

SUPERNOVA Series



Key Features

- Smart Starting
 - Adaptive Acceleration Control
- Smoother Stopping
- Braking
- Simulation
 - Run
 - Protection
 - Signaling
- Graphical display
 - Monitoring and Event Logging
 - Real Language in Real Time
- Advanced Protection
- Easier Installation
- Faster Commissioning
- 6 Wire Motor Connection
- Bypass Contactor Built-in
- Compact Design

Soft Starters

Complete Motor Starting and Management System

Smart Start + Smoother Stop + Advanced Display = SUPERNOVA

The SUPERNOVA Softstarter provides a **complete motor starting and management system**. With an impressive range of features in a single user friendly package, never before has motor control been simple. The softstarter has unique **XLR-8 adaptive acceleration control** which gives an unprecedented level of control over motor's acceleration and deceleration profiles.

SUPERNOVA EMX3 has a built-in bypass contactor and can be connected to **6 Wire** or inside delta configuration enabling the starter to control motors 50% larger than possible with standard 3 Wire connection.



EBG-Control & Automation Business Unit

LARSEN & TOUBRO LIMITED

HIGHLIGHTS

Range - 23 Models

- 23 A ~ 1600 A (3 Wire)
- 11kW ~ 950 kW (@ 415 V AC)

Voltage Ranges (3 wire - Inline Connection)

- 200 V AC ~ 440 V AC ($\pm 10\%$)
- 380 V AC ~ 690 V AC ($\pm 10\%$)

Voltage Ranges (6 wire - Inside Delta Connection)

- 200 V AC ~ 440 V AC ($\pm 10\%$)
- 380 V AC ~ 600 V AC ($\pm 10\%$)

Protection Class

- 23 A ~ 195 A - IP 20, NEMA I
- 145 A ~ 1600 A - IP 00

Power connections

- 3 Wire and 6 Wire
- Internal Built in Bypass Contactor upto 220A
- External Bypass terminals for 225A ~ 1600 A (Protections retained in bypass mode)

FEATURES

Starting Functions

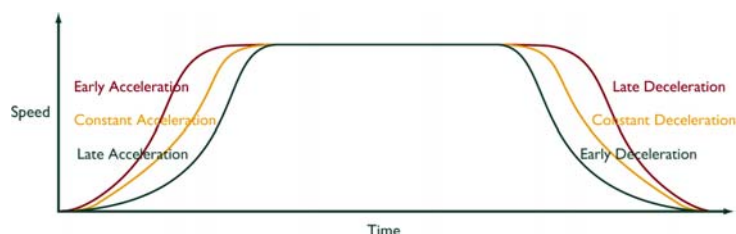
- XLR-8 adaptive acceleration
- Constant current start mode
- Current ramp start mode
- Kickstart

Stopping Functions

- XLR-8 adaptive deceleration
- TVR Stop Mode
- Brake Mode
- Coast to Stop

Protections

- Fully Customizable Protection
- Motor Thermal Model
- Motor Thermistor Input
- Phase Sequence
- Under Current, Instantaneous overcurrent
- Auxillary Trip Input
- Heat Sink Overtemperature
- Excess Start Time
- Supply Frequency



Adaptive acceleration offers three start and stop profiles according to your needs

- Shorted SCR's, Power Circuit
- Motor Connection
- RS485
- Motor Overload
- Current Imbalance
- Ground Fault

Additional Features

- Starter Communication Timeout
- Network Communication Trip
- Auto Detection of Inline or Inside Delta Connection
- Programmable Auto Start/ Stop
- 24V DC auxillary Power Supply
- PT-100 (RTD) Input
- Real Time Clock with battery backup
- Powerthrough
- Forward and reverse jog function
- I/O Expansion Card (Optional)

Keypad

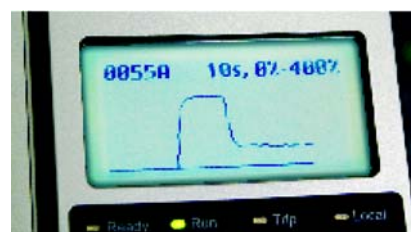
- Remote Mounting option
- Status LED's
- Easy to read screen
- Real Language feedback
- Multilanguage Options
- Shortcut Buttons

Accessories / Other Features

- Profibus, Devicenet, Modbus RTU Communication Modules
- Hardware Expansion cards for additional Inputs and Outputs
- RTD and Ground fault input card.
- PC Software
- Voltage Measurement Card
- Finger guard
- Adjustable Busbar configuration for EMX3 0360C and above



REAL LANGUAGE IN REAL TIME



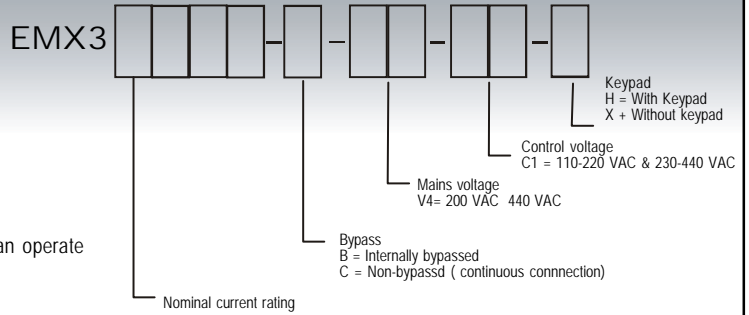
GRAPHICAL DISPLAY

STANDARD SPECIFICATIONS

Model EMX3		0023B	0043B	0050B	0053B	0076B	0097B	0100B	0105B	0145B	0170B	0200B	0220B	0255C	0360C	0380C	0430C	0620C	0650C	0790C	0930C	1200C	1410C	1600C
400 V Class	Current Rating (3 Wire)* 1* 2 A	19	38	42	53	60	75	81	103	114	127	173	193	209	328	374	381	553	568	756	866	1184	1238	1486
	Power Rating (3 Wire) kW 1*2	11	20	22	30	37	40	45	60	70	75	90	100	110	185	210	220	330	350	470	500	700	775	950
	Current Rating (6 Wire)*1*2 A	29	57	63	80	90	113	121	155	190	172	260	290	314	492	561	571	830	852	1133	1299	1776	1857	2229
	Power Rating (6 Wire) kW 1*2	15	30	37	45	50	65	70	80	90	110	147	160	185	280	330	350	500	520	700	775	1080	1130	1350
	Rated Supply Voltage & Frequency	200 VAC ~ 440 VAC (±10%) / 50 Hz ~ 60Hz (±10%)																						
	Degree of Protection	IP20 & NEMA1											IP00											
	Control Voltage	110 VAC ~ 220 VAC (-10% / +15%) Terminals A1, A2 - OR- 230VAC ~ 440 VAC (-10% / +15%) Terminals A3, A2 (Field Selectable)																						
	Operating Temperature	- 10°C ~ +60°C																						
	Bypass Mode	Inbuilt Bypass Contactor											Bypass Contactor to be provided externally											
	Digital Inputs/ Digital Outputs	Digital Inputs - 5 Nos. (2 Nos. programmable) Relay Outputs - 4 Nos. (3 Nos. programmable)																						
Analog Output	1 No. (0 - 20mA / 4 - 20mA)																							

1* Current Rating at 45°C 2* AC-53b 3.5 - 15: 345 for 0023B ~ 220B
 AC-53a 3.5 - 15: 50 for 0255C ~ 1600C

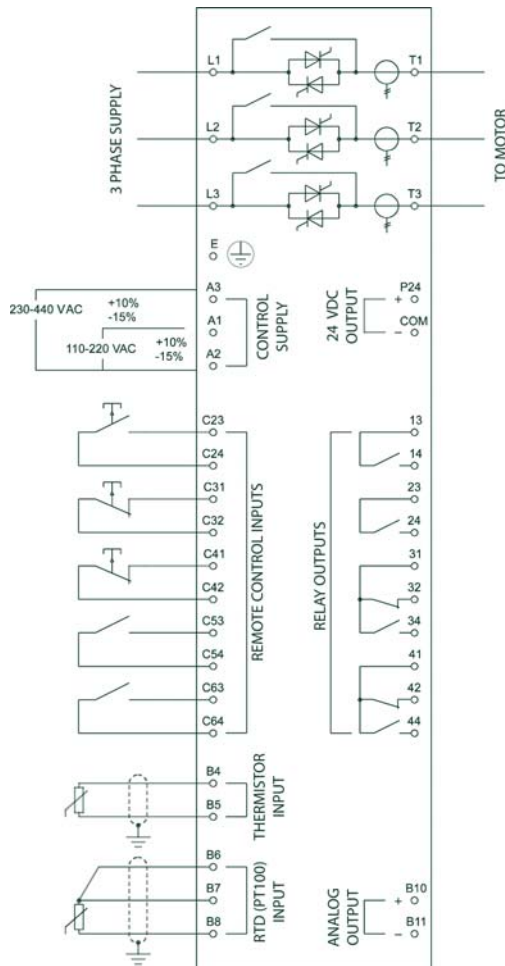
ORDERING CODE



- AC53a Utilisation Category Format : Eg. 78A: AC-53a 3.5 - 15 : 50 - 10
 AC53a Utilisation Category Format : Eg. 78A: AC-53b 3.5 - 15 : 345
- 78 Starter Rated Current (Amp)
 - AC53a For Continuous Operation
 - AC53b For Bypass Operation
 - 3.5 Max. Available Start current (Multiples of FLC)
 - 15 Max. Available Start Time (Second)
 - 50 Max. permissible % of each operating cycle that the softstarter can operate Onload Duty cycle (%)
 - 10 Max. Available Starts per Hour
 - 345 Min. allowable time between the end of one start and the beginning of next start (Second)

Contact your L&T representative for EMX3 ratings under operating conditions not covered by the above ratings charts.

ELECTRICAL SCHEMATIC



MECHANICAL DIMENSIONS

Model	Height (mm)	Width (mm)	Depth (mm)	Weight (kg)
EMX3-0023B	294.6	156.4	192.2	3.2
EMX3-0043B				
EMX3-0050B				
EMX3-0053B				
EMX3-0076B				
EMX3-0097B				
EMX3-0100B	438	282	250	16
EMX3-0105B				
EMX3-0145B				
EMX3-0170B				
EMX3-0200B				
EMX3-0220B				
EMX3-0255C	417	390	281	25
EMX3-0360C				
EMX3-0380C				
EMX3-0430C				
EMX3-0620C				
EMX3-0650C				
EMX3-0790C	545	430	299	50.5
EMX3-0930C				
EMX3-1200C				
EMX3-1410C				
EMX3-1600C				
EMX3-0255C				
EMX3-0255C	750	574	361	136
EMX3-0255C				

APPLICATION WISE TYPICAL START CURRENT REQUIREMENTS

(as % of Motor FLC)

	300 %	350 %	400 %	450 %		300 %	350 %	400 %	450 %
Agitator			●		Fan - High Pressure				●
Atomiser			●		Grinder		●		
Bottle Washer	●				Hydraulic Power Pack		●		
Centrifuge				●	Mill				●
Chipper				●	Mill - Ball				●
Compressor - Recip (loaded)				●	Mill - Hammer				●
Compressor - Recip (unloaded)			●		Mill - Roller				●
Compressor - Screw (loaded)			●		Mixer				●
Compressor - Screw (unloaded)		●			Palletiser				●
Conveyor - Belt				●	Planer		●		
Conveyor - Roller		●			Press		●		
Conveyor - Screw			●		Pump - Bore	●			
Crusher - Cone		●			Pump - Centrifugal		●		
Crusher - Jaw				●	Pump - Positive Displacement			●	
Crusher - Rotary		●			Pump - Slurry				●
Crusher - Vertical Impact		●			Re-pulper				●
Debarker		●			Rotary Table			●	
Dryer				●	Sander			●	
Dust Collector		●			Saw - Bandsaw				●
Edger		●			Saw - Circular		●		
Fan - Axial (Damped)		●			Separator				●
Fan - Axial (Un-damped)				●	Shredder				●
Fan - Centrifugal (Damped)		●			Slicer	●			
Fan - Centrifugal (Un-damped)				●	Tumbler			●	

The above table is intended as a guide only. Individual machine and motor characteristics will determine the actual start current requirements.

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