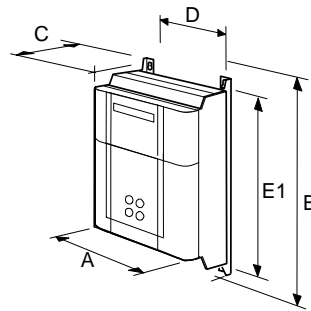


ADDENDUM FOR 590PX PRODUCT

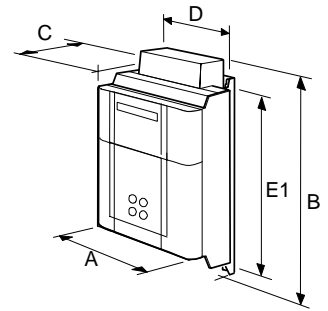
590+ Series DC Digital Converter - HA466461U00x

This addendum describes a series of complimentary 590+ products that are additional to the 590+ Frame 1 & 2.

The products use the 590 chassis fitted with the 590PX door.



35A - 70A



110A - 150A

Current Rating (A)	Weight in Kg (lbs)	Overall Dimensions			Fixing Centres	
		A	B	C	D	E1
35-70	10-14 (22-30)	250 (9.8)	415 (16.3)	196 (7.7)	200 (7.9)	400 (15.7)
110-150	15 (33.2)	250 (9.8)	449 (17.7)	196 (7.7)	200 (7.9)	400 (15.7)

Dimensions are in millimetres (inches)

Product Code Information

Refer to Appendix E.

		Block 1	Block 2	Block 3
Example ▶		590PX	23 2350 1 0	P 00
Product Family	DC590PX Series DC Digital Drive - regen DC591PX Series DC Digital Drive - non-regen	590PX 591PX		
	Supply Voltage			
Current / Power Ratings	110-220V 3ph		23	
		35		2350 1
		70		2700 1
		110		3110 1
		150		3150 1
		220-500V 3ph		53
Auxiliary Supply	Universal 115V-230V 1ph (35/70 Amp rating only)			0
	115V 1ph (110/150 Amp rating only)			1
	230V 1ph (110/150 Amp rating only)			2
	Mechanical Style	Panel Mounting		
Special Options	None			
	Documented special options (01-99) (Refer to local sales office)			

Block 4 unchanged from Product Manual details

Technical Specifications

Refer to page E-6.

Electrical Ratings - Power Circuit							
Refer to Chapter 3: "Earth Fault Monitoring Systems" for circuit breaker details. Motor HP ratings as NEC Table 430-147: "Full Load Current in Amperes, DC Motors"							
Rated Ambient (°C)	Output Current with 150% and 200% * (A)	Output Current @ 100% Continuous * (A)	Power @ 500V dc (kW)	Motor HP @ 500V dc (HP)	Field Current (A)	Total Losses @ Full Load (W)	Symmetrical Fault Current rms (kA)
45	35	40	15	20	10	145	5
45	70	80	30	40	10	240	5
35	110	125	45	60	10	360	10
35	150	165	60	80	10	480	10

* The output current figures are given at 100% Continuous (no overload), and with overloads of 150% for 30 seconds or 200% for 10 seconds.
Output current values should be derated at 1% per degree Centigrade above rated temperature up to a maximum of 55°C.
Output current values should be derated at an altitude of 500 metres above sea level at a rate of 1% per 200 metres to a maximum of 2000 metres.

Refer to page E-9.

AC Line Choke			
To correctly isolate the 590+ drive from the ac power system, and to protect other equipment from transients on the power system, always use the recommended external ac line choke (or alternatively a transformer may achieve the necessary isolation). Drives below 100A Armature Current rating cannot achieve conformance with EN61800-3 Table 11 using only a 50µH line choke. Capacitors must be fitted between phase and earth to achieve conformance. Refer to page 3-8 - "Filtering".			
Armature Current Rating (A)	AC Rating (A)	Inductance (µH)	Parker SSD Drives Part No.
		500Vac	500Vac
For use <i>without</i> filters (use with capacitors for armature currents < 100A, refer to Chapter 3: "AC Line Choke")			
35	35	50 µH	CO055192
70	70	50 µH	CO055193
110	90	50 µH	CO055253
150	162	50 µH	CO055255

Refer to page E-12.

External AC Supply (RFI) Filters & Chokes			
Filters must only be fitted on the mains side of the contactor. AC supply filter & choke part numbers for conformance with EN61800-3 Table 9 (restricted distribution).			
Armature Current Rating (A)	Parker SSD Filter Part No.	Total Filter Watt Loss (W)	AC Line Choke Part No. @ 2% line impedance when used with specified filters
35	CO467844U040	16	CO463036
70	CO467844U070	16	CO463037
110	CO467844U110	18	CO463038
150	CO467844U165	25	CO463039

Refer to page Appendix E-13.

Power Semiconductor Protection Fuses				
For fuses where compliance to UL Standards are required, refer to Appendix B: "Certification" – Branch Circuit/Short Circuit Protection Requirements.				
Controller Rating (A)	Line Fuse Rating (A)	Parker SSD Drives Part No.	Fuse I ² t @ 600V (kA ² s)	Thyristor I ² t (kA ² s)
35	40	CH570044	0.46	1.15
70	80	CH570084		
110	160	CH580164	7.5	8
150	200	CH580025	15	15

Refer to page Appendix E-29.

Wire Sizes and Termination Tightening Torques		
<ul style="list-style-type: none"> Power cables must have a minimum rating of 1.1 x full load current - EUROPE Control wiring must have a minimum cross-section area of 0.75mm² (18AWG) 		
Terminations	Maximum Tightening Torque	UL Recommended Wire Size
A1 – A9, B1 – B9, C1 – C9	0.6-0.8Nm (5-7 lb-in.)	14 AWG
A+, A-	11Nm (97 lb-in)	8-18 AWG
L1, L2, L3	11Nm (97 lb-in)	8-18 AWG
Grounding terminal	6.8Nm (60 lb-in)	12 AWG
D1- D8, THERM+, THERM-	0.45Nm (4.0 lb-in)	12 AWG

Spares List

Refer to page Appendix E-33.

	Power Board	Armature Thyristor	Field Bridge	Fan (110V series/parallel)
591PX/0035/500/	AH385851U003	CF385522U016	CF057273U016	
590PX/0035/500/	AH385851U004	CF385522U016	CF057273U016	
591PX/0070/500/	AH385851U003	CF385524U016	CF057273U016	
590PX/0070/500/	AH385851U004	CF385524U016	CF057273U016	
591PX/0110/500/	AH385851U003	CF385524U016	CF057273U016	DL047934 (2 off)
590PX/0110/500/	AH385851U004	CF385524U016	CF057273U016	DL047934 (2 off)
591PX/0150/500/	AH385851U003	CF385525U016	CF057273U016	DL047934 (2 off)
590PX/0150/500/	AH385851U004	CF385525U016	CF057273U016	DL047934 (2 off)

Requirements for UL Compliance

The following information is in addition to the information in Table B-1 on page B-5.

(HP) 500V	Controller Rating (A)	Input Line Semiconductor Fuses			Part No. Littelfuse (or recognised equivalent)
		Ratings (V)	(A)	I ² t (A ² s)	
20	35	500Vac	40	1,000	L50S 40
40	70	500Vac	80	5,000	L50S 80
60	110	500Vac	125	10,000	L50S 125
80	150	500Vac	175	20,000	L50S 175

The following is in addition to the table in Field Terminal Kits.


Kit Part Number	Controller Rating (A)	Number of Lugs	Purpose	Wire Size
LA386000U035	35	5	AC/DC	8 AWG (8.4 mm ²)
LA386000U070	70	5	AC/DC	4 AWG (21.2 mm ²)
LA386000U110	110	3	AC	2 AWG (33.6 mm ²)
		2	DC	1/0 AWG (53.5 mm ²)
LA386000U150	150	3	AC	1/0 AWG (53.5 mm ²)
		2	DC	3/0 AWG (85 mm ²)

Which Standards Apply?

Basic and Generic Standards

The following table is in addition to the information in Appendix C.

Assuming installation to EMC instructions in this manual
 "Filter" refers to a specified external filter.

Installation	Standard	Unit used as <i>Relevant Apparatus</i>		Unit used as a <i>Component</i>		
		filter (EMC compliance)	no filter	filter (EMC compliance may be applied for)	no filter	
		enclosure	enclosure	enclosure	enclosure	
2nd Environment 	Radiated RF Emission	EN61800-3 (1997) Table 12	✓	✓	✓	✓
	Conducted RF Emission	EN61800-3 (1997) Table 9	✓		✓	
		EN61800-3 (1997) Table 11		✓		✓
Immunity	EN61800-3 (1997) 2nd Environment	✓	✓	✓	✓	

Additional Information

Please note that the 35A and 70A units are not fitted with an integral fan; and the 110A and 150A unit have a Maximum Rating Ambient of 35°C.

The drive is fitted with Power Board AH385851 described on pages 3-32 to 3-45 of the Product Manual. Power supply fuses are as described for AH385851 in the product manual, page E-15.

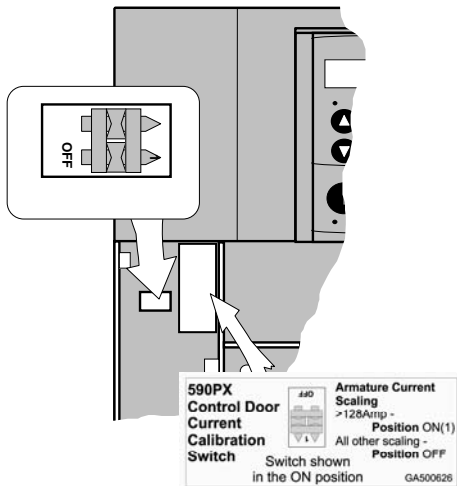
Calibration Checks

NO POWER IS CONNECTED AT THIS STAGE

The drive leaves the factory with the following calibration switches set to the default positions shown below. Inappropriate settings will prevent the drive from operating correctly.

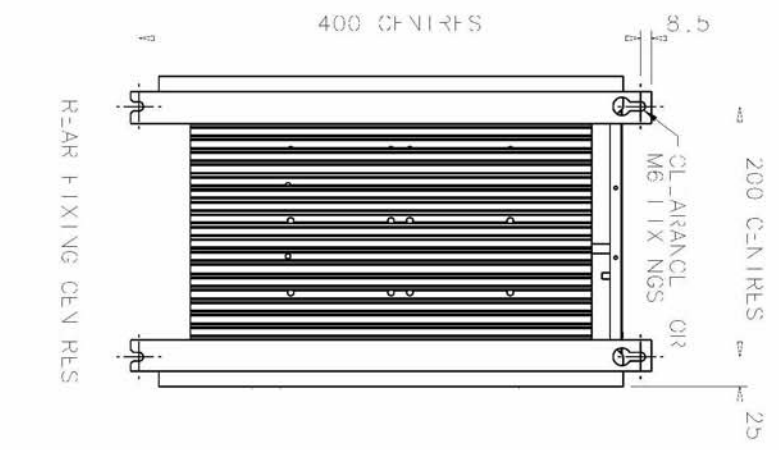
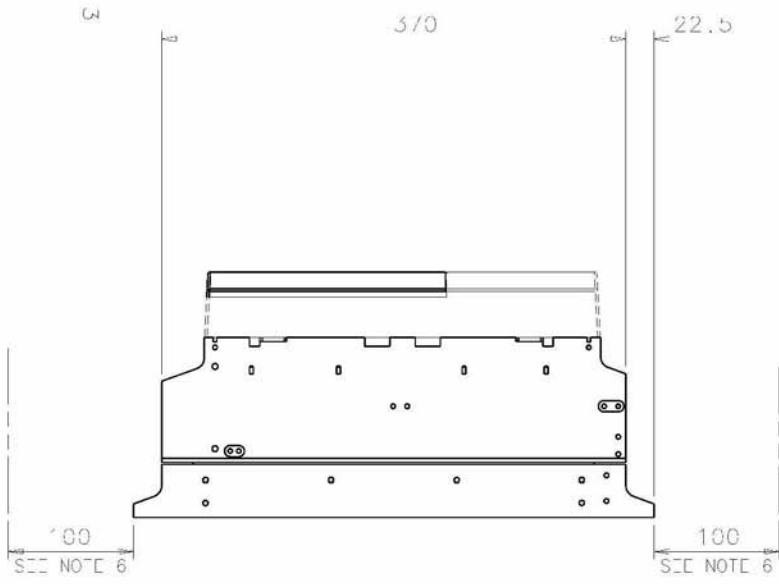
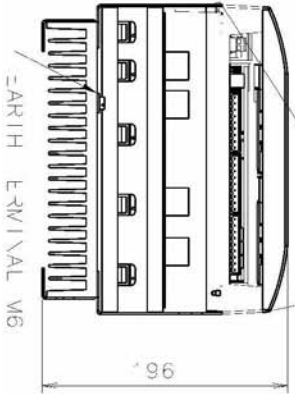
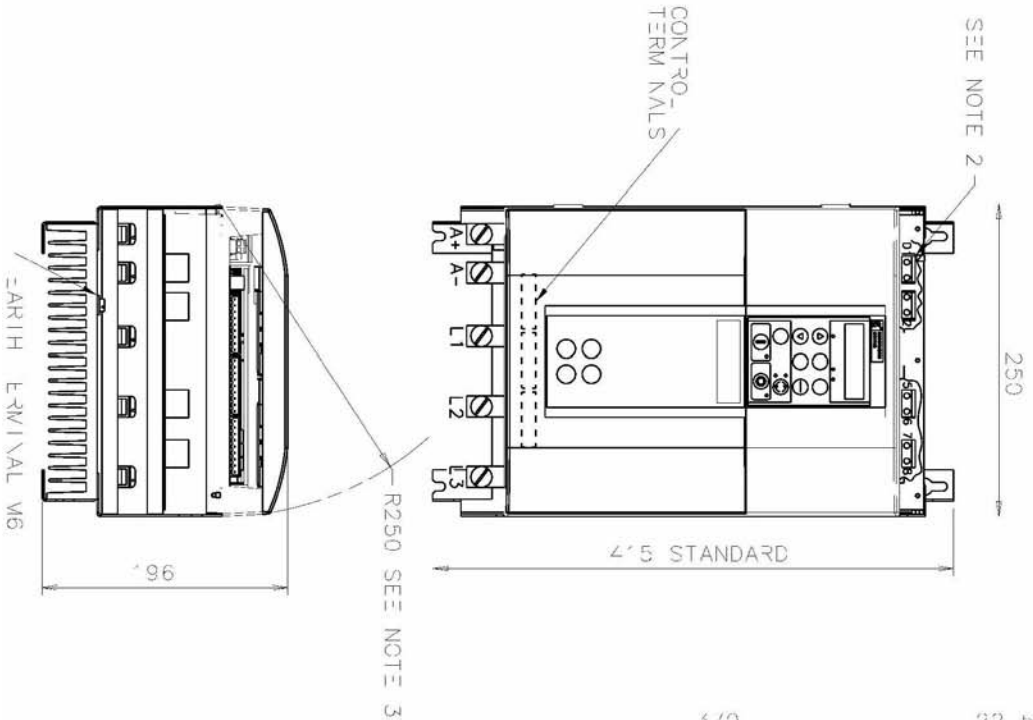
Adaptor Board Calibration Scaling Switch

View the switch with the terminal cover removed. This switch is set by default as shown below:-

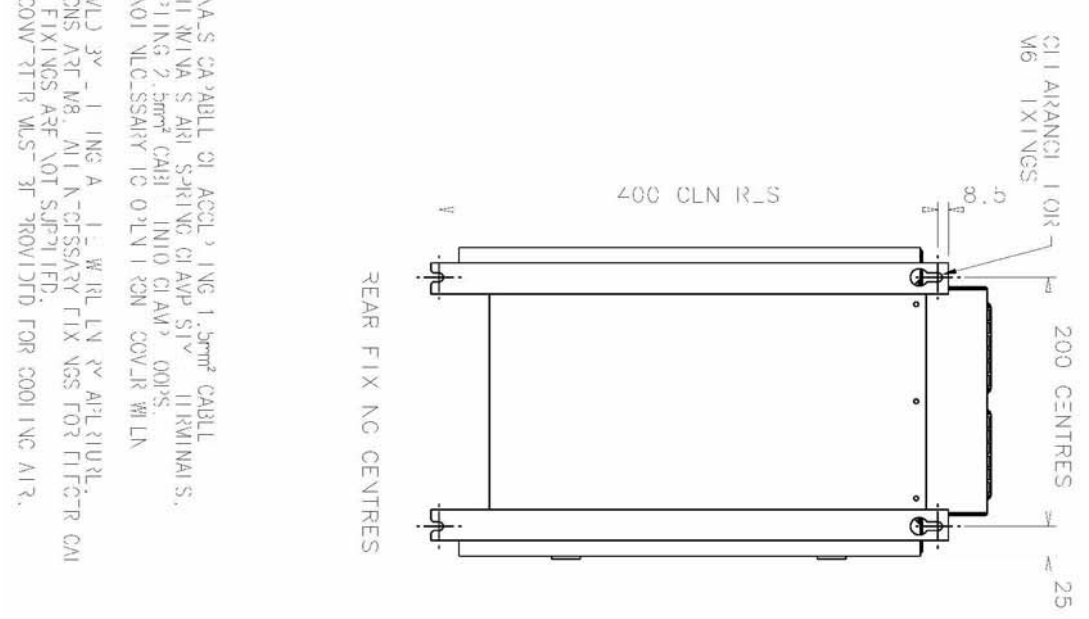
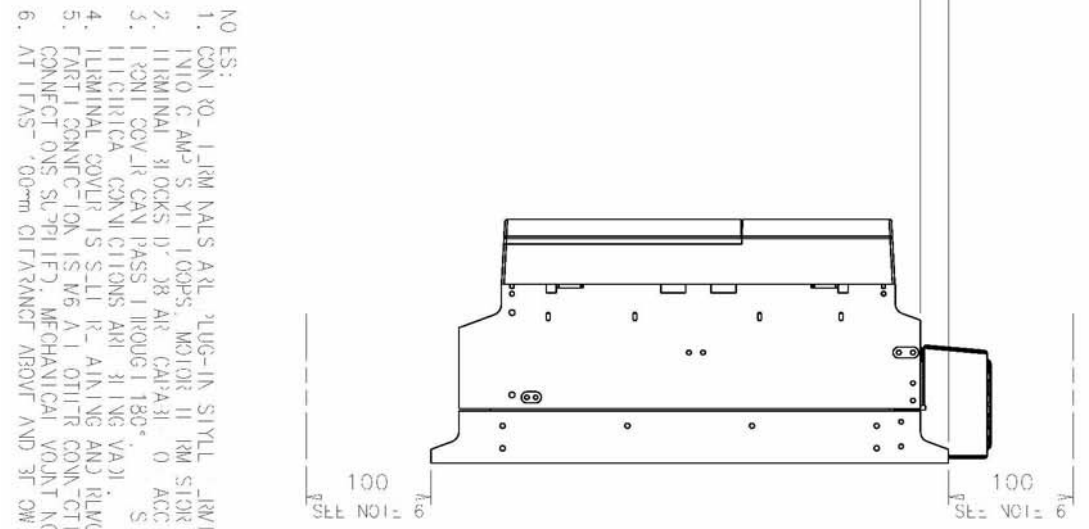
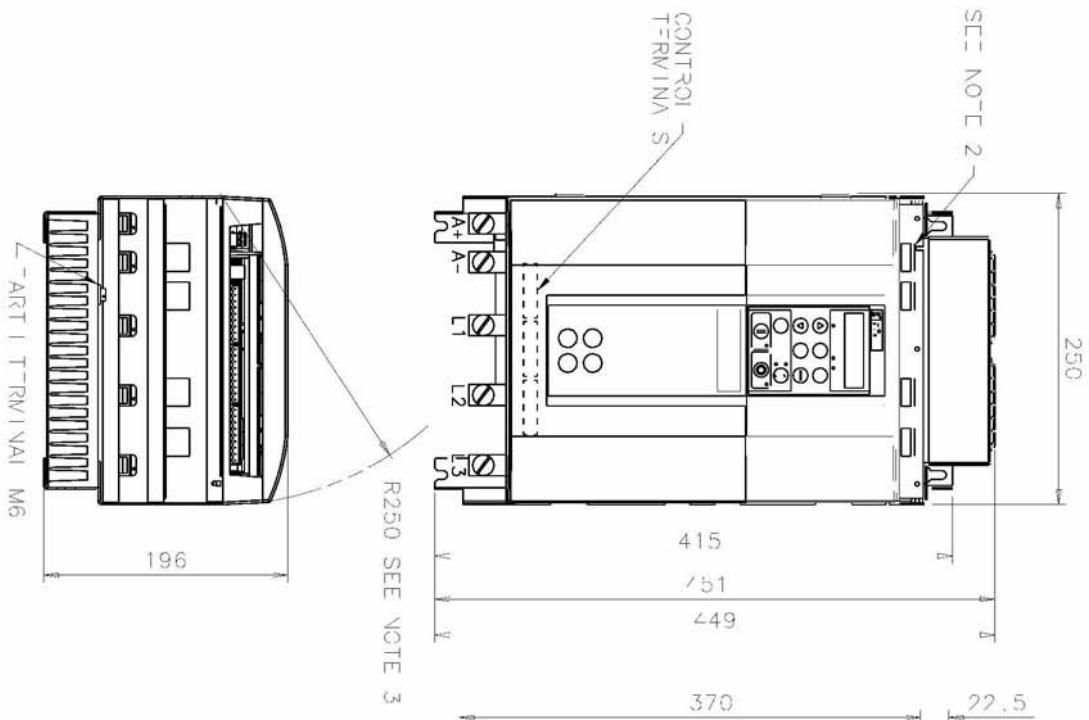


Output Current with 150% and 200% (A)	Adaptor Board	Product Code (4Q or 2Q as required)
35	OFF	DC 4Q 35A D
70	OFF	DC 4Q 70A D
110	OFF	DC 4Q 110A D
150	ON	DC 4Q 150A D

IMPORTANT: If you change the settings for any of these switches you **MUST** adjust the "Product Code" and re-calibrate the Control Board. Refer to Chapter 4: "Operating the Drive" - Calibrating the Control Board in the Product Manual.



- NOTES:
- CONTROL TERMINALS ARE PROVIDED IN STANDARD ACCEPTING 2.5mm² CABLE NTC AMP STYLE 100PS. MOTOR TERMinals ARE SPRING CLAMP STYLE TFRM NLS.
 - TERMINAL BLOCKS DO NOT ACCEPT 2.5mm² CABLE IN TO CLAMP 100PS.
 - FRONT COVER CAN PASS THROUGH 180° SW. VESSEL THROUGH COVER WHEN ELECTRICAL CONNECTIONS ARE BEING MADE.
 - FRONT COVER IS SELF REMOVING AND REMOVED BY FITTING AT THE WIRE ENTRY APERTURE.
 - EARTH CONNECTION IS MADE ALL OTHER CONNECTIONS ARE V8. ALL NECESSARY FIXINGS FOR ELECTRICAL CONNECTIONS SUPPLIED. WIRE CAN MOUNTING FIXINGS ARE NOT SUPPLIED.
 - AT FAS 130mm CLEARANCE ABOVE AND BELOW COVER MUST BE PROVIDED FOR COOLING AIR.



- NOTES:
- CONTROL TERMINALS ARE PLUG-IN STYLE TERMINALS CABLES ARE 1.5mm² CABLES WITH 100PS. MIDDLE TERMINALS ARE SPRING CLAMP STYLE TERMINALS.
 - TERMINAL SOCKS D₁ 08 AIR CAPABLE ACCORDING TO 3mm² CABLE WITH CLAMP DOORS.
 - CONTROL COVER PASS THROUGH 180° SLITS NOT NECESSARY TO OPEN CONTROL COVER WITH TERMINAL COVER IS SLITTING AND REMOVED BY SLITTING AND REMOVAL OF AIR PLUGS.
 - TERMINAL CONNECTIONS ARE M6. ALL NECESSARY FIXINGS FOR FITTING CAN BE CONNECTED SUPPLIED. MECHANICAL MOUNTING FIXINGS ARE NOT SUPPLIED.
 - AT FAS 100mm CLEARANCE ABOVE AND 31mm COVER WITH 31mm PROVIDED FOR COOLING AIR.