

### Type of load

Three phase medium voltage AC induction motors

### AC supply voltage

2300, 3300, 4160, 6600/6900, 13,800 VAC

+10% to -10%

50/60 Hz line voltages

### HP ratings ①

Up to 15,000 HP @ 13,800V (600 Amps max)

### Overload rating

500% – 60 Seconds

### Power circuit

Series strings of SCR power modules (2,4 or 6 matched pairs of SCRs per phase depending on voltage rating)

### SCR peak inverse voltage

Amps	Line voltage	PIV rating
200 to 400	2300 V	6500
	3300 V	13,000
	4160 V	13,000
	6600/6900 V	19,500
	11-14 kV	39,000
600	2300 V	7000
	3300 V	14,000
	4160 V	14,000
	6600/6900 V	21,000
	11-14 kV	39,000

### Transient voltage protection

dv/dt circuits (1 per SCR power module)

### Vacuum bypass contactor ③

Standard on all models, line start rated

### Ambient operating temperature

0 to 50°C (32°F to 122°F)

(Optional -20° to 50°C with heaters)

### Control

Digital microprocessor controller with read-out in English text

Alphanumeric LCD display

Non-volatile memory for programming and faults

Opto-isolated inputs

### Communications

RS485 with modbus RTU protocol

RS232 with Windows interface

### Auxiliary contacts

FORM C, 8 Amps @ 250V

### Adjustments

Motor FLA

Dual adjustments — Two independent settings for:

Initial voltage	0 – 100% of nominal voltage
Current limit	0 – 600% of motor FLA
Acceleration time	1 – 120 seconds
Deceleration time	1 – 60 seconds
Kick start	0.1 – 2.0 seconds, 10 - 100% of line voltage
Under voltage trip	70 – 95% (adjustable trip delay)
Over voltage trip	105 – 130% (adjustable trip delay)
Under current trip	20 – 90% of motor FLA (adjustable trip delay)
Over current trip	100 – 300% of motor FLA (adjustable trip delay)
Allowable re-starts	0 – 10 (adjustable time inhibit)

### Motor and starter protection

Electronic overload	Inverse time, 75 – 150% of motor FLA
Electronic shear pin	Trips within 1 cycle of setpoint
Phase loss	One or more phases missing
Phase sequence	Phase sequency incorrect
Over voltage	Trips at high line setpoint
Under voltage	Trips at low line setpoint
Stall protection	Starting process is not complete
Shorted SCR	Internal fault detected
Error connection	Internal fault/motor connection
Starter over-temp	Heatsink over temperature

### Metering

Current	Phase A, B, C & average current
Thermal data	Thermal capacity of motor
Power	KVA, KW, KVAR, power factor, KWH

### Line start section

Load break/fault make disconnect switch with automatic grounding arm and viewing window

Fuses with blown fuse indicator

In-line vacuum contactor ③

Control power transformer with fused primary/secondary

Packaged in common enclosure with soft start

Optional "Soft Start" (requires customer supplied line start panel)

### Statistical data

Total amount of run time since soft start was reset

Amount of time it took motor to start during last period

Maximum current during last start period

Total number of starts since soft start was reset

Event history for last 60 events

### Elevation

1000 m / 3300 ft. without derating (contact factory for higher elevations)

### Enclosure ②

NEMA 12, top and bottom entrance plates

11 gauge steel

ASA #61 gray paint with lifting eyes

① Consult factory for higher horsepower and voltage requirements.

② 13.8 kV softstarters are rated NEMA 1.

③ 13.8 kV, 600A softstarters use circuit breakers for isolation and bypass functions.