MAKING IT EASIER TO CONTROL DC MOTORS

DC Digital Drive Feature comparison guide

SPRINT ELECTRIC

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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.

KEY ✓ = yes ✗ = no 👎 = reduced specification £ = extra cost option

Feature	PL/PLX	Parker SSD 590 +	CT Mentor2	Lenze 48/4900	ABB DCS500
Unique electronic regenerative stopping facility on most 2Q models.	✓	✗	✗	✗	✗
Plain 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 plain 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.	✓	👎	✗	✗	£

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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 plain language.	✓	✓	👎	👎	✓
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.

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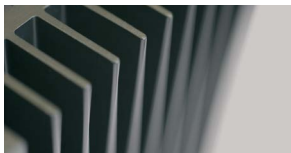|	PL/PLX	Parker SSD 590 +	CT Mentor2	Lenze 48/4900	ABB DCS500
Full suite of centre winding macro's	✓	✓	£	£	✗
Motorised Pot simulator with memory	✓	👎	👎	👎	✗
2 x PID's (undedicated)	✓	👎	£	👎	✗
2 x Summers (undedicated)	✓	👎	✓	👎	✗
2 x Filters (undedicated)	✓	👎	£	✗	✗
Dual Motor Swap	✓	✗	£	£	✓
Batch Counter	✓	✗	✗	✗	✓
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.

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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.

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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	✓	✓	✓	✓	✓

	PL/PLX	Parker SSD 590 +	CT Mentor2	Lenze 48/4900	ABB DCS500
Standstill logic	✓	✓	✓	✓	✓
Stall protection	✓	✓	✓	✓	✓
Digital Output short circuit Trip Alarm	✓	✗	✗	✗	✗
Overspeed	✓	✓	✓	✓	✓
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)   *32A (650-1050A ratings)*
Optional 50A (430-1050A ratings)   *64A (1250-2250A ratings)*
Optional 100A (1250-2250A ratings)

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

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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 & 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 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.