

# DC DRIVES 590+ Integrator Series

## 1 to 2700 Amps

The Integrator Series is a single family of both AC drives (690+) and DC drives (590+) that provides the benefits of common programming, set-up and communications across both technologies. The 590+ Integrator series highly advanced DC drive meets the demands of the most complex motor control applications. Extensive application software (including winder control as standard) together with Function Block Programming and configurable I/O creates a total drive system in a single module.



### COMMON PROGRAMMING, SET-UP AND COMMUNICATIONS WITH 690+ AC INTEGRATOR SERIES

### DRV OPTION WITH BUILT-IN CONTACTOR, FUSES AND BLOWER STARTER

### SYSTEMS SPECIFICATION INCLUDING OPEN AND CLOSED-LOOP WINDER CONTROL AS STANDARD

### RATINGS UP TO 2700A AND SUPPLY VOLTAGES UP TO 660V

### FUNCTION BLOCK PROGRAMMING BASED

### INTERNAL CONTROLLED FIELD SUPPLY

### TECHNICAL SPECIFICATION

#### Power Configuration

590+ Four Quadrant Regenerative; 2 Fully Controlled Three Phase Thyristor Bridges  
 591+ Two Quadrant Non-Regenerative; 1 Fully Controlled Three Phase Thyristor Bridge  
 Thyristor Controlled Variable Field Supply

#### Armature Current Ratings (A dc)

Frame 1	15, 35A
Frame 2	40, 70, 110, 165A
Frame 3	180, 270A
Frame 4	380, 500, 725, 830A
Frame 5	1580A
Frame H	1200, 1700, 2200, 2700A

DRV Version available Frame 1 and 2

#### Overload

15- 450A; 200% for 10 seconds 150% for 30 seconds ≥700A; Various overload options available

#### Armature Voltage

Varmature=Vac x 1.15

#### AC Supply Voltage (Vac) 50/60Hz

220-500V (±10%) Frame 1-5  
 110-220V (±10%) option Frame 1-5  
 500-600V (±10%) option Frame 4-5  
 500-690V (±10%) Frame H

#### Field Current

4A Frame 1 30A Frame 4 and 5  
 10A Frame 2 and 3 60A Frame H

#### Field Voltage

Vfield=Vac x 0.82

#### Ambient

Temperature 0-45°C (15-165A ratings) 0-40°C (≥1200A ratings)  
 0-35°C (180-270A ratings) Derate 1%/°C for higher ambients to 55°C max

#### Altitude

500m ASL  
 Derate 1%/200m above 500m to 5000m max

#### Protection

High Energy MOV's	Heatsink Overtemperature
Instantaneous Overcurrent	Thyristor Trigger Failure
Inverse Time Overcurrent	Interline Snubber Network
Field Failure	Zero Speed Detection
Speed Feedback Failure	Standstill Logic
Motor Overtemperature	Stall Protection

#### Inputs/Outputs

Analogue Inputs (5 Total - 1 x 12 bit plus sign, 4 x 10 bit plus sign)  
 1 - Speed Demand Setpoint (-10/0/+10V)  
 4 - Configurable

#### Analogue Outputs (3 Total - 10 bit)

1 - Armature Current Output (-10/0/+10V or 0-10V)  
 2 - Configurable

#### Digital Inputs (9 Total - 24V, max 15mA)

1 - Program Stop 1 - Coast Stop  
 1 - External Trip 1 - Start/Run  
 5 - Configurable

#### Digital Outputs (3 Total - 24V(max 30V) 100mA)

3 - Configurable

#### Reference Supplies

1 - +10V DC 1 - -10V DC  
 1 - +24V DC

### Options

Programming/Control Module	6901
Remote mounting bezel and 3m lead	6052
Communication Options	
Profibus Technology Box	6055/PROF
Modbus/EI Bisynch/RS422/RS485 Technology Box	6055/EI00
Link Technology Box	6055/LINK
Devicenet Technology Box	6055/DNET
Tachogenerator switchable calibration board	AH385870U001
Microtech feedback board - glass	AH386025U001
AC Line Reactors (standard type)	
15A rating	C0466448U015
35 and 40A rating	C0466448U040
70A rating	C0466448U070
110A rating	C0466448U110
165A rating	C0466448U165
180A rating	C0055255
270A rating	C0057960
380A rating	C00466709U038
500A rating	C00466709U050
725A rating	C00466709U073
830A	C0466709U083
1580A*	2xC0466709U083
1200A (500V) rating	C0466250U012
1200A (690V) rating	C0466251U012
1700A (500V) rating	C0466250U017
1700A (690V) rating	C0466251U017
2200A (500V) rating	C0466250U022
2200A (690V) rating	C0466251U022
2700A (500V) rating	C0466250U027
2700A (690V) rating	C0466251U027
*1580A	C0466709U160
Load shore choke for transformer supply	
AC Line Reactors (for use with EMC filters)	
15A rating	C0466449U015
35 and 40A rating	C0466449U040
70A rating	C0466449U070
110A rating	C0466449U110
165A rating	C0466449U165
180A	C0463039
Above 180A use the standard line reactors above	

EMC filters please refer to page 60. Fuses please refer to page 59.

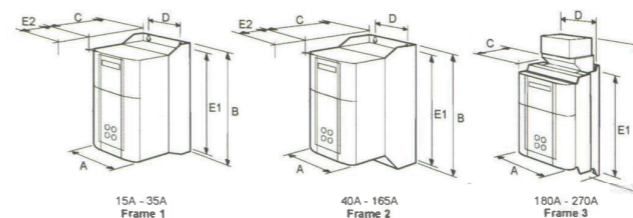
### STANDARDS

The 590+ 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 filters (590+ up to 110A require external supply capacitors for compliance)

UL listed to US and cUL listed to Canadian safety standards

Current Rating	Overall Dimensions				Fixing Centres		Weight kg
	A	B	C	D	E1	E2	
Frame 1	200	375	220	140	360	-	6.4
Frame 2	200	434	292	140	418	-	10.5
Frame 3	250	485	234	200	400	-	20
Frame 4	253	700	358	150	680	-	32/44
Frame 5	506	700	358	2x150	680	-	90
Frame H Regenerative	850	1406	417	810	78	4x400	270
Frame H Non-Regenerative	850	956	417	810	78	3x400	160



# DRV – A new concept in DC drive technology

The 590+ is available in either module, or alternatively "DRV" format up to 165A. The DRV version includes all the peripheral power components associated with a DC drive system integrally fitted within the footprint area of the drive.

DRV options include the following integrally mounted within the drive:

- AC line contactor
- AC line fuses
- DC fuse (regenerative versions)
- Control/field fuses
- Motor blower starter



All major power components are mounted under the hinged cover within the footprint area of the drive.

