Chapter 8   TECHNICAL SPECIFICATIONS

Understanding the Product Code

Manufacturing Product Codes

The unit is fully identified using an alphanumeric code which records how the Drive was calibrated, it's various settings when despatched from the factory, and the country of origin.

For conformal coated PCB's add a "C" in front of the product code e.g., **C**690-21…….

The Product Code appears as the "Model No". Each block of the Product Code is identified as below.

AC690+ Series (230V) Integrator Series Drive

		Block 1	Block 2	Block 3	Block4
		690 -			
		Example:	690 - 21 1400 B 0 - 0 0 S W 00 - A 0 0 C		
Family	690 inverter range		690		

Constant Torque 230v ratings

Current/Power Rating	Supply Voltage	kW	Output Current	Frame Size		
	230v 1ph				21	
		0.75	4.0	B	1400	B
		1.5	7.0	B	1700	B
		2.2	10.5	B	2105	B
	230v 3ph				23	
		0.75	4.0	B	1400	B
		1.5	7.0	B	1700	B
		2.2	10.5	B	2105	B
		4.0	16.5	B	2165	B
		5.5	22	C	2220	C
		7.5	28	C	2280	C
		11	42	D	2420	D
		15	54	D	2540	D
		18.5	68	D	2680	D
		22	80	E	2800	E
		30	104	F	3104	F
		37	130	F	3130	F
		45	154	F	3154	F

Auxiliary supply		
Not required (frames B-E)	0	
115v 1ph (Frame F-J only)	1	
230v 1ph (Frame F-J only)	2	

Brake Switch		
Not Fitted (optional on Frame D-J)	0	
Brake switch fittedFitted (mandatory on frames B & C, optional on frames D-J)	B	

Filter		
Not fitted (Optional on frame B, mandatory on frames C-F)	0	
Filter fitted (Optional on frames B only)	F	

System Board		
Not fitted	0	
System Board fitted	S	

Mechanical Style		
Panel Mount (Option on Frames B-E, mandatory on Frames F-J)	P	
Wall Mount (Option on Frames B-E only)	W	
Through Panel Mount (Option on Frames C-E only)	T	

Special Option		
None	00	
Documented special options (01-99)		

Destination		
English (50Hz)	A	
English (60Hz)	B	
German	D	
Spanish	E	
French	F	
Portuguese	G	
Italian	I	
Polish	L	
Swedish	S	

Keypad		
None (Option on Frames B-F)	0	
6901 Keypad fitted (option on Frames B-F, mandatory on frames G-J)	4	

Speed Feedback		
None	0	
HTTL Encoder	3	

Comms		
None	0	
ControlNet	C	
DeviceNet	D	
Ethernet	E	
Johnson Metasys	J	
Link	L	
ModBus +	M	
CanOpen	N	
Profibus	P	
RS485 (EI Bisynch)	R	
Siemens Apogee	S	
Lon**W**orks	W	

8-2 Technical Specifications

AC690+ Series (400/460V) Integrator Series Drive

	Block 1	Block 2	Block 3	Block4
	690 -			
Example:	690 -	43 1250 B 0 -	0 0 0 W 00 -	A 0 0 C

Family	690 inverter range	690

Current/Power Rating

Supply Voltage	Constant Torque 400v rating kW	Output Current	Constant Torque 460v ratings HP	Output Current	Frame Size		
400/460v 3ph						43	
	0.75	2.5	1.0	2.5	B	1250	B
	1.5	4.5	2.0	4.5	B	1450	B
	2.2	5.5	3.0	5.5	B	1550	B
	4.0	9.5	5.0	9.5	B	1950	B
	5.5	12.0	7.5	11.0	B	2120	B
	5.5	12.0	7.5	12.0	C	2120	C
		14.0	10	14.0	B	2140	B
	7.5	16.0	10	14.0	C	2160	C
	11	23.0	15	21.0	C	2230	C
	15	30.0	20	27.0	C	2300	C
	15	31.0	20	31.0	D	2310	D
	18.5	38.0	25	38.0	D	2380	D
	22	45.0	30	45.0	D	2450	D
	30	59.0	40	52.0	D	2590	D
	30	59.0	40	59.0	E	2590	E
	37	73.0	50	73.0	E	2730	E
	45	87.0	60	87.0	E	2870	E
	55	105	75	100	F	3105	F
	75	145	100	130	F	3145	F
	90	180	125	156	F	3156	F
	90	180	150	180	F	3180	F

Auxiliary supply

Not required (frames B-E)	0
115v 1ph (Frame F-J only)	1
230v 1ph (Frame F-J only)	2

Brake Switch

Not Fitted (optional on Frame D-J)	0
Brake switch fittedFitted (mandatory on frames B & C, optional on frames D-J)	B

Filter

Not fitted (Optional on frame B, mandatory on frames C-F)	0
Filter fitted (Optional on frames B only)	F

System Board

Not fitted	0
System Board fitted	S

Mechanical Style

Panel Mount (Option on Frames B-E, mandatory on Frames F-J)	P
Wall Mount (Option on Frames B-E only)	W
Through Panel Mount (Option on Frames C-E only)	T

Special Option

None	00
Documented special options (01-99)	

Destination

English (50Hz)	A
English (60Hz)	B
German	D
Spanish	E
French	F
Portuguese	G
Italian	I
Polish	L
Swedish	S

Keypad

None (Option on Frames B-F)	0
6901 Keypad fitted (option on Frames B-F, mandatory on frames G-J)	4

Speed Feedback

None	0
HTTL Encoder	3

Comms

None	0
ControlNet	C
DeviceNet	D
Ethernet	E
Johnson Metasys	J
Link	L
ModBus +	M
Ca**n**Open	N
Profibus	P
RS485 (EI Bisynch)	R
Siemens Apogee	S
Lon**W**orks	W

690+ Series AC Drive

AC690+ Series (400/500V) Integrator Series Drive

						Block 1	Block 2	Block 3	Block 4
					Example ▶	690	- 53 1500 B 0	- B 0 0 P 00	- A 0 0 0

Product Family — AC690+ Series AC Drive → **690**

		Contant Torque		Quadratic Torque				
	Supply Voltage	kW @500Vac	Current (A)	kW @500Vac	Current (A)	Frame Size		
Current / Power Rating	400/500V 3ph						**53**	
		2.2	5.0			B	1500 B	
		4.0	8.0			B	1800 B	
		5.5	11			B	2110 B	
		5.5	11	7.5	14	C	2110 C	
		7.5	14	11	21	C	2140 C	
		11	21	15	27	C	2210 C	
		15	27	18.5	34	C	2270 C	
		15	28	18.5	36	D	2280 D	
		18.5	36	22	42	D	2360 D	
		22	42	30	52	D	2420 D	
		30	52	37	65	D	2520 D	
		30	54	37	67	E	2540 E	
		37	67	45	79	E	2730 E	
		45	79	55	98	E	2870 E	
		55	100	75	125	F	3105 F	
		75	125	90	156	F	3145 F	
		90	156	110	180	F	3156 F	

Auxiliary Supply		
Not Required (Frames B-E)		0
115V 1ph (Frame F only)		1
230V 1ph (Frame F only)		2

Brake Switch		
Not Fitted (optional on Frames D-F)		0
Brake switch fitted (mandatory on Frames B & C, optional on Frames D-F)		B
Filter		
Not fitted (optional on Frame B, mandatory on Frames C-F)		0
Filter fitted (optional on Frame B only)		F
System Board		
Not Fitted		0
System Board Fitted		S
Mechanical Style		
Panel Mount (option on Frames B-E, mandatory on Frame F)		P
Wall Mount (option on Frames B-E only)		W
Through Panel Mount (option on Frames C-E only)		T
Special Option		
None		00
Documented special options (01-99) (Refer to local sales office)		

Destination		
English (50Hz)		A
English (60Hz)		B
German		D
Spanish		E
French		F
Portuguese		G
Italian		I
Polish		L
Swedish		S
Keypad		
None (option on Frames B-F)		0
6901 Keypad Fitted (option on Frames B-F)		4
Speed Feedback		
None		0
HTTL Encoder		3
Communications		
None		0
ControlNet		C
DeviceNet		D
Ethernet		E
Johnson Metasys		J
Link		L
Modbus +		M
Ca**N**Open		N
Profibus		P
RS485 (EI Bisynch)		R
Siemens Apogee		S
Lon**W**orks		W

8-4 Technical Specifications

US Model Number & Legacy Product Codes

The unit is fully identified using a twelve block alphanumeric code which records how the drive was calibrated, and its various settings when dispatched from the factory.

The Product Code appears as the "Model No.". Each block of the Product Code is identified as below:

Typical example:

690PD/0110/400/0011/GR/0/PROF/BO/0/0

This is a Frame D 690+, 11kW, rated at 400V supply, standard livery, IP20, with Keypad fitted displaying German language, no encoder feedback option, Profibus Option card fitted and braking option fitted.

Frame B – Model Number (Europe)		
Block No.	Variable	Description
1	690PB	Generic product (C690PB = Conformal Coated PCB's)
2	XXXX	Four numbers specifying the power output: 0007 = 0.75kW 0015 = 1.5kW 0022 = 2.2kW 0040 = 4.0kW 0055 = 5.5kW 0075 = 7.5kW
3	XXX	230 220 to 240V (±10%) 50/60Hz 400 380 to 460V (±10%) 50/60Hz 500 380 to 500V (±10%) 50/60Hz
4	X	One digit specifying the supply phases 1 = Single 3 = Three
5	X	One character specifying the use of the Internal RFI Filter: F = Internal Supply Filter fitted 0 = Not fitted

6	XXXX	Four digits specifying mechanical package including livery and mechanical package style, and any keypad (see Note):
		
		First two digits Livery
		
		    00 Standard Parker Hannifin Manufacturing livery
		    05 Distributor livery
		01-04,06-99 Defined customer liveries
		
		Third digit Mechanical packaging style
		
		    1 Standard (IP20), protected panel mounting with gland plate
		    2 IP20 and falling dirt protection (UL Type 1)
		
		Fourth digit Keypad
		
		    0 No Keypad
		    1 6901 Keypad fitted

7	XX	Two Characters specifying the user interface language including operating frequency. These characters are the same as used for computer keyboard specifications:
		
		    FR French (50Hz)
		    GR German (50Hz)
		    IT Italian (50Hz)
		    PL Polish (50Hz)
		    PO Portuguese (50Hz)
		    SP Spanish (50Hz)
		    SW Swedish (50Hz)
		    UK English (50Hz)
		    US English (60Hz)

Frame B – Model Number (Europe)		
Block No.	**Variable**	**Description**
8	X	Characters specifying any feedback option installed over and above the standard features of the product. 0 — No option fitted HTTL — 605B encoder card fitted behind the Keypad/Tech Box Option site
9	X	Characters specifying the communications option (see Note): 0 — No technology option fitted EI00 — RS485 Comms option PROF — Profibus protocol LINK — LINK protocol DNET — DeviceNet
10	X	Characters specifying the comms board fitted internally. 0 — Not fitted
11	X	Characters specifying the system board fitted internally. 0 — Not fitted SHTTL — Fitted – Dual Encoder Option
12	X	Digits specifying engineering special options. 0 — No special option
Note: *The Keypad and the Comms Technology Box occupy the same physical position in the product and are therefore mutually exclusive.*		

Frame C, D, E, F – Model Number (Europe)		
Block No.	**Variable**	**Description**
1	690PC 690PD 690PE 690PF	Characters specifying the generic product: (C690PC = Conformal Coated PCB's) 690PC = Frame C 690PD = Frame D 690PE = Frame E 690PF = Frame F
2	XXXX	Four numbers specifying the power output: **Frame C** 0055 = 5.5kW 0075 = 7.5kW 0110 = 11kW 0150 = 15kW **Frame D** 0110 = 11kW 0150 = 15kW 0180 = 18.5kW 0220 = 22kW 0300 = 30kW **Frame E** 0220 = 22kW 0300 = 30kW 0370 = 37kW 0450 = 45kW **Frame F** 0300 = 30kW 0370 = 37kW 0450 = 45kW 0550 = 55kW 0750 = 75kW 0900 = 90kW 0910 = 90kW (150Hp)
3	XXX	Three numbers specifying the nominal input voltage rating: 230 — 220 to 240V (±10%) 50/60Hz 400 — 380 to 460V (±10%) 50/60Hz 500 — 380 to 500V (±10%) 50/60Hz

8-6 Technical Specifications

Frame C, D, E, F – Model Number (Europe)		
Block No.	Variable	Description

4	XXXX	Four digits specifying the mechanical package including livery and mechanical package style:
		
		First two digits Livery
		
		         00 Standard Parker Hannifin Manufacturing livery
		         05 Distributor livery
		         (01-04, 06-99 - Defined customer liveries)
		
		Third digit Mechanical packaging style
		         1 Standard (IP20), protected panel mounting with gland plate (IP00 or IP20 only for Frame F)
		         2 IP20 and falling dirt protection (UL Type 1)
		         3 Enclosed (IP20), with through-panel mounting kit
		
		Fourth digit Keypad
		         0 No Keypad
		         1 6901 Keypad option fitted

5	XX	Two characters specifying the user interface language including operating frequency. These characters are the same as used for computer keyboard specifications: FR French (50Hz) GR German (50Hz) IT Italian (50Hz) PL Polish (50Hz) PO Portuguese (50Hz) SP Spanish (50Hz) SW Swedish (50Hz) UK English (50Hz) US English (60Hz)
6	X	Characters specifying the speed feedback option (Technology Box 1) installed over and above the standard features of the product: 0 No additional option fitted HTTL Wire ended encoder feedback HTTL
7	X	Characters specifying the communications option (Technology Box 2): 0 No technology option fitted EI00 RS485 Comms option PROF Profibus protocol LINK LINK protocol DNET DeviceNet
8	X	Characters specifying the Comms board fitted internally: 0 Not fitted
9	X	Characters specifying the system board fitted internally: 0 Not fitted SHTTL Fitted – Dual Encoder Option
10	X	Characters specifying the braking option: 0 Brake power switch not fitted (Frames D, E & F only) BO Brake power switch fitted - no braking resistors supplied Note: External braking resistors should be specified and ordered separately.
11	X	Characters specifying the auxiliary mains power supply. 0 No auxiliary supply required (Frame C – E) 115 110 to 120V (±10%), 50/60Hz (Frame F) 230 220 to 240V (±10%), 50/60Hz (Frame F)
12	X	Digits specifying engineering special options: 0 No special option

690+ Series AC Drive

Catalog Number (North America)

The unit is identified using a 6 block alphanumeric code which records how the drive was calibrated, and its various settings when dispatched from the factory.

The Product Code appears as the "Cat No.". Each block of the Product Code is identified as below:

Typical example:

690+0010/460/1BN

This is a 10Hp 690+ Frame C, rated at 460 Volts supply, NEMA 1, Braking option fitted, No System board.

Frame B, C, D, E, F – Catalog Number (North America)		
Block No.	Variable	Description
1	690+	Generic product (C690+ = Conformal Coated PCB's)
2	X	Characters specifying the power output in Hp: Frame B Frame D Frame F 0001 = 1Hp 0020 = 20Hp 0075 = 75Hp 0002 = 2Hp 0025 = 25Hp 0100 = 100Hp 0003 = 3Hp 0030 = 30Hp 0125 = 125Hp 0005 = 5Hp 0040D = 40Hp 0150 = 150Hp 0007B = 7.5Hp 0010B = 10Hp Frame E Frame C 0040 = 40Hp 0050 = 50Hp 0007 = 7.5Hp 0060 = 60Hp 0010 = 10Hp 0015 = 15Hp 0020C = 20Hp
3	XXX	Three numbers specifying the nominal input voltage rating: 230 230 (±10%) 50/60Hz 460 380 to 460V (±10%) 50/60Hz
4	XXX	Enclosure options: 1 - Nema 1 (IP20 and falling dirt protection (UL Type 1) C - Chassis (IP20 only)
5	XX	Characters specifying the braking option: N Brake power switch not fitted (Frames D & E only) B Brake power switch fitted - no braking resistors supplied Note: External braking resistors should be specified and ordered separately.
6	XX	Characters specifying the systems board: N Not fitted S System board fitted