


Series 81000™ Solid State Reduced Voltage Controller



- Up to 13.8kV 300A drawout main fuses and fixed-mounted main contactor
- Main and bypass contactors: Siemens type 3TL71, 24kV 800A
- Bypass standard on all models, capable of full voltage start
- Minimize system maintenance and repair
- Reduce system downtime; increase productivity
- Minimize mechanical wear and tear
- Reduce inrush currents
- Reduce motor starting current for prolonged motor life
- Full drawout construction means power fuse changes are done outside of the enclosure
- 125% continuous duty rating (on soft start module only)
- Modbus RTU communications
- Standard adjustment capabilities: soft start, soft stop, voltage ramp, and current ramp
- Available with main bus up to 600A for lineups of multiple controllers
- Made to ISO9001 quality standards

Up to 13.8kV

Up to 13.8kV Solid State Reduced Voltage Controller Specification Sheet

One Line Diagram	Voltage	Maximum HP			AC Supply Voltage +10% to -15% ³	SCR Peak Inverse Voltage		Series Pairs
		< 100 FLA	< 200 FLA	< 300 FLA		Line Voltage	PIV Rating	
	10000	1500	3000	4500	10000	10000	32500	5
	11000	1750	3000	5000	11000	11000	39000	6
	13200	2000	4000	5500	13800	13800	39000	6
Motor and Starter Protection					Programmable Features			
Electronic overload		2 stage, programmable class 5-30			Motor FLA			
Phase loss		One or more phases missing			Dual ramp adjustments: Initial voltage Current limit		Two independent settings for: 0-100% of nominal voltage 200-600% of motor FLA	
Phase imbalance		Adjustable trip level with delay						
Phase reversal		Phase sequence varies from initial start						
Short circuit detection		Starting and running protection			Acceleration time		1-120 seconds	
Over current		100-300% of FLA with trip delay			Three custom curves		Via plotted torque / time axis points	
Under current / load loss		10-90% of FLA with trip delay			Deceleration time		1-60 seconds	
Over voltage		Trips at high line set point			Kick start		0.1 - 2.0 seconds (10-100% voltage)	
Under voltage		Trips at low line set point			Tach feedback*		Closed loop speed ramp	
Shorted SCR		Internal fault detected			Ambient Operating Temperature			
Shunt trip		Prevents start if SCR(s) are shorted			0-40°C (32°F to 104°F)			
Starter over-temp		Thermal sensors on heatsink			Overload Ratings			
Ground fault ⁴		Alarm and 2 trip levels with trip delay			500% overload capacity for 60 seconds; 600% for 30 seconds			
Coast down lockout		0-60 minutes following stop command			Digital Control Unit (DCU)			
Starts per hour lockout		1-10 starts per hour			With programmable keypad / operator interface			
Time between starts		0-60 minutes between start attempts			2 lines x 20 characters backlit LCD display & non-volatile memory			
RTD inputs ⁴		12 RTDs for motor / bearing protection			LCD status / alarm LEDs (power, run, alarm, trip, aux 1-8)			
Auxiliary Contacts					Communications			
Multiple Form C contacts rated 5A @ 240VAC max.					RS485 or RS422 with Modbus RTU, RS422 protocol or Windows interface			
Metering					Statistical Data			
Percent of FLA, phase currents, average start time, ground fault current, remaining thermal register, thermal capacity to start, average start time & current, measured capacity to start, time since last start, line frequency, phase order, motor RPM ¹					Elapsed run time, last start time, average starting current, stores history of up to 60 events (includes: date & time, phase & ground fault current)			
					Starter Dimensions ²			
					126" w x 90" h x 48" d			

¹ Requires tach feedback option. ² For estimating purposes only. ³ Consult factory for higher requirements. ⁴ Optional.

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