

Open Type and Non-Combination Enclosed (IP65, Type 4/12) Controllers — For use with Line-Connected Motors

Enclosures other than those listed are available; consult your local Rockwell Automation sales office or Allen-Bradley distributor.

Rated Voltage [V AC]	Motor Current [A]⚡	Max. kW, 50 Hz	Max. Hp, 60 Hz	Control Power	Open Type — Line-Connected Motors*	IP65 (Type 4/12) Enclosed Non-Combination Controllers§➤	
					Cat. No.	Cat. No.	
200/208	1...5	—	1	100...240V AC, 50/60 Hz	150-F5NBD	150-F5FHD	
				24V AC/DC⚡	150-F5NBR	—	
	5...25	—	5	100...240V AC, 50/60 Hz	150-F25NBD	150-F25FHD	
				24V AC/DC⚡	150-F25NBR	—	
	8.6...43	—	10	100...240V AC, 50/60 Hz	150-F43NBD	150-F43FHD	
				24V AC/DC⚡	150-F43NBR	—	
	12...60	—	15	100...240V AC, 50/60 Hz	150-F60NBD	150-F60FHD	
				24V AC/DC⚡	150-F60NBR	—	
	17...85	—	25	100...240V AC, 50/60 Hz	150-F85NBD	150-F85FHD	
				24V AC/DC⚡	150-F85NBR	—	
	27...108	—	30	100...240V AC, 50/60 Hz	150-F108NBD	150-F108FHD	
				24V AC/DC⚡	150-F108NBR	—	
	34...135	—	40	100...240V AC, 50/60 Hz	150-F135NBD	150-F135FHD	
				24V AC/DC⚡	150-F135NBR	—	
	67...201	—	60	100...240V AC, 50/60 Hz	150-F201NBD	150-F201FHD	
				24V AC/DC⚡	150-F201NBR	—	
	84...251	—	75	100...240V AC, 50/60 Hz	150-F251NBD	150-F251FHD	
				24V AC/DC⚡	150-F251NBR	—	
	106...317	—	100	100...240V AC, 50/60 Hz	150-F317NBD	150-F317FHD	
				24V AC/DC⚡	150-F317NBR	—	
	120...361	—	125	100...240V AC, 50/60 Hz	150-F361NBD	150-F361FHD	
				24V AC/DC⚡	150-F361NBR	—	
	160...480	—	150	100...240V AC, 50/60 Hz	150-F480NBD	150-F480FHD	
				24V AC/DC⚡	150-F480NBR	—	
	208...625	—	200	110/120V AC, 50/60 Hz	150-F625NBE	⚡	150-F625JHE
				230/240V AC, 50/60 Hz	150-F625NBA	⚡	150-F625JHA
	260...780	—	250	110/120V AC, 50/60 Hz	150-F780NBE	⚡	150-F780JHE
				230/240V AC, 50/60 Hz	150-F780NBA	⚡	150-F780JHA
	323...970	—	350	110/120V AC, 50/60 Hz	150-F970NBE	—	
				230/240V AC, 50/60 Hz	150-F970NBA	—	
	416...1250	—	400	110/120V AC, 50/60 Hz	150-F1250NBE	—	
				230/240V AC, 50/60 Hz	150-F1250NBA	—	

* Controllers rated 108 A and greater are not equipped with line and load terminal lugs. See page 4-126 for terminal lug kits.

⚡ Motor FLA rating should fall within specified current range for unit to operate properly. Special consideration should be given when using a motor with a potentially high starting current (greater than ten times motor FLA) with the SMC Flex in the "Full Voltage" starting mode. Contact Rockwell Automation technical support for further guidance.

§ These controllers require a separate 100...240V, 50/60 Hz single-phase control source. To add a control circuit transformer to the enclosure, add the appropriate option code to the catalog string.

⚡ Separate 120V or 240V single-phase power supply is required for fan operation.

➤ Line and load termination are provided as standard.

⚡ Available in IP54 (Type 12) enclosure only.



Bulletin 150 — SMC™ Flex Smart Motor Controller

The SMC Flex controller provides microprocessor controlled starting for standard 3-phase squirrel-cage induction or Wye-Delta (6-lead) motors. Seven standard modes of operation are available within a single controller.

- 1...1250 A Range
- Seven Standard Start Modes
- Options Include Pump Control and Braking Control

Features

- Built in SCR Bypass/Run Contactor
- Built in Electronic Motor Overload Protection
- CT on each Phase
- Metering
- DPI Communication
- LCD Display
- Keypad Programming
- Four Programmable Auxiliary Contacts

The SMC Flex controller is available for motors rated 1...1250 A; 200...480V AC, 200...600V AC, or 230...690V AC, 50/60 Hz. In addition to motors, the SMC Flex controller can be used to control resistive loads.

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This catalog product information is based on the **minimum** information needed to select an SMC soft starter for applications with low starting torque requirements. For product selection involving loads with high starting torque requirements (large fan, rock crusher, chipper, etc.), use of the free tools available from the Rockwell Automation Website is recommended:

http://www.ab.com/industrialcontrols/products/solid-state_motor_control/software/

Standards Compliance

UL 508
CSA C22.2 No.14
EN/IEC 60947-1
EN/IEC 60947-4-2

Modes of Operation

The SMC Flex controller provides the following modes of operation as standard:

- Soft Start
- Selectable Kickstart
- Current Limit Start
- Dual Ramp Start
- Full Voltage Start
- Linear Speed Acceleration
- Preset Slow Speed
- Soft Stop

Note: For detailed information about the different modes of operation, see page 4-109.

Description of Features

Electronic Motor Overload Protection

The SMC Flex controller incorporates, as standard, electronic motor overload protection. This overload protection is accomplished electronically with an I^2t algorithm.

When coordinated with the proper short-circuit protection, overload protection is intended to protect the motor, motor controller, and power wiring against overheating caused by excessive overcurrent. The SMC Flex controller meets applicable requirements as a motor overload protective device.

The controller's overload protection is programmable, providing the user with flexibility. The overload trip class consists of either OFF, 10, 15, 20, or 30 protection. The trip current is programmed by entering the motor full-load current rating, service factor, and selecting the trip class.

Thermal memory is included to accurately model motor operating temperature. Ambient temperature insensitivity is inherent in the electronic design of the overload.

Certifications

cULus Listed (Open Type) (File No. E96956, Guides NMFT, NMFT7)
CSA Certified (File No. LR 1234)
CE Marked
CCC Certified

Optional Modes of Operation

Pump Control

- Start and Stop

Braking Control

- SMB — Smart Motor Braking
- Accu-Stop
- Slow Speed with Braking

Undervoltage Protection

The SMC Flex controller's undervoltage protection will halt motor operation if a drop in the incoming line voltage is detected. The undervoltage trip level is adjustable as a percentage of the programmed line voltage, from 0...99%. To eliminate nuisance trips, a programmable undervoltage trip delay time of 0...99 seconds can also be programmed. The line voltage must remain below the undervoltage trip level during the programmed delay time.

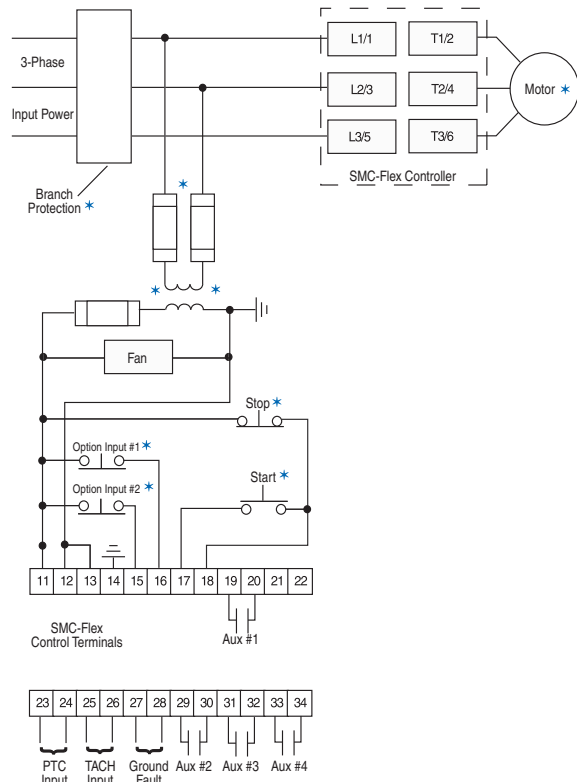
Overvoltage Protection

If a rise in the incoming line voltage is detected, the SMC Flex controller's overvoltage protection will halt motor operation. The overvoltage trip level is adjustable as a percentage of the programmed line voltage, from 0...199%. To eliminate nuisance trips, a programmable overvoltage trip delay time of 0...99 seconds can also be programmed. The line voltage must remain above the overvoltage trip level during the programmed delay time.

Functional Design Specifications

Standard Features	Installation	Power Wiring	Standard squirrel-cage induction motor or a Wye-Delta, six-lead motor.
		Control Wiring	2- and 3-wire control for a wide variety of applications.
	Setup	Keypad	Front keypad and backlit LCD display.
		Software	Parameter values can be downloaded to the SMC-Flex Controller with DriveTools programming software and the Cat. No. 20-COMM... DPI communication module.
	Communications		One DPI provided for connection to optional human interface and communication modules.
	Starting and Stopping Modes		Soft Start Current Limit Start Dual Ramp Full Voltage Linear Speed Acceleration Preset Slow Speed Soft Stop
	Protection and Diagnostics		Power loss, line fault, voltage unbalance, excessive starts/hour, phase reversal, undervoltage, overvoltage, controller temp, stall, jam, open gate, overload, underload, communication fault.
	Metering		Amps, volts, kW, kWh, MW, MWH, elapsed time, power factor, motor thermal capacity usage.
	Alarm Contact		Overload, underload, undervoltage, overvoltage, unbalance, jam, stall, and ground fault
	Status Indication		Stopped, starting, stopping, at speed, alarm, and fault.
	Auxiliary Contacts		Four fully programmable contacts as normal/up-to-speed/fault/alarm/network (N.O./N.C.), or external bypass (N.O. only).
Optional Features	Pump Control		Helps reduce fluid surges in centrifugal pumping systems during starting and stopping period. Starting time is adjustable from 0...30 s. Stopping time is adjustable from 0...120 s.
	Braking Control	SMB Smart Motor Braking	Provides motor braking without additional equipment for applications that require the motor to stop quickly. Braking current is adjustable from 0...400% of the motor's full-load current rating.
		Accu-Stop	Provides controlled position stopping. During stopping, braking torque is applied to the motor until it reaches preset slow speed (7% or 15% of rated speed) and holds the motor at this speed until a stop command is given. Braking torque is then applied until the motor reaches zero speed. Braking current is programmable from 0...450% of full-load current.
		Slow Speed with Braking	Used on applications that require slow speed (in the forward direction) for positioning or alignment and also require braking control to stop.

Wiring Diagram — Line Controller



* Customer supplied.

Electrical Ratings				
		Device Rating	UL/CSA/NEMA	IEC
Power Circuit	Rated Operation Voltage	480V	200...480V AC (–15%, +10%)	200...415V
		600V	200...600V AC (–15%, +10%)	200...500V
		690V	230...600V AC (–15%, +10%)	230...690V/Y (–15%, +10%)
	Rated Insulation Voltage	480V	N/A	500V
		600V		500V
		690V		690V
	Rated Impulse Voltage	480V	N/A	6000V
		600V		
		690V		
	Dielectric Withstand	480V	2200V AC	2500V
		600V		
		690V		
	Repetitive Peak Inverse Voltage Rating	480V	1400V	1400V
		600V	1600V	1600V
		690V	1800V	1800V
	Operating Frequency	All	50/60 Hz	
	Utilization Category	5...480 A	MG 1	AC-53B:3.0-50:1750
		625...1250 A	MG 1	AC-53B:3.0-50:3550
Control Circuit	Protection Against Electrical Shock	5...85 A	N/A	IP20
		108...480 A		IP2X (with terminal covers)
		625...1250 A		IP00 (open device)
	DV/DT Protection	480V & 600V	RC Snubber Network	
		690V	None	
	Transient Protection	480V & 600V	Metal Oxide Varistors: 220 Joules	
		690V	None	
	Rated Operational Voltage§	5...480 A	100...240V AC or 24V AC/DC	
		625...1250 A	110/120V AC and 230/240V AC	
	Rated Insulation Voltage	All	N/A	240V
	Rated Impulse Voltage	All	N/A	3000V
	Dielectric Withstand	All	1600V AC	2000V
	Operating Frequency	All	50/60 Hz	
	Input onstate voltage minimum		85V AC, 19.2V DC / 20.4V AC	
	Input onstate current		20 mA @120V AC / 40 mA @ 240V AC, 7.6 mA @ 24V AC/DC	
	Input offstate voltage maximum		50V AC, 10V DC / 12V AC	
	Input offstate current @ input offstate voltage		<10 mA AC, <3 mA DC	

§ 690V power is only available with 100...240V control.

Electrical Ratings							
4	SCPD Performance 200...600V		Type 1§				
	SCCR List*		Max. Standard Available Fault	Max. Standard Fuse [A]*	Max. Standard Available Fault	Max. Circuit Breaker [A]	Max. High Fault
							Max. Fuse [A] ‡
Short-Circuit Protection	Line Device Operational Current Rating [A]	5	5 kA	20	5 kA	20	70 kA
		25	5 kA	100	5 kA	100	70 kA
		43	10 kA	150	10 kA	150	70 kA
		60	10 kA	225	10 kA	225	70 kA
		85	10 kA	300	10 kA	300	70 kA
		108	10 kA	400	10 kA	300	70 kA
		135	10 kA	500	10 kA	400	70 kA
		201	18 kA	600	18 kA	600	70 kA
		251	18 kA	700	18 kA	700	70 kA
		317	30 kA	800	30 kA	800	69 kA
		361	30 kA	1000	30 kA	1000	69 kA
		480	42 kA	1200	42 kA	1200	69 kA
		625	42 kA	1600	42 kA	1600	74 kA
		780	42 kA	1600	42 kA	2000	74 kA
		970	85 kA	2500	85 kA	2500	85 kA
		1250	85 kA	3000	85 kA	3200	85 kA
	Delta Device Operational Current Rating [A]	8.7	5 kA	35	5 kA	35	70 kA
		43	5 kA	150	5 kA	150	70 kA
		74	10 kA	300	10 kA	300	70 kA
		104	10 kA	400	10 kA	400	70 kA
		147	10 kA	400	10 kA	400	70 kA
		187	10 kA	600	10 kA	500	70 kA
		234	10 kA	700	10 kA	700	70 kA
		348	18 kA	1000	18 kA	1000	70 kA
		435	18 kA	1200	18 kA	1200	70 kA
		549	30 kA	1600	30 kA	1600	69 kA
		625	30 kA	1600	30 kA	1600	69 kA
		831	42 kA	1600	30 kA	1600	69 kA
		850	42 kA	1600	42 kA	2000	74 kA
		900	42 kA	1600	42 kA	2000	74 kA
		1200	85 kA	3000	85 kA	3200	85 kA
		1600	85 kA	3000	85 kA	3200	85 kA
	SCPD Performance 690V		Type 1§				
	SCCR List*		Device Rating	Max. Standard Available Fault	Max. Ampere Tested — North American Style	Max. Ampere Tested — European Style	
	Maximum FLC	108		70 kA	A070URD33xxx500	6,9 gRB 73xxx400 6,6URD33xxx500	
		135		70 kA	A070URD33xxx500	6,9 gRB 73xxx400 6,6URD33xxx500	
		201		70 kA	A070URD33xxx700	6,9 gRB 73xxx630 6,6URD33xxx700	
		251		70 kA	A070URD33xxx700	6,9 gRB 73xxx630 6,6URD33xxx700	
		317		70 kA	A070URD33xxx900	6,9 gRB 73xxx800 6,6URD33xxx900	
		361		70 kA	A070URD33xxx900	6,9 gRB 73xxx800 6,6URD33xxx900	
		480		70 kA	A070D33xxx1250 A100URD73xxx1250	9 URD 73xxx1250 6,6URD33xxx1250	
		625		70 kA	A070URD33xxx1400	6,6URD33xxx1400	
		780		70 kA	A070URD33xxx1400	6,6URD33xxx1400	
		970		85 kA	Two fuses in parallel A070URD33xxx1250	Two fuses in parallel 6,6URD33xxx1250	
		1250		85 kA	Two fuses in parallel A070URD33xxx1250	Two fuses in parallel 6,6URD33xxx1250	

* Consult local codes for proper sizing of short circuit protection.

* Non-time delay fuses (K5 — 5...480V (8.7...831 A) devices; Class L — 625...1250V (850...1600 A) devices).

‡ High capacity fault rating when used with time delay class CC, J, or L fuses.

§ Type 1 performance/protection indicates that, under a short-circuit condition, the fused or circuit breaker-protected starter shall cause no danger to persons or installation but may not be suitable for further service without repair or replacement.

♣ For short-circuit current rating (SCCR) for enclosed panel with external bypass or isolation contactor, see the Industrial Controls catalog website: www.ab.com/catalogs.

Electrical Ratings					
Power Requirements	Control Module	1...480 A	120...240V AC	Transformer	75 VA
			24V AC	Transformer	130 VA
			24V DC	Inrush Current	5 A
				Inrush Time	250 ms
				Transient Watts	60 W
				Transient Time	500 ms
				Steady State Watts	24 W
				Minimum Allen-Bradley Power Supply	1606-XLP50E
	Heatsink Fan(s)✱	625...1250 A	751 VA (recommended 800 VA)		
			5...135 A, 20 VA		
Steady State Heat Dissipation with Control and Fan Power (Watts)	Controller Rating [A]	5	70		
		25	70		
		43	81		
		60	97		
		85	129		
		108	91		
		135	104		
		201	180		
		251	198		
		317	225		
		361	245		
		480	290		
		625	446		
		780	590		
		970	812		
		1250	1222		
Auxiliary Contacts 19/20 (Aux #1) 29/30 (Aux #2) 31/32 (Aux #3) 33/34 (Aux #4)	Type of Control Circuit		Electromagnetic relay		
	Number of Contacts		1		
	Type of Contacts		programmable N.O./N.C.		
	Type of Current		AC		
	Rated Operational Current		3 A @ 120V AC, 1.5 A @ 240V AC		
	Conventional Thermal Current I_{th} AC/DC		5 A		
	Make/Break VA		3600/360		
	Utilization Category		AC-15/DC		
PTC Input Ratings	Response Resistance		3400 Ω $\pm$ 150 Ω		
	Reset Resistance		1600 Ω $\pm$ 100 Ω		
	Short-Circuit Trip Resistance		25 Ω $\pm$ 10 Ω		
	Max. Voltage at PTC Terminals ($R_{PTC} = 4$ k Ω)		< 7.5V		
	Max. Voltage at PTC Terminals ($R_{PTC} =$ open)		30V		
	Max. No. of Sensors.		6		
	Max. Cold Resistance of PTC Sensor Chain		1500 Ω		
Tach Input			800 ms		
			0...5V DC, 4.5V DC = 100% Speed		

✱ Heatsink fans can be powered by either 110/120V AC or 220/240V AC.

Bulletin 150
SMC™ Flex Smart Motor Controllers
 Specifications

Environmental				
Operating Temperature Range		-5...+50 °C (23...+122 °F) (open) -5...+40 °C (23...+104 °F) (enclosed)		
Storage and Transportation Temperature Range		-20...+75 °C (-4...167 °F)		
Altitude		2000 m (6560 ft)		
Humidity		5...95% (non-condensing)		
Pollution Degree		2		
Mechanical				
Resistance to Vibration	Operational	All	1.0 G Peak, 0.15 mm (0.006 in.) displacement	
	Non-Operational	5...480 A	2.5 G Peak, 0.38 mm (0.015 in.) displacement	
		625...1250 A	1.0 G Peak, 0.15 mm (0.006 in.) displacement	
Resistance to Shock	Operational	5...85 A	15 G	
		108...480 A	5.5 G	
		625...1250 A	4 G	
	Non-Operational	5...85 A	30 G	
		108...480 A	25 G	
		625...1250 A	12 G	
Construction	Power Poles	5...85 A	Heatsink thyristor modular design	
	Power Poles	108...1250 A	Heatsink hockey puck thyristor modular design	
	Control Modules		Thermoset and Thermoplastic Moldings	
	Metal Parts		Plated Brass, Copper, or Painted Steel	
Terminals	Power Terminals	5...85 A	Cable size — Line Upper — 2.5...95 mm² (14...3/0 AWG) Line Lower — 0.8...2.5 mm² (18...14 AWG) Load Upper — 2.5...50 mm² (14...1 AWG) Load Lower — 0.8...2.5 mm² (18...14 AWG) Tightening torque — 14.7 N•m (130 lb.-in.) Wire strip length — 18...20 mm (0.22...0.34 in.)	
			108...135 A	One M10 x 1.5 diameter hole per power pole
			201...251 A	Two M10 x 1.5 diameter holes per power pole
			317...480 A	Two M12 x 1.75 diameter holes per power pole
			625...1250 A	Two 13.5 mm (0.53 in.) diameter holes per power pole
	Power Terminal Markings		NEMA, CENELEC EN50 012	
	Control Terminals	M3 screw clamp	Clamping yoke connection	
Other				
EMC Emission Levels	Conducted Radio Frequency Emissions Radiated Emissions		Class A Class A	
EMC Immunity Levels	Electrostatic Discharge Radio Frequency Electromagnetic Field Fast Transient Surge Transient		8 kV Air Discharge Per EN/IEC 60947-4-2 Per EN/IEC 60947-4-2 Per EN/IEC 60947-4-2	
Overload Characteristics	Current Range [A]	5	Line 1...5 Delta 1.7...9	
		25	5...25 8.6...43	
		43	8.6...43 14.8...75	
		60	12...60 20.8...104	
		85	17...85 29.4...147	
		108	27...108 47...187	
		135	34...135 59...234	
		201	67...201 116...348	
		251	84...251 145...435	
		317	106...317 183...549	
		361	120...361 208...625	
		480	160...480 277...831	
		625	208...625 283...850	
		780	260...780 300...900	
		970	323...970 400...1200	
	1250	416...1250 533...1600		
	Trip Classes Trip Current Rating Number of Poles		10, 15, 20, and 30 117% of Motor FLC 3	
Certifications	Open-Type Controllers		CE Marked Per Low Voltage Directive 73/23/EEC, 93/68/EEC UL Listed (File No. E96956)	



Dimensions are in millimeters (inches). Dimensions are not intended for manufacturing purposes.

Approximate Dimensions and Shipping Weights

Open Type Controllers

Rating [A]	Height	Width	Depth	Weight
5...85	321 (12.6)	150 (5.9)	203 (8.0)	5.7 kg (12.6 lbs)
108...135	443.7 (17.47)	196.4 (7.74)	205.2 (8.08)	15.0 kg (33 lbs).
201...251	560 (22.05)	225 (8.86)	253.8 (9.99)	30.4 kg (67 lbs).
317...480	600 (23.62)	290 (11.42)	276.5 (10.89)	45.8 kg (101 lbs)
625...780	1041.1 (41.0)	596.9 (23.5)	346.2 (13.63)	179 kg (395 lbs)
970...1250	1041.1 (41.0)	596.9 (23.5)	346.2 (13.63)	224 kg (495 lbs)

Enclosed-Type Line-Connected Controllers

Factory-installed options may affect enclosure size requirements.
 Exact dimensions can be obtained after order entry. Please consult your local Rockwell Automation sales office or Allen-Bradley distributor.

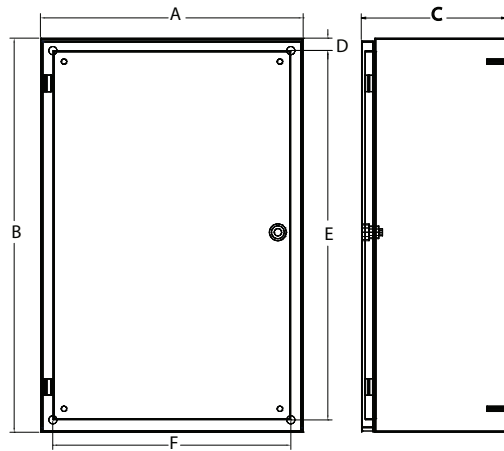


Figure 1 — Wall-Mount

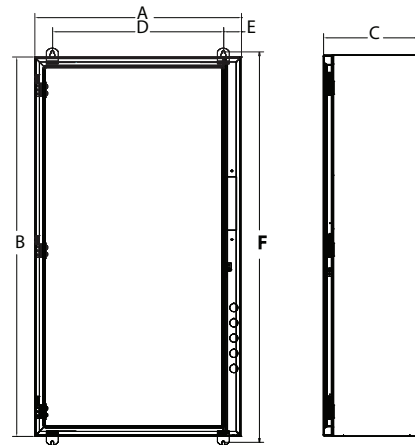


Figure 2 — Wall-Mount

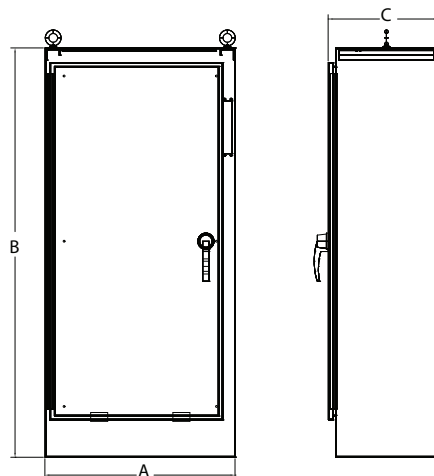


Figure 3 — Floor-Mount

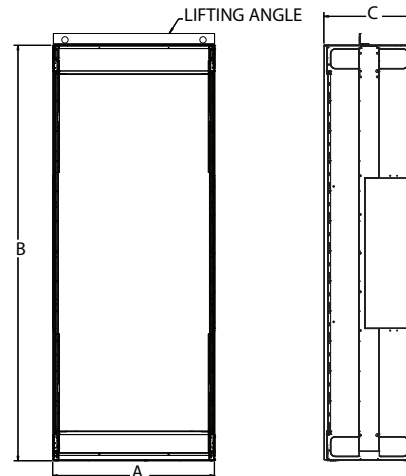


Figure 4 — Floor-Mount

Controller Rating [A]	Bulletin	With Option	Dimension Figure No.	Dimensions in inches (mm)								
				A (Width)	B (Height)	C (Depth)	D (Mtg. Dim.)	E (Mtg. Dim.)	F (Mtg. Dim.)			
SMC-Flex Combination Controller												
5...25	152H,153H,152B,153B	—	1	16 (406)	24 (610)	10 (254)	0.75 (19)	22.5 (572)	14.5 (368)			
		BP,NB,NI,6_		24 (610)	30 (762)	12 (305)		28.5 (724)	22.5 (572)			
43	152H,153H,152B,153B	—	1	16 (406)	24 (610)	10 (254)	0.75 (19)	22.5 (572)	14.5 (368)			
		BP, 6_		24 (610)	30 (762)	12 (305)		28.5 (724)	22.5 (572)			
		NI, NB		30 (762)	38 (965)	14 (356)		36.5 (927)	28.5 (724)			
60	153H, 153B	—	1	16 (406)	24 (610)	10 (254)	0.75 (19)	22.5 (572)	14.5 (368)			
	152H, 153H,153B	6_		24 (610)	30 (762)	12 (305)		28.5 (724)	22.5 (572)			
	152H,152B	—		24 (610)	30 (762)	12 (305)		28.5 (724)	22.5 (572)			
85	152H,152B, 153B,153H	NI, NB	1	30 (762)	38 (965)	14 (356)	0.75 (19)	36.5 (927)	28.5 (724)			
	153B, 153H	—		16 (406)	24 (610)	10 (254)		22.5 (572)	14.5 (368)			
	152B,152H	—		24 (610)	30 (762)	12 (305)		28.5 (724)	22.5 (572)			
	152H, 153H,153B	6_		24 (610)	30 (762)	12 (305)		28.5 (724)	22.5 (572)			
	153H	BP		24 (610)	30 (762)	12 (305)		28.5 (724)	22.5 (572)			
		BP , 6_		30 (762)	38 (965)	14 (356)		36.5 (927)	28.5 (724)			
		152B, 152H,153B		BP,NB,NI	30 (762)	38 (965)		14 (356)	36.5 (927)	28.5 (724)		
	108	152H,153H		—	1	30 (762)		38 (965)	14 (356)	0.75 (19)	36.5 (927)	28.5 (724)
				6_		30 (762)		38 (965)	14 (356)		36.5 (927)	28.5 (724)
153H,153B,152H,152B		BP, NB,NI	36 (914)	51 (1295)		14 (356)	49.5 (1257)	34.5 (876)				
135	152H,153H	—	1	30 (762)	38 (965)	14 (356)	0.75 (19)	36.5 (927)	28.5 (724)			
		6_		30 (762)	38 (965)	14 (356)		36.5 (927)	28.5 (724)			
	152H,152B,153H,153B	BP, NB,NI		36 (914)	51 (1295)	14 (356)		49.5 (1257)	34.5 (876)			
201	152H,153H	—	1	30 (762)	38 (965)	14 (356)	0.75 (19)	36.5 (927)	28.5 (724)			
		6_		30 (762)	38 (965)	14 (356)		36.5 (927)	28.5 (724)			
	152B,153B,153H,152H	BP, NB,NI		36 (914)	51 (1295)	14 (356)		49.5 (1257)	34.5 (876)			
251	152H,153H	—	1	30 (762)	38 (965)	14 (356)	0.75 (19)	36.5 (927)	28.5 (724)			
		6_		30 (762)	38 (965)	14 (356)		36.5 (927)	28.5 (724)			
	152B,153B,153H,152H	BP, NB,NI		36 (914)	51 (1295)	14 (356)		49.5 (1257)	34.5 (876)			
317	153H	—	1	36 (914)	51 (1295)	14 (356)	0.75 (19)	49.5 (1257)	34.5 (876)			
		6_		36 (914)	51 (1295)	14 (356)		49.5 (1257)	34.5 (876)			
		BP,NB		36 (914)	60 (1524)	14 (356)		58.5 (1486)	34.5 (876)			
	—	36 (914)		60 (1524)	14 (356)	58.5 (1486)		34.5 (876)				
	152H,152B	—	2	38 (965)	60 (1524)	17 (431)	33.88 (861)	1.75 (45)	61.69 (1567)			
		6_		38 (965)	60 (1524)	17 (431)		1.75 (45)	61.69 (1567)			
	152B,153B,152H	NB,NI	3	40 (1016)	84 (2134)	18 (457)	—	—	—			
361	153H	—	1	36 (914)	51 (1295)	14 (356)	0.75 (19)	49.5 (1257)	34.5 (876)			
		6_		36 (914)	51 (1295)	14 (356)		49.5 (1257)	34.5 (876)			
		BP		36 (914)	60 (1524)	14 (356)		58.5 (1486)	34.5 (876)			
	—	36 (914)		60 (1524)	14 (356)	58.5 (1486)		34.5 (876)				
	152H, 152B	—	2	38 (965)	60 (1524)	17 (431)	33.88 (861)	1.75 (45)	61.69 (1567)			
		6_		38 (965)	60 (1524)	17 (431)		1.75 (45)	61.69 (1567)			
153H,152B,153B,152H	NB,NI	3	40 (1016)	84 (2134)	18 (457)	—	—	—				
480	153H	—	1	36 (914)	51 (1295)	14 (356)	0.75 (19)	49.5 (1257)	34.5 (876)			
		6_		36 (914)	51 (1295)	14 (356)		49.5 (1257)	34.5 (876)			
	153H,153B	BP,NI	1⊛	36 (914)	60 (1524)	14 (356)	33.88 (861)	58.5 (1486)	34.5 (876)			
		—	2⊛‡	38 (965)	60 (1524)	17 (431)		1.75 (45)	61.69 (1567)			
	152H	BP		3⊛‡	38 (965)	60 (1524)		17 (431)	1.75 (45)	61.69 (1567)		
		NB	40 (1016)		84 (2134)	18 (457)		—	—			
	—	4⊛§	20 (508)	91.5 (2324)	20 (508)	—	—	—				
	153H,153B	BP,NB,NI	3⊛§	40 (1016)	84 (2134)	18 (457)	—	—	—			
152B	BP,NB,NI,6_	3⊛	40 (1016)	84 (2134)	18 (457)							
625	152H,152B	BP,NB,NI	4	35 (889)	91.5 (2324)	20 (508)	—	—	—			
	152B	—	4	55 (1397)	91.5 (2324)	20 (508)						
		152B,152H,153B,153H		NB	105 (2664)	91.5 (2324)				20 (508)		
	152H	—		55 (1397)	91.5 (2324)	20 (508)						
BP		70 (1778)		91.5 (2324)	20 (508)							
780	153B,153H	—	4	65 (1651)	91.5 (2324)	20 (508)	—	—	—			
	152B	—		55 (1397)	91.5 (2324)	20 (508)						
	152B,152H	BP,NI		70 (1778)	91.5 (2324)	20 (508)						
	152B,152H,153B,153H	NB		105 (2664)	91.5 (2324)	20 (508)						
153B,153H	—	65 (1651)	91.5 (2324)	20 (508)								

* Assumed line voltage to be 480V AC. Different voltage may necessitate a bigger enclosure size. Consult your local Rockwell Automation sales office or Allen-Bradley distributor.

‡ 350 Hp max.

‡ 150 Hp @ 208V AC, 350 Hp @480V, 400...4500 Hp @ 600V

§ 200 Hp @ 240V AC, 400 Hp @480V, 5000 Hp @ 600V

www.ab.com/catalogs Preferred availability cat. nos. are bold.



Allen-Bradley

Controller Rating [A]	Bulletin	With Option	Dimension Figure No.	Dimensions in inches (mm)					
				A (Width)	B (Height)	C (Depth)	D (Mtg. Dim.)	E (Mtg. Dim.)	F (Mtg. Dim.)
Non-Combination Controller									
5...43	150	—	1	16 (406)	24 (610)	10 (254)	0.75 (19)	22.5 (572)	14.5 (368)
		6_	1*	16 (406)	24 (610)	10 (254)		22.5 (572)	14.5 (368)
		BP	1	24 (610)	30 (762)	12 (305)		28.5 (724)	22.5 (572)
	150, 150B	NB,NI	1	24 (610)	30 (762)	305(12)		28.5 (724)	22.5 (572)
	150	NB,6P_	1❄	30 (762)	38 (965)	14 (356)		36.5 (927)	28.5 (724)
60	150	—	1	16 (406)	24 (610)	10 (254)	0.75 (19)	22.5 (572)	14.5 (368)
	150B	—		24 (610)	30 (762)	12 (305)		28.5 (724)	22.5 (572)
		BP		24 (610)	30 (762)	12 (305)		28.5 (724)	22.5 (572)
	150	6_	1❄	24 (610)	30 (762)	12 (305)		28.5 (724)	22.5 (572)
		NB	1	24 (610)	30 (762)	12 (305)		28.5 (724)	22.5 (572)
	150, 150B	NI		30 (762)	38 (965)	14 (356)		36.5 (927)	28.5 (724)
85	150	—	1	16 (406)	24 (610)	10 (254)	0.75 (19)	22.5 (572)	14.5 (368)
	150B	—		24 (610)	30 (762)	12 (305)		28.5 (724)	22.5 (572)
		BP		24 (610)	30 (762)	12 (305)		28.5 (724)	22.5 (572)
	150	NB		24 (610)	30 (762)	12 (305)		28.5 (724)	22.5 (572)
		6_	1❄	24 (610)	30 (762)	12 (305)		28.5 (724)	22.5 (572)
	150, 150B	NB,NI,6P_	1❄	30 (762)	38 (965)	14 (356)		36.5 (927)	28.5 (724)
108	150	—	1	24 (610)	30 (762)	12 (305)	0.75 (19)	28.5 (724)	22.5 (572)
		BP		30 (762)	38 (965)	14 (356)		36.5 (927)	28.5 (724)
		NB		30 (762)	38 (965)	14 (356)		36.5 (927)	28.5 (724)
	150B	—		30 (762)	38 (965)	14 (356)		36.5 (927)	28.5 (724)
		NB,NI		36 (914)	51 (1295)	14 (356)		49.5 (1257)	34.5 (876)
135	150	—	1	24 (610)	30 (762)	12 (305)	0.75 (19)	28.5 (724)	22.5 (572)
		BP		30 (762)	38 (965)	14 (356)		36.5 (927)	28.5 (724)
	150B	—		30 (762)	38 (965)	14 (356)		36.5 (927)	28.5 (724)
	150	NB		30 (762)	38 (965)	14 (356)		36.5 (927)	28.5 (724)
	150B	NB,NI		36 (914)	51 (1295)	14 (356)		49.5 (1257)	34.5 (876)
201	150	—	1	30 (762)	38 (965)	14 (356)	0.75 (19)	36.5 (927)	28.5 (724)
	150,150B	NB,NI,BP,6_		36 (914)	51 (1295)	14 (356)		49.5 (1257)	34.5 (876)
251	150	—	1	30 (762)	38 (965)	14 (356)	0.75 (19)	36.5 (927)	28.5 (724)
	150,150B	NB,NI,BP,6_		36 (914)	51 (1295)	14 (356)		49.5 (1257)	34.5 (876)
317	150	NB,NI,BP,6_	1	36 (914)	51 (1295)	14 (356)	0.75 (19)	49.5 (1257)	34.5 (876)
	150B	NB,NI,BP,6_		36 (914)	60 (1524)	14 (356)		58.5 (1486)	34.5 (876)
361	150	NB,NI,BP,6_	1	36 (914)	51 (1295)	14 (356)	0.75 (19)	49.5 (1257)	34.5 (876)
	150B	NB,NI,BP,6_		36 (914)	60 (1524)	14 (356)		58.5 (1486)	34.5 (876)
480	150	—	1	36 (914)	51 (1295)	14 (356)	0.75 (19)	49.5 (1257)	34.5 (876)
	150, 150B	BP,NB,NI		36 (914)	60 (1524)	14 (356)		58.5 (1486)	34.5 (876)
625	150	—	4	35 (889)	91.5 (2324)	20 (508)	—	—	—
		BP,NB		60 (1524)	91.5 (2324)	20 (508)			
	150B	—		60 (1524)	91.5 (2324)	20 (508)			
		NB		90 (2286)	91.5 (2324)	20 (508)			
780	150	—	4	35 (889)	91.5 (2324)	20 (508)	—	—	—
		BP,NB		60 (1524)	91.5 (2324)	20 (508)			
	150B	—		60 (1524)	91.5 (2324)	20 (508)			
		NB		90 (2286)	91.5 (2324)	20 (508)			

* Extra capacity transformer may require a larger enclosure; consult your local Rockwell Automation sales office or Allen-Bradley distributor.
* 1 kVA control transformers or larger extra capacity transformers may require a larger enclosure; consult your local Rockwell Automation sales office or Allen-Bradley distributor.