

# The XLD Series... for Advanced Protection



**The XLD Series**  
by MOTORTRONICS

## Acceleration Adjustments

Ramp types	Voltage ramp or current ramp
Starting torque	0 - 100% of line voltage or 0 - 600% of FLA
Ramp time	1 to 120 seconds
Current limit	200 - 600%

## Dual Ramp Settings\*

Four (4) programmable ramp options

## Deceleration Adjustments

Begin decel level	0 - 100% of line voltage
Stop level	0 to 1% less than begin decel
Decel time	0 - 60 seconds
Operation during overload	Ramp down or coast-to-stop

## Jog Settings\*

Jog at set current	100 - 500% of FLA
Jog at set voltage	0 - 100% of line voltage
Voltage jog max time	0 - 20 seconds

## Kick Start Settings

Kick start	0 - 100% of line voltage
Kick start time	0.1 - 2 seconds

## Programmable Output Relays

Three (3) relays can be individually programmed for change of state indication for any one of 18 conditions.

Type / Rating	FORM C (SPDT), rated 5 amps, 240VAC max (1200VA)
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\*Separate external control inputs



## Advanced Motor Protection in a Soft Starter

### Start & Run Protection

Two programmable overload trip curves allow for the thermal capacity required to start the load while providing motor overload protection needed during the run time.

Start:	Programmable for Class 5 - 30
Run:	Programmable for Class 5 - 30, enabled when starter detects motor is "At-Speed"
Reset:	Manual or automatic, selectable via programming

The **XLD Series** recognizes motor cool-down rates are a function of the run time and that sometimes a motor will cool faster if allowed to run.

**Real-Time Thermal Modeling** Continuously calculates motor operating temperature even when your motor isn't running. Knows when your motor is cool enough for a successful restart.

**Retentive Thermal Memory** Remembers the thermal condition of the motor even in the event of a power brown-out or black-out. Extrapolates motor temperature using a real-time clock.

**Dynamic Reset Capacity** Overload will not reset until thermal capacity in the motor is sufficient for a successful restart. Starter learns and retains this information from previous starts.

### Phase Current Imbalance/Loss Protection

Imbalance trip level	5 - 30% current between any two phases
Imbalance trip delay	0 - 20 seconds
Phase loss	Trips on any phase current loss

### Electronic Shear Pin Protection

Shear pin trip level	50 - 300% of motor FLA
Shear pin trip delay	0 - 20 seconds

### Load Loss Trip Protection

Under current trip level	10 - 90% of motor FLA
Under current trip delay	0 - 20 seconds

### Coast Down (Back Spin) Lockout Timer

Coast down time	0 - 60 minutes
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### Starts-per-Hour Lockout Timer

Starts-per-hour	1 - 10 successful starts per hour
Time between starts	0 - 60 min. between start attempts

### Phase Rotation

Phase sequence insensitive

### Shorted Load

During start, injects voltage for ¼ second and will trip if it sees a current surge

### Short Circuit

Trips in 12.5 ms at 10x unit current rating during run

### Shorted SCR

Trips on a voltage drop of less than 1½ V across any SCR pair

### Shunt Trip

Relay trips on current flow while in the OFF mode (multiple shorted SCRs)

### Over Temperature

Thermal sensors on heat sinks trip when temperature exceeds 185° F

# XLD Series... Reliable, Digital Soft Starters



Simple to use keypad operator

## Operator Interface

LED readout	4 digit alpha numeric, high brightness, 7 segment display
Keypad	7 function keys with tactile feedback
Status Indicators	8 LEDs for run and fault indication
Remote Capability	Up to 10 ft (3 meters) with NEMA1 or NEMA12 mounting kit

## Metering Functions

Phase Currents	0 - 9999 amps, Phase A, B, or C
Thermal Capacity	0 - 100% of remaining motor thermal capacity
Elapsed Time	0 - 9,999,000 hours
Run Cycle Counter	0 - 99,990,000 run commands
Fault History	Last 3 faults, including time and date stamps for each

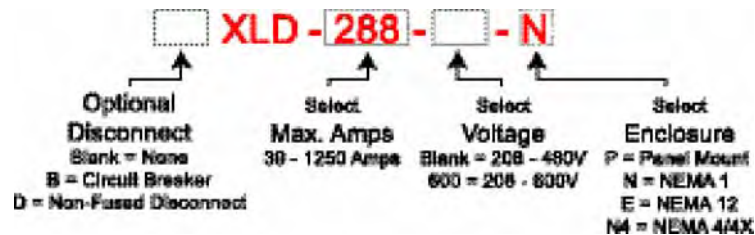
## Processor Intelligence

Real Time Clock	Lithium ion battery for clock memory only, 10+ year life span.
Customer Settings	Non-volatile EEPROM, no battery backup necessary
Operating Memory	DRAM, loaded from EPROM and EEPROM at initialization
Factory Default Storage	Flash EPROM, field replaceable

## Serial Communications

Protocol	Modbus RTU & RS232
Signal	RS-485
Network	Up to 247 devices per node
Functionality	Full operation, status view and programming via the comm port

## How to Order



## General Specifications

### Type of Load

Three phase AC induction motors

### AC Supply Voltage

208 - 600VAC  $\pm 10\%$ , 50/60 Hz

### Current and HP Ratings

39 - 1250 Amps; 10 - 1125HP

### Unit Overload Capacity

(% of motor FLA)  
 125% - Continuous  
 500% - 60 Seconds  
 600% - 30 Seconds

### Control

2 or 3 wire 120 VAC (customer supplied)  
 Order 240 VAC control as option  
 Optional CPTs also available

### SCR Peak Inverse Voltage

1600V (ratings above 39 A)

### Transient Voltage Protection

RC snubber (dv/dt) network on each phase

### Ambient Condition Design

0 - 50° C open panel (32° F to 122° F)  
 0 - 40° C enclosed (32 - 104° F)

### Cooling Systems

Convection up to 180A, fan assisted  
 62 - 120A; Fan ventilated 220 - 1250A

### Bypass Contactor

Shunt rated contactor included as standard in all NEMA 12 enclosed units  $\geq 92A$  and all NEMA 12 combination starters. Line start rated contactor optional.

### Approvals

