DC Motor Control Technology:

Increase your productivity, save energy and reduce downtime.

With an extensive range of DC motor control products, you will find an answer to your industrial automation questions.

Your Industry - Our Experience.

We've used our renowned industrial automation experience to design a range of DC motor controllers which provide you with solutions to the most demanding motor control applications.

It's now easier than ever to design new DC motor control systems or improve the performance of an existing application by retrofitting with the latest DC technology.

Save with Compact Designs and Ex-Stock Delivery.

You can save cabinet space in new control systems, or easily upgrade an existing DC motor application. Compact design comes as standard.

Reduce your downtime by relying on our ex-stock delivery. With a global network of partners and all products built for stock, you can quickly get your business moving again.

Single Phase products

We also manufacture single phase DC motor controllers. Please see our single phase catalogue for details. Available at www.sprint-electric.com.

Slip Ring Motor Drives

We also manufacture the JLX range of digital slip ring motor drives, see www.sprint-electric.com

Take control of the most demanding motor control applications.

The PL and PLX DC drives give a fast controlled response over the full speed range.

The PL/X range

5 - 50KW
12 - 123AMPS

65 - 145KW
155 - 330AMPS

The 4Q PLX can motor and brake in forward and reverse and regenerate energy into the mains supply when braking.

All models include 40 character alpha-numeric back-lit display, full set of centre winding blocks and a field weakener for extended speed range. A high quality product from a world beating company.

Available in both 2Q and 4Q versions the range comprises 5 very compact chassis sizes with models rated from 12 to 2250 Amps.

Key Features:

- Friendly easy-to-use menu structure with descriptive parameter names.
- Extremely flexible block diagram including unique "Configuration Checker", detects conflicts in user programmed configurations.
- Failsafe automatic "Revert to AVF" on tach feedback failure.
- A choice of two drive configuration and monitoring packages.
  - PL Pilot. Free with PL/X.
  - Pilot+. Free and can be upgraded to signal flow diagram.
- Ultra compact sizes offering significant panel space savings over other manufacturers.
- Programming menu is designed for rapid travel to desired parameter using ergonomically designed keys.

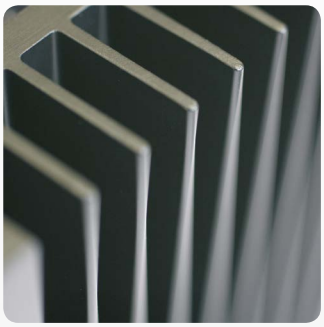
185 - 265KW
430 - 630AMPS

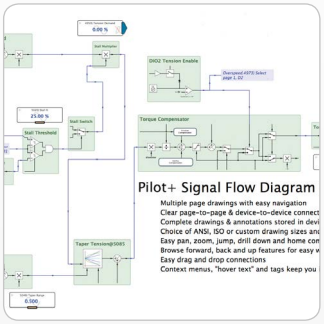
275 - 440KW
650 - 1050AMPS

520 - 980KW
1250 - 2250AMPS

- Five feedback transducer options as standard.
- Non-volatile trip alarm memory, even after power-down.
- Real language parameter description eliminates need for look-up tables.
- Built-in "Oscilloscope" output for full parameter monitoring.
- Three fully independent, user programmable drive configurations.
- Full suite of centre winding Apps included.
- Extensive, multi-function programmable I/O, with over 36 digital and analogue input/output combinations.
- Built-in system application blocks with descriptive connection points.
- In-depth fault monitoring and comprehensive system alarms.
- Serial communications to allow off-site programming and remote diagnostics.
- In-depth diagnostic facility available from on-board display and "in-built meter".
- On board fully controlled field with five operating modes.
- Easy to use product manual with display graphics and block diagrams.
- Full suite of built-in encoder functions as standard.
- Large 40 character backlit alphanumeric LCD display.
- All PL/X models are compatible with drive.web, to provide robust programmable peer control for drives and systems.

SPECIFICATION





Ratings

POWER CONFIGURATION
- PLX Four Quadrant Regenerative
- PL Two Quadrant Non-Regenerative
- Fully controlled variable field supply

ARMATURE VOLTAGE
- V armature = Vac x 1.2

ARMATURE CURRENT RATINGS (ADC)
- 12, 24, 36, 51, 72, 99, 123, 155, 205, 270, 330, 430, 530, 630, 650, 750, 850, 950, 1050*, 1250, 1450, 1650, 1850, 2050, 2250*
- Overload 150% for 25 seconds

*No overload

FIELD CURRENT
- 8A (12-123A ratings)
- 16A (155-330A ratings)
- 32A (430-630A ratings)
- 64A (1250-2250A ratings)

FIELD VOLTAGE
- V field = 0 to 0.9 x Auxiliary AC Supply

AC SUPPLY VOLTAGE (VAC)
Main 3 phase 50-60Hz:
- 12 to 500Vac +/- 10% for armature power
- 600/690Vac options for 650A-2250A

Auxiliary 3 phase 50-60Hz:
- 100 to 500Vac +/- 10% for field power
- 600/690Vac options for 650A-2250A

Control 1 phase 50-60Hz:
- 110 to 240Vac +/- 10% for control power

Protection
- Interline device networks
- High energy MOV's
- Instantaneous over-current
- Field failure and over-current
- Motor over-temperature
- Thyristor stack over-temperature
- Mains supply phase loss
- Mains synchronisation loss
- Armature over-volts
- Speed feedback failure
- Stall protection
- Standstill logic
- Thyristor 'trigger' failure
- Digital output short circuit

Inputs/Outputs

ANALOGUE INPUTS
- 8 total (resolution 2.5mV+sign)
- All configurable
- All have programmable thresholds and 4 voltage ranges
- +/- 5/10/20/30V
- All inputs are over voltage protected and can also be utilised as digital inputs

ANALOGUE OUTPUTS
- 4 Total (resolution 2.5mV+sign)
- 1 armature current output
- 3 configurable
- All outputs are short circuit protected

DIGITAL INPUTS
- 17 total
- All configurable

DIGITAL OUTPUTS
- 7 Total (24V logic 350mA total)
- Short circuit protected
- Over temp and
- over voltage protected
- All configurable

Standard software functions
- Full suite of centre winding macros
- Motorised pot simulator with memory
- 2x PIDs (undedicated)
- 2x Summers (undedicated)
- 2x Filters (undedicated)
- Delay timer
- Current Profiling
- Spindle Orientation
- Jog/Crawl functions
- Dual motor swap
- Latch
- Linear or S ramp
- Slack take up
- Batch counter
- Draw control
- Auto self-tune current loop
- 3 user programmable drive configurations

Alarm Status
- First fault latched and automatically displayed.
- Fault automatically saved at power off

Monitoring
- All analogue input voltages
- All digital input states
- All analogue output voltages
- All digital output states
- Tachogenerator voltage
- Motor armature current (amps)
- Motor field current (amps)
- Motor armature volts
- Output power
- AC supply volts

Field configurations
- Fixed current
- Fixed voltage
- Field weakening
- Delayed quenching
- Standby field value
- Field economy

Environment
- Ambient operating temperature
- 0-40˚C (2050A 2250A 35°C)
- 25 to +55˚C storage

Steady state accuracy
- 0.01% Encoder feedback with digital reference.
- 0.1% Analogue tachogenerator feedback
- 2% Armature voltage feedback
- 0.01% Encoder + tach, encoder + AVF or encoder only feedback
- Maximum encoder frequency 100KHz

Standards
CE marked to EN50178
- (low voltage directive)

EN50082-2:1995
- Immunity industrial environment

EN50082-1:1997
- Immunity residential commercial and light industry

EN50081-2:1993
- Emissions industrial environment (EN55011 Class A)

EN50081-1:1992
- Emissions industrial environment (EN55022 Class B)

- UL and cUL listed 12-630Amps
- UL and cUL pending 650-2250Amps

PL/X configuration and monitoring tools

Minimise your setup and commissioning time.
A choice of 2 drive configuration and monitoring packages.

PRODUCT NAME

PL PILOT

DESCRIPTION

The PC running the PL PILOT software is connected to the drive via the PC's standard serial port. The package is designed for ease of use and provides a clear, defined and understandable method for accessing all levels of the drives extensive built in functionality.

Unique 'Configuration Checker' automatically scans for user programmed connection faults and highlights the conflicts. Tile and zoom facility allows the user to view and arrange any number of screens simultaneously.

Diagnostic monitoring in engineering units (volts, amps, Kw, RPM, Hz) and percentages for all terminals and block outputs.

Extensive colour dynamics to assist in the detection of important conditions.

PRODUCT NAME

PILOT+

DESCRIPTION

Pilot+ is a sophisticated software tool that can be used to configure the PL/X as an alternative to PL PILOT.

Pilot+ can be upgraded for a small cost to include a signal flow diagram (SFD) graphical package. This allows the user configured internal block diagram of the PL/X system to be represented as a block diagram on screen and changed by drag and drop connections from PIN to PIN.

When used in conjunction with the drive.web distributed control products the Pilot+ software can produce an entire configuration diagram of a multiple drive system.

drive.web

All PL/X models are compatible with drive.web. The drive.web distributed control technology uses Ethernet and powerful graphical tools to provide robust, Programmable Peer Control (PPC) for drives and systems.

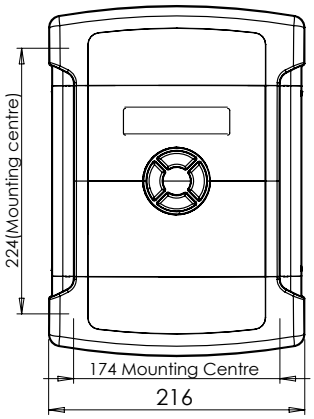
The drive.web technology is infinitely scalable and cost effective for systems of any size or complexity. For typical motor control systems, drive.web beats using any PLC on cost, performance and ease of use.

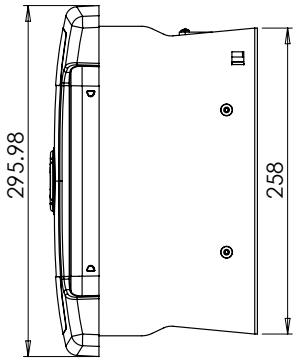
DESCRIPTION

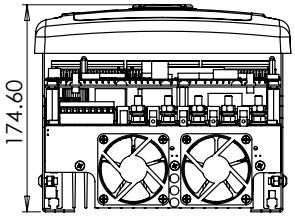
The PL/X DC motor controller uses closed loop control of armature current and feedback voltage to give precise control of motor torque and speed. The unit also controls the motor excitation field. The closed loop parameters are programmable by the user and a wealth of inputs and outputs are provided to allow very complex motion control processes to be achieved.

PRODUCT NAME

PL/X5-50







RATINGS & DIMENSIONS

PL 2 QUADRANT PLX 4 QUADRANT	KW @ 460v	HP @ 460v	ARMATURE CURRENT DC AMPS	FIELD AMPS
PL and PLX 5	5	6.6	12	8
PL and PLX 10	10	13.3	24	8
PL and PLX 15	15	20	36	8
PL and PLX 20	20	26.6	51	8
PL and PLX 30	30	40	72	8
PL and PLX 40	40	53.3	99	8
PL and PLX 50	50	66.6	123	8

FRAME SIZE

H	**296 mm**
W	**216 mm**
D	**175 mm**

SHIPPING WEIGHT

8kg