

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

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



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# 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
True 3-phase control	Yes	Yes	Yes
Bypass	Integral	Integral	External
Protection and diagnostics	Basic	Advanced	Industry leading
Start/stop modes	5	9	17
Enclosure type	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
Voltage range	200...575V AC	200...575V AC	200...575V AC
Control voltage	100...240V AC	100...240V AC	100...240V AC
Option offering and customization	Moderate	Extensive	Extensive
Customization through Modified Industrial Controls	Yes	Yes	Yes

## Overview

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

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

(2) Accu-Stop is not included as a parameter/function like that of the SMC-Flex. However, the Accu-Stop function can be accomplished with the Stop Option and Slow Speed with Braking functions.

(3) The SMC-50 starter is fully solid-state (no integrated bypass). An external bypass contactor can be added as an option.

(4) Option using a Bulletin 1410 motor winding heater

(5) 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 (large fan, rock crusher, chipper, etc.), use of the free tools available from the Rockwell Automation Website is recommended:

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

SMC-3 and SMC Flex Smart Motor Controllers Selection Guide, [Publication 150-SG009](#)

SMC-50 Solid-state Smart Motor Controllers Selection Guide, [Publication 150-SG010](#)

## Standards Compliance and Certifications

### SMC-3 and SMC Flex

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		

### SMC-50

Standards Compliance— Open Controllers	Certifications—Open Controllers	Standards Compliance— Enclosed Controllers	Certifications—Enclosed Controllers
UL 508	cULus Listed (Open Type) (File No. E96956)	UL 508A	cULus Listed
EN 60947-4-2	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>		

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

# 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 1](#) shows an example of this feature.

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

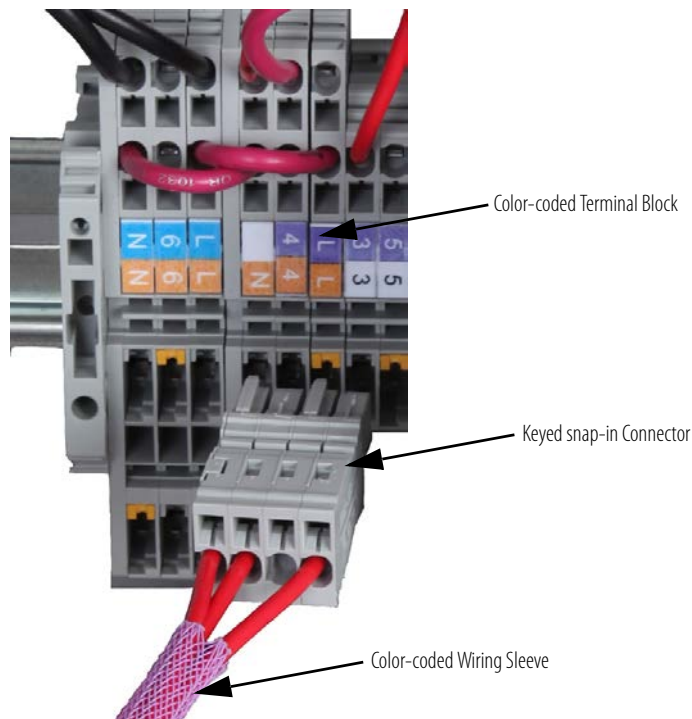


Figure 2 - SMC-3 Snap-together Wiring

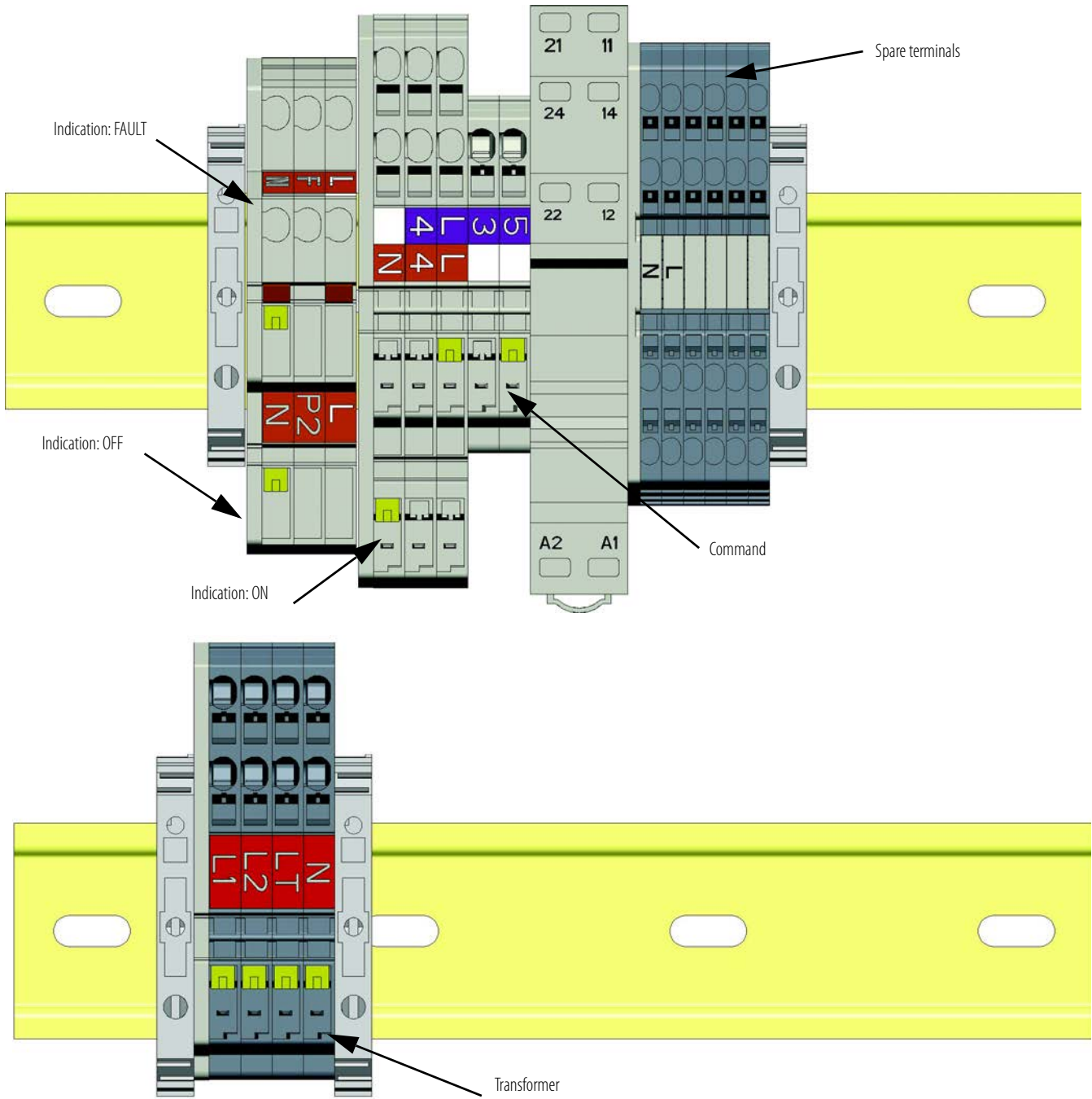


Figure 3 - SMC Flex Snap-together Wiring

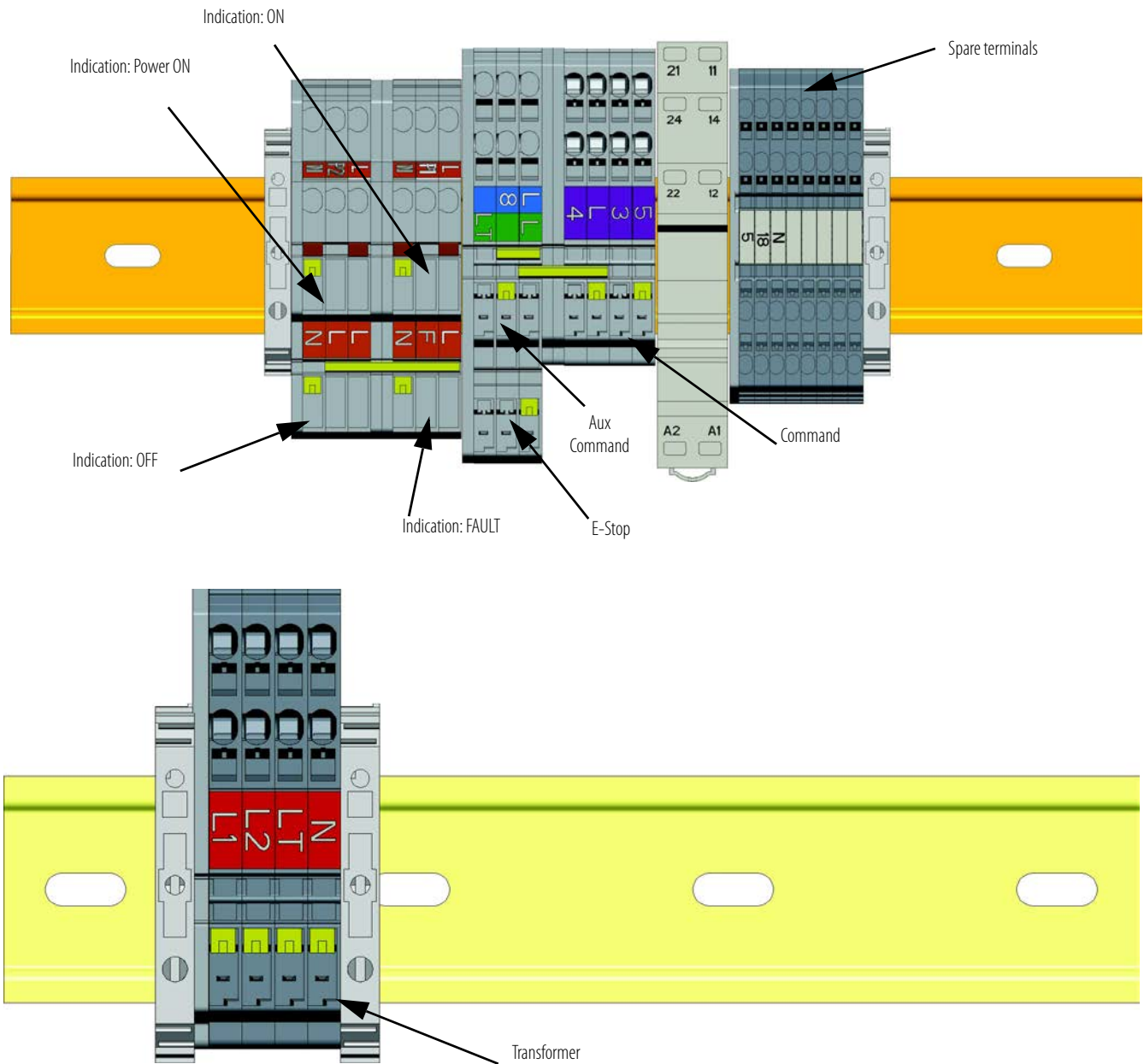
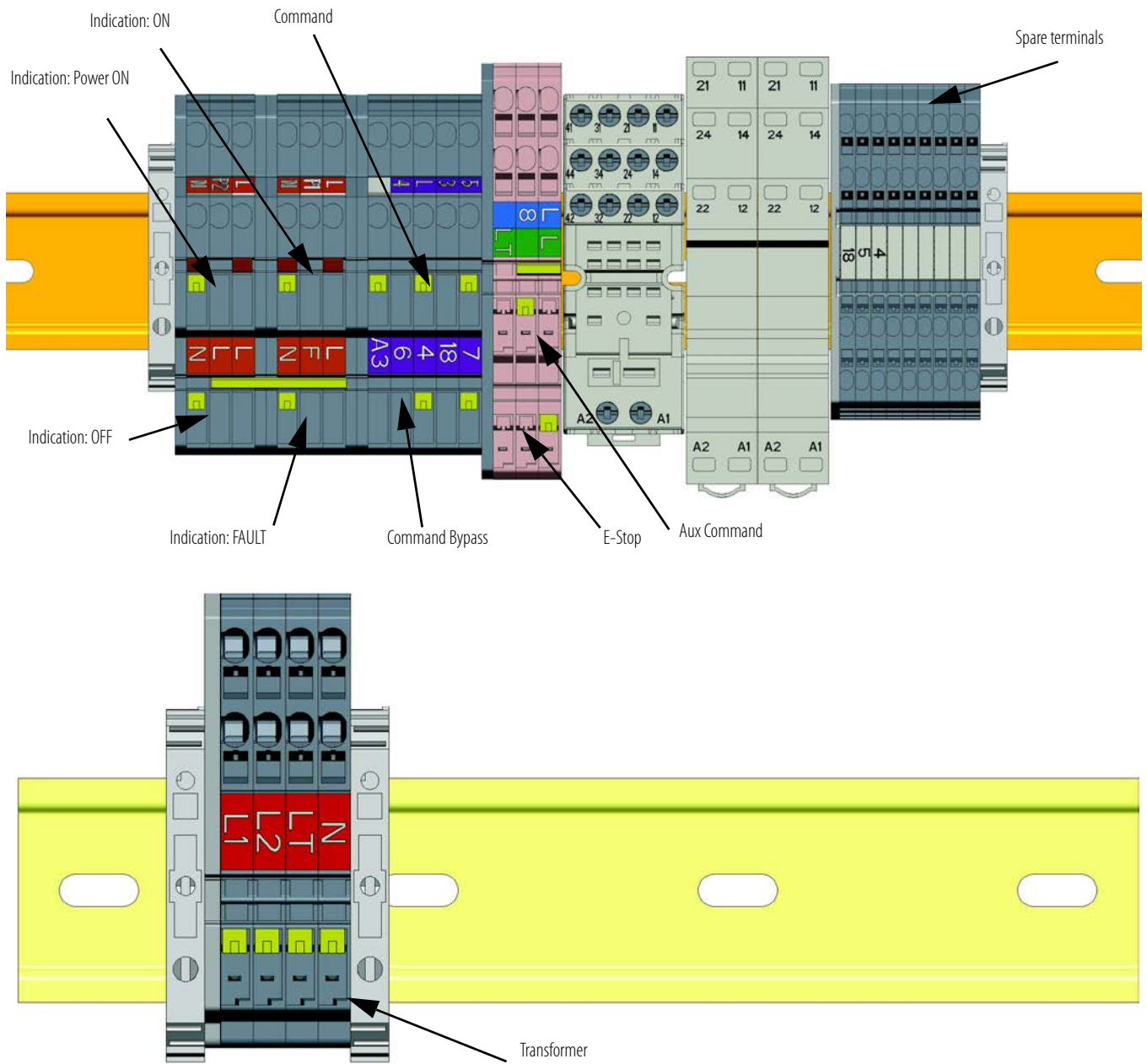




Figure 4 - SMC-50 Snap-together Wiring



Notes:

# 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
150F	SMC Flex Non-combination
152F	SMC Flex Combination with Fusible Disconnect
153F	SMC Flex Combination with Circuit Breaker
150S	SMC-50 Non-combination
152S	SMC-50 Combination with Fusible Disconnect
153S	SMC-50 Combination with Circuit Breaker

b					
Controller Rating [A]					
SMC-3		SMC Flex		SMC-50	
D10	108	D10	108	C90	90
D13	135	D13	135	D11	110
D20	201	D20	201	D14	140
D25	251	D25	251	D18	180
D31	317	D31	317	D21	210
D36	361	D36	361	D26	260
D48	480	D48	480	D32	320
		D62	625	D36	361
		D78	780	D42	420
		D97	970	D52	520
		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	
See <a href="#">page 12</a>	

g		Options	
Code	Description	Code	Description
1	Start-Stop Push-Button	HC3	SMC Flex Human Interface Module- Door mounted type 4/12
1E	On - Off Push-Button	HC6	SMC-50 Human Interface Module- Door mounted type 4/12
3	Hand-Off-Auto Selector Switch	20S	Communication: RS-485
3E	On - Off Selector Switch	20D	Communication: DeviceNet
3H	Hand-Auto Selector Switch	20E	Communication: Ethernet/IP
3B	SMC-Off-Bypass Selector Switch	20C	Communication: Control Net
13	Start-Stop Push-Button & Hand-Off-Auto Selector Switch	20P	Communication: ProfiBUS
4_ ___ <sup>(1)</sup>	Pilot Lights	PC	Pump Control
5_ ___ <sup>(1)</sup>	Push to test Pilot Lights	BC	Braking Control
1XA	Soft Stop Push Button†	TB10	10 Spare Terminal Blocks
1XB	Pump Stop Push Button†	TB20	20 Spare Terminal Blocks
1XC	Slow Speed Push Button†	P10	100 mm Mounting foot, sheet metal
1XD	Brake Push Button†	P20	200 mm Mounting foot, sheet metal
6P	Control Circuit Transformer	F10	100 mm Mounting foot, high-strength plastic
6XP	1 Factor Additional VA	F20	200 mm Mounting foot, high-strength plastic
6YP	2 Factor Additional VA	416	Plug-in Control Relay 2-pole
8L	Line-Mounted Protective Module	417	Plug-in Control Relay On Delay
8M	Load-Mounted Protective Module	418	Plug-in Control Relay Off Delay
8B	Line- and Load-Mounted Protective Modules	425	Hour Meter
BP	Bypass Starter	428	Ammeter
NB	NEMA Bypass Starter	429	Ground Fault Relay
IC	Isolation Contactor	430	Under Voltage Relay
NI	NEMA Isolation Contactor	22	Control Circuit Fusing
989	1 N.O 1 N.C Auxiliary Contact on Circuit Breaker or Fusible Disconnect Switch	OPS	Bulletin 509 NEMA Size 1 starter and Bulletin 592 solid-state overload

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

**Table 1 - 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

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

# Controllers Rated 5...85 A

## SMC Flex Controllers

152H - F85 F BD D - B - 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 Rating [A]	
Code	Description
F5	5 A
F25	25 A
F43	43 A
F60	60 A
F85	85 A

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

d	
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

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

f									
Horsepower (Combination Controllers only)									
Code	Rating	Code	Rating	Code	Rating	Code	Rating	Code	Rating
33	0.5	39	5	45	30	51	125	59	400
34	0.75	40	7.5	46	40	52	150	60	450
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 <sup>(1)</sup>	
Code	Description
1	Start-Stop Push Button
1F	Start-Stop Push Button with Hand-Off-Auto Selector Switch
1XA <sup>(2)</sup>	Soft Stop Push Button
1XB <sup>(2)</sup>	Pump Stop Push Button
1XC <sup>(2)</sup>	Slow Speed Push Button
1XD <sup>(2)</sup>	Brake Push Button
1XE <sup>(2)</sup>	Accu-Stop/Slow Speed Push Button
3	Hand-Off-Auto Selector Switch
3B <sup>(3)</sup>	SMC-Off-Bypass Selector Switch
4G	Transformer Pilot Light - Green Power On Indicator
4R	Transformer Pilot Light - Red Run Indicator
5R	Push-to-Test Pilot Light - Red Run Indicator
6P	Control Circuit Transformer (fused primary and secondary)
6PX	Additional 100VA Control Circuit Transformer (fused primary and secondary)
6PK	1000VA Control Circuit Transformer (fused primary and secondary)
6PL	1600VA Control Circuit Transformer (fused primary and secondary)
6PM	2000VA Control Circuit Transformer (fused primary and secondary)
8L	Line-Mounted Protective Module
8M	Load-Mounted Protective Module
8B	Line- and Load-Mounted Protective Modules
HC3	Human Interface Module; Door-mounted, Full Numeric (Type 4/12)
20S	Communication: RS-485
20D	Communication: DeviceNet
20E	Communication: Ethernet/IP
20C	Communication: Control Net
20P	Communication: ProfIBUS
98	N.O. disconnect auxiliary mounted on operating mechanism
99	N.C. disconnect auxiliary mounted on operating mechanism
98X	Internal N.O. circuit breaker auxiliary
99X	Internal N.C. circuit breaker auxiliary
SEL	Service Entrance Label
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.

## SMC-3 Controllers

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.

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

## Power Centers

**Table 2 - Power Centers for SMC-3 Controllers**

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

**Table 3 - Power Centers for SMC Flex Controllers**


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

**Table 4 - Power Centers for SMC-50 Controllers**


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

# Transformers

**Table 5 - Transformers for SMC-3 and SMC Flex Controllers**



	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

**Table 6 - Transformers for SMC-50 Controllers**








	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 Kits

**Table 7 - Snap-together Kits for SMC-3, SMC Flex, and SMC-50 Controllers**

	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
	3-Position Hand-Off-Auto Selector Switch & Start-Stop Pushbutton Kit Metal Bezel 22.5 mm	198-3SSPBM
	2-Position Hand-Auto or On-Off Selector Switch & Start-Stop Pushbutton Kit Metal Bezel 22.5 mm	198-2SSPBM
	Red Universal LED Pilot Light Snap-together Kit 22.5 mm	198-RUPL



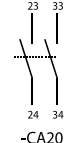




	Description	Cat. No.
	Green Universal LED Pilot Light Snap-together Kit 22.5 mm	198-GUPL
	White or Amber Universal LED Pilot Light Snap-together Kit 22.5 mm	198-WUPL
	Red Universal LED Push to Test Pilot Light Snap-together Kit 22.5 mm	198-RUPPLM
	Green Universal LED Push to Test Pilot Light Snap-together 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


Notes:

## Accessories for SMC-3 Controllers

### Auxiliary Contact Blocks


Description		N.O.	N.C.	Connection Diagram				Cat. No.
	Auxiliary Contact Blocks for side mounting with sequence terminal designations <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	 -CA10	 -CA20	 -CA01	 -CA11	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.	
	Fan <ul style="list-style-type: none"> <li>Field installed</li> </ul>	Optional	1	150-CF64	
		Replacement		150-C3...37	150-CF147
				150-C43...85	41391-801-03
				150-C108, 150-C135	41391-801-01
				150-C201, 150-C251	41391-801-02
150-C317...C480					

### Protective Modules

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

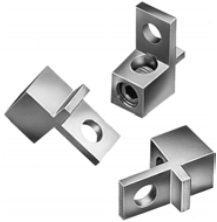
Description		For Use With	Pkg. Qty.	Cat. No.
	480V Protective Module	150-C3...37NB	1	150-C84
		150-C43...85NB (line and/or load)	1	150-C84P
		150-C108...480NB (line and/or load)	1	150-F84L
	600V Protective Module	150-C3...37NC	1	150-C86
		150-C43...85NC (line and/or load)	1	150-C86P
		150-C108...480NC (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.
	Marking Tag Sheet • 160 perforated paper labels each, 6 x 17 mm, to be used with a transparent cover	150-C, 150-D	10	100-FMP
	Transparent Cover • To be used with marking tag sheets		100	100-FMC

## Remote Reset Solenoid

Description	For Use With	Pkg. Qty.	Cat. No.
 Remote Reset Solenoid • for remote reset of electronic overload	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	—	—	—

# Accessories for SMC Flex Controllers

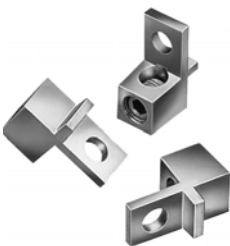
## Protective Modules

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
	1250 <sup>(3)</sup>	4/0...500 MCM	4/0...500 MCM	6	6	3	100-DL680
			2/0...500 MCM	6	6	3	100-DL630
			4/0...500 MCM	3	3	3	100-DL680

(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.



(3) 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>(1)</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)	RS485 DF1 Communication Adapter	SMC Flex	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		Programming Software	Windows 7/2000/XP/Vista	Available for download at <a href="http://www.rockwellautomation.com">www.rockwellautomation.com</a>
DriveExecutive™	9303-4DTE01ENE			
DriveTools™ SP <sup>(2)</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) Requires a 20-HIM-H10 cable to connect to the SMC Flex.
- (2) Includes DriveExecutive™ and DriveObserver™
- (3) Includes Cat. No. 1203-SFC and 1202-C10 cables.
- (4) Includes Cat. No. 20-HIM-H10 and 22-HIM-H10 cables.

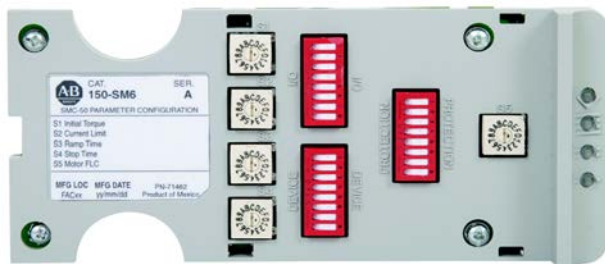
# Accessories for SMC-50 Controllers

## 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, the 150-SM6 can be removed from the SMC-50 controller. This enables 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

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



	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 24</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 24</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 24</a> for more information	7, 8, 9	3	150-SM4
	Parameter Configuration Module — DIP and rotary dial See <a href="#">page 23</a> for more information	7, 8, 9	1	150-SM6

## Converter Modules

Description	For Use With	Rated Current [A]	Cat. No.
	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>(1)</sup>
Connection Cable (Replacement) Cat. No. 150-SM2 to Bul. 825-MCM Connection			825-MCA
	Used with a Cat. No. 150-SM2 to provide ground current feedback.	Turns Ratio: 100:1	825-CBCT


(1) Requires user-supplied current transformers with 5 A secondary.

(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.

## 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

### External Bypass – Optional Run Operation


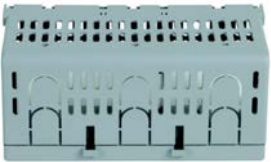
An external bypass contactor can be used to carry the motor running current. In this running mode, the SCRs are only used for starting and potentially stopping depending on the stop mode selected. The SMC-50 controller controls the external bypass using one of its auxiliary relay outputs. When the SMC-50 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. This configuration enables the SMC-50 controller's current-related motor protection features to be used (e.g., external overload not required).

- NOTE: If this configuration is not used, a means of external motor protection is required when using an external bypass contactor.



If the bypass kit is used (Frames C and D only), the SMC-50 controller is used for current sensing, metering, alarm/fault conditions, etc. and neither a Bulletin 825-MCM converter module nor a Cat. No. 150-SM2 are required.

	For Use With Controller Type		Current Range [A]	Cat. No.
			150-SC...	210...320
Solid-state (With External Bypass)		150-SD...	361...520	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
	<ul style="list-style-type: none"> <li>Dead front protection</li> <li>IP2X finger safe when used with 250 MCM cable</li> </ul>	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... Frame B (90...180 A) units only.	1	150-STCB

## 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>(1)</sup>	
	HIM Interface Cables	HIM Interface Cable, 1 m (39 in)	20-HIM-H10 <sup>(2)</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	
	RS485 DF1 Communication Adapter	Bulletin 150-Sxx	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	Windows 7/2000/XP/Vista	Available for download at <a href="http://www.rockwellautomation.com">www.rockwellautomation.com</a>
DriveExecutive™			9303-4DTE01ENE
DriveTools™ SP <sup>(3)</sup>			9303-4DTS01ENE
AnaCANda™ RS-232 to DPI	PC Interface	Serial	1203-SSS <sup>(4)</sup>
DPI to USB		USB	1203-USB <sup>(5)</sup>

- (1) A 3 m (9.8 ft.) Cat. No. 1202-C30 cable is provided.
- (2) A cable is required if 20-HIM-A6 is connected to the SMC-50 DPI Port #2 and used as a handheld device.
- (3) Includes DriveExecutive™ and DriveObserver™
- (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.
 <ul style="list-style-type: none"> <li>Perforated frame strip</li> <li>Mounting rail for door or panel installation</li> </ul>	Sheet steel	400 mm	198-DS400
		600 mm	198-DS600
		1000 mm	198-DS1000
 <ul style="list-style-type: none"> <li>Enclosure mounting foot</li> <li>100 mm height</li> </ul>	High-strength plastic	400 mm	198-FB100 A
		600 mm	198-FB100B
		1000 mm	198-FB100C
	Sheet steel	400 mm	198-PL100 A
		600 mm	198-PL100B
		1000 mm	198-PL100C
<ul style="list-style-type: none"> <li>Enclosure mounting foot</li> <li>200 mm height</li> </ul>	Sheet steel	400 mm	198-PL200 A
		600 mm	198-PL200B
		1000 mm	198-PL200C

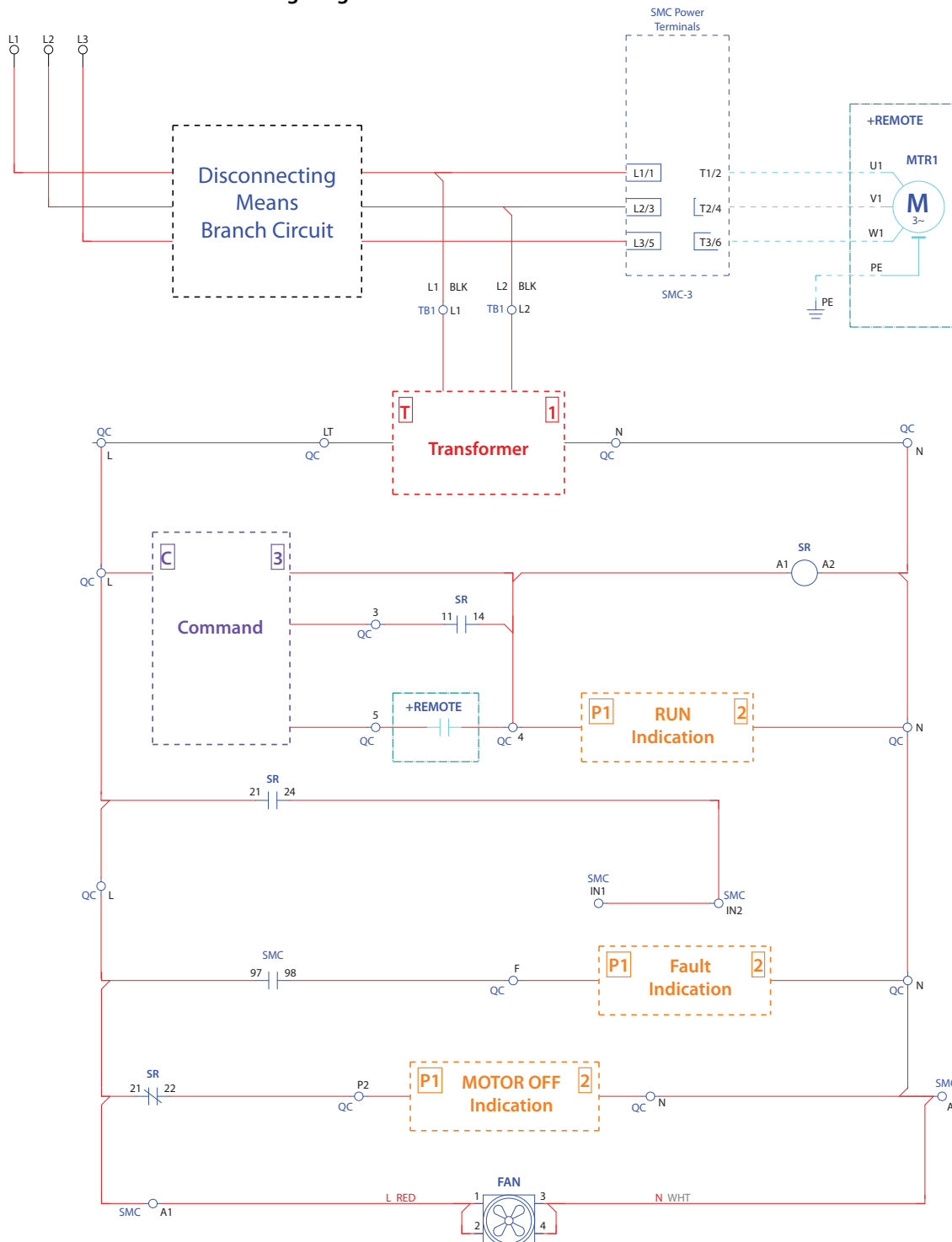
## Wiring Diagrams for SMC Controllers

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 supplied by the customer when the disconnect switch is supplied. Refer to NEC when selecting short-circuit protection.
- Additional control circuit overcurrent protection is required for non-combination starters. Refer to NEC.

Figure 5 - SMC-3 Controller Basic Wiring Diagram

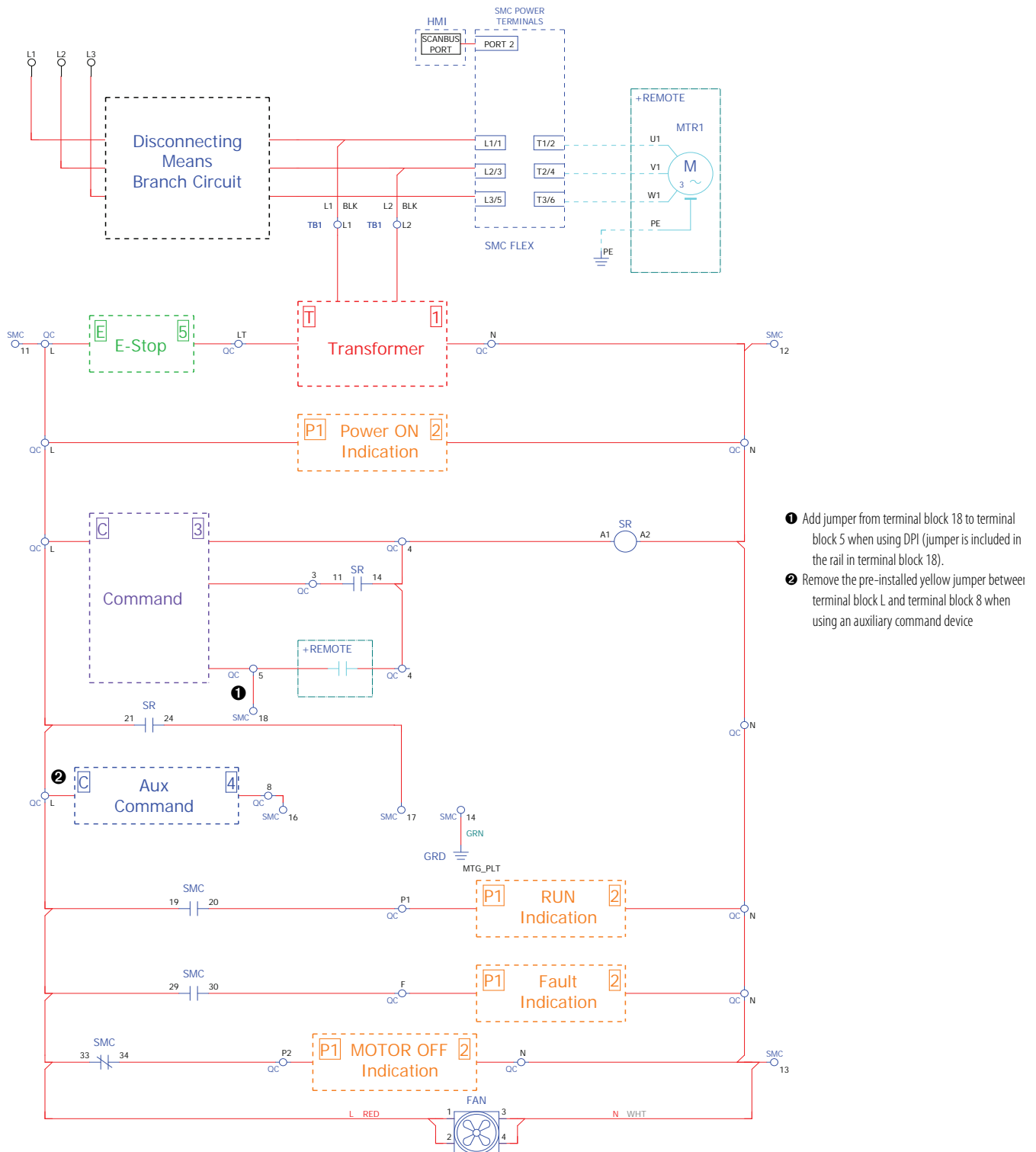


- For wiring diagrams for snap-together kits, please see the following figures:
  - Command kits: [Figure 8](#), [Figure 9](#), and [Figure 10](#)
  - Indication kit: [Figure 16](#)
  - Transformer kit: [Figure 17](#)

Table 8 - SMC-3 Controller DIP Switch Default Factory Settings

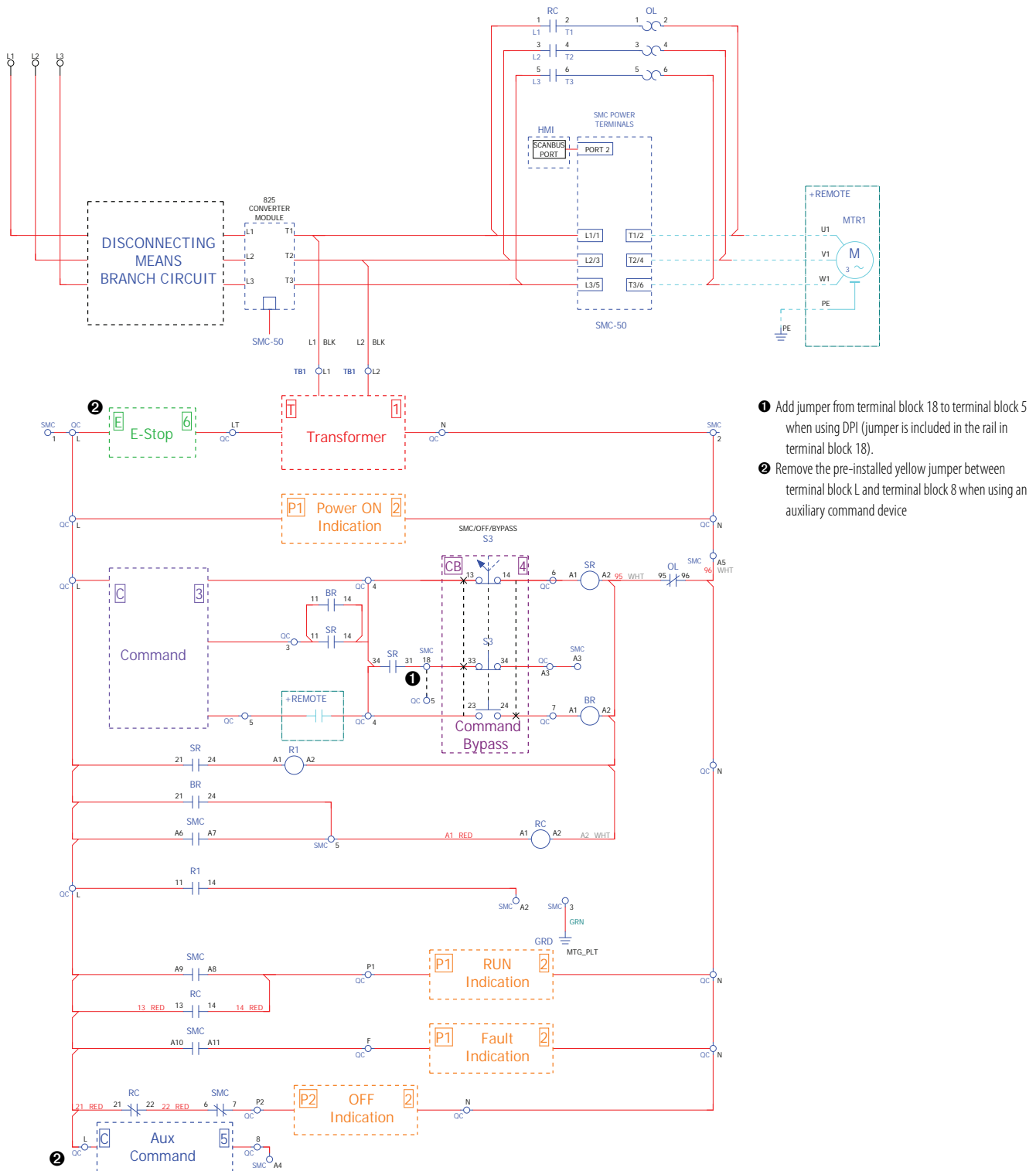
DIP Switch	Value	DIP Switch	Value	DIP Switch	Value	DIP Switch	Value	DIP Switch	Value	DIP Switch	Value	DIP Switch	Value	DIP Switch	Value
1	0	3	0	5	1	7	0	9	0	11	1	13	0	15	1
2	1	4	0	6	0	8	0	10	0	12	0	14	0	16	0

Figure 6 - SMC Flex Controller Basic Wiring Diagram



- For wiring diagrams for snap-together kits, please see the following figures:
  - Command kits: [Figure 8](#), [Figure 9](#), and [Figure 10](#); Auxiliary Command kits: [Figure 11](#), [Figure 12](#), and [Figure 13](#)
  - Emergency Stop (E-Stop) kit: [Figure 15](#)
  - Indication kit: [Figure 16](#)
  - Transformer kit: [Figure 17](#)
- 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.

Figure 7 - SMC-50 Controller Basic Wiring Diagram



- ❶ Add jumper from terminal block 18 to terminal block 5 when using DPI (jumper is included in the rail in terminal block 18).
- ❷ 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 8](#), [Figure 9](#), and [Figure 10](#); Auxiliary Command kits: [Figure 11](#), [Figure 12](#), and [Figure 13](#)
  - Command bypass kit: [Figure 14](#)
  - Emergency Stop (E-Stop) kit: [Figure 15](#)
  - Indication kit: [Figure 16](#)
  - Transformer kit: [Figure 17](#)
- For additional wiring diagram notes, please see [Table 9](#), [Table 10](#), and [Table 11](#)



**Table 9 - SMC-50 Controller 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 10 - SMC-50 Controller 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	Aux1 Cfg Ext Bypass 4
10	Aux2 Cfg Normal 0
Set 14	Aux3 Cfg Fault 2

**Table 11 - SMC-50 Controller 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

# Wiring Diagrams for Snap-together Kits

Figure 8 - Start-Stop Command Kit Wiring Diagram

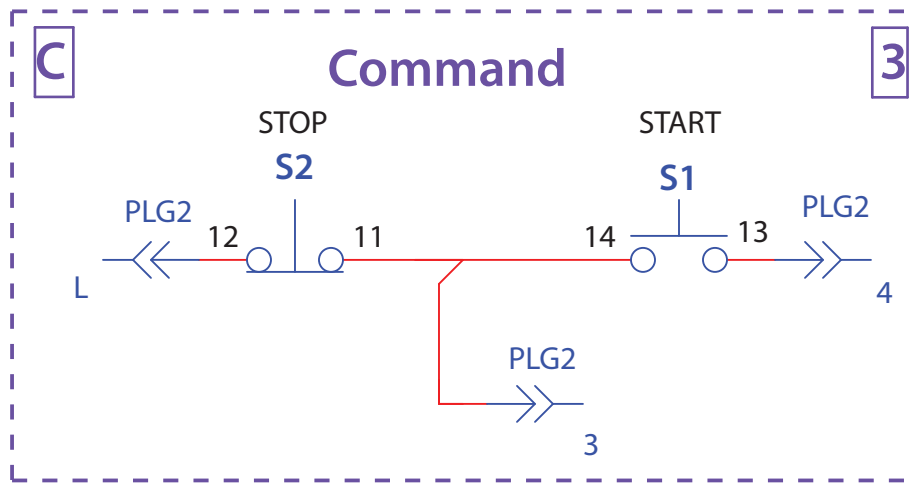


Figure 9 - Hand-OFF-Auto Command Kit Wiring Diagram

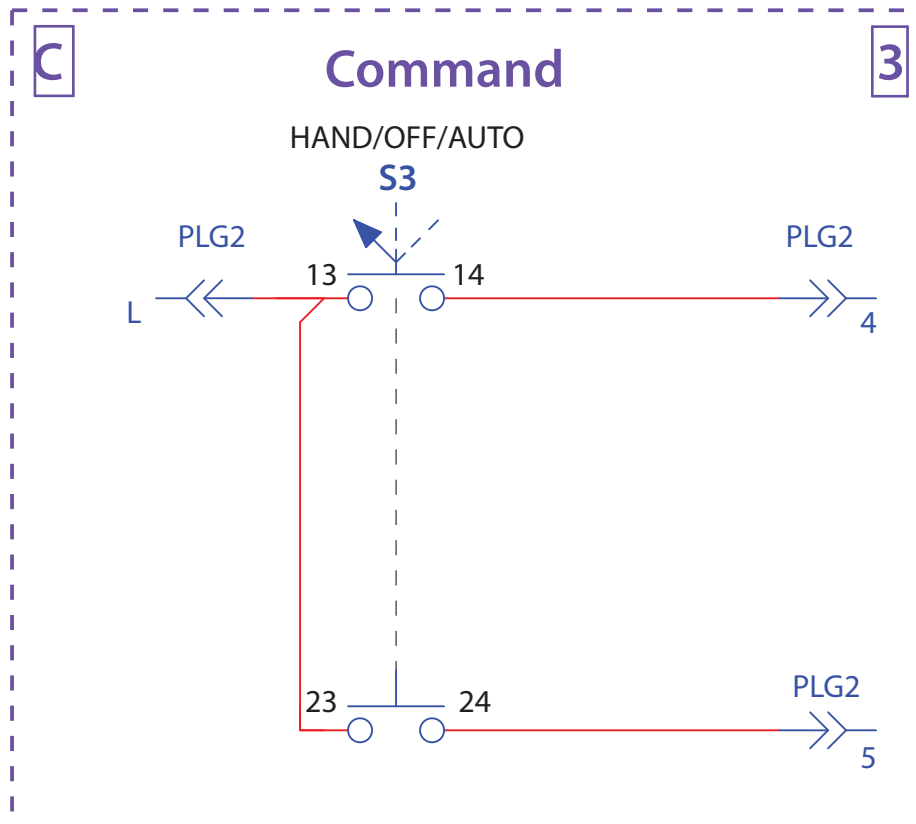


Figure 10 - Hand-OFF-Auto and Start-Stop Command Kit Wiring Diagram

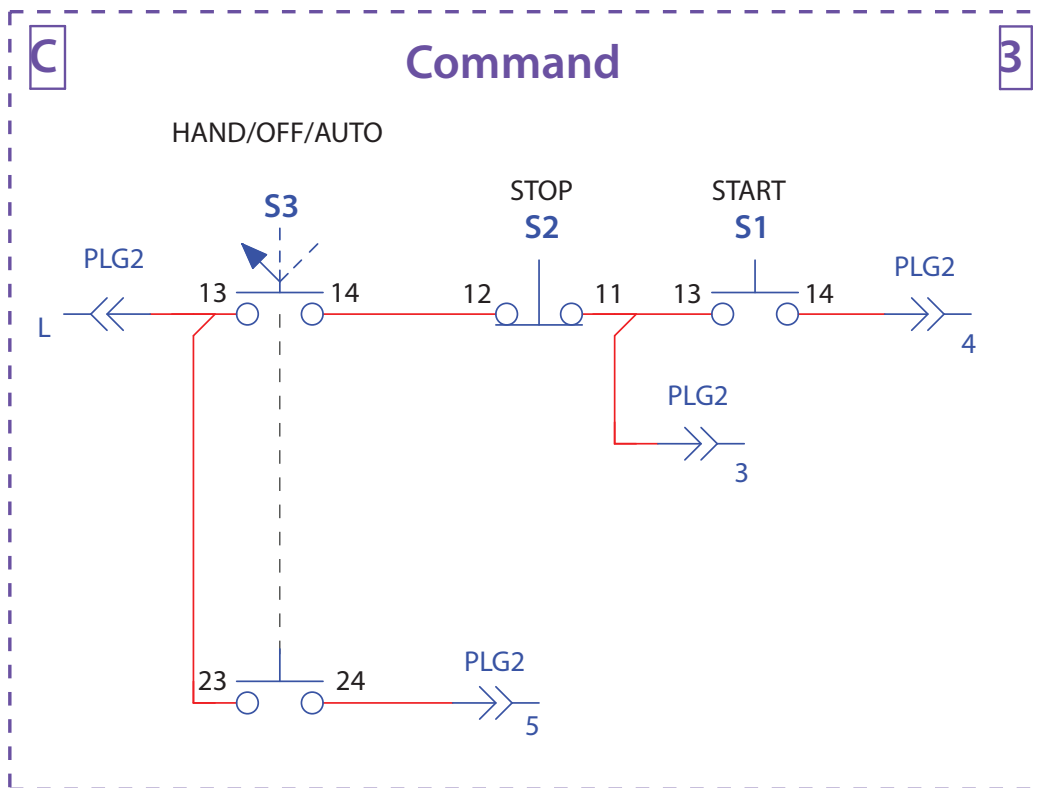


Figure 11 - Soft Stop Auxiliary Command Kit Wiring Diagram

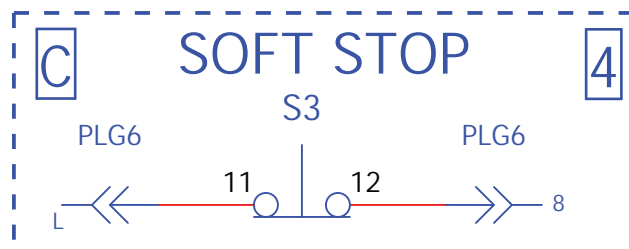


Figure 12 - Pump Stop Auxiliary Command Kit Wiring Diagram

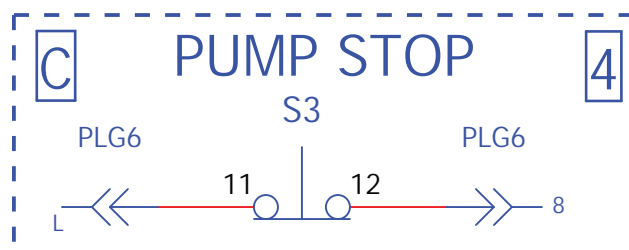


Figure 13 - Brake Auxiliary Command Kit Wiring Diagram

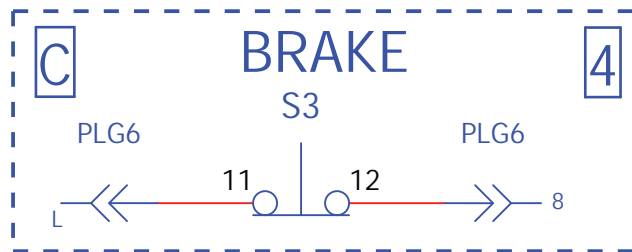


Figure 14 - Command Bypass Kit Wiring Diagram

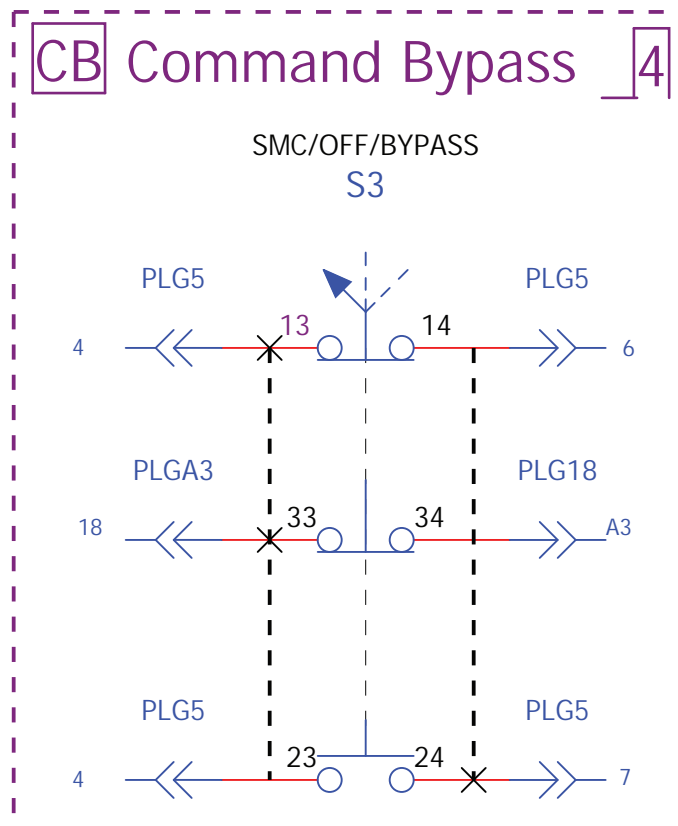


Figure 15 - E-Stop Kit Wiring Diagram

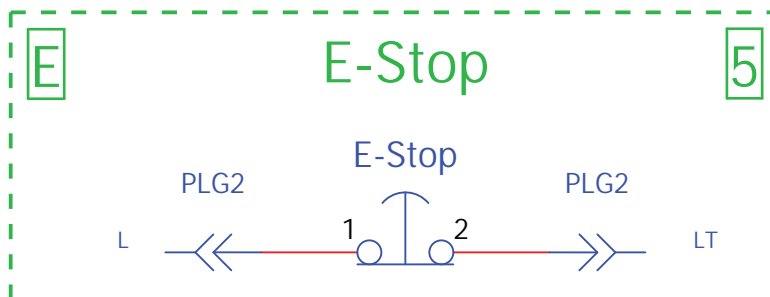


Figure 16 - Indication Kit Wiring Diagram

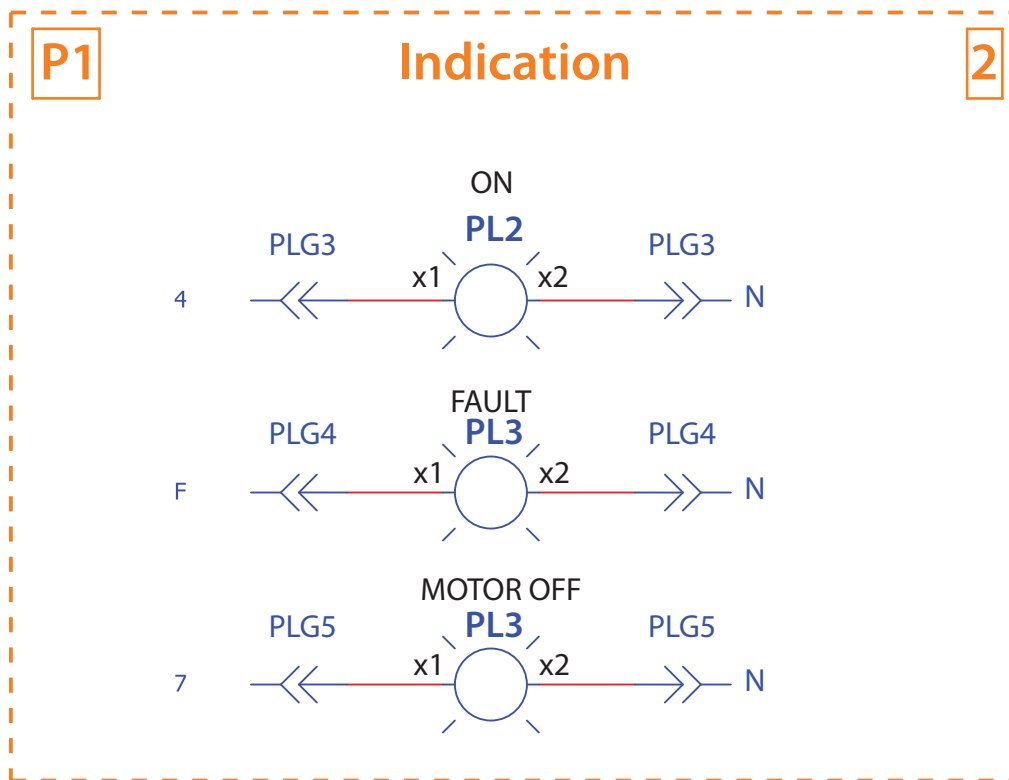
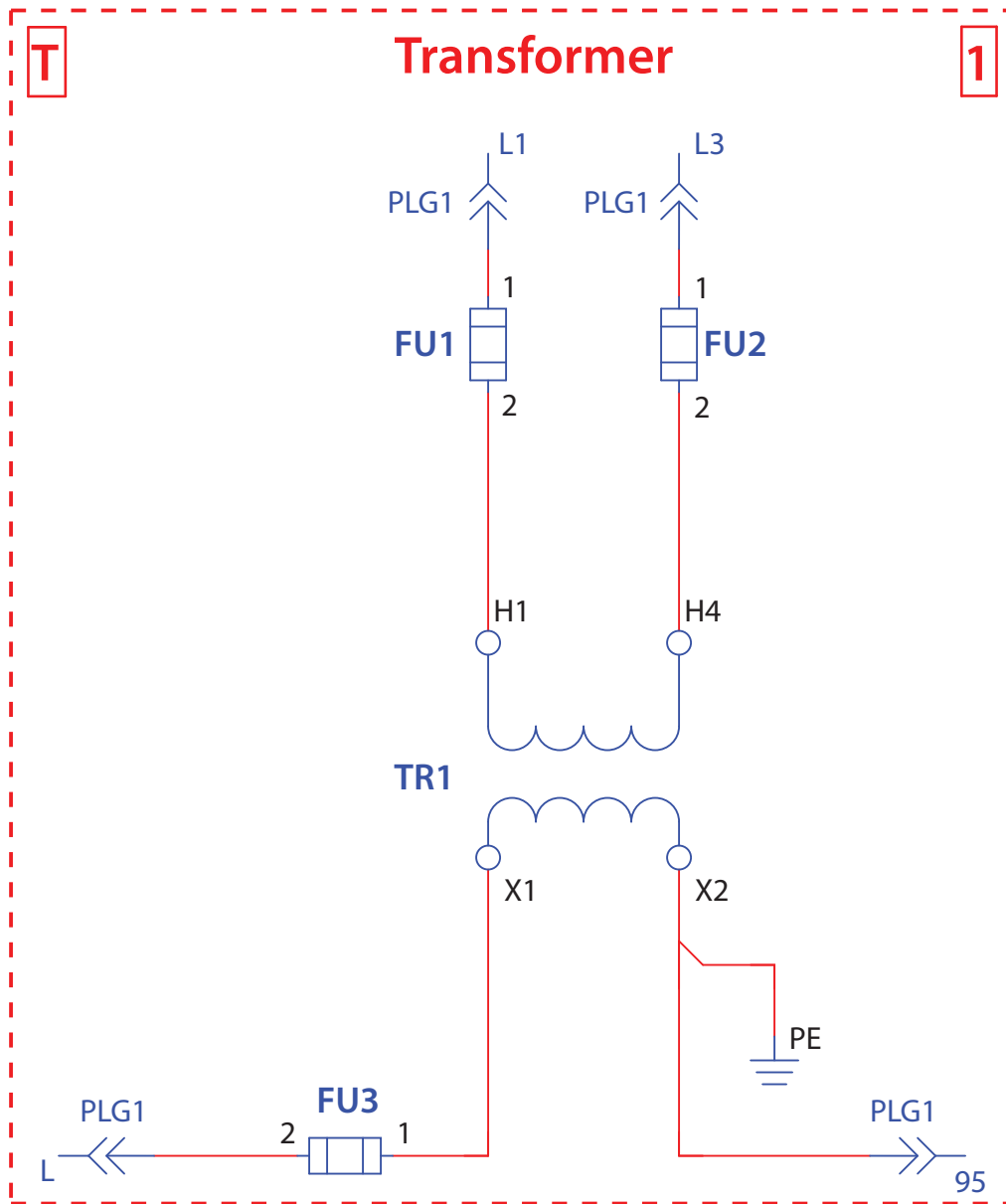


Figure 17 - Transformer Kit Wiring Diagram



# 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 Short Circuit Current Ratings 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>.

## Short Circuit Ratings for SMC-3 Controllers

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

**Table 12 - 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>
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 13 - 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 14 - 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	• 70 kA rms symmetrical, 600V maximum when protected by a maximum 350 A Class J Fuse • 18 kA rms symmetrical, 600V maximum when protected by a maximum 600 A fuse
251	• 70 kA rms symmetrical, 600V maximum when protected by a maximum 400 A Class J Fuse • 18 kA rms symmetrical, 600V maximum when protected by a maximum 700 A fuse
317	• 69 kA rms symmetrical, 600V maximum when protected by a maximum 500 A Class J Fuse • 30 kA rms symmetrical, 600V maximum when protected by a maximum 800 A fuse
361	• 69 kA rms symmetrical, 600V maximum when protected by a maximum 600 A Class J Fuse • 30 kA rms symmetrical, 600V maximum when protected by a maximum 1000 A fuse
480	• 69 kA rms symmetrical, 600V maximum when protected by a maximum 800 A Class L Fuse • 42 kA rms symmetrical, 600V maximum when protected by a maximum 1200 A fuse



# Short Circuit Ratings for SMC Flex Controllers

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

**Table 15 - 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 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>
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 16 - Combination Enclosed Soft Starters with SMC Flex Controllers and Circuit Breakers**

Controller Rating [A]	Short Circuit Current Rating
5...25	5 kA rms symmetrical, 600V maximum
43...135	10 kA rms symmetrical, 600V maximum
201..251	18 kA rms symmetrical, 600V maximum
317A...361	30 kA rms symmetrical, 600V maximum
480	42 kA rms symmetrical, 600V maximum
625...780	42 kA rms symmetrical, 600V maximum

**Table 17 - 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>

## Short Circuit Ratings for SMC-50 Controllers

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

**Table 18 - Non-combination Enclosed Soft Starters with SMC-50 Controllers**

Controller Rating [A]	Short Circuit Current Rating
90	<ul style="list-style-type: none"> <li>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</li> </ul>
110	<ul style="list-style-type: none"> <li>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</li> </ul>
140	<ul style="list-style-type: none"> <li>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</li> </ul>
180	<ul style="list-style-type: none"> <li>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</li> </ul>
210	<ul style="list-style-type: none"> <li>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</li> </ul>
260	<ul style="list-style-type: none"> <li>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</li> </ul>
320	<ul style="list-style-type: none"> <li>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</li> </ul>
361	<ul style="list-style-type: none"> <li>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</li> </ul>
420	<ul style="list-style-type: none"> <li>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</li> </ul>
520	<ul style="list-style-type: none"> <li>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</li> </ul>

**Table 19 - Combination Enclosed Soft Starters with SMC-50 Controllers 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 20 - Combination Enclosed Soft Starters with SMC-50 Controllers 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

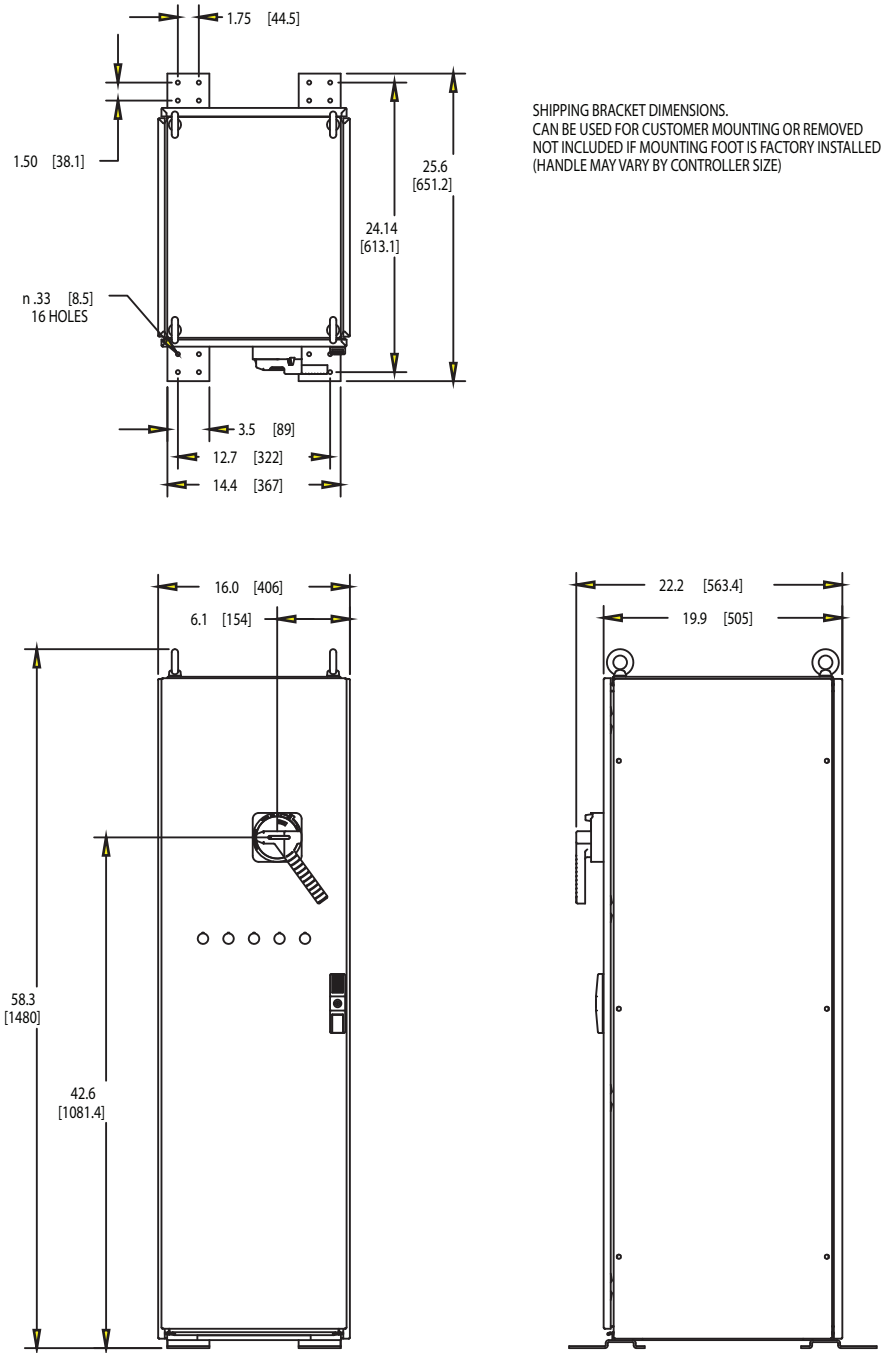
Notes:

# 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 18 - Enclosure for SMC Controllers—1400 mm x 400 mm x 500 mm**



**Figure 19 - Enclosure for SMC Controllers—1400 mm x 600 mm x 500 mm**

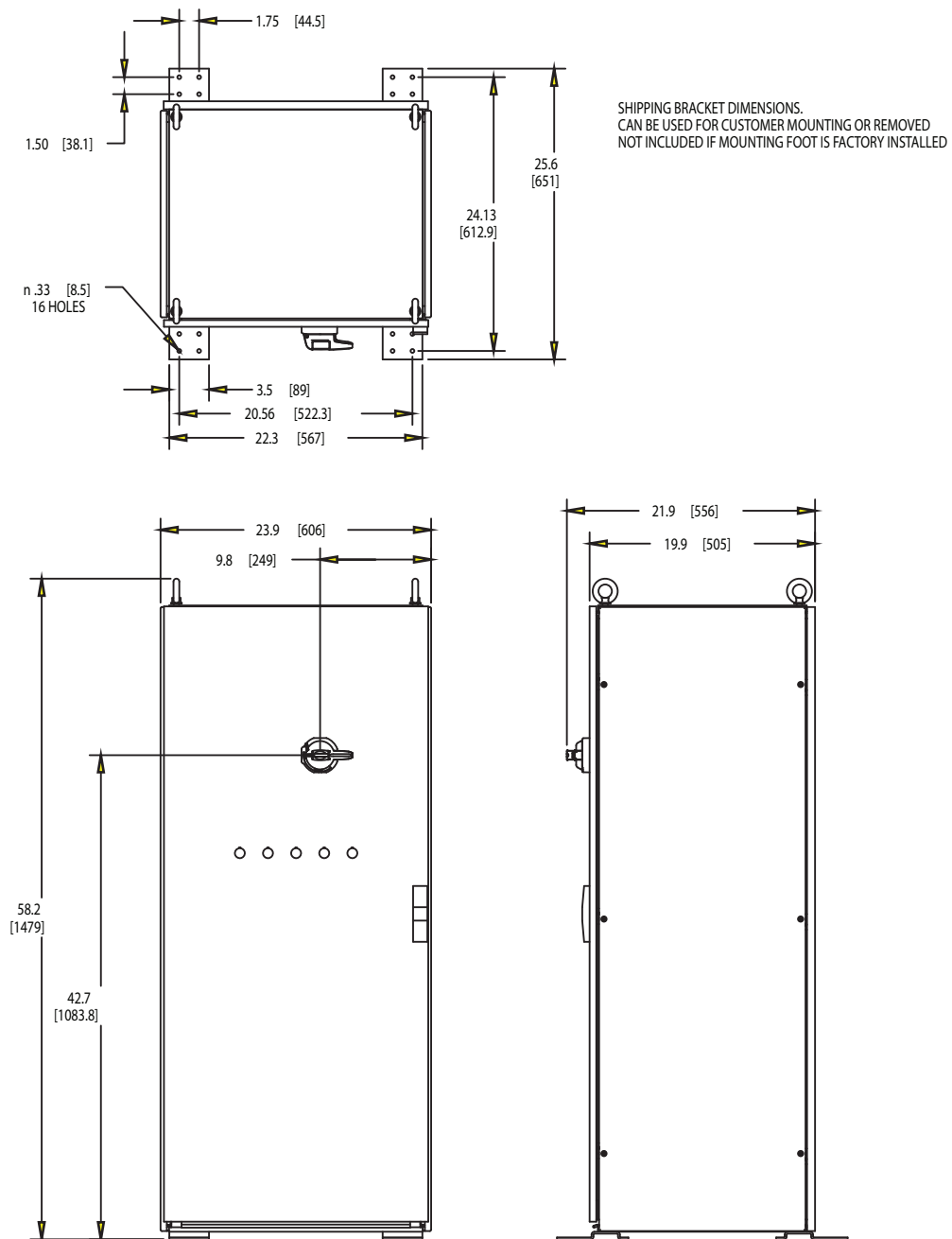


Figure 20 - Enclosure for SMC Controllers—1600 mm x 600 mm x 500 mm

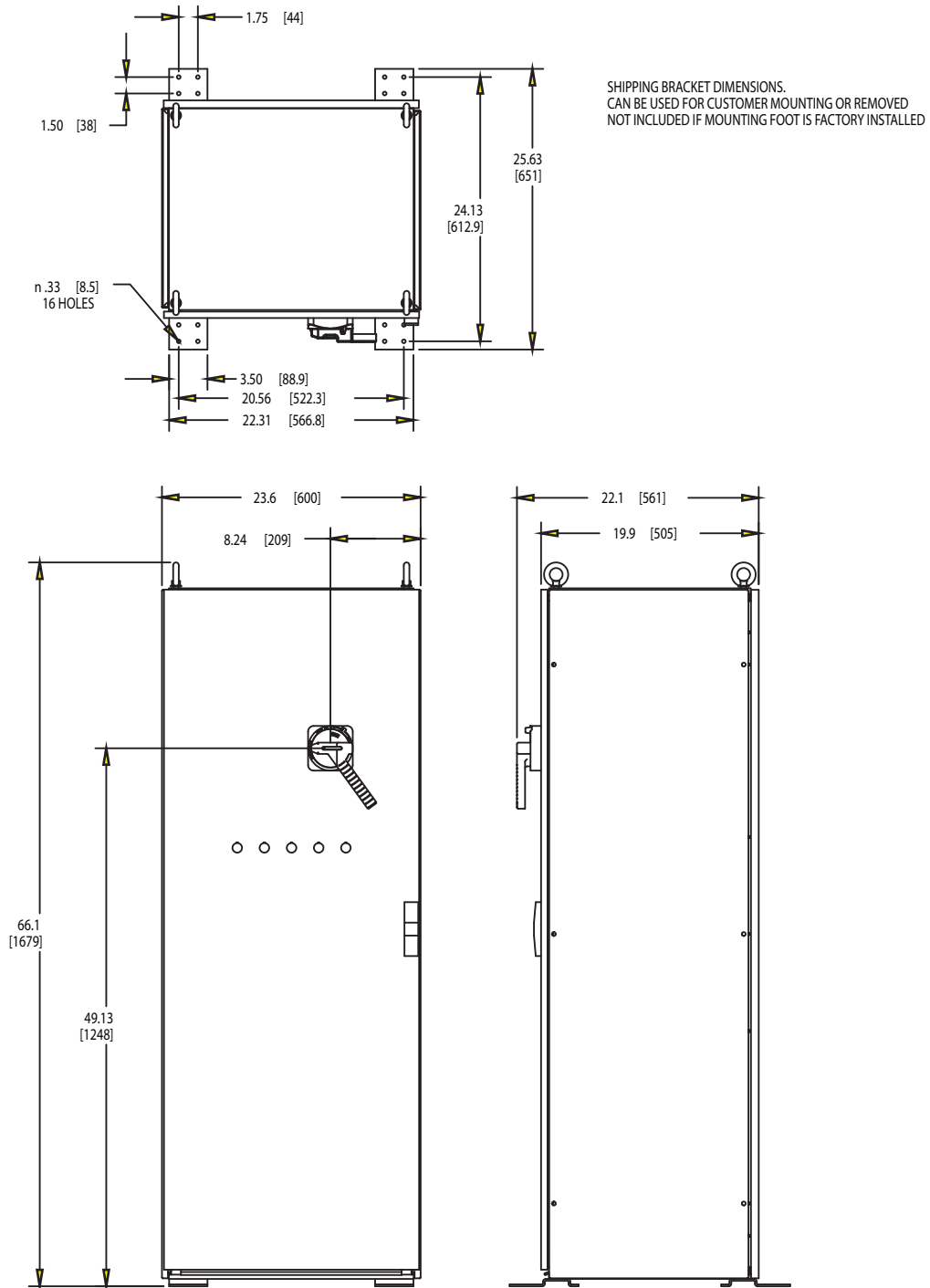
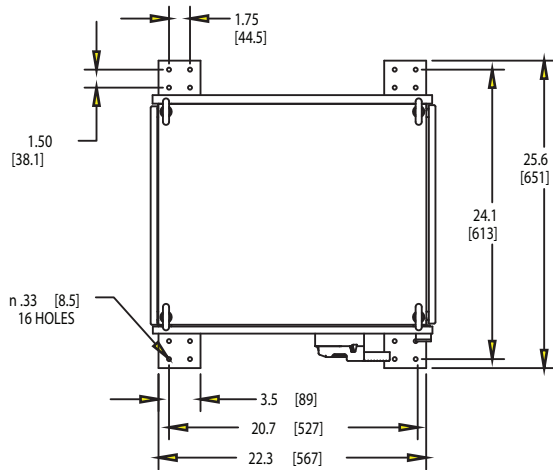


Figure 21 - Enclosure for SMC Controllers—2000 mm x 600 mm x 500 mm



SHIPPING BRACKET DIMENSIONS.  
CAN BE USED FOR CUSTOMER MOUNTING OR REMOVED  
NOT INCLUDED IF MOUNTING FOOT IS FACTORY INSTALLED

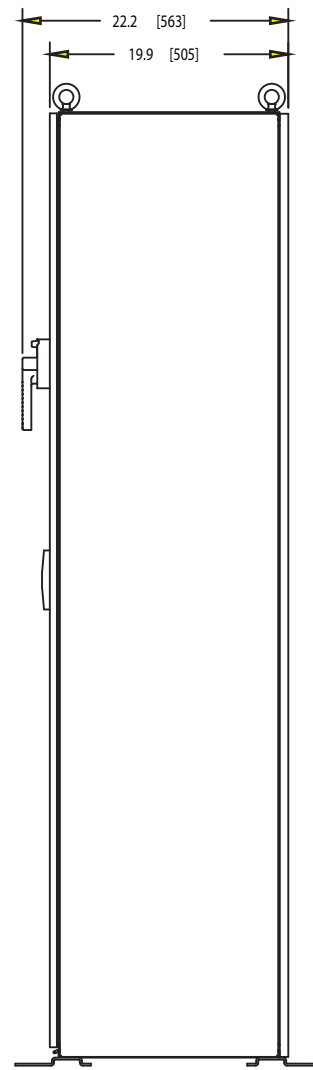
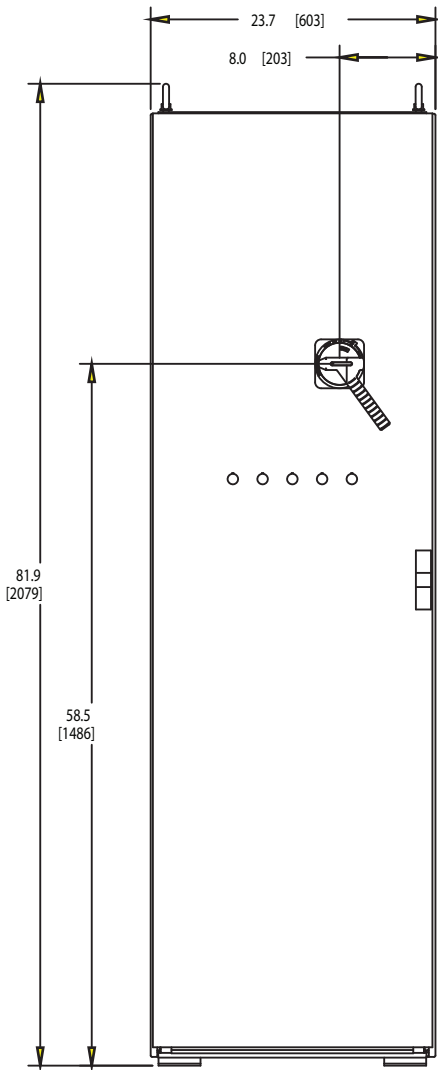




Figure 22 - Enclosure for SMC Controllers—2000 mm x 1000 mm x 500 mm

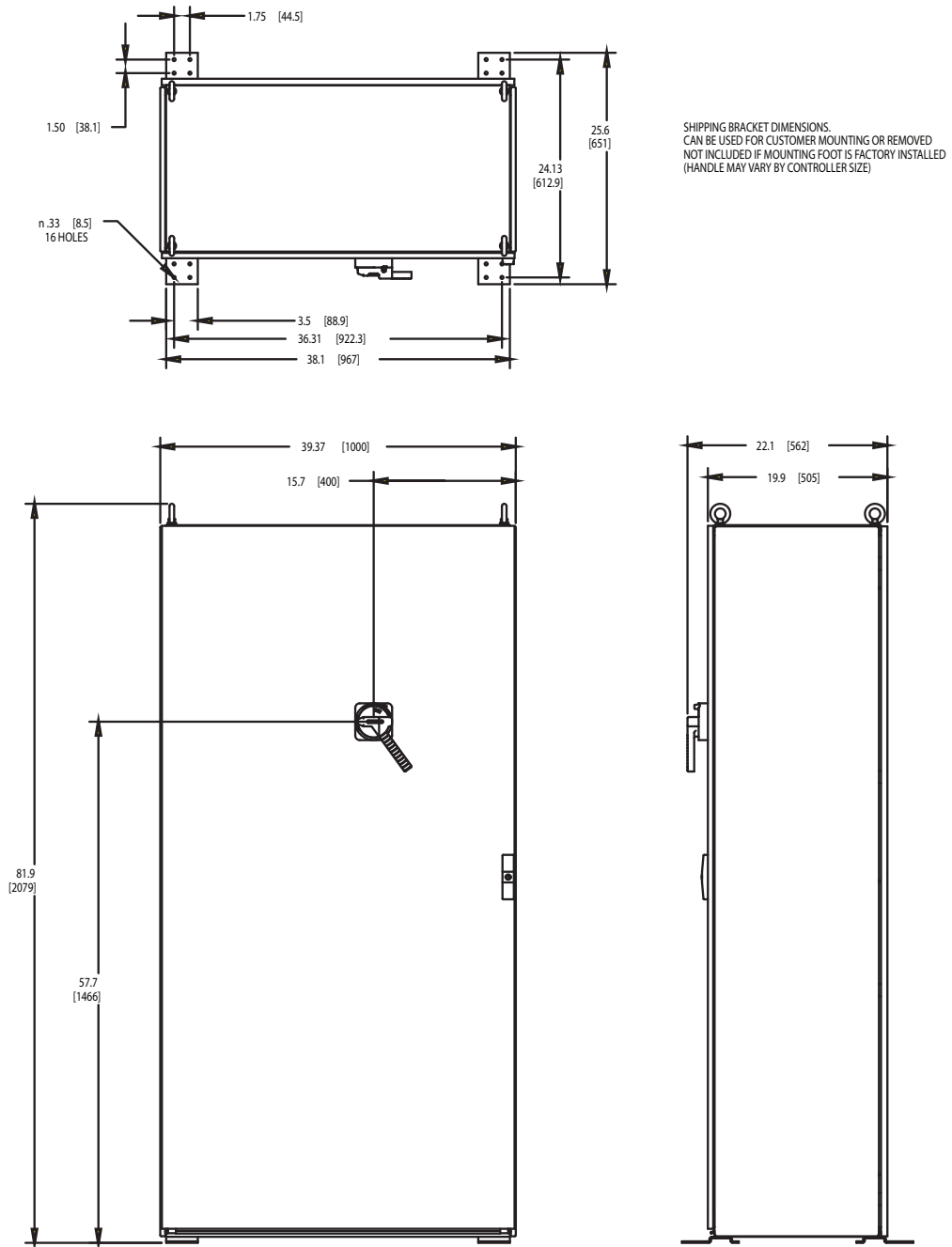
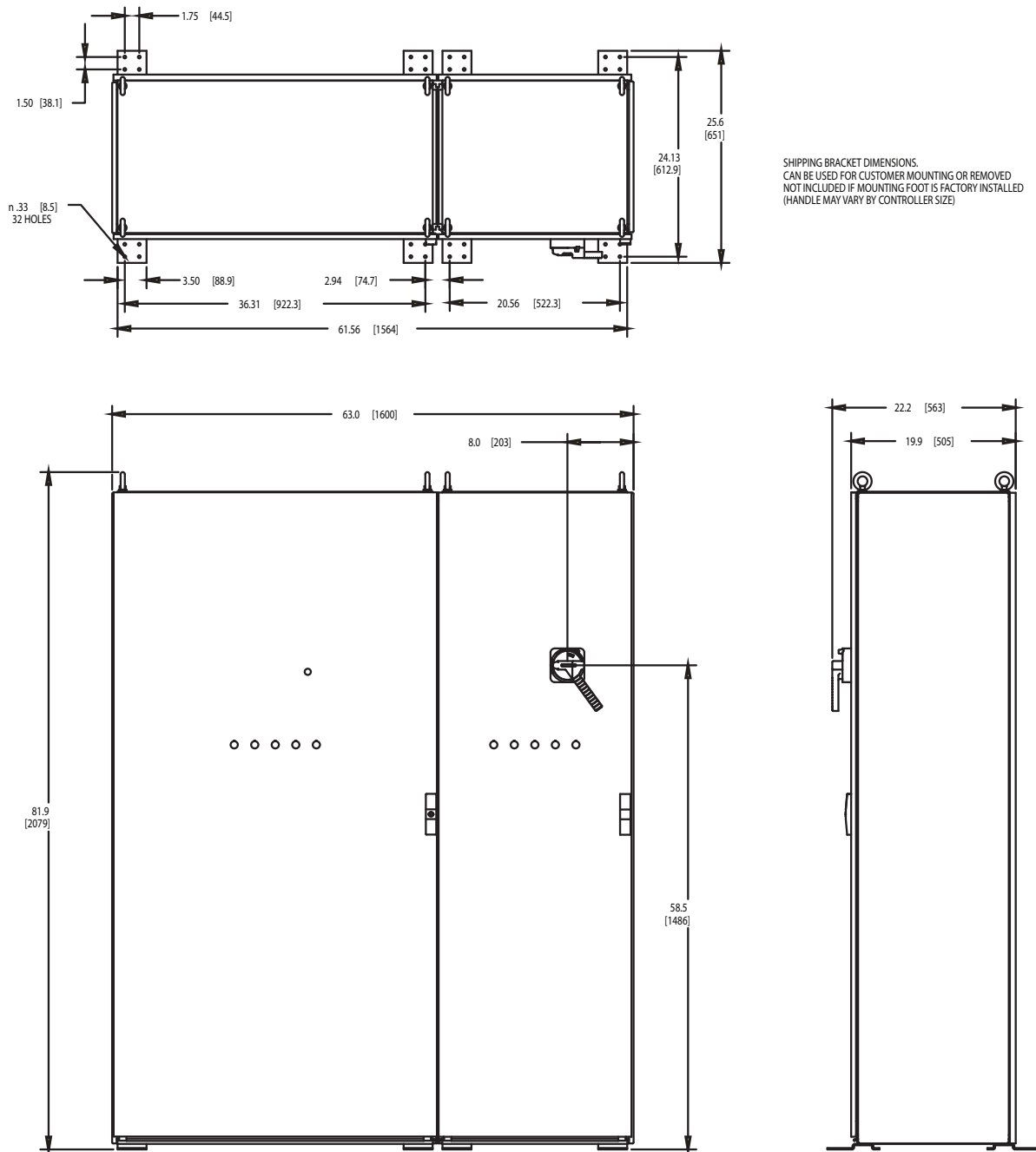


Figure 23 - Enclosure for SMC Controllers—2000 mm x 1600 mm x 500 mm



**Table 21 - SMC-3 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 18</a>	152C-D10J...	1400 x 400 x 500 (55.1 x 15.7 x 19.7) see <a href="#">Figure 18</a>	153C-D10J...	1400 x 400 x 500 (55.1 x 15.7 x 19.7) see <a href="#">Figure 18</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 21</a>	153C-D31J...	2000 x 600 x 500 (78.7 x 23.6 x 19.7) see <a href="#">Figure 21</a>
150C-D36J...		152C-D36J...		153C-D36J...	
150C-D48J...		152C-D48J...		153C-D48J...	

**Table 22 - SMC Flex 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 18</a>	152F-D10J...	1400 x 400 x 500 (55.1 x 15.7 x 19.7) see <a href="#">Figure 18</a>	153F-D10J...	1400 x 400 x 500 (55.1 x 15.7 x 19.7) see <a href="#">Figure 18</a>
150F-D13J...		152F-D13J...		153F-D13J...	
150F-D20J...		152F-D20J...	153F-D20J...		
150F-D25J...		152F-D25J...	153F-D25J...		
150F-D31J...		152F-D31J...	2000 x 600 x 500 (78.7 x 23.6 x 19.7) see <a href="#">Figure 21</a>	153F-D31J...	2000 x 600 x 500 (78.7 x 23.6 x 19.7) see <a href="#">Figure 21</a>
150F-D36J...		152F-D36J...		153F-D36J...	
150F-D48J...		152F-D48J...		153F-D48J...	
150F-D62J...	2000 x 1000 x 500 (78.7 x 39.4 x 19.7) see <a href="#">Figure 22</a>	152F-D62J...	2000 x 1600 x 500 (78.7 x 63 x 19.7) see <a href="#">Figure 23</a>	153F-D62J...	2000 x 1600 x 500 (78.7 x 63 x 19.7) see <a href="#">Figure 23</a>
150F-D78J...		152F-D78J...		153F-D78J...	

**Table 23 - SMC-50 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 19</a>	152S-C90J...	1400 x 600 x 500 (55.1 x 23.6 x 19.7) see <a href="#">Figure 19</a>	153S-C90J...	1400 x 600 x 500 (55.1 x 23.6 x 19.7) see <a href="#">Figure 19</a>
150S-D11J...		152S-D11J...		153S-D11J...	
150S-D14J...		152S-D14J...		153S-D14J...	
150S-D18J...		152S-D18J...		153S-D18J...	
150S-D21J...		152S-D21J...	1600 x 600 x 500 (63.0 x 23.6 x 19.7) see <a href="#">Figure 20</a>	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 22</a>	152S-D36J...	2000 x 1000 x 500 (78.7 x 39.4 x 19.7) see <a href="#">Figure 22</a>	153S-D36J...	2000 x 1000 x 500 (78.7 x 39.4 x 19.7) see <a href="#">Figure 22</a>
150S-D42J...		152S-D42J...		153S-D42J...	
150S-D52J...		152S-D52J...		153S-D52J...	

# 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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Rockwell Automation maintains current product environmental information on its website at <http://www.rockwellautomation.com/rockwellautomation/about-us/sustainability-ethics/product-environmental-compliance.page>.

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