment.
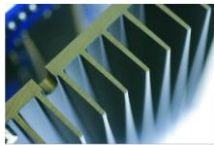
KEY:

✔ = yes ✘ = no

☜ = reduced specification £ = extra cost option

	Sprint PL/PLX	Parker SSD 590 +	CT Mentor2	Lenze 48/4900	ABB DCS500
Analogue inputs					
8 (all programmable) (can also be utilised as digital i/p's)	8	5	5	4	5
Analogue outputs					
4 (3 programmable)	4	3	4	3	2
Digital inputs					
17 (all programmable)	17	9	9	5	8
Digital outputs					
7 (all programmable)	7	3	7	4	7
Speed feedback					
Analogue tacho	✔	£	✔	✔	✔
Encoder	✔	£	✔	✔	✔
Armature voltage	✔	✔	✔	✔	✔
Encoder + Armature volts or Analogue Tacho	✔	£	✔	✔	✘

Protection

Reducing your downtime and maintenance costs by giving your DC motors added levels of protection.

KEY:

✔ = yes ✘ = no

☜ = reduced specification £ = extra cost option

	Sprint PL/PLX	Parker SSD 590 +	CT Mentor2	Lenze 48/4900	ABB DCS500
Interline device networks (snubber)	✔	✔	✔	✘	✔
High energy MOV's	✔	✔	✔	✔	✔
Overcurrent (instantaneous)	✔	✔	✔	✔	✔
Overcurrent (150% for 25s inverse time)	✔	✔	✔	☜	✔
Field Failure	✔	✔	✔	✔	✔
Field Overcurrent	✔	✔	✔	✔	✔
Tacho and/or Encoder failure with auto AVF backup	✔	✘	✘	✔	✘
Motor over-temperature	✔	✔	✔	✔	✔
Thyristor Stack over-temperature	✔	✔	✔	✔	✔
Thyristor "Trigger" failure	✔	✔	✔	✔	✔
Zero speed detection	✔	✔	✔	✔	✔
Standstill logic	✔	✔	✔	✔	✔
Stall protection	✔	✔	✔	✔	✔
Digital Output short circuit Trip Alarm	✔	✘	✘	✘	✘
Overspeed	✔	✔	✔	✔	✔

	Sprint PL/PLX	Parker SSD 590 +	CT Mentor2	Lenze 48/4900	ABB DCS500
Armature Overvolts	✔	✔	✔	✔	✔
Mains synchronisation loss	✔	✔	✔	✔	✔
Mains supply phase loss	✔	✔	✔	✔	✔
Digital Output limit 350mA	✔	👎	👎	👎	👎
Low leakage current	✔	👎	👎	👎	👎

Field Control

On board fully controlled field supply.

8A (12-123A ratings)
16A (155-330A ratings)
32A (430-630A ratings)
Optional 50A (430-1650A ratings)

The field and armature supplies are input through separate terminals and may be at different levels if desired.

	Sprint PL/PLX	Parker SSD 590 +	CT Mentor2	Lenze 48/4900	ABB DCS500
Fixed Voltage	✔	✔	✔	✔	£
Fixed Current	✔	✔	✔	✔	£
Field Economy	✔	✔	✔	✔	£
Field Weakening	✔	✔	✔	✔	£
Delayed Quenching (for Dynamic Braking)	✔	✔	✔	✔	£
Standby field value (for keeping motor warm/no condensation)	✔	✔	✔	✔	£

PL Pilot Configuration and monitoring software

The most powerful digital DC drive on the market needs the most flexible and robust software available.

The PL Pilot simplifies drive programming

- Easy to use 'Windows' based software
- Allows online and offline configuration
- Allows real time diagnostics and monitoring

This graphical diagnostic tool is included with every Sprint Electric PL/X free of charge.

PL Pilot makes interconnecting the drive's application blocks a simple task, and allows the user to tailor the drive's control strategy to meet the demands of the process or application exactly.