

Open and Non-Combination

150 – F135 F B D B – 8L
 a b c d e f g

a

Bulletin Number	
Code	Description
150	Solid-State Controller
150B	Enclosed Solid-State Controller with Isolation Contactor

c

Enclosure Type	
Code	Description
F	NEMA Type 4/12 (IP65) (Non-Combination Only)
J	NEMA Type 12 (IP54)
N	Open

e

Control Voltage	
Code	Description
D	100...240V AC (5...480 A units)
R	24V AC/DC (5...480 A units) (Open Only)
E	110/120V AC (625...1250 A units)
A	230/240V AC (625...1250 A units)

b

Controller Ratings	
Code	Description
F5	5 A, 3 Hp @ 460V AC
F25	25 A, 15 Hp @ 460V AC
F43	43 A, 30 Hp @ 460V AC
F60	60 A, 40 Hp @ 460V AC
F85	85 A, 60 Hp @ 460V AC
F108	108 A, 75 Hp @ 460V AC
F135	135 A, 100 Hp @ 460V AC
F201	201 A, 150 Hp @ 460V AC
F251	251 A, 200 Hp @ 460V AC
F317	317 A, 250 Hp @ 460V AC
F361	361 A, 300 Hp @ 460V AC
F480	480 A, 400 Hp @ 460V AC
F625	625 A, 500 Hp @ 460V AC
F780	780 A, 600 Hp @ 460V AC
F970	970 A, 800 Hp @ 460V AC
F1250	1250 A, 1000 Hp @ 460V AC

d

Input Line Voltage	
Open Type	
Code	Description
B	200...460V AC, 3-phase, 50 and 60 Hz
C	200...575V AC, 3-phase, 50 and 60 Hz
Z	230...690V AC, 3-phase, 50 and 60 Hz (Open Only, 108 A and above)
Non-Combination Enclosed Only	
H	200...208V AC, 3-phase, 50 and 60 Hz
A	230V AC, 3-phase, 50 and 60 Hz
B	400...460V AC, 3-phase, 50 and 60 Hz
C	500...575V AC, 3-phase, 50 and 60 Hz

f

Options (Select Only One)	
Code	Description
Blank	Standard
B	Pump Control
D	Braking Control

g

Options (Non-Combination only) (see page 4-125 for a full listing)	
Code	Description
8L	Line-Mounted Protective Module (enclosed only)
8M	Load-Mounted Protective Module (enclosed only)
8B	Line- and Load-Mounted Protective Modules (enclosed only)

Load-side MOVs are not available with Pump and Braking options, or on delta-connected motors. MOVs can be field installed for open type units.

4

Combination

152H – F480 F BD B – 59 – 8B
 a b c d e f g

a

Bulletin Number	
Code	Description
152H	Solid-State Controller with Fusible Disconnect
152B	Solid-State Controller with Fusible Disconnect and Isolation Contactor
153H	Solid-State Controller with Circuit Breaker
153B	Solid-State Controller with Circuit Breaker and Isolation Contactor

c

Enclosure Type	
Code	Description
F	NEMA Type 4/12 (IP65)
J	NEMA Type 12 (IP54)

e

Control Options	
Code	Description
Blank	Standard
B	Pump Control
D	Braking Control

b

Controller Ratings	
Code	Description
F5	5 A, 3 Hp @ 460V AC
F25	25 A, 15 Hp @ 460V AC
F43	43 A, 30 Hp @ 460V AC
F60	60 A, 40 Hp @ 460V AC
F85	85 A, 60 Hp @ 460V AC
F108	108 A, 75 Hp @ 460V AC
F135	135 A, 100 Hp @ 460V AC
F201	201 A, 150 Hp @ 460V AC
F251	251 A, 200 Hp @ 460V AC
F317	317 A, 250 Hp @ 460V AC
F361	361 A, 300 Hp @ 460V AC
F480	480 A, 400 Hp @ 460V AC
F625	625 A, 500 Hp @ 460V AC
F780	780 A, 600 Hp @ 460V AC

d

Line Voltage, 120V AC Control Voltage	
Code	Description
HD	200...208V AC, 3-phase, 50 and 60 Hz
AD	230V AC, 3-phase, 50 and 60 Hz
BD	400...460V AC, 3-phase, 50 and 60 Hz
CD	500...575V AC, 3-phase, 50 and 60 Hz

g

Options (see page 4-125 for a full listing)	
Code	Description
8L	Line-Mounted Protective Module
8M	Load-Mounted Protective Module
8B	Line- and Load-Mounted Protective Modules

Load-side MOVs are not available with Pump and Braking options, or when used with inside-the-delta connections.

f

Horsepower									
Cat. No.	Hp Rating	Cat. No.	Hp Rating	Cat. No.	Hp Rating	Cat. No.	Hp Rating	Cat. No.	Hp Rating
33	0.5	39	5	46	40	52	150	60	450
34	0.75	40	7.5	47	50	54	200	61	500
35	1	41	10	48	60	56	250	62	600
36	1.5	42	15	49	75	57	300	63	700
37	2	43	20	50	100	58	350	65	800
38	3	44	25	51	125	59	400	67	1000
—	—	45	30	—	—	—	—	—	—



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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4

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.

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

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.

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.

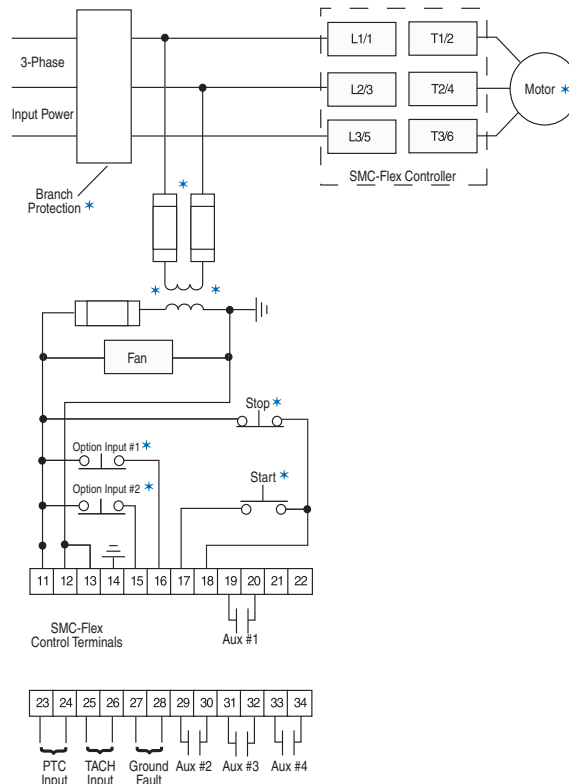


Functional Design Specifications

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.

4

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	
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		
Control Circuit	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

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] ‡
Line Device Operational Current Rating [A]	5	5 kA	20	5 kA	20	70 kA	10
	25	5 kA	100	5 kA	100	70 kA	50
	43	10 kA	150	10 kA	150	70 kA	90
	60	10 kA	225	10 kA	225	70 kA	125
	85	10 kA	300	10 kA	300	70 kA	175
	108	10 kA	400	10 kA	300	70 kA	200
	135	10 kA	500	10 kA	400	70 kA	225
	201	18 kA	600	18 kA	600	70 kA	350
	251	18 kA	700	18 kA	700	70 kA	400
	317	30 kA	800	30 kA	800	69 kA	500
	361	30 kA	1000	30 kA	1000	69 kA	600
	480	42 kA	1200	42 kA	1200	69 kA	800
	625	42 kA	1600	42 kA	1600	74 kA	1600
	780	42 kA	1600	42 kA	2000	74 kA	1600
	970	85 kA	2500	85 kA	2500	85 kA	2500
1250	85 kA	3000	85 kA	3200	85 kA	3000	
Delta Device Operational Current Rating [A]	8.7	5 kA	35	5 kA	35	70 kA	17.5
	43	5 kA	150	5 kA	150	70 kA	90
	74	10 kA	300	10 kA	300	70 kA	150
	104	10 kA	400	10 kA	400	70 kA	200
	147	10 kA	400	10 kA	400	70 kA	200
	187	10 kA	600	10 kA	500	70 kA	300
	234	10 kA	700	10 kA	700	70 kA	400
	348	18 kA	1000	18 kA	1000	70 kA	600
	435	18 kA	1200	18 kA	1200	70 kA	800
	549	30 kA	1600	30 kA	1600	69 kA	1000
	625	30 kA	1600	30 kA	1600	69 kA	1200
	831	42 kA	1600	30 kA	1600	69 kA	1600
	850	42 kA	1600	42 kA	2000	74 kA	1600
	900	42 kA	1600	42 kA	2000	74 kA	1600
	1200	85 kA	3000	85 kA	3200	85 kA	3000
1600	85 kA	3000	85 kA	3200	85 kA	3000	
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.

Short-Circuit Protection



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		
			625...1250 A	751 VA (recommended 800 VA)			
			Heatsink Fan(s)*	5...135 A, 20 VA			
201...251 A, 40 VA							
317...480 A, 60 VA							
625...1250 A, 150 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 ($R_{PTC} = 4 \text{ k}\Omega$)		< 7.5V				
	Max. Voltage at PTC Terminals ($R_{PTC} = \text{open}$)		30V				
	Max. No. of Sensors.		6				
	Max. Cold Resistance of PTC Sensor Chain		1500 Ω				
Response Time		800 ms					
Tach Input		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 mm ² (14...3/0 AWG) Line Lower — 0.8...2.5 mm ² (18...14 AWG) Load Upper — 2.5...50 mm ² (14...1 AWG) Load Lower — 0.8...2.5 mm ² (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]	Line	Delta	
		5	1...5	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)		

4

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.

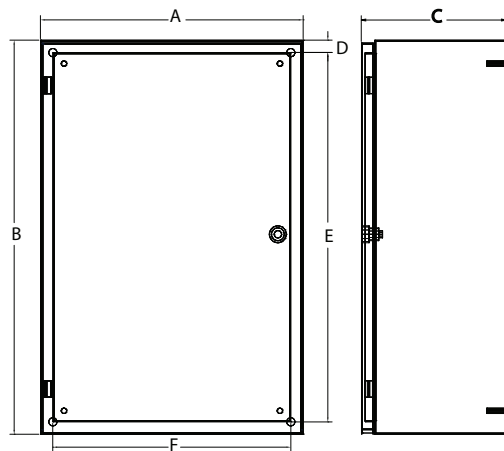


Figure 1 — Wall-Mount

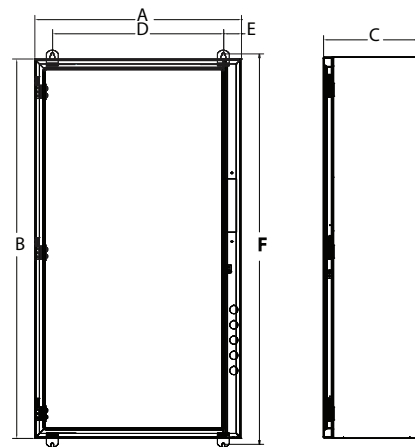


Figure 2 — Wall-Mount

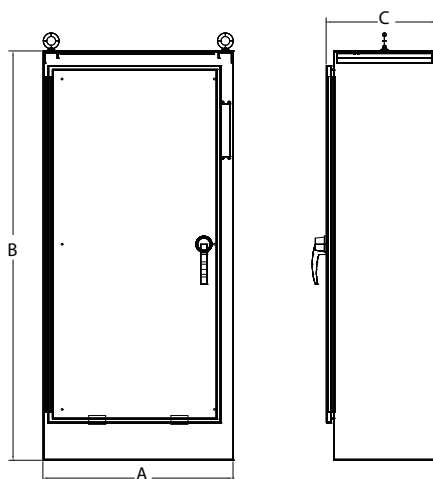


Figure 3 — Floor-Mount

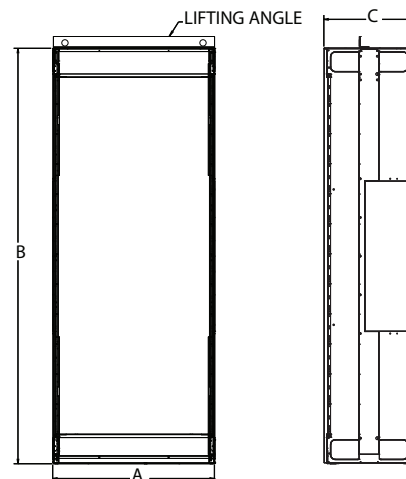


Figure 4 — Floor-Mount

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)
	152H,152B, 153B,153H	NI, NB		30 (762)	38 (965)	14 (356)		36.5 (927)	28.5 (724)
85	153B, 153H	—	1	16 (406)	24 (610)	10 (254)	0.75 (19)	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)
	152B, 152H,153B	BP, 6_		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)
	153H,153B,152H,152B	6_		30 (762)	38 (965)	14 (356)		36.5 (927)	28.5 (724)
135	152H,153H	—	1	30 (762)	38 (965)	14 (356)	0.75 (19)	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)
	152B,153B,153H,152H	6_		30 (762)	38 (965)	14 (356)		36.5 (927)	28.5 (724)
251	152H,153H	—	1	30 (762)	38 (965)	14 (356)	0.75 (19)	36.5 (927)	28.5 (724)
	152B,153B,153H,152H	6_		30 (762)	38 (965)	14 (356)		36.5 (927)	28.5 (724)
317	153H	—	1	36 (914)	51 (1295)	14 (356)	0.75 (19)	49.5 (1257)	34.5 (876)
	153H	6_		36 (914)	51 (1295)	14 (356)		49.5 (1257)	34.5 (876)
	153H	BP,NB		36 (914)	60 (1524)	14 (356)		58.5 (1486)	34.5 (876)
	153B	—	2	36 (914)	60 (1524)	14 (356)	33.88 (861)	58.5 (1486)	34.5 (876)
	152H,152B	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)
	153H	6_		36 (914)	51 (1295)	14 (356)		49.5 (1257)	34.5 (876)
	153H	BP		36 (914)	60 (1524)	14 (356)		58.5 (1486)	34.5 (876)
	153B	—	2	36 (914)	60 (1524)	14 (356)	33.88 (861)	58.5 (1486)	34.5 (876)
	152H, 152B	—		38 (965)	60 (1524)	17 (431)		1.75 (45)	61.69 (1567)
	152H	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)
	153H	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)
	152H	—	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)
	152H	NB	3*‡	40 (1016)	84 (2134)	18 (457)		—	—
	153H,153B	—	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)	—		—	
152H,152B	BP,NB,NI	4	35 (889)	91.5 (2324)	20 (508)	—		—	
625	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)		—	—
	152H	BP		70 (1778)	91.5 (2324)	20 (508)		—	—
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	—	4	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



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)
	150, 150B	NB	1	24 (610)	30 (762)	12 (305)		28.5 (724)	22.5 (572)
		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)	
	150, 150B	6_	1*	24 (610)	30 (762)	12 (305)		28.5 (724)	22.5 (572)
		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)
		—		24 (610)	30 (762)	12 (305)		28.5 (724)	22.5 (572)
135	150	—	1	30 (762)	38 (965)	14 (356)	0.75 (19)	36.5 (927)	28.5 (724)
	150B	—		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)
	150	NB,NI		36 (914)	51 (1295)	14 (356)		49.5 (1257)	34.5 (876)
	150B	—		30 (762)	38 (965)	14 (356)		36.5 (927)	28.5 (724)
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.