The compact design of the SMC-3 controller provides three-phase control, increased intelligence, and unmatched performance in a cost-effective package with overload protection, integrated bypass, and motor system diagnostics. DIP switches and a rotary dial make secure setup easy. This controller features an electronic overload with adjustable trip class.

Modes of operation include the following:

- Soft Start
- Current Limit Start
- Selectable Kickstart
- Coast-to-rest
- Soft Stop

Catalog Number Explanation

Examples that are given in this section are not intended to be used for product selection. Use ProposalWorks software to configure the SMC-3 controller. ProposalWorks software is available from rok.auto/systemtools.

150	–	C	30	N	B	D
a		b	c	d	e	f

a	
Bulletin Number	
Code	**Description**
150	Solid-state Controller

b	
Controller Type	
Code	**Description**
C	SMC-3

c	
Ampere Ratings	
Code	**Description**
3	3 A
9	9 A
16	16 A
19	19 A
25	25 A
30	30 A
37	37 A
43	43 A
60	60 A
85	85 A
108	108 A
135	135 A
201	201 A
251	251 A
317	317 A
361	361 A
480	480 A

d	
Enclosure Type	
Code	**Description**
N	Open

e	
Input Line Voltage	
Code	**Description**
B	200...460V AC, 3-Phase, 50/60 Hz
C	200...600V AC, 3-Phase, 50/60 Hz

f	
Control Voltage	
Code	**Description**
D	100...240V AC
R	24V AC/DC

Product Selection

For use with Line-connected Motors

Use the SMC Estimation Wizard and SMC Thermal Estimation Wizard to confirm that the SMC controller selection meets the application requirements. See Sizing and Selection Tools for more information. For additional assistance, visit rok.auto or contact Industrial Controls Technical Support by email at raictechsupport@ra.rockwell.com or by phone at +1 440-646-5800.

Table 1 - 200/208V AC SMC-3 Controllers for Use with Line-connected Motors

Rated Voltage [V AC]	Motor Current [A](1)	Max. kW, 50 Hz	Max. Hp, 60 Hz	Control Power	Open Type Cat. No.
200/208	1...3	–	0.5	100...240V AC, 50/60 Hz	150-C3NBD
		–		24V AC/DC	150-C3NBR
	3...9	–	0.75...2	100...240V AC, 50/60 Hz	150-C9NBD
		–		24V AC/DC	150-C9NBR
	5.3...16	–	1.5...3	100...240V AC, 50/60 Hz	150-C16NBD
		–		24V AC/DC	150-C16NBR
	6.3...19	–	1.5...3	100...240V AC, 50/60 Hz	150-C19NBD
		–		24V AC/DC	150-C19NBR
	8.3...25	–	3...7.5	100...240V AC, 50/60 Hz	150-C25NBD
		–		24V AC/DC	150-C25NBR
	10...30	–	3...7.5	100...240V AC, 50/60 Hz	150-C30NBD
		–		24V AC/DC	150-C30NBR
	12.3...37	–	5...10	100...240V AC, 50/60 Hz	150-C37NBD
		–		24V AC/DC	150-C37NBR
	14.3...43	–	5...10	100...240V AC, 50/60 Hz	150-C43NBD
		–		24V AC/DC	150-C43NBR
	20...60	–	7.5...15	100...240V AC, 50/60 Hz	150-C60NBD
		–		24V AC/DC	150-C60NBR
	28.3...85	–	10...25	100...240V AC, 50/60 Hz	150-C85NBD
		–		24V AC/DC	150-C85NBR
	27...108	–	20...30	100...240V AC, 50/60 Hz	150-C108NBD
		–		24V AC/DC(2)	150-C108NBR
	34...135	–	25...40	100...240V AC, 50/60 Hz	150-C135NBD
		–		24V AC/DC(2)	150-C135NBR
	67...201	–	40...60	100...240V AC, 50/60 Hz	150-C201NBD
		–		24V AC/DC(2)	150-C201NBR
	84...251	–	50...75	100...240V AC, 50/60 Hz	150-C251NBD
		–		24V AC/DC(2)	150-C251NBR
	106...317	–	60...100	100...240V AC, 50/60 Hz	150-C317NBD
		–		24V AC/DC(2)	150-C317NBR
	120...361	–	75...125	100...240V AC, 50/60 Hz	150-C361NBD
		–		24V AC/DC(2)	150-C361NBR
	160...480	–	100...150	100...240V AC, 50/60 Hz	150-C480NBD
		–		24V AC/DC(2)	150-C480NBR

(1) Motor FLA rating must fall within specified current range for unit to operate properly.
(2) Separate 120V or 240V single phase is required for fan operation.

Table 2 - 230V AC SMC-3 Controllers for Use with Line-connected Motors

Rated Voltage [V AC]	Motor Current [A][1]	Max. kW, 50 Hz	Max. Hp, 60 Hz	Control Power	Open Type Cat. No.
230	1...3	0.55	0.5	100...240V AC, 50/60 Hz	150-C3NBD
				24V AC/DC	150-C3NBR
	3...9	2.2	0.75...2	100...240V AC, 50/60 Hz	150-C9NBD
				24V AC/DC	150-C9NBR
	5.3...16	4	1.5...5	100...240V AC, 50/60 Hz	150-C16NBD
				24V AC/DC	150-C16NBR
	6.3...19	4	2...5	100...240V AC, 50/60 Hz	150-C19NBD
				24V AC/DC	150-C19NBR
	8.3...25	5.5	3...7.5	100...240V AC, 50/60 Hz	150-C25NBD
				24V AC/DC	150-C25NBR
	10...30	7.5	5...10	100...240V AC, 50/60 Hz	150-C30NBD
				24V AC/DC	150-C30NBR
	12.3...37	7.5	5...10	100...240V AC, 50/60 Hz	150-C37NBD
				24V AC/DC	150-C37NBR
	14.3...43	11	5...15	100...240V AC, 50/60 Hz	150-C43NBD
				24V AC/DC	150-C43NBR
	20...60	15	7.5...20	100...240V AC, 50/60 Hz	150-C60NBD
				24V AC/DC	150-C60NBR
	28.3...85	22	15...30	100...240V AC, 50/60 Hz	150-C85NBD
				24V AC/DC	150-C85NBR
	27...108	30	20...40	100...240V AC, 50/60 Hz	150-C108NBD
				24V AC/DC[2]	150-C108NBR
	34...135	37	25...50	100...240V AC, 50/60 Hz	150-C135NBD
				24V AC/DC[2]	150-C135NBR
	67...201	55	40...75	100...240V AC, 50/60 Hz	150-C201NBD
				24V AC/DC[2]	150-C201NBR
	84...251	75	50...100	100...240V AC, 50/60 Hz	150-C251NBD
				24V AC/DC[2]	150-C251NBR
	106...317	90	60...125	100...240V AC, 50/60 Hz	150-C317NBD
				24V AC/DC[2]	150-C317NBR
	120...361	110	75...150	100...240V AC, 50/60 Hz	150-C361NBD
				24V AC/DC[2]	150-C361NBR
	160...480	132	100...200	100...240V AC, 50/60 Hz	150-C480NBD
				24V AC/DC[2]	150-C480NBR

(1) Motor FLA rating must fall within specified current range for unit to operate properly.
(2) Separate 120V or 240V single phase is required for fan operation.

Table 3 - 380/400/415/460V AC SMC-3 Controllers for Use with Line-connected Motors

Rated Voltage [V AC]	Motor Current [A](1)	Max. kW, 50 Hz	Max. Hp, 60 Hz	Control Power	Open Type Cat. No.
380/400/415 (kW) 460 (Hp)	1...3	1.1	0.5...1.5	100...240V AC, 50/60 Hz	150-C3NBD
				24V AC/DC	150-C3NBR
	3...9	4	1.5...5	100...240V AC, 50/60 Hz	150-C9NBD
				24V AC/DC	150-C9NBR
	5.3...16	7.5	5...10	100...240V AC, 50/60 Hz	150-C16NBD
				24V AC/DC	150-C16NBR
	6.3...19	7.5	5...10	100...240V AC, 50/60 Hz	150-C19NBD
				24V AC/DC	150-C19NBR
	8.3...25	11	7.5...15	100...240V AC, 50/60 Hz	150-C25NBD
				24V AC/DC	150-C25NBR
	10...30	15	7.5...20	100...240V AC, 50/60 Hz	150-C30NBD
				24V AC/DC	150-C30NBR
	12.3...37	18.5	10...25	100...240V AC, 50/60 Hz	150-C37NBD
				24V AC/DC	150-C37NBR
	14.3...43	22	10...30	100...240V AC, 50/60 Hz	150-C43NBD
				24V AC/DC	150-C43NBR
	20...60	30	15...40	100...240V AC, 50/60 Hz	150-C60NBD
				24V AC/DC	150-C60NBR
	28.3...85	45	25...60	100...240V AC, 50/60 Hz	150-C85NBD
				24V AC/DC	150-C85NBR
	27...108	55	50...75	100...240V AC, 50/60 Hz	150-C108NBD
				24V AC/DC(2)	150-C108NBR
	34...135	75	60...100	100...240V AC, 50/60 Hz	150-C135NBD
				24V AC/DC(2)	150-C135NBR
	67...201	95...110	75...150	100...240V AC, 50/60 Hz	150-C201NBD
				24V AC/DC(2)	150-C201NBR
	84...251	95...132	100...200	100...240V AC, 50/60 Hz	150-C251NBD
				24V AC/DC(2)	150-C251NBR
	106...317	95...160	125...250	100...240V AC, 50/60 Hz	150-C317NBD
				24V AC/DC(2)	150-C317NBR
	120...361	110...200	250...300	100...240V AC, 50/60 Hz	150-C361NBD
				24V AC/DC(2)	150-C361NBR
	160...480	160...250	300...400	100...240V AC, 50/60 Hz	150-C480NBD
				24V AC/DC(2)	150-C480NBR

(1) Motor FLA rating must fall within specified current range for unit to operate properly.
(2) Separate 120V or 240V single phase is required for fan operation.

Table 4 - 500/575V AC SMC-3 Controllers for Use with Line-connected Motors

Rated Voltage [V AC]	Motor Current [A](1)	Max. kW, 50 Hz	Max. Hp, 60 Hz	Control Power	Open Type Cat. No.
500 (kW) 575 (Hp)	1...3	1.5	0.75...2	100...240V AC, 50/60 Hz	150-C3NCD
				24V AC/DC	150-C3NCR
	3...9	5.5	3...7.5	100...240V AC, 50/60 Hz	150-C9NCD
				24V AC/DC	150-C9NCR
	5.3...16	7.5	5...10	100...240V AC, 50/60 Hz	150-C16NCD
				24V AC/DC	150-C16NCR
	6.3...19	11	7.5...15	100...240V AC, 50/60 Hz	150-C19NCD
				24V AC/DC	150-C19NCR
	8.3...25	15	7.5...20	100...240V AC, 50/60 Hz	150-C25NCD
				24V AC/DC	150-C25NCR
	10...30	18.5	10...25	100...240V AC, 50/60 Hz	150-C30NCD
				24V AC/DC	150-C30NCR
	12.3...37	22	15...30	100...240V AC, 50/60 Hz	150-C37NCD
				24V AC/DC	150-C37NCR
	14.3...43	22	15...40	100...240V AC, 50/60 Hz	150-C43NCD
				24V AC/DC	150-C43NCR
	20...60	37	20...50	100...240V AC, 50/60 Hz	150-C60NCD
				24V AC/DC	150-C60NCR
	28.3...85	55	30...75	100...240V AC, 50/60 Hz	150-C85NCD
				24V AC/DC	150-C85NCR
	27...108	75	60...100	100...240V AC, 50/60 Hz	150-C108NCD
				24V AC/DC(2)	150-C108NCR
	34...135	90	75...125	100...240V AC, 50/60 Hz	150-C135NCD
				24V AC/DC(2)	150-C135NCR
	67...201	75...132	100...200	100...240V AC, 50/60 Hz	150-C201NCD
				24V AC/DC(2)	150-C201NCR
	84...251	90...160	125...250	100...240V AC, 50/60 Hz	150-C251NCD
				24V AC/DC(2)	150-C251NCR
	106...317	100...200	200...300	100...240V AC, 50/60 Hz	150-C317NCD
				24V AC/DC(2)	150-C317NCR
	120...361	132...250	200...350	100...240V AC, 50/60 Hz	150-C361NCD
				24V AC/DC(2)	150-C361NCR
	160...480	200...315	250...500	100...240V AC, 50/60 Hz	150-C480NCD
				24V AC/DC(2)	150-C480NCR

(1) Motor FLA rating must fall within specified current range for unit to operate properly.
(2) Separate 120V or 240V single phase is required for fan operation.

For use with Delta-connected Motors

Use the SMC Estimation Wizard and SMC Thermal Estimation Wizard to confirm that the SMC controller selection meets the application requirements. See Sizing and Selection Tools for more information. For additional assistance, visit rok.auto or contact Industrial Controls Technical Support by email at raictechsupport@ra.rockwell.com or by phone at +1 440-646-5800.

Table 5 - 200/208V AC SMC-3 Controllers for Use with Delta-connected Motors

Rated Voltage [V AC]	Motor Current [A](1)	Max. kW, 50 Hz	Max. Hp, 60 Hz	Control Power	Open Type Cat. No.
200/208	1.7...5.1	–	1	100...240V AC, 50/60 Hz	150-C3NBD
		–		24V AC/DC	150-C3NBR
	5.1...16	–	1.5...3	100...240V AC, 50/60 Hz	150-C9NBD
		–		24V AC/DC	150-C9NBR
	9.1...27.6	–	3...7.5	100...240V AC, 50/60 Hz	150-C16NBD
		–		24V AC/DC	150-C16NBR
	10.9...32.8	–	3...10	100...240V AC, 50/60 Hz	150-C19NBD
		–		24V AC/DC	150-C19NBR
	14.3...43	–	3...10	100...240V AC, 50/60 Hz	150-C25NBD
		–		24V AC/DC	150-C25NBR
	17.3...52	–	5...10	100...240V AC, 50/60 Hz	150-C30NBD
		–		24V AC/DC	150-C30NBR
	21...64	–	7.5...20	100...240V AC, 50/60 Hz	150-C37NBD
		–		24V AC/DC	150-C37NBR
	25...74	–	7.5...20	100...240V AC, 50/60 Hz	150-C43NBD
		–		24V AC/DC	150-C43NBR
	34.6...104	–	15...30	100...240V AC, 50/60 Hz	150-C60NBD
		–		24V AC/DC	150-C60NBR
	50...147	–	15...40	100...240V AC, 50/60 Hz	150-C85NBD
		–		24V AC/DC	150-C85NBR
	47...187	–	20...60	100...240V AC, 50/60 Hz	150-C108NBD
		–		24V AC/DC(2)	150-C108NBR
	59...234	–	20...75	100...240V AC, 50/60 Hz	150-C135NBD
		–		24V AC/DC(2)	150-C135NBR
	116...348	–	75...100	100...240V AC, 50/60 Hz	150-C201NBD
		–		24V AC/DC(2)	150-C201NBR
	145...435	–	100...150	100...240V AC, 50/60 Hz	150-C251NBD
		–		24V AC/DC(2)	150-C251NBR
	183...549	–	100...200	100...240V AC, 50/60 Hz	150-C317NBD
		–		24V AC/DC(2)	150-C317NBR
	208...625	–	125...200	100...240V AC, 50/60 Hz	150-C361NBD
		–		24V AC/DC(2)	150-C361NBR
	277...831	–	200...300	100...240V AC, 50/60 Hz	150-C480NBD
		–		24V AC/DC(2)	150-C480NBR

(1) Motor FLA rating must fall within specified current range for unit to operate properly.
(2) Separate 120V or 240V single phase is required for fan operation.

Table 6 - 230V AC SMC-3 Controllers for Use with Delta-connected Motors

Rated Voltage [V AC]	Motor Current [A](1)	Max. kW, 50 Hz	Max. Hp, 60 Hz	Control Power	Open Type Cat. No.
230	1.7...5.1	0.25...1.1	1	100...240V AC, 50/60 Hz	150-C3NBD
				24V AC/DC	150-C3NBR
	5.1...16	1.1...4	1...5	100...240V AC, 50/60 Hz	150-C9NBD
				24V AC/DC	150-C9NBR
	9.1...27.6	2.2...7.5	3...7.5	100...240V AC, 50/60 Hz	150-C16NBD
				24V AC/DC	150-C16NBR
	10.9...32.8	2.2...7.5	3...10	100...240V AC, 50/60 Hz	150-C19NBD
				24V AC/DC	150-C19NBR
	14.3...43	4...11	3...15	100...240V AC, 50/60 Hz	150-C25NBD
				24V AC/DC	150-C25NBR
	17.3...52	4...15	5...15	100...240V AC, 50/60 Hz	150-C30NBD
				24V AC/DC	150-C30NBR
	21...64	5.5...18.5	7.5...20	100...240V AC, 50/60 Hz	150-C37NBD
				24V AC/DC	150-C37NBR
	25...74	5.5...22	7.5...25	100...240V AC, 50/60 Hz	150-C43NBD
				24V AC/DC	150-C43NBR
	34.6...104	7.5...30	15...40	100...240V AC, 50/60 Hz	150-C60NBD
				24V AC/DC	150-C60NBR
	50...147	15...45	20...50	100...240V AC, 50/60 Hz	150-C85NBD
				24V AC/DC	150-C85NBR
	47...187	55	20...60	100...240V AC, 50/60 Hz	150-C108NBD
				24V AC/DC(2)	150-C108NBR
	59...234	75	25...75	100...240V AC, 50/60 Hz	150-C135NBD
				24V AC/DC(2)	150-C135NBR
	116...348	110	75...125	100...240V AC, 50/60 Hz	150-C201NBD
				24V AC/DC(2)	150-C201NBR
	145...435	132	100...150	100...240V AC, 50/60 Hz	150-C251NBD
				24V AC/DC(2)	150-C251NBR
	183...549	160	125...200	100...240V AC, 50/60 Hz	150-C317NBD
				24V AC/DC(2)	150-C317NBR
	208...625	200	150...250	100...240V AC, 50/60 Hz	150-C361NBD
				24V AC/DC(2)	150-C361NBR
	277...831	250	200...300	100...240V AC, 50/60 Hz	150-C480NBD
				24V AC/DC(2)	150-C480NBR

(1) Motor FLA rating must fall within specified current range for unit to operate properly.
(2) Separate 120V or 240V single phase is required for fan operation.

Table 7 - 380/400/415/460V AC SMC-3 Controllers for Use with Delta-connected Motors

Rated Voltage [V AC]	Motor Current [A][1]	Max. kW, 50 Hz	Max. Hp, 60 Hz	Control Power	Open Type Cat. No.
380/400/415 (kW) 460 (Hp)	1.7...5.1	0.55...2.2	0.5...2	100...240V AC, 50/60 Hz	150-C3NBD
				24V AC/DC	150-C3NBR
	5.1...16	2.2...7.5	2...7.5	100...240V AC, 50/60 Hz	150-C9NBD
				24V AC/DC	150-C9NBR
	9.1...27.6	4...11	5...15	100...240V AC, 50/60 Hz	150-C16NBD
				24V AC/DC	150-C16NBR
	10.9...32.8	4...15	5...15	100...240V AC, 50/60 Hz	150-C19NBD
				24V AC/DC	150-C19NBR
	14.3...43	5.5...22	7.5...20	100...240V AC, 50/60 Hz	150-C25NBD
				24V AC/DC	150-C25NBR
	17.3...52	7.5...22	7.5...30	100...240V AC, 50/60 Hz	150-C30NBD
				24V AC/DC	150-C30NBR
	21...64	7.5...30	10...40	100...240V AC, 50/60 Hz	150-C37NBD
				24V AC/DC	150-C37NBR
	25...74	11...37	10...50	100...240V AC, 50/60 Hz	150-C43NBD
				24V AC/DC	150-C43NBR
	34.6...104	15...55	20...75	100...240V AC, 50/60 Hz	150-C60NBD
				24V AC/DC	150-C60NBR
	50...147	22...75	25...100	100...240V AC, 50/60 Hz	150-C85NBD
				24V AC/DC	150-C85NBR
	47...187	90	40...125	100...240V AC, 50/60 Hz	150-C108NBD
				24V AC/DC[2]	150-C108NBR
	59...234	132	50...150	100...240V AC, 50/60 Hz	150-C135NBD
				24V AC/DC[2]	150-C135NBR
	116...348	160	150...250	100...240V AC, 50/60 Hz	150-C201NBD
				24V AC/DC[2]	150-C201NBR
	145...435	250	200...350	100...240V AC, 50/60 Hz	150-C251NBD
				24V AC/DC[2]	150-C251NBR
	183...549	315	250...450	100...240V AC, 50/60 Hz	150-C317NBD
				24V AC/DC[2]	150-C317NBR
	208...625	355	300...500	100...240V AC, 50/60 Hz	150-C361NBD
				24V AC/DC[2]	150-C361NBR
	277...831	450	350...700	100...240V AC, 50/60 Hz	150-C480NBD
				24V AC/DC[2]	150-C480NBR

(1) Motor FLA rating must fall within specified current range for unit to operate properly.
(2) Separate 120V or 240V single phase is required for fan operation.

Table 8 - 500/575V AC SMC-3 Controllers for Use with Delta-connected Motors

Rated Voltage [V AC]	Motor Current [A][1]	Max. kW, 50 Hz	Max. Hp, 60 Hz	Control Power	Open Type Cat. No.
500 (kW) 575 (Hp)	1.7...5.1	0.75...3	1...3	100...240V AC, 50/60 Hz	150-C3NCD
				24V AC/DC	150-C3NCR
	5.1...16	3...7.5	3...10	100...240V AC, 50/60 Hz	150-C9NCD
				24V AC/DC	150-C9NCR
	9.1...27.6	5.5...15	7.5...20	100...240V AC, 50/60 Hz	150-C16NCD
				24V AC/DC	150-C16NCR
	10.9...32.8	5.5...22	7.5...30	100...240V AC, 50/60 Hz	150-C19NCD
				24V AC/DC	150-C19NCR
	14.3...43	7.5...22	10...40	100...240V AC, 50/60 Hz	150-C25NCD
				24V AC/DC	150-C25NCR
	17.3...52	11...30	15...50	100...240V AC, 50/60 Hz	150-C30NCD
				24V AC/DC	150-C30NCR
	21...64	11...37	15...60	100...240V AC, 50/60 Hz	150-C37NCD
				24V AC/DC	150-C37NCR
	25...74	15...45	20...60	100...240V AC, 50/60 Hz	150-C43NCD
				24V AC/DC	150-C43NCR
	34.6...104	22...55	30...100	100...240V AC, 50/60 Hz	150-C60NCD
				24V AC/DC	150-C60NCR
	50...147	30...90	40...150	100...240V AC, 50/60 Hz	150-C85NCD
				24V AC/DC	150-C85NCR
	47...187	132	50...150	100...240V AC, 50/60 Hz	150-C108NCD
				24V AC/DC[2]	150-C108NCR
	59...234	160	60...200	100...240V AC, 50/60 Hz	150-C135NCD
				24V AC/DC[2]	150-C135NCR
	116...348	250	250...300	100...240V AC, 50/60 Hz	150-C201NCD
				24V AC/DC[2]	150-C201NCR
	145...435	315	250...400	100...240V AC, 50/60 Hz	150-C251NCD
				24V AC/DC[2]	150-C251NCR
	183...549	400	300...500	100...240V AC, 50/60 Hz	150-C317NCD
				24V AC/DC[2]	150-C317NCR
	208...625	450	350...600	100...240V AC, 50/60 Hz	150-C361NCD
				24V AC/DC[2]	150-C361NCR
	277...831	560	400...900	100...240V AC, 50/60 Hz	150-C480NCD
				24V AC/DC[2]	150-C480NCR

(1) Motor FLA rating must fall within specified current range for unit to operate properly.
(2) Separate 120V or 240V single phase is required for fan operation.

Accessories

Table 9 - Auxiliary Contact Blocks

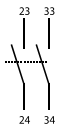
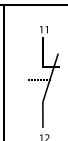
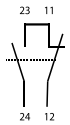
Description		N.O.	N.C.	Connection Diagram				Cat. No.
	Auxiliary Contact Blocks for side mounting with sequence terminal designations • 1- and 2-pole • Quick and easy mounting without tools • One block per device only	1	0					150-CA10
		2	0					150-CA20
		0	1					150-CA01
		1	1					150-CA11 (Form C)

Table 10 - Fans

Description			For Use With	Pkg. Qty.	Cat. No.
	Fan • Field installed	Optional	150-C3...37	1	150-CF64
		Replacement	150-C43...85		150-CF147
			150-C108, 150-C135		41391-801-03
			150-C201, 150-C251		41391-801-01
			150-C317...C480		41391-801-02

Table 11 - Connecting Modules

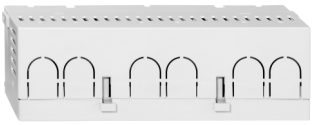
Description		For Use With	Pkg. Qty.	Cat. No.
	Connecting modules to 140-M • Electrical interconnection between SMC-3 and 140-M. • Motor protector and SMC-3 must be mounted separately.	Connects 140-M-C to 150-C3...25	1	150-CC25
		Connects 140-M-D to 150-C3...25	1	150-CD25
		Connects 140-M-F to 150-C3...37	1	150-CF45
	Connecting modules to 100-C • Electrical interconnection between SMC-3 and 100-C. • Contactor and SMC-3 must be mounted separately.	Connects 100-C09...23 to 150-C3...19	1	150-CI23
		Connects 100-C30...37 to 150-C3...37	1	150-CI37

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

Table 12 - Protective Modules

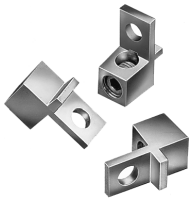
Description		For Use With	Pkg. Qty.	Cat. No.
	480V Protective Module	150-C3...37NB	1	150-C84
		150-C43...85NB	1	150-C84P
		150-C108...480NB (line and/or load)	1	150-F84L
	600V Protective Module	150-C3...37NC	1	150-C86
		150-C43...85NC (line and/or load)	1	150-C86P
		150-C108...480NC (line and/or load)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

Table 13 - IEC Line- or Load-side Terminal Covers

	Description[1] [2]	Current Range [A]	Pkg. Qty.	Cat. No.
	• Dead front protection • IP2X finger safe when used with 250 MCM cable	108...135	1	150-TC1
		201...251	1	150-TC2
	• Dead front protection • IP2X finger safe when used with 500 MCM cable	317...480	1	150-TC3

(1) 3...85 A units have terminal covers as standard. No additional terminal guards are required.
(2) SMC-3 controllers that are rated from 108...480 A are shipped with one terminal cover as standard.

Table 14 - Terminal Lug Kits

	Connection Type	Current Range [A](1)	Wire Size Range	Total No. of Terminal Lugs Possible Each Side		Pkg. Qty.	Cat. No.
				Line Side	Load Side		
	Line	108...135(2)	#6...250 MCM AWG 16 mm²...120 mm²	3	3	3	199-LF1
		201...251(2)		6	6	3	
		317...480(2)	#4...500 MCM AWG 25 mm²...240 mm²	6	6	3	199-LG1
	Delta	108...135	#4...500 MCM AWG 25 mm²...240 mm²	1	6(3)		1494R-N15
		201...251	1/0...250 MCM AWG 50 mm²...120 mm²	2	12(3)		1494R-N14
		317...480	3/0...500 MCM AWG 95 mm²...240 mm²	1	12(4)		150-LGSMC

(1) 3...85 A units have box lugs standard. No additional lugs are required.
(2) When a multi-conductor lug is required, refer to the installation instructions for appropriate lug catalog number.
(3) When connected in an inside-the-delta configuration, use Cat. No. 199-LF1 for load-side connections (T1...T6).
(4) When connected in an inside-the-delta configuration, use Cat. No. 199-LG1 for load-side connections (T1...T6).

Table 15 - 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

Table 16 - 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

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

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

Specifications

Table 17 - Standard Features

Attribute	Description
Selectable Start Times	2, 5, 10, 15, 20, 25, or 30 s
Selectable Initial Torque	15%, 25%, 35%, and 65% of locked rotor torque
Selectable Current Limit	150%, 250%, 350%, and 450% of full load current
Selectable Kick Start — 450% FLA	0, 0.5, 1.0, or 1.5 s
Selectable Soft Stop	Off, 100%, 200%, or 300% of the start time setting when wired
Selectable Overload Trip Class	Trip Class 10, 15, or 20

Table 18 - Power Circuit Ratings

Attribute		UL/CSA/NEMA	IEC
Rated Operation Voltage		200...480V AC (-15%, +10%) 200...600V AC(-15%, +10%)	200...480V AC — 400V AC 500V AC — 500V AC
Rated Insulation Voltage		600V AC	500V AC
Dielectric Withstand		2200V AC	2500V AC
Repetitive Peak		200...480V AC: 1400V 200...600V AC: 1600V	200...480V AC: 1400V 500V AC: 1600V
Operating Frequency		50/60 Hz	50/60 Hz
Utilization Category	1...37 A	—	AC-53b: 3.5-15:3585
	43...60 A	—	AC-53b: 4.5-30:1770
	85 A	—	AC-53b: 4.5-30:3570
	108 A	—	AC-53b: 4.5-30:1770
	135 A	—	AC-53b: 3.5-30: 1770
	201...251 A	—	AC-53b: 3.5-30: 1770
	317...480 A	—	AC-53b: 3.5-30: 1770
Number of Poles		Equipment is designed for 3-phase only	
Rated Impulse Voltage		6 kV	
DV/DT Protection		1000V/µs	
Overvoltage Category		III	

Table 19 - Standards Compliance and Certifications

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

Certifications
cULus Listed (Open Type) (File No. E96956, Guides NMFT, NMFT7)
CSA Certified (File No. LR 1234)
CE Marked (Open Type) per EMC and Low Voltage Directive
CCC Certified

Table 20 - Short-circuit Protection Ratings

Attribute		Description			
SCPD Performance		Type 1[1]			
		Non-Time Delay		Thermal Magnetic Circuit Breaker	
SCPD List[2]		Max. Standard Available Fault	Max. Standard Fuse [A][3]	Max. Standard Available Fault	Max. Circuit Breaker [A]
Line Device Operational Current Rating [A]	3	5 kA	12	5 kA	15
	9	5 kA	30	5 kA	30
	16	5 kA	60	5 kA	60
	19	5 kA	70	5 kA	70
	25	5 kA	100	5 kA	100
	30	10 kA	110	10 kA	110
	37	10 kA	125	10 kA	125
	43	10 kA	150	10 kA	150
	60	10 kA	225	10 kA	225
	85	10 kA	300	10 kA	300
	108	10 kA	400	10 kA	300
	135	10 kA	500	10 kA	400
	201	18 kA	600	18 kA	600
	251	18 kA	700	18 kA	700
	317	30 kA	800	30 kA	800
	361	30 kA	1000	30 kA	1000
	480	42 kA	1200	42 kA	1200
Delta Device Operational Current Rating [A]	5.1	5 kA	15	5 kA	15
	16	5 kA	60	5 kA	60
	27.6	5 kA	70	5 kA	70
	32.8	5 kA	125	5 kA	125
	43	5 kA	150	5 kA	150
	52	10 kA	200	10 kA	200
	64	10 kA	250	10 kA	250
	74	10 kA	250	10 kA	250
	104	10 kA	400	10 kA	300
	147	10 kA	400	10 kA	400
	187	10 kA	600	10 kA	500
	234	10 kA	700	10 kA	700
	348	18 kA	1000	18 kA	1000
	435	18 kA	1200	18 kA	1200
	549	30 kA	1600	30 kA	1600
	625	30 kA	1600	30 kA	1600
	831	42 kA	1600	30 kA	1600
	831	42 kA	1600	42 kA	1200

(1) Type 1 performance/protection indicates that, under a short-circuit condition, the fused or circuit breaker-protected starter shall cause no danger to persons or installation but may not be suitable for further service without repair or replacement.
(2) Consult local codes for proper sizing of short-circuit protection.
(3) Non-time delay fuses (K5).

Table 21 - Short-circuit Protection Performance, High Fault, Type 1

SCPD Performance[1]			Type 1 Ratings[2]				
Motor Connection Type	Cat. No.	Current Rating [A]	Class J or Class L Fuse[3]		Inverse Time (Thermal Magnetic) Circuit Breaker 480V, 65 kA Max.		
			Max. High Capacity Available Fault (600V) [kA]	Max. Current [A]	Max. Current [A]	Cat. No.	Rating Plug Cat. No.
Line Connection	150-C3N...	3	65	6	15	140G-G6C3-C15	–
	150-C9N...	9		15	30	140G-G6C3-C30	–
	150-C16N...	16		30	60	140G-G6C3-C60	–
	150-C19N...	19		40	70	140G-G6C3-C70	–
	150-C25N...	25	70	50	100	140G-J6F3-D10	–
	150-C30N...	30		60	110	140G-J6F3-D11	–
	150-C37N...	37		60	125	140G-J6F3-D12	–
	150-C43N...	43		90	150	140G-J6F3-D15	–
	150-C60N...	60		125	225	140G-J6F3-D22	–
	150-C85N...	85		175	250	140G-J6F3-D25	–
	150-C108N...	108		200	300	140G-K6F3-D30	–
	150-C135N...	135		250	400	140G-K6F3-D40	–
	150-C201N...	201		350	600	140G-M6F3-D60	–
	150-C251N...	251		400	700	140G-M6F3-D80	–
	150-C317N...	317	69	500	800	140G-N6H3-E12	140G-NRP-D80
	150-C361N...	361		600	1000	140G-N6H3-E12	140G-NRP-E10
	150-C480N...	480		800	1200	140G-N6H3-E12	–
Inside-the-Delta Connection	150-C3N...	3	69	10	20	140G-G6C3-C20	–
	150-C9N...	9		30	60	140G-G6C3-C60	–
	150-C16N...	16		60	100	140G-G6C3-D10	–
	150-C19N...	19		70	125	140G-G6C3-D12	–
	150-C25N...	25	70	90	150	140G-J6F3-D15	–
	150-C30N...	30		100	200	140G-J6F3-D20	–
	150-C37N...	37		100	250	140G-J6F3-D25	–
	150-C43N...	43		150	250	140G-J6F3-D25	–
	150-C60N...	60		225	250	140G-J6F3-D25	–
	150-C85N...	85		300	250	140G-J6F3-D25	–
	150-C108N...	108		400	400	140G-K6F3-D40	–
	150-C135N...	135		400	400	140G-K6F3-D40	–
	150-C201N...	201		600	800	140G-M6F3-D80	–
	150-C251N...	251		800	800	140G-M6F3-D80	–
	150-C317N...	317	69	1000	1200	140G-N6H3-E12	–
	150-C361N...	361		1200	1200	140G-N6H3-E12	–
	150-C480N...	480		1600	1200	140G-N6H3-E12	–

(1) Consult local codes for proper sizing of short-circuit protection.
(2) Basic Requirements for Type 1 Coordination: Under the short-circuit condition, the starter shall cause no danger to persons or to the installation. The starter may not be suitable for further service without repair or replacement of parts. For further details, refer to UL 508/CSA C22.2 No. 14 and EN 60947-4-2.
(3) High Capacity fault ratings when used with time delay Class J or time delay Class L fuse.

Electrical Ratings

Table 22 - Control Circuits

	UL/CSA/NEMA	IEC
Rated Operational Voltage (+10%, –15%)	100...240V AC, 24V AC/DC	100...240V AC, 24V AC/DC
Rated Insulation Voltage	250V	250V AC
Rated Impulse Voltage	2.5 kV	4 kV
Dielectric Withstand	1500V AC	2000V AC
Overvoltage Category	II	III[1]
Operating Frequency	50/60 Hz	50/60 Hz
Input on-state voltage minimum, during start (IN1, IN2)	85V AC, 19.2V DC / 19.2V AC	
Input on-state current (IN1, IN2)	9.8 mA @120V AC/19.6 mA @ 240V AC, 7.3 mA @ 24V AC/DC	
Input off-state voltage maximum (IN1, IN2)	40V AC, 17V DC / 12V AC	
Input off-state current @ input off-state voltage (IN1, IN2)	<10 mA, <12 mA	

(1) Overvoltage category II, when either control or auxiliary circuit is wired to a SELV or PELV circuit.

Table 23 - Control Power During Start

		UL/CSA/NEMA	IEC
With Fan	3...37 A	215 mA @ 120V AC / 180 mA @ 240V AC, 800 mA @ 24V DC / 660 mA @ 24V AC	
	43...85 A	200 mA @ 120V AC / 100 mA @ 240V AC, 700 mA @ 24V AC/DC	
		Fan Power	Control Power
	108...135 A	20VA	200 mA @ 120V AC / 120 mA @ 240V AC, 600 mA @ 24V AC/DC
	201...251 A	40VA	
	317...480 A	60VA	
Without Fan	3...37 A	205 mA @ 120V AC / 145 mA @ 240V AC, 705 mA @ 24V DC / 580 mA @ 24V AC	

Table 24 - Steady-state Heat Dissipation and Overload Current Range

Controller Rating [A]	Steady State Heat Dissipation [W]	Overload Current Range [A]
3	11	1...3
9	12	3...9
16	14	5.3...16
19	15	6.3...19
25	17	8.3...25
30	19	10...30
37	24	12.3...37
43	34	14.3...43
60	50	20...60
85	82	28.3...85
108	62	27...108
135	75	34...135
201	129	67...201
251	147	84...251
317	174	106...317
361	194	120...361
480	239	160...480

Table 25 - Environmental Ratings

Attribute		Rating
Operating Temperature Range	open	-5…+50 °C (23…122 °F)
	enclosed	-5…+40 °C (23…104 °F)
Storage and Transportation Temperature Range		-25…+85 °C (-13…+185 °F)
Altitude		2000 m (6560 ft)
Humidity		5…95% (noncondensing)
Pollution Degree		2
Type of Protection		IP2X

Table 26 - Mechanical Ratings

Attribute			Rating
Resistance to Vibration	Operational		1.0 G Peak, 0.15 mm (0.006 in.) displacement
	Non-Operational		2.5 G Peak, 0.38 mm (0.015 in.) displacement
Resistance to Shock	Operational		15 G
	Non-Operational		30 G
Line Power Terminals	Cable Size Tightening Torque	3…37 A	2.5…25 mm^2 (14…4 AWG); 2.3…3.4 N•m (30 lb•in) if 1 25 mm^2 (4 AWG) wire in top terminal, 4.0 N•m (35 lb•in.)
		43…85 A	2.5…95 mm^2 (14…3/0 AWG) 11.3…12.4 N•m (100…110 lb•in)
	Power Pole Holes	108…135 A	One M10 x 1.5 diameter hole per power pole
		201…251 A	Two M10 x 1.5 diameter holes per power pole
		317…480 A	Two M12 x 1.75 diameter holes per power pole
Load Power Terminals	Cable Size Tightening Torque	3…37 A	2.5…16 mm^2 (14…6 AWG) 2.3…2.5 N•m (20…22.5 lb•in)
		43…85 A	2.5…50 mm^2 (14…1 AWG) 11.3…12.4 N•m (100…110 lb•in)
	Power Pole Holes	108…135 A	One M10 x 1.5 diameter hole per power pole
		201…251 A	Two M10 x 1.5 diameter holes per power pole
		317…480 A	Two M12 x 1.75 diameter holes per power pole
Control Terminals	Cable Size Tightening Torque	All	0.2…2.5 mm^2 (24…14 AWG) 0.45…0.9 N•m (4.0…8.0 lb•in)

Table 27 - Other Ratings

		UL/CSA/NEMA	IEC
EMC Emission Levels	Conducted Radio Frequency Emissions	–	Class A
	Radiated Emissions	–	Class A
EMC Immunity Levels	Electrostatic Discharge	4 kV Contact and 8 kV Air Discharge	8 kV Air Discharge
	Radio Frequency Electromagnetic Field	–	Per EN/IEC 60947-4-2
	Fast Transient	–	Per EN/IEC 60947-4-2
	Surge Transient	–	Per EN/IEC 60947-4-2

Table 28 - Auxiliary Contacts

		UL/CSA/NEMA	IEC
Rated Operational Voltage		250V AC/30V DC	250V AC/30V DC
Rated Insulation Voltage		250V	250V AC
Rated Impulse Voltage		2.5 kV	4 kV
Dielectric Withstand		1500V AC	2000V AC
Overvoltage Category		II	III[1]
Operating Frequency		50/60 Hz	50/60 Hz
Utilization Category		D300/D300	AC-15/DC
TB-97, -98 (OVLD/Fault)	Type of Control Circuit	Electromagnetic relay	
	Number of Contacts	1	
	Type of Contacts	Normally Open (N.O.)	
	Type of Current	AC/DC	
	Rated Operational Current (max.)	0.6 A @ 120V AC and 0.3 A @ 240V AC	
	Conventional Thermal Current I_{th}	1 A	
	Make/Break VA	432/72	
TB-13, -14 Aux 1 (Normal/Up-to-Speed)	Type of Control Circuit	Electromagnetic relay	
	Number of Contacts	1	
	Type of Contacts	Normally Open (N.O.)	
	Type of Current	AC/DC	
	Rated Operational Current (max.)	0.6 A @ 120V AC and 0.3 A @ 240V AC	
	Conventional Thermal Current I_{th}	1 A	
	Make/Break VA	432/72	

(1) Overvoltage category II, when either control or auxiliary circuit is wired to a SELV or PELV circuit.

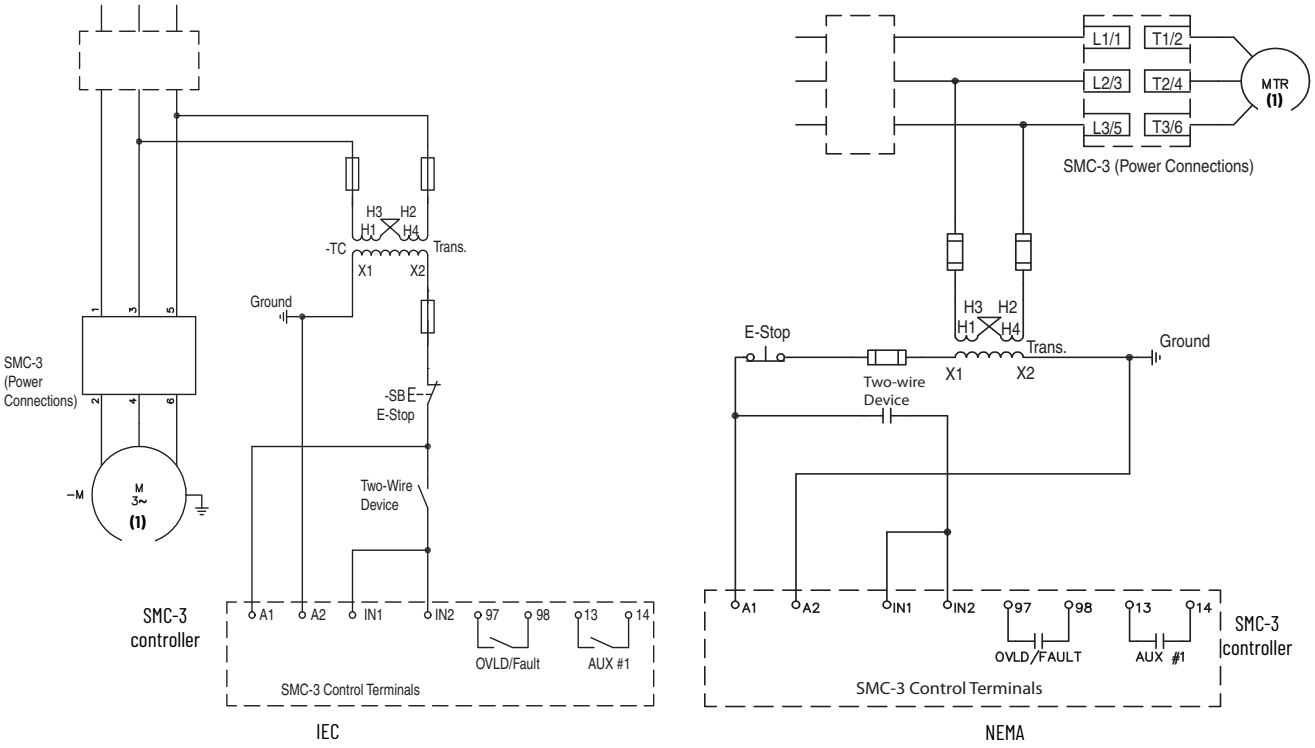
Table 29 - Side-mount Auxiliary Contacts

		UL/CSA/NEMA	IEC
Rated Operational Voltage		250V AC/30V DC	250V AC/30V DC
Rated Insulation Voltage		250V	250V AC
Rated Impulse Voltage		2.5 kV	4 kV
Dielectric Withstand		1500V AC	2000V AC
Overvoltage Category		II	III[1]
Operating Frequency		50/60 Hz	50/60 Hz
TB-23, -24 (Normal/Up-to-Speed) TB-33, -34 (Normal/Up-to-Speed)	Utilization Category	C300/R150	AC-15/DC-13
	Type of Control Circuit	Electromagnetic relay	
	Number of Contacts	1	
	Type of Contacts	Normally Open (N.O.)	
	Type of Current	AC/DC	
	Rated Operational Current (max.)	1.5 A @ 120V AC, 0.75 A @ 240V AC, 1.17 A @ 24V DC	
	Conventional Thermal Current I_{th}	2.5 A	
	Make/Break VA	1800/180V AC, 28V DC (resistive)	
TB-11, -12 (Normal/Up-to-Speed)	Type of Control Circuit	B300/R300	AC-15/DC-13
	Type of Control Circuit	Electromagnetic relay	
	Number of Contacts	1	
	Type of Contacts	Normally Closed (N.C.)	
	Type of Current	AC/DC	
	Rated Operational Current (max.)	3 A @ 120V AC, 1.5 A @ 240V AC, 1.17 A @ 24V DC	
	Conventional Thermal Current I_{th}	5 A	
	Make/Break VA	3600/360VA, 28VA (DC resistive)	

(1) Overvoltage category II, when either control or auxiliary circuit is wired to a SELV or PELV circuit.

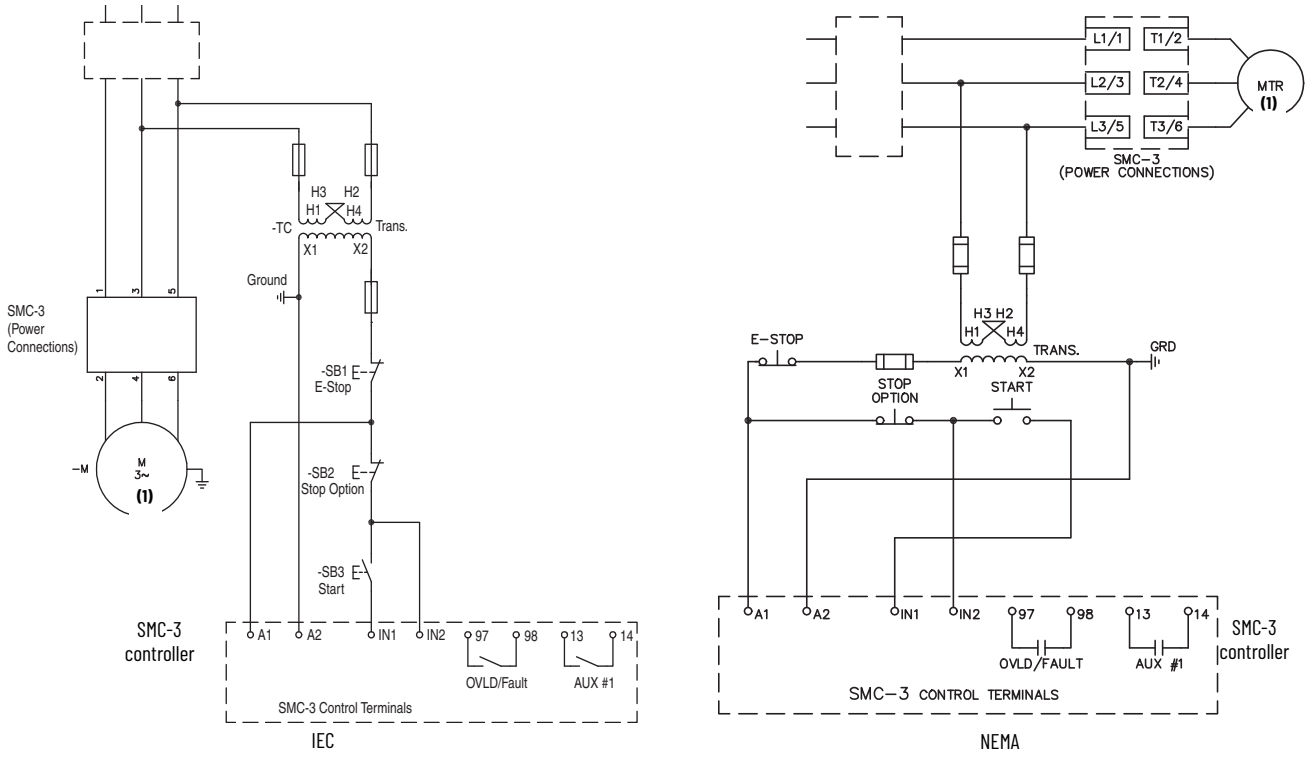
Typical Wiring Diagrams

Figure 1 - Two-wire Configuration



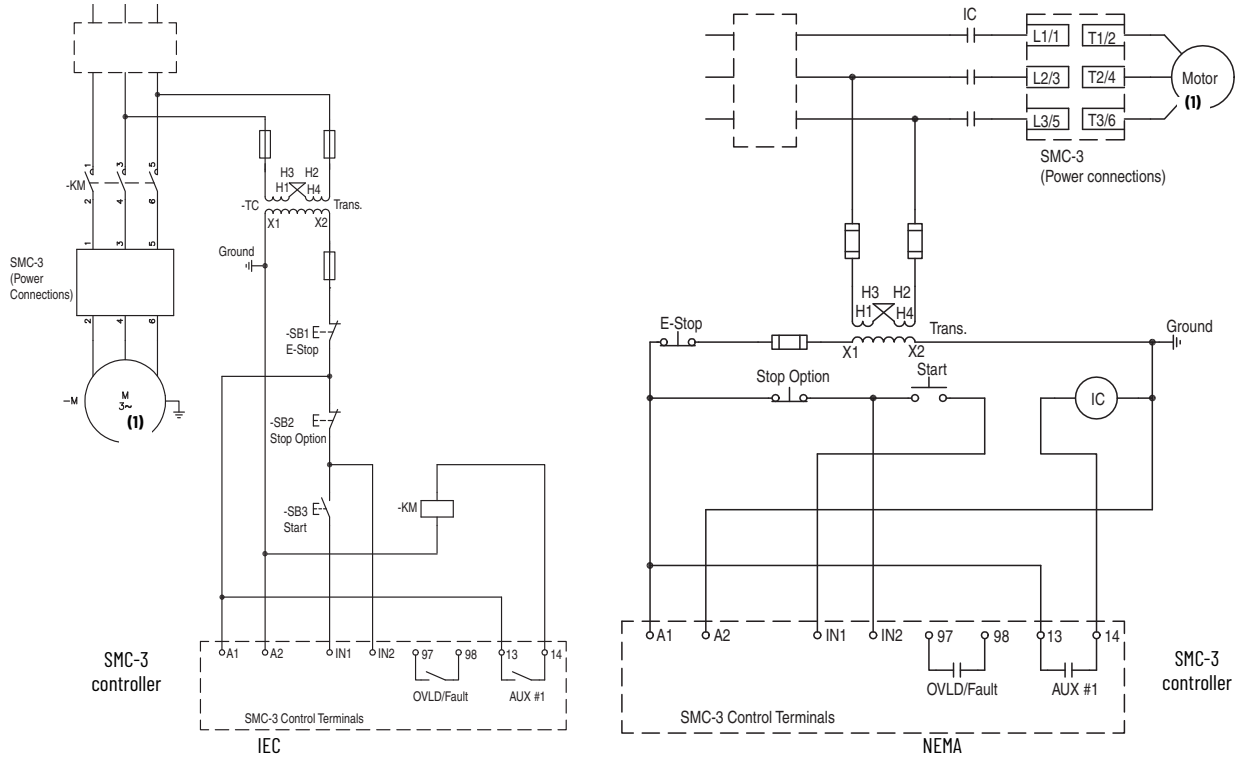
Note	Information
1	Customer supplied

Figure 2 - Three-wire Configuration



Note	Information
1	Customer supplied

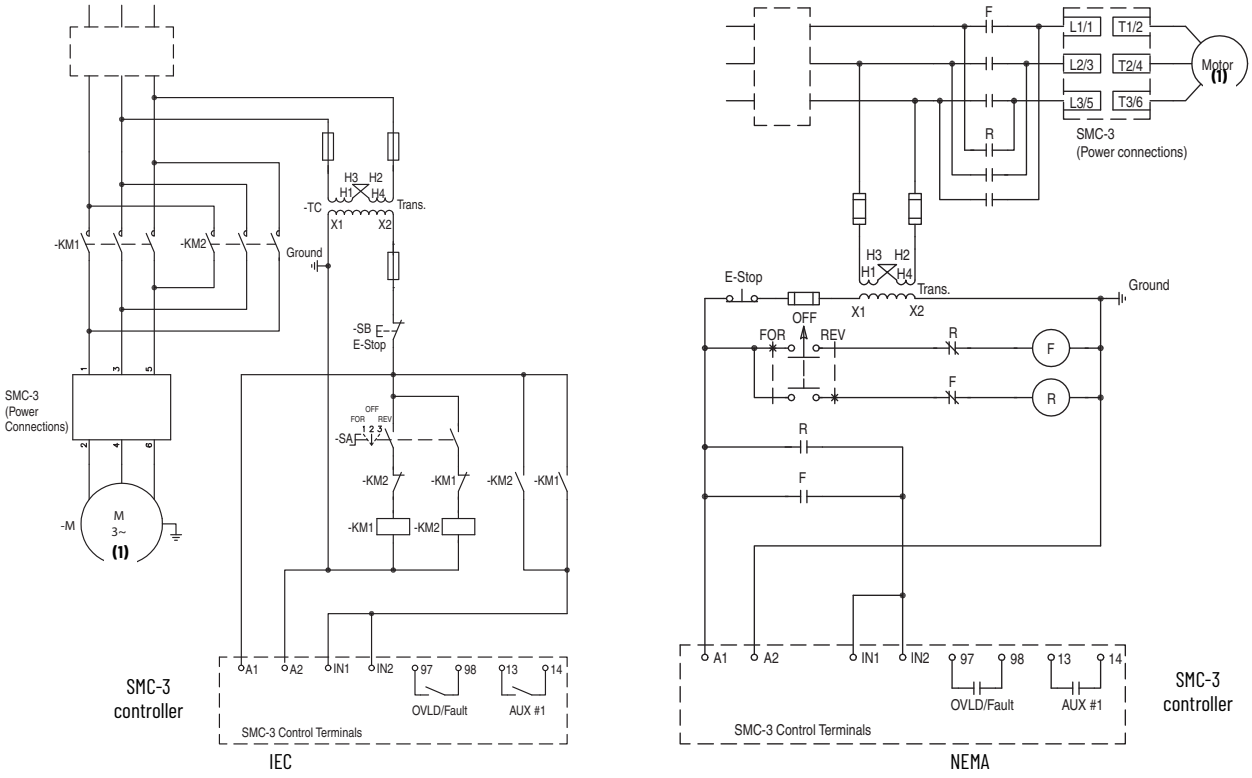
Figure 3 - Isolation Contactor Configuration



Note	Information
1	Customer supplied

Figure 4 - Reversing Configuration

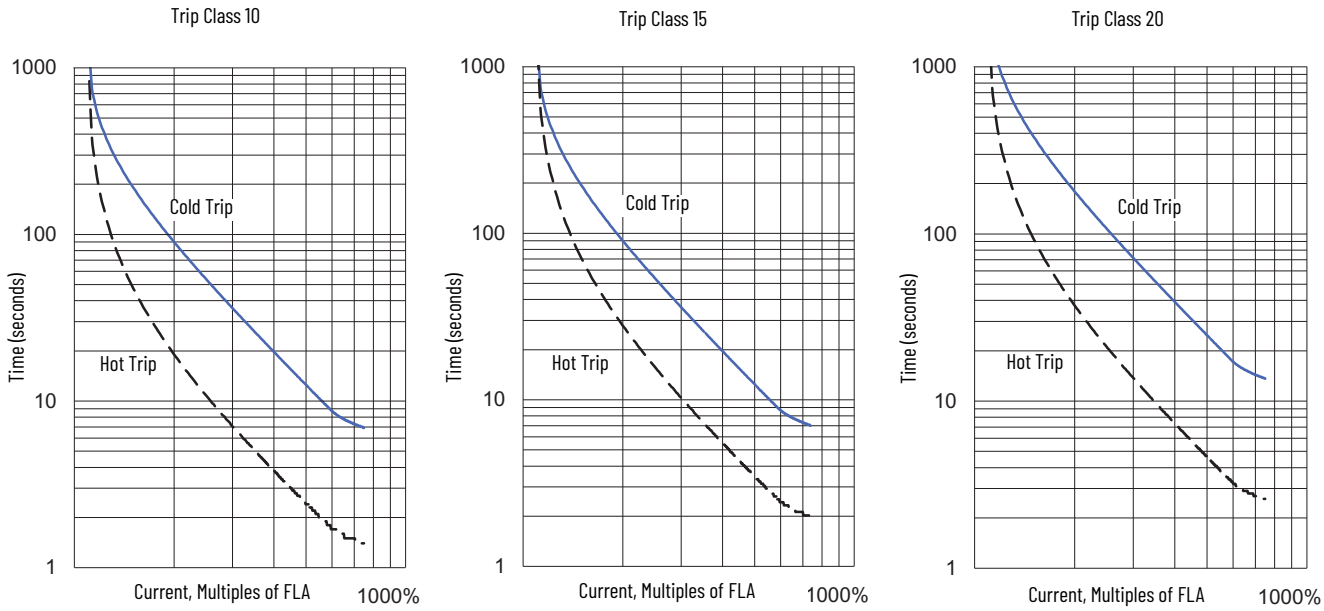
Minimum off time = 1 second



Note	Information
1	Customer supplied

Overload Trip Curves

Figure 5 - SMC-3 Overload Trip curves—Trip Class 10, 15, and 20



Starts per Hour Curves

Figure 6 - SMC-3 Starts per hour (3...37 A) 40 °C, 100% Duty Cycle, 10 s, 350%

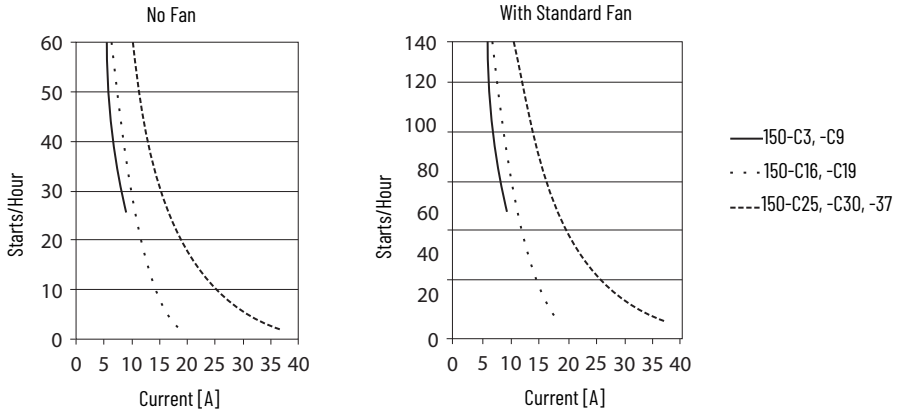


Figure 7 - SMC-3 Starts per hour (43...85 A) 40 °C, 100% Duty Cycle, 20 s, 350%

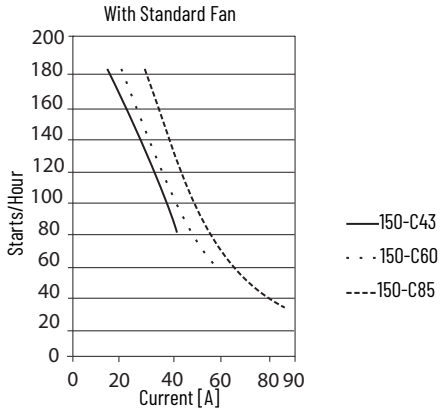


Figure 8 - SMC-3 Starts per hour (108...135 A) 40 °C, 100% Duty Cycle, 20 s, 350%

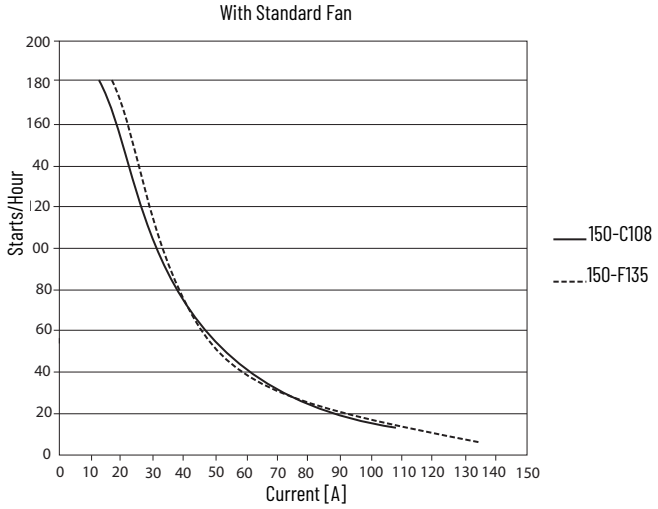
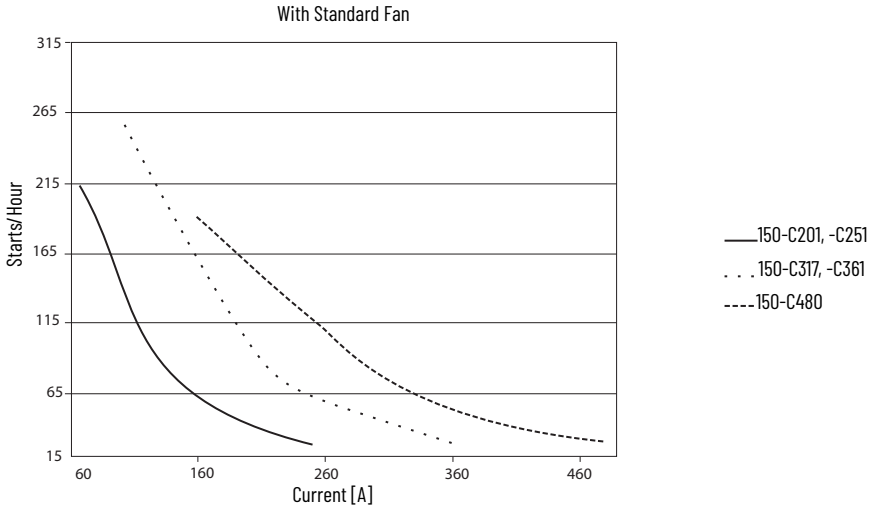


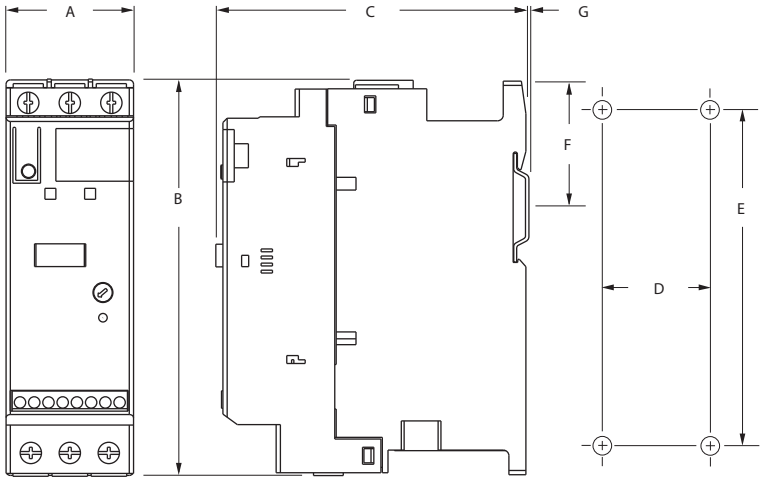
Figure 9 - SMC-3 Starts per hour (201...480 A) 40 °C, 100% Duty Cycle, 20 s, 350%



Approximate Dimensions

Dimensions in millimeters (inches). Dimensions are not intended to be used for manufacturing purposes. All dimensions are subject to change.

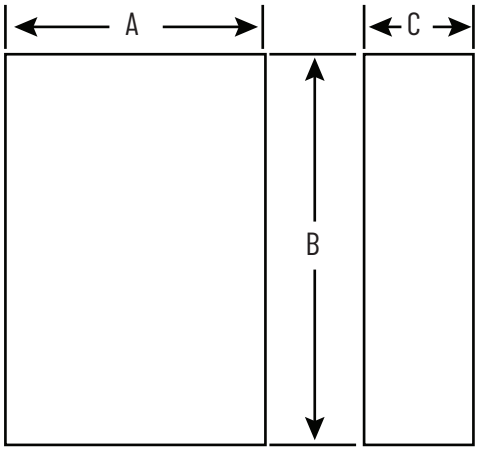
Figure 10 - Open Type Controllers



Controller Rating [A]	A	B	C	D	E	F	G	Mounting Hole Size	Weight kg (lbs)
1...37[1]	44.8 (1-49/64)	139.7 (5-1/2)	110 (4-21/64)	35 (1-3/8)	132 (5-13/64)	46.4 (1.81)	2 (1/16)	4.6 (0.18)	0.86 (1.9)
43...85[2]	72 (2.83)	206 (8.11)	130 (5.12)	55 (2.17)	198 (7.8)	102 (4.02)	2 (1/16)	5.3 (0.21)	2.25 (5.0)
108...135[2]	196.4 (7.74)	443.7 (17.47)	205.2 (8.08)	166.6 (6.56)	367 (14.45)	–	–	7.5 (0.295)	15 (33)
201...251[2]	225 (8.86)	560 (22.05)	265.3 (10.45)	150 (5.91)	504.1 (19.85)	–	–	11.5 (0.45)	30.4 (67)
317...480[2]	290 (11.42)	600 (23.62)	298 (11.73)	200 (7.87)	539.2 (21.23)	–	–	11.5 (0.45)	45.8 (101)

(1) Optional fan does not increase dimension B.
(2) Fan is standard.

Figure 11 - Minimum Enclosure Size



Controller Rating [A]	B Height	A Width	C Depth	Fan Requirements
1...37	305 (12)	224 (9)	152 (6)	none
43...85	406 (16)	305 (12)	203 (8)	none
108...135	762 (30)	610 (24)	305 (12)	none
201...251	965 (38)	762 (30)	356 (14)	none
317...480	1295 (51)	914 (36)	356 (14)	none