

# VMX

Now UL Listed 65KA @ 480V

**VMX SERIES COMPACT SOFT STARTER**  
208 - 600V, 9 - 1250 Amps, 5 - 1200 HP

**Easy to install, Easy to wire**



- 500% overcurrent capacity for 60 sec
- Multiple Ramp Profiles
- Pump-Flex Decel
- Integral Bypass Contactor
- 65KA Rated with no special fuses
- 690V Rated units available
- Advanced Motor Protection

# VMX

LOW VOLTAGE COMPACT SOFT STARTER

## Rugged – Compact - Versatile

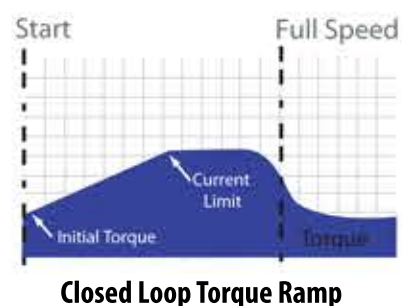
Heavy Duty Ratings, Built-in Bypass, and Advanced Motor Protection make the VMX Series Soft Starter suitable for the most demanding motor applications.



## Choose Ramp Method for your Application

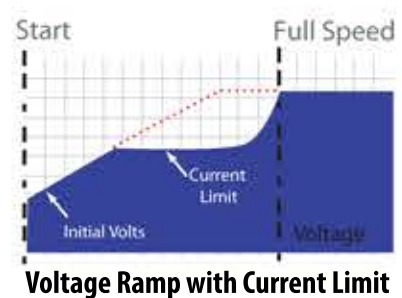
### Pumps, Fans, Bowers & Conveyors

Closed Loop Torque/Current Ramping provides a linear increase in output torque during acceleration and maximizes the available torque using an internal PID feedback loop ensuring a smooth linear ramp.



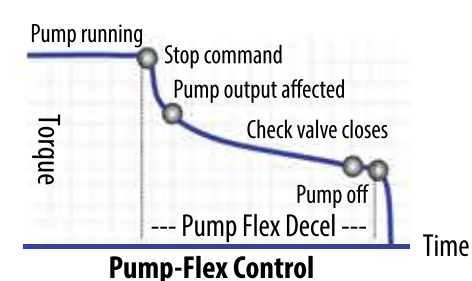
### Compressors & Chillers

Voltage Ramp with Current Limit provides the smoothness of voltage ramping while maintaining the ability to start in limited power environments.



### Pump-Flex Decel Control

Eliminate Water Hammer with Pump-Flex Decel Control. A gradual reduction in the output torque of your pump motor is provided when a stop signal is initiated. Check valves close gently and other fluid system components are no longer subjected to the shock and destructive potential of water hammer.



# Enclosed Design

Complete Package to meet the needs of any Application



### VMX-S & VMX-H Include:

- N12/4 Enclosure
- VMX Softstarter with built-in Bypass
- Circuit Breaker Disconnect (55A- & up)
- Fusible Switch Disconnect (18A-48A)
- Advanced Motor Protection
- Control Power Transformer
- Interface Board for easy control connections
- Smart Door Customer Interface including:
  - Door Mounted Digital Keypad
  - Emergency Stop Pushbutton
  - Local-Off-Remote Selector Switch
  - Start /Stop Pushbuttons
  - Motor Run Pilot Light
  - Power On Pilot Light
  - Starter Fault Pilot Light
  - E-Stop Fault Pilot Light
  - External Interlock Pilot Light



The Smart Door Customer Interface Panel allows for Superior Functionality and Diagnostics.

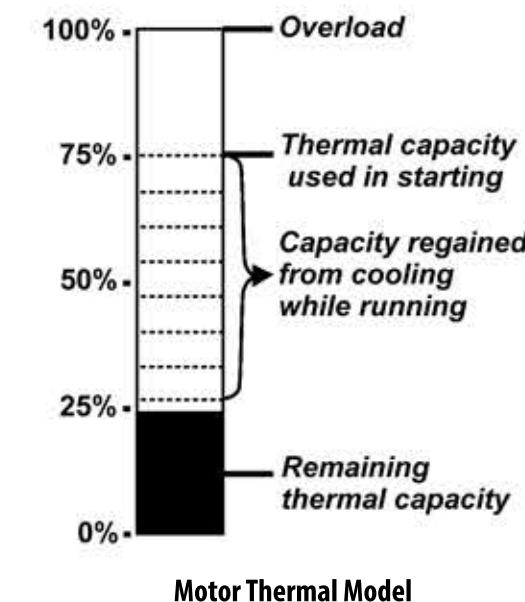
### VMX-H also includes:

- Start Rated Bypass Contactor
- External Motor Overload for Across the Line mode
- Soft Start – X-Line mode Selector Switch
- X-Line Enabled Pilot Light

# Advanced Motor Protection

Built in Solid State Overload offers Superior Protection for your Motor

- ✓ **Real-Time Thermal Modeling**  
Continuously calculates motor operating temperature
- ✓ **Dynamic Reset Capacity**  
Knows when the motor is cool enough for a successful start
- ✓ **Separate Start & Run Overload Protection**  
For closely matched overload protection during start and run
- ✓ **Pre-start Shorted Load Protection**  
Checks for motor lead or winding damage before starting
- ✓ **Over Current Trip**  
Acts as an Electronic Shear Pin
- ✓ **Under Current Trip**  
Acts as a Load Loss Trip (broken belt monitor)
- ✓ **Phase Loss**  
Instantaneous tripping
- ✓ **Current Imbalance Trip**  
Adjustable level and time delay
- ✓ **Minimum Time Between Starts Lockout**  
Helps reduce utility demand charges
- ✓ **Coast Down Lockout**  
Inhibits Start attempts that could harm equipment
- ✓ **Starts per hour Lockout**  
Matches motor protection to motor or utility limits
- ✓ **Restart Delay**  
Allows for staggered starting of motors
- ✓ **Equipment Ground Fault**  
Residual Current type
- ✓ **Manual / Automatic Overload Reset**  
Match overload protection type to the application
- ✓ **Shorted SCR Lockout**  
Self Diagnostic
- ✓ **PTC Thermistor Input**  
For use with motors with embedded temperature sensors



# Ratings and Dimensions

## Chassis Units

Model Number	Amps	208V / HP		240V / HP		480V / HP		600V / HP	
		Shunt Bypass	Start Bypass	Shunt Bypass	Start Bypass	Shunt Bypass	Start Bypass	Shunt Bypass	Start Bypass
VMX-18-BP	9 - 18	5	3	5	5	10	10	15	10
VMX-28-BP	14-28	7.5	7.5	7.5	7.5	20	15	25	20
VMX-39-BP	19-39	10	10	10	10	25	25	30	30
VMX-48-BP	24-48	15	10	15	15	30	30	40	30
VMX-62-BP	31-62	20	15	20	20	40	40	50	50
VMX-78-BP	39-78	25	20	25	25	60	50	60	60
VMX-92-BP	46-92	30	25	30	30	60	60	75	75
VMX-112-BP	56-112	30	30	40	30	75	75	100	75
VMX-150-BP	75-150	40	40	50	50	100	100	125	-
VMX-160-BP	80-160	50	40	60	50	125	100	150	-
VMX-210-BP	105-210	60	50	75	60	150	150	200	150
VMX-275-BP	138-275	75	60	100	75	200	150	200	150
VMX-361-BP	181-361	125	75	125	125	300	250	350	300
VMX-450-BP	225-450	150	125	150	150	350	300	450	300
VMX-550-BP	275-550	150	150	200	200	450	400	500	500
VMX-600-BP	300-600	200	200	200	200	500	500 (4)	600	600 (4)
VMX-862-BP	431-862	250	250	300	300	600	500	700	600
VMX-900-BP	450-900	300	250	350	300	700	600	900	600
VMX-1006-BP	503-1006	350	300	400	400	800	800	1000	900
VMX-1250-BP	625-1250	450	350	500	450	1000	900	1200	1000

1 – 690V Rated units available – Contact Factory.

2 – Size the Soft Starter based on the actual motor nameplate FLA.

3 – All VMX units rated 500% current 60 sec; Start bypass ratings allow for use of 1.15 service factor motors.

4 – VMX-600-BP @ 480V and 600VAC is 1.0 S.F.

5 – Control power is required for all units.

PANEL - Dimensions and Shipping Weights				
Model Number	H inches (mm)	W Inches (mm)	D inches (mm)	Shipping Weight Approx. lbs. (kg)
VMX-18-BP thru VMX-48-BP	8.85 (225)	8 (203)	6.65 (169)	13 (6)
VMX-62-BP thru VMX-112-BP	14 (355.6)			23 (10)
VMX-150-BP thru VMX-160-BP	19 (482.6)			33 (15)
VMX-210-BP	28.1 (713.7)	12.5 (317.5)	9.1 (231)	130 (59)
VMX-275-BP				140 (64)
VMX-361-BP thru VMX-450-BP	29.3 (744.2)	25.5 (647.7)	11.86 (301.3)	145 (66)
VMX-550-BP thru VMX-600-BP	29.5 (749.3)			165 (75)
VMX-862-BP thru VMX-900-BP	44.25 (1124)			13.28 (337.3)
VMX-1006-BP thru VMX-1250-BP	50.77 (1289.6)			



# 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

## AC Supply Voltage

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

Optional 240VAC 50Hz control available

## 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 combinations of the above

## 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

## 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.

## Restart Delay Timer (Sequential Start Delay)

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

## Real-time Clock (RTC)

24 hour/7 day real-time clock to provide automatic start

## 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

## Motor Temperature

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

## Protection

Equipment ground fault, Phase Current Imbalance/Loss Protection, Phase Loss, Phase Rotation, Electronic Shear Pin, Motor Duty Cycle, Short Circuit, Shorted SCR

## Metering

Monitors phase current, ground current and motor thermal capacity.

## RS-485 Serial Communications

Up to 247 starters per link, Modbus RTU protocol built-in

Full programming over the serial link, Remote starter control

## Operator Interface

Tactile feedback keypad, Easy to read LED display, Run and fault, status indicators

## CORPORATE HEADQUARTERS

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