

Type MV801, Intelligent Technologies (IT) Medium Voltage Soft Starters

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Type MV801 Soft Starter

Product Description

The Cutler-Hammer® Intelligent Technologies (IT) MV801 Line of Reduced Voltage Soft Starters from Eaton's electrical business is very compact, multi-functional, easy to install and easy to program. Designed to control the acceleration and deceleration of three-phase medium voltage motors up to 5 kV. The line is available from 11 amp through 420 amp applications as an open unit or in the Ampgard® IT starter assembly. This product is perfect for the OEM who wants to add value by installing the MV801 in their own structure design. The MV801 can easily fit in the space where an existing Reduced Voltage Auto Transformer was.

The IT MV801 Line of Reduced Voltage Soft Starters comes standard with the following:

- Control Module
- Control Interface Module

Application Description

The MV801 line of IT Soft Starters is designed to work with three-phase center grounded star (WYE) source and medium voltage motors in a WYE

or Delta (3-lead) configuration. The starter uses Silicon Controlled Rectifiers (SCRs) to control the voltage to soft start and soft stop the motor. After the motor is started, internal run bypass contactors close resulting in the motor running across the line. The built-in solid-state overload protects the motor from overload conditions with sophisticated algorithms that model true motor heating, resulting in better motor protection and fewer nuisance trips. Advanced protective and diagnostic features reduce downtime.

The MV801 has a unique inclusive design encasing the SCRs, power circuitry, run bypass contactors and overload protection, minimizing required mounting space and installation time. The separate control module provides mounting flexibility.

Each MV801 power pole is rated at up to 420 amps at 2.5 kV. Two units wired in series provide ratings up to 420 amps at 5 kV. A voltage ramp start or current limit start is available. Kick-start is available in either starting mode. The soft stop option allows for a ramp stop time that is longer than the coast to stop time. The pump control option provides a smooth transition for starting and stopping a motor and eliminating the "water-hammer" effect that can damage pipes, valves and pumps.

Features and Benefits

- Internal run bypass contactors and overload protection eliminate the need for additional devices reducing enclosure sizes, minimizing installation and wiring time, reducing overall assembly size and cost.
 - Bypass contactors directly connect the motor to the line and improve system efficiency by reducing internal power losses. Run bypass mode greatly reduces internal heating created by the greater power dissipation across the SCRs, minimizing enclosure sizes and costs.
 - Solid-state overload protection provides accurate current measurement and trip settings. Sophisticated algorithms solve a series of differential equations that model true motor heating and cooling resulting in superior motor overload protection while minimizing nuisance trips. Advanced selectable protective features safeguard the motor and system against a variety of system faults.
 - The control circuitry, communications and Control Interface Module
- are housed in a separate module apart from the power circuitry, providing OEM customers with design flexibility. This feature results in the control circuitry operating at lower temperatures, maximizing life of the electronic components. Electromagnetic interference from the power circuit is also minimized with this design feature.
 - Inclusive design encases the SCRs, power circuitry, run bypass contactors and overload relay. This uncluttered design simplifies installation and is the perfect product solution for electrical original equipment manufacturers.
 - Easy to use control interface module provides for fast and simple setup of starting parameters and protective features.
 - Variable ramp times and torque control settings provide unlimited starting configurations, allowing for maximum application flexibility.
 - Kick-start feature enables soft starting of high friction loads.
 - Wide range of overload FLA settings (31 – 100% of rated current) and selectable trip class (5, 10, 20, 30) allows for wide application range while offering users the flexibility to fine tune the starter to match their specific application requirements.
 - Soft stop control for applications where an abrupt stop of the load is not acceptable.
 - Pump control option with sophisticated pump algorithms on both starting and stopping that minimize the pressure surges that cause water hammer. The pump control option will maximize the life of the pump and piping systems while minimizing the downtime caused by system failure.
 - Six SCRs control all three motor phases providing smooth acceleration and deceleration performance.
 - Soft acceleration and deceleration reduces wear on belts, gears, chains, clutches, shafts and bearings.
 - Minimizes the peak inrush currents that stress the power system.
 - Minimizes peak starting torque to diminish mechanical system wear and damage.
 - 24V DC control module enhances personnel and equipment safety.
 - Removable, lockable control terminal block reduces maintenance costs. Also provides the opportunity for OEMs to reduce assembly and test costs by using pre-assembled wiring harnesses.

Protective Features

Motor Overload

Will trip in an overload condition removing power to the motor. Selectable trip class 5, 10, 20, and 30.

Overtemperature

Protects the soft starter SCRs from overheating.

Jam

Selectable protective feature to prevent damage to the motor from a jam during normal run. After the motor is started, a current greater than 300% FLA setting will cause the starter to trip on jam fault.

Stall

Selectable protective feature, unit trips to protect system in event motor can not get to rated speed in the defined soft start period. A current greater than 200% FLA at the end of the soft start period will cause the starter to trip on a stall fault.

Phase Loss/Current Unbalance

Selectable protective feature to prevent motor and system damage from phase loss or phase unbalance. Starter will trip if a phase voltage is lost or the current is unbalanced more than 40% from the average of all three phases.

Phase Reversal

Selectable protective feature, trips when line phase rotation is something other than A-B-C.

Shorted SCR Detection

Monitors for shorted SCR in the power polls.

Load Disconnect Detection

Selectable protective feature, unit trips when load current drops below 6% of FLA setting.

Operation

Starting Modes

The motor can be started in either Voltage Ramp Start or Current Limit Start mode. Kick Start and Soft Stop are available with both starting modes.

Voltage Ramp Start

Provides a voltage ramp to the motor resulting in a constant torque increase. The most commonly used form of soft start. This start mode allows you to set the initial torque value and the duration of the ramp to full voltage conditions. Bypass contactors close after the motor is started.

- Adjustable initial torque 0 – 85% of locked rotor torque.
- Adjustable ramp time .5 – 180 seconds (can be extended with factory modification).

Current Limit Start

Limits the maximum current available to the motor during the start phase. This mode of soft starting is used when it becomes necessary to limit the maximum starting current due to long start times or to protect the motor. This start mode allows you to set the maximum starting current as a percentage of locked rotor current and the duration of the current limit. Bypass contactors close after the motor is started.

- Maximum current of 0 – 85% locked rotor current.
- Adjustable ramp time .5 – 180 seconds (can be extended with factory modification).

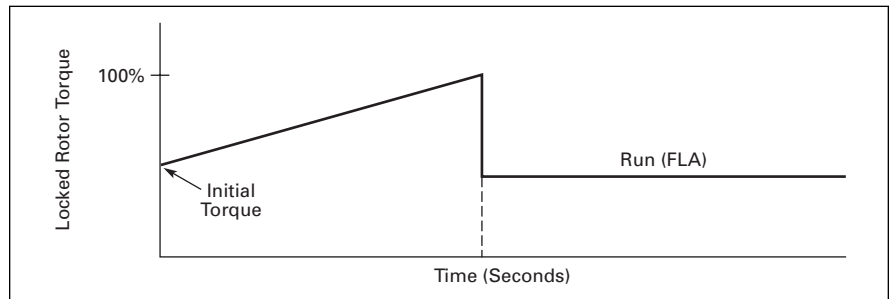


Figure 39-28. Starting Characteristics — Ramp Start

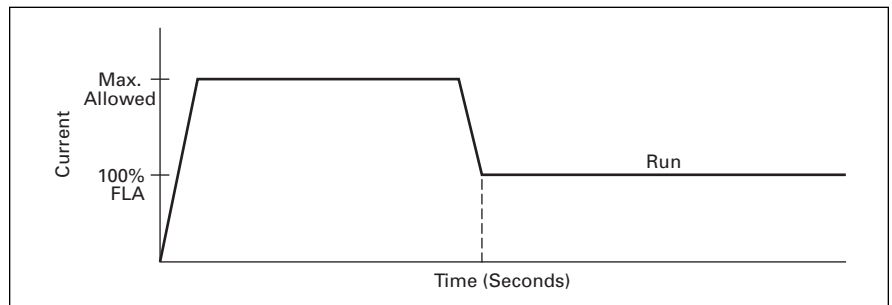


Figure 39-29. Starting Characteristics — Current Limit

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Kick Start

Selectable feature in both Voltage Ramp Start or Current Limit Start modes. Provides a current “kick” of up to 550% of full load current for 0 to 2.0 seconds. This provides greater initial current to develop additional torque to breakaway a high friction load.

- 0 – 85% of locked rotor torque
- 0 – 2.0 seconds duration

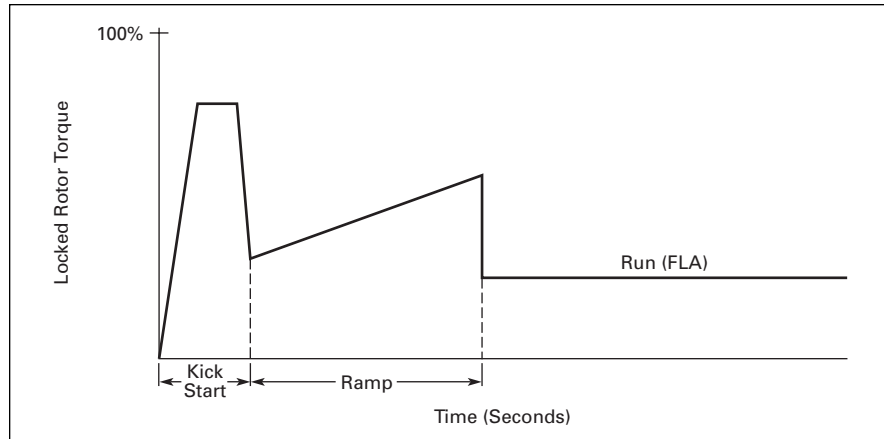


Figure 39-30. Starting Characteristics — Kick Start

Soft Stop

Allows for a controlled stopping of a load. Used when a stop-time that is greater than the coast-to-stop time is desired. Often used with high friction loads where a sudden stop may cause system or load damage.

- Stop time = 0 – 60 seconds.

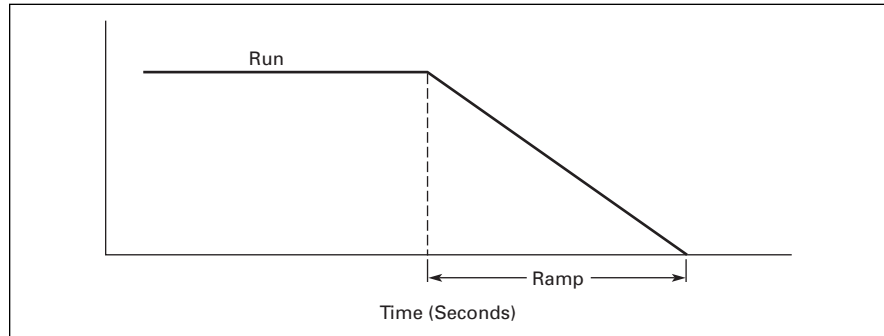


Figure 39-31. Starting Characteristics — Soft Stop

Component Identification

MV801 Soft Starter Assembly

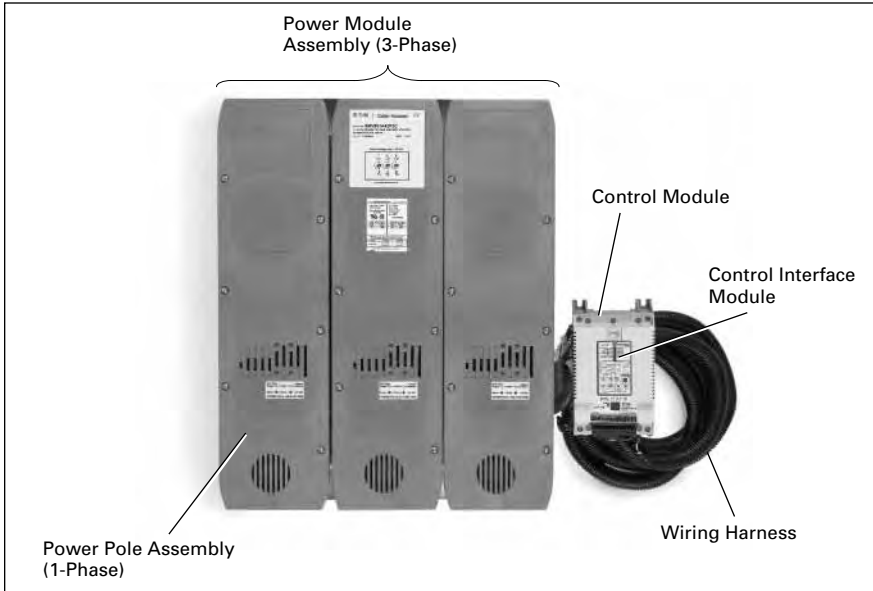
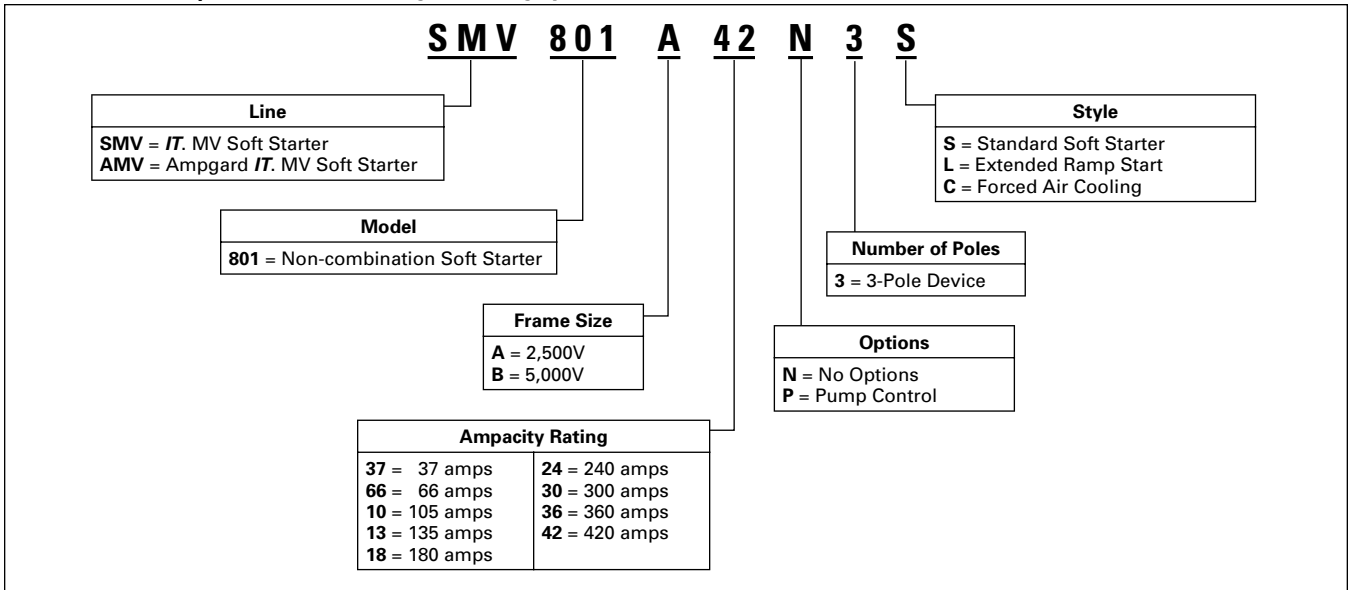


Figure 39-32. Component Identification — MV801 Soft Starter Assembly

Catalog Number Selection

Table 39-74. MV801 Open Soft Starters Catalog Numbering System



Type MV801, Intelligent Technologies (IT) Medium Voltage Soft Starters

Product Selection

Base Ratings

Ratings are based on a maximum 300% current, 15-second ramp, 4 Starts per Hour and 40°C ambient temperature.

Table 39-75. MV801 Open Soft Starters Standard Duty Product Selection

Three-Phase Motor											Catalog Number	Price U.S. \$
Max. Voltage	Max. Current	FLA Current Range	kW Rating (50 Hertz)				Horsepower Rating (60 Hertz)					
			2,300V	3,300V	4,160V	4,800V	2,300V	3,300V	4,160V	4,800V		
A-Frame												
2,500	37	11 – 37	125	—	—	—	125	—	—	—	—	SMV801A37N3S SMV801A66N3S SMV801A10N3S SMV801A13N3S SMV801A18N3S
	66	20 – 66	223	—	—	—	250	—	—	—	—	
	105	32 – 105	355	—	—	—	400	—	—	—	—	
	135	42 – 135	457	—	—	—	500	—	—	—	—	
	180	56 – 180	609	—	—	—	600	—	—	—	—	
	240	75 – 240	812	—	—	—	900	—	—	—	—	SMV801A24N3S SMV801A30N3S SMV801A36N3S SMV801A42N3S
	304	95 – 304	1,028	—	—	—	1,100	—	—	—	—	
	360	112 – 360	1,218	—	—	—	1,300	—	—	—	—	
	420	131 – 420	1,421	—	—	—	1,600	—	—	—	—	
B-Frame												
5,000	37	11 – 37	125	180	253	261	125	200	250	300	SMV801B37N3S	
	66	20 – 66	223	320	451	466	250	400	450	500	SMV801B66N3S	
	105	32 – 105	355	510	718	741	400	600	700	800	SMV801B10N3S	
	135	42 – 135	457	655	923	953	500	800	900	1,000	SMV801B13N3S	
	180	56 – 180	609	873	1,231	1,271	600	1,000	1,200	1,400	SMV801B18N3S	
	240	75 – 240	812	1,165	1,641	1,694	900	1,400	1,600	1,800	SMV801B24N3S	
	304	95 – 304	1,028	1,475	2,078	2,146	1,100	1,800	2,000	2,300	SMV801B30N3S	
	360	112 – 360	1,218	1,747	2,461	2,541	1,300	2,100	2,400	2,800	SMV801B36N3S	
	420	131 – 420	1,421	2,038	2,872	2,965	1,600	2,500	2,800	3,300	SMV801B42N3S	

Severe Duty Ratings

Severe duty ratings are any combination of parameters that exceed the Standard Duty Ratings where the ramp time is over 30 seconds, the number of starters per hour exceeds 4, or the current limit is set over 300% current. Example: 35-second ramp, 5 starts per hour, 350% current limit at 40°C.

Table 39-76. MV801 Open Soft Starters Severe Duty Product Selection

Three-Phase Motor											Catalog Number	Price U.S. \$
Max. Voltage	Max. Current	FLA Current Range	kW Rating (50 Hertz)				Horsepower Rating (60 Hertz)					
			2,300V	3,300V	4,160V	4,800V	2,300V	3,300V	4,160V	4,800V		
A-Frame												
2,500	22	11 – 37	—	—	—	—	—	—	—	—	SMV801A37N3S SMV801A66N3S SMV801A10N3S SMV801A13N3S SMV801A18N3S	
	42	20 – 66	142	—	—	—	150	—	—	—		
	65	32 – 105	220	—	—	—	250	—	—	—		
	80	42 – 135	271	—	—	—	300	—	—	—		
	115	56 – 180	389	—	—	—	400	—	—	—		
	150	75 – 240	507	—	—	—	500	—	—	—	SMV801A24N3S SMV801A30N3S SMV801A36N3S SMV801A42N3S	
	192	95 – 304	649	—	—	—	700	—	—	—		
	240	112 – 360	812	—	—	—	900	—	—	—		
	305	131 – 420	1,032	—	—	—	1,100	—	—	—		
B-Frame												
5,000	22	11 – 37	—	97	150	155	—	—	150	150	SMV801B37N3S	
	42	20 – 66	142	185	287	296	150	200	250	300	SMV801B66N3S	
	65	32 – 105	220	287	444	459	250	350	450	500	SMV801B10N3S	
	80	42 – 135	271	353	547	565	300	450	500	600	SMV801B13N3S	
	115	56 – 180	389	507	786	812	400	700	800	900	SMV801B18N3S	
	150	75 – 240	507	662	1,026	1,059	500	900	1,000	1,100	SMV801B24N3S	
	192	95 – 304	649	847	1,313	1,355	700	1,100	1,300	1,500	SMV801B30N3S	
	240	112 – 360	812	1,059	1,641	1,694	900	1,400	1,600	1,800	SMV801B36N3S	
	305	131 – 420	1,032	1,346	2,085	2,153	1,100	1,800	2,100	2,400	SMV801B42N3S	

Discount Symbol 1CD1

Options

Extended Ramp

For a longer ramp acceleration time of 1.0 – 360 seconds, change the 12th digit in the Catalog Number from **Page 39-56** to **L** (i.e. SMV801A42N3L).

Table 39-77. Extended Ramp

Max. Voltage	Max. Current Rating	Catalog Number	Price U.S. \$
A-Frame			
2,500	37	SMV801A37N3L	
	66	SMV801A66N3L	
	105	SMV801A10N3L	
	135	SMV801A13N3L	
	180	SMV801A18N3L	
	240	SMV801A24N3L	
	304	SMV801A30N3L	
	360	SMV801A36N3L	
	420	SMV801A42N3L	
	B-Frame		
5,000	37	SMV801B37N3L	
	66	SMV801B66N3L	
	105	SMV801B10N3L	
	135	SMV801B13N3L	
	180	SMV801B18N3L	
	240	SMV801B24N3L	
	304	SMV801B30N3L	
	360	SMV801B36N3L	
	420	SMV801B42N3L	

Pump Control

For a pump control option, change the 10th digit in the Catalog Number from **Page 39-56** to **P** (i.e. SMV801A42P3S).

Table 39-78. Pump Control

Max. Voltage	Max. Current Rating	Catalog Number	Price U.S. \$
A-Frame			
2,500	37	SMV801A37P3S	
	66	SMV801A66P3S	
	105	SMV801A10P3S	
	135	SMV801A13P3S	
	180	SMV801A18P3S	
	240	SMV801A24P3S	
	304	SMV801A30P3S	
	360	SMV801A36P3S	
	420	SMV801A42P3S	
	B-Frame		
5,000	37	SMV801B37P3S	
	66	SMV801B66P3S	
	105	SMV801B10P3S	
	135	SMV801B13P3S	
	180	SMV801B18P3S	
	240	SMV801B24P3S	
	304	SMV801B30P3S	
	360	SMV801B36P3S	
	420	SMV801B42P3S	

Power Pole Forced Air Cooling

Power pole forced air cooling option includes internal fans to cool power poles. For use in high ambient temperature, high duty cycle, and/or long ramp applications. For power pole forced air cooling, change the 12th digit in the Catalog Number from **Page 39-56** to a **C** (i.e. SMV801A42N3C).

Table 39-79. Forced Air Cooling

Max. Voltage	Max. Current Rating	Catalog Number	Price U.S. \$
A-Frame			
2,500	37	SMV801A37N3C	
	66	SMV801A66N3C	
	105	SMV801A10N3C	
	135	SMV801A13N3C	
	180	SMV801A18N3C	
	240	SMV801A24N3C	
	304	SMV801A30N3C	
	360	SMV801A36N3C	
	420	SMV801A42N3C	
	B-Frame		
5,000	37	SMV801B37N3C	
	66	SMV801B66N3C	
	105	SMV801B10N3C	
	135	SMV801B13N3C	
	180	SMV801B18N3C	
	240	SMV801B24N3C	
	304	SMV801B30N3C	
	360	SMV801B36N3C	
	420	SMV801B42N3C	

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Accessories

User Manual

Comprehensive instruction manual. This publication can be downloaded for free from www.EatonElectrical.com by performing a "Document Search" for MN03901001E.

Roll Out Truck



Roll Out Truck

Provide horizontal mounting for up to 2 power pole assemblies (4,160V). Line and load stabs provide easy power wiring connections to Ampgard bus. Consult factory for more information.

Power Pole Cooling Kit

Optional lug covers with two internal fans per pole allow force air cooling of power poles. For use in high ambient temperature, high duty cycle and/or long ramp applications.

Table 39-80. Power Pole Cooling Kit

Description	Catalog Number	Price U.S. \$
Cooling Kit	MW02A	

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Terminal Pad Kits

The soft starter power modules are supplied without terminal pads. Terminal pads are fastened to the soft starter power bus and provide a threaded hole for customer connection. Kits are available to accept either a bus bar or a ring terminal connection. Each kit includes instructions, three terminal pads, hardware to fasten to either the line or line side power bus, and hardware for customer connections.



Terminal Pad Kit

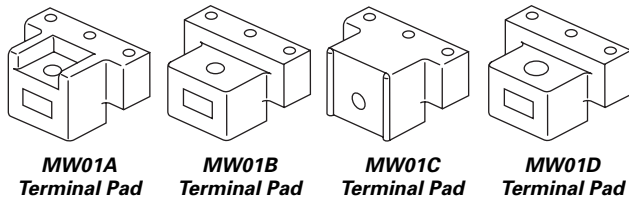


Table 39-81. Terminal Pad Kits

Description	Conductor Type	Catalog Number	Price U.S. \$
Terminal pad kit to accept 3/8-16 bolt, 1.12 inch max ring tang (28.5 mm)	Ring lug	MW01A	
Terminal pad kit to accept 3/8-16 bolt, 2.0 inch max width bus bar (50.8 mm) horizontal	Bus bar	MW01B	
Terminal pad kit to accept 3/8-16 bolt, 1.5 inch max width bus bar (38.1 mm) vertical	Bus bar	MW01C	
Terminal pad kit to accept 1/2-13 bolt, 2.0 inch max width bus bar (50.8 mm) horizontal	Bus bar	MW01D	

Remote CIM (Control Interface Module) Mounting Kit

Used to door mount the control interface module. Does not include the CIM.

Table 39-82. Remote CIM Mounting Kit

Description	Catalog Number	Price U.S. \$
Remote mounting kit with 3 ft. cable	EMA69A	
Remote mounting kit with 5 ft. cable	EMA69B	
Remote mounting kit with 8 ft. cable	EMA69C	
Remote mounting kit with 10 ft. cable	EMA69D	

Renewal Parts

Control Module Renewal Parts

Control Wire Connector

Control Module detachable control terminal block.



Table 39-83. Control Wire Connector

Description	Catalog Number	Price U.S. \$
12 pin, 5 mm pitch Connector for Control Wiring	EMA75	

Control Interface Module (CIM)



CIM — Control Interface Module

Table 39-84. Control Interface Module (CIM)

Description	Catalog Number	Price U.S. \$
CIM for standard unit	EMA71	
CIM with pump control option	EMA72	
Blank Cover (Filler)	EMA68	
CIM Cable	MX02A	

Control Module

Control Module includes the printed circuit board, wire harness, control terminal block connector and labeling consistent with that of a new soft starter assembly. The Control Modules do not include the CIM (Control Interface Module). Control Modules must be matched with specific Power Modules.

Ordering Instructions

- Specify the Control Module Catalog Number from **Table 39-85**.
- Specify the complete Catalog Number of the MV801 Soft Starter assembly that the Control Module is to be used with in the Order Notes.

Table 39-85. Control Module

Description	For Use with MV801 Catalog Prefix	Catalog Number	Price U.S. \$
Control Module for 2.5KV OEM Power Module	SMV801A	MZ01A	
Control Module for 5.0KV OEM Power Module	SMV801B	MZ02A	
Control Module for 2.5KV Ampgard Power Module	AMV801A	MZ04A	
Control Module for 5.0KV Ampgard Power Module	AMV801B	MZ05A	

Discount Symbol **1CD1**

Control Module Plastics Kit

Control Module Plastics Kit includes the Control Module plastic housing and labeling consistent with that of a new soft starter assembly. The Control Module Plastics Kit does not include the CIM (Control Interface Module), the wire harness, or the printed circuit board.

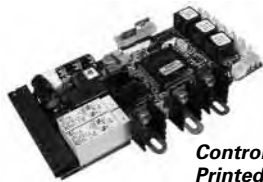
Ordering Instructions

- Specify the Catalog Number from **Table 39-86**.
- Specify the complete Catalog Number of the MV801 Soft Starter assembly that the Control Module Plastics Kit is to be used with in the Order Notes.

Table 39-86. Control Module Plastics Kit

Description	Catalog Number	Price U.S. \$
Control Module Plastics Kit	MZ13A	

Control Module Printed Circuit Board



Control Module Printed Circuit Board

Ordering Instructions

- Specify the Catalog Number from **Table 39-87**.
- Specify the complete Catalog Number of the MV801 Soft Starter assembly that the Control Module Printed Circuit Board is to be used with in the Order Notes.

Table 39-87. Control Module Printed Circuit Board

Description	Catalog Number	Price U.S. \$
Control Module Printed Circuit Board	MZ15A	

Power Module Renewal Parts

Power Module Assemblies

Three-Phase Power Module assemblies complete with wire harness and mounting panel. Does not include Control Module. Power Modules must be matched to the Control Module.

Ordering Instructions

- Specify the Catalog Number from **Table 39-88**.
- Specify the complete Catalog Number of the MV801 Soft Starter assembly that the Power Module Assembly is to be used with in the Order Notes.

Table 39-88. Power Module Renewal Parts — Power Module Assemblies

Description ①	For Use with MV801 Catalog Prefix	Catalog Number	Price U.S. \$
2.5 kV OEM Power Module	SMV801A37 & A66 SMV801A10 & A13 SMV801A18, A24, A30, A36, A42	MZ07A MZ07B MZ07C	
2.5 kV OEM Power Module w/ Cooling Fans	SMV801A37 & A66 SMV801A10 & A13 SMV801A18, A24, A30, A36, A42	MZ07D MZ07E MZ07F	
5.0 kV OEM Power Module	SMV801B37 & B66 SMV801B10 & B13 SMV801B18, B24, B30, B36, B42	MZ08A MZ08B MZ08C	
5.0 kV OEM Power Module w/ Cooling Fans	SMV801B37 & B66 SMV801B10 & B13 SMV801B18, B24, B30, B36, B42	MZ08D MZ08E MZ08F	
2.5 kV Ampgard Power Module	AMV801A37 & A66 AMV801A10 & A13 AMV801A18, A24, A30, A36, A42	MZ10A MZ10B MZ10C	
2.5 kV Ampgard Power Module w/ Cooling Fans	AMV801A37 & A66 AMV801A10 & A13 AMV801A18, A24, A30, A36, A42	MZ10D MZ10E MZ10F	
5.0 kV Ampgard Power Module	AMV801B37 & B66 AMV801B10 & B13 AMV801B18, B24, B30, B36, B42	MZ11A MZ11B MZ11C	
5.0 kV Ampgard Power Module w/ Cooling Fans	AMV801B37 & B66 AMV801B10 & B13 AMV801B18, B24, B30, B36, B42	MZ11D MZ11E MZ11F	

① 5.0 kV power poles must be installed as a matched pair.

Power Pole Assembly

Single-Phase Power Pole assembly to replace individual power poles. 5.0 kV Power Pole Assemblies include two Power Poles and must be installed as a matched pair.

Ordering Instructions

- Specify the Catalog Number from **Table 39-89**.
- Specify the complete Catalog Number of the MV801 Soft Starter assembly that the Power Pole Assembly is to be used with in the Order Notes.

Table 39-89. Power Module Renewal Parts — Power Pole Assemblies

Description ②	For Use with MV801 Catalog Prefix ③	Catalog Number	Price U.S. \$
2.5 kV Power Pole w/o Cooling Fans	SMV801A37 & A66 SMV801A10 & A13 SMV801A18, A24, A30, A36, A42	MY12A MY12B MY12C	
2.5 kV Power Pole w/ Cooling Fans	SMV801A37 & A66 SMV801A10 & A13 SMV801A18, A24, A30, A36, A42	MY13A MY13B MY13C	
5.0 kV Power Pole w/o Cooling Fans	SMV801B37 & B66 SMV801B10 & B13 SMV801B18, B24, B30, B36, B42	MY10A MY10B MY10C	
5.0 kV Power Pole w/ Cooling Fans	SMV801B37 & B66 SMV801B10 & B13 SMV801B18, B24, B30, B36, B42	MY11A MY11B MY11C	

② 5.0 kV power poles must be installed as a matched pair per phase.

③ For use with both SMV801 and AMV801 Catalog Prefixes.

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Power Pole Cover Kit

The Power Pole Cover Kit includes the cover for one phase, gaskets, hardware and labeling consistent with that of a new soft starter assembly.

Ordering Instructions

- Specify the Catalog Number from **Table 39-90**.
- Specify the complete Catalog Number of the MV801 Soft Starter assembly that the Power Pole Cover Kit is to be used with in the Order Notes.

Table 39-90. Power Pole Cover Kit

Description	Catalog Number	Price U.S. \$
Power Pole Cover Kit	MY14A	

Lug Cover Kits

Lug cover can be used on either line or load side. Kit includes cover only.

Table 39-91. Lug Cover Kits

Description	Catalog Number	Price U.S. \$
Lug Cover	MX01A	

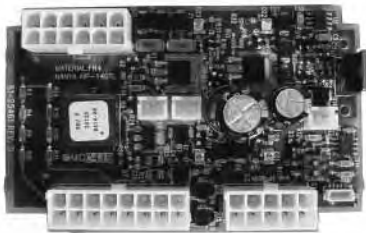
Strain Relief

Connector that attaches to side of power pole to prevent damage to power pole harness.

Table 39-92. Strain Relief

Description	Catalog Number	Price U.S. \$
Strain Relief	MX03A	

Driver Printed Circuit Board



Driver Printed Circuit Board

Table 39-93. Driver Printed Circuit Board

Description	Catalog Number	Price U.S. \$
Driver printed circuit board assembly	MY05A	

Wire Harness Kits

Controller wire harness is between the Control Module and the Power Module; the Power Module Wire Harness is between the Power Modules.

Table 39-94. Wire Harness Kits

Soft Starter Catalog Prefix	Controller Wire Harness	Price U.S. \$	Power Module Wire Harness Unit 1	Price U.S. \$	Power Module Wire Harness Unit 2	Price U.S. \$
SMV801A	MY01A		MY03A		N/A	
SMV801B	MY01B		MY03B		MY03C	
AMV801A	MY02A		MY04A		N/A	
AMV801B	MY02B		MY04B		MY04C	

Forced Air Cooling Fan

Fan used in Power Pole Cooling Kit MW02A accessory. Includes fan only.

Table 39-95. Forced Air Cooling Fan

Description	Catalog Number	Price U.S. \$
Forced Air Cooling Fan	MY14A	

Standards and Certifications

- UL 347
- CSA C22.2 no. 14-95 in conjunction with T.I.L no. D-21 issued 2-8-95
- IEC 68-2-30 (dampheat)

Instructional Leaflets

MN03901001E User Manual
10-8493 Outline Drawing

Technical Data and Specifications

Table 39-96. A-Frame — 2,500V AC

Soft Starter (Partial Catalog Number)	SMV801 A37	SMV801 A66	SMV801 A10	SMV801 A13	SMV801 A18	SMV801 A24	SMV801 A30	SMV801 A36	SMV801 A42
Ratings									
Max. Current	37	66	105	135	180	240	304	360	420
Max. Voltage	2,500	2,500	2,500	2,500	2,500	2,500	2,500	2,500	2,500
FLA Current Range	11 – 37	20 – 66	32 – 105	42 – 135	56 – 180	75 – 240	95 – 304	112 – 360	131 – 420
Horsepower Rating @ 60 Hz ^①	125	250	400	500	700	900	1200	1400	1600
Max. kW Rating @ 50 Hz ^①	125	223	355	457	609	812	1028	1218	1421

Dimensions — Power Module

Width in Inches (mm)	18.1 (459.7)
Height in Inches (mm)	23.9 (606.5)
Depth in Inches (mm)	9.8 (248.7)
Weight in Lbs. (kg)	150 (68.3)

Dimensions — Control Module

Width in Inches (mm)	4.41 (112.1)
Height in Inches (mm)	7.83 (199.0)
Depth in Inches (mm)	3.41 (86.8)
Weight in Lbs. (kg)	5.8 (2.6)

General Information

Bypass Mechanical Life	10M
Insulating Voltage U _i	2,500
Ramp Time Range	.5 – 180 Seconds (.5 -360 Seconds Extended Ramp)
Resistance to Vibration	Operational: 1g in each axis per IEC 68-2-6 Non-operational: 2.5g in each axis per IEC 68-2-6
Resistance to Shock	Operational: 2.5g in each axis per IEC 68-2-27 Non-operational: 5.5g in each axis per IEC 68-2-27

Electrical Information

Operating Voltage	2300
Operating Frequency	47 – 63 Hz
Overload Setting	30 – 100%
Trip Class	5, 10, 20 & 30

Control Wiring

Wire Sizes in AWG	22 – 12
Number of Conductors (Stranded)	2 (or one 14 AWG)
Torque Requirements in lb-in	3.5
Solid, Stranded or Flexible Max. (Size in mm ²)	4.0 mm ²

Control Power Requirements

Voltage Range (24V ± 1%)	21.6 – 26.4
Steady State Current Amps	2.3
Inrush Current Amps	10.5
Ripple	1%

Relays (1) Class A and C

Voltage AC — maximum	240
Voltage DC — maximum	120
Amps — maximum	3

Environment

Temperature — Operating	-30 – 40°C (No Derating) Consult factory for operation > 40°C
Temperature — Storage	-50 – 70°C
Altitude	2,000 meters (without derating) Consult factory for operation > 2,000 meters
Humidity	< 95% non-condensing
Operating Position	Any
Pollution Degree IEC947-1	3
Impulse withstand Voltage IEC947-4-1	60 kV

^① Based on 300% max. current, 15 second ramp, 4 starts per hour and 40°C ambient temperature.

Type MV801, Intelligent Technologies (IT) Medium Voltage Soft Starters

Table 39-97. B-Frame — 5,000V AC

Soft Starter (Partial Catalog Number)	SMV801 B37	SMV801 B66	SMV801 B10	SMV801 B13	SMV801 B18	SMV801 B24	SMV801 B30	SMV801 B36	SMV801 B42
Ratings									
Max. Current	37	66	105	135	180	240	304	360	420
Max. Voltage	5,000	5,000	5,000	5,000	5,000	5,000	5,000	5,000	5,000
FLA Current Range	11 – 37	20 – 66	32 – 105	42 – 135	56 – 180	75 – 240	95 – 304	112 – 360	131 – 420
Horsepower Rating @ 60 Hz ^①	300	500	900	1,100	1,500	2,100	2,600	3,100	3,600
Max. kW Rating @ 50 Hz ^①	292	521	828	1,065	1,420	1,893	2,398	2,840	3,313
Dimensions — Power Module									
Width in Inches (mm)	18.1 (459.7)								
Height in Inches (mm)	48.8 (1,238.4)								
Depth in Inches (mm)	9.8 (248.7)								
Weight in Lbs. (kg)	300 (125.2)								
Dimensions — Control Module									
Width in Inches (mm)	4.41 (112.1)								
Height in Inches (mm)	7.83 (199.0)								
Depth in Inches (mm)	3.41 (86.8)								
Weight in Lbs. (kg)	5.8 (2.6)								
General Information									
Bypass Mechanical Life	10M								
Insulating Voltage Ui	5,000								
Ramp Time Range	.5 – 180 Seconds (.5 -360 Seconds Extended Ramp)								
Resistance to Vibration	Operational: 1g in each axis per IEC 68-2-6 Non-operational: 2.5g in each axis per IEC 68-2-6								
Resistance to Shock	Operational: 2.5g in each axis per IEC 68-2-27 Non-operational: 5.5g in each axis per IEC 68-2-27								
Electrical Information									
Operating Voltage	4,800								
Operating Frequency	47 – 63 Hz								
Overload Setting	30 – 100%								
Trip Class	5, 10, 20 & 30								
Control Wiring									
Wire Sizes in AWG	22 – 12								
Number of Conductors (Stranded)	2 (or one 14 AWG)								
Torque Requirements in lb-in	3.5								
Solid, Stranded or Flexible Max. (Size in mm ²)	4.0 mm ²								
Control Power Requirements									
Voltage Range (24V ± 1%)	21.6 – 26.4								
Steady State Current Amps	4.6								
Inrush Current Amps	21								
Ripple	1%								
Relays (1) Class A and C									
Voltage AC — maximum	240								
Voltage DC — maximum	120								
Amps — maximum	3								
Environment									
Temperature — Operating	-30 – 40°C (No Derating) Consult factory for operation > 40°C								
Temperature Storage	-50 – 70°C								
Altitude	2,000 meters (without derating) Consult factory for operation > 2,000 meters								
Humidity	< 95% non-condensing								
Operating Position	Any								
Pollution Degree IEC947-1	3								
Impulse withstand Voltage IEC947-4-1	60 kV								

^① Based on 300% max. current, 15 second ramp, 4 starts per hour and 40°C ambient temperature.

Dimensions

SMV801A – 2,500V AC

Applies to SMV, TMV and AMV Catalog prefixes.

The SMV801 can be mounted in any orientation except with the power pole cover facing down.

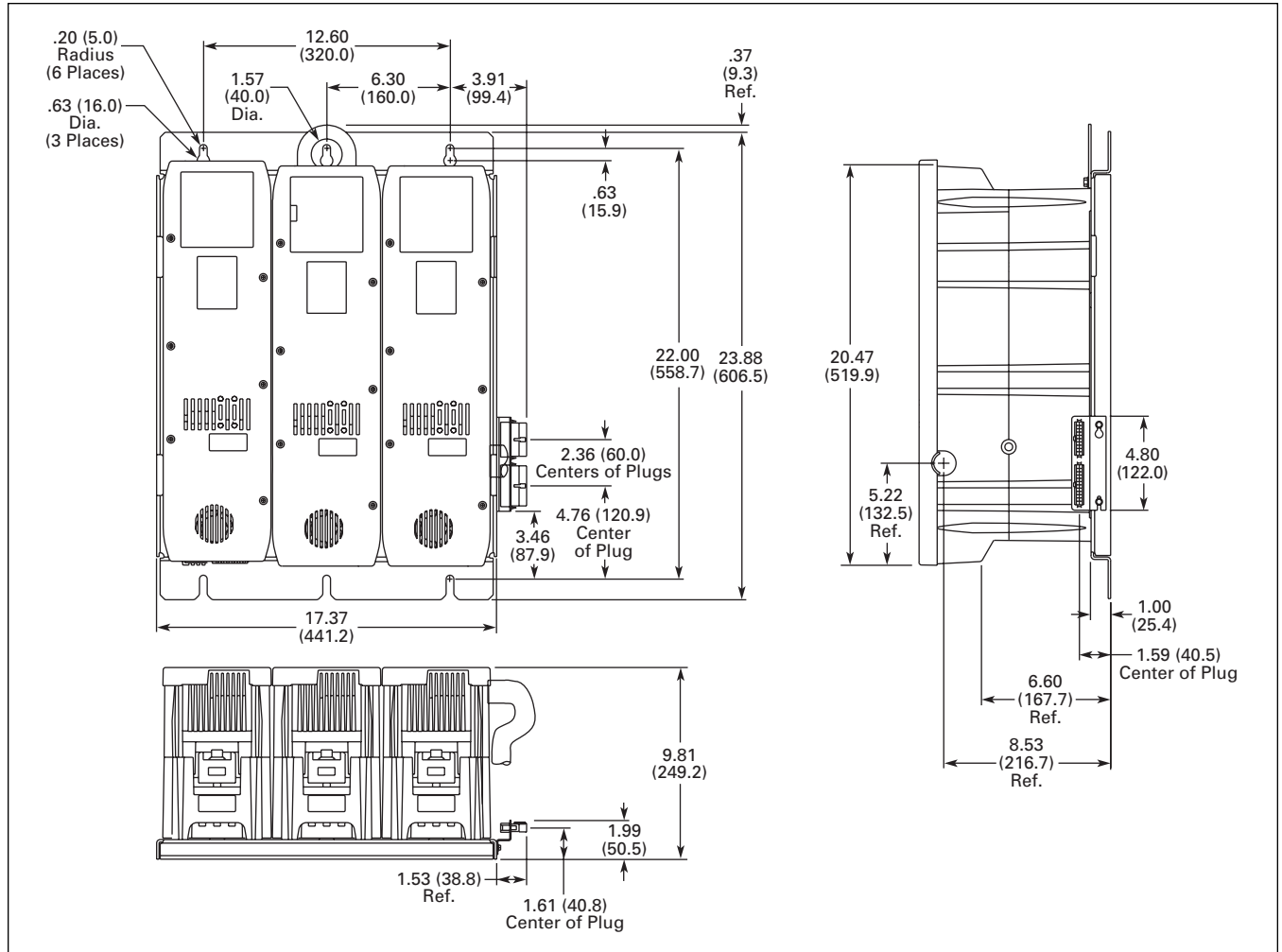


Figure 39-33. SMV801A — 2,500V AC — Approximate Dimensions in Inches (mm)

Type MV801, Intelligent Technologies (IT) Medium Voltage Soft Starters

SMV801B – 5,000V AC

Applies to SMV, TMV and AMV Catalog prefixes.

The SMV801B consists of two power pole assemblies that are wired in series. Unit 1 is always wired on the load side, unit 2 is always wired on the line side. The two power pole assemblies can be mounted in a variety of configurations as long as the minimum spacing between units is observed. Some examples are shown in **Figures 39-34 – 39-36**.

Configuration 1

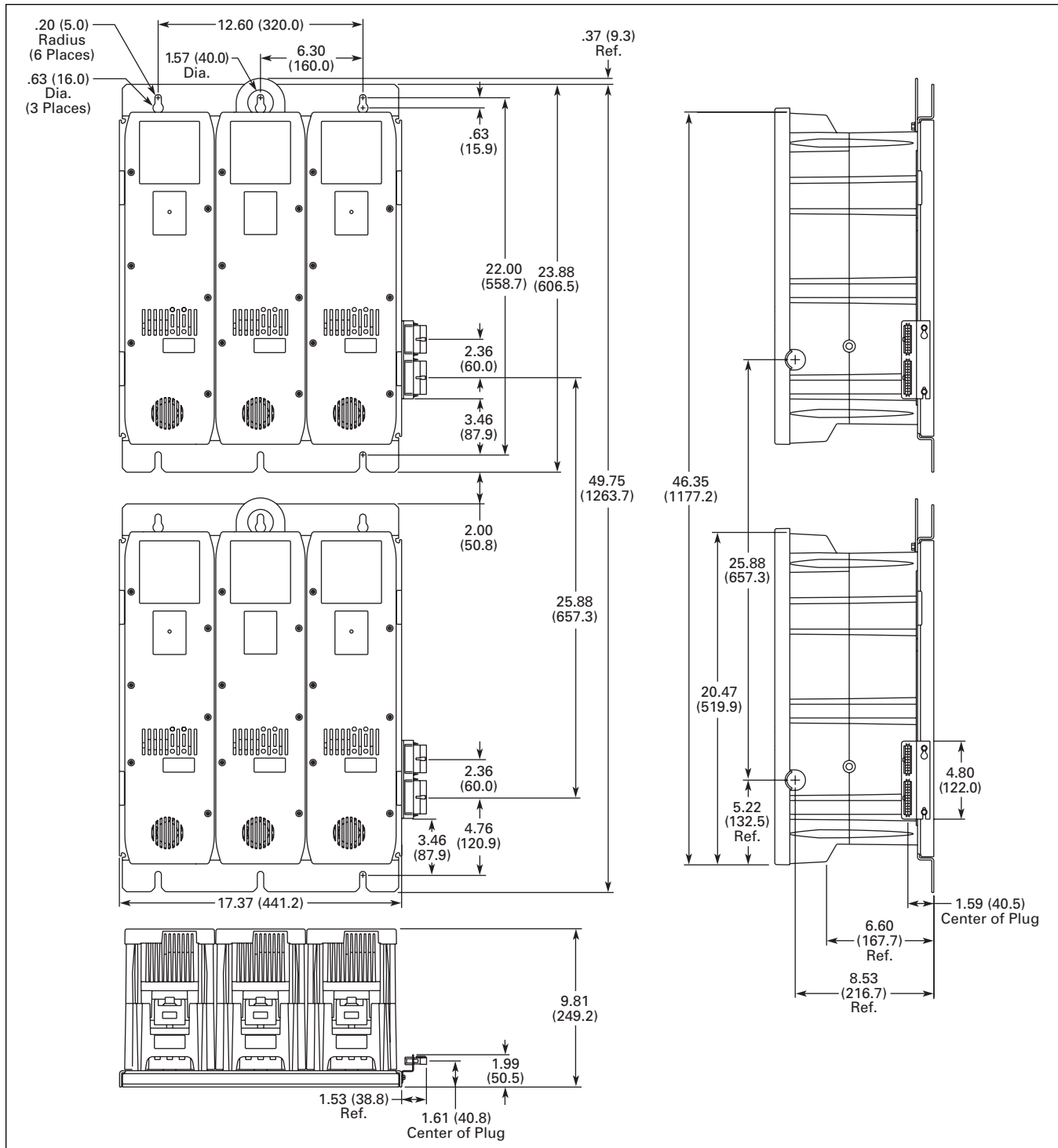


Figure 39-34. Configuration 1 of SMV801B — Approximate Dimensions in Inches (mm)

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Configuration 2

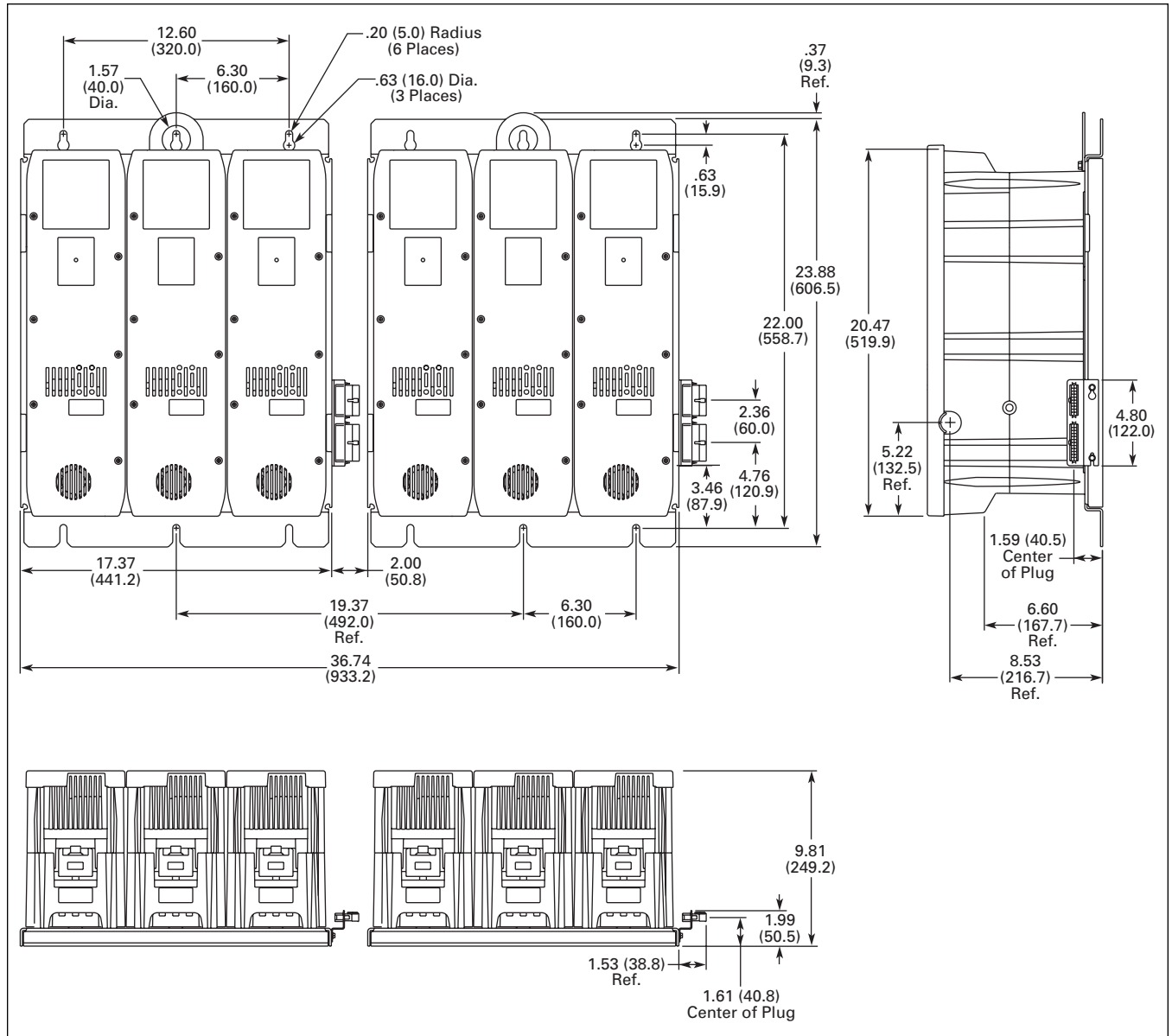


Figure 39-35. Configuration 2 of SMV801B — Approximate Dimensions in Inches (mm)

Type MV801, Intelligent Technologies (IT) Medium Voltage Soft Starters

Configuration 3

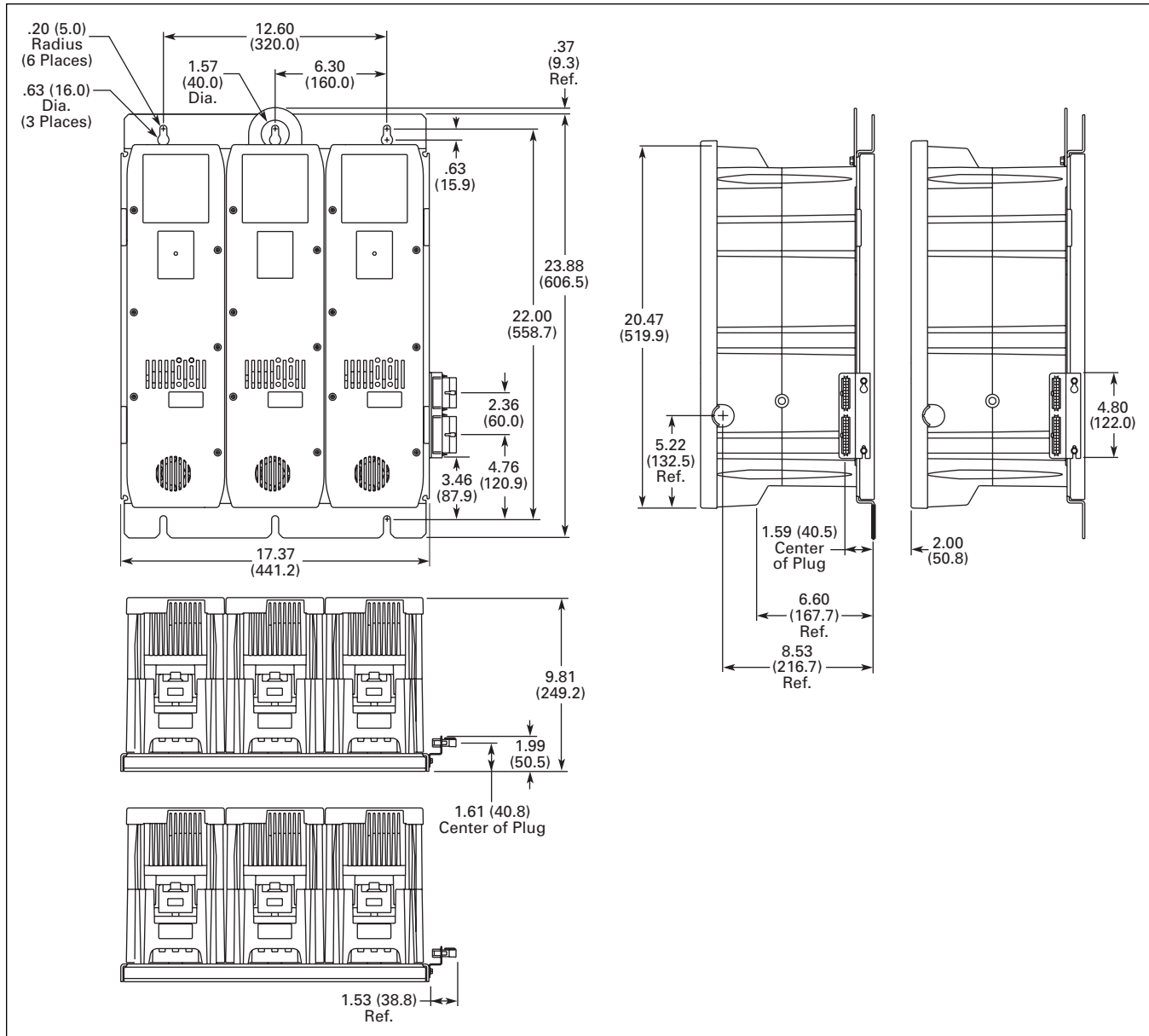


Figure 39-36. Configuration 3 of SMV801B — Approximate Dimensions in Inches (mm)

Control Module

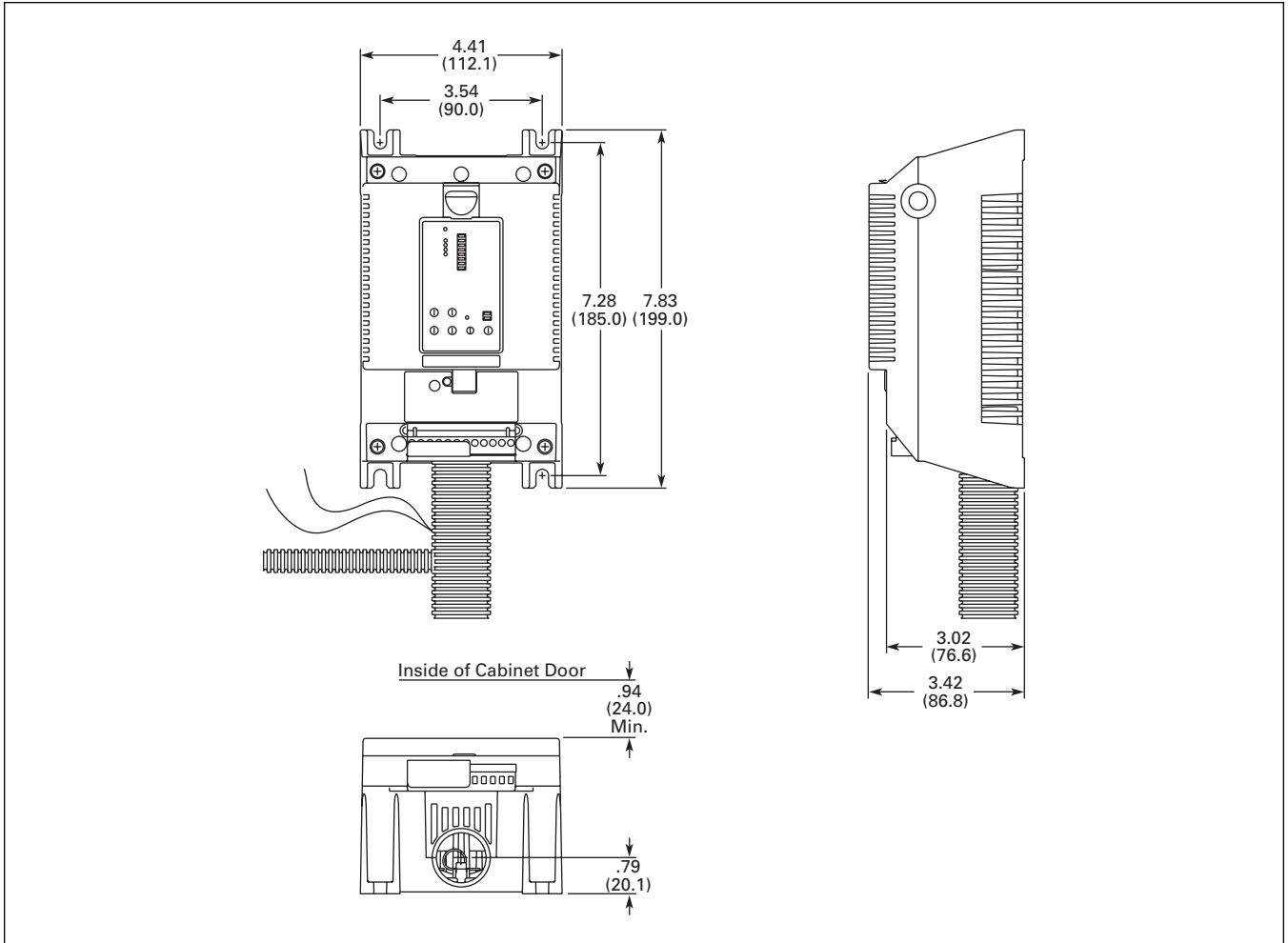


Figure 39-37. Control Module — Approximate Dimensions in Inches (mm)