

# Enclosed SMC-3, SMC Flex, and SMC-50 Smart Motor Controllers

Bulletin Numbers 150C, 152C, 153C, 150F, 152F, 153F, 150S, 152S, 153S

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## Additional Resources

These documents contain additional information concerning related products from Rockwell Automation.

Resource	Description
SMC-3, SMC Flex, and SMC-50 Technical Data, publication <a href="#">150-TD009</a>	Provides technical information for open SMC-3, SMC Flex, and SMC-50 controllers.
SMC-50 User Manual, publication <a href="#">150-UM011</a>	Provides complete user information for SMC-50 controllers.
SMC Flex User Manual, publication <a href="#">150-UM008</a>	Provides complete user information for SMC Flex controllers.
SMC-3 Installation Instructions, publication <a href="#">150-IN004</a>	Provides installation instructions for SMC-3 controllers.
Industrial Automation Wiring and Grounding Guidelines, publication <a href="#">1770-4.1</a>	Provides general guidelines for installing a Rockwell Automation industrial system.
Product Certifications website, <a href="http://www.rockwellautomation.com/global/certification/overview.page">http://www.rockwellautomation.com/global/certification/overview.page</a>	Provides declarations of conformity, certificates, and other certification details.






## Overview

Our Enclosed soft starters can be fully customized with a wide variety of factory-installed options and are pre-engineered for quick factory lead times.



Enclosed Starter Features	SMC™-3	SMC™ Flex	SMC™-50 Solid-state Controller	SMC™-50 Controller with Internal Bypass
True 3-phase control	Yes	Yes	Yes	Yes
Bypass	Internal	Internal	External	Internal
Protection and diagnostics	Basic	Advanced	Industry leading	Industry leading
Start/stop modes	5	9	17	17
Enclosure type	1/12/4 or 3R	1/12/4 or 3R	1/12/4 or 3R	1/12/4 or 3R
Factory-installed communication modules (optional)	None	RS-485, DeviceNet™, Ethernet/IP, ControlNet™ ProfiBUS	RS-485, DeviceNet™, Ethernet/IP, ControlNet™ ProfiBUS	
Controller Current	1 . . . 480 A	1 . . . 1250 A	90 . . . 520 A	108 . . . 480 A
Voltage range	200...575V AC	200...575V AC	200...575V AC	200...575V AC
Control voltage	100...240V AC	100...240V AC	100...240V AC	100...240V AC
Option offering and customization	Moderate	Extensive	Extensive	Extensive
Customization through Modified Industrial Controls	Yes	Yes	Yes	Yes

Controller Features <sup>(1)</sup>				
	SMC™-3	SMC™ Flex	SMC™-50 Controller	
			Solid-state	with Internal Bypass
	200...690V	200...690V	200...690V	200...690V
	1...480 A	1...1250 A	90...520 A	108...480 A
Soft Start	S	S	S	S
Linear Acceleration/Deceleration	—	S	S	S
Torque Control	—	—	S	S
Kickstart	S	S	S	S
Pump Control	—	0	S	S
Current Limit	S	S	S	S
Dual Ramp Start	—	S	S	S
Full Voltage	—	S	S	S
Energy Saver	—	—	S	S
Phase Rebalance	—	—	S	—
Soft Stop	S	S	S	S
Preset Slow Speed	—	S <sup>(2)</sup>	S <sup>(3)</sup>	S <sup>(3)</sup>
Dual Slow Speed Commands	—	—	S	S
SMB™ Smart Motor Braking	—	0	S	S
Accu-Stop™	—	0	S <sup>(4)</sup>	S <sup>(4)</sup>
Slow Speed with Braking	—	0	S	S
Integrated Bypass Contactor (SMC-50 firmware rev. 5.XXX and higher)	S	S	— <sup>(5)</sup>	S
Integrated Motor Overload Protection	S	S	S	S
DPI™ Communication	—	S	S	S
Metering	—	S	S	S
Real Time Clock	—	—	S	S
Energy Saver Mode	—	—	S	—
Motor Winding Heater Function	—	<sup>(6)</sup>	S	S
Resistive Load Control (Firmware rev. 5.XXX and higher, solid-state devices only.)	—	—	S	—
Diagnostic Faults and Alarms	—	S	S	S
Parameter Configuration/Programming Tools	—	S	0	0
Human Interface Module (HIM)	—	0	0	0
Parameter Configuration Module	—	—	0	0
DriveExplorer™ and DriveExecutive™	—	0	0	0
Configuration Software: Connected Components Workbench	—	0	0	0
Network Communications	—	0	0	0
Inside-the-Delta Functionality	S	S	S	S
Individual Bit Enable of Faults and Alarms	—	—	S	S
Automatic Tuning of Motor Parameters	—	—	S	S
Digital I/O Expansion Module <sup>(7)</sup>	—	—	0	0
Analog I/O Expansion Module <sup>(7)</sup>	—	—	0	0
Ground Fault/CT/PTC Module <sup>(7)</sup>	—	—	0	0
DeviceLogix™ (Firmware rev. 4.XXX and higher.)	—	—	S	S

(1) S = Standard Feature; 0 = Optional Feature

(2) Limited slow speed capability

(3) Advanced slow speed capability

(4) Accu-Stop is not included as a parameter/function for the SMC-50 controller. However, the Accu-Stop function can be accomplished with the Stop Option and Slow Speed with Braking functions.

(5) You can add an external bypass contactor as an option.

(6) Option using a Bulletin 1410 motor winding heater

(7) With removable terminal block.

This catalog 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 (such as large fan, rock crusher, chipper), use of the free tools available from the Rockwell Automation Website is recommended:

[http://www.ab.com/industrialcontrols/products/solid-state\\_motor\\_control/software/](http://www.ab.com/industrialcontrols/products/solid-state_motor_control/software/)

You can find full descriptions of features and modes of operation, as well as specifications in the selection guides for open SMC Controllers in the open style SMC controllers technical data, [publication 150-TD009](#).

## Enclosed SMC-3 Controllers

### Catalog Number Explanation

Examples given in this section are not intended to be used for product selection. Use ProposalWorks to configure Smart Motor Controllers. ProposalWorks is available from <http://www.rockwellautomation.com/global/e-tools/overview.page>.

#### Controllers Rated 90...1250 A

**152F** - **D10** **J** **B** **D** - **J20** - **3**  
 a b c d e f g

a	
Bulletin Number	
Code	Description
150C	SMC-3 Non-combination
152C	SMC-3 Combination with Fusible Disconnect
153C	SMC-3 Combination with Circuit Breaker

b	
Controller Rating [A]	
Code	Description
D10	108
D13	135
D20	201
D25	251
D31	317
D36	361
D48	480

c	
Enclosure Type	
Code	Description
J	1/12/3R (3R)

d	
Input Line Voltage	
Code	Description
H	200...208V AC, 3-Phase, 50/60 Hz
A	230V AC, 3-Phase, 50/60 Hz
B	400...460V AC, 3-Phase, 50/60 Hz
C	500...575V AC, 3-Phase, 50/60 Hz

e	
Control Voltage	
Code	Description
D	120V AC
J	24V AC
A	240V AC
EJ	24V DC

f			
Fuse Clip/Circuit Breaker (CB)—Combination Controllers Only			
Code	Description	Code	Description
J20	200 A, Class J	D12	125 A, CB
J40	400 A, Class J	D17	175 A, CB
J60	600 A, Class J	D25	250 A, CB
L80	800 A, Class L	D40	400 A, CB
L12	1200 A, Class L	D60	600 A, CB
L16	1600 A, Class L	D80	800 A, CB
D16	160 A, DIN	E12	1200 A, CB
D25	250 A, DIN		
D40	400 A, DIN		
D63	630 A, DIN		
D80	800 A, DIN		
N12	1250 A, DIN		

g					
Options					
Code	Description	Code	Description	Code	Description
1	Start-Stop Push-Button	8M	Load-Mounted Protective Module	P20	200 mm Mounting foot, sheet metal
1E	On - Off Push-Button	8B	Line- and Load-Mounted Protective Modules	F10	100 mm Mounting foot, high-strength plastic
3	Hand-Off-Auto Selector Switch	BP	Bypass Starter	F20	200 mm Mounting foot, high-strength plastic
3E	On - Off Selector Switch	NB	NEMA Bypass Starter	416	Plug-in Control Relay 2-pole
3H	Hand-Auto Selector Switch	IC	Isolation Contactor	417	Plug-in Control Relay On Delay
3B	SMC-Off-Bypass Selector Switch	NI	NEMA Isolation Contactor	418	Plug-in Control Relay Off Delay
13	Start-Stop Push-Button and Hand-Off-Auto Selector Switch	989	1 N.O 1 N.C Auxiliary Contact on Circuit Breaker or Fusible Disconnect Switch	425	Hour Meter
4_ _ _ _ <sup>(1)</sup>	Pilot Lights	20S	Communication: RS-485	428	Ammeter
5_ _ _ _ <sup>(1)</sup>	Push to test Pilot Lights	20D	Communication: DeviceNet	429	Ground Fault Relay
1XA	Soft Stop Push Button	20E	Communication: Ethernet/IP	430	Under Voltage Relay
1XB	Pump Stop Push Button	20C	Communication: Control Net	22	Control Circuit Fusing
1XC	Slow Speed Push Button	20P	Communication: ProfIBUS	OPS	Bul. 509 NEMA Size 1 starter and Bul. 592 solid-state overload
1XD	Brake Push Button	PC	Pump Control		
6P	Control Circuit Transformer	BC	Braking Control		
6XP	1 Factor Additional VA	TB10	10 Spare Terminal Blocks		
6YP	2 Factor Additional VA	TB20	20 Spare Terminal Blocks		
8L	Line-Mounted Protective Module	P10	100 mm Mounting foot, sheet metal		

(1) Pilot Lights require configuration. See [Table 14](#)

**Table 1 - Pilot Light Configuration**

**4**      **R**      **G**      **X**      **W**  
 a          b          c          d          e

<b>a</b>	
<b>Option</b>	
<b>Code</b>	<b>Description</b>
4	Pilot Light
5	Push to test Pilot Lights

<b>b</b>	
<b>ON Indication</b>	
<b>Code</b>	<b>Description</b>
R	108
G	135
X	none

<b>c</b>	
<b>OFF Indication</b>	
<b>Code</b>	<b>Description</b>
R	108
G	135
X	none

<b>d</b>	
<b>Fault Indication</b>	
<b>Code</b>	<b>Description</b>
A	Amber
X	none

<b>e</b>	
<b>Power ON Indication</b>	
<b>Code</b>	<b>Description</b>
W	White

Note: The final character in the configuration string cannot be "X".

Controllers Rated 5...85 A

- Note: Controllers rated 5...85 A do not include snap-together wiring.

**150** - **C** **30** **F** **B** - **D** - **8L**  
 a b c d e f g

a	
Bulletin Number	
Code	Description
150	Non-combination solid-state controller
150B	Non-combination solid-state controller with isolation contactor
152H	Combination solid-state controller with fusible disconnect
152B	Combination solid-state controller with fusible disconnect and isolation contactor
153H	Combination solid-state controller with circuit breaker
153B	Combination solid-state controller with circuit breaker and isolation contactor

b	
Controller Type	
Code	Description
C	SMC-3

c	
Controller Rating [A]	
Code	Description
3	3
9	9
16	16
25	25
30	30
37	37
43	43
60	60
85	85

d	
Enclosure Type	
Code	Description
F	NEMA Type 4/12 (IP65)
X	NEMA Type 3R (IP44) (Combination only)

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

f			
Horsepower (Combination Controllers only)			
Code	Rating	Code	Rating
33	0.5	49	75
34	0.75	50	100
35	1	51	125
36	1.5	52	150
37	2	54	200
38	3	56	250
39	5	57	300
40	7.5	58	350
41	10	59	400
42	15	60	450
43	20	61	500
44	25	62	600
45	30	63	700
46	40	65	800
47	50	67	1000
48	60		

g	
Options <sup>(1)</sup>	
Code	Description
1	Start-Stop Push Button
3	Hand-Off-Auto Selector Switch
4R	Transformer Pilot Light - Red Run Indicator
6P	Control Circuit Transformer
8L	Line-Mounted Protective Module
8M	Load-Mounted Protective Module
8B	Line- and Load-Mounted Protective Modules
90	1 N.O. auxiliary contact
900	2 N.O. auxiliary contacts
901	1 N.O. and 1 N.C. auxiliary contacts
98	N.O. disconnect auxiliary mounted on the operating mechanism
99	N.C. disconnect auxiliary mounted on the operating mechanism
NB	NEMA Bypass Starter
BP	IEC Bypass Starter

(1) Load-side MOVs are not available with Pump and Braking options, or on delta-connected motors.

## Product Selection


- NOTE: Refer to and use Selection Wizards to ensure the SMC controller selection meets the application requirements. For additional assistance, please visit [www.ab.com](http://www.ab.com) or contact Industrial Controls Technical Support by email at [raictechsupport@ra.rockwell.com](mailto:raictechsupport@ra.rockwell.com) or by phone at 440-646-5800.

You can configure enclosed soft starters by selecting a power center, snap-together kits, transformers, and/or any applicable controller accessories.

### Power Centers

Motor Current [A]	Rated Hp [Hp]				Non-combination Starters Cat. No.	Combination Starters Cat. No.	
	200...208V	230V	400...460V	500...575V		with Fusible Disconnect	with Circuit Breaker
108	30	40	75	100	150C-D10JCD	152C-D10JCD-J20	153C-D10JCD-D17
135	40	50	100	125	150C-D13JCD	152C-D13JCD-J20	153C-D13JCD-D25
201	60	75	150	150	150C-D20JCD	152C-D20JCD-J40	153C-D20JCD-D25
251	75	100	200	200	150C-D25JCD	152C-D25JCD-J40	153C-D25JCD-D40
317	100	125	250	300	150C-D31JCD	152C-D31JCD-J60	153C-D31JCD-D40
361	125	150	300	350	150C-D36JCD	152C-D36JCD-J60	153C-D36JCD-D80
480	150	200	400	500	150C-D48JCD	152C-D48JCD-L80	153C-D48JCD-D80

### Transformers

	Controller Current [A]	Capacity	VA	208V x 120V Cat. No.	240V x 120V Cat. No.	460V x 120V Cat. No.	575V x 120V Cat. No.
	108, 135, 251, 317, 361, 480	Standard	200	1497-HD200	1497-AD200	1497-BD200	1497-CD200
		Extra Capacity	350	1497-HD350	1497-AD350	1497-BD350	1497-CD350
		Extra Capacity	500	1497-HD500	1497-AD500	1497-BD500	1497-CD500

### Snap-together Wiring

- Note: This option applies only to controllers with current ratings greater than 90 A.

Component wiring is color coded by function. The wiring sleeve color corresponds to a colored label on the terminal block. Keyed connectors snap these components into the terminal block. This greatly reduced assembly time is ideal for the quick installation of pilot devices and control circuit transformers, and significantly reduces wiring errors. [Figure 31](#) shows an example of this feature.



**Figure 1 - Snap-together Wiring Example**

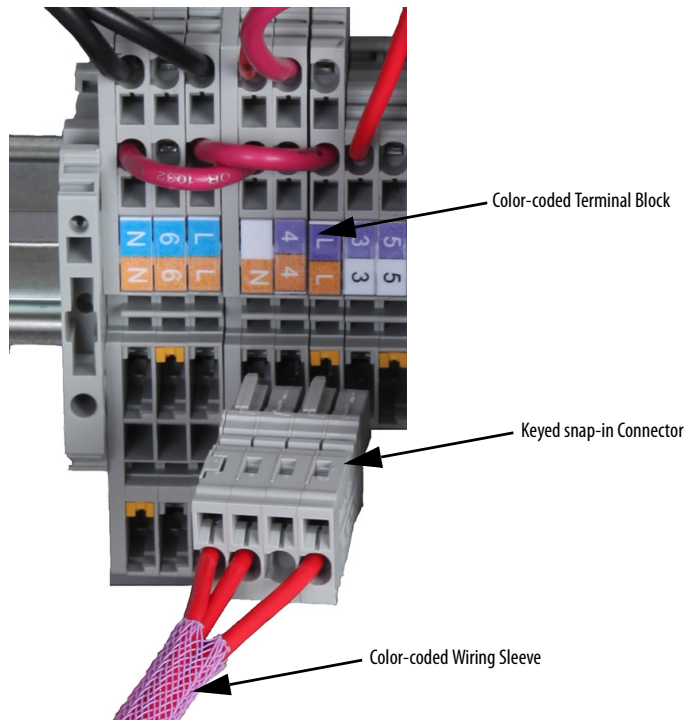
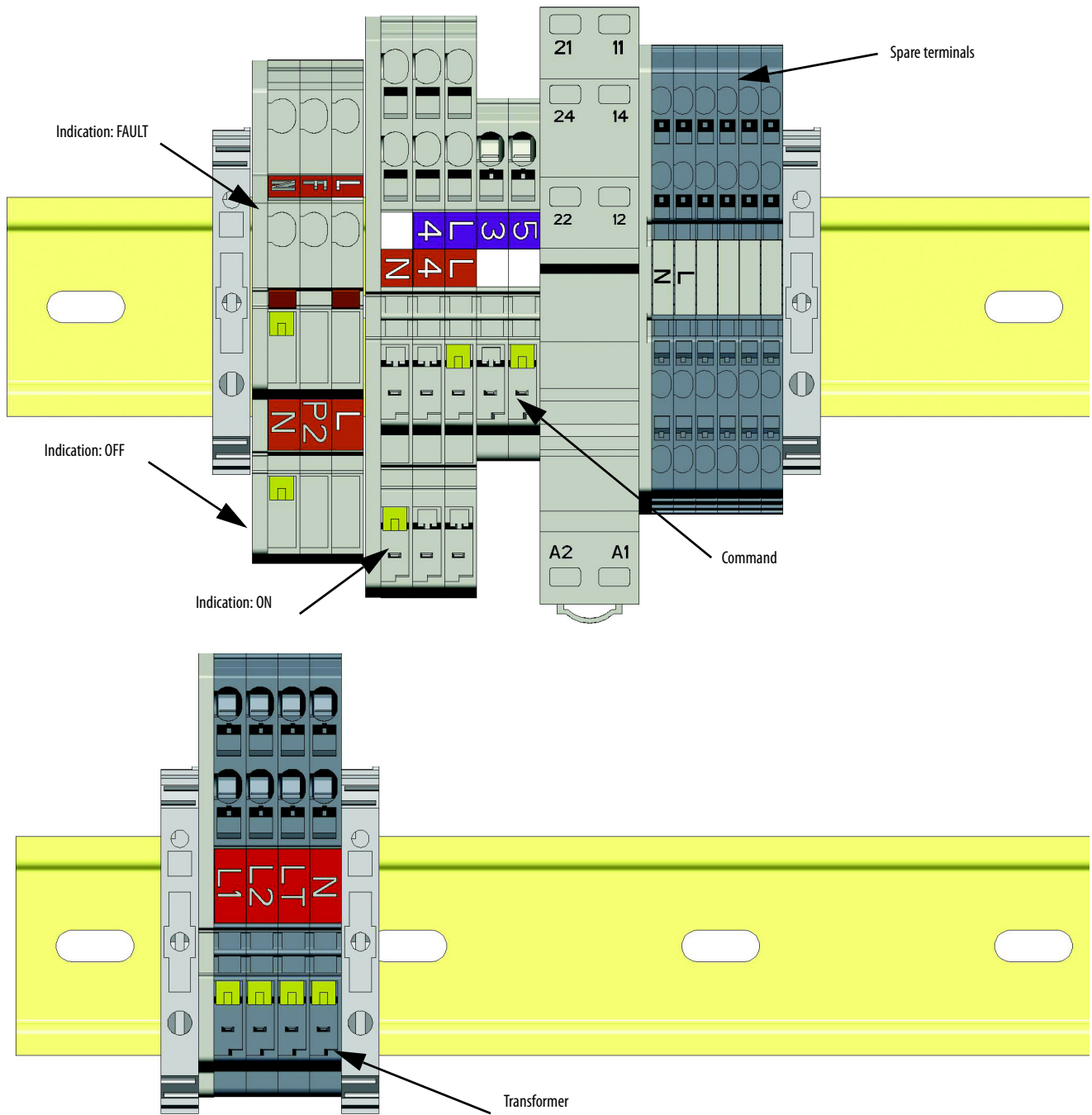
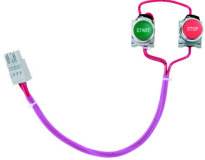







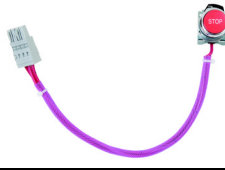
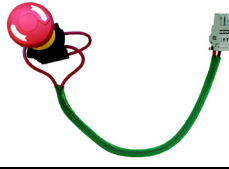


Figure 2 - SMC-3 Controller Snap-together Wiring



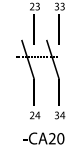

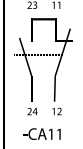


	Description	Cat. No.
	Start-Stop Snap-together Push Button Kit, Metal Bezel 22.5 mm	198-SSPBM
	3-Position Hand-Off-Auto Snap-together Selector Switch Kit Metal Bezel 22.5 mm	198-3SSM
	2-Position On-Off or Hand-Auto Snap-together Selector Switch Kit Metal Bezel 22.5 mm	198-2SSM
	Red Universal LED Pilot Light Snap-together Kit 22.5 mm	198-RUPL
	Green Universal LED Pilot Light Snap-together Kit 22.5 mm	198-GUPL
	White or Amber Universal LED Pilot Light Snap-together Kit 22.5 mm	198-WUPL
	Red Universal LED Push to Test Pilot Light Snap-together Kit 22.5 mm	198-RUPPLM
	Green Universal LED Push to Test Pilot Light Snap-together Kit 22.5 mm	198-GUPPLM


	Description	Cat. No.
	White or Amber Universal LED Push to Test Pilot Light Kit Snap-together 22.5 mm	198-WUPPLM
	Stop Push Button Snap-together Kit N.C. 22.5 mm, Momentary	198-PBM
	Emergency Stop Snap-together Kit	198-ESP

### Accessories

#### Auxiliary Contact Blocks


Description	N.O.	N.C.	Connection Diagram	Cat. No.
 <p>Auxiliary Contact Blocks for side mounting with sequence terminal designations</p> <ul style="list-style-type: none"> <li>• 1- and 2-pole</li> <li>• Quick and easy mounting without tools One block per device only</li> </ul>	1	0		150-CA10
	2	0		150-CA20
	0	1		150-CA01
	1	1		150-CA11 (Form C)

#### Fans


Description	For Use With	Pkg. Qty.	Cat. No.	
 <p>Fan</p> <ul style="list-style-type: none"> <li>• Field installed</li> </ul>	Optional	1	150-C3...37	
	Replacement		150-C43...85	150-CF64
			150-C108, 150-C135	150-CF147
			150-C201, 150-C251	41391-801-03
			150-C317...C480	41391-801-01
			41391-801-02	

#### Protective Modules

Do not place protective modules on the load side of a device when using an inside-the-delta connection.

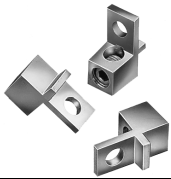
Description	For Use With	Pkg. Qty.	Cat. No.
 <p>480V Protective Module</p>	150-C3...37NB	1	150-C84
	150-C43...85NB (line and/or load)	1	150-C84P
	150-C108...480NB (line and/or load)	1	150-F84L
600V Protective Module	150-C3...37NC	1	150-C86
	150-C43...85NC (line and/or load)	1	150-C86P
	150-C108...480NC (line and/or load)	1	150-F86L

**IEC Line or Load Terminal Covers**

	Description <sup>(1)</sup>	Current Range [A]	Pkg. Quantity	Cat. No.
	<ul style="list-style-type: none"> <li>Dead front protection</li> <li>IP2X finger safe when used with 250 MCM cable</li> </ul>	108...135	1	150-TC1
		201...251	1	150-TC2
	<ul style="list-style-type: none"> <li>Dead front protection</li> <li>IP2X finger safe when used with 500 MCM cable</li> </ul>	317...480	1	150-TC3

(1) 5...85 A units have terminal guards as standard. No additional terminal guards are required.


**Terminal Lug Kits**

	Current Range [A] <sup>(1)</sup>	Wire Size Range	Total No. of Terminal Lugs Possible Each Side		Pkg. Qty.	Cat. No.
			Line Side	Load Side		
	108...135 <sup>(2)</sup>	#6...250 MCM AWG 16 mm <sup>2</sup> ...120 mm <sup>2</sup>	3	3	3	199-LF1
	201...251 <sup>(2)</sup>		6	6	3	
	317...480 <sup>(2)</sup>	#4...500 MCM AWG 25 mm <sup>2</sup> ...240 mm <sup>2</sup>	6	6	3	199-LG1


(1) 5...85 A units have box lugs standard. No additional lugs are required.

(2) When a multi-conductor lug is required, refer to the User Manual for appropriate lug catalog number.

**Marking Tags and Covers**

	Description	For Use With	Pkg. Qty.	Cat. No.
	<b>Marking Tag Sheet</b> <ul style="list-style-type: none"> <li>160 perforated paper labels each, 6 x 17 mm, to be used with a transparent cover</li> </ul>	150-C, 150-D	10	100-FMP
	<b>Transparent Cover</b> <ul style="list-style-type: none"> <li>To be used with marking tag sheets</li> </ul>		100	100-FMC

**Remote Reset Solenoid**



	Description	For Use With	Pkg. Qty.	Cat. No.
	<b>Remote Reset Solenoid</b> <ul style="list-style-type: none"> <li>for remote reset of electronic overload</li> </ul>	193-T all, 150-C	1	193-ER1⊗

⊗ *Voltage Suffix Codes*

- Available Coil Voltages 12...600V 50 Hz/12...600V 60 Hz
- Surcharge for special voltages up to 20 pcs. (no surcharge for quantities greater than 20 pcs.)

Voltage	24	48	110	115	120	220	240
50 Hz	J	—	D	—	—	A	—
60 Hz	J	—	—	—	D	—	A
DC	Z24	Z48	—	Z01	—	—	—

### Enclosure Accessories

	Description	Construction Material	For Use With Enclosure Width	Cat. No.
	<b>Perforated frame strip</b> • Mounting rail for door or panel installation	Sheet steel	400 mm	198-DS400
			600 mm	198-DS600
			1000 mm	198-DS1000
	<b>Enclosure mounting foot</b> • 100 mm height	High-strength plastic	400 mm	198-FB100 A
			600 mm	198-FB100B
			1000 mm	198-FB100C
	<b>Enclosure mounting foot</b> • 200 mm height	Sheet steel	400 mm	198-PL100 A
			600 mm	198-PL100B
			1000 mm	198-PL100C
		Sheet steel	400 mm	198-PL200 A
			600 mm	198-PL200B
			1000 mm	198-PL200C

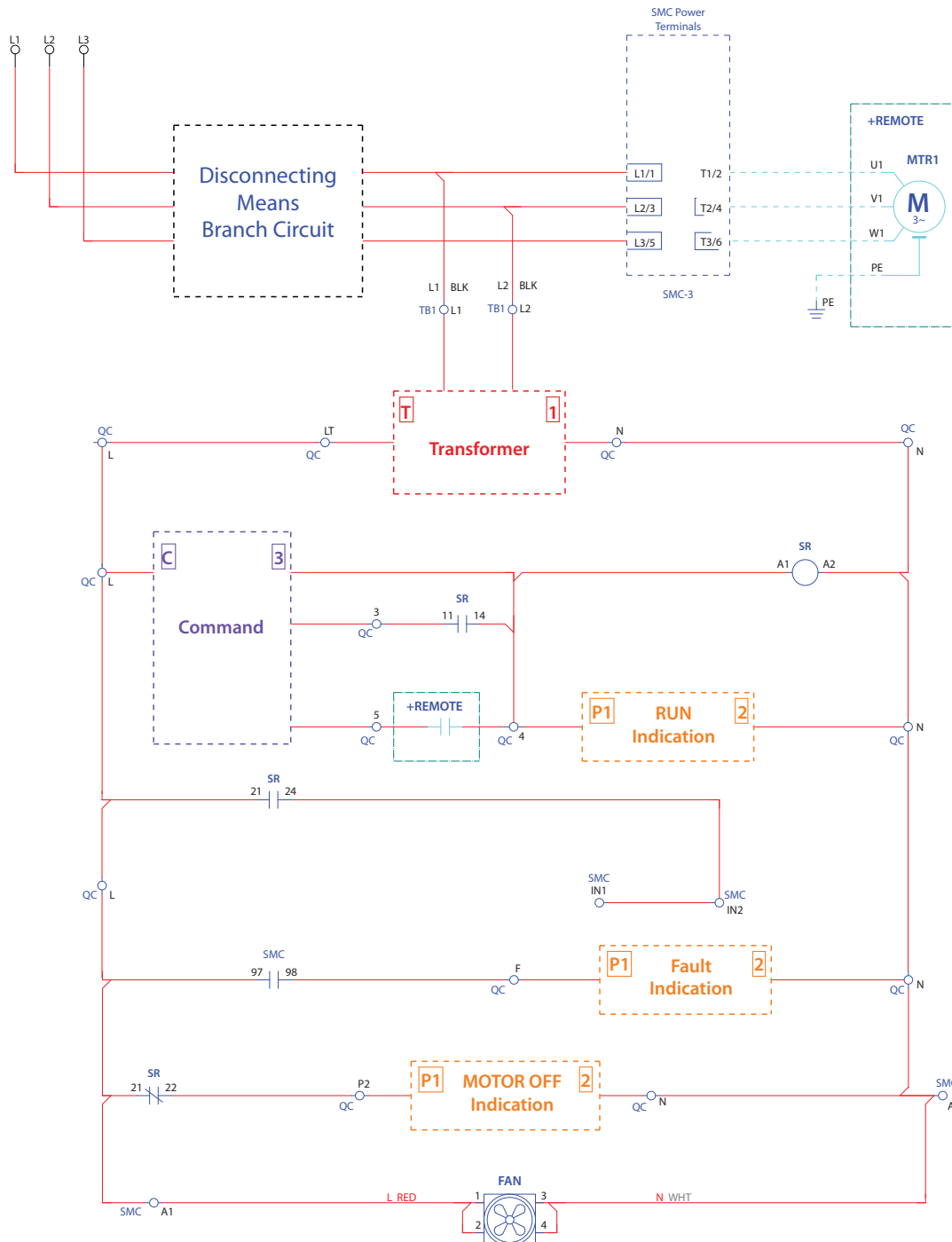
### Wiring Diagrams

The diagrams in this section illustrate basic SMC controller wiring. For specific wiring diagrams, please consult your local Rockwell Automation sales office or Allen-Bradley distributor.

Notes:

- Use 75 °C Cu wire only
- Line fuses are customer supplied on controllers with factory-supplied disconnect switch. Refer to NEC when selecting short-circuit protection.
- Additional control circuit overcurrent protection is required for non-combination starters. Refer to NEC.

Figure 3 - SMC-3 Controller Basic Wiring Diagram



- For wiring diagrams for snap-together kits, please see the following figures:

- Command kits: [Figure 4](#), [Figure 5](#), and [Figure 6](#)
- Indication kit: [Figure 7](#)
- Transformer kit: [Figure 8](#)

Table 2 - SMC-3 Controller DIP Switch Default Factory Settings

DIP Switch	Value	DIP Switch	Value	DIP Switch	Value	DIP Switch	Value	DIP Switch	Value	DIP Switch	Value	DIP Switch	Value
1	0	3	0	5	1	7	0	9	0	11	1	13	0
2	1	4	0	6	0	8	0	10	0	12	0	14	0
												15	1
												16	0

Wiring Diagrams for Snap-together Kits

Figure 4 - Start-Stop Command Kit Wiring Diagram

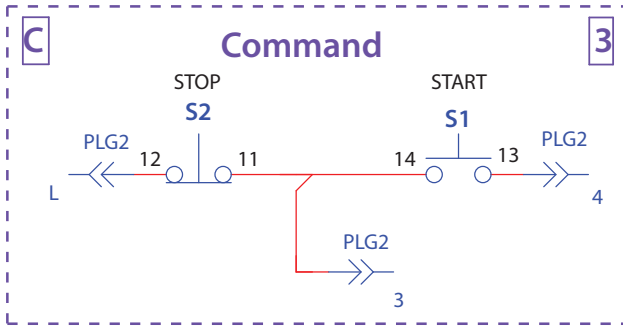


Figure 5 - Hand-OFF-Auto Command Kit Wiring Diagram

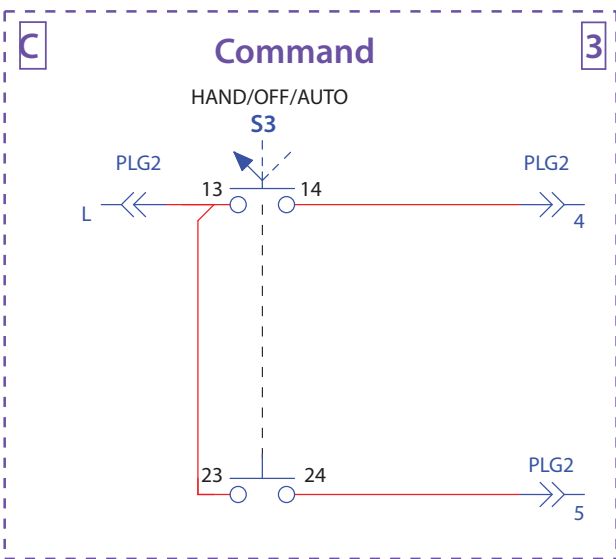


Figure 6 - Hand-OFF-Auto and Start-Stop Command Kit Wiring Diagram

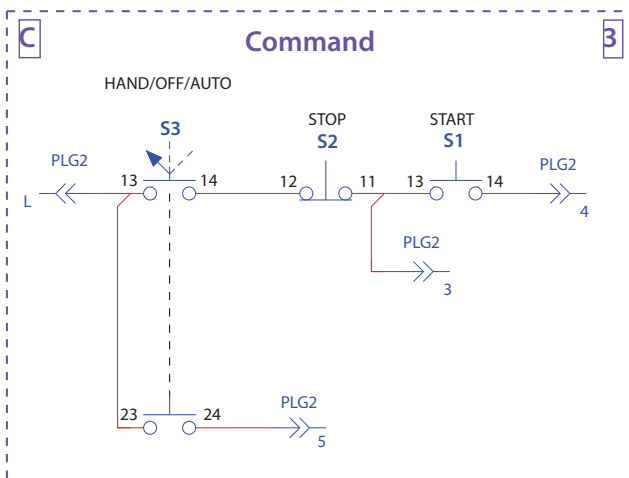


Figure 7 - Indication Kit Wiring Diagram

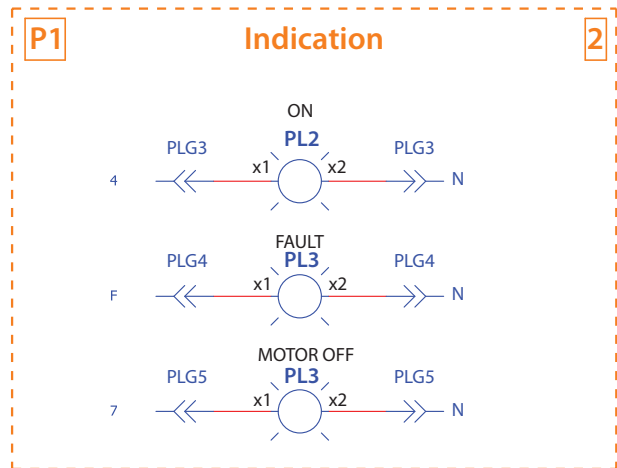
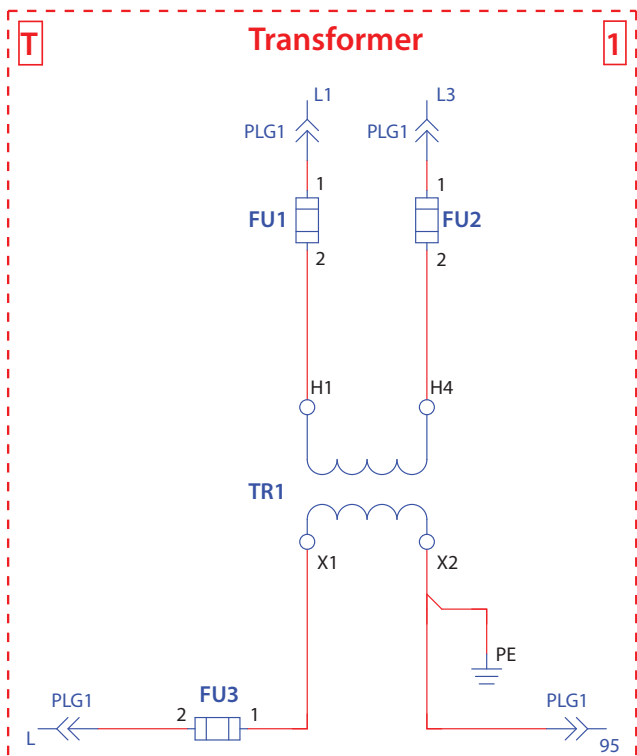


Figure 8 - Transformer Kit Wiring Diagram





## Standards Compliance and Certifications

Standards Compliance— Open Controllers	Certifications—Open Controllers	Standards Compliance— Enclosed Controllers	Certifications—Enclosed Controllers
UL 508	cULus Listed (Open Type) (File No. E96956, Guides NMFT, NMFT7)	UL 508A	cULus Listed
CSA C22.2 No.14	CSA Certified (File No. LR 1234)		
EN/IEC 60947-1	CE Marked		
EN/IEC 60947-4-2	CCC Certified		

### Short-circuit Current Ratings

Determining the short circuit current ratings (SCCR) of a complex system can be very challenging, especially if proper considerations are not made during the initial stages of the component selection process.

The SCCRs in this section provide coordinated high fault branch circuit for enclosed soft starters and is based on compliance to IEC and UL standards. For comprehensive SCCR information, please consult the Rockwell Automation Global SCCR Selection Tool at <http://www.rockwellautomation.com/global/support/global-sccr.page>.

- Note: Ratings provided are for standard options only; does not include bypass or isolation contactor configurations

**Table 3 - Non-combination Enclosed Soft Starters with SMC-3 Controllers**

Controller Rating [A]	Short Circuit Current Rating
3	<ul style="list-style-type: none"> <li>70 kA rms symmetrical, 600V maximum when protected by a maximum 6 A Class J Fuse</li> <li>5 kA rms symmetrical, 600V maximum when protected by a maximum 12 A fuse</li> <li>5 kA rms symmetrical, 600V maximum when protected by a maximum 15 A circuit breaker</li> </ul>
9	<ul style="list-style-type: none"> <li>70 kA rms symmetrical, 600V maximum when protected by a maximum 15 A Class J Fuse</li> <li>5 kA rms symmetrical, 600V maximum when protected by a maximum 30 A fuse</li> <li>5 kA rms symmetrical, 600V maximum when protected by a maximum 30 A circuit breaker</li> </ul>
30	<ul style="list-style-type: none"> <li>70 kA rms symmetrical, 600V maximum when protected by a maximum 60 A Class J Fuse</li> <li>10 kA rms symmetrical, 600V maximum when protected by a maximum 110 A fuse</li> <li>10 kA rms symmetrical, 600V maximum when protected by a maximum 110 A circuit breaker</li> </ul>
37	<ul style="list-style-type: none"> <li>70 kA rms symmetrical, 600V maximum when protected by a maximum 60 A Class J Fuse</li> <li>10 kA rms symmetrical, 600V maximum when protected by a maximum 125 A fuse</li> <li>10 kA rms symmetrical, 600V maximum when protected by a maximum 125 A circuit breaker</li> </ul>
43	<ul style="list-style-type: none"> <li>70 kA rms symmetrical, 600V maximum when protected by a maximum 90 A Class J Fuse</li> <li>10 kA rms symmetrical, 600V maximum when protected by a maximum 150 A fuse</li> <li>10 kA rms symmetrical, 600V maximum when protected by a maximum 150 A circuit breaker</li> </ul>
60	<ul style="list-style-type: none"> <li>70 kA rms symmetrical, 600V maximum when protected by a maximum 125 A Class J Fuse</li> <li>10 kA rms symmetrical, 600V maximum when protected by a maximum 225 A fuse</li> <li>10 kA rms symmetrical, 600V maximum when protected by a maximum 225 A circuit breaker</li> </ul>
85	<ul style="list-style-type: none"> <li>70 kA rms symmetrical, 600V maximum when protected by a maximum 175 A Class J Fuse</li> <li>10 kA rms symmetrical, 600V maximum when protected by a maximum 300 A fuse</li> <li>10 kA rms symmetrical, 600V maximum when protected by a maximum 300 A circuit breaker</li> </ul>
108	<ul style="list-style-type: none"> <li>70 kA rms symmetrical, 600V maximum when protected by a maximum 200 A Class J Fuse</li> <li>10 kA rms symmetrical, 600V maximum when protected by a maximum 400 A fuse</li> <li>10 kA rms symmetrical, 600V maximum when protected by a maximum 300 A circuit breaker</li> </ul>
135	<ul style="list-style-type: none"> <li>70 kA rms symmetrical, 600V maximum when protected by a maximum 250 A Class J Fuse</li> <li>10 kA rms symmetrical, 600V maximum when protected by a maximum 500 A fuse</li> <li>10 kA rms symmetrical, 600V maximum when protected by a maximum 400 A circuit breaker</li> </ul>
201	<ul style="list-style-type: none"> <li>70 kA rms symmetrical, 600V maximum when protected by a maximum 350 A Class J Fuse</li> <li>18 kA rms symmetrical, 600V maximum when protected by a maximum 600 A fuse</li> <li>18 kA rms symmetrical, 600V maximum when protected by a maximum 600 A circuit breaker</li> </ul>
251	<ul style="list-style-type: none"> <li>70 kA rms symmetrical, 600V maximum when protected by a maximum 400 A Class J Fuse</li> <li>18 kA rms symmetrical, 600V maximum when protected by a maximum 700 A fuse</li> <li>18 kA rms symmetrical, 600V maximum when protected by a maximum 700 A circuit breaker</li> </ul>

Controller Rating [A]	Short Circuit Current Rating
317	<ul style="list-style-type: none"> <li>• 69 kA rms symmetrical, 600V maximum when protected by a maximum 500 A Class J Fuse</li> <li>• 30 kA rms symmetrical, 600V maximum when protected by a maximum 800 A fuse</li> <li>• 30 kA rms symmetrical, 600V maximum when protected by a maximum 800 A circuit breaker</li> </ul>
351	<ul style="list-style-type: none"> <li>• 69 kA rms symmetrical, 600V maximum when protected by a maximum 600 A Class J Fuse</li> <li>• 30 kA rms symmetrical, 600V maximum when protected by a maximum 1000 A fuse</li> <li>• 30 kA rms symmetrical, 600V maximum when protected by a maximum 1000 A circuit breaker</li> </ul>
480	<ul style="list-style-type: none"> <li>• 69 kA rms symmetrical, 600V maximum when protected by a maximum 800 A Class L Fuse</li> <li>• 30 kA rms symmetrical, 600V maximum when protected by a maximum 1200 A fuse</li> <li>• 30 kA rms symmetrical, 600V maximum when protected by a maximum 1200 A circuit breaker</li> </ul>

**Table 4 - Combination Enclosed Soft Starters with SMC-3 Controllers and Circuit Breakers**

Controller Rating [A]	Short Circuit Current Rating
3...25	• 5 kA rms symmetrical, 600V maximum
30...135	• 10 kA rms symmetrical, 600V maximum
201...251	• 18 kA rms symmetrical, 600V maximum
317...361	• 30 kA rms symmetrical, 600V maximum
480	• 42 kA rms symmetrical, 600V maximum

**Table 5 - Combination Enclosed Soft Starters with SMC-3 Controllers and Fusible Disconnect**

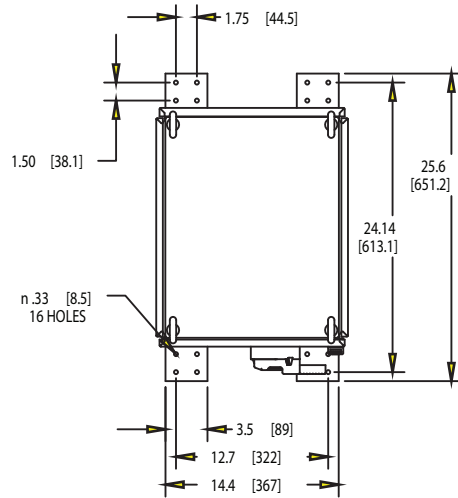
Controller Rating [A]	Short Circuit Current Rating
3	• 70 kA rms symmetrical, 600V maximum when protected by a maximum 6 A Class J Fuse
9	• 70 kA rms symmetrical, 600V maximum when protected by a maximum 15 A Class J Fuse
16	• 70 kA rms symmetrical, 600V maximum when protected by a maximum 30 A Class J Fuse
25	• 70 kA rms symmetrical, 600V maximum when protected by a maximum 50 A Class J Fuse
30...37	• 70 kA rms symmetrical, 600V maximum when protected by a maximum 60 A Class J Fuse
43	• 70 kA rms symmetrical, 600V maximum when protected by a maximum 90 A Class J Fuse
60	• 70 kA rms symmetrical, 600V maximum when protected by a maximum 125 A Class J Fuse
85	• 70 kA rms symmetrical, 600V maximum when protected by a maximum 175 A Class J Fuse
108	• 70 kA rms symmetrical, 600V maximum when protected by a maximum 200 A Class J Fuse
135	• 70 kA rms symmetrical, 600V maximum when protected by a maximum 250 A Class J Fuse
201	<ul style="list-style-type: none"> <li>• 70 kA rms symmetrical, 600V maximum when protected by a maximum 350 A Class J Fuse</li> <li>• 18 kA rms symmetrical, 600V maximum when protected by a maximum 600 A fuse</li> </ul>
251	<ul style="list-style-type: none"> <li>• 70 kA rms symmetrical, 600V maximum when protected by a maximum 400 A Class J Fuse</li> <li>• 18 kA rms symmetrical, 600V maximum when protected by a maximum 700 A fuse</li> </ul>
317	<ul style="list-style-type: none"> <li>• 69 kA rms symmetrical, 600V maximum when protected by a maximum 500 A Class J Fuse</li> <li>• 30 kA rms symmetrical, 600V maximum when protected by a maximum 800 A fuse</li> </ul>
361	<ul style="list-style-type: none"> <li>• 69 kA rms symmetrical, 600V maximum when protected by a maximum 600 A Class J Fuse</li> <li>• 30 kA rms symmetrical, 600V maximum when protected by a maximum 1000 A fuse</li> </ul>
480	<ul style="list-style-type: none"> <li>• 69 kA rms symmetrical, 600V maximum when protected by a maximum 800 A Class L Fuse</li> <li>• 42 kA rms symmetrical, 600V maximum when protected by a maximum 1200 A fuse</li> </ul>

## Approximate Dimensions

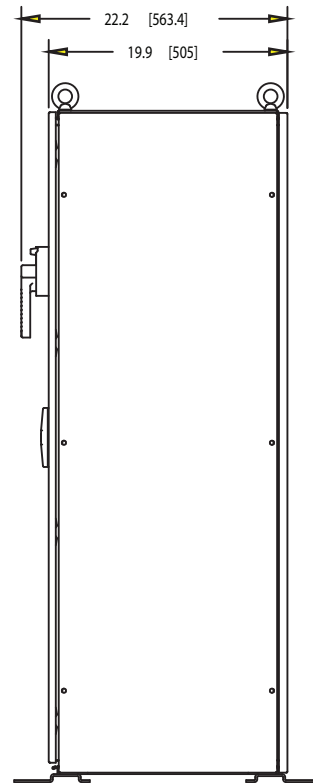
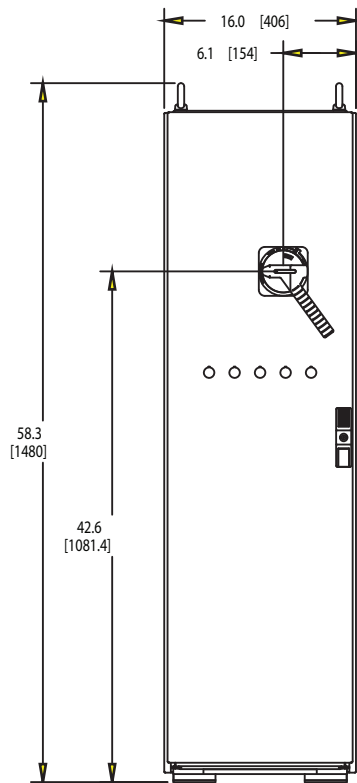
Examples given in this section include standard options. Use ProposalWorks to obtain dimensions for Smart Motor Controllers with all available options. ProposalWorks is available from <http://www.rockwellautomation.com/global/e-tools/overview.page>.

Dimensions are in inches (millimeters) unless otherwise noted. Dimensions are not to be used for manufacturing purposes.

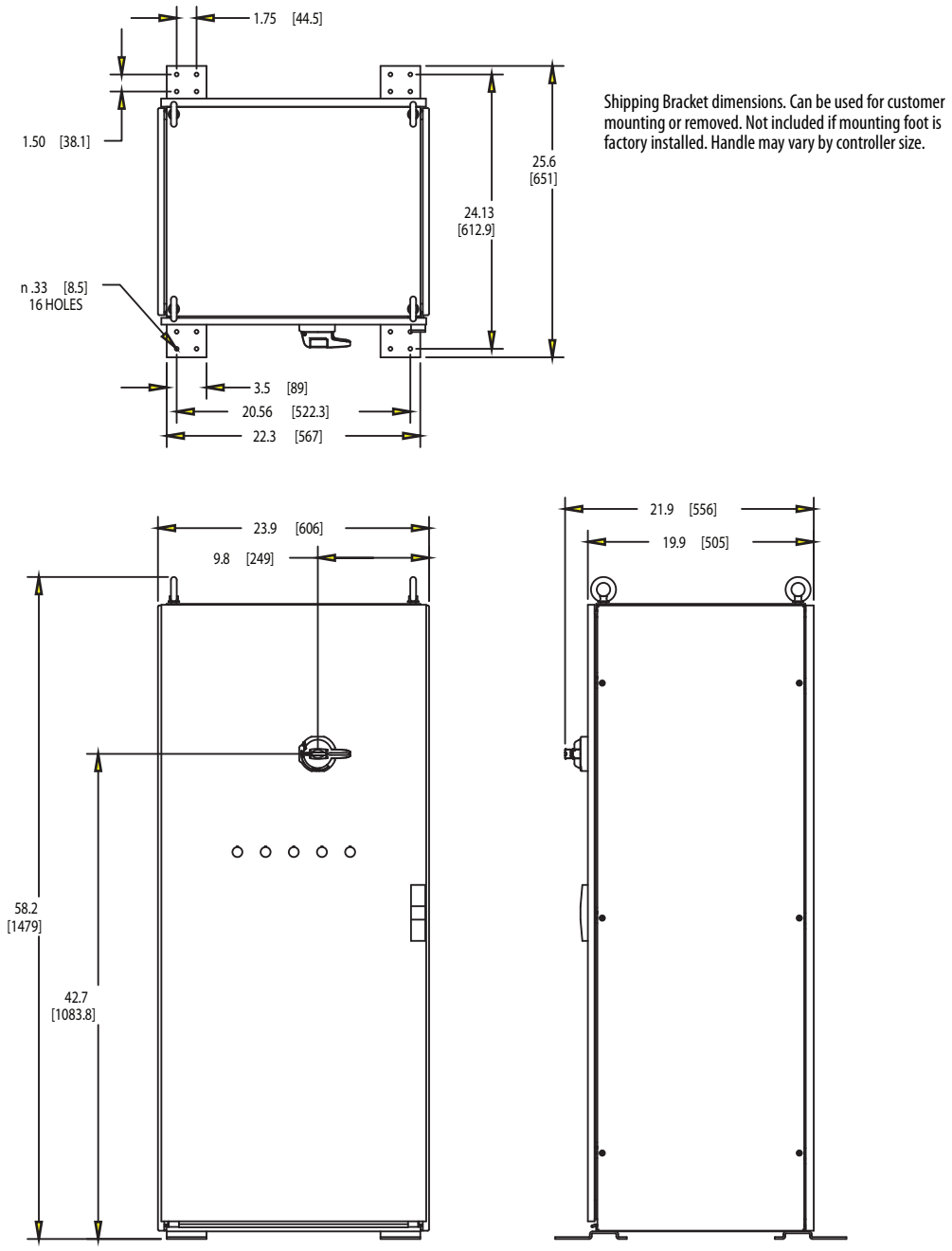
**Figure 9 - Enclosure for SMC Controllers—1400 mm x 400 mm x 500 mm**



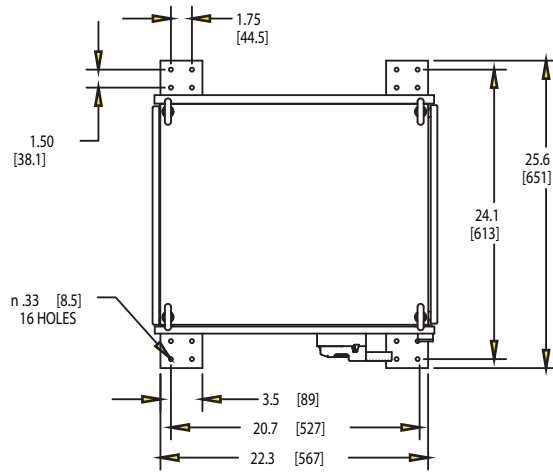
Shipping Bracket dimensions. Can be used for customer mounting or removed. Not included if mounting foot is factory installed. Handle may vary by controller size.



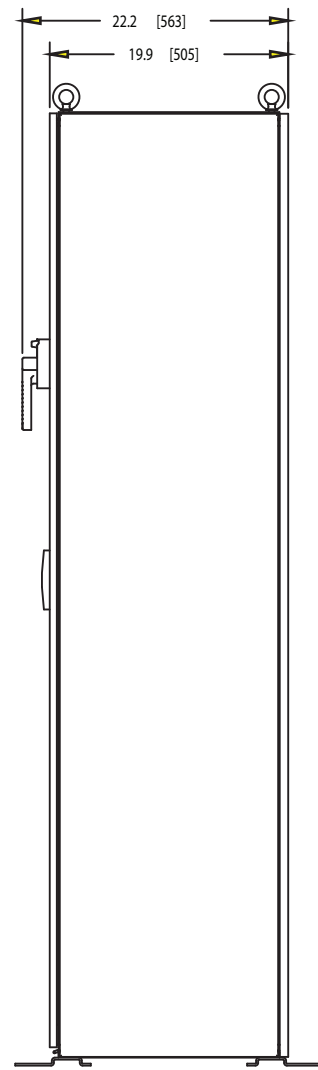
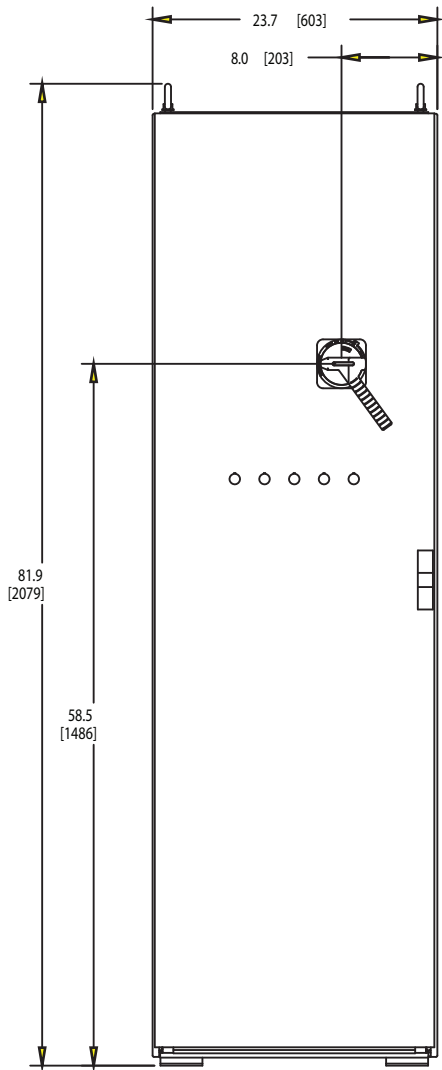
**Figure 10 - Enclosure for SMC Controllers—1400 mm x 600 mm x 500 mm**



**Figure 11 - Enclosure for SMC Controllers—2000 mm x 600 mm x 500 mm**



Shipping Bracket dimensions. Can be used for customer mounting or removed. Not included if mounting foot is factory installed. Handle may vary by controller size.

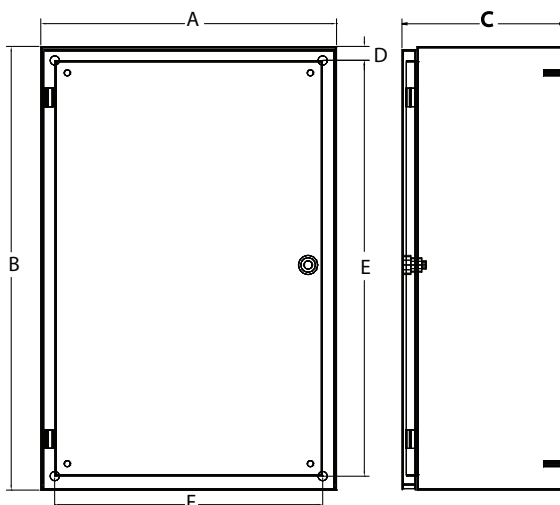


**Table 6 - SMC-3 Controller Enclosure Dimensions**

Non-combination Controllers		Combination Controllers				
		With Fusible Disconnect		With Circuit Breaker		
Cat. No.	Dimensions (H x W x D)	Cat. No.	Dimensions (H x W x D)	Cat. No.	Dimensions (H x W x D)	
150C-D10J...	1400 x 400 x 500 (55.1 x 15.7 x 19.7) see <a href="#">Figure 9</a>	152C-D10J...	1400 x 400 x 500 (55.1 x 15.7 x 19.7) see <a href="#">Figure 9</a>	153C-D10J...	1400 x 400 x 500 (55.1 x 15.7 x 19.7) see <a href="#">Figure 9</a>	
150C-D13J...		152C-D13J...		153C-D13J...		
150C-D20J...		152C-D20J...	153C-D20J...			
150C-D25J...		152C-D25J...	153C-D25J...			
150C-D31J...		152C-D31J...	2000 x 600 x 500 (78.7 x 23.6 x 19.7) see <a href="#">Figure 11</a>	153C-D31J...		2000 x 600 x 500 (78.7 x 23.6 x 19.7) see <a href="#">Figure 11</a>
150C-D36J...		152C-D36J...	153C-D36J...			
150C-D48J...		152C-D48J...	153C-D48J...			

**Figure 12 - Wall-mounted Enclosure Dimensions**

- Wall-mounted controllers do not include Snap-together wiring



**Table 7 - Wall-mounted Enclosed SMC-3 Controllers**

Controller Rating [A]	Bulletin	With Option	Dimensions in inches (mm)					
			A (Width)	B (Height)	C (Depth)	D (Mtg. Dim.)	E (Mtg. Dim.)	F (Mtg. Dim.)
<b>Non-Combination Controller</b>								
3...37	150	—	8 (203)	12 (305)	6 (152)	2.44 (62)	10.43 (265)	3.0 (76)
		6P	12 (305)	12 (305)	6 (152)	2.41 (61)	10.43 (265)	7.0 (178)
43...85	150	—	8 (203)	14 (356)	8 (203)	2.44 (62)	12.40 (315)	3.0 (76)
		6P	16 (406)	14 (356)	8 (203)	4.38 (111)	12.40 (315)	7.0 (178)
<b>Combination Controller</b>								
3...37	152H, 153H	Any	16 (406)	14 (356)	8 (203)	4.38 (111)	12.40 (315)	7.0 (178)
43	152H	Any	16 (406)	14 (356)	8 (203)	4.38 (111)	12.40 (315)	7.0 (178)
	153H	Any	16 (406)	24 (610)	10 (254)	0.75 (19)	22.5 (572)	14.5 (368)
60	152H, 153H	Any	16 (406)	24 (610)	9 (229)	0.75 (19)	22.5 (572)	14.5 (368)
	152H	Any	24 (610)	30 (762)	12 (305)	0.75 (19)	28.5 (724)	22.5 (572)
85	152H	Any <sup>(1)</sup>	16 (406)	24 (610)	9 (229)	0.75 (19)	22.5 (572)	14.5 (368)
		Any <sup>(2)</sup>	24 (610)	30 (762)	12 (305)	0.75 (19)	28.5 (724)	22.5 (572)
	153H	Any	16 (406)	24 (610)	9 (229)	0.75 (19)	22.5 (572)	14.5 (368)

(1) Rating 20 Hp @208V, 25 Hp @240V, 50 Hp @ 480V, 60 Hp @ 600V.

(2) Rating 25 Hp @208V, 30 Hp @240V, 60 Hp @ 480V, 75 Hp @ 600V.

## Enclosed SMC Flex Controllers

### Catalog Number Explanation

Examples given in this section are not intended to be used for product selection. Use ProposalWorks to configure Smart Motor Controllers. ProposalWorks is available from <http://www.rockwellautomation.com/global/e-tools/overview.page>.

Controllers Rated 90...1250 A

**152F** - **D10** **J** **B** **D** - **J20** - **3**  
 a b c d e f g

a	
Bulletin Number	
Code	Description
150F	SMC Flex Non-combination
152F	SMC Flex Combination with Fusible Disconnect
153F	SMC Flex Combination with Circuit Breaker

b	
Controller Rating [A]	
Code	Description
D10	108
D13	135
D20	201
D25	251
D31	317
D36	361
D48	480
D62	625
D78	780
D97	970
E12	1250

c	
Enclosure Type	
Code	Description
J	1/12/3R (3R)

d	
Input Line Voltage	
Code	Description
H	200...208V AC, 3-Phase, 50/60 Hz
A	230V AC, 3-Phase, 50/60 Hz
B	400...460V AC, 3-Phase, 50/60 Hz
C	500...575V AC, 3-Phase, 50/60 Hz

e	
Control Voltage	
Code	Description
D	120V AC
J	24V AC
A	240V AC
EJ	24V DC

f			
Fuse Clip/Circuit Breaker (CB)— Combination Controllers Only			
Code	Description	Code	Description
J20	200 A, Class J	D12	125 A, CB
J40	400 A, Class J	D17	175 A, CB
J60	600 A, Class J	D25	250 A, CB
L80	800 A, Class L	D40	400 A, CB
L12	1200 A, Class L	D60	600 A, CB
L16	1600 A, Class L	D80	800 A, CB
D16	160 A, DIN	E12	1200 A, CB
D25	250 A, DIN		
D40	400 A, DIN		
D63	630 A, DIN		
D80	800 A, DIN		
N12	1250 A, DIN		

g					
Options					
Code	Description	Code	Description	Code	Description
1	Start-Stop Push-Button	6XP	1 Factor Additional VA	20C	Communication: Control Net
1E	On - Off Push-Button	6YP	2 Factor Additional VA	20P	Communication: ProfiBUS
3	Hand-Off-Auto Selector Switch	8L	Line-Mounted Protective Module	PC	Pump Control
3E	On - Off Selector Switch	8M	Load-Mounted Protective Module	BC	Braking Control
3H	Hand-Auto Selector Switch	8B	Line- and Load-Mounted Protective Modules	TB10	10 Spare Terminal Blocks
3B	SMC-Off-Bypass Selector Switch	BP	Bypass Starter	TB20	20 Spare Terminal Blocks
13	Start-Stop Push-Button & Hand-Off-Auto Selector Switch	NB	NEMA Bypass Starter	P10	100 mm Mounting foot, sheet metal
4_ _ _ _ <sup>(1)</sup>	Pilot Lights	IC	Isolation Contactor	P20	200 mm Mounting foot, sheet metal
5_ _ _ _ <sup>(1)</sup>	Push to test Pilot Lights	NI	NEMA Isolation Contactor	F10	100 mm Mounting foot, high-strength plastic
1XA	Soft Stop Push Button	989	1 N.O 1 N.C Auxiliary Contact on Circuit Breaker or Fusible Disconnect Switch	F20	200 mm Mounting foot, high-strength plastic
1XB	Pump Stop Push Button	HC3	SMC Flex Human Interface Module-Door mounted type 4/12	416	Plug-in Control Relay 2-pole
1XC	Slow Speed Push Button	20S	Communication: RS-485	417	Plug-in Control Relay On Delay
1XD	Brake Push Button	20D	Communication: DeviceNet	418	Plug-in Control Relay Off Delay
6P	Control Circuit Transformer	20E	Communication: Ethernet/IP		

(1) Pilot Lights require configuration. See [Table 8](#)

**Table 8 - Pilot Light Configuration**

**4**      **R**      **G**      **X**      **W**  
 a            b            c            d            e

a		b		c		d		e	
Option		ON Indication		OFF Indication		Fault Indication		Power ON Indication	
Code	Description	Code	Description	Code	Description	Code	Description	Code	Description
4	Pilot Light	R	108	R	108	A	Amber	W	White
5	Push to test Pilot Lights	G	135	G	135	X	none		
		X	none	X	none				

Note: The final character in the configuration string cannot be "X".

*Controllers Rated 5...85 A*

- Note: Controllers rated 5...85 A do not include snap-together wiring.

**152H**    -    **F85**    **F**    **BD**    **D**    -    **B**    -    **8L**  
 a            b            c            d            e            f            g

a		b		c		d	
Bulletin Number		Controller Rating [A]		Enclosure Type		Input Line Voltage, 120V AC Control Voltage	
Code	Description	Code	Description	Code	Description	Code	Description
150	Non-combination solid-state controller	F5	5 A	F	NEMA Type 4/12 (IP65)	HD	200...208V AC, 3-Phase, 50/60 Hz
150B	Non-combination solid-state controller with isolation Contactor	F25	25 A			AD	230V AC, 3-Phase, 50/60 Hz
152H	Combination solid-state controller with fusible disconnect	F43	43 A			BD	400...460V AC, 3-Phase, 50/60 Hz
152B	Combination solid-state controller with fusible disconnect and isolation contactor	F60	60 A			CD	500...575V AC, 3-Phase, 50/60 Hz
153H	Combination solid-state controller with circuit breaker	F85	85 A				
153B	Combination solid-state controller with circuit breaker and isolation contactor						

e		f									
Control Options		Horsepower (Combination Controllers only)									
Code	Description	Code	Rating	Code	Rating	Code	Rating	Code	Rating	Code	Rating
Blank	Standard	33	0.5	39	5	45	30	51	125	59	400
B	Pump Control	34	0.75	40	7.5	46	40	52	150	60	450
D	Braking Control	35	1	41	10	47	50	54	200	61	500
		36	1.5	42	15	48	60	56	250	62	600
		37	2	43	20	49	75	57	300	63	700
		38	3	44	25	50	100	58	350	65	800
										67	1000

g	
Options	
See <a href="#">page 25</a>	



<b>g</b>			
<b>Options<sup>(1)</sup></b>			
<b>Code</b>	<b>Description</b>	<b>Code</b>	<b>Description</b>
1	Start-Stop Push Button	6PM	2000VA Control Circuit Transformer (fused primary and secondary)
1F	Start-Stop Push Button with Hand-Off-Auto Selector Switch	8L	Line-Mounted Protective Module
1XA <sup>(2)</sup>	Soft Stop Push Button	8M	Load-Mounted Protective Module
1XB <sup>(2)</sup>	Pump Stop Push Button	8B	Line- and Load-Mounted Protective Modules
1XC <sup>(2)</sup>	Slow Speed Push Button	HC3	Human Interface Module; Door-mounted, Full Numeric (Type 4/12)
1XD <sup>(2)</sup>	Brake Push Button	20S	Communication: RS-485
1XE <sup>(2)</sup>	Accu-Stop/Slow Speed Push Button	20D	Communication: DeviceNet
3	Hand-Off-Auto Selector Switch	20E	Communication: Ethernet/IP
3B <sup>(3)</sup>	SMC-Off-Bypass Selector Switch	20C	Communication: Control Net
4G	Transformer Pilot Light - Green Power On Indicator	20P	Communication: ProfIBUS
4R	Transformer Pilot Light - Red Run Indicator	98	N.O. disconnect auxiliary mounted on operating mechanism
5R	Push-to-Test Pilot Light - Red Run Indicator	99	N.C. disconnect auxiliary mounted on operating mechanism
6P	Control Circuit Transformer (fused primary and secondary)	98X	Internal N.O. circuit breaker auxiliary
6PX	Additional 100VA Control Circuit Transformer (fused primary and secondary)	99X	Internal N.C. circuit breaker auxiliary
6PK	1000VA Control Circuit Transformer (fused primary and secondary)	SEL	Service Entrance Label
6PL	1600VA Control Circuit Transformer (fused primary and secondary)	OPS	Oil Pump Starter; Bulletin 509 NEMA Size 1starter and Bulletin 592 solid-state overload relay

- (1) Load-side MOVs are not available with Pump and Braking options, or on delta-connected motors.
- (2) Option push buttons are available only when the corresponding option module is selected.
- (3) Bypass contactor and overload are not included with this option. You must add -NB or -BP to the catalog string to add these devices.

### Product Selection

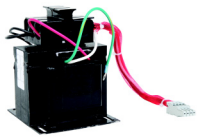
- NOTE: Refer to and use Selection Wizards to ensure the SMC controller selection meets the application requirements. For additional assistance, please visit [www.ab.com](http://www.ab.com) or contact Industrial Controls Technical Support by email at [raictechsupport@ra.rockwell.com](mailto:raictechsupport@ra.rockwell.com) or by phone at 440-646-5800.

You can configure enclosed soft starters by selecting a power center, snap-together kits, transformers, and/or any applicable controller accessories.

### Power Centers

Motor Current [A]	Rated Hp [Hp]				Non-combination Starters Cat. No.	Combination Starters Cat. No.	
	200...208V	230V	400...460V	500...575V		with Fusible Disconnect	with Circuit Breaker
108	30	40	75	100	150F-D10JCD	152F-D10JCD-J20	153F-D10JCD-D17
135	40	50	100	125	150F-D13JCD	152F-D13JCD-J20	153F-D13JCD-D25
201	60	75	150	150	150F-D20JCD	152F-D20JCD-J40	153F-D20JCD-D25
251	75	100	200	200	150F-D25JCD	152F-D25JCD-J40	153F-D25JCD-D40
317	100	125	250	300	150F-D31JCD	152F-D31JCD-J60	153F-D31JCD-D40
361	125	150	300	350	150F-D36JCD	152F-D36JCD-J60	153F-D36JCD-D80
480	150	200	400	500	150F-D48JCD	152F-D48JCD-L80	153F-D48JCD-D80

### Transformers

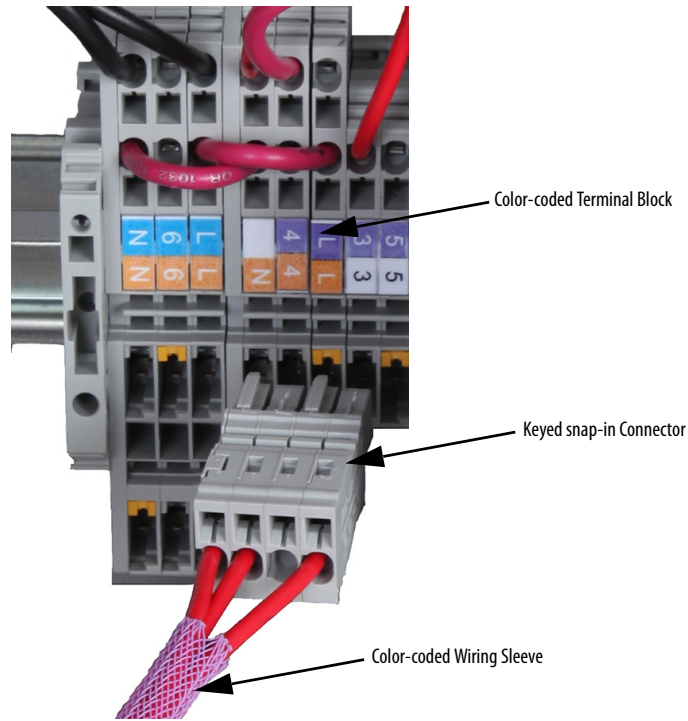
	Controller Current [A]	Capacity	VA	208V x 120V Cat. No.	240V x 120V Cat. No.	460V x 120V Cat. No.	575V x 120V Cat. No.
	108, 135, 251, 317, 361, 480	Standard	200	1497-HD200	1497-AD200	1497-BD200	1497-CD200
		Extra Capacity	350	1497-HD350	1497-AD350	1497-BD350	1497-CD350
		Extra Capacity	500	1497-HD500	1497-AD500	1497-BD500	1497-CD500

### Snap-together Wiring

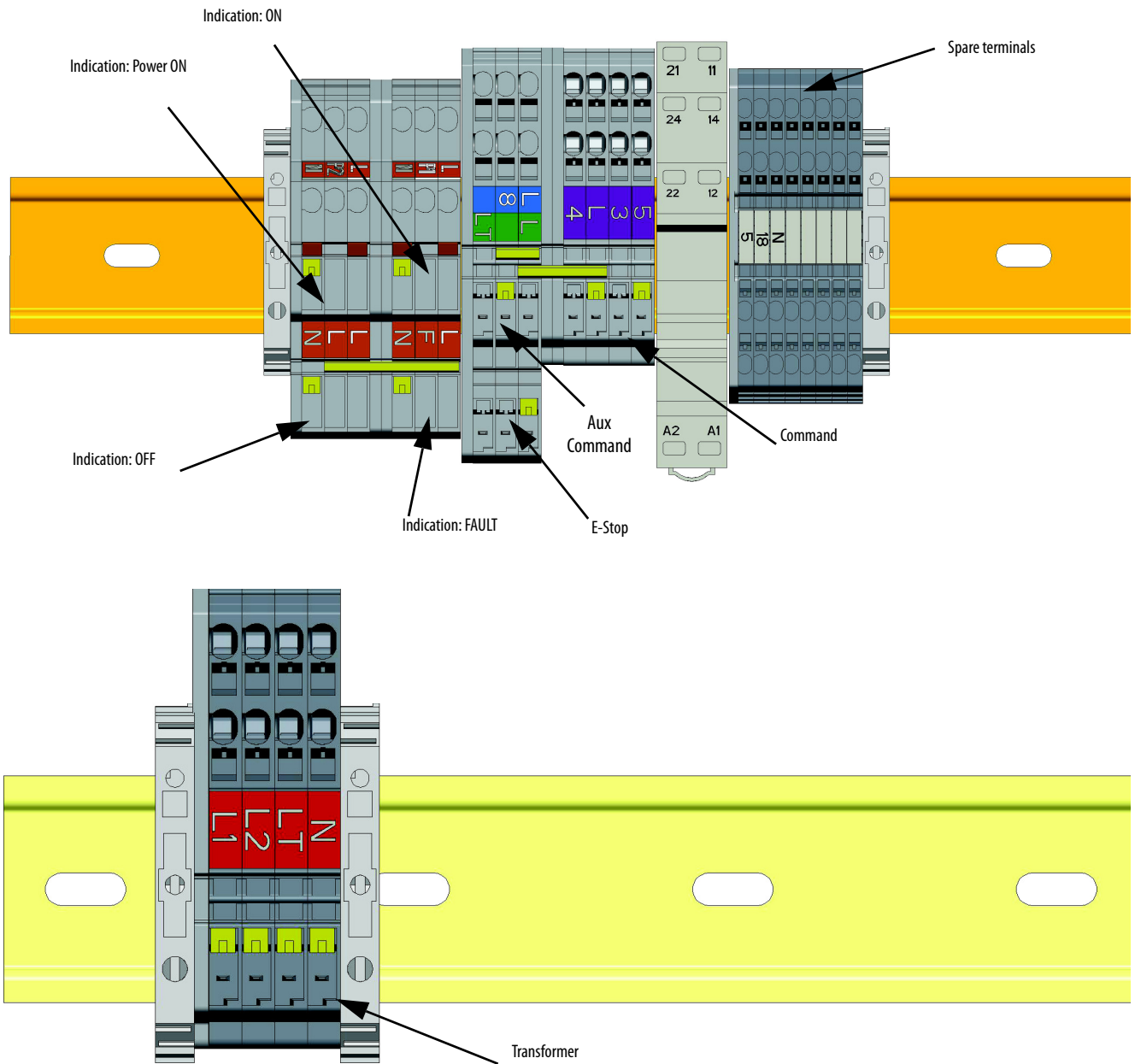
- Note: This option applies only to controllers with current ratings greater than 90 A.

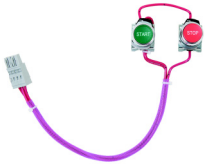
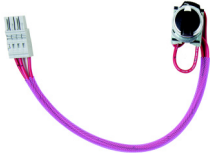

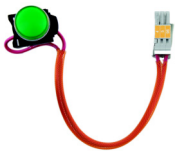



Component wiring is color coded by function. The wiring sleeve color corresponds to a colored label on the terminal block. Keyed connectors snap these components into the terminal block. This greatly reduced assembly time is ideal for the quick installation of pilot devices and control circuit transformers, and significantly reduces wiring errors. [Figure 31](#) shows an example of this feature.


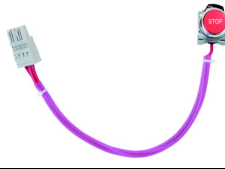
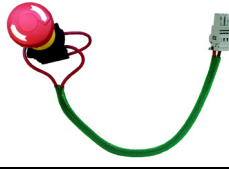
**Figure 13 - Snap-together Wiring Example**



**Figure 14 - SMC Flex Controller Snap-together Wiring**



	Description	Cat. No.
	Start-Stop Snap-together Push Button Kit, Metal Bezel 22.5 mm	198-SSPBM
	3-Position Hand-Off-Auto Snap-together Selector Switch Kit Metal Bezel 22.5 mm	198-3SSM
	2-Position On-Off or Hand-Auto Snap-together Selector Switch Kit Metal Bezel 22.5 mm	198-2SSM
	Red Universal LED Pilot Light Snap-together Kit 22.5 mm	198-RUPL
	Green Universal LED Pilot Light Snap-together Kit 22.5 mm	198-GUPL
	White or Amber Universal LED Pilot Light Snap-together Kit 22.5 mm	198-WUPL
	Red Universal LED Push to Test Pilot Light Snap-together Kit 22.5 mm	198-RUPPLM
	Green Universal LED Push to Test Pilot Light Snap-together Kit 22.5 mm	198-GUPPLM

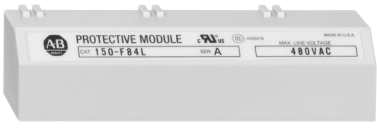
	Description	Cat. No.
	White or Amber Universal LED Push to Test Pilot Light Kit Snap-together 22.5 mm	198-WUPPLM
	Stop Push Button Snap-together Kit N.C. 22.5 mm, Momentary	198-PBM
	Emergency Stop Snap-together Kit	198-ESP

**Accessories**

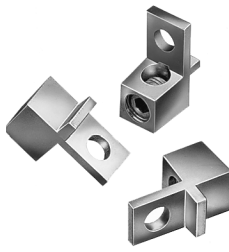
**Protective Modules**

The same protective module mounts on the line or load side of the SMC Flex controller. Use of protective modules is highly recommended. For applications requiring both line and load side protection, you must order two protective modules.

- Note: You must not place protective modules on the load (motor) side of an SMC Flex controller when using an inside-the-delta connection or with pump, braking, or linear speed acceleration/deceleration control.

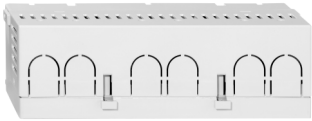
	Current Rating [A]	Description	Cat. No.
	5...85	480V Protective Module	150-F84
90...520	150-F84L		
5...85	600V Protective Module	150-F86	
90...520		150-F86L	

**Terminal Lug Kits**

	Current Range [A] <sup>(1)</sup>	Wire Size Range	Total No. of Terminal Lugs Possible Each Side		Pkg. Qty.	Cat. No.
			Line Side	Load Side		
	108...135 <sup>(2)</sup>	#6...250 MCM AWG 16 mm <sup>2</sup> ...120 mm <sup>2</sup>	3	3	3	199-LF1
	201...251 <sup>(2)</sup>		6	6	3	
	317...480 <sup>(2)</sup>	#4...500 MCM AWG 25 mm <sup>2</sup> ...240 mm <sup>2</sup>	6	6	3	199-LG1
	625...780	2/0...500 MCM	3	3	3	100-DL630
	970	4/0...500 MCM	6	6	3	100-DL680
	1250 <sup>(3)</sup>	2/0...500 MCM	6	6	3	100-DL630
		4/0...500 MCM	3	3	3	100-DL680



- 5...85 A units have box lugs standard. No additional lugs are required.
- When a multi-conductor lug is required, refer to the User Manual for appropriate lug catalog number.
- The 1250 A device requires (1) 100-DL630 and (1) 100-DL860 per connection.

**IEC Line or Load Terminal Covers**

	Description <sup>(1)</sup>	Current Range [A]	Pkg. Quantity	Cat. No.
	<ul style="list-style-type: none"> <li>• Dead front protection</li> <li>• IP2X finger safe when used with 250 MCM cable</li> </ul>	108...135	1	150-TC1
		201...251	1	150-TC2
	<ul style="list-style-type: none"> <li>• Dead front protection</li> <li>• IP2X finger safe when used with 500 MCM cable</li> </ul>	317...480	1	150-TC3



(1) 5...85 A units have terminal guards as standard. No additional terminal guards are required.

**Human Interface Modules (HIMs) and Communication Modules**

Description		Cat. No.		
	Hand-held HIM	LCD display, Full Numeric Keypad <sup>(2)</sup> 20-HIM-A3		
		LCD display, Programmer only 20-HIM-A5		
	Door-mounted HIM	20-HIM-C3S		
		Remote (panel mount) LCD Display, Full Numeric Keypad (version of Cat. No. 20-HIM-A6) 20-HIM-C5S		
	HIM Interface Cables	HIM Interface Cable, 1 m (39 in)	20-HIM-H10	
		Cable Kit (Male-Female) 0.33 m (1.1 ft)	1202-H03	
		Cable Kit (Male-Female) 1 m (3.3 ft)	1202-H10	
		Cable Kit (Male-Female) 3 m (9.8 ft)	1202-H30	
		Cable Kit (Male-Female) 9 m (29.5 ft)	1202-H90	
		DPI/SCANport™ One to Two Port Splitter Cable	1203-S03	
Description (IP30/Type 1)		For Use With	Cat. No.	
	Communication Modules (installed into the physical space assigned to control module expansion port 9; connected to DPI port 4 via cable)	SMC Flex	RS485 DF1 Communication Adapter	20-COMM-S
			PROFIBUS™ DP Communication Adapter	20-COMM-P
			ControlNet™ Communication Adapter (Coax)	20-COMM-C
			Interbus™ Communication Adapter	20-COMM-I
			Modbus/TCP Communication Adapter	20-COMM-M
			DeviceNet™ Communication Adapter	20-COMM-D
			EtherNet/IP™ Communication Adapter	20-COMM-E
			HVAC Communication Adapter	20-COMM-H
	ControlNet™ Communication Adapter (Fiber)	20-COMM-Q		
Connected Components Workbench™ Software		Windows 7/2000/XP/Vista	Available for download at <a href="http://www.rockwellautomation.com">www.rockwellautomation.com</a>	
DriveExecutive™	Programming Software		9303-4DTE01ENE	
DriveTools™ SP <sup>(1)</sup>			9303-4DTS01ENE	
AnaCANda™ RS-232 to DPI	PC Interface	Serial	1203-SSS <sup>(3)</sup>	
DPI to USB		USB	1203-USB <sup>(4)</sup>	

- (1) Includes DriveExecutive™ and DriveObserver™
- (2) Requires a 20-HIM-H10 cable to connect to the SMC Flex.
- (3) Includes Cat. No. 1203-SFC and 1202-C10 cables.
- (4) Includes Cat. No. 20-HIM-H10 and 22-HIM-H10 cables.

## Enclosure Accessories

	Description	Construction Material	For Use With Enclosure Width	Cat. No.
	<b>Perforated frame strip</b> • Mounting rail for door or panel installation	Sheet steel	400 mm	198-DS400
			600 mm	198-DS600
			1000 mm	198-DS1000
	<b>Enclosure mounting foot</b> • 100 mm height	High-strength plastic	400 mm	198-FB100 A
			600 mm	198-FB100B
			1000 mm	198-FB100C
	<b>Enclosure mounting foot</b> • 200 mm height	Sheet steel	400 mm	198-PL100 A
			600 mm	198-PL100B
			1000 mm	198-PL100C
		Sheet steel	400 mm	198-PL200 A
			600 mm	198-PL200B
			1000 mm	198-PL200C

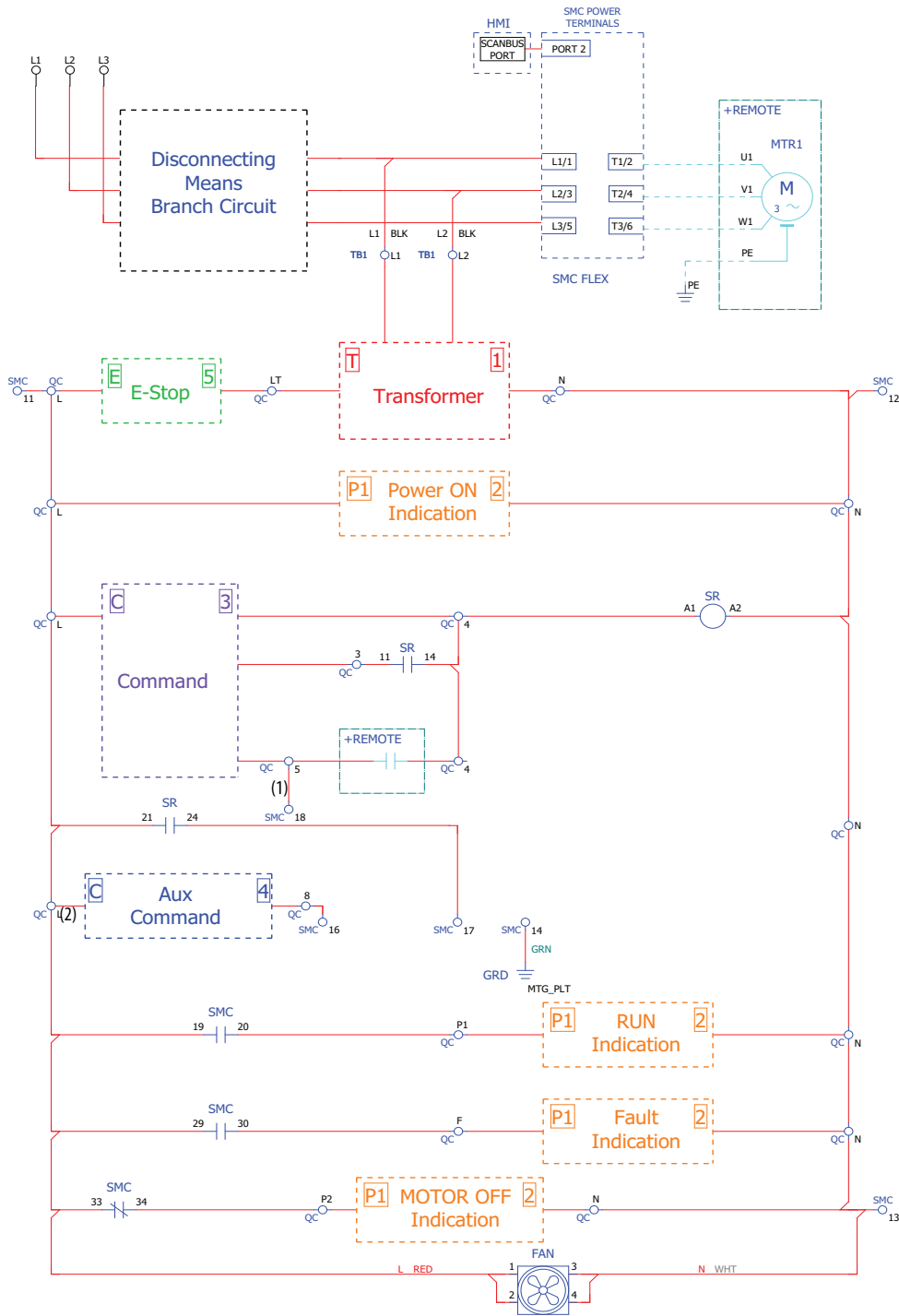
## Wiring Diagrams

The diagrams in this section illustrate basic SMC controller wiring. For specific wiring diagrams, please consult your local Rockwell Automation sales office or Allen-Bradley distributor.

### Notes:

- Use 75 °C Cu wire only
- Line fuses are customer supplied on controllers with factory-supplied disconnect switch. Refer to NEC when selecting short-circuit protection.
- Additional control circuit overcurrent protection is required for non-combination starters. Refer to NEC.

**Figure 15 - SMC Flex Controller Basic Wiring Diagram**



- (1) Add jumper from terminal block 18 to terminal block 5 when using DPI (jumper is included in the rail in terminal block 18).
- (2) Remove the pre-installed yellow jumper between terminal block L and terminal block 8 when using an auxiliary command device

- For wiring diagrams for snap-together kits, please see the following figures:
  - Command kits: [Figure 16](#), [Figure 17](#), and [Figure 18](#); Auxiliary Command kits: [Figure 19](#), [Figure 20](#), and [Figure 21](#)
  - Emergency Stop (E-Stop) kit: [Figure 22](#)
  - Indication kit: [Figure 23](#)
  - Transformer kit: [Figure 24](#)
- SMC Flex controller factory pre-programmed parameters; Parameter 109: AUX4CFG set to NORMAL NC TO NORMAL NC.
- For units with DPI, set Logic Mask (Parameter 87) to 0010 0100.



Wiring Diagrams for Snap-together Kits

Figure 16 - Start-Stop Command Kit Wiring Diagram

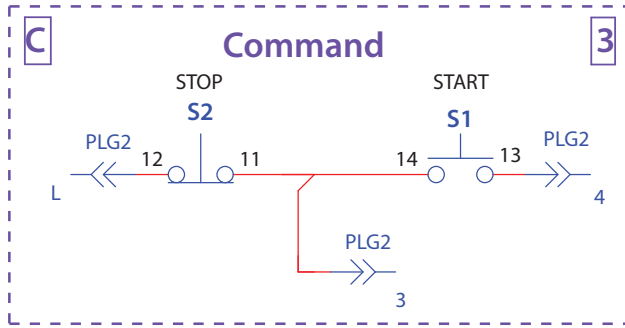


Figure 17 - Hand-OFF-Auto Command Kit Wiring Diagram

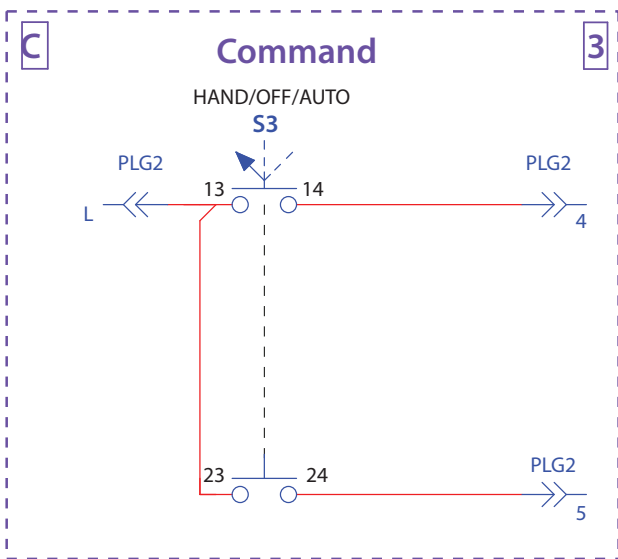


Figure 18 - Hand-OFF-Auto and Start-Stop Command Kit Wiring Diagram

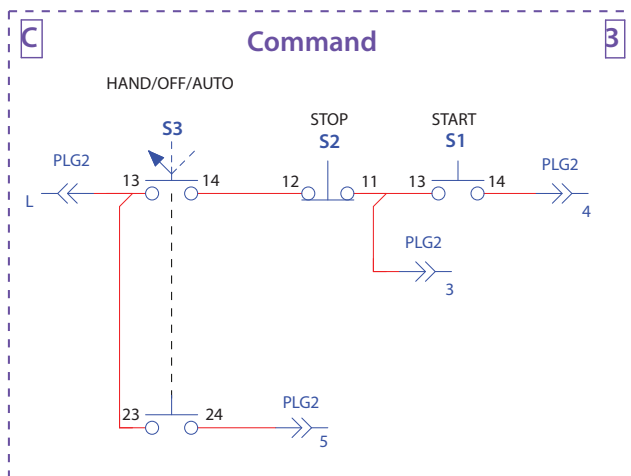


Figure 19 - Soft Stop Auxiliary Command Kit Wiring Diagram

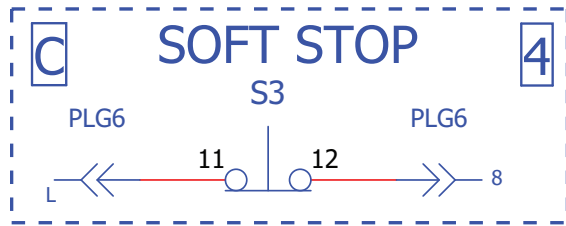


Figure 20 - Pump Stop Auxiliary Command Kit Wiring Diagram

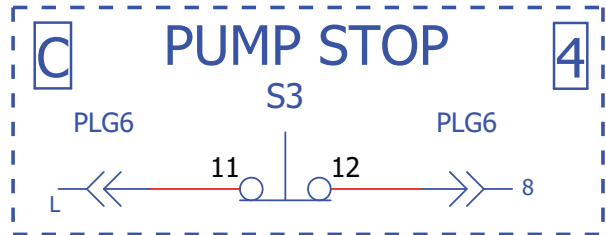


Figure 21 - Brake Auxiliary Command Kit Wiring Diagram

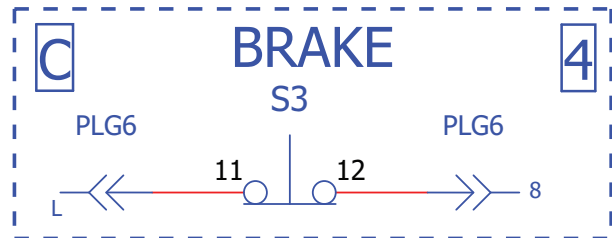
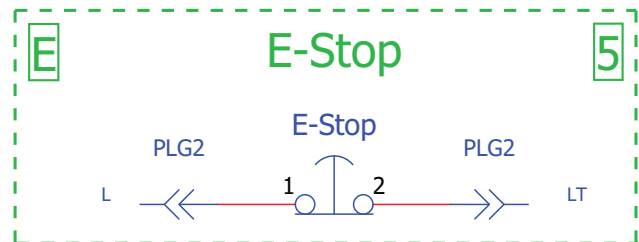
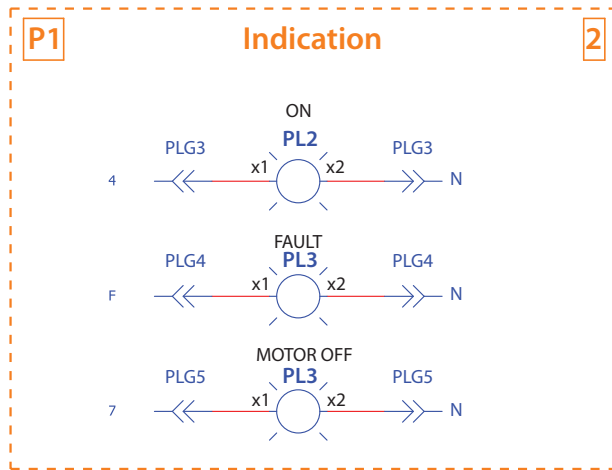


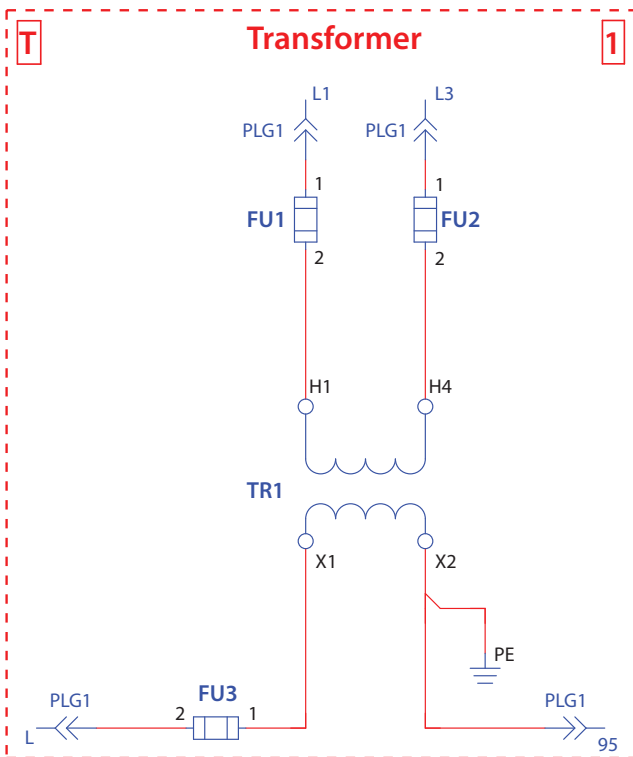
Figure 22 - E-Stop Kit Wiring Diagram



**Figure 23 - Indication Kit Wiring Diagram**



**Figure 24 - Transformer Kit Wiring Diagram**



**Standards Compliance and Certifications**

Standards Compliance—Open Controllers	Certifications—Open Controllers
UL 508	cULus Listed (Open Type) (File No. E96956, Guides NMFT, NMFT7)
CSA C22.2 No.14	CSA Certified (File No. LR 1234)
EN/IEC 60947-1	CE Marked
EN/IEC 60947-4-2	CCC Certified

Standards Compliance—Enclosed Controllers	Certifications—Enclosed Controllers
UL 508A	cULus Listed

## Short-circuit Current Ratings

Determining the short circuit current ratings (SCCR) of a complex system can be very challenging, especially if proper considerations are not made during the initial stages of the component selection process.

The SCCRs in this section provide coordinated high fault branch circuit for enclosed soft starters and is based on compliance to IEC and UL standards. For comprehensive SCCR information, please consult the Rockwell Automation Global SCCR Selection Tool at <http://www.rockwellautomation.com/global/support/global-sccr.page>.

- Note: Ratings provided are for standard options only; does not include bypass or isolation contactor configurations

**Table 9 - Non-combination Enclosed Soft Starters with SMC Flex Controllers**

Controller Rating [A]	Short Circuit Current Rating
5	<ul style="list-style-type: none"> <li>• 70 kA rms symmetrical, 600V maximum when protected by a maximum 10 A Class J Fuse</li> <li>• 5 kA rms symmetrical, 600V maximum when protected by a maximum 20 A fuse</li> <li>• 5 kA rms symmetrical, 600V maximum when protected by a maximum 20 A circuit breaker</li> </ul>
25	<ul style="list-style-type: none"> <li>• 70 kA rms symmetrical, 600V maximum when protected by a maximum 50 A Class J Fuse</li> <li>• 5 kA rms symmetrical, 600V maximum when protected by a maximum 100 A fuse</li> <li>• 5 kA rms symmetrical, 600V maximum when protected by a maximum 100 A circuit breaker</li> </ul>
43	<ul style="list-style-type: none"> <li>• 70 kA rms symmetrical, 600V maximum when protected by a maximum 90 A Class J Fuse</li> <li>• 10 kA rms symmetrical, 600V maximum when protected by a maximum 150 A fuse</li> <li>• 10 kA rms symmetrical, 600V maximum when protected by a maximum 150 A circuit breaker</li> </ul>
60	<ul style="list-style-type: none"> <li>• 70 kA rms symmetrical, 600V maximum when protected by a maximum 125 A Class J Fuse</li> <li>• 10 kA rms symmetrical, 600V maximum when protected by a maximum 225 A fuse</li> <li>• 10 kA rms symmetrical, 600V maximum when protected by a maximum 225 A circuit breaker</li> </ul>
85	<ul style="list-style-type: none"> <li>• 70 kA rms symmetrical, 600V maximum when protected by a maximum 175 A Class J Fuse</li> <li>• 10 kA rms symmetrical, 600V maximum when protected by a maximum 300 A fuse</li> <li>• 10 kA rms symmetrical, 600V maximum when protected by a maximum 300 A circuit breaker</li> </ul>
108	<ul style="list-style-type: none"> <li>• 70 kA rms symmetrical, 600V maximum when protected by a maximum 200 A Class J Fuse</li> <li>• 10 kA rms symmetrical, 600V maximum when protected by a maximum 400 A fuse</li> <li>• 10 kA rms symmetrical, 600V maximum when protected by a maximum 300 A circuit breaker</li> </ul>
135	<ul style="list-style-type: none"> <li>• 70 kA rms symmetrical, 600V maximum when protected by a maximum 225 A Class J Fuse</li> <li>• 10 kA rms symmetrical, 600V maximum when protected by a maximum 500 A fuse</li> <li>• 10 kA rms symmetrical, 600V maximum when protected by a maximum 400 A circuit breaker</li> </ul>
201	<ul style="list-style-type: none"> <li>• 70 kA rms symmetrical, 600V maximum when protected by a maximum 350 A Class J Fuse</li> <li>• 18 kA rms symmetrical, 600V maximum when protected by a maximum 600 A fuse</li> <li>• 18 kA rms symmetrical, 600V maximum when protected by a maximum 600 A circuit breaker</li> </ul>
251	<ul style="list-style-type: none"> <li>• 70 kA rms symmetrical, 600V maximum when protected by a maximum 400 A Class J Fuse</li> <li>• 18 kA rms symmetrical, 600V maximum when protected by a maximum 700 A fuse</li> <li>• 18 kA rms symmetrical, 600V maximum when protected by a maximum 700 A circuit breaker</li> </ul>
317	<ul style="list-style-type: none"> <li>• 69 kA rms symmetrical, 600V maximum when protected by a maximum 500 A Class J Fuse</li> <li>• 30 kA rms symmetrical, 600V maximum when protected by a maximum 800 A fuse</li> <li>• 30 kA rms symmetrical, 600V maximum when protected by a maximum 800 A circuit breaker</li> </ul>
361	<ul style="list-style-type: none"> <li>• 69 kA rms symmetrical, 600V maximum when protected by a maximum 600 A Class J Fuse</li> <li>• 30 kA rms symmetrical, 600V maximum when protected by a maximum 1000 A fuse</li> <li>• 30 kA rms symmetrical, 600V maximum when protected by a maximum 1000 A circuit breaker</li> </ul>
480	<ul style="list-style-type: none"> <li>• 69 kA rms symmetrical, 600V maximum when protected by a maximum 800 A Class J Fuse</li> <li>• 30 kA rms symmetrical, 600V maximum when protected by a maximum 1200 A fuse</li> <li>• 30 kA rms symmetrical, 600V maximum when protected by a maximum 1200 A circuit breaker</li> </ul>
625	<ul style="list-style-type: none"> <li>• 74 kA rms symmetrical, 600V maximum when protected by a maximum 1600 A Class L Fuse</li> <li>• 42 kA rms symmetrical, 600V maximum when protected by a maximum 1600 A fuse</li> <li>• 42 kA rms symmetrical, 600V maximum when protected by a maximum 1600 A circuit breaker</li> </ul>
780	<ul style="list-style-type: none"> <li>• 74 kA rms symmetrical, 600V maximum when protected by a maximum 1600 A Class L Fuse</li> <li>• 42 kA rms symmetrical, 600V maximum when protected by a maximum 1600 A fuse</li> <li>• 42 kA rms symmetrical, 600V maximum when protected by a maximum 2000 A circuit breaker</li> </ul>

**Table 10 - Combination Enclosed Soft Starters with SMC Flex Controllers and Circuit Breakers**

Controller Rating [A]	Short Circuit Current Rating
5...25	<ul style="list-style-type: none"> <li>5 kA rms symmetrical, 600V maximum</li> </ul>
43...135	<ul style="list-style-type: none"> <li>10 kA rms symmetrical, 600V maximum</li> </ul>
201...251	<ul style="list-style-type: none"> <li>18 kA rms symmetrical, 600V maximum</li> </ul>
317A...361	<ul style="list-style-type: none"> <li>30 kA rms symmetrical, 600V maximum</li> </ul>
480	<ul style="list-style-type: none"> <li>42 kA rms symmetrical, 600V maximum</li> </ul>
625...780	<ul style="list-style-type: none"> <li>42 kA rms symmetrical, 600V maximum</li> </ul>

**Table 11 - Combination Enclosed Soft Starters with SMC Flex Controllers and Fusible Disconnect**

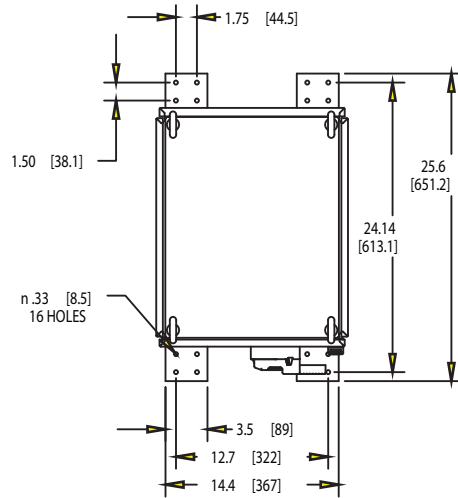
Controller Rating [A]	Short Circuit Current Rating
5	<ul style="list-style-type: none"> <li>70 kA rms symmetrical, 600V maximum when protected by a maximum 10 A Class J Fuse</li> <li>5 kA rms symmetrical, 600V maximum when protected by a maximum 20 A Class J Fuse</li> </ul>
25	<ul style="list-style-type: none"> <li>70 kA rms symmetrical, 600V maximum when protected by a maximum 50 A Class J Fuse</li> <li>5 kA rms symmetrical, 600V maximum when protected by a maximum 100 A Class J Fuse</li> </ul>
43	<ul style="list-style-type: none"> <li>70 kA rms symmetrical, 600V maximum when protected by a maximum 90 A Class J Fuse</li> <li>10 kA rms symmetrical, 600V maximum when protected by a maximum 150 A Class J Fuse</li> </ul>
60	<ul style="list-style-type: none"> <li>70 kA rms symmetrical, 600V maximum when protected by a maximum 125 A Class J Fuse</li> <li>10 kA rms symmetrical, 600V maximum when protected by a maximum 225 A Class J Fuse</li> </ul>
85	<ul style="list-style-type: none"> <li>70 kA rms symmetrical, 600V maximum when protected by a maximum 175 A Class J Fuse</li> <li>10 kA rms symmetrical, 600V maximum when protected by a maximum 300 A Class J Fuse</li> </ul>
108	<ul style="list-style-type: none"> <li>70 kA rms symmetrical, 600V maximum when protected by a maximum 200 A Class J Fuse</li> <li>10 kA rms symmetrical, 600V maximum when protected by a maximum 400 A Class J Fuse</li> </ul>
135	<ul style="list-style-type: none"> <li>70 kA rms symmetrical, 600V maximum when protected by a maximum 225 A Class J Fuse</li> <li>10 kA rms symmetrical, 600V maximum when protected by a maximum 500 A Class J Fuse</li> </ul>
201	<ul style="list-style-type: none"> <li>70 kA rms symmetrical, 600V maximum when protected by a maximum 350 A Class J Fuse</li> <li>18 kA rms symmetrical, 600V maximum when protected by a maximum 600 A Class J Fuse</li> </ul>
251	<ul style="list-style-type: none"> <li>70 kA rms symmetrical, 600V maximum when protected by a maximum 400 A Class J Fuse</li> <li>18 kA rms symmetrical, 600V maximum when protected by a maximum 700 A Class J Fuse</li> </ul>
317	<ul style="list-style-type: none"> <li>69 kA rms symmetrical, 600V maximum when protected by a maximum 500 A Class J Fuse</li> <li>30 kA rms symmetrical, 600V maximum when protected by a maximum 800 A fuse</li> </ul>
361	<ul style="list-style-type: none"> <li>69 kA rms symmetrical, 600V maximum when protected by a maximum 600 A Class J Fuse</li> <li>30 kA rms symmetrical, 600V maximum when protected by a maximum 1000 A fuse</li> </ul>
480	<ul style="list-style-type: none"> <li>69 kA rms symmetrical, 600V maximum when protected by a maximum 800 A Class L Fuse</li> <li>42 kA rms symmetrical, 600V maximum when protected by a maximum 1200 A fuse</li> </ul>
625	<ul style="list-style-type: none"> <li>74 kA rms symmetrical, 600V maximum when protected by a maximum 1600 A Class L Fuse</li> <li>42 kA rms symmetrical, 600V maximum when protected by a maximum 1600 A fuse</li> </ul>
780	<ul style="list-style-type: none"> <li>74 kA rms symmetrical, 600V maximum when protected by a maximum 1600 A Class L Fuse</li> <li>42 kA rms symmetrical, 600V maximum when protected by a maximum 1600 A fuse</li> </ul>

## Approximate Dimensions

Examples given in this section include standard options. Use ProposalWorks to obtain dimensions for Smart Motor Controllers with all available options. ProposalWorks is available from <http://www.rockwellautomation.com/global/e-tools/overview.page>.

Dimensions are in millimeters (inches) unless otherwise noted. Dimensions are not to be used for manufacturing purposes.

**Figure 25 - Enclosure for SMC Controllers—1400 mm x 400 mm x 500 mm**



Shipping Bracket dimensions. Can be used for customer mounting or removed. Not included if mounting foot is factory installed. Handle may vary by controller size.

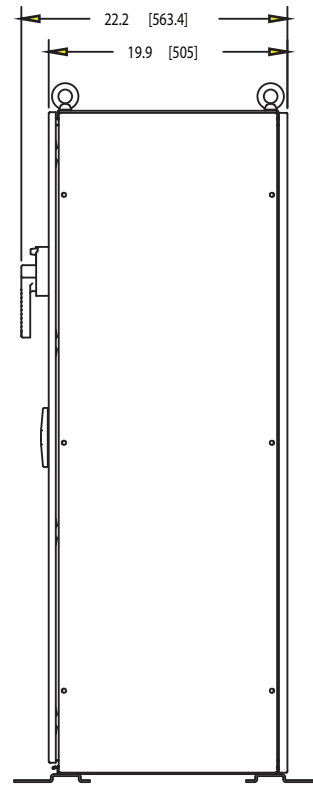
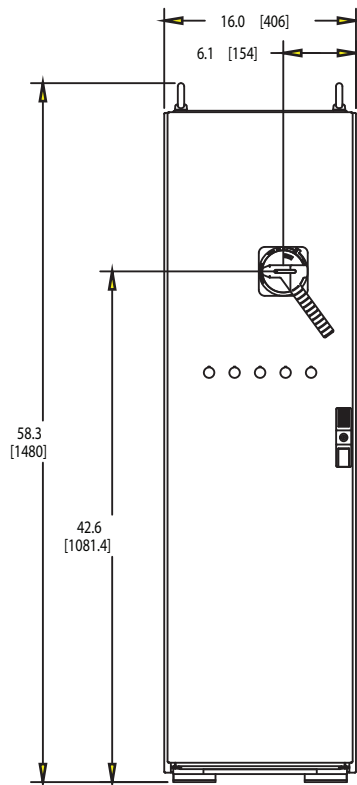
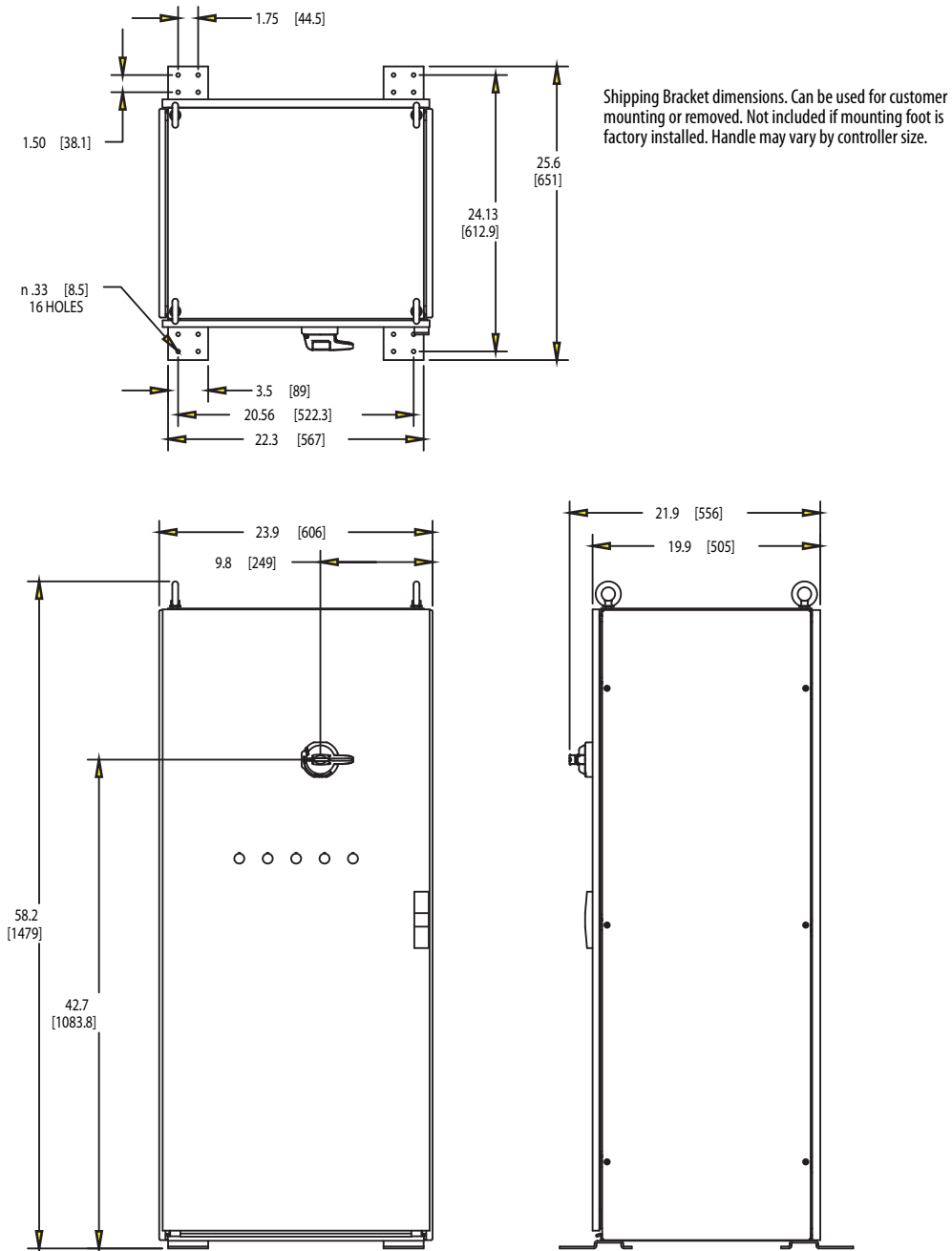
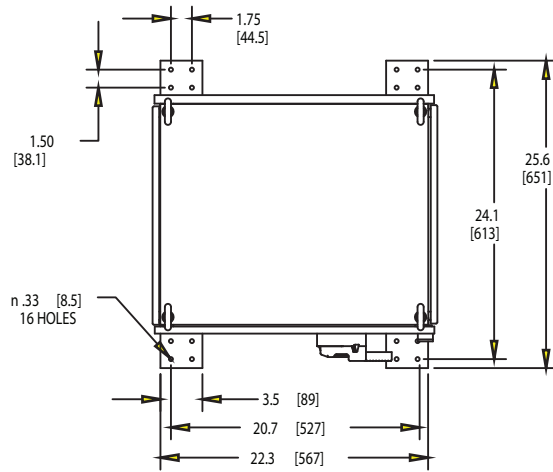


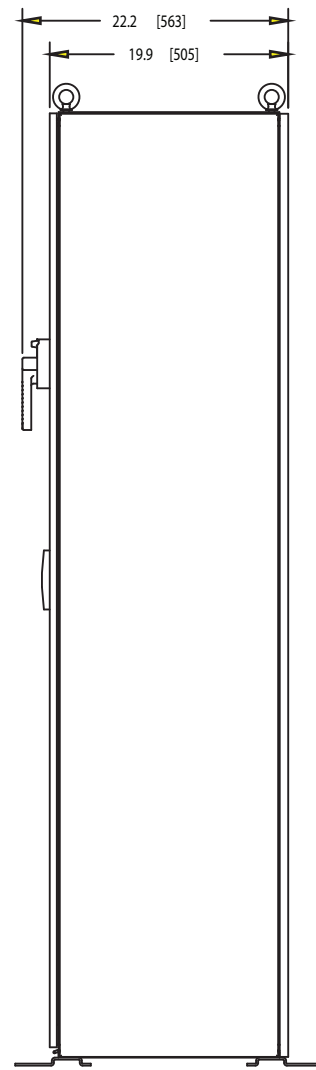
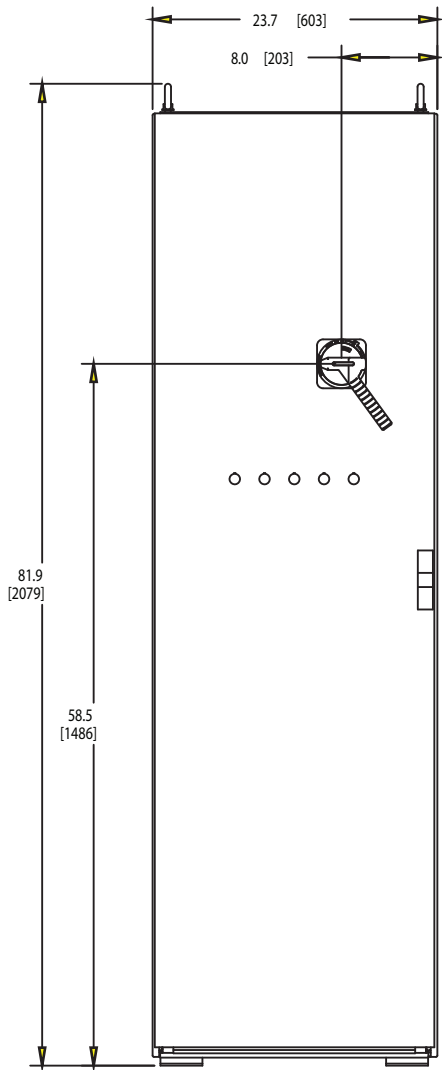
Figure 26 - Enclosure for SMC Controllers—1400 mm x 600 mm x 500 mm



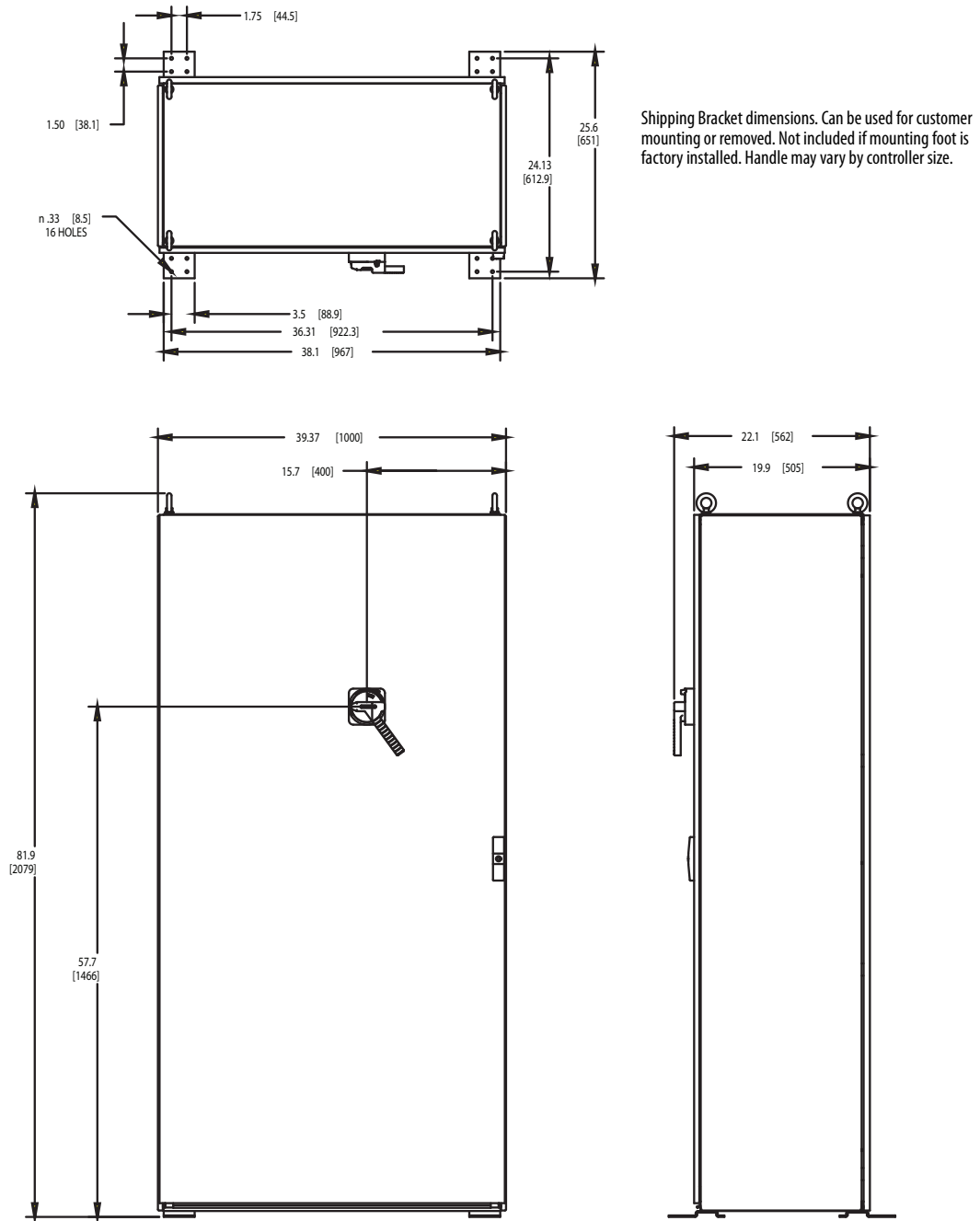
**Figure 27 - Enclosure for SMC Controllers—2000 mm x 600 mm x 500 mm**



Shipping Bracket dimensions. Can be used for customer mounting or removed. Not included if mounting foot is factory installed. Handle may vary by controller size.

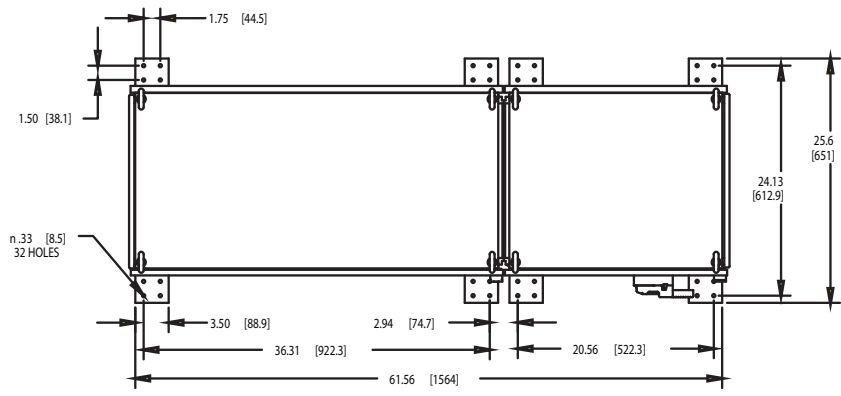


**Figure 28 - Enclosure for SMC Controllers—2000 mm x 1000 mm x 500 mm**

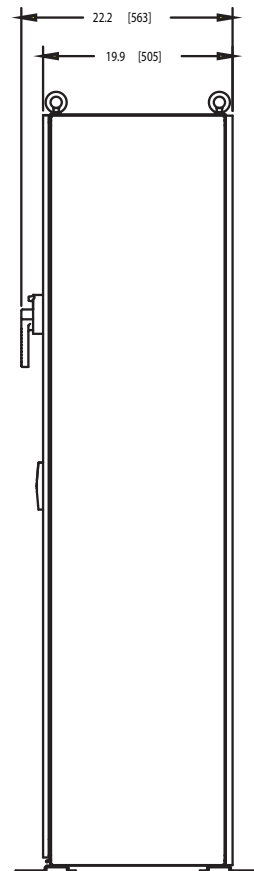
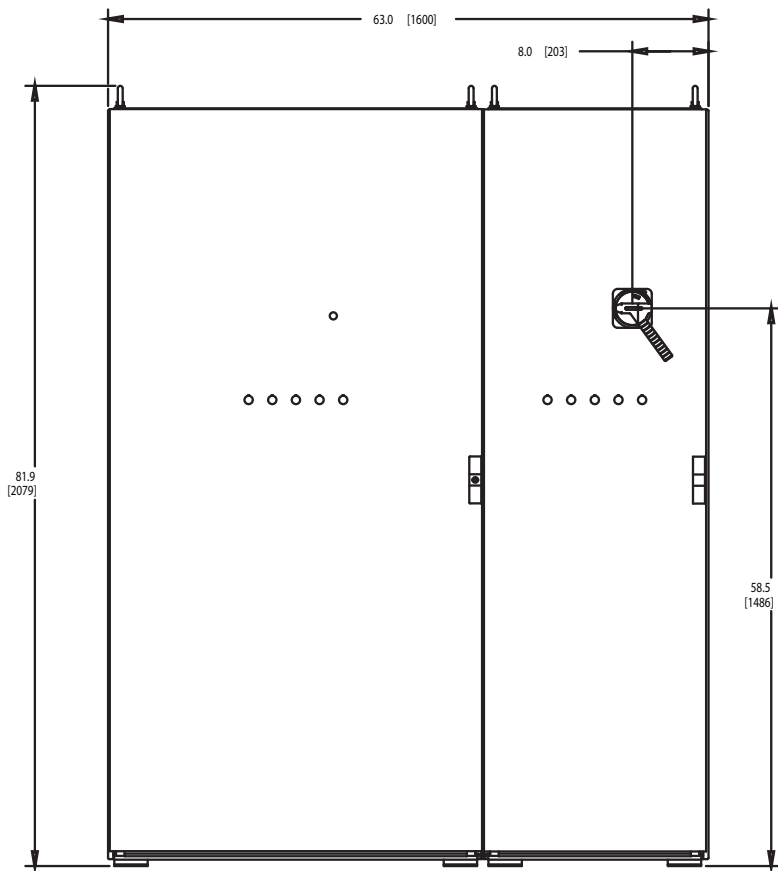




**Figure 29 - Enclosure for SMC Controllers—2000 mm x 1600 mm x 500 mm**



Shipping Bracket dimensions. Can be used for customer mounting or removed. Not included if mounting foot is factory installed. Handle may vary by controller size.



**Table 12 - SMC Flex Controller Enclosure Dimensions**

Non-combination Controllers		Combination Controllers			
		With Fusible Disconnect		With Circuit Breaker	
Cat. No.	Dimensions (H x W x D)	Cat. No.	Dimensions (H x W x D)	Cat. No.	Dimensions (H x W x D)
150F-D10J...	1400 x 400 x 500 (55.1 x 15.7 x 19.7) see <a href="#">Figure 25</a>	152F-D10J...	1400 x 400 x 500 (55.1 x 15.7 x 19.7) see <a href="#">Figure 25</a>	153F-D10J...	1400 x 400 x 500 (55.1 x 15.7 x 19.7) see <a href="#">Figure 25</a>
150F-D13J...		152F-D13J...		153F-D13J...	
150F-D20J...		152F-D20J...	153F-D20J...		
150F-D25J...		152F-D25J...	153F-D25J...		
150F-D31J...		152F-D31J...	153F-D31J...		
150F-D36J...		152F-D36J...	153F-D36J...		
150F-D48J...	2000 x 1000 x 500 (78.7 x 39.4 x 19.7) see <a href="#">Figure 28</a>	152F-D48J...	2000 x 600 x 500 (78.7 x 23.6 x 19.7) see <a href="#">Figure 27</a>	153F-D48J...	2000 x 600 x 500 (78.7 x 23.6 x 19.7) see <a href="#">Figure 27</a>
150F-D62J...		152F-D62J...		153F-D62J...	
150F-D78J...		152F-D78J...	153F-D78J...		

**Figure 30 - Wall-mounted Enclosure Dimensions**

- Wall-mounted controllers do not include Snap-together wiring

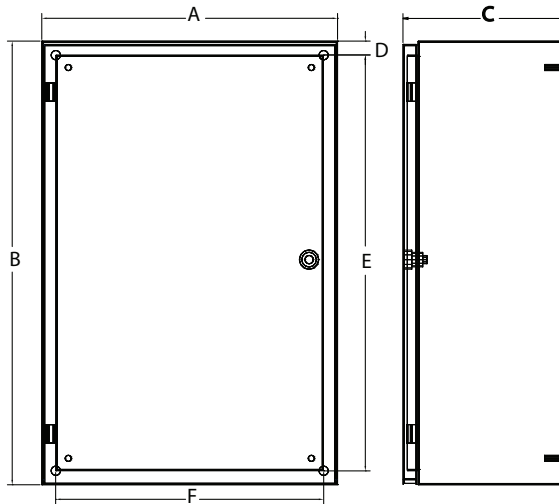


Table 13 - Wall-mounted Enclosed SMC Flex Controllers

Controller Rating [A]	Bulletin	With Option	Dimensions in inches (mm)						
			A (Width)	B (Height)	C (Depth)	D (Mtg. Dim.)	E (Mtg. Dim.)	F (Mtg. Dim.)	
<b>Non-Combination Controller</b>									
5...43	150	—	16 (406)	24 (610)	10 (254)	0.75 (19)	22.5 (572)	14.5 (368)	
		6_ <sup>(1)</sup>	16 (406)	24 (610)	10 (254)		22.5 (572)	14.5 (368)	
		BP	24 (610)	30 (762)	12 (305)		28.5 (724)	22.5 (572)	
	150, 150B	NB, NI	24 (610)	30 (762)	12 (305)		28.5 (724)	22.5 (572)	
	150	NB, 6P_ <sup>(2)</sup>	30 (762)	38 (965)	14 (356)		36.5 (927)	28.5 (724)	
60	150	—	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_	24 (610)	30 (762)	12 (305)		28.5 (724)	22.5 (572)	
		NB	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	—	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_ <sup>(2)</sup>	24 (610)	30 (762)	12 (305)		28.5 (724)	22.5 (572)	
	150, 150B	NB, NI, 6P_ <sup>(2)</sup>	30 (762)	38 (965)	14 (356)		36.5 (927)	28.5 (724)	
<b>Combination Controller</b>									
5...25	152H, 152B, 153H, 153B	—	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, 152B, 153H, 153B	—	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	—	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, 153H, 153B	NI, NB	30 (762)	38 (965)	14 (356)		36.5 (927)	28.5 (724)	
85	153H, 153B	—	16 (406)	24 (610)	10 (254)	0.75 (19)	22.5 (572)	14.5 (368)	
	152H, 152B	—	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)	
	152H, 152B, 153B	BP, NB, NI	30 (762)	38 (965)	14 (356)		36.5 (927)	28.5 (724)	

(1) Extra capacity transformer may require a larger enclosure; consult your local Rockwell Automation sales office or Allen-Bradley distributor.

(2) 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.

## Enclosed SMC-50 Controllers

### Catalog Number Explanation

Examples given in this section are not intended to be used for product selection. Use ProposalWorks to configure Smart Motor Controllers. ProposalWorks is available from <http://www.rockwellautomation.com/global/e-tools/overview.page>.

Controllers Rated 90...1250 A

**152F** - **D10** **J** **B** **D** - **J20** - **3**  
 a b c d e f g

a	
Bulletin Number	
Code	Description
150S	SMC-50 Non-combination
152S	SMC-50 Combination with Fusible Disconnect
153S	SMC-50 Combination with Circuit Breaker

b			
Controller Rating [A]			
Solid-state		External Bypass	
Code	Description	Code	Description
C90	90	D10	108
D11	110	D13	135
D14	140	D20	201
D18	180	D25	251
D21	210	D31	317
D26	260	D36	361
D32	320	D48	480
D36	361		
D42	420		
D52	520		

c	
Enclosure Type	
Code	Description
J	1/12/3R (3R)

d	
Input Line Voltage	
Code	Description
H	200...208V AC, 3-Phase, 50/60 Hz
A	230V AC, 3-Phase, 50/60 Hz
B	400...460V AC, 3-Phase, 50/60 Hz
C	500...575V AC, 3-Phase, 50/60 Hz

e	
Control Voltage	
Code	Description
D	120V AC
J	24V AC
A	240V AC
EJ	24V DC

f			
Fuse Clip/Circuit Breaker (CB)—Combination Controllers Only			
Code	Description	Code	Description
J20	200 A, Class J	D12	125 A, CB
J40	400 A, Class J	D17	175 A, CB
J60	600 A, Class J	D25	250 A, CB
L80	800 A, Class L	D40	400 A, CB
L12	1200 A, Class L	D60	600 A, CB
L16	1600 A, Class L	D80	800 A, CB
D16	160 A, DIN	E12	1200 A, CB
D25	250 A, DIN		
D40	400 A, DIN		
D63	630 A, DIN		
D80	800 A, DIN		
N12	1250 A, DIN		

g			
Options			
Code	Description	Code	Description
1	Start-Stop Push-Button	8L	Line-Mounted Protective Module
1E	On - Off Push-Button	8M	Load-Mounted Protective Module
3	Hand-Off-Auto Selector Switch	8B	Line- and Load-Mounted Protective Modules
3E	On - Off Selector Switch	BP	Bypass Starter
3H	Hand-Auto Selector Switch	NB	NEMA Bypass Starter
3B	SMC-Off-Bypass Selector Switch	IC	Isolation Contactor
13	Start-Stop Push-Button & Hand-Off-Auto Selector Switch	NI	NEMA Isolation Contactor
4____ <sup>(1)</sup>	Pilot Lights	989	1 N.O 1 N.C Auxiliary Contact on Circuit Breaker or Fusible Disconnect Switch
5____ <sup>(1)</sup>	Push to test Pilot Lights	HC6	SMC-50 Human Interface Module-Door mounted type 4/12
1XA	Soft Stop Push Button	20S	Communication: RS-485
1XB	Pump Stop Push Button	20D	Communication: DeviceNet
1XC	Slow Speed Push Button	20E	Communication: Ethernet/IP
1XD	Brake Push Button	20C	Communication: Control Net
6P	Control Circuit Transformer	20P	Communication: ProfiBUS
6XP	1 Factor Additional VA	PC	Pump Control
6YP	2 Factor Additional VA	BC	Braking Control
		TB10	10 Spare Terminal Blocks
		TB20	20 Spare Terminal Blocks
		P10	100 mm Mounting foot, sheet metal
		P20	200 mm Mounting foot, sheet metal
		F10	100 mm Mounting foot, high-strength plastic
		F20	200 mm Mounting foot, high-strength plastic
		416	Plug-in Control Relay 2-pole
		417	Plug-in Control Relay On Delay
		418	Plug-in Control Relay Off Delay
		425	Hour Meter
		428	Ammeter
		429	Ground Fault Relay
		430	Under Voltage Relay
		22	Control Circuit Fusing
		OPS	Bul. 509 NEMA Size 1 starter and Bul. 592 solid-state overload

(1) Pilot Lights require configuration. See [Table 14](#)

**Table 14 - Pilot Light Configuration**

**4**      **R**      **G**      **X**      **W**  
 a          b          c          d          e

a		b		c		d		e	
Option		ON Indication		OFF Indication		Fault Indication		Power ON Indication	
Code	Description	Code	Description	Code	Description	Code	Description	Code	Description
4	Pilot Light	R	108	R	108	A	Amber	W	White
5	Push to test Pilot Lights	G	135	G	135	X	none		
		X	none	X	none				

Note: The final character in the configuration string cannot be "X".

**Product Selection**

- NOTE: Refer to and use Selection Wizards to ensure the SMC controller selection meets the application requirements. For additional assistance, please visit [www.ab.com](http://www.ab.com) or contact Industrial Controls Technical Support by email at [raictechsupport@ra.rockwell.com](mailto:raictechsupport@ra.rockwell.com) or by phone at 440-646-5800.

Enclosed soft starters can be user configured by selecting a power center, snap-together kits, transformers, and/or any applicable controller accessories.

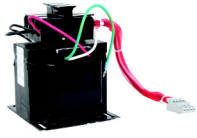
**Power Centers for SMC-50 Controllers with External Bypass**

Motor Current [A]	Rated Hp [Hp]				Non-combination Starters Cat. No.	Combination Starters Cat. No.	
	200...208V	230V	400...460V	500...575V		with Fusible Disconnect	with Circuit Breaker
90	25	30	60	75	150S-C90JCD-3B-BP	152S-C90JCD-J20-3B-BP	153S-C90JCD-D12-3B-BP
110	30	40	75	100	150S-D11JCD-3B-BP	152S-D11JCD-J20-3B-BP	153S-D11JCD-D17-3B-BP
140	40	50	100	125	150S-D14JCD-3B-BP	152S-D14JCD-J20-3B-BP	153S-D14JCD-D25-3B-BP
180	60	60	150	150	150S-D18JCD-3B-BP	152S-D18JCD-J40-3B-BP	153S-D18JCD-D25-3B-BP
210	60	75	150	150	150S-D21JCD-3B-BP	152S-D21JCD-J40-3B-BP	153S-D21JCD-D25-3B-BP
260	75	100	200	250	150S-D26JCD-3B-BP	152S-D26JCD-J40-3B-BP	153S-D26JCD-D40-3B-BP
320	100	125	250	300	150S-D32JCD-3B-BP	152S-D32JCD-J60-3B-BP	153S-D32JCD-D40-3B-BP
361	125	150	300	350	150S-D36JCD-3B-BP	152S-D36JCD-J60-3B-BP	153S-D36JCD-D80-3B-BP
420	150	150	350	400	150S-D42JCD-3B-BP	152S-D42JCD-J60-3B-BP	153S-D42JCD-D80-3B-BP
520	150	200	450	500	150S-D52JCD-3B-BP	152S-D52JCD-L80-3B-BP	153S-D52JCD-D80-3B-BP

**Power Centers for SMC-50 Controllers with Internal Bypass**

Motor Current [A]	Rated Hp [Hp]				Non-combination Starters Cat. No.	Combination Starters Cat. No.	
	200...208V	230V	400...460V	500...575V		with Fusible Disconnect	with Circuit Breaker
108	30	40	75	100	150S-D10JCD	152S-D10JCD-J20	153S-D10JCD-D17
135	40	50	100	125	150S-D13JCD	152S-D13JCD-J20	153S-D13JCD-D25
201	60	75	150	150	150S-D20JCD	152S-D20JCD-J40	153S-D20JCD-D25
251	75	100	200	200	150S-D25JCD	152S-D25JCD-J40	153S-D25JCD-D40
317	100	125	250	300	150S-D31JCD	152S-D31JCD-J60	153S-D31JCD-D40
361	125	150	300	350	150S-D36JCD	152S-D36JCD-J60	153S-D36JCD-D80
480	150	200	400	500	150S-D48JCD	152S-D48JCD-L80	153S-D48JCD-D80

### Transformers

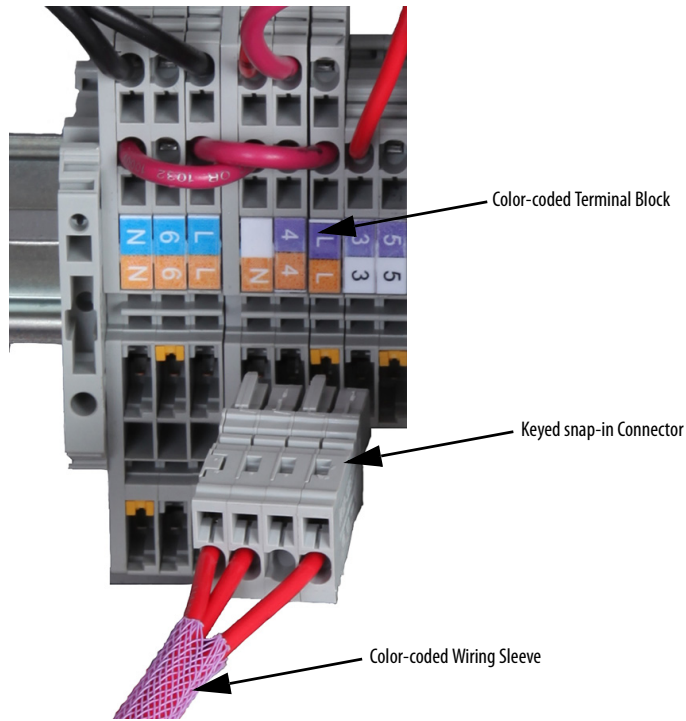
	Controller Current [A]	Capacity	VA	208V x 120V Cat. No.	240V x 120V Cat. No.	460V x 120V Cat. No.	575V x 120V Cat. No.
	90, 110, 140, 180, 210, 260, 320	Standard	350	1497-HD350	1497-AD350	1497-BD350	1497-CD350
		Extra Capacity	500	1497-HD500	1497-AD500	1497-BD500	1497-CD500
	361, 420, 520	Standard	500	1497-HD500	1497-AD500	1497-BD500	1497-CD500

### Snap-together Wiring

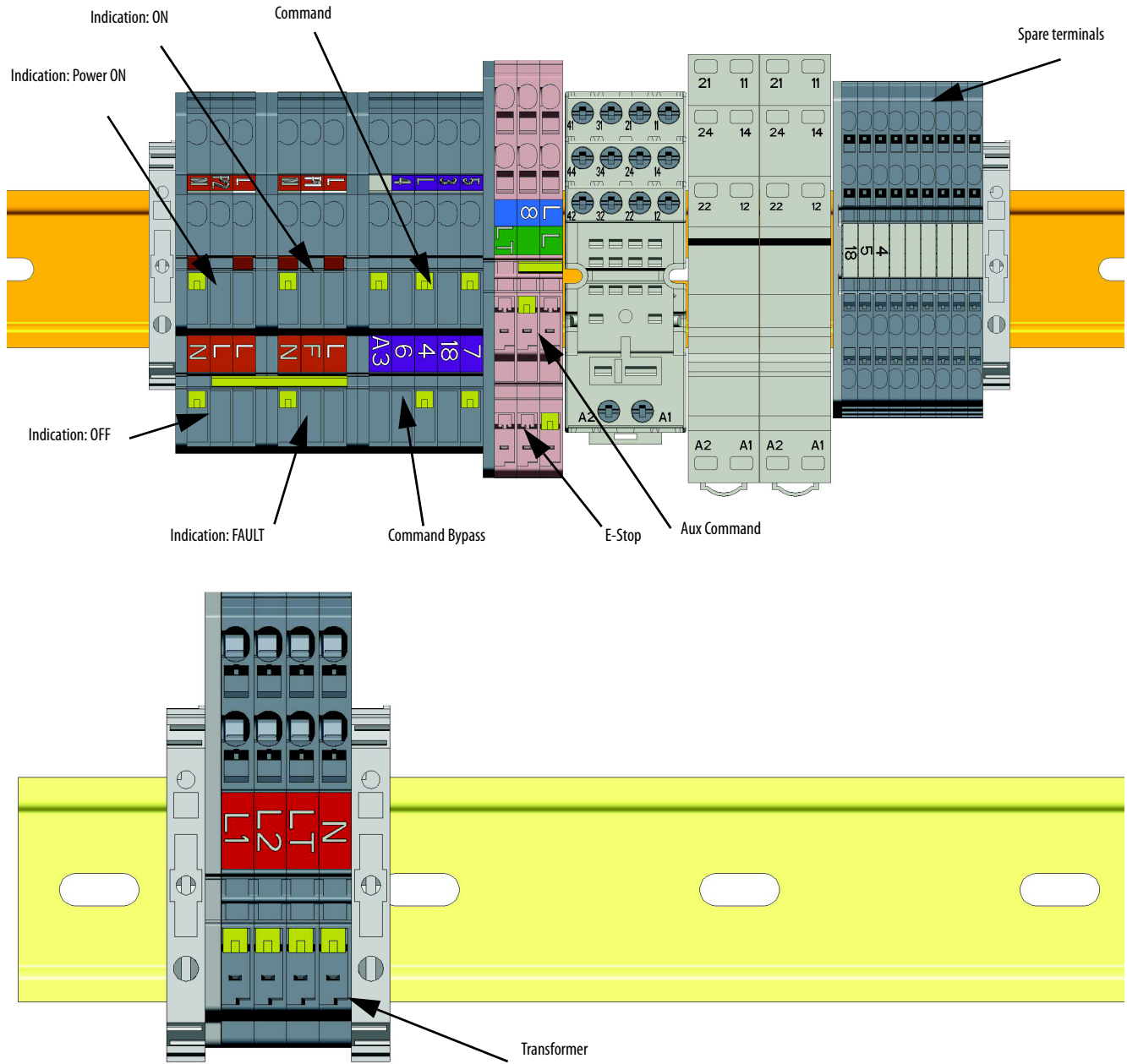
- Note: This option applies only to controllers with current ratings greater than 90 A.

Component wiring is color coded by function. The wiring sleeve color corresponds to a colored label on the terminal block. Keyed connectors snap these components into the terminal block. This greatly reduced assembly time is ideal for the quick installation of pilot devices and control circuit transformers, and significantly reduces wiring errors. [Figure 31](#) shows an example of this feature.

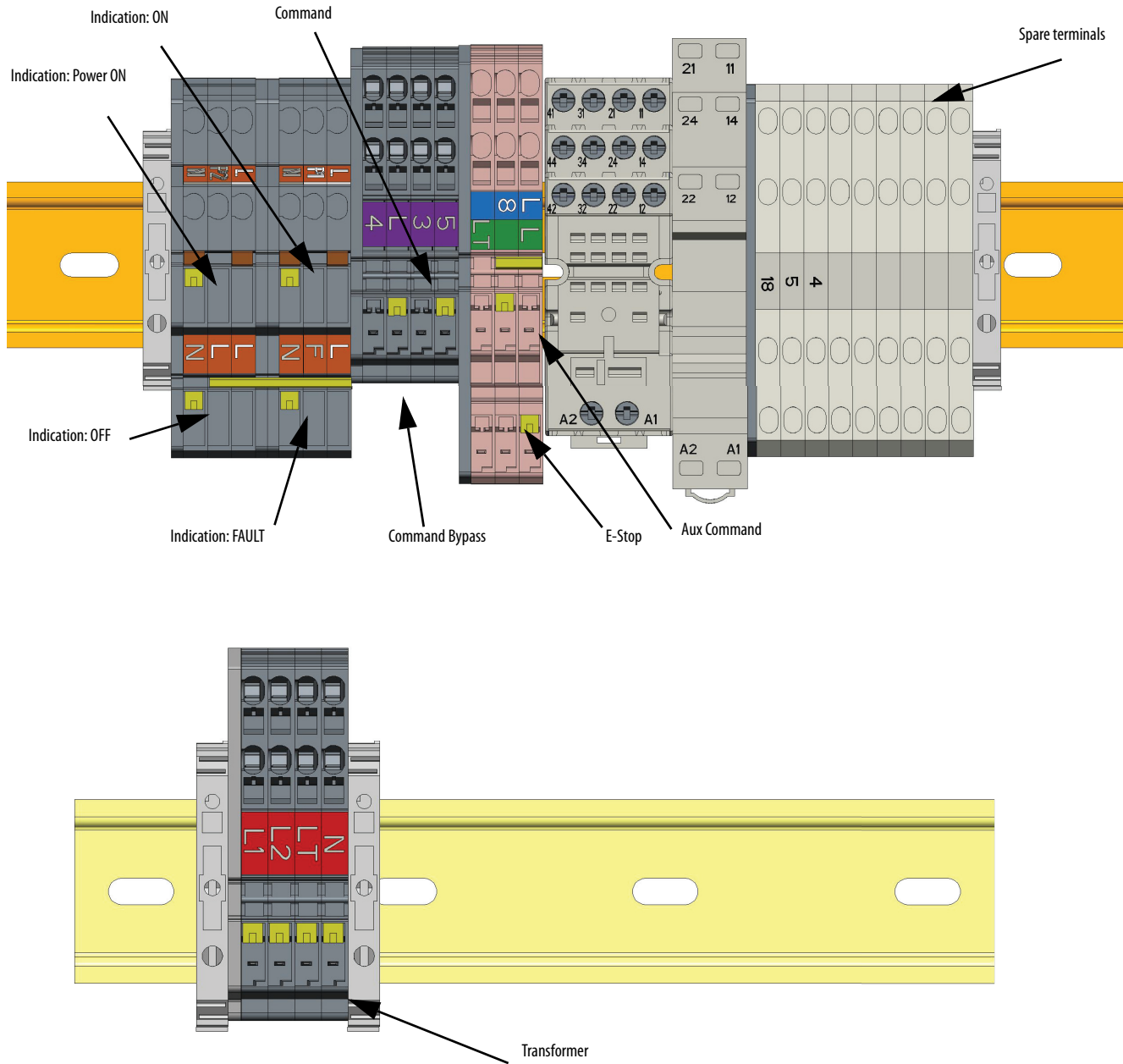
**Figure 31 - Snap-together Wiring Example**

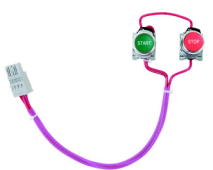
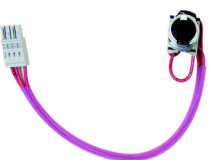


**Figure 32 - SMC-50 Controller with External Bypass Snap-together Wiring**


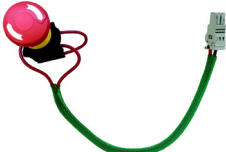


**Figure 33 - SMC-50 Controller with Internal Bypass Snap-together Wiring**



	Description	Cat. No.
	Start-Stop Snap-together Push Button Kit, Metal Bezel 22.5 mm (internal bypass units only)	198-SSPBM
	3-Position Hand-Off-Auto Snap-together Selector Switch Kit Metal Bezel 22.5 mm (internal bypass units only)	198-3SSM
	2-Position On-Off or Hand-Auto Snap-together Selector Switch Kit Metal Bezel 22.5 mm (internal bypass units only)	198-2SSM



	Description	Cat. No.
	3-Position Hand-Off-Auto Selector Switch & Start-Stop Pushbutton Kit Metal Bezel 22.5 mm (external bypass units only)	198-3SSPBM
	2-Position Hand-Auto or On-Off Selector Switch & Start-Stop Pushbutton Kit Metal Bezel 22.5 mm (external bypass units only)	198-2SSPBM
	Red Universal LED Pilot Light Snap-together Kit 22.5 mm	198-RUPL
	Green Universal LED Pilot Light Snap-together Kit 22.5 mm	198-GUPL
	White or Amber Universal LED Pilot Light Snap-together Kit 22.5 mm	198-WUPL
	Red Universal LED Push to Test Pilot Light Snap-together Kit 22.5 mm	198-RUPPLM
	Green Universal LED Push to Test Pilot Light Snap-together Kit 22.5 mm	198-GUPPLM
	White or Amber Universal LED Push to Test Pilot Light Kit Snap-together 22.5 mm	198-WUPPLM
	Stop Push Button Snap-together Kit N.C. 22.5 mm, Momentary	198-PBM
	Emergency Stop Snap-together Kit	198-ESP

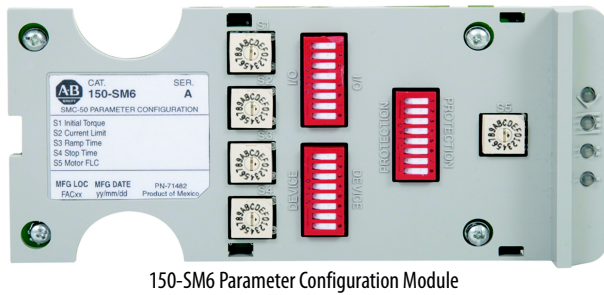
## Accessories

### Option Modules

Option modules can be used to add or expand the functionality of the SMC-50 Control Module. Option modules are installed into the control module's three expansion ports, 7 through 9.

- NOTE: If network communication is required, a Cat. No. 20-COMM-X communication adapter must be inserted in expansion port 9.

#### Parameter Configuration Option Module (Cat. No.150-SM6)



150-SM6 Parameter Configuration Module

The Parameter Configuration Option Module inserts into any one of the SMC-50 controller's three option ports (Port 7, 8 or 9). The 150-SM6 features three sets of 8-position ON/OFF DIP switches and five sets of 16-position rotary switches. These switches allow for configuration of several key motor parameters (e.g., start and stop modes, ramp time, motor FLA, etc.) for limited setup of simple applications. In addition, the 150-SM6 features three diagnostic LED status indicators to display key alarms and faults. Only one 150-SM6 is allowed per SMC-50 controller.

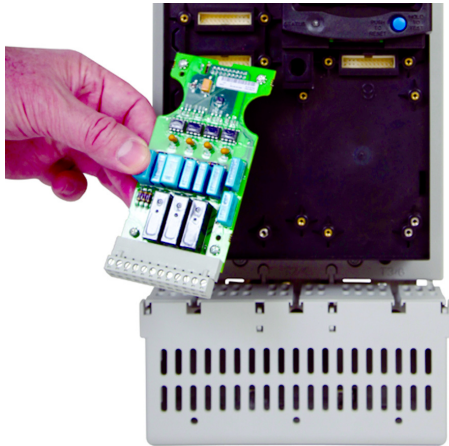
- NOTE: After parameter configuration is complete, you can remove the 150-SM6 from the SMC-50 controller. This allows one module to configure multiple SMC-50s.

When using a Cat. No. 150-SM6 PCM to configure the SMC-50 controller, it should be noted that the following features, functions, and modes are not configurable:

- Full voltage start
- Torque ramp start
- External brake stop
- Option card I/O configuration (Cat. No. 150-SM... option modules)
- External bypass
- Specialized output relay configuration (e.g., network control, DeviceLogix, auxiliary control)
- Specialized operation modes/features
  - Dual ramp, motor winding heater, emergency run
  - Overload select (Class)
  - Adjustment of slow speed set point

Parameters that are not defined and therefore are not configurable by the Cat. No. 150-SM6 PCM can be configured through other means (Human Interface Module (HIM), Connected Components Workbench Software, DriveExplorer or DriveExecutive software), if necessary.

## Standard Input Modules<sup>(1)</sup>



SMC-50 Smart Motor Controller with 150-SM4

option ports (three modules maximum per control module). The control functionality of each input is user configurable and identical to the standard inputs. The status of any input is readable via communications.

The SMC-50 controller comes standard with two 24V DC inputs. The control functionality of each input is user-configurable as follows: Start, Coast, Stop Option (e.g., Soft Stop, Pump Stop), Start/Coast, Start/Stop, Slow Speed, Overload Select, Fault Input (N.O.), Fault Input (N.C.), Clear Fault, Emergency Run, Dual Ramp Profile Select, and Start Motor Heater function. The status of any input is readable via communications.

## Optional Input Modules<sup>(1)</sup>

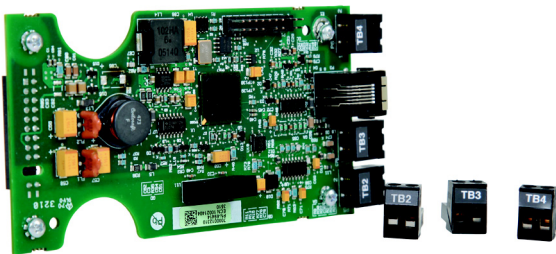
A Cat. No. 150-SM4 Digital I/O option module contains four 120/240V AC inputs and can be inserted into any of the three control module option ports (three modules maximum per control module). The control functionality of each input is user configurable and identical to the standard inputs. The status of any input is readable via communications.

A Cat. No. 150-SM3 Analog I/O option module provides two analog inputs (voltage or current) and can be inserted into any of the three control module option ports (three modules maximum per control module). The control functionality of each input is user configurable. The status of any input is readable via communications.

## Standard and Optional Output Modules<sup>(1)</sup>

The SMC-50 controller comes standard with two relay outputs. By adding a Cat. No. 150-SM4 Digital I/O Option Module, three additional relay outputs are provided (three option modules maximum per control module). The control functionality of each relay output is user-configurable as follows: Normal (Start Enabled), Up-To-Speed, Fault, Alarm, External Bypass, External brake, Auxiliary Control, and Network 1-4. Each output also includes a user-configurable on and off delay timer (10.0 seconds maximum) and the ability to invert the state of the contact. Network control of each output is also provided. By adding a Cat. No. 150-SM3 Analog I/O module, two analog outputs (voltage or current) are provided.

## Optional PTC, Ground Fault<sup>(2)</sup>, & Current Transformer Interface Capability Modules<sup>(3)</sup>



150-SM2 Option Module

The Cat. No. 150-SM2 Option Module features PTC, ground fault, and external current transformer interface capability. The PTC feature enables connection to external PTC temperature sensors to monitor motor winding temperature and feedback data to the SMC-50. A SMC-50 controller Alarm and/or Fault can be configured to trip if the PTC setpoint is exceeded. The ground fault feature enables controller detection and enunciation of a possible system ground fault which could indicate a pending motor winding failure (for example, insulation breakdown). A Bulletin 825-CBCT External Ground Fault (Core Balance) Sensor is also required to interface with the 150-SM2 to fully enable this feature.





When the SMC-50 controller is used in the external bypass mode with the contacts of the external bypass contactor closed, the user has the option of using the SMC-50 controller's internal or external current sensing capabilities. If using external current sensing so that metering, alarm/fault, etc. conditions are reported to the controller during run operation, an external Bulletin 825-MCM Converter Module is required to interface with the 150-SM2 Option Module.

(1) All standard and optional I/O Terminal Blocks are removable



(2) The ground fault sensing feature of the SMC-50 controller is intended for monitoring purposes only. It is not to be used as a ground fault circuit interrupter for personnel protection as defined by Article 100 of the NEC. The sensing feature has not been evaluated to UL 1053.

(3) All standard and optional I/O Terminal Blocks are removable

### Option Modules

	Description	Compatible Control Module Ports	Maximum No. of Option Modules of this Type Per Controller	Cat. No.
	PTC, Ground Fault, & Current Feedback Option Module See <a href="#">page 51</a> for more information	7 & 8	1	150-SM2
	Analog I/O Option Module: 2 analog inputs (voltage or current) and 2 analog outputs (voltage or current) See <a href="#">page 51</a> for more information	7, 8, 9	3	150-SM3
	Digital I/O Option Module: 4 100...240V AC inputs and 3 relay outputs See <a href="#">page 51</a> for more information	7, 8, 9	3	150-SM4
	Parameter Configuration Module — DIP and rotary dial See <a href="#">page 50</a> for more information	7, 8, 9	1	150-SM6

### Converter Modules

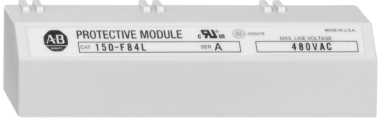
Description	For Use With	Rated Current [A]	Cat. No.
	Three-Phase Current Monitoring Module Used with a Cat. No. 150-SM2 to provide current feedback to the SMC-50 controller when in external bypass configuration.	30...180	825-MCM180
		181...520	825-MCM20 <sup>(2)</sup>
Connection Cable (Replacement) Cat. No. 150-SM2 to Bul. 825-MCM Connection			825-MCA
	Core Balance Ground Fault Sensor <sup>(1)</sup> Used with a Cat. No. 150-SM2 to provide ground current feedback.	Turns Ratio: 100:1	825-CBCT

- (1) The ground fault sensing feature of the SMC-50 controller is intended for monitoring purposes only. It is not to be used as a ground fault circuit interrupter for personnel protection as defined by Article 100 of the NEC. The sensing feature has not been evaluated to UL 1053.
- (2) Requires user-supplied current transformers with 5 A secondary.

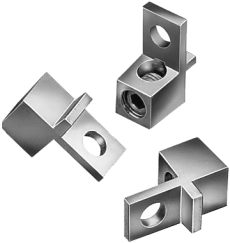
### Protective Modules

The same protective module mounts on the line or load side of the SMC-50 controller. Use of protective modules is highly recommended. For applications requiring both line and load side protection, you must order two protective modules.


- Note: You must not place protective modules on the load (motor) side of an SMC-50 controller when using an inside-the-delta connection or with pump, braking, or linear speed acceleration/deceleration control.

	Current Rating	Description	Cat. No.
	90...520 108...480	480V Protective Module	150-F84L
	600V Protective Module	150-F86L	

**Terminal Lug Kits**

	For Use With Controller Type		Current Range [A]	Wire Size Range	Total No. of Terminal Lugs Possible Each Side		Pkg. Qty.	Cat. No.
					Line Side	Load Side		
	Integrated Bypass	150-S108... 150-S135...	108...135	#6...250 MCM AWG 16 mm <sup>2</sup> ...120 mm <sup>2</sup>	3	3	3	199-LF1
		150-S201... 150-S251...	201...251	#6...250 MCM AWG 16 mm <sup>2</sup> ...120 mm <sup>2</sup>	6	6	3	199-LF1
		150-S317... 150-S361... 150-S480...	317...480	#4...500 MCM AWG 25 mm <sup>2</sup> ...240 mm <sup>2</sup>	6	6	3	199-LG1
	Solid-State (No External Bypass)	150-SB...	90...180	#6...250 MCM AWG 16 mm <sup>2</sup> ...120 mm <sup>2</sup>	3	3	3	199-LF1
		150-SC...	210...320	#6...250 MCM AWG 16 mm <sup>2</sup> ...120 mm <sup>2</sup>	6	6	3	199-LF1
		150-SD...	361...520	#4...500 MCM AWG 25 mm <sup>2</sup> ...240 mm <sup>2</sup>	6	6	3	199-LG1
	Solid-State (With External Bypass)	150-SB...	90...180	(2) 1/0...250 MCM AWG 50 mm <sup>2</sup> ...120 mm <sup>2</sup>	3	3	3	1494R-N14
		150-SC...	210...320	#6...250 MCM AWG 16 mm <sup>2</sup> ...120 mm <sup>2</sup>	6 (6 additional needed for bypass kit)	6	3	199-LF1
		150-SD...	361...520	#4...500 MCM AWG 25 mm <sup>2</sup> ...240 mm <sup>2</sup>	6 (6 additional needed for bypass kit)	6	3	199-LG1
	Integrated Bypass -- (Inside-the-Delta Terminal Lugs)	150-S108... 150-S135...	187...234	#4...500 MCM AWG 25 mm <sup>2</sup> ...240 mm <sup>2</sup>	3	—	3	1494R-N15
		150-S201... 150-S251...	348...435	(2) 1/0...250 MCM AWG 50 mm <sup>2</sup> ...120 mm <sup>2</sup>	6	—	3	1494R-N14
		150-S317... 150-S361... 150-S480...	549...831	(3) 3/0...500 MCM AWG 95 mm <sup>2</sup> ...240 mm <sup>2</sup>	3	—	3	150-LG5MC


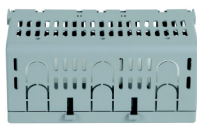
**Distribution Blocks**

	For Use With Controller Type		Current Range [A]	Wire Size Range		Total No. Distribution Blocks Needed		Pkg. Qty.	Cat. No.
				Line Side	Load Side	Line Side	Load Side		
	Solid-state	150-SB...	155...311	(2) #4 AWG...500 MCM 25...240 mm <sup>2</sup>	(2) #4 AWG...500 MCM 25...240 mm <sup>2</sup>	3	—	1	1492-BG
		150-SC...	363...554	(2) 1/0 AWG...750 MCM 54...400 mm <sup>2</sup>	(6) 6 AWG...250 MCM 16...120 mm <sup>2</sup>	1	6	1	Marathon Special Products Cat. No. 1353703
		150-SD...	625...900	(4) 1/0 AWG...750 MCM 54...400 mm <sup>2</sup>	(4) 1/0 AWG...750 MCM 54...400 mm <sup>2</sup>	3	6	1	Marathon Special Products Cat. No. 1352702


**External Bypass Kits**

For Use With Controller Type	Current Range [A]	Cat. No.
Solid-state (with external bypass)	150-SC...	150-SCBK
	150-SD...	150-SDBK



**IEC Line or Load Terminal Covers**

	Description	For Use With	Pkg. Quantity	Cat. No.
	<ul style="list-style-type: none"> <li>Dead front protection</li> <li>IP2X finger safe when used with 250 MCM cable</li> </ul>	150-S108..., 150-S135...	1	150-TC1
		150-S201..., 150-S251...	1	150-TC2
	<ul style="list-style-type: none"> <li>Dead front protection</li> <li>IP2X finger safe when used with 500 MCM cable</li> </ul>	150-S317..., 150-S361..., 150-S480...	1	150-TC3
	<ul style="list-style-type: none"> <li>Dead front protection</li> <li>IP2X finger safe when used with 250 MCM cable</li> </ul>	150-SB... (90...180 A units only)	1	150-STCB

**Capacitor Module**



	Description	For Use With	Cat. No.
	Required for EMC directive compliance (EN60947-4-2)	150-SB... (90...180 A units only)	150-SMCAP

**Human Interface Modules (HIMs) and Communication Modules**

		Description	Cat. No.
	SMC-50 Controller — Bezel-mounted	Enhanced, LCD, Full Numeric Keypad	20-HIM-A6
	Door-mounted HIM	Remote (panel mount) LCD Display, Full Numeric Keypad (version of Cat. No. 20-HIM-A6)	20-HIM-C6S <sup>(2)</sup>
	HIM Interface Cables	HIM Interface Cable, 1 m (39 in)	20-HIM-H10 <sup>(3)</sup>
		Cable Kit (Male-Female) 0.33 m (1.1 ft)	1202-H03
		Cable Kit (Male-Female) 1 m (3.3 ft)	1202-H10
		Cable Kit (Male-Female) 3 m (9.8 ft)	1202-H30
		Cable Kit (Male-Female) 9 m (29.5 ft)	1202-H90
	DPI/SCANport™ One to Two Port Splitter Cable	1203-S03	
		Description (IP30/Type 1)	For Use With
	Communication Modules (installed into the physical space assigned to control module expansion port 9; connected to DPI port 4 via cable)	RS485 DF1 Communication Adapter	20-COMM-S
		PROFIBUS™ DP Communication Adapter	20-COMM-P
		ControlNet™ Communication Adapter (Coax)	20-COMM-C
		Interbus™ Communication Adapter	20-COMM-I
		Modbus/TCP Communication Adapter	20-COMM-M
		DeviceNet™ Communication Adapter	20-COMM-D
		EtherNet/IP™ Communication Adapter	20-COMM-E
		Dual-port EtherNet/IP™ Communication Adapter	20-COMM-ER
		HVAC Communication Adapter	20-COMM-H
		ControlNet™ Communication Adapter (Fiber)	20-COMM-Q
Connected Components Workbench™ Software		Programming Software	Available for download at <a href="http://www.rockwellautomation.com">www.rockwellautomation.com</a>
DriveExecutive™			Windows 7/2000/XP/Vista
DriveTools™ SP <sup>(1)</sup>			9303-4DTE01ENE
AnaCANda™ RS-232 to DPI		PC Interface	Serial
DPI to USB			USB
			9303-4DTS01ENE
			1203-SSS <sup>(4)</sup>
			1203-USB <sup>(5)</sup>

- (1) Includes DriveExecutive™ and DriveObserver™
- (2) A 3 m (9.8 ft.) Cat. No. 1202-C30 cable is provided.
- (3) A cable is required if 20-HIM-A6 is connected to the SMC-50 DPI Port #2 and used as a handheld device.
- (4) Includes Cat. No. 1203-SFC and 1202-C10 cables.
- (5) Includes Cat. No. 20-HIM-H10 and 22-HIM-H10 cables.

## Enclosure Accessories

	Description	Construction Material	For Use With Enclosure Width	Cat. No.
	<b>Perforated frame strip</b> • Mounting rail for door or panel installation	Sheet steel	400 mm	198-DS400
			600 mm	198-DS600
			1000 mm	198-DS1000
	<b>Enclosure mounting foot</b> • 100 mm height	High-strength plastic	400 mm	198-FB100 A
			600 mm	198-FB100B
			1000 mm	198-FB100C
	<b>Enclosure mounting foot</b> • 200 mm height	Sheet steel	400 mm	198-PL100 A
			600 mm	198-PL100B
			1000 mm	198-PL100C
		Sheet steel	400 mm	198-PL200 A
		Sheet steel	600 mm	198-PL200B
		Sheet steel	1000 mm	198-PL200C

## Standards Compliance and Certifications

Standards Compliance— Open Controllers
UL 508
EN 60947-4-2

Certifications—Open Controllers
cULus Listed (Open Type) (File No. E96956)
CE Marked per EMC Directive and Low Voltage Directive
CCC <sup>(1)</sup>
C-Tick <sup>(1)</sup>
EAC <sup>(1)</sup>
KCC <sup>(1)</sup>
ABS <sup>(1)</sup>

Standards Compliance— Enclosed Controllers	Certifications—Enclosed Controllers
UL 508A	cULus Listed

(1) For updated certification status of controllers with 24V DC control power, consult your local Rockwell Automation sales office or Allen-Bradley distributor.

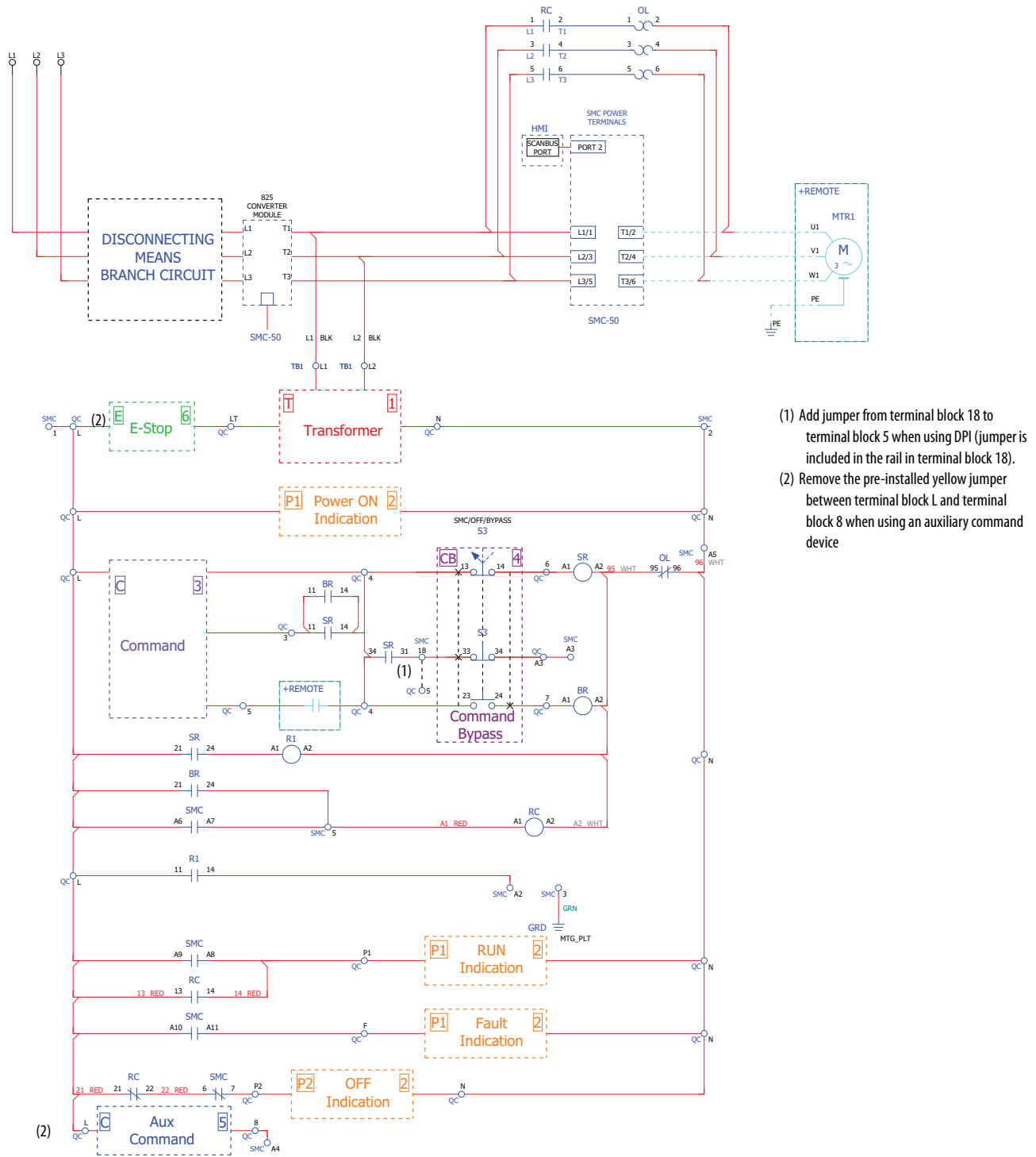
## Wiring Diagrams

The diagrams in this section illustrate basic SMC controller wiring. For specific wiring diagrams, please consult your local Rockwell Automation sales office or Allen-Bradley distributor.

### Notes:

- Use 75 °C Cu wire only
- Line fuses are customer supplied on controllers with factory-supplied disconnect switch. Refer to NEC when selecting short-circuit protection.
- Additional control circuit overcurrent protection is required for non-combination starters. Refer to NEC.

**Figure 34 - SMC-50 Controller with External Bypass Basic Wiring Diagram**

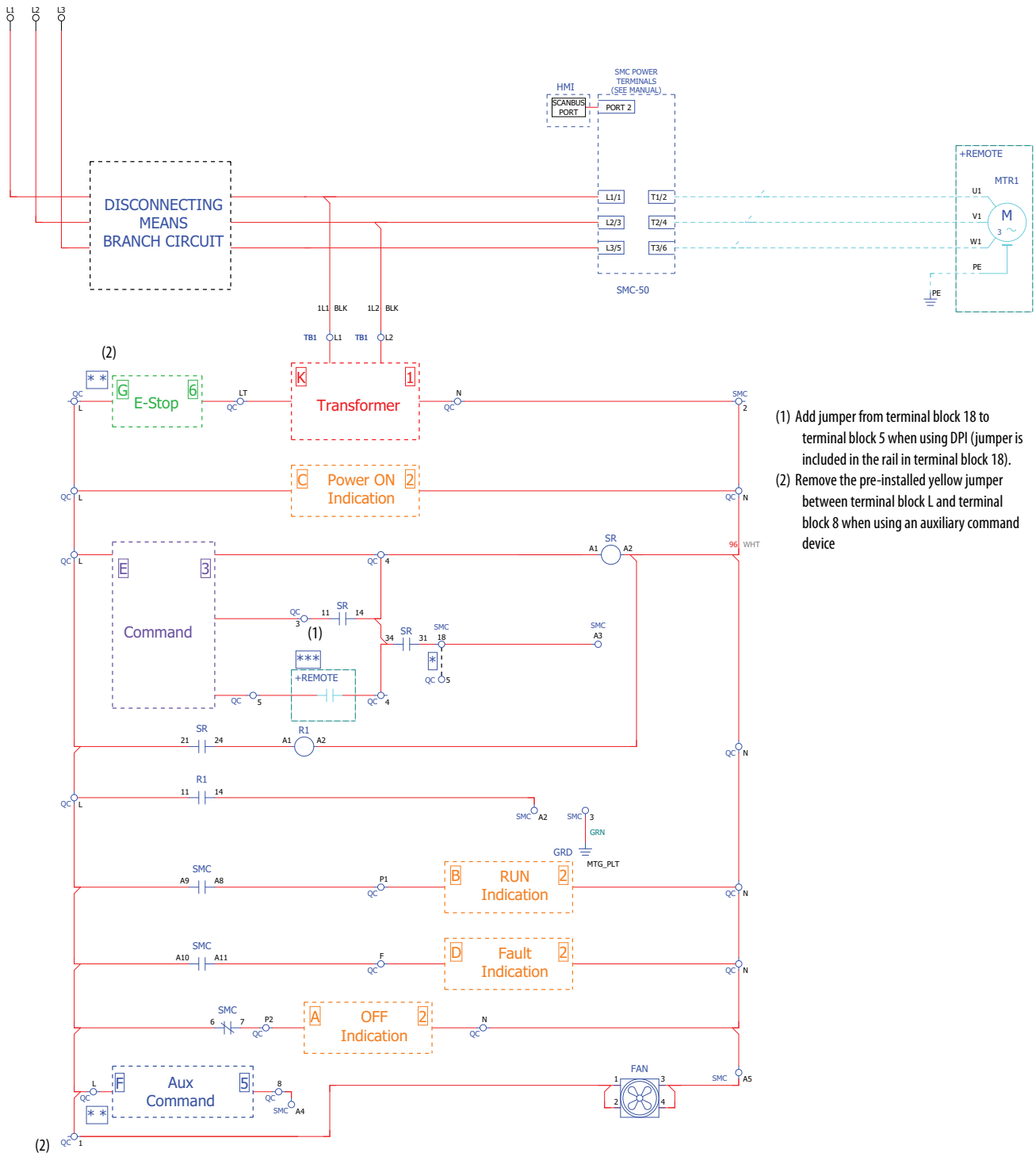


- (1) Add jumper from terminal block 18 to terminal block 5 when using DPI (jumper is included in the rail in terminal block 18).
- (2) Remove the pre-installed yellow jumper between terminal block L and terminal block 8 when using an auxiliary command device

- For wiring diagrams for snap-together kits, please see the following figures:
  - Command kits: [Figure 36](#), [Figure 37](#), and [Figure 38](#); Auxiliary Command kits: [Figure 39](#), [Figure 40](#), and [Figure 41](#)
  - Command bypass kit: [Figure 42](#)
  - Emergency Stop (E-Stop) kit: [Figure 43](#)
  - Indication kit: [Figure 44](#)
  - Transformer kit: [Figure 45](#)
- For additional wiring diagram notes, please see [Table 15](#), [Table 16](#), and [Table 17](#)



**Figure 35 - SMC-50 Controller with Internal Bypass Basic Wiring Diagram**



- (1) Add jumper from terminal block 18 to terminal block 5 when using DPI (jumper is included in the rail in terminal block 18).
- (2) Remove the pre-installed yellow jumper between terminal block L and terminal block 8 when using an auxiliary command device

- For wiring diagrams for snap-together kits, please see the following figures:
  - Command kits: [Figure 36](#), [Figure 37](#), and [Figure 38](#); Auxiliary Command kits: [Figure 39](#), [Figure 40](#), and [Figure 41](#)
  - Command bypass kit: [Figure 42](#)
  - Emergency Stop (E-Stop) kit: [Figure 43](#)
  - Indication kit: [Figure 44](#)
  - Transformer kit: [Figure 45](#)

- For additional wiring diagram notes, please see [Table 18](#), [Table 19](#), and [Table 20](#)

**Table 15 - SMC-50 Controller with External Bypass Factory Pre-programmed Parameters**

Parameter	Value
A2	Start
A3	Coast
A4	Option Stop
56	Disable 0
57	Disable 0
172	Aux1 Config to Ext Bypass 4
176	Aux2 Config to Fault Normal (0)
177	Enabled (1)
230 (upper)	XXXX XXXX 0000 0010
230 (lower)	0000 0000 0000 0001

**Table 16 - SMC-50 Controller with External Bypass I/O (Cat. No. 150-SM4) Device Parameters**

With HIM and Communication Card installed on Port 00

Parameter	Value
148	X000 0000 0001 0100
3	Input 2 (A2) Start 1
4	Input 3 (A3) Coast 2
5	Input 4 (A4) Stop Option 3
6	Aux1Cfg Ext Bypass 4
10	Aux2Cfg Normal 0
Set 14	Aux3Cfg Fault 2

**Table 17 - SMC-50 Controller with External Bypass Relay Functions**

Relay No.	Function
R1	Prevent race condition between A3 and A2
BR 11-14	Hold-in contact with Start-Stop for bypass
SR 11-14	Hold-in contact with Start-Stop for SR Relay (Starts SMC controller)
SR 31-34	Starts SMC controller with pilot device (no DPI present)
R1 11-14	SMC controller start command

**Table 18 - SMC-50 Controller with Internal Bypass Factory Pre-programmed Parameters**

Parameter	Value
A2	Start
A3	Coast
A4	Option Stop
56	Disable 0
57	Disable 0
172	Aux1 Config to Normal
176	Aux2 Config to Fault Normal (0)
177	Enabled (1)
230 (upper)	XXXX XXXX 0000 0010
230 (lower)	0000 0000 0000 0001

**Table 19 - SMC-50 Controller with Internal Bypass I/O (Cat. No. 150-SM4) Device Parameters**

With HIM and Communication Card installed on Port 00

Parameter	Value
148	X000 0000 0001 0100
3	Input 2 (A2) Start 1
4	Input 3 (A3) Coast 2
5	Input 4 (A4) Stop Option 3
6	Aux1Cfg Normal
10	Aux2Cfg Normal 0
Set 14	Aux3Cfg Fault 2

**Table 20 - SMC-50 Controller with Internal Bypass Relay Functions**

Relay No.	Function
R1	Prevent race condition between A3 and A2
SR 11-14	Hold-in contact with Start-Stop for SR Relay (Starts SMC controller)
SR 31-34	Starts SMC controller with pilot device (no DPI present)
R1 11-14	SMC controller start command

Wiring Diagrams for Snap-together Kits

Figure 36 - Start-Stop Command Kit Wiring Diagram

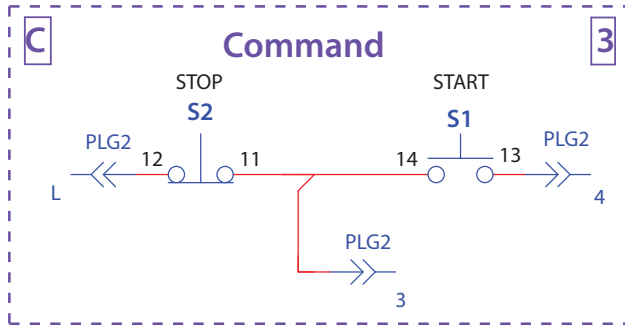


Figure 37 - Hand-OFF-Auto Command Kit Wiring Diagram

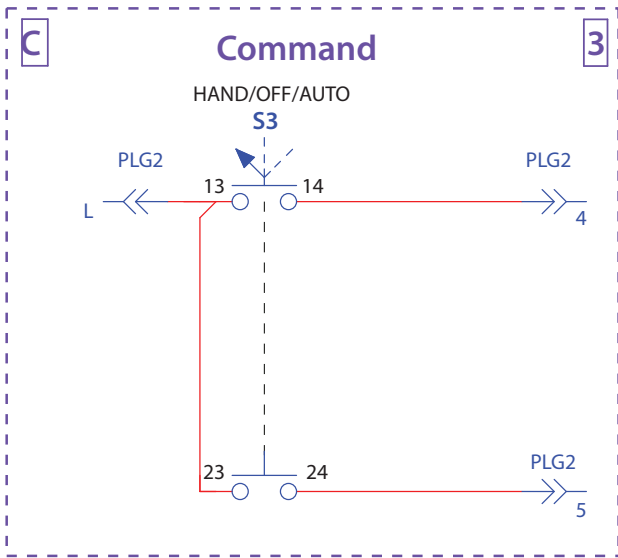


Figure 38 - Hand-OFF-Auto and Start-Stop Command Kit Wiring Diagram

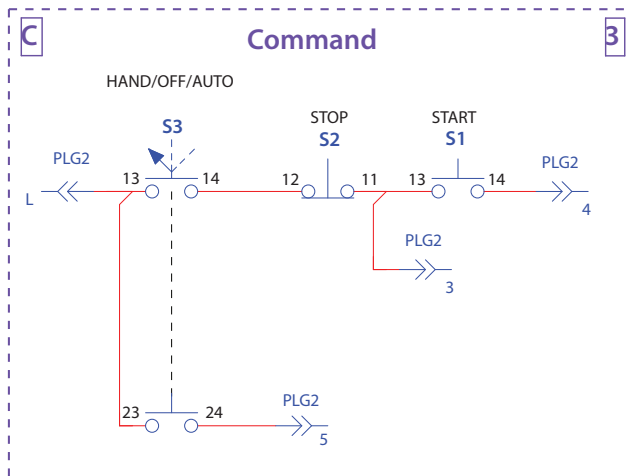


Figure 39 - Soft Stop Auxiliary Command Kit Wiring Diagram

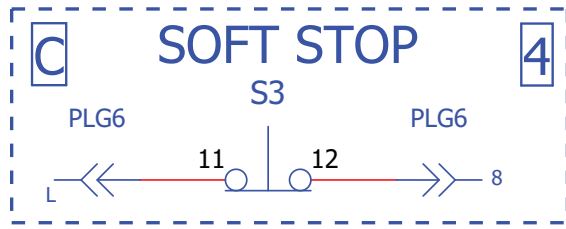


Figure 40 - Pump Stop Auxiliary Command Kit Wiring Diagram

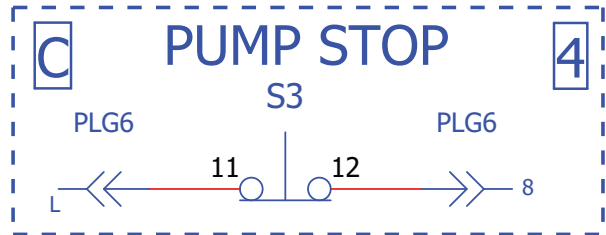


Figure 41 - Brake Auxiliary Command Kit Wiring Diagram

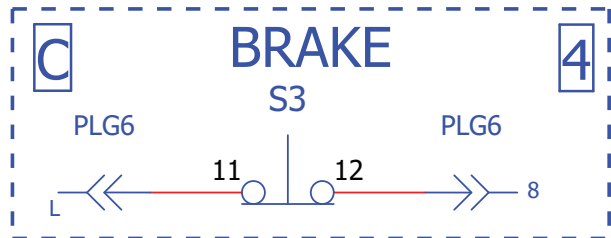


Figure 42 - Command Bypass Kit Wiring Diagram

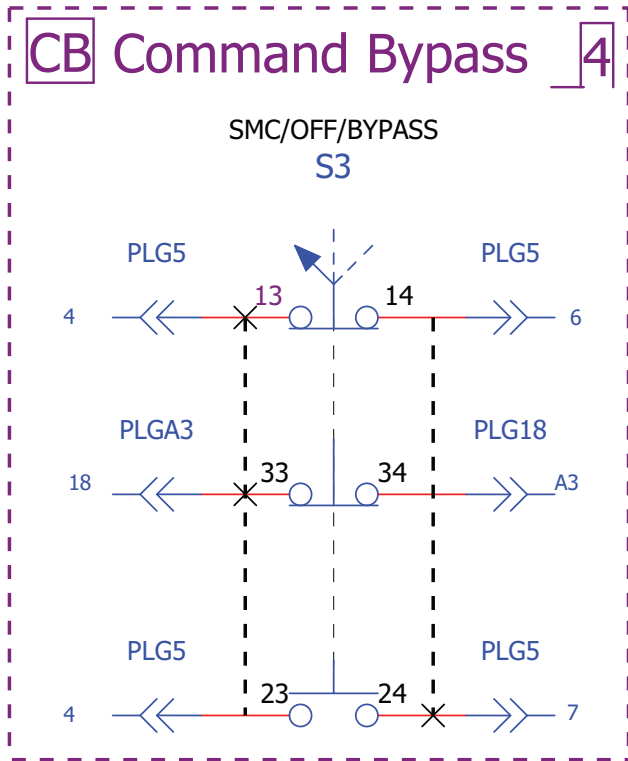


Figure 45 - Transformer Kit Wiring Diagram

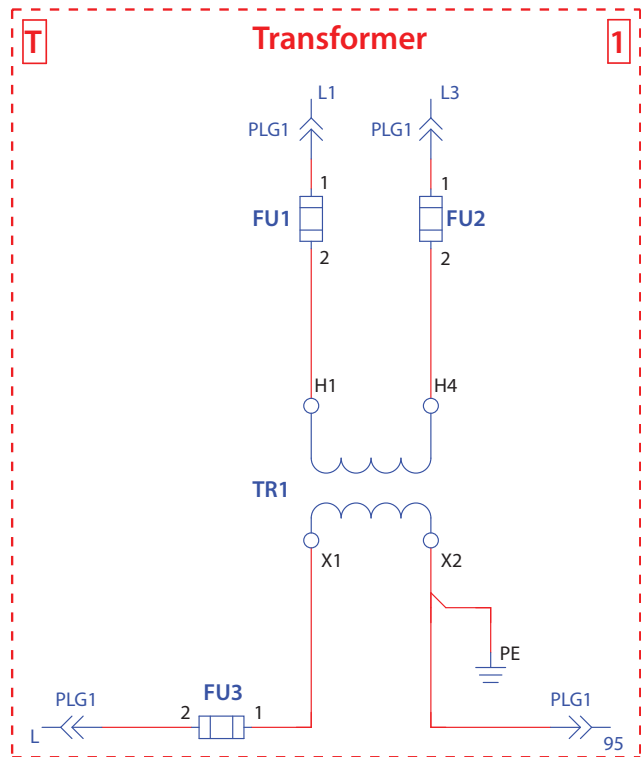


Figure 43 - E-Stop Kit Wiring Diagram

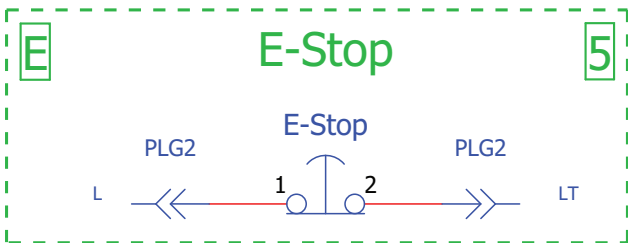
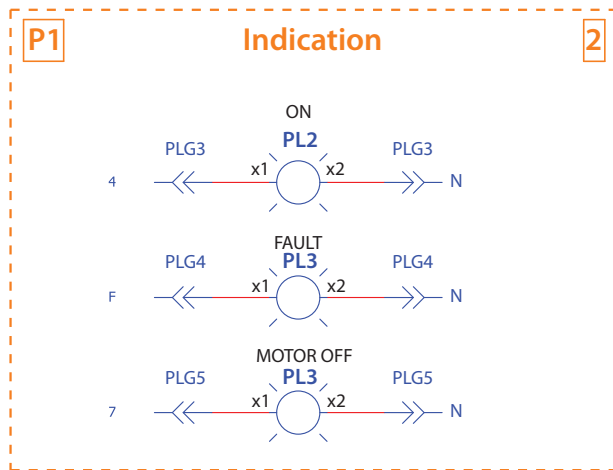


Figure 44 - Indication Kit Wiring Diagram



## Short-circuit Current Ratings

Determining the short circuit current ratings (SCCR) of a complex system can be very challenging, especially if proper considerations are not made during the initial stages of the component selection process.

The SCCRs in this section provide coordinated high fault branch circuit for enclosed soft starters and is based on compliance to IEC and UL standards. For comprehensive SCCR information, please consult the Rockwell Automation Global SCCR Selection Tool at <http://www.rockwellautomation.com/global/support/global-sccr.page>.

- Note: Ratings provided are for standard options only; does not include isolation contactor configurations

**Table 21 - Non-combination Enclosed Soft Starters with SMC-50 Solid-state Controllers with External Bypass**

Controller Rating [A]	Short Circuit Current Rating
90	• 100 kA rms symmetrical, 600V maximum when protected by a maximum 200 A Class J Fuse; 65 kA rms symmetrical, 480V maximum when protected by a maximum 350 A circuit breaker; 10 kA rms symmetrical, 600V maximum when protected by a maximum 350 A circuit breaker
110	• 100 kA rms symmetrical, 600V maximum when protected by a maximum 225 A Class J Fuse; 65 kA rms symmetrical, 480V maximum when protected by a maximum 300 A circuit breaker; 10 kA rms symmetrical, 600V maximum when protected by a maximum 300 A circuit breaker
140	• 100 kA rms symmetrical, 600V maximum when protected by a maximum 300 A Class J Fuse; 65 kA rms symmetrical, 480V maximum when protected by a maximum 400 A circuit breaker; 10 kA rms symmetrical, 600V maximum when protected by a maximum 400 A circuit breaker
180	• 100 kA rms symmetrical, 600V maximum when protected by a maximum 400 A Class J Fuse; 65 kA rms symmetrical, 480V maximum when protected by a maximum 400 A circuit breaker; 10 kA rms symmetrical, 600V maximum when protected by a maximum 400 A circuit breaker
210	• 100 kA rms symmetrical, 600V maximum when protected by a maximum 450 A Class J Fuse; 42 kA rms symmetrical, 480V maximum when protected by a maximum 600 A circuit breaker; 18 kA rms symmetrical, 600V maximum when protected by a maximum 600 A circuit breaker
260	• 100 kA rms symmetrical, 600V maximum when protected by a maximum 500 A Class J Fuse; 42 kA rms symmetrical, 480V maximum when protected by a maximum 700 A circuit breaker; 18 kA rms symmetrical, 600V maximum when protected by a maximum 700 A circuit breaker
320	• 100 kA rms symmetrical, 600V maximum when protected by a maximum 700 A Class L Fuse; 42 kA rms symmetrical, 480V maximum when protected by a maximum 800 A circuit breaker; 18 kA rms symmetrical, 600V maximum when protected by a maximum 800 A circuit breaker
361	• 100 kA rms symmetrical, 600V maximum when protected by a maximum 800 A Class L Fuse; 42 kA rms symmetrical, 480V maximum when protected by a maximum 1000 A circuit breaker; 25 kA rms symmetrical, 600V maximum when protected by a maximum 1000 A circuit breaker
420	• 100 kA rms symmetrical, 600V maximum when protected by a maximum 800 A Class L Fuse; 42 kA rms symmetrical, 480V maximum when protected by a maximum 1200 A circuit breaker; 25 kA rms symmetrical, 600V maximum when protected by a maximum 1200 A circuit breaker
520	• 42 kA rms symmetrical, 600V maximum when protected by a maximum 1000 A Class L Fuse; 65 kA rms symmetrical, 480V maximum when protected by a maximum 1200 A circuit breaker; 30 kA rms symmetrical, 600V maximum when protected by a maximum 1200 A circuit breaker

**Table 22 - Non-combination Enclosed Soft Starters with SMC-50 Controllers with Internal Bypass**

Controller Rating [A]	Short Circuit Current Rating
108	• 70 kA rms symmetrical, 600V maximum when protected by a maximum 200 A Class J Fuse; 65 kA rms symmetrical, 480V maximum when protected by a maximum 300 A circuit breaker; 10 kA rms symmetrical, 600V maximum when protected by a maximum 300 A circuit breaker
135	• 70 kA rms symmetrical, 600V maximum when protected by a maximum 225 A Class J Fuse; 65 kA rms symmetrical, 480V maximum when protected by a maximum 400 A circuit breaker; 10 kA rms symmetrical, 600V maximum when protected by a maximum 400 A circuit breaker
201	• 70 kA rms symmetrical, 600V maximum when protected by a maximum 350 A Class J Fuse; 65 kA rms symmetrical, 480V maximum when protected by a maximum 600 A circuit breaker; 18 kA rms symmetrical, 600V maximum when protected by a maximum 600 A circuit breaker
251	• 70 kA rms symmetrical, 600V maximum when protected by a maximum 400 A Class J Fuse; 65 kA rms symmetrical, 480V maximum when protected by a maximum 700 A circuit breaker; 18 kA rms symmetrical, 600V maximum when protected by a maximum 700 A circuit breaker
317	• 69 kA rms symmetrical, 600V maximum when protected by a maximum 500 A Class J Fuse; 65 kA rms symmetrical, 480V maximum when protected by a maximum 800 A circuit breaker; 30 kA rms symmetrical, 600V maximum when protected by a maximum 800 A circuit breaker
361	• 69 kA rms symmetrical, 600V maximum when protected by a maximum 600 A Class J Fuse; 65 kA rms symmetrical, 480V maximum when protected by a maximum 1000 A circuit breaker; 30 kA rms symmetrical, 600V maximum when protected by a maximum 1000 A circuit breaker
480	• 69 kA rms symmetrical, 600V maximum when protected by a maximum 800 A Class L Fuse; 65 kA rms symmetrical, 480V maximum when protected by a maximum 1200 A circuit breaker; 42 kA rms symmetrical, 600V maximum when protected by a maximum 1200 A circuit breaker

**Table 23 - Non-combination Enclosed Soft Starters with SMC-50 Controllers with Internal Bypass and Circuit Breaker**

Controller Rating [A]	Short Circuit Current Rating
108	• 25 kA rms symmetrical, 480V maximum; 10 kA rms symmetrical, 600V maximum
135	• 25 kA rms symmetrical, 480V maximum; 10 kA rms symmetrical, 600V maximum
201	• 25 kA rms symmetrical, 480V maximum; 14 kA rms symmetrical, 600V maximum
251	• 35 kA rms symmetrical, 480V maximum; 18 kA rms symmetrical, 600V maximum
317	• 50 kA rms symmetrical, 480V maximum; 25 kA rms symmetrical, 600V maximum
361	• 50 kA rms symmetrical, 480V maximum; 25 kA rms symmetrical, 600V maximum
480	• 50 kA rms symmetrical, 480V maximum; 25 kA rms symmetrical, 600V maximum

**Table 24 - Non-combination Enclosed Soft Starters with SMC-50 Controllers with Internal Bypass and Fusible Disconnect**

Controller Rating [A]	Short Circuit Current Rating
108	• 70 kA rms symmetrical, 600V maximum when protected by a maximum 200 A Class J Fuse
135	• 70 kA rms symmetrical, 600V maximum when protected by a maximum 225 A Class J Fuse
201	• 70 kA rms symmetrical, 600V maximum when protected by a maximum 350 A Class J Fuse
251	• 70 kA rms symmetrical, 600V maximum when protected by a maximum 400 A Class J Fuse
317	• 69 kA rms symmetrical, 600V maximum when protected by a maximum 500 A Class J Fuse
361	• 69 kA rms symmetrical, 600V maximum when protected by a maximum 600 A Class J Fuse
480	• 69 kA rms symmetrical, 600V maximum when protected by a maximum 800 A Class L Fuse

**Table 25 - Combination Enclosed Soft Starters with SMC-50 Solid-state Controllers with External Bypass and Circuit Breakers**

Controller Rating [A]	Short Circuit Current Rating
90...180	• 25 kA rms symmetrical, 480V maximum; 10 kA rms symmetrical, 600V maximum
210	• 25 kA rms symmetrical, 480V maximum; 14 kA rms symmetrical, 600V maximum
260	• 35 kA rms symmetrical, 480V maximum; 18 kA rms symmetrical, 600V maximum
320	• 35 kA rms symmetrical, 480V maximum; 18 kA rms symmetrical, 600V maximum
361...420	• 42 kA rms symmetrical, 480V maximum; 25 kA rms symmetrical, 600V maximum
520	• 50 kA rms symmetrical, 480V maximum; 30 kA rms symmetrical, 600V maximum

**Table 26 - Combination Enclosed Soft Starters with SMC-50 Solid-state Controllers with External Bypass and Fusible Disconnect**

Controller Rating [A]	Short Circuit Current Rating
90	• 100 kA rms symmetrical, 600V maximum when protected by a maximum 200 A Class J Fuse
110	• 100 kA rms symmetrical, 600V maximum when protected by a maximum 225 A Class J Fuse
140	• 100 kA rms symmetrical, 600V maximum when protected by a maximum 300 A Class J Fuse
180	• 100 kA rms symmetrical, 600V maximum when protected by a maximum 400 A Class J Fuse
210	• 100 kA rms symmetrical, 600V maximum when protected by a maximum 450 A Class J Fuse
260	• 100 kA rms symmetrical, 600V maximum when protected by a maximum 500 A Class J Fuse
320	• 100 kA rms symmetrical, 600V maximum when protected by a maximum 700 A Class L Fuse
361	• 100 kA rms symmetrical, 600V maximum when protected by a maximum 800 A Class L Fuse
420	• 100 kA rms symmetrical, 600V maximum when protected by a maximum 800 A Class L Fuse
520	• 42 kA rms symmetrical, 600V maximum when protected by a maximum 1000 A Class L Fuse

**Table 27 - Combination Enclosed Soft Starters with SMC-50 with Internal Bypass and Fusible Disconnect**

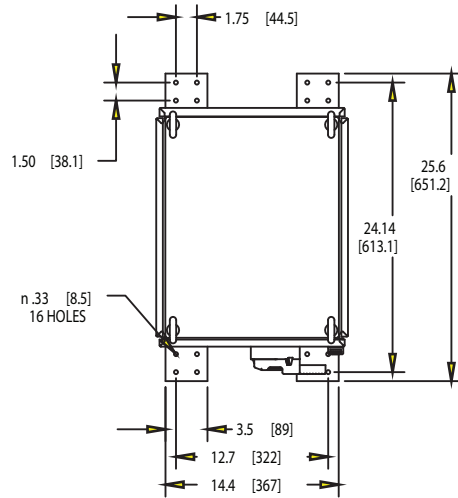
Controller Rating [A]	Short Circuit Current Rating
108	• 70 kA rms symmetrical, 600V maximum when protected by a maximum 200 A Class J Fuse
135	• 70 kA rms symmetrical, 600V maximum when protected by a maximum 225 A Class J Fuse
201	• 70 kA rms symmetrical, 600V maximum when protected by a maximum 350 A Class J Fuse
251	• 70 kA rms symmetrical, 600V maximum when protected by a maximum 400 A Class J Fuse
317	• 69 kA rms symmetrical, 600V maximum when protected by a maximum 500 A Class J Fuse
361	• 69 kA rms symmetrical, 600V maximum when protected by a maximum 600 A Class J Fuse
480	• 69 kA rms symmetrical, 600V maximum when protected by a maximum 800 A Class L Fuse

## Approximate Dimensions

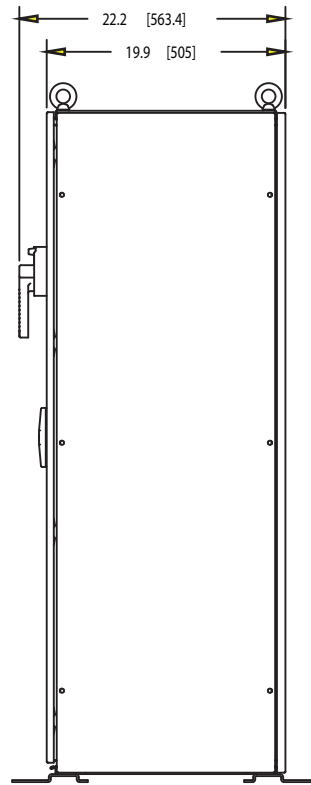
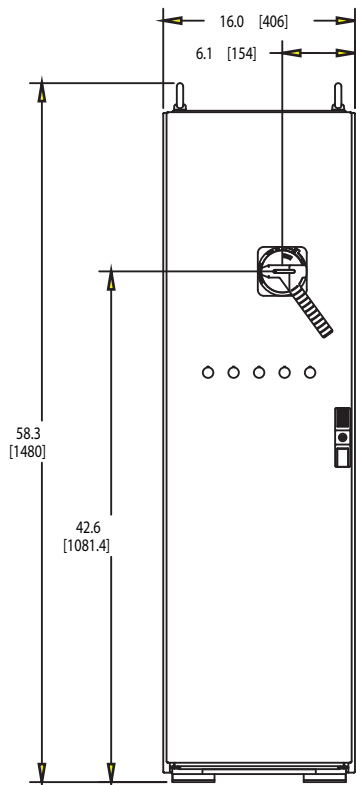
Examples given in this section include standard options. Use ProposalWorks to obtain dimensions for Smart Motor Controllers with all available options. ProposalWorks is available from <http://www.rockwellautomation.com/global/e-tools/overview.page>.

Dimensions are in millimeters (inches) unless otherwise noted. Dimensions are not to be used for manufacturing purposes.

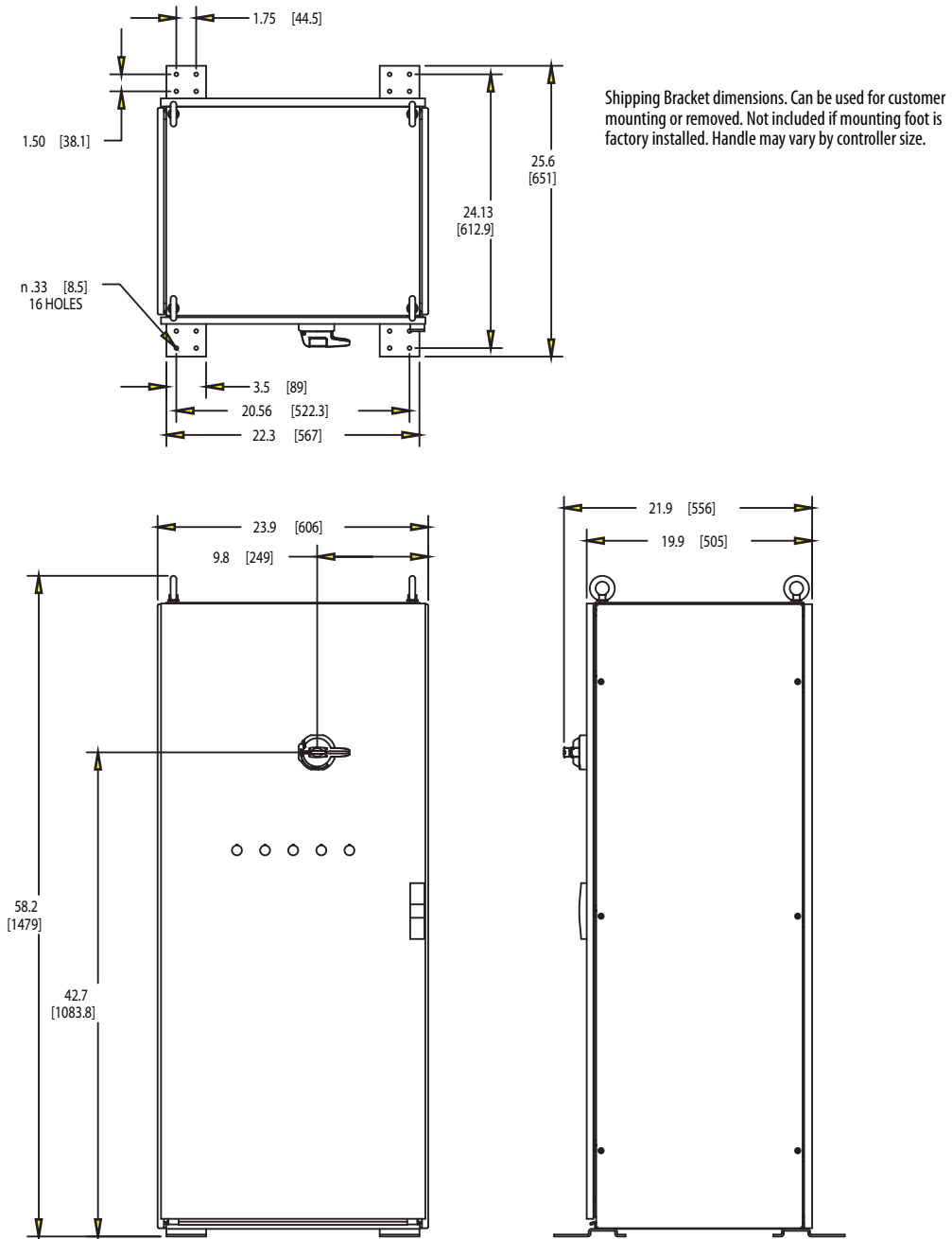
**Figure 46 - Enclosure for SMC Controllers—1400 mm x 400 mm x 500 mm**



Shipping Bracket dimensions. Can be used for customer mounting or removed. Not included if mounting foot is factory installed. Handle may vary by controller size.

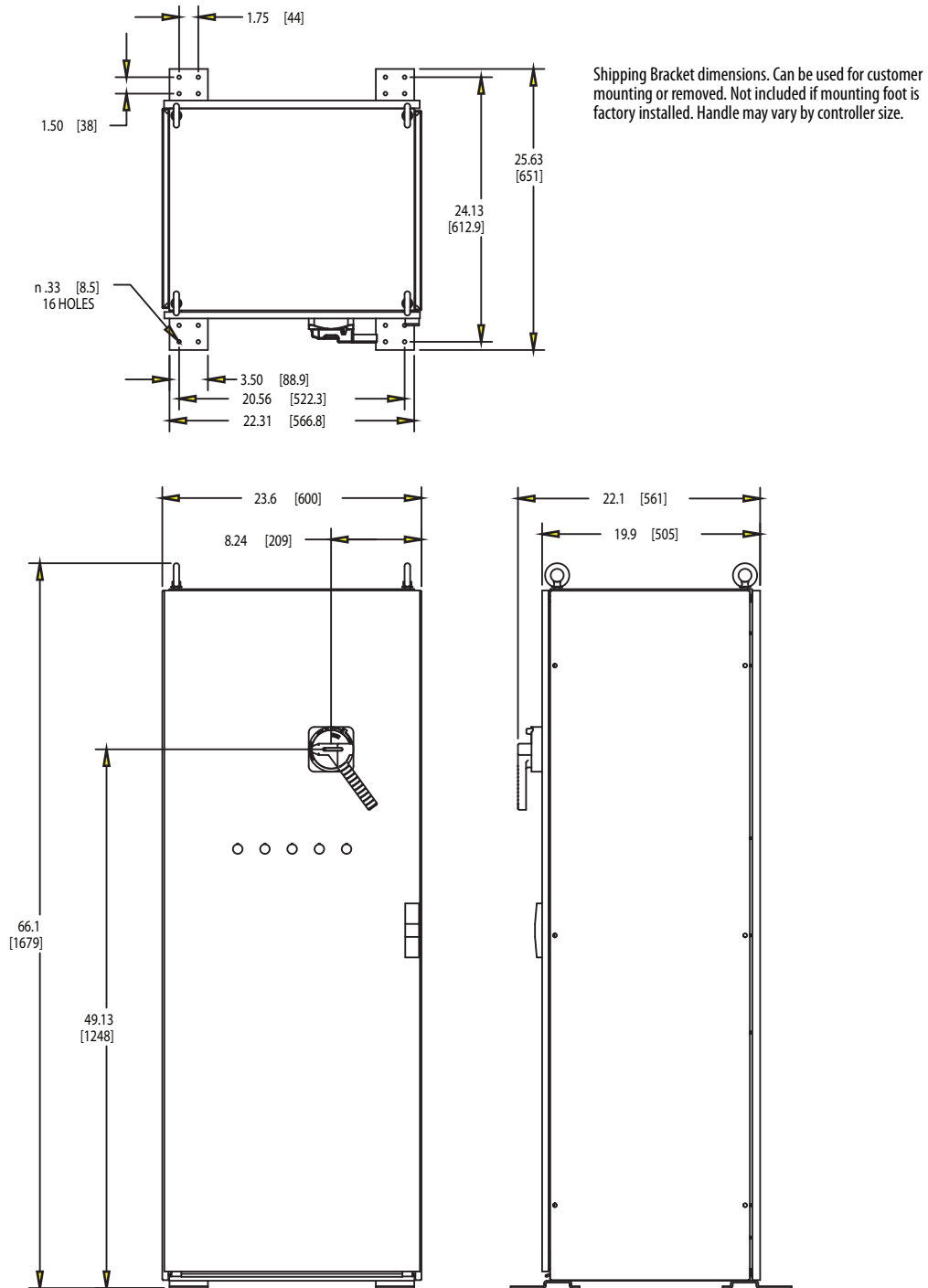


**Figure 47 - Enclosure for SMC Controllers—1400 mm x 600 mm x 500 mm**

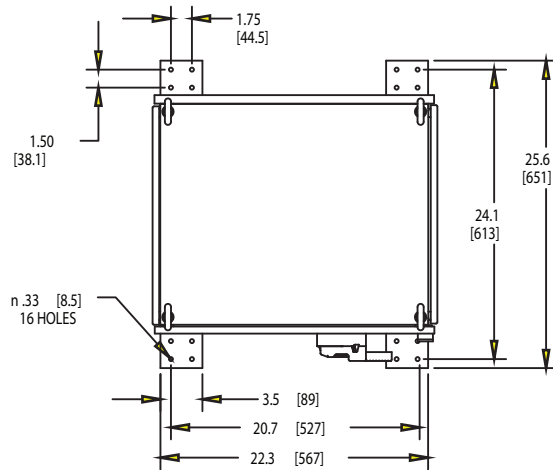




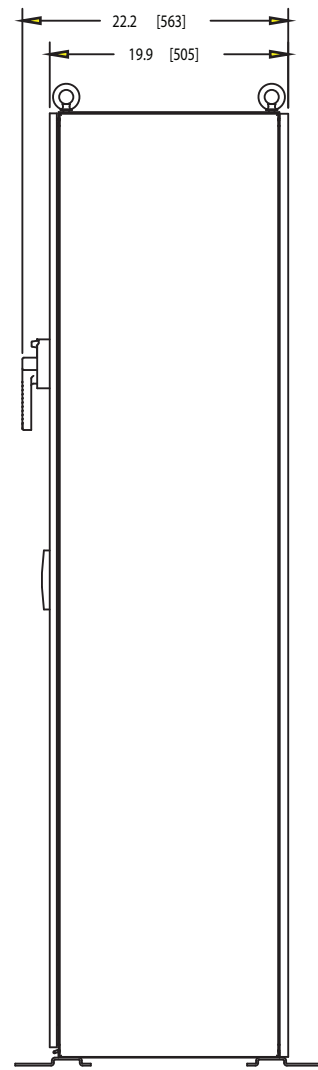
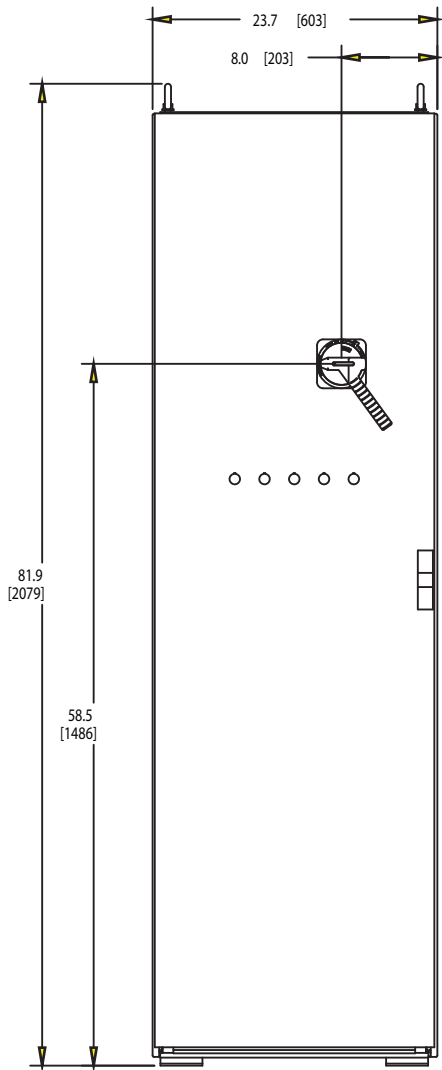
**Figure 48 - Enclosure for SMC Controllers—1600 mm x 600 mm x 500 mm**



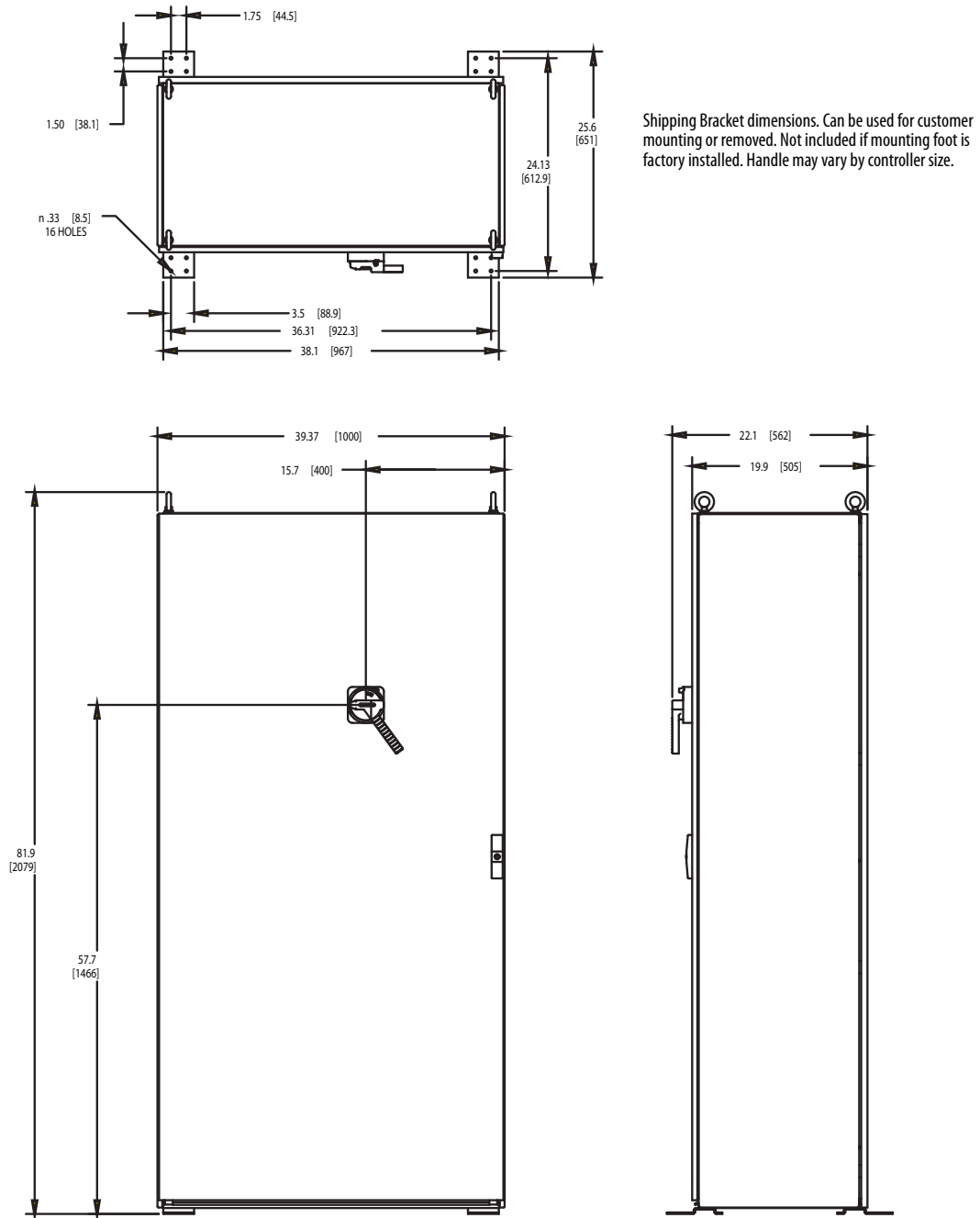
**Figure 49 - Enclosure for SMC Controllers—2000 mm x 600 mm x 500 mm**



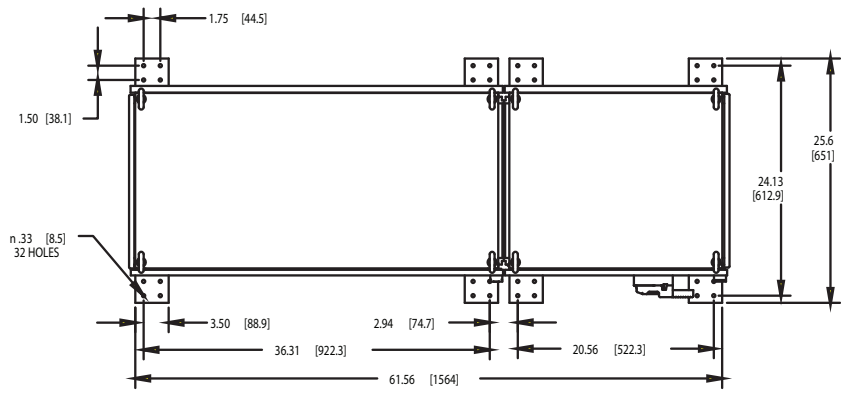
Shipping Bracket dimensions. Can be used for customer mounting or removed. Not included if mounting foot is factory installed. Handle may vary by controller size.



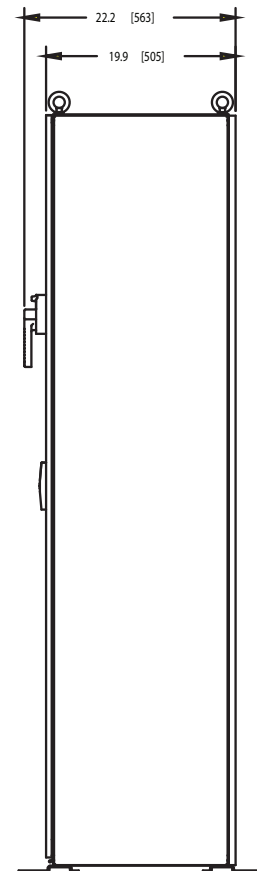
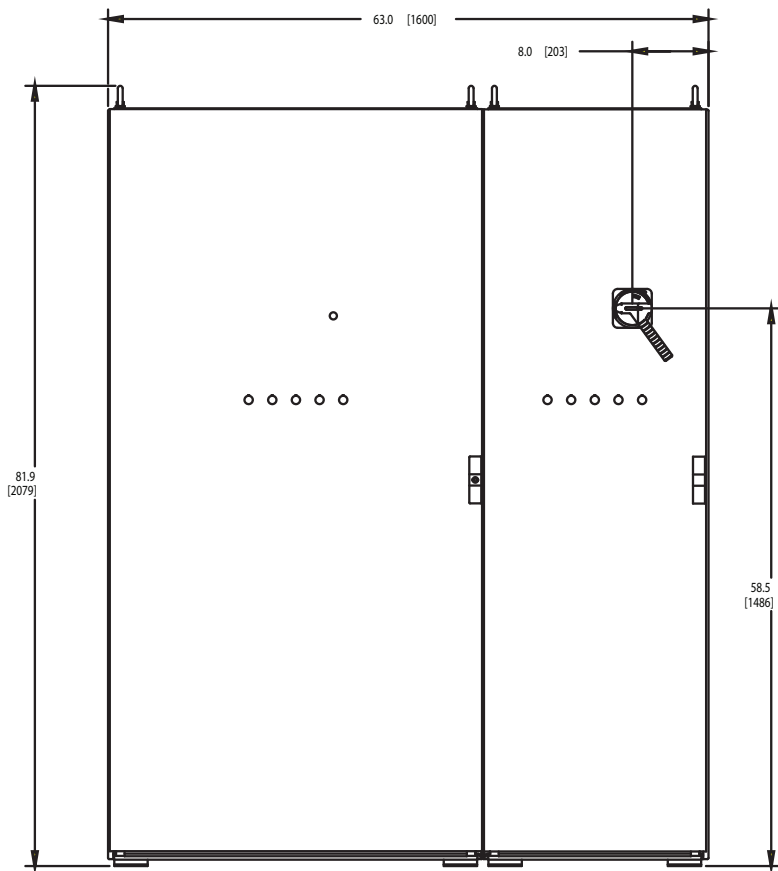
**Figure 50 - Enclosure for SMC Controllers—2000 mm x 1000 mm x 500 mm**



**Figure 51 - Enclosure for SMC Controllers—2000 mm x 1600 mm x 500 mm**



Shipping Bracket dimensions. Can be used for customer mounting or removed. Not included if mounting foot is factory installed. Handle may vary by controller size.



**Table 28 - SMC-50 Controller with External Bypass Enclosure Dimensions**

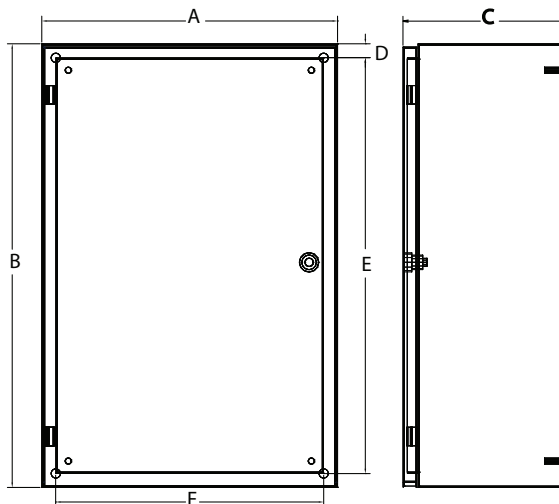
Non-combination Controllers		Combination Controllers				
		With Fusible Disconnect		With Circuit Breaker		
Cat. No.	Dimensions (H x W x D)	Cat. No.	Dimensions (H x W x D)	Cat. No.	Dimensions (H x W x D)	
150S-C90J...	1400 x 600 x 500 (55.1 x 23.6 x 19.7) see <a href="#">Figure 47</a>	152S-C90J...	1400 x 600 x 500 (55.1 x 23.6 x 19.7) see <a href="#">Figure 47</a>	153S-C90J...	1400 x 600 x 500 (55.1 x 23.6 x 19.7) see <a href="#">Figure 47</a>	
150S-D11J...		152S-D11J...		153S-D11J...		
150S-D14J...		152S-D14J...		153S-D14J...		
150S-D18J...		2000 x 1000 x 500 (78.7 x 39.4 x 19.7) see <a href="#">Figure 50</a>	152S-D18J...	1600 x 600 x 500 (63.0 x 23.6 x 19.7) see <a href="#">Figure 48</a>	153S-D18J...	1600 x 600 x 500 (63.0 x 23.6 x 19.7) see <a href="#">Figure 48</a>
150S-D21J...			152S-D21J...		153S-D21J...	
150S-D26J...			152S-D26J...		153S-D26J...	
150S-D32J...			152S-D32J...		153S-D32J...	
150S-D36J...	2000 x 1000 x 500 (78.7 x 39.4 x 19.7) see <a href="#">Figure 50</a>	152S-D36J...	2000 x 1000 x 500 (78.7 x 39.4 x 19.7) see <a href="#">Figure 50</a>	153S-D36J...	2000 x 1000 x 500 (78.7 x 39.4 x 19.7) see <a href="#">Figure 50</a>	
150S-D42J...		152S-D42J...		153S-D42J...		
150S-D52J...		152S-D52J...		153S-D52J...		

**Table 29 - SMC-50 Controller with Internal Bypass Enclosure Dimensions**

Non-combination Controllers		Combination Controllers				
		With Fusible Disconnect		With Circuit Breaker		
Cat. No.	Dimensions (H x W x D)	Cat. No.	Dimensions (H x W x D)	Cat. No.	Dimensions (H x W x D)	
150S-D10J...	1400 x 400 x 500 (55.1 x 15.7 x 19.7) see <a href="#">Figure 46</a>	152S-D10J...	1400 x 400 x 500 (55.1 x 15.7 x 19.7) see <a href="#">Figure 46</a>	153S-D10J...	1400 x 400 x 500 (55.1 x 15.7 x 19.7) see <a href="#">Figure 46</a>	
150S-D13J...		152S-D13J...		153S-D13J...		
150S-D20J...		152S-D20J...	153S-D20J...			
150S-D25J...		2000 x 600 x 500 (78.7 x 23.6 x 19.7) see <a href="#">Figure 49</a>	152S-D25J...	1400 x 600 x 500 (55.1 x 23.6 x 19.7) see <a href="#">Figure 47</a>	153S-D25J...	2000 x 600 x 500 (78.7 x 23.6 x 19.7) see <a href="#">Figure 49</a>
150S-D31J...			152S-D31J...		153S-D31J...	
150S-D36J...			152S-D36J...		153S-D36J...	
150S-D48J...			152S-D48J...		153S-D48J...	
150S-D62J...	2000 x 1000 x 500 (78.7 x 39.4 x 19.7) see <a href="#">Figure 50</a>	152S-D62J...	2000 x 1600 x 500 (78.7 x 63 x 19.7) see <a href="#">Figure 51</a>	153S-D62J...	2000 x 1600 x 500 (78.7 x 63 x 19.7) see <a href="#">Figure 51</a>	
150S-D78J...		152S-D78J...		153S-D78J...		

**Figure 52 - Wall-mounted Enclosure Dimensions**

- Wall-mounted controllers do not include Snap-together wiring



## Rockwell Automation Support

Use the following resources to access support information.

<b>Technical Support Center</b>	Knowledgebase Articles, How-to Videos, FAQs, Chat, User Forums, and Product Notification Updates.	<a href="http://www.rockwellautomation.com/knowledgebase">www.rockwellautomation.com/knowledgebase</a>
<b>Local Technical Support Phone Numbers</b>	Locate the phone number for your country.	<a href="http://www.rockwellautomation.com/global/support/get-support-now.page">www.rockwellautomation.com/global/support/get-support-now.page</a>
<b>Direct Dial Codes</b>	Find the Direct Dial Code for your product. Use the code to route your call directly to a technical support engineer.	<a href="http://www.rockwellautomation.com/global/support/direct-dial.page">www.rockwellautomation.com/global/support/direct-dial.page</a>
<b>Literature Library</b>	Installation Instructions, Manuals, Brochures, and Technical Data.	<a href="http://www.rockwellautomation.com/literature">www.rockwellautomation.com/literature</a>
<b>Product Compatibility and Download Center (PCDC)</b>	Get help determining how products interact, check features and capabilities, and find associated firmware.	<a href="http://www.rockwellautomation.com/global/support/pcdc.page">www.rockwellautomation.com/global/support/pcdc.page</a>

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Publication 150-TD010A-EN-P - July 2018

Supersedes Publication 150-SG012A-EN-P EN-P March 2017

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