

690+ Integrator

0.3 to 500 Hp

3-in-1

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 (380-460V) ratings are available from 0.5 to 500 Hp and (220-240V) ratings from 0.5 to 75 Hp.



... USER FRIENDLY

... NETWORK FRIENDLY

... SIMPLY POWERFUL

OPEN LOOP (v/Hz), SENSORLESS VECTOR AND CLOSED LOOP VECTOR IN A SINGLE DRIVE

REGENERATIVE CAPABILITY FOR COMMON BUS SUPPLIES

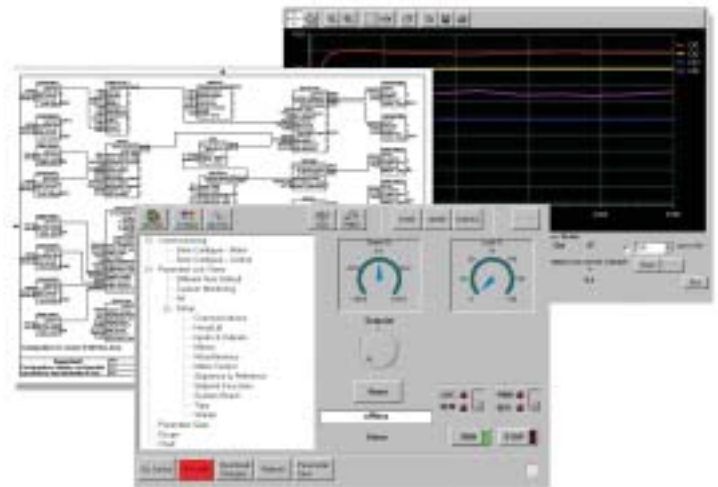
COMMON PROGRAMMING, FIELDBUS AND SOFTWARE TOOLS WITH THE 590+ DC INTEGRATOR SERIES

DUAL RATED FOR CONSTANT OR QUADRATIC 'VARIABLE' TORQUE APPLICATIONS

IP20, IP40 (NEMA 1) AND IP54 (NEMA12) PROTECTION OPTIONS

BUILT-IN CHOKES PROTECT AGAINST LINE SURGES AND SPIKES

FUNCTION BLOCK PROGRAMMING



ConfigEd Lite Plus

Lets you...

- Set up all parameters
- Autotune your application
- Chart key variables ON LINE!

208-240V Single and Three-Phase Controllers

Type	Constant Torque Rating** Nominal Output		Variable (Fan) Torque Rating** Nominal Output		Frame Size	Built-in Choke	Built-in Brake Switch
	Power KW/Hp	Current (A)	Power KW/Hp	Current (A)			
690+0001/230/1BN*	0.75/1	4.3	-	-	B	-	YES
690+0002/230/1BN*	1.5/2	8					
690+0003/230/1BN*	2.2/3	10.5					
690+0005/230/1BN	3.7/5	16					
690+0007/230/1BN	5.5/7.5	22	7.5/10	28	C	DC	Optional
690+0010/230/1BN	7.5/10	28	11/15	42			
690+0015/230/1BN	11/15	42	15/20	54	D		
690+0020/230/1BN	15/20	54	18/25	68			
690+0025/230/1BN	18/25	68	-	-	E		
690+0030/230/1BN	22/30	80	30/40	104			
690+0040/230/1BN	30/40	104	37/50	130	F	AC	
690+0050/230/1BN	37/50	130	45/60	154			
690+0060/230/CBN	45/60	154	55/75	192			

* Add a '-1' suffix for controllers using a single-phase supply. ** All horsepower ratings assume a 1800 RPM base speed motor.

380-460V Three-Phase Controllers

Type	Constant Torque Rating** Nominal Output		Variable (Fan) Torque Rating** Nominal Output		Frame Size	Built-in Choke	Built-in Brake Switch
	Power KW/Hp	Current (A)	Power KW/Hp	Current (A)			
690+0001/460/1BN	0.75/1	2.5	-	-	B	-	YES
690+0002/460/1BN	1.5/2	4.5					
690+0003/460/1BN	2.2/3	5.5					
690+0005/460/1BN	4.0/5	9.5					
690+0007B/460/1BN	5.5/7.5	11					
690+0010B/460/1BN	6.0/10	14					
690+0015/460/1BN	11/15	21	15/20	27	C	DC	Optional
690+0020C/460/1BN	15/20	27	18/25	34			
690+0025/460/1BN	18/25	38	22/30	45	D		
690+0030/460/1BN	22/30	45	30/40	52			
690+0040D/460/1BN	30/40	52	37/50	65	E	AC	
690+0050/460/1BN	37/50	73	45/60	87			
690+0060/460/1BN	45/60	87	55/75	105	F		
690+0075/460/CBN	55/75	100	75/100	125			
690+0100/460/CBN	75/100	125	90/125	156	G	External	
690+0125/460/CBN	90/125	156	90/150	180			
690+0150/460/CBN	91/150	180	-	-	H		
690+0175/460/CBN	110/175	216	132/200	260			
690+0200/460/CBN	132/200	250	150/250	302	J		
690+0250/460/CBN	160/250	316	200/300	361			
690+0300/460/CBN	180/300	361	220/350	420			
690+0350/460/CBN	200/350	420	250/400	480			
690+0400/460/CBN	250/400	480	300/450	545			
690+0500/460/CBN	280/500	590	315/550	650			

* Add a '-1' suffix for controllers using a single-phase supply. ** All horsepower ratings assume a 1800 RPM base speed motor.

Options & Accessories

Miscellaneous Remote mounting bezel and 3m (10 ft.) lead 6052

Technology Boxes 690+ Size B 690+ All Others

Profibus 6053/PROF/00 6055/PROF/00

Modbus/RS422/RS485/EIbisynch 6053/EI00/00 6055/EI00/00

Link 6053/LINK/00 6055/LINK/00

DeviceNet 6053/DNET/00 6055/DNET/00

Encoder feedback LA467461 6054-00

Wall Mount IP40 (NEMA 1) Covers included to 60 Hp (not available above 60 Hp)

Dynamic Braking Switch - optional above 15 Hp (replace the 'B' in the part number with a 'N' to remove this option)

For example, change 690+0020/460/1BN to 690+0020/460/1NN for a standard, 20 Hp, 690+ controller without a Dynamic Braking Switch installed. Drives do not include resistors for braking, for details on resistors, please refer to page 20.

System Expansion Module - Factory installed option. (Replace the 'N' in the part number with a 'S' to select this option)

For example, change 690+0020/460/1BN to 690+0020/460/1BS for a standard, 20 Hp, 690+ controller with a System Expansion Module installed.

Internal EMC filter (up to 10 Hp) (Add a '-F' suffix to select this option) For example, change 690+0005/460/1BN to 690+0005/460/1BN-F for a 5 Hp, 690+ controller with an internally mounted EMC filter. Optional external **EMC filters** and **line chokes** please refer to pages 26 and 21.

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TECHNICAL SPECIFICATION

Power Supply - Single or three phase units; 220-240 VAC ±10%; 50-60 Hz ±5%

Three phase units; 380- 460 VAC ±10%; 50-60 Hz ±5%

Ambient - Constant Torque rating - 0-45°C (32-113°F) (40°C (104°F) with IP40 cover); Variable Torque rating - 0-40°C (32-104°F) (35°C (95°F) with IP40 cover); derate 2% per °C to 50°C (122°F) maximum

Altitude - 1000m (3280 ft.) ASL; derate 1% per 100m (328 ft.) above 1000m (3280 ft.) to 5000m (16400 ft.) max.

Overload - 150% for 60 seconds, 180% for 0.5 second (frames C through F only) (constant torque rating) 115% for 60 seconds (variable torque rating)

Output Frequency - 0-480 Hz

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

Environmental Protection - IP20

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

Analog Outputs - 3; User configurable (10 bit 0-10V, ±10V, 0-20mA, 4-20mA)

Digital Inputs - 7; User configurable (nominal 24V DC)

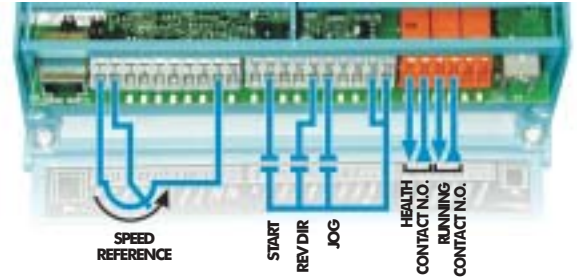
Digital Outputs - 3; User configurable relay outputs (3A @ 230 VAC)

Motor Thermistor Input

POWER SUPPLIES

Digital I/O supply – 24 VDC (150 mA)

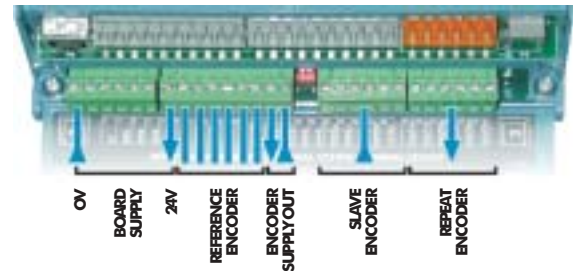
Analog reference supply – +10 VDC, -10 VDC (10 mA)



SYSTEMS EXPANSION MODULE

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

- 5 configurable digital inputs/outputs
- 2 encoder inputs
- 2 high speed register mark inputs
- Improved analog input resolution (from 10 to 12 bit plus sign)

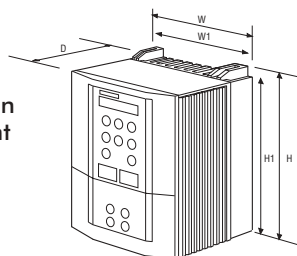


Dimensions

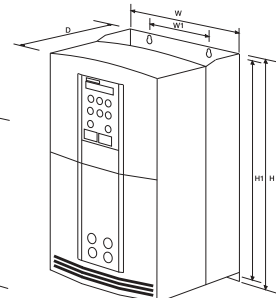
Frame Size	Size			Mounting			Weight (Kg/Lbs)
	H	W	D	H1	H2	W1	
B	233/9.1	171/6.9	181/7.1	233/8.7			4.3/9.5
C	348/13.7	201/7.9	208/8.1	335/13.2			9.3/20
D	453/17.8	252/9.9	245/9.6	471/17.3	—		17.4/38
E	668/26.3	257/10.1	312/12.2	630/24.8		150/5.9	22.5/50
F	720/28.9	257/10.1	349/13.7	700/27.5			29/64
G	1042/41.0	569/22.4				420/16.5	108/238
H	1177/46.3	684/27.0	465/18.3	300/11.8	16/0.6	536/21.1	138/304
J	1288/50.7	789/31.1				641/25.2	176/387

All dimensions in millimeters/inches.

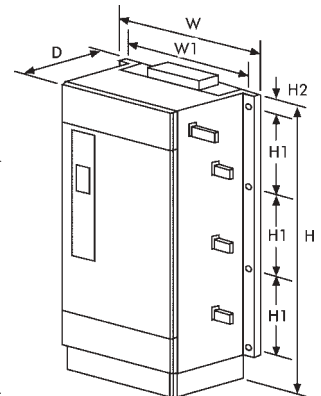
The 690+ series meets European and North American standards when installed in accordance with relevant product manual.



FRAME B



FRAME C, D, E & F



FRAME G, H & J

USER FRIENDLY

6901 Man Machine Interface

The 6901 Man Machine Interface is used for setting-up, programming and controlling the drive. It has been ergonomically designed with a back-lit, 32-character, alphanumeric display to provide intuitive access to all functions in a logical menu driven format.

- Straight-forward 4-button menu structure
- Provides local control - even on networked systems
- Password and function lockout
- Detachable for control panel mounting
- Same keypad as on DC drives



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Multi-lingual plain language
English • French • German • Spanish • Italian

Quick set-up
Bypasses advanced features for simple applications

Autotune
Custom tunes drive for full torque without turning motor shaft

Customized screens
Customize to display application-specific engineering units

Easy Configuration
Connect any function block to any other



- LINK
- DeviceNet
- ControlNet
- ProfiBus
- ModBus
- ModBus Plus
- Ethernet
- CANopen
- LonWorks

NETWORK FRIENDLY

Communication techboxes plug onto the drive and allow users to monitor and control the drive on many industry standard fieldbus networks.

SIMPLY POWERFUL!

With built-in function blocks to meet any application.

- PID Control
- Diameter Calculator
- Taper Calculator
- Torque Calculator
- Speed Demand Calculator
- Compensation Calculator
- Setpoint Summing Junction

Contains several pre-engineered applications that configure entire sections like 'Speed Winders' with one selection.

