

690+ Integrator

0.75 to 1,000kW

The 690+ series is a single range of ac drives designed to meet the requirements of all variable speed applications from simple single motor speed control through to the most sophisticated integrated multi drive systems. At the heart of the 690+ is a highly advanced, 32-bit microprocessor based, motor control algorithm, to which can be added a host of control options that allow you to tailor the drive to meet your exact requirements.

Three phase (380-500V) ratings are available from 0.37 to 1,000kW and single phase ratings (220-240V) from 0.37 to 2.2kW.



OPEN LOOP (V/F), SENSORLESS VECTOR AND CLOSED LOOP VECTOR IN A SINGLE DRIVE

POWERS UP TO 1,000kW

FUNCTION BLOCK PROGRAMMING

COMMON PROGRAMMING, FIELD BUS AND SOFTWARE TOOLS WITH THE 590+ INTEGRATOR DC SERIES

DUAL RATED FOR CONSTANT OR QUADRATIC "FAN" TORQUE

INTEGRAL EMC COMPLIANT FILTERS

TECHNICAL SPECIFICATION

Power Supply – 220-240Vac ($\pm 10\%$) single or three phase; 380-460Vac ($\pm 10\%$) three phase; (500V option available)

Ambient – Constant torque ratings – 0-45°C (40°C with IP40 cover); Quadratic torque ratings – 0-40°C (35°C with IP40 cover)

Derate from above temperatures to 50°C max

Altitude up to 1000m ASL, derate 1% per 100m above 1000m

Overload – Constant torque ratings – 150% for 60 seconds, 180% for 1 second; Quadratic torque ratings – 115% for 10 seconds

Output Frequency – 0-480Hz

Switching Frequency – Frame B 3,6 or 9kHz; Frame C, D, E and F 3 or 6kHz (all with audibly silent switching pattern)

Dynamic Braking – Frame B and C standard; Frame D, E and F optional

Inputs/Outputs

Analogue Inputs – 4 User configurable, 10bit (12 bit with systems expansion module). 0-10V, 0- ± 10 V, 0-20mA, 4-20mA

Analogue Outputs – 3 User configurable, 10 bit. 0-10V, 0- ± 10 V, 0-20mA, 4-20mA

Digital Inputs – 8 User configurable, nominal 24V dc (30V dc max).

Digital Outputs – 3 User configurable, volt free contact 3A at 230 Vac

Reference Supplies – +10V dc, -10V dc, +24V dc.

Function Block Programming

Function Block Programming allows almost limitless combinations of user functions to be realised with ease. Out of the box the Function Blocks are pre-configured to perform as a standard inverter for immediate use.

However by using the programming module or Configured Lite+ software package (see page 62) each function of the drive can be interconnected to any other to perform the required control action.

Function Blocks include;

Value Functions: If, Addition, Difference, Multiplication, Division, Greater than, Less than, Counter, Timer

Logic Functions: Not, And, Nand, Or, Nor, Xor, Trigger, Flip-Flop

Standard Macro's: Basic Speed Control, Forward/Reverse, Raise/Lower, Process PID, Preset Speeds, Closed Loop Speed Feedback, Winder Control

6901 Man Machine Interface

The 6901 Man Machine Interface is used for configuring, parametising and controlling the drive. It has been ergonomically designed to provide intuitive access to all functions in a logical menu driven format.

Key features include:

Detachable for 690+ or control panel mounting

Back lit display

Multilingual 32 character alphanumeric readout

Local control of speed, start/stop, jog and direction

Customised displays and legend

Password and function lockout

Quick set up menu

Systems Expansion Module

An optional add-on systems expansion module is available for more advanced applications including phase locking between drives and register control. Key features include:

5 Extra configurable digital inputs/outputs

4 High resolution (12 bit plus sign) analogue inputs

2 Extra encoder inputs

2 High speed register mark inputs

STANDARDS

The 690+ series meets the following standards when installed in accordance with the relevant product manuals.

CE marked to EN50178 (Safety, Low Voltage Directive)

EN61800-3 (EMC Compliance) with integral filter



listed to US and cUL listed to Canadian safety standards

220-240V (±10%) AC Supply Single Phase

Type	Frame Size	Constant Torque Rating		Prices (£)	
		Nominal Power (kW)	Output Current (A)	Without Internal Filter	With Internal Filter
690PB-0007-230-1	B	0.75	4.0	479	504
690PB-0015-230-1	B	1.5	7.0	519	549
690PB-0022-230-1	B	2.2	10.5	543	580

Type	Frame Size	Constant Torque Rating		Quadratic (Fan) Torque Rating		Prices (£)	
		Nominal Power (kW)	Output Current (A)	Nominal Power (kW)	Output Current (A)	Without Internal Filter	With Internal Filter
690PB-0007-400-3	B	0.75	2.5	-	-	520	545
690PB-0015-400-3	B	1.5	4.5	-	-	587	617
690PB-0022-400-3	B	2.2	5.5	-	-	596	631
690PB-0040-400-3	B	4.0	9.5	-	-	619	659
690PB-0055-400-3	B	5.5	12	-	-	-	795
690PC-0075-400-3	C	7.5	16	11	23	-	940
690PC-0110-400-3	C	11	23	15	31 (UL=27)*	-	1290
690PC-0150-400-3	C	15	31	18.5	38	-	1828
690PD-0180-400-3	D	18.5	38	22	45	-	2322
690PD-0220-400-3	D	22	45	30	59(UL=52)*	-	2717
690PD-0300-400-3	D	30	59	37	73	-	3141
690PE-0370-400-3	E	37	73	45	87	-	3953
690PE-0450-400-3	E	45	87	55	105	-	4520
690PF-0550-400-3	F	55	105	75	145	-	5515
690PF-0750-400-3	F	75	145	90	165	-	5942
690PF-0900-400-3	F	90	180	110	205	-	7105
690PG-1100-400-3	G	110/110**	216	132/150**	260	-	7564
690PG-1320-400-3	G	132/150	250	150/150	302	-	7981
690PG-1600-400-3	G	160/185	316	200/225	377	-	9075
690PG-1800-400-3	G	180/200	361	220/250	420	-	9665
690PH-2000-400-3	H	200/220	375	250/280	480	-	10,314
690PH-2200-400-3	H	220/250	420	250/280	480	-	10,850
690PH-2500-400-3	H	250/280	480	300/315	545	-	11,341
690PH-2800-400-3	H	280/315	520	315/355	595	-	11,929
690PJ-3150-400-3	J	315/315	590	315/355	650	-	12,981

*Max current for UL listing. Powers up to 1,000kW, 3 Phase 230V and 500V 690+ are also available, please refer to your local SSD Drives sales outlet for details.

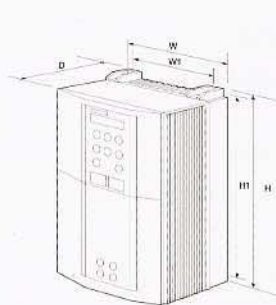
**kW Rating at 380/415V. Frames G, H, J require AC Input line choke listed below.

Options

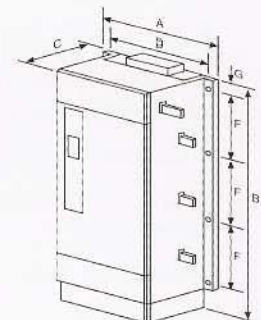
Options	Prices (£)
6901 Programming/Control Module	54
6052 Remote mounting bezel and 3m lead	28
Internal Brake Switch	Standard
Frame B,C	
Frame D	75
Frame E	97
Communication Technology Boxes	
Profibus	690B 690C-J
Modbus/RS422/RS485/ElBisynch	6053/PROF 6055/PROF 210
Link	6053/EI00 6055/EI00 135
Devicenet	6053/LINK 6055/LINK 345
Encoder feedback	6053/DNET 6055/DNET 210
Encoder feedback	AH467407 U001 (Board) 6054/HTTL 98
Wall Mount IP40 Covers	
LA467452 (Frame B)	10
LA465034U002 (Frame C)	10
LA465048U002 (Frame D)	25
LA465058U002 (Frame E)	25
System Expansion Module	195
ConfigEd Lite+ "Windows" graphical configuration software (see page 58)	68
AC Input Lin Chokes	
C0389936U401	690PG-1100/1320 630
C0389936U402	690PG-1600/1800 and 690PH-2000/2200 770
C0389936U403	690PH-2500/2800 and 690PJ 820

Dimensions

Model	Overall Dimensions			Fixing Centre			Weight (kg)
	H	W	D	H1	W1	G	
Frame B	233	177	181	223	130		4.3
Frame C	348	201	208	335	150		9.3
Frame D	453	252	245	440	150		17.4
Frame E	669	257	312	630	150		32.5
Frame F	720	257	349	700	150		41.0
Frame G	1042	456	465	300	420	16	100
Frame H	1177	572	465	300	536	16	125
Frame J	1288	1177	465	300	641	16	160



Frame B,C,D,E,F



Frame G,H,J

Optional external EMC filters and line chokes please refer to page 54/55.
Details on brake resistors please refer to page 53.