

# 690+ Integrator

## 0.75 to 355kW

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 355kW 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 355kW**

**FUNCTION BLOCK PROGRAMMING**

**COMMON PROGRAMMING, FIELDBUS 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- $\pm 10$ V, 0-20mA, 4-20mA

**Analogue Outputs** – 3 User configurable, 10 bit. 0-10V, 0- $\pm 10$ 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	
		Nominal Power (kW)	Output Current (A)
690PB-0007-230-1	B	0.75	4.0
690PB-0015-230-1	B	1.5	7.0
690PB-0022-230-1	B	2.2	10.5

## 380-460V (±10%) AC Supply Three Phase

Type	Frame Size	Constant Torque Rating		Quadratic (Fan) Torque Rating	
		Nominal Power (kW)	Output Current (A)	Nominal Power (kW)	Output Current (A)
690PB-0007-400-3	B	0.75	2.5	-	-
690PB-0015-400-3	B	1.5	4.5	-	-
690PB-0022-400-3	B	2.2	5.5	-	-
690PB-0040-400-3	B	4.0	9.5	-	-
690PB-0055-400-3	B	5.5	12	-	-
690PC-0075-400-3	C	7.5	16	11	23
690PC-0110-400-3	C	11	23	15	31 (UL=27)*
690PC-0150-400-3	C	15	31	18.5	38
690PD-0180-400-3	D	18.5	38	22	45
690PD-0220-400-3	D	22	45	30	59(UL=52)*
690PD-0300-400-3	D	30	59	37	73
690PE-0370-400-3	E	37	73	45	87
690PE-0450-400-3	E	45	87	55	105
690PF-0550-400-3	F	55	105	75	145
690PF-0750-400-3	F	75	145	90	165
690PF-0900-400-3	F	90	180	110	205
690PG-1100-400-3	G	110/110**	216	132/150**	260
690PG-1320-400-3	G	132/150	250	150/150	302
690PG-1600-400-3	G	160/185	316	200/225	377
690PG-1800-400-3	G	180/200	361	220/250	420
690PH-2000-400-3	H	200/220	375	250/280	480
690PH-2200-400-3	H	220/250	420	250/280	480
690PH-2500-400-3	H	250/280	480	300/315	545
690PH-2800-400-3	H	280/315	520	315/355	595
690PJ-3150-400-3	J	315/315	550	315/355	595

\*Max current for UL listing. 3 Phase 230V and 500V 690+ are also available, please refer to your local Eurotherm Drives sales outlet for details.

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

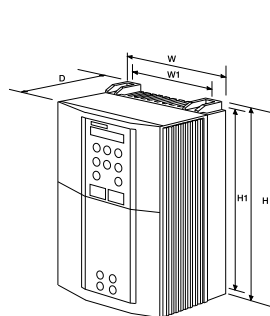
### Options

6901 Programming/Control Module	
6052 Remote mounting bezel and 3m lead	
Internal Brake Switch	Frame B,C
	Frame D
	Frame E
Communication Technology Boxes	690B      690C-J
Profibus	6053/PROF      6055/PROF
Modbus/RS422/RS485/EIBisynch	6053/EI00      6055/EI00
Link	6053/LINK      6055/LINK
Devicenet	6053/DNET      6055/DNET
Encoder feedback	AH467407 U001 (Board)      6054/HTTL
Wall Mount IP40 Covers	LA467452 (Frame B)
	LA465034U002 (Frame C)
	LA465048U002 (Frame D)
	LA465058U002 (Frame E)
System Expansion Module	
ConfigEd Lite+ 'Windows' graphical configuration software (see page 38)	
AC Input Lin Chokes	
C0389936U401	690PG-1100/1320
C0389936U402	690PG-1600/1800 and 690PH-2000/2200
C0389936U403	690PH-2500/2800 and 690PJ

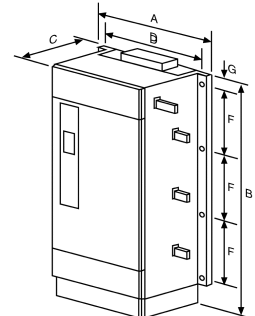
Optional external EMC filters and line chokes please refer to page 34/35.  
Details on brake resistors please refer to page 33.

### 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