

# DC technology

## K-Series single phase DC drives - up to 2HP

### Regenerative & Non-regenerative

Enclosed, DIN rail mounting drives in elegant compact packages for both stand alone and systems applications.

#### Standard features include:

- Plug-in screw terminals
- Dual 115 & 230 volts, 50/60Hz supply
- Armature volts or tach feedback
- IP20 enclosure
- Output for ramps, speed demand, current demand
- Inputs for ramped speed, unramped speed, torque (current)
- Logic outputs for overload & trip
- Configurable level comparator & sign changer
- Standards: UL, C-UL, CE



MODEL	RATING	FEATURES	TERMINALS
<b>NON-ISOLATED</b>			
<b>K340</b>	<b>Armature current 3.4 amps</b> 1/4Hp 0.25kW @90Vdc 1/2Hp 0.55kW @180Vdc Size 1.4"W x 4.2"H x 4.7"D	Max Speed Min Speed Up Ramp IR Comp	+10V Min Input + Common
<b>K680</b>	<b>Armature current 6.8 amps</b> 1/2Hp 0.55kW @90Vdc 1Hp 0.75kW @180Vdc Size 1.8"W x 4.2"H x 4.7"D	I max AVF/Tach switch Speed range switch AC voltage selector Field 1Amp 0.9x ac supply	Run Tach f/b
<b>K1220</b>	<b>Armature current 12.2 amps</b> 1Hp 0.75kW @90Vdc 2Hp 1.8kW @180Vdc Size 1.8"W x 4.2"H x 4.7"D		
<b>ISOLATED</b>			
<b>K340i</b>	<b>Armature current 3.4 amps</b> 1/4Hp 0.25kW @90Vdc 1/2Hp 0.55kW @180Vdc Size 2.4"W x 4.2"H x 4.7"D	Max Speed Min Speed Up Ramp Down Ramp Stability	+10V ref Min speed Input + Output +/- Common
<b>K680i</b>	<b>Armature current 6.8 amps</b> 1/2Hp 0.55kW @90Vdc 1Hp 0.75kW @180Vdc Size 2.8"W x 4.2"H x 4.7"D	I max IR Comp AVF/Tach switch Speed range switch AC voltage selector	Level O/P Level I/P Overload Trip Ramp O/P Demand O/P Speed O/P Current O/P + Speed I/P Torque I/P
<b>K1220i</b>	<b>Armature current 12.2 amps</b> 1Hp 0.75kW @90Vdc 2Hp 1.8kW @180Vdc Size 2.8"W x 4.2"H x 4.7"D	Level comparator	Tach f/b
<b>4-QUADRANT, REGENERATIVE, REVERSING, ISOLATED</b>			
<b>K340XRi</b>	<b>Armature current 3.4 amps</b> 1/4Hp 0.25kW @90Vdc 1/2Hp 0.55kW @180Vdc Size 2.4"W x 4.2"H x 4.7"D	Max Speed Min Speed Up Ramp Down Ramp Stability	+10V ref Min speed Input + Output +/- Common
<b>K680XRi</b>	<b>Armature current 6.8 amps</b> 1/2Hp 0.55kW @90Vdc 1Hp 0.75kW @180Vdc Size 2.8"W x 4.2"H x 4.7"D	I max IR Comp AVF/Tach switch Speed range switch AC voltage selector	Ramp O/P Demand O/P Speed O/P Current O/P + Speed I/P Torque I/P
<b>K1220XRi</b>	<b>Armature current 12.2 amps</b> 1Hp 0.75kW @90Vdc 2Hp 1.8kW @180Vdc Size 2.8"W x 4.2"H x 4.7"D	Level comparator	Tach f/b



#### Optional **drive.web smarty**

For complete process automation Model dw210-1107 uses discrete i/o interface to provide:

- Ethernet networking
- Internet access
- Powerful function blockprogramming
- ModbusRTU and ModbusTCP/IP
- Additional remote i/o
- Encoder feedback (see page 20 for details)

#### High Speed Fuse Kits - DIN Rail Mounting

FLN-6.3	Line fuse kit	K340
FLL-6.3	Line/line fuse kit	K340
FLNR-6.3	Line & arm fuse kit	K340XRi
FLLR-6.3	Line/line & arm fuse kit	K340XRi
FLN-20	Line fuse kit	all non-regen K
FLL-20	Line/line fuse kit	all non-regen K
FLNR-20	Line & arm fuse kit	all regen K
FLLR-20	Line/line & arm fuse kit	all regen K

# Single Phase DC Systems Drives

This family of single phase DC drives with isolated control circuitry, is designed to meet the most exacting requirements of high performance systems builders. It is a range of full featured products using advanced manufacturing technologies to give unequalled value and functionality to OEMs and System Integrators with world wide markets and demanding applications.

## NON-REGEN MODELS

	230VAC, 180VDC	115VAC, 90VDC	FUSE KIT
400i (4 amps)	0.75hp	0.4hp	included
1600i (16 amps)	3hp	1.5hp	F2-30
3200i/32 (32 amps)	6hp	3hp	F2-60
<b>415VAC, 320VDC</b>			
3200i/48LL (48 amps)	7.5hp	4hp	F2-80
<b>460VAC, 360VDC</b>			
3200i/32C109 (32 amps)	8hp	5hp	F2-60

## 4-Q REGEN, REVERSING MODELS

	230VAC, 180VDC	115VAC, 90VDC	FUSE KIT
3600XRi/16	3hp	1.5hp	F3-30
3600XRi/32	6hp	3hp	F3-60
3600XRi/36	6.5hp	3hp	F3-60
<b>415VAC, 320VDC</b>			
3600XRi/36LL	10hp	6hp	F3-60
<b>480VAC, 360VDC</b>			
3600XRi/32C132	10hp	6hp	F3-60



Model 400i, up to 0.75hp  
4" x 6.25" x 2" (100 x 160 x 50mm)



Model 1600i, up to 3hp  
6.1" x 6.1" x 3.4" (150 x 150 x 85 mm)

## Standard Features

Approvals: CE  
 Linear torque control  
 Armature voltage or tach feedback  
 Calibration range switches  
 Speed reference 0-10V or 4-20mA  
 Maximum and minimum speed settings  
 Adjustable current limit  
 Current range switch selectable (not on 400i)  
 Independently adjustable up and down ramps  
 150% overload capacity, 30 second stall timer  
 Stall relay contact output (transistor on 400i)  
 Zero speed relay contact (transistor on 400i)  
 Control fuses fitted (Power fuse on 400i)  
 Start inhibit after power loss  
 Power on and stall indicator LEDs  
 Speed signal output  
 Current signal output  
 Ramp signal output  
 Total demand signal output  
 Dual supply voltage 110 / 230 VAC, 50/60Hz  
 Suitable for shunt or PM motors  
 IR compensation  
 Stability adjustment

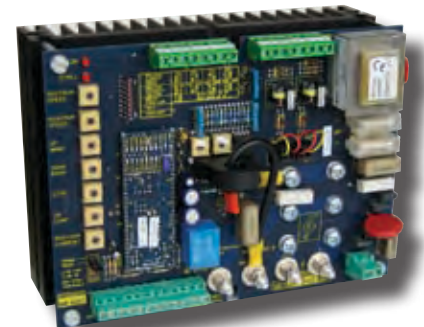
## Additional Regen Drive Features

Speed reference +/-10V or 4-20mA  
 Speed trim input  
 Independent up & down ramps in FWD & REV  
 Separate adjustable current limits motor/brake  
 Torque control in either 2 or 4 quadrants  
 Relay for Stall, Zero speed, Reverse, Overload  
 Control fuses fitted  
 Fast, ramped or coast stop  
 LEDs for + current, - current, stall & stall timer  
 Momentary contact for reversing applications

## Optional drive.web smarty

For complete process automation Model dw210-1107 uses discrete i/o interface to the drive and to provide:

- Ethernet networking
- Internet access
- Powerful function blockprogramming
- ModbusRTU and ModbusTCP/IP
- Additional remote i/o
- Encoder feedback (see page 15 for details)



Model 3200i, up to 7.5hp  
6.1" x 8.0" x 4.2" (150 x 200 x 105 mm)



Model 3600XRi  
 Up to 32 amps - 6.9" x 8" x 3.2" (175x200x80 mm)  
 36 amps unit - 6.9" x 8" x 3.8" (175x200x95 mm)

## Enclosed Drives

Enclosed wall mounting versions of these drives and a wide range of other options are detailed in the "Modulus Drive Units" section of this catalog

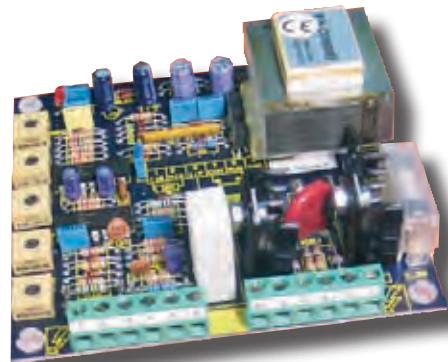
## Single Phase DC Drives for OEMs

### Model 370 ... OEM Chassis Drives

Compact, DC drives designed for low cost, non-regenerative, non-isolated machine controls.

#### Basic Specification:

Rating: 1/4hp at 90VDC, 1/2hp at 180VDC  
 Maximum and minimum speed settings  
 Current limit  
 Acceleration pot  
 Suitable 110 or 230 volts, single phase, 50 or 60Hz (not isolated)  
 For use with permanent magnet or shunt field motors  
 Approval: CE



#### Dimensions

4" x 4" x 1.6" (100 x 100 x 40mm)

### Models 400, 800, 1200 ... OEM DC Drives (up to 2hp)

Versatile, basic, low cost drives suitable for wide range of machine control applications

Model	Amps	Description	@ 180VDC	@ 90VDC	Dimensions
400	4 amps	Open chassis with screw terminals	0.75hp	0.38hp	5.2"x4.0"x1.6" (130x100x40mm)
800	8 amps	Open chassis with screw terminals	1.5hp	0.75hp	5.2"x4.0"x2.8" (130x100x70mm)
1200	12 amps	Open chassis with screw terminals	2.0hp	1.0hp	5.2"x4.0"x2.8" (130x100x70mm)
400E	4 amps	Enclosed NEMA 1 with pot, switch, fuse	0.75hp	0.38hp	9.9"x7.0"x3.8" (250x177x95 mm)
800E	8 amps	Enclosed NEMA 1 with pot, switch, fuse	1.5hp	0.75hp	9.9"x7.0"x3.8" (250x177x95 mm)
1200E	12 amps	Enclosed NEMA 1 with pot, switch, fuse	2.0hp	1.0hp	9.9"x7.0"x3.8" (250x177x95 mm)
400ERB	4 amps	Enclosed, pot, switch, brake, reverse, fuse	0.75hp	0.38hp	9.9"x7.0"x3.8" (250x177x95 mm)
800ERB	8 amps	Enclosed, pot, switch, brake, reverse, fuse	1.5hp	0.75hp	9.9"x7.0"x3.8" (250x177x95 mm)
1200ERB	12 amps	Enclosed, pot, switch, brake, reverse, fuse	2.0hp	1.0hp	9.9"x7.0"x3.8" (250x177x95 mm)

#### Standard features:

Linear torque control  
 Armature voltage or tach feedback with IR compensation  
 Calibration range switches (no component changes)  
 Speed reference 0-10V or 4-20mA  
 Maximum and minimum speed settings  
 Adjustable current limit  
 Independently adjustable up and down ramps  
 150% overload capacity with 30 second stall timer  
 Stall and Zero Speed relay driver outputs  
 Power fuse (up to 12 amps)  
 Power on and stall indicator LEDs  
 Stability adjustment  
 Speed, Ramp Speed and Current signal outputs  
 International supply voltages 110 / 230 VAC, 50/60hz (not isolated)  
 Suitable for shunt wound or permanent magnet motors

Approvals: CE



Model 1200E

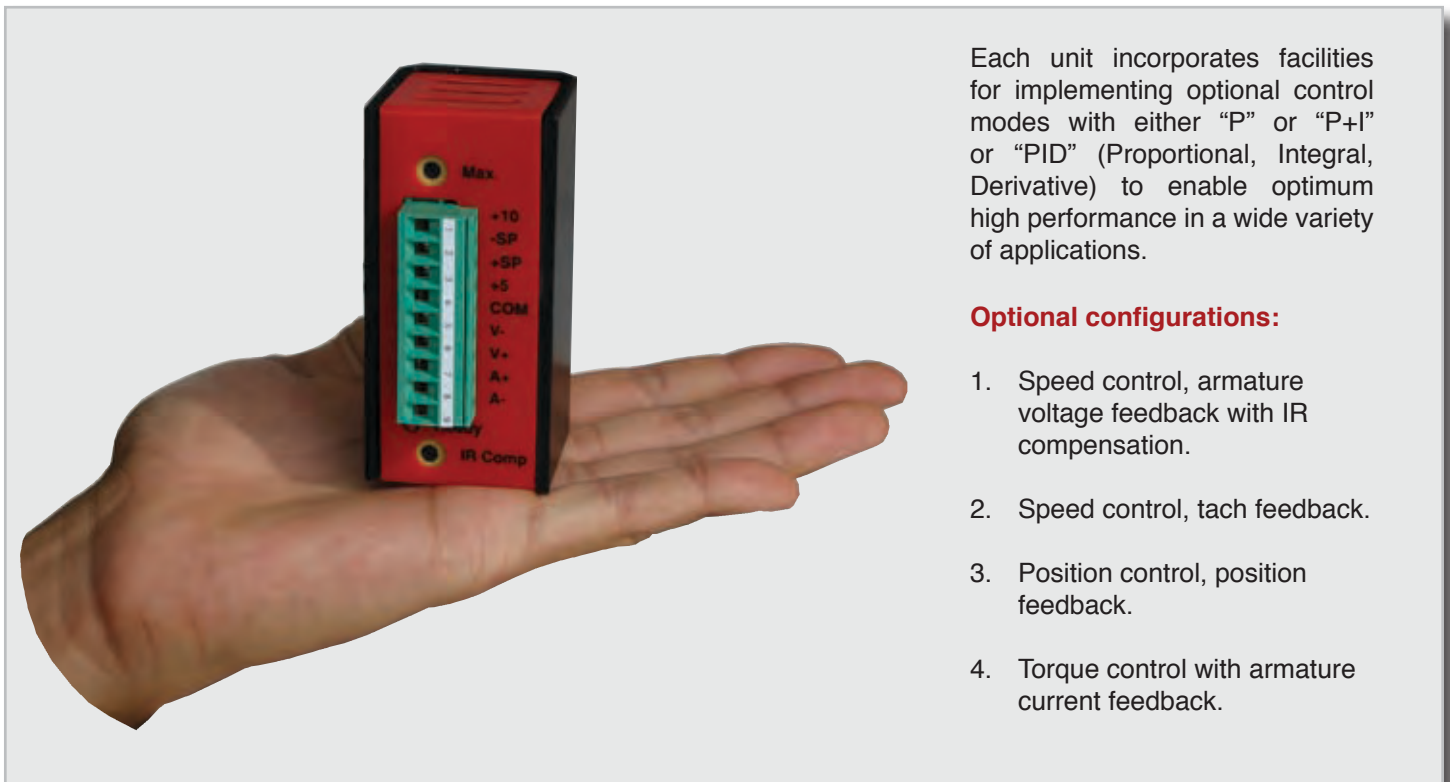
# Linear Amplifier DC Servo Drives

## Model 200XLV 4-Quadrant DC Drive

These products are designed for small, high performance position and speed control applications such as robotics, mechanical handling, automated assembly, packaging processes, machine tool axis, etc.

The units are miniature, fast response, reversing, linear transistor drives for brushed DC motors with armatures up to 48 volts. They operate from either a smoothed, unregulated, rectified DC, or battery supply, and include built in thermal protection, current limit with short term overcurrent capacity and resettable overload trip.

The control circuits are designed to ensure extremely low noise emissions, and will meet the most stringent of EMC (Electro-Magnetic Compliance) requirements.



Each unit incorporates facilities for implementing optional control modes with either “P” or “P+I” or “PID” (Proportional, Integral, Derivative) to enable optimum high performance in a wide variety of applications.

### Optional configurations:

1. Speed control, armature voltage feedback with IR compensation.
2. Speed control, tach feedback.
3. Position control, position feedback.
4. Torque control with armature current feedback.

### Standard Features

- Speed, Position, or Torque control modes
- Extremely low RF noise emissions
- Ready indicator light
- Motor voltage range: +/-6 VDC to +/-48 VDC
- Armature current up to 2A cont., 3A peak
- Supply voltage 12 to 48 VDC
- Precision 5v and 10v references (short circuit protected, 5mA)
- Differential setpoint inputs (300K ohms)
- Overload trip
- Thermal protection
- Adjustable Maximum Speed
- Adjustable IR Compensation for armature volts feedback
- Plug-on terminals
- DIN rail mounting clip (optional)

### Dimensions

3.25" x 1.65" x 1.65" (82x40x40mm)

### Approvals: CE



# PL Series ...digital dc drives



up to  
2000+ hp

## Standard Features

- Total digital control
- Basic peer-to-peer link
- 40 character backlit display
- Friendly, easy menu structure
- Modern, compact packaging
- Extensive, flexible, plug-in i/o
- RS232 serial port
- Easy configuration saving & cloning
- Built-in automatic field controller
- Built in programmable control functions for PID, winders, orientation, etc.
- Tach, encoder & arm volts feedback
- Easy reliable autotune
- UL, C-UL, CE

## Optional:

- Peer-to-peer Ethernet communications
- **drive.web** programmable control
- ModbusTCP & EIP over Ethernet
- ModbusRTU RS485 serial port
- Devicenet
- Profibus DP



## powerDRIVE Packages

PL/X DC drives up to 400 horsepower are available in compact **powerDRIVE** packages complete with:

- Main contactor
- High speed 3-phase line fuses
- High speed armature fuse
- High speed control/field fuses
- Line filter (100HP & up)
- Optional motor blower starter (100HP & up)



# Key Features

## Analog Inputs & Outputs

8 analog inputs & 4 analog outputs (12 bits)  
 All outputs short circuit protected  
 All inputs over voltage protected up to +50v  
 Inputs configurable 5 to 30v  
 Input volts programmable up to +/-30v

## Digital Inputs & Outputs

17 digital inputs & 7 digital outputs  
 Digital i/o short circuit protected  
 Digital inputs over volts protected to +50v  
 (with settable switching levels)  
 Digital outputs over volts protected to +50v

## Speed Feedback - Standard

Analog tach  
 Encoder  
 Armature voltage  
 Encoder + armature volts  
 Encoder + analog tach

## Field Configurations

Fixed Current  
 Fixed voltage  
 Automatic field weakening  
 Delayed field quench  
 Standby field setting  
 Field economy

## Diagnostic Monitoring

Scope terminal monitors selectable values  
 All analog input voltages  
 All digital input states  
 All analog output voltages  
 All digital output states  
 Tach volts  
 Motor arm volts & amps  
 Field current  
 Output power Kw  
 AC supply volts

## User Configurable Software Functions

Two PID blocks, Parameter profiler, Winder reel diameter calculator, Winder taper tension calculator, Winder torque/inertia/friction compensator, Preset speed function, Two summers, Software "motorized pot", Interval timer, Current profiling, Zero speed with shaft position lock, Jog / crawl functions, Two filters, Dual motor swap, Latch, Sample & hold function, Auto self-tune current loop, Linear and S-ramps, Slack take-up, Batch Counter, Draw control.

## Engineered Configuration Packages

Using the drive.web speedy dw111 controller, pre-configured generic apps are available for Open & Closed Loop Winders, Position Controls, Coordinated Line Drives, Indexing and others.

## Protection

Interline device networks  
 High energy MOV's  
 Instantaneous overcurrent  
 Overcurrent ( inverse time)  
 Field fail and overcurrent  
 Motor over temperature  
 SCR (thyristor) over temp  
 Main power phase loss  
 Armature over volts  
 Over speed protection  
 Speed feedback mismatch  
 Stall protection  
 Standstill logic  
 SCR (Thyristor) trigger failure  
 Digital output short circuit

## RS232 Serial Communications Port

Parameter upload/download to save and print  
 Drive - to - drive parameter link & set up cloning

## Optional Communications

**drive.web** peer-to-peer  
 Ethernet: **drive.web**, ModbusTCP/IP, EIP  
 ModbusRTU  
 Profibus DP



Easily add a **savvyPanel** touch screen HMI with secure WiFi interface

- Simple, intuitive configuration techniques with clear display of information
- No pots or switches to set
- Accurate display of voltages and currents
- Positive displacement pushbuttons for tactile feel
- High power processor and large memory will ensure ease of product enhancement in the future
- 2-button reset gets users back to OEM set up
- Powerful **savvy** graphical configuration, diagnostics & system design tools



Reliable, easy plug-in control terminals

The powerful **savvy** configuration tools are used for the PL Series DC drives, AC drives, **drive.web** programmable controllers, **savvyPanel** operator stations & complete systems.

# DC technology



↑ 75 HP, PLX50/123

powerPLX50/123 →  
With fuses, contactor  
& power components  
(shown hinged open  
for easy access)



↑ 400 HP, PL265/630

powerPL265/630 →  
With fuses, contactor  
& power components  
(shown with optional  
motor blower starter)



## Models & Ratings

### 4-Quadrant, Regenerative Drives

hp @ 500V arm 460VAC	hp @ 240V arm 230VAC	Armature Amps DC @ 40°C	Field Amps DC power(basic)	powerDRIVE Model	Dimensions W x H x D (weight) inches (LBS)	basicDRIVE Model	Dimensions W x H x D (weight) inches (LBS)	Line Reactor Model
20	10	36	5(8)	powerPLX15/36	8.5 x 11.4 x 11.7 (26)	PLX15/36	8.5 x 11.4 x 6.9 (16)	LM37
30	10	51	5(8)	powerPLX20/51	8.5 x 11.4 x 11.7 (26)	PLX20/51	8.5 x 11.4 x 6.9 (16)	LM52
60	25	99	5(8)	powerPLX40/99	8.5 x 11.4 x 11.7 (30)	PLX40/99	8.5 x 11.4 x 6.9 (17)	LM120
75	35	123	5(8)	powerPLX50/123	8.5 x 11.4 x 11.7 (30)	PLX50/123	8.5 x 11.4 x 6.9 (17)	LM120
100	50	164	10(16)	powerPLX65/164	16 x 33 x 9.7 (80)	PLX65/164	8.5 x 16.2 x 8.6 (27)	LM150
125	60	205	10(16)	powerPLX85/205	16 x 33 x 9.7 (80)	PLX85/205	8.5 x 16.2 x 8.6 (27)	LM195
150	75	270	10(16)	powerPLX115/270	16 x 33 x 9.7 (82)	PLX115/270	8.5 x 16.2 x 8.6 (28)	LM240
200	100	330	10(16)	powerPLX145/330	16 x 33 x 9.7 (89)	PLX145/330	8.5 x 16.2 x 8.6 (28)	LM300
250	125	405	32	powerPLX185/405	16 x 43.5 x 13.7 (143)	PLX185/430	8.5 x 19.9 x 11.6 (43)	LM375
300	150	480	32	powerPLX225/480	16 x 43.5 x 13.7 (145)	PLX225/530	8.5 x 19.9 x 11.6 (45)	LM480

### 2-Quadrant, Non-Reversing Drives

hp @ 500V arm 460VAC	hp @ 240V arm 230VAC	Armature Amps DC @ 40°C	Field Amps DC power(basic)	powerDRIVE Model	Dimensions W x H x D (weight) inches (LBS)	basicDRIVE Model	Dimensions W x H x D (weight) inches (LBS)	Line Reactor Model
20	10	36	5(8)	powerPL15/36	8.5 x 11.4 x 11.7 (26)	PL15/36	8.5 x 11.4 x 6.9 (16)	LM37
30	10	51	5(8)	powerPL20/51	8.5 x 11.4 x 11.7 (26)	PL20/51	8.5 x 11.4 x 6.9 (16)	LM52
60	25	99	5(8)	powerPL40/99	8.5 x 11.4 x 11.7 (30)	PL40/99	8.5 x 11.4 x 6.9 (17)	LM120
75	35	123	5(8)	powerPL50/123	8.5 x 11.4 x 11.7 (30)	PL50/123	8.5 x 11.4 x 6.9 (17)	LM120
100	50	164	10(16)	powerPL65/164	16 x 33 x 9.7 (80)	PL65/164	8.5 x 16.2 x 8.6 (27)	LM150
125	60	205	10(16)	powerPL85/205	16 x 33 x 9.7 (80)	PL85/205	8.5 x 16.2 x 8.6 (27)	LM195
150	75	270	10(16)	powerPL115/270	16 x 33 x 9.7 (82)	PL115/270	8.5 x 16.2 x 8.6 (28)	LM240
200	100	330	10(16)	powerPL145/330	16 x 33 x 9.7 (89)	PL145/330	8.5 x 16.2 x 8.6 (28)	LM300
250	125	405	32	powerPL185/405	16 x 43.5 x 13.7 (143)	PL185/430	8.5 x 19.9 x 11.6 (43)	LM375
300	150	480	32	powerPL225/480	16 x 43.5 x 13.7 (143)	PL225/530	8.5 x 19.9 x 11.6 (45)	LM480
400	200	630	32	powerPL265/630	16 x 43.5 x 13.7 (154)	PL265/630	8.5 x 19.9 x 11.6 (45)	LM600

basicDRIVES must be installed with new contactor and the correct high speed SCR fuses to maintain the warranty  
drive.web options see pages 20 - 21

Computer RS232 Communications Cable - Drive to DB9 - part number LA102595, included with every drive  
For details of Drive Isolation Transformers, Line Reactors and Line Filters, please call +410-604-3400



# PL-Series Drives to 2000HP

DC drives 400 HP to 2000 HP are normally available as **basicDRIVES** but can be supplied with **powerKITS** including:

- high speed fuses for line, armature & field
- main DC contactor.
- Line filter
- Flexible bus bar kits

(**basicDRIVES** must be installed with new power components to maintain the warranty)

Drives are available for either 6-pulse or 12-pulse, 460 VAC or 690 VAC configurations - please call for further information.



drive.web smart control

## Models & Ratings

### DC Drives - 500 VDC Armature

HP @ 500VDC 460VAC	ARMATURE AMPS DC @ 40 °C	FIELD AMPS DC	<b>basicDRIVE</b> 4-QUAD REGEN REVERSING	<b>basicDRIVE</b> NON-REVERSING	DIMENSIONS W x H x D (weight) INCHES (LBS) TOP CABLE ENTRY	OVERLOAD RATING
400	650	32 (50)	PLX275/650	PL275/650	10 x 30 x 13.8 (120)	150%, 25 SECS
450	750	32 (50)	PLX315/750	PL315/750	10 x 30 x 13.8 (120)	150%, 25 SECS
500	850	32 (50)	PLX360/850	PL360/850	10 x 30 x 13.8 (120)	150%, 25 SECS
575	950	32 (50)	PLX400/950	PL400/950	10 x 30 x 13.8 (120)	150%, 25 SECS
650	1050	32 (50)	PLX440/1050	PL440/1050	10 x 30 x 13.8 (120)	100%, CONT
750	1250	64	PLX520/1250	PL520/1250	20 x 30 x 13.8 (285)	150%, 25 SECS
895	1450	64	PLX600/1450	PL600/1450	20 x 30 x 13.8 (285)	150%, 25 SECS
1000	1650	64	PLX700/1650	PL700/1650	20 x 30 x 13.8 (285)	150%, 25 SECS
1140	1850	64	PLX800/1850	PL800/1850	20 x 30 x 13.8 (285)	150%, 25 SECS
1260	2050 @35°C	64	PLX900/2050	PL900/2050	20 x 30 x 13.8 (285)	150%, 25 SECS
1380	2250 @35°C	64	PLX980/2250	PL980/2250	20 x 30 x 13.8 (285)	100%, CONT

### DC Drives - 700 VDC Armature

HP @ 700VDC 690VAC	ARMATURE AMPS DC @ 40 °C	FIELD AMPS DC	<b>basicDRIVE</b> 4-QUAD REGEN REVERSING	<b>basicDRIVE</b> NON-REVERSING	DIMENSIONS W x H x D (weight) INCHES (LBS) TOP CABLE ENTRY	OVERLOAD RATING
550	650	32 (50)	PLX275HV/650	PL275/650	10 x 30 x 13.8 (120)	150%, 25 SECS
650	750	32 (50)	PLX315HV/750	PL315/750	10 x 30 x 13.8 (120)	150%, 25 SECS
735	850	32 (50)	PLX360HV/850	PL360/850	10 x 30 x 13.8 (120)	150%, 25 SECS
820	950	32 (50)	PLX400HV/950	PL400/950	10 x 30 x 13.8 (120)	150%, 25 SECS
900	1050	32 (50)	PLX440/1050	PL440/1050	10 x 30 x 13.8 (120)	100%, CONT
1080	1250	64	PLX520HV/1250	PL520HV/1250	20 x 30 x 13.8 (285)	150%, 25 SECS
1250	1450	64	PLX600HV/1450	PL600HV/1450	20 x 30 x 13.8 (285)	150%, 25 SECS
1420	1650	64	PLX700HV/1650	PL700HV/1650	20 x 30 x 13.8 (285)	150%, 25 SECS
1600	1850	64	PLX800HV/1850	PL800HV/1850	20 x 30 x 13.8 (285)	150%, 25 SECS
1770	2050 @35°C	64	PLX900HV/2050	PL900HV/2050	20 x 30 x 13.8 (285)	150%, 25 SECS
1940	2250 @35°C	64	PLX980HV/2250	PL980HV/2250	20 x 30 x 13.8 (285)	100%, CONT



## PLXD Separate Stack Controller

The PLXD is a great retrofit option for controlling large separate SCR stacks in either 6 or 12-pulse DC drive configurations and also for wound rotor motor SCR stack control. The unit has all the standard PL/X series drive features together with:

- Available for stacks up to 690 volts AC, 700 volts DC
- Built-in 32 amps fully automatic field controller (optional 50 amps rating)
- Separate gate pulse driver unit for greater noise immunity and reliability
- Optional current transformers
- Optional Ethernet and **drive.web** distributed control

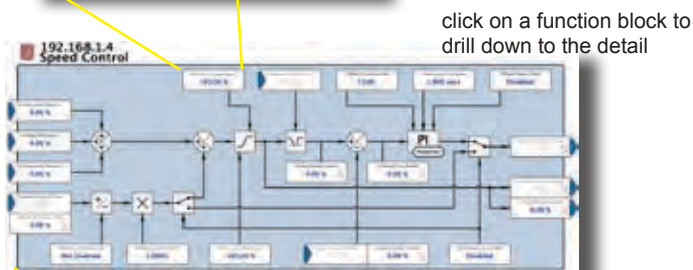
Please call for details



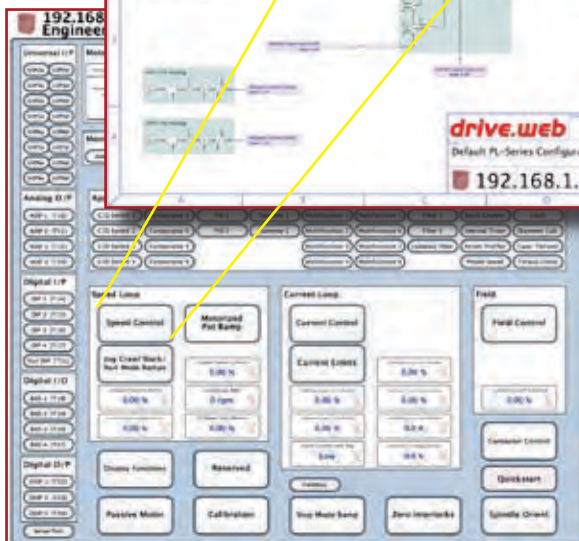
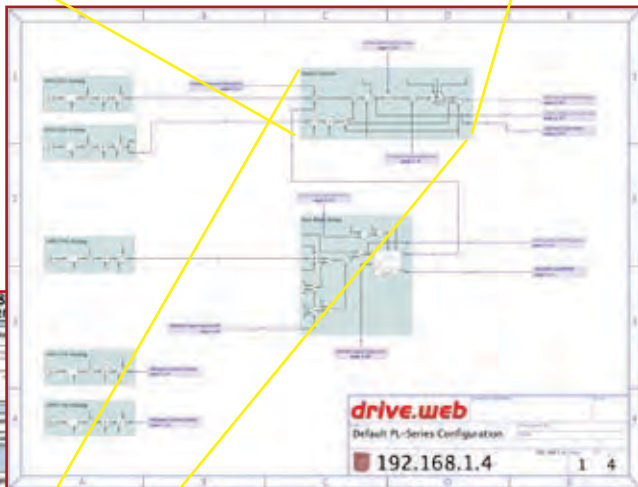
## savvy tools for the PL dc drives



click on a parameter to open the setter



click on a function block to drill down to the detail



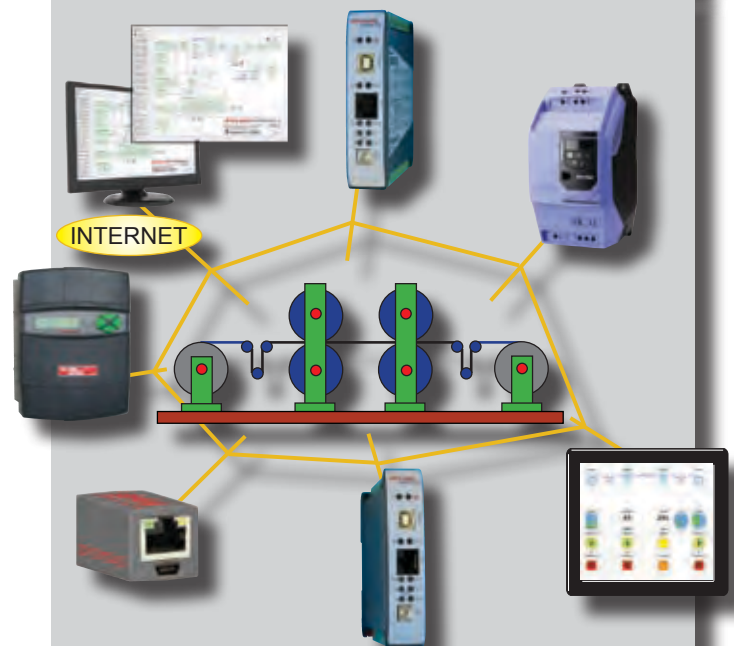
↑ View the drive Signal Flow Diagram

or

← View the drive Engineering Info window

- Import or export data
- Monitor trend charts
- Change the configuration
- Make drag & drop connections
- Manage multiple drives at the same time

## drive.web smart drives



Add a **drive.web** module to any drive for unlimited automation capability:

- Powerful programmable control functions
- Peer-to-peer networking over Ethernet
- Smart iPad or touch screen PC operation
- Internet access

**smarty** - adds programmable control & extra i/o  
**speedy** - adds programmable control & gateway

- Get clear graphical signal flow system diagrams.
- Send event driven emails from your drive.
- All in one unique, intuitive, environment.

### drive.web automation

- Intuitive
- Easy
- Reliable
- Very smart!

# powerSL Series

## Analog DC drives - up to 75 hp

The **powerSL** Series of dc drives incorporate the well proven SLX, SL & SLE 3-phase basic OEM chassis drives into a compact package, complete with high speed 3-phase power fuses, armature fuses (SLX & SL models only), control power fuses, contactor, and other features.

Easy access to all internal power components and terminals is achieved in a compact, elegant package which, at 75hp is as small as a 8<sup>1</sup>/<sub>2</sub>" x 11" note pad and is less than 10<sup>1</sup>/<sub>2</sub>" deep!

- powerSLX Series ...** 4-Q regenerative, reversing DC systems drive with field controller
- powerSL Series ...** Non-reversing DC systems drive with field controller
- powerSLE Series ...** Non-reversing DC OEM drive.

### Standard Features

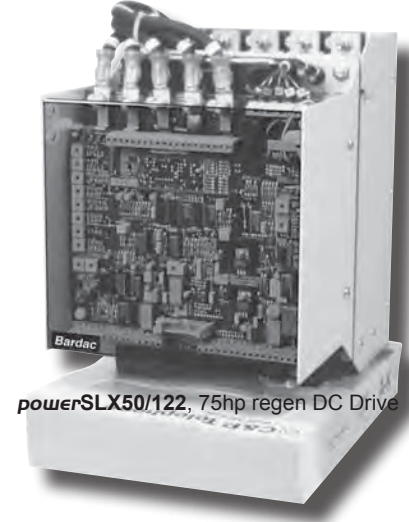
- SL SLX SLE
- Field controller with automatic field weakening
  - Configurable field bridge
  - Heat sink thermostat protection
  - Diagnostic test socket
  - 50/60Hz autoranging
  - Power supply range: 208-240 or 380-480 volts +/-10%
  - Auxiliary control power input: 115 volts 50/60Hz.
  - Phase rotation insensitivity
  - Linear torque control
  - Armature voltage or tach feedback
  - Calibration range switches (no component change)
  - Speed reference +/-10V or 4-20mA
  - Speed trim input
  - Maximum and minimum speed settings
  - Adjustable up & down ramps
  - Adjustable current limit
  - Current range selectable for multiple horsepower's
  - Torque control
  - 150% overload capacity with 30 second stall timer
  - Relay outputs: Stall, Zero speed, Overload
  - Regen stop (SLX 4-quadr. regen drive)
  - Setpoint ramp reset
  - Start inhibit after power loss
  - LED indicators:
    - Stall
    - +/- Current
    - Tach Loss
    - Ext. Trip
    - 25%, 50%, 95%
    - Speed signal output
    - Current signal output
    - Ramp & Total demand signal outputs
    - Shunt wound or permanent magnet motors
    - Stability adjustment
    - Current reduction for low power test
  - Stall Timer
  - Field Loss
  - Peak Amps
  - Power On
  - Field Volts

### Protection & Control

- Control fuses
- 3-Phase high speed semiconductor fuses
- Armature high speed semiconductor fuse
- Main AC line contactor



SLE44/106, 60hp DC Drive



powerSLX50/122, 75hp regen DC Drive

### SL Series Non-Regen DC Drives & SLX Series 4Q Regen DC Drives

powerDRIVE Model	basicDRIVE Model	500VDC Arm	240VDC Arm	Armature Current	Line reactor	Drive Isolation Transformer
powerSL & SLX15	SL & SLX15	20hp	10hp	36 amps	LM37	DIT27**
powerSL & SLX20	SL & SLX20	30hp	13hp	51 amps	LM52	DIT40**
powerSL & SLX40	SL & SLX40	60hp	25hp	99 amps	LM120	DIT75**
powerSL & SLX50	SL & SLX50	75hp	35hp	122 amps	LM120	DIT93**

Field current controlled up to 5 amps

Dimensions: basicDRIVE 9.8" high x 8" wide x 5.6" deep (248mm x 203mm x 143mm)

Dimensions: powerDRIVE 11" high x 8" wide x 10.4" deep (280mm x 203mm x 265mm)

### SLE Series ... Non-reversing OEM drive

powerDRIVE Model	basicDRIVE Model	500VDC Arm	240VDC Arm	Armature Current	Line reactor	Drive Isolation Transformer
powerSLE14	SLE14	20hp	10hp	34 amps	LM37	DIT27**
powerSLE24	SLE24	30hp	15hp	58 amps	LM52	DIT40**
powerSLE34	SLE34	50hp	20hp	82 amps	LM82	DIT63**
powerSLE44	SLE34	60hp	30hp	106 amps	LM120	DIT75**

Field current up to 2.5 amps

Dimensions: basicDRIVE 11.5" high x 8.5" wide x 6.1" deep (290mm x 215mm x 155mm)

Dimensions: powerDRIVE 11.5" high x 8.5" wide x 9.4" deep (290mm x 215mm x 240mm)

### Power Quality For DC Drives

#### Drive Isolation Transformers

Standard specification:  
NEMA 1 enclosed for indoor use  
K-factor 4  
Windings: Delta Primary, Wye Secondary  
Aluminum or Copper windings as indicated  
Taps at ± 5%  
Approvals: UL, C-UL

#### Options

Outdoor enclosures  
Frequencies other than 60Hz  
Voltages other than 230/460/575 pri, 230/460 sec  
Special Taps  
Fungus Proofing  
80°C & 115°C Rise  
Copper Windings  
Electrostatic Shield  
K-13, K-20, K-30

Discount Schedule SX-1

Model	Specification
DIT3**	3KVA - Cu (2hp)
DIT6**	6KVA - Cu (5hp)
DIT11**	11KVA - Al (7.5hp)
DIT14**	14KVA - Al (10hp)
DIT20**	20KVA - Al (15hp)
DIT27**	27KVA - Al (20hp)
DIT34**	34KVA - Al (25hp)
DIT40**	40KVA - Al (30hp)
DIT51**	51KVA - Al (40hp)
DIT63**	63KVA - Al (50hp)
DIT75**	75KVA - Al (60hp)
DIT93**	93KVA - Al (75hp)
DIT118**	118KVA - Al (100hp)
DIT145**	145KVA - Al (125hp)
DIT175**	175KVA - Al (150hp)
DIT220**	220KVA - Al (200hp)
DIT275**	275KVA - Al (250hp)
DIT330**	330KVA - Al (300hp)
DIT440**	440KVA - Al (400hp)
DIT550**	550KVA - Al (500hp)
DIT660**	660KVA - Al (600hp)

#### Line Reactors For 3-Phase DC Drives

Model Number	hp. at 230V	hp. at 460V	Arm Amps	Dimensions W x D x H	Mount Holes H x W	Weight LBS
LM18	5	10	20	6.0"x4.8"x3.1"	2.1"x2.0"	9
LM37	10	20	41	7.2"x5.6"x3.4"	2.3"x3.0"	11
LM52	15	30	58	7.2"x5.6"x3.8"	2.6"x3.0"	14
LM67	20	40	75	9.0"x7.0"x4.8"	3.2"x3.0"	23
LM82	25	50	91	9.0"x7.0"x4.8"	3.2"x3.0"	24
LM120	35	75	133	10.8"x8.2"x5.6"	3.5"x3.6"	43
LM150	40	100	166	10.8"x8.3"x5.6"	3.5"x3.6"	47
LM195	60	125	216	9.0"x7.1"x4.9"	3.2"x3.0"	29
LM240	75	150	266	10.8"x8.4"x5.8"	3.2"x3.6"	40
LM300		200	333	10.8"x8.4"x6.0"	4.2"x3.6"	48
LM375	100	250	416	10.8"x8.2"x7.3"	4.2"x3.6"	68
LM480	150	300	533	14.8"x14.0"x10.2"	5.9"x4.6"	125
LM600		400	666	15.5"x14.0"x11.5"	6.8"x4.6"	155
LM750	200	500	833	15.5"x14.0"x13.0"	6.8"x4.6"	180
LM900		600	1000	15.5"x14.0"x15.5"	9.3"x4.6"	290
LM1125		750	1250	22.0"x20.0"x14.8"	9.5"x7.2"	400

#### Line Filter



LF3 Line Filter  
LF3-FK Line Filter Fuse Kit

# Engineering & Support



## AC and DC motors from fractional to over 2000 HP

All speed ranges, duties, enclosures and voltages complete with a full range of accessories such as encoders, tachs, thermal protection, brakes, blowers, filters, brushes and slide bases. Please call for details and competitive pricing.

## Modulus Packaged Drives

**Modulus** solutions are a range of standard, pre-engineered drive packages with a selection of options for wide range common applications.

Using the flexible **drive.web** programmable automation technology it is possible to adapt a small range of hardware configurations to a wide range of applications thereby keeping design and manufacturing costs to a minimum.

**Modulus** drives are available either as packages mounted on an open panel, **Modulus P**, or as assemblies installed in an enclosure, **Modulus E**, to suit the type of operating environment and the control scheme required.

Every **Modulus** project is accompanied by a detailed, 50-point, Quality Control Report covering every facet of the product, its design, construction, testing and shipping.

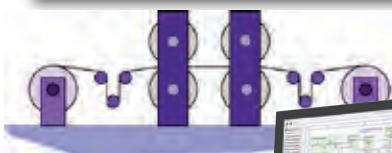


User manuals for all products are available from [www.bardac.com](http://www.bardac.com)

## Online Product Support

Using innovative, interactive, Internet online technologies we can provide either product training or product support through your browser from the comfort of your desk! Simply connect via your browser and get live interactive support where ever you are - with savvy running on your computer call +410-604-3400 and in less than a minute an engineer will be able to see your system live and give you the support you need.

*... it's as easy as that!*



Your plant view



Internet

**Unbeatable!**



Our support view