

# VMX SPECIFICATIONS

## Power Components

6 SCRs in inverse parallel pairs for full phase angle soft start control

1600V PIV rating on all units

RC snubber for dv/dt protection of each SCR pair

## Line Voltage Range

200 to 600 VAC, 3 phase +10% -15% on all units, 50/60Hz

## Current Ratings

18 - 1250A depending on unit selection

Range of each unit is 50-100% of maximum current rating based on 1.0 service factor

## Short Circuit Current Rating

65 KA @ 480V without semi-conductor fuses

## AC Supply Voltage

User supplied 120VAC +10% -15% tolerance, 60Hz

Optional 240VAC 50Hz control available

## Ambient Operating Temperature

0 to 50°C (32 to 122°F)

## Overload Capacity (% of motor FLA)

500% for 60 seconds

## Bypass Contactor

Standard on all units

Shunt rated bypass / Start rated bypass

## Start/Stop Control Choices

2-wire Run-Stop using dry contacts

3-wire Start/Stop with built-in seal in contact

N.C. Interlock input (dry contact) for remote devices

## Ramp Control Choices (4 built-in)

Voltage Ramp

Voltage Ramp with Current Limit

CLT© Closed Loop Torque Ramp (Current Ramp)

Current Step (current limit only)

Ramp times adjustable 1 - 120 seconds

Current Limit adjustable 200 - 600% of FLA

## Dual Ramps

Select via dry contact closure between any

## Jog

Dry contact closure selects a non-ramping Jog function at an adjustable torque

## Kick Start

10 - 100% starting torque for 0.1 - 2 seconds

## Pump-Flex™ Deceleration Ramp

Fully adjustable to match field conditions:

Begin Decel setting, 0 - 100% of line voltage

Decel ramp time, 1 - 60 seconds

End Decel setting (Off), 0 - 1% of Begin setting

## Restart Delay Timer (Sequential Start Delay)

Programmable time delay 1 - 999 seconds after loss of control power for staggered restarts

## Real Time Clock (RTC)

Range: 1-24 hours, and 1- 7 days per week

## RS-485 Serial Communications

Up to 247 starters per link

Modbus RTU protocol built-in

Full programming over the serial link

Programmable remote starter control

## Operator Interface

Tactile feedback keypad

Easy to read LED display

Run and fault

status indicators



# VMX SPECIFICATIONS (Continued)

## 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.  
Remote reset available.

## Real-Time Thermal Modeling

Continuously calculates motor operating temperature even when the motor is not running.

## Retentive Thermal Memory

Remembers the thermal condition of the motor even in the event of a power brown-out or black-out when power is restored. 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.

## Motor Temperature

PTC thermistor input can also be used for E-stop or external overload relay.

## Equipment Ground Fault

Residual current method with adjustable trip delay.

## Phase Current Imbalance/Loss Protection

Trip level: 5 - 30% current imbalance between any two phases with trip delay

## Phase Loss

Trips on phase current or voltage loss

## Phase Rotation

Phase rotation trip can be set to A-B-C, A-C-B or disabled

## Electronic Shear Pin Protection

Trip level: 100 - 300% of motor FLA with trip delay

## Load Loss (Under Current) Trip Protection

Trip level: 10 - 90% of motor FLA with trip delay

## Motor Duty Cycle Protection

Back-spin/coast-down, starts-per-hour or minimum time between starts lockouts. Restart delay after a power failure.

## Short Circuit

Trips at 10x unit current rating during run. Checks for shorted load prior to each start.

## Shorted SCR

Locks out on any single shorted SCR (defeatable) or can provide shunt trip function if multiple SCRs short or bypass contactor is welded closed.

## Metering

Monitors phase current, ground current and motor thermal capacity.

