

# Enclosed Starters with Snap-Together Wiring

Component wiring made easy



**Allen-Bradley**  
by ROCKWELL AUTOMATION




**Rockwell  
Automation**

# Enclosed Starter Wiring Made Easy

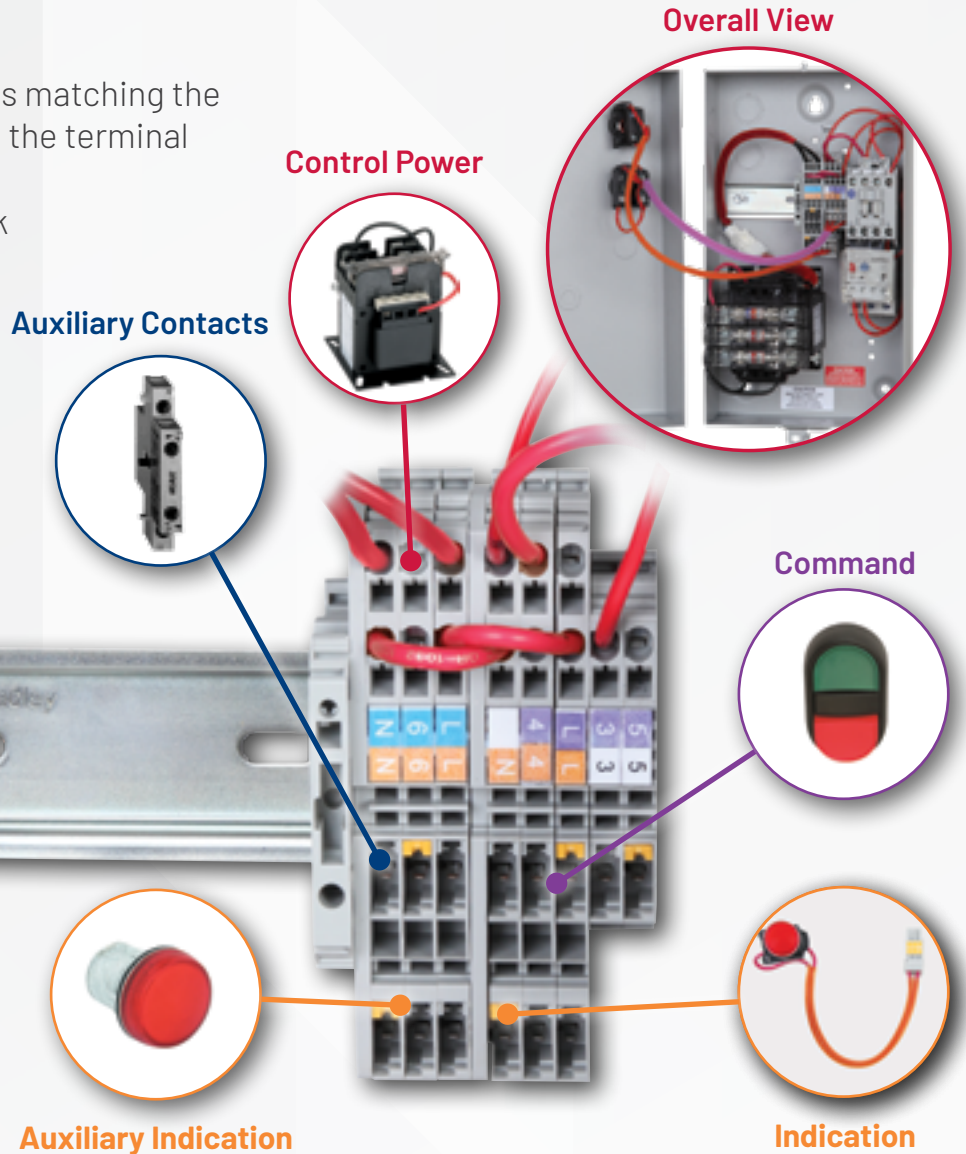
Allen-Bradley enclosed starters now feature patented snap-together terminations for quick and secure component wiring. In addition to significantly reducing wiring time, these connections virtually eliminate wiring errors while allowing for easy on-site assembly and component replacement.

## How It Works

Making connections is as simple as matching the color-coded wiring sleeve color to the terminal block label. Just snap the keyed connectors into the terminal block and you have a secure, error-free connection in a fraction of the time associated with traditional wiring.



**10 Min.**  
Amount of time to snap in components vs. 40 minutes when wiring traditionally.



## Color-coded Assembly

## Ideal for...



When you need your starter quickly



Reducing wiring errors



When you need to assemble or repair on site

# Enclosed Starter Selection

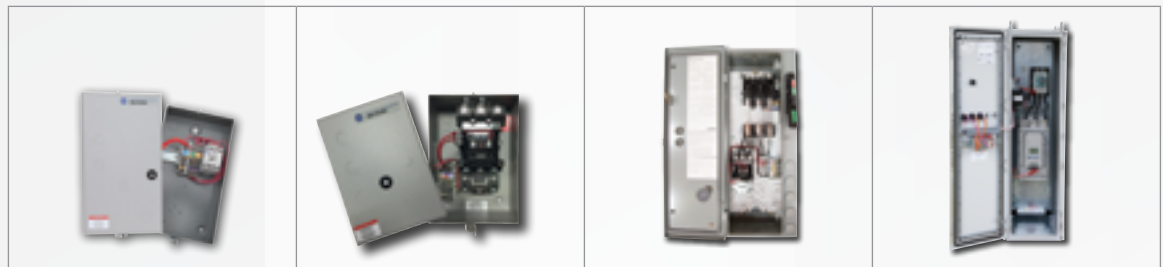
Our family of enclosed starters offers a broad range of motor control options, accessories, ratings, and enclosures. Now offered with snap-together wiring technology, you can build a tailored solution to meet your power, control and application needs.

## Direct-on-line Starters

- Featuring our NEMA and IEC Contactors
  - Full torque applied to motor
  - Can be used for motor, non-motor and lighting loads
- Communication and diagnostic options with electronic overload relay
- Designed to meet regional certifications

## Soft Starters

- Featuring our Smart Motor Controllers™
  - Simple starting and stopping
  - Reduced torque and current starting
  - Limiting current inrush protects motor
  - Limited control at various speeds
- Communication options available
- Integrated overload relay
- Designed to meet global standards

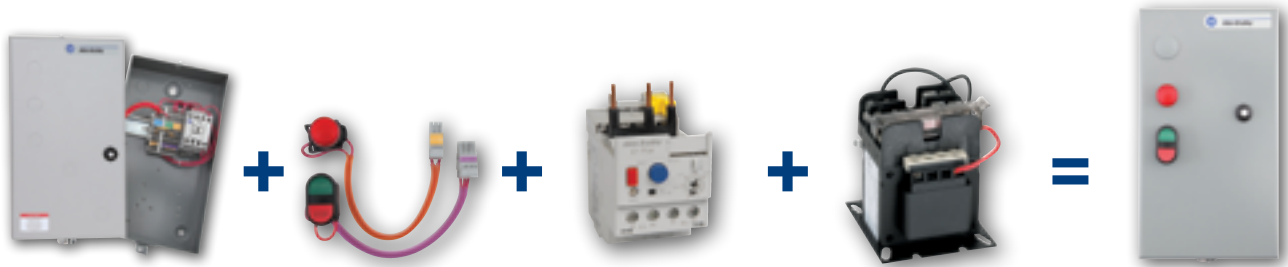


	Enclosed IEC Starters	Enclosed NEMA Starters	Enclosed NEMA Combination Starters	Enclosed Soft Starters
Availability <sup>1</sup>	3 Days	3 Days	3 Days	5 Days
Current	9...55 A	9...45 A	18...270 A	9...780A
NEMA Size	NA	00...2	0...5	NA
Starting Method	Direct-on-line	Direct-on-line	Direct-on-line	Microprocessor-controlled Soft Start
Motor Direction	Reversing, Non-reversing	Reversing, Non-reversing	Reversing, Non-reversing	Non-reversing
Branch Circuit Protection	NA	NA	Fusible Disconnect or Circuit Breaker	Fusible Disconnect or Circuit Breaker
Overload Relays	Bimetallic or Electronic	Eutectic Alloy or Electronic	Eutectic Alloy or Electronic	Electronic
Enclosure Type	Type 1(IP42)	Type 1, 4/12, 4/4X	Type 1, 4/12, 4/4X	Type 1, 12, 3R(IP54)
Enclosure Mounting	Wall Mounted	Wall Mounted	Wall Mounted or Floor Standing	Wall Mounted or Floor Standing
Disconnect Handle	NA	NA	Flange	Rotary
Command and Indication	22.5 mm	22.5 mm	30.5 mm	22.5 mm
Short-Circuit Current Rating	5 kA Interrupting Capacity	up to 100 kA Interrupting Capacity	up to 100 kA Interrupting Capacity	up to 100 kA Interrupting Capacity
Certifications	cULus Listed	cULus Listed	cULus Listed	cULus Listed

<sup>1</sup>Availability: lead-time for in-house production at Regional Configuration Center, does not include transit time. Some options have longer lead time and color coded accordingly in Proposal Works.

# Table of Contents

Our modular approach to enclosed starter selection and assembly makes it quicker and easier for you to get your application up and running. Build your starter by selecting components from each category, assemble it using our keyed and color-coded snap-together wiring system, and you're ready to go!



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**2** COMMAND AND INDICATION DEVICES

**3** OVERLOAD RELAYS

**4** TRANSFORMER KITS

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**In addition to the user assembled starters available through this Selection Guide (power centers and kits), factory-configured starters are also available through ProposalWorks and the Regional Configuration Centers.**

# Enclosed IEC Starter Selection



## 1 POWER CENTER

IEC Reversing and Non-Reversing starters<sup>1</sup>

Amps	Max. Hp Rating						Catalog Number	
	1-Phase		3-Phase				Type 1 (IP42)	
	115V AC	230V AC	200V AC	230V AC	460V AC	575V AC	Non-reversing	Reversing
9	1/2	1/2	2	2	5	7 1/2	109-C09AD-OLR	105-C09AD-OLR
12	1/2	2	3	3	7 1/2	10	109-C12AD-OLR	105-C12AD-OLR
16	1	3	5	5	10	15	109-C16AD-OLR	105-C16AD-OLR
23	2	3	5	7 1/2	15	15	109-C23AD-OLR	105-C23AD-OLR
30	2	5	7 1/2	10	20	25	109-C30AD-OLR	105-C30AD-OLR
37	3	5	10	10	25	30	109-C37AD-OLR	105-C37AD-OLR
43	3	7 1/2	10	15	30	30	109-C43AD-OLR	-
55	5	10	15	20	40	40	109-C55AD-OLR	-

<sup>1</sup>All starters come standard with a 120V AC coil

## 2 COMMAND AND INDICATION DEVICES

Push buttons, selector switches, E-stop and pilot light kits are 22.5 mm

Kit Description	Catalog Number
Push Button, Start-Stop	198-SSPB <sup>2</sup>
Selector Switch, Plastic, On-Off	198-2SS <sup>2</sup>
Selector Switch, Plastic, HOA/FOR	198-3SS
Push Button, For-Rev-Stop	198-FRSPB <sup>3</sup>
Emergency Stop Push Button	198-ESP <sup>3</sup>
Pilot Light, 24...120V AC/DC, Red LED	198-RUPL
Pilot Light, 24...120V AC/DC, Green LED	198-GUPL
Pilot Light, 24...120V AC/DC, White LED	198-WUPL
Pilot Light, 240V AC, Red LED	198-R240PL
Pilot Light, 240V AC, Green LED	198-G240PL
Pilot Light, 240V AC, White LED	198-W240PL
N.O./N.C. Auxiliary contact kit	198-SA11 <sup>2</sup>



<sup>2</sup>Can only be used with non-reversing starters and contactors

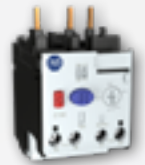
<sup>3</sup>Can only be used with reversing starters

### 3 OVERLOAD RELAYS



#### Bimetallic Overload Relays

IEC Contactor	Overload Relay FLA Range [A]	Three-phase Cat. No.
109-C09...109-C23	0.75...1.0	193-T1AB10
	0.90...1.3	193-T1AB13
	1.1...1.6	193-T1AB16
	1.4...2.0	193-T1AB20
	1.8...2.5	193-T1AB25
	2.3...3.2	193-T1AB32
	2.9...4.0	193-T1AB40
	3.5...4.8	193-T1AB48
	4.5...6.3	193-T1AB63
	5.5...7.5	193-T1AB75
	7.2...10	193-T1AC10
	9.0...12.5	193-T1AC12
109-C12...109-C23	11.3...16	193-T1AC16
109-C16...109-C23	15...20	193-T1AC20
	17.5...21.5	193-T1AC21
109-C23	21...25	193-T1BC25
109-C30...109-C37	24.5...30	193-T1BC30
109-C37	33...38	193-T1BC38
109-C43...109-C55	24.5...36	193-T1CC36
	35...47	193-T1CC47
External reset adapter is required		193-RA3



#### E100 Overload Relays

IEC Contactor	Overload Relay FLA Range [A]	Catalog Number
109-C09...109-C23	0.1...0.5	193-1EEAB
	0.2...1.0	193-1EEBB
	1.0...5.0	193-1EECB
	3.2...16	193-1EEDB
	5.4...27	193-1EEEB
109-C30...109-C55	5.4...27	193-1EEED
	11...55	193-1EEFD
	20...100	193-1EEQD
External reset adapter is required		193-1ERA



### 4 TRANSFORMER KITS<sup>1</sup>

Kit Description	Catalog Number
208/120V AC transformer kit	1497-HD50
240/120V AC transformer kit	1497-AD50
480/120V AC transformer kit	1497-BD50
600/120V AC transformer kit	1497-CD50
208/24V AC transformer kit	1497-HJ50
240/24V AC transformer kit	1497-AJ50
480/24V AC transformer kit	1497-BJ50
600/24V AC, transformer kit	1497-CJ50

<sup>1</sup> Transformer kits are pre-engineered with fuses and fuse covers.

# 1 POWER CENTER

## NEMA Reversing and Non-reversing Starters and Contactors<sup>1</sup>

NEMA Size	Max. Hp Rating				Catalog Number					
	3-Phase				Type 1					
	200V	230V	460V	575V	Non-reversing <sup>2</sup>	Reversing <sup>2</sup>	Contactor <sup>2</sup>	NEMA 300 Non-reversing	NEMA 300 Reversing	NEMA 300 Contactor <sup>2</sup>
00	1½	1½	2	2	509-TAD-XXX	505-TAD-XXX	500-TAD930	-	-	
0	3	3	5	5	509-AAD-XXX	-	500-AAD930	309-AAD-XXX	305-AAD-XXX	300-AAD930
1	7½	7½	10	10	509-BAD-XXX	-	500-BAD930	309-BAD-XXX	305-BAD-XXX	300-BAD930
2	10	15	25	25	509-CAD-XXX	-	500-CAD930	309-CAD-XXX	305-CAD-XXX	300-CAD930

## NEMA Lighting Contactors<sup>1</sup>

Tungsten lamp loads (Max. 480V Line, 277V Load)	Maximum Continuous Ampere Rating [A]		Catalog Number
	General use		
	Resistive heating		
	Ballast lighting (fluorescent)		
	Discharge lighting (mercury vapor high-pressure sodium and metal halide)		
5	10		500L-TAD930
15	20		500L-AAD930
30	30		500L-BAD930
60	60		500L-CAD930

<sup>1</sup> All starters and contactors come standard with a 120V AC coil

# 2 COMMAND AND INDICATION DEVICES

22.5 mm push buttons, selector switches, E-stop and pilot light kits supplied in Type 1 lift-off enclosures

Kit Description	Catalog Number
Push Button, Start-Stop	198-SSPB <sup>2</sup>
Selector Switch, Plastic, On-Off	198-2SS <sup>2</sup>
Selector Switch, Plastic, HOA/FOR	198-3SS
Push Button, For-Rev-Stop	198-FRSPB <sup>3</sup>
Emergency Stop Push Button	198-ESP <sup>3</sup>
Pilot Light, 24...120V AC/DC, Red LED	198-RUPL
Pilot Light, 24...120V AC/DC, Green LED	198-GUPL
Pilot Light, 24...120V AC/DC, White LED	198-WUPL
Pilot Light, 240V AC, Red LED	198-R240PL
Pilot Light, 240V AC, Green LED	198-G240PL
Pilot Light, 240V AC, White LED	198-W240PL
N.O./N.C. Auxiliary contact kit	198-SA11 <sup>2,4</sup>

<sup>2</sup> Can only be used with non-reversing starters and contactors

<sup>3</sup> Can only be used with reversing starters

<sup>4</sup> Can not be used on Bul. 509, 505, 500, and 500L above NEMA Size 00.



### 3 OVERLOAD RELAYS

#### E100 Overload Relays<sup>1</sup>

NEMA Size	Overload Relay FLA Range [A]	Catalog Number
Size 00	0.1...0.5	592-1EFAT
	0.2...1.0	592-1EFBT
	1.0...5.0	592-1EFCT
	3.2...16	592-1EFDT
Size 0...2	0.2...1.0	592-1EFBC
	1.0...5.0	592-1EFCC
	3.2... 16	592-1EFDC
	5.4...27	592-1EFEC
	11...55	592-1EFFC

<sup>1</sup>To be used on Bul. 509 and 505 starters and contactors.



#### E100 Overload Relays<sup>2</sup>

NEMA Size	Overload Code	Current Range [Amps]	Catalog Number
0	-A2C	0.2 ... 1.0	193-1EEBB
	-A2E	1.0 ... 5.0	193-1EECB
	-A2F	3.2 ... 16	193-1EEDB
	-A2G	5.4 ... 27	193-1EEEB
1, 2	-A2G	5.4 ... 27	193-1EEED
	-A2J	11 ... 55	193-1EEFD
3	-A2L	20 ... 100	193-1EEGE
4	-A2M	30 ... 150	193-1EEHF
5	-A2N	60 ... 300	193-1EEKZ
6	-A2R	120 ... 600	193-1EEMZ

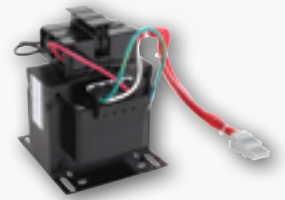
<sup>2</sup>To be used on Bul. 309 and 305 starters

#### Eutectic Alloy Overload Relays<sup>1,3</sup>

NEMA Size	Three-phase Cat. No.
Size 0...1	592-EUTB
Size 2	592-EUTC

<sup>1,3</sup>Information on heater elements for eutectic overload relays can be found in Bulletin 592 Heater Element Specifications Technical Data (592-TD010).

### 4 TRANSFORMER KITS



Kit Description	Catalog Number <sup>4,5</sup>
208/120V AC transformer kit	1497-HD50
240/120V AC transformer kit	1497-AD50
480/120V AC transformer kit	1497-BD50
600/120V AC transformer kit	1497-CD50
208/24V AC transformer kit	1497-HJ50
240/24V AC transformer kit	1497-AJ50
480/24V AC transformer kit	1497-BJ50
600/24V AC, transformer kit	1497-CJ50

<sup>4</sup>Due to enclosure space limitations, Bulletin 509, 505, 500, 500L starters and contactors cannot be used with a transformer kit

<sup>5</sup>Transformer kits are pre-engineered with fuses and fuse covers.



# Enclosed NEMA Combination Starter Selection

## 1 POWER CENTER

### NEMA Combination Starter with Circuit Breakers

Nema Size	Continuous Amperage	Max. Hp Rating				Catalog Number		
		208V	240V	480V	600V	Type 1 <sup>3</sup>	Type 4/12 <sup>3</sup>	Type 4/4X <sup>3</sup>
0	18	3	3	5	5	513-AABD-XXX-38	513-AFBD-XXX-38	513-ACBD-XXX-38
1	27	7.5 <sup>1</sup>	7.5 <sup>2</sup>	10	10	513-BABD-XXX-41	513-BFBD-XXX-41	513-BCBD-XXX-41
2	45	10	15	25	25	513-CABD-XXX-44	513-CFBD-XXX-44	513-CCBD-XXX-44
3	90	25	30	50	50	513-DABD-XXX-47	513-DFBD-XXX-47	513-DCBD-XXX-47
4	135	40	50	100	100	513-EABD-XXX-50	513-EFBD-XXX-50	513-ECBD-XXX-50
5	270	75	100	200	200	513-FABD-XXX-54	513-FFBD-XXX-54	513-FCBD-XXX-54

<sup>1</sup>5 Hp at 208V requires a breaker change to 30A

<sup>2</sup>7.5 Hp at 208V and 240V require a breaker change to 50A

<sup>3</sup>Power center comes standard with instantaneous circuit breaker. Change out the circuit breaker as required.



Fusible or circuit breaker disconnecting means

### Circuit Breakers

Rated Operating Current [A]	Catalog Number
15	140MG-G8P-C15
30	140MG-G8P-C30
50	140MG-G8P-C50
100	140MG-G8P-D10
125	140MG-G8P-D12
150	140MG-J8P-D15
400	140MG-K8P-D40

### NEMA Combination Starter with Visible Blade Disconnect Switches

NEMA Size	Continuous Amperage [A]	Max. Hp Rating				Catalog Number		
		208V	240V	480V	600V	Type 1 <sup>4</sup>	Type 4/12 <sup>4</sup>	Type 4/4X <sup>4</sup>
0	18	3	3	5	5	512-AACD-XXX-24R	512-AFCD-XXX-24R	512-ACCD-XXX-24R
1	27	7.5	7.5	10	10	512-BACD-XXX-24R	512-BFCD-XXX-24R	512-BCCD-XXX-24R
2	45	10	15	25	25	512-CACD-XXX-25R	512-CFCD-XXX-25R	512-CCCD-XXX-25R
3	90	25	30	50	50	512-DACD-XXX-26R	512-DFCD-XXX-26R	512-DCCD-XXX-26R
4	135	40	50	100	100	512-EACD-XXX-27R	512-EFCD-XXX-27R	512-ECCD-XXX-27R
5	270	75	100	200	200	512-FACD-XXX-28R	512-FFCD-XXX-28R	512-FCCD-XXX-28R

<sup>4</sup>Power center comes standard with Class R fusing. Swap with Class J or H as needed.

## NEMA Combination Reversing Starter with Visible Blade Disconnect Switch

NEMA Size	Continuous Amperage [A]	Max. Hp Rating				Catalog Number	
		208V	240V	480V	600V	Type 1	Type 4/12
0	18	3	3	5	5	506-AACD-XXX-24R	506-AFCD-XXX-24R
1	27	7.5	7.5	10	10	506-BACD-XXX-24R	506-BFCD-XXX-24R
2	45	10	15	25	25	506-CACD-XXX-25R	506-CFCD-XXX-25R
3	90	25	30	50	50	506-DACD-XXX-26R	506-DFCD-XXX-26R
4	135	40	50	100	100	506-EACD-XXX-27R	506-EFCD-XXX-27R
5	270	75	100	200	200	506-FACD-XXX-28R	506-FFCD-XXX-28R

## NEMA 300 Combination Starter with Circuit Breakers

NEMA Size	Continuous Amperage	Max. Hp Rating				Catalog Number		
		208V	240V	480V	600V	Type 1	Type 4/12	Type 4/4X
0	18	3	3	5	5	313-AABD-XXX-C15	313-AFBD-XXX-C15	313-ACBD-XXX-C15
1	27	7.5	7.5	10	10	313-BABD-XXX-C30	313-BFBD-XXX-C30	313-BCBD-XXX-C30
2	45	10	15	25	25	313-CABD-XXX-C50	313-CFBD-XXX-C50	313-CCBD-XXX-C50
3	90	25	30	50	50	313-DABD-XXX-D12	313-DFBD-XXX-D12	313-DCBD-XXX-D12
4	135	40	50	100	100	313-EABD-XXX-D15	313-EFBD-XXX-D15	313-ECBD-XXX-D15
5	270	75	100	200	200		313-FFBD-XXX-D30	313-FCBD-XXX-D30

## NEMA 300 Combination Starter with Visible Blade Disconnect Switches

NEMA Size	Continuous Amperage [A]	Max. Hp Rating				Catalog Number		
		208V	240V	480V	600V	Type 1 <sup>4</sup>	Type 4/12 <sup>4</sup>	Type 4/4X <sup>4</sup>
1	18	3	3	5	5	312-AABD-XXX-R03	312-AFBD-XXX-R03	312-ACBD-XXX-R03
2	27	7.5	7.5	10	10	312-BABD-XXX-R03	312-BFBD-XXX-R03	312-BCBD-XXX-R03
3	45	10	15	25	25	312-CABD-XXX-R06	312-CFBD-XXX-R06	312-CCBD-XXX-R06
4	90	25	30	50	50	312-DABD-XXX-R10	312-DFBD-XXX-R10	312-DCBD-XXX-R10
5	135	40	50	100	100	312-EABD-XXX-R20	312-EFBD-XXX-R20	312-ECBD-XXX-R20
6	270	75	100	200	200		312-FFBD-XXX-R40	312-FCBD-XXX-R40

<sup>4</sup> Power center comes standard with Class R fusing. Swap with Class J or H as needed.

## NEMA Combination Reversing Starter with Circuit Breaker

NEMA Size	Continuous Amperage [A]	Max. Hp Rating				Catalog Number		
		208V	240V	480V	600V	Type 1	Type 4/12	Type 4/4X
0	18	3	3	5	5	507-AABD-XXX-38	507-AFBD-XXX-38	507-ACBD-XXX-38
1	27	7.5	7.5	10	10	507-BABD-XXX-41	507-BFBD-XXX-41	507-BCBD-XXX-41
2	45	10	15	25	25	507-CABD-XXX-44	507-CFBD-XXX-44	507-CCBD-XXX-44
3	90	25	30	50	50	507-DABD-XXX-47	507-DFBD-XXX-47	507-DCBD-XXX-47
4	135	40	50	100	100	507-EABD-XXX-50	507-EFBD-XXX-50	507-ECBD-XXX-50
5	270	75	100	200	200	507-FABD-XXX-54	507-FFBD-XXX-54	507-FCBD-XXX-54

## Fuse Clips and Accessories

Description	Catalog Number
30 A, 250V Class R clips <sup>5</sup>	1494U-FC302R
30 A, 250V Class J clips <sup>5</sup>	1494U-FC302J
30 A, 600V Class J clips <sup>5</sup>	1494U-FC30J
60 A, 600V Class J clips <sup>5</sup>	1494U-FC60J
100 A, 600V Class J clips <sup>5</sup>	1494U-FC100J
200 A, 250V/600V Class J clips <sup>5</sup>	1401-N45
400 A, 250V/600V Class J clips <sup>5</sup>	1401-N46
(1) N.O. auxiliary contact	1494U-NO
(1) N.C. auxiliary contact	1494U-NC
Disconnect fuse cover	1494U-PC1
Disconnect fuse cover	1494U-PC3
Operating handle, painted metal	1494U-HM1

<sup>5</sup> Package quantity 6

## NEMA 300 Combination Reversing Starter with Visible Blade Disconnect Switch

NEMA Size	Continuous Amperage [A]	Max. Hp Rating				Catalog Number		
		208V	240V	480V	600V	Type 1 <sup>4</sup>	Type 4/12 <sup>4</sup>	Type 4/4X <sup>4</sup>
1	18	3	3	5	5	306-AABD-XXX-R03	306-AFBD-XXX-R03	306-ACBD-XXX-R03
2	27	7.5	7.5	10	10	306-BABD-XXX-R03	306-BFBD-XXX-R03	306-BCBD-XXX-R03
3	45	10	15	25	25	306-CABD-XXX-R06	306-CFBD-XXX-R06	306-CCBD-XXX-R06
4	90	25	30	50	50	306-DABD-XXX-R10	306-DFBD-XXX-R10	306-DCBD-XXX-R10
5	135	40	50	100	100	306-EABD-XXX-R20	306-EFBD-XXX-R20	306-ECBD-XXX-R20
6	270	75	100	200	200	306-FABD-XXX-R40	306-FFBD-XXX-R40	306-FCBD-XXX-R40

## NEMA 300 Combination Reversing Starter with Circuit Breakers

NEMA Size	Continuous Amperage	Max. Hp Rating				Catalog Number		
		208V	240V	480V	600V	Type 1 <sup>3</sup>	Type 4/12 <sup>3</sup>	Type 4/4X <sup>3</sup>
0	18	3	3	5	5	307-AABD-XXX-C15	307-AFBD-XXX-C15	307-ACBD-XXX-C15
1	27	7.5	7.5	10	10	307-BABD-XXX-C30	307-BFBD-XXX-C30	307-BCBD-XXX-C30
2	45	10	15	25	25	307-CABD-XXX-C50	307-CFBD-XXX-C50	307-CCBD-XXX-C50
3	90	25	30	50	50	307-DABD-XXX-D12	307-DFBD-XXX-D12	307-DCBD-XXX-D12
4	135	40	50	100	100	307-EABD-XXX-D15	307-EFBD-XXX-D15	307-ECBD-XXX-D15
5	270	75	100	200	200		307-FFBD-XXX-D40	307-FCBD-XXX-D40



## 2 COMMAND AND INDICATION DEVICES

Push buttons, selector switches, pilot light and push-to-test kits are 30.5 mm

Kit Description	Catalog Number
Push Button, Type 4/12, Start-Stop	599-PBF-SS
Push Button, Type 4/12, ON-OFF	599-PBF-00
Push Button, Type 4X, Start-Stop	599-PBC-SS
Push Button, Type 4X, ON-OFF	599-PBC-00
Push Button, Illuminated, Type 4/12, Start-Stop	599-PBF-SSL120
Push Button, Illuminated, Type 4X, Start-Stop	599-PBC-SSL120
Selector Switch, Type 4/12, Hand-Off-Auto	599-SSF-HOA
Selector Switch, Type 4X, Hand-Off-Auto	599-SSC-HOA
Selector Switch, Type 4/12, On-Off/Hand-Auto	599-SSF-00
Selector Switch, Type 4/12, Hand-Off-Auto-Start-Stop	599-SSF-HOASS
Selector Switch, Type 4X, On-Off/Hand-Auto	599-SSC-00
Selector Switch, Type 4X, Hand-Off-Auto-Start-Stop	599-SSC-HOASS
Pilot Light, Type 4/12, 120V, Red LED	599-PLF-⊗R <sup>1</sup>
Pilot Light, Type 4/12, 120V, Green LED	599-PLF-⊗G <sup>1</sup>
Pilot Light, Type 4/12, 120V, Amber/White LED	599-PLF-⊗AW <sup>1</sup>
Pilot Light, Type 4X, 120V, Red LED	599-PLC-⊗R <sup>1</sup>
Pilot Light, Type 4X, 120V, Green LED	599-PLC-⊗G <sup>1</sup>
Pilot Light, Type 4X, 120V, Amber/White LED	599-PLC-⊗AW <sup>1</sup>
Push-to-test, Type 4/12, 120V, Red LED	599-PTF-⊗R <sup>1</sup>
Push-to-test, Type 4/12, 120V, Green LED	599-PTF-⊗G <sup>1</sup>
Push-to-test, Type 4/12, 120V, Amber/White LED	599-PTF-⊗AW <sup>1</sup>
Push-to-test, Type 4X, 120V, Red LED	599-PTC-⊗R <sup>1</sup>
Push-to-test, Type 4X, 120V, Green LED	599-PTC-⊗G <sup>1</sup>
Auxiliary Contact, N.C. Size 0-2	599-AUNC02
Auxiliary Contact, N.C. Size 3-5	599-AUNC35
Fuseholder 1 Pole with fuse	599-FB1
Fuseholder 2 Poles with fuse	599-FB2
Selector Switch, Type 1/3R/4/12, HI-LOW-OFF-AUTO	599-SSF-HLOA
Selector Switch, Type 4/4X, HI-LOW-OFF-AUTO	599-SSC-HLOA

<sup>1</sup> Catalog number as listed in incomplete, replace the ⊗ with correct voltage from table below to complete

NEMA 300 Aux Contacts Kits	Catalog Number
NO, NC for Size 0...3	198-SA11
NO, NC for Size 4, 5	198-ES1-11
NO,NC for Size 6	198-ES3-11



⊗ Voltage Suffix Codes for AC Control

Voltage	Voltage Code
120V AC	120
240V AC	240
480V AC	480
600V AC	600

Example: 599-PLF-⊗R becomes 599-PLF-120R

### 3 OVERLOAD RELAYS

#### Solid State Overload Relays

#### E100

For Bulletin 500 Starters



NEMA Size	Overload Code	Current Range (Amp)	Catalog Number
			Bulletin 500
0 ... 2	A2C	0.2 ... 1.0	592-1EFBC
	A2E	1.0 ... 5.0	592-1EFCC
	A2F	3.2 ... 16	592-1EFDC
	A2G	5.4 ... 27	592-1EFEC
	A2J	11 ... 55	592-1EFFC
3	A2J	11 ... 55	592-1EFFD
	A2L	20 ... 100	592-1EFGD
4	A2M	30 ... 150	592-1EFHE
5	A2N	60 ... 300	592-1EFKF

#### Solid State Overload Relays

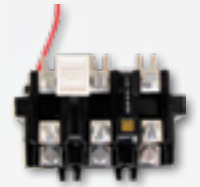
#### E100

For Bulletin 300 Starters

NEMA Size	Overload Code	Current Range [A]	Catalog Number
0	-A2C	0.2 ... 1.0	193-1EEBB
	-A2E	1.0 ... 5.0	193-1EECB
	-A2F	3.2 ... 16	193-1EEDB
	-A2G	5.4 ... 27	193-1EEEB
1, 2	-A2G	5.4 ... 27	193-1EEED
	-A2J	11 ... 55	193-1EEFD
3	-A2L	20 ... 100	193-1EEGE
4	-A2M	30 ... 150	193-1EEHF
5	-A2N	60 ... 300	193-1EEKZ
6	-A2R	120 ... 600	193-1EEMZ

#### Eutectic Alloy Overload Relays<sup>1</sup>

For Bulletin 500 Starters



NEMA Size	Catalog Number
0...1	592-EUTB
2	592-EUTC
3	592-EUTD
4	592-EUTE
5	W4245280001

<sup>1</sup> Information on heater elements for eutectic overload relays can be found in Bulletin 592 Heater Element Specifications Technical Data (592-TD010)

## E300 Solid State Overload Relays with network connectivity

For Bulletin 300 Starters

NEMA Size	Protection options <sup>1</sup>	Current Range [ A ]	Catalog Number Sensing Module	Catalog Number Control Module	Catalog Number Communication Module
0, 1	-EBV	0.5 ... 30	193-ESM-VIG-30A-C23	193-E10-43-120	193-ECM-ETR
	-EBI	0.5 ... 30	193-ESM-I-30A-C23		
	-EBG	0.5 ... 30	193-ESM-IG-30A-C23		
2	-EBV	6 ... 60	193-ESM-VIG-60A-C55		
	-EBI	6 ... 60	193-ESM-I-60A-C55		
	-EBG	6 ... 60	193-ESM-IG-60A-C55		
3	-EBV	10 ... 100	193-ESM-VIG-100A-C97		
	-EBI	10 ... 100	193-ESM-I-100A-C97		
	-EBG	10 ... 100	193-ESM-IG-100A-C97		
4	-ENV	20 ... 200	193-ESM-VIG-30A-E3T		
	-ENI	20 ... 200	193-ESM-I-30A-E3T		
	-ENG	20 ... 200	193-ESM-IG-30A-E3T		
5	-ENV	60 ... 300	193-ESM-VIG-30A-E3T		
	-ENI	60 ... 300	193-ESM-I-30A-E3T		
	-ENG	60 ... 300	193-ESM-IG-30A-E3T		
6	-ENV	120 ... 600	193-ESM-VIG-30A-E3T		
	-ENI	120 ... 600	193-ESM-I-30A-E3T		
	-ENG	120 ... 600	193-ESM-IG-30A-E3T		

-EBV 110/120 VAC W/ 4 IN / 3 OUT, VOLTAGE, CURRENT & GF SENSING

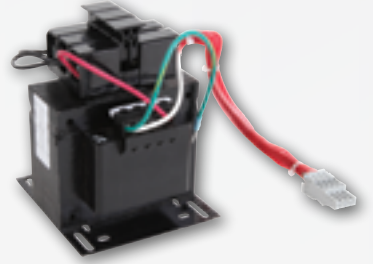
-EBI 110/120 VAC W/ 4 IN / 3 OUT, CURRENT SENSING

-EBG 110/120 VAC W/ 4 IN / 3 OUT, CURRENT & GF SENSING



## 4 TRANSFORMER KITS

Nema Size	AC Voltage		Standard Capacity		100 W Extra Capacity	
	Primary	Secondary <sup>2</sup>	VA	Catalog Number	VA	Catalog Number
0...2	208V	120V	80	1497-HD80	130	1497-HD130
	240V	120V		1497-AD80		1497-AD130
	480V	120V		1497-BD80		1497-BD130
	600V	120V		1497-CD80		1497-CD130
3	208V	120V	200	1497-HD200	250	1497-HD250
	240V	120V		1497-AD200		1497-AD250
	480V	120V		1497-BD200		1497-BD250
	600V	120V		1497-CD200		1497-CD250
4	208V	120V	250	1497-HD250	350	1497-HD350
	240V	120V		1497-AD250		1497-AD350
	480V	120V		1497-BD250		1497-BD350
	600V	120V		1497-CD250		1497-CD350
5	208V	120V	350	1497-HD350	500	1497-HD500
	240V	120V		1497-AD350		1497-AD500
	480V	120V		1497-BD350		1497-BD500
	600V	120V		1497-CD350		1497-CD500



<sup>2</sup> For 24V secondary control, replace the D with J. For example: 1497-HD80 becomes 1497-HJ80

### NEMA 300

NEMA Size	AC Voltage		Standard Capacity		100W Extra Capacity	
	Primary	Secondary <sup>2</sup>	VA	Catalog Number	VA	Catalog number
0..4	208V	120V	80	1497-HD80	130	1497-HD130
	240V	120V	80	1497-AD80	130	1497-AD130
	480V	120V	80	1497-BD80	130	1497-BD130
	600V	120V	80	1497-CD80	130	1497-CD130
5	208V	120V	130	1497-HD130	250	1497-HD250
	240V	120V	130	1497-AD130	250	1497-AD250
	480V	120V	130	1497-BD130	250	1497-BD250
	600V	120V	130	1497-CD130	250	1497-CD250
6	208V	120V	350	1497-HD350	500	1497-HD500
	240V	120V	350	1497-AD350	500	1497-AD500
	480V	120V	350	1497-BD350	500	1497-BD500
	600V	120V	350	1497-CD350	500	1497-CD500



# Enclosed Soft Starter Selection

## 1 POWER CENTER

### SMC™-3 Soft Starter

Internal bypass

Motor Current [A]	Rated Hp [Hp]				Non-combination Starters Cat. No.	Combination Starters Cat. No.	
	200...208V	230V	400...460V	500...575V		with Fusible Disconnect	with Circuit Breaker
	Type 1, 12, 3R (IP54)						
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-J80	153C-D48JCD-D80



### SMC™ Flex Soft Starter

Internal bypass with DPI communication protocol

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
	Type 1, 12, 3R (IP54)						
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-J80	153F-D48JCD-D80





## SMC™-50 Soft Starter

Start duty external bypass with DPI communication protocol

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
	Type 1, 12, 3R (IP54)						
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-J80-3B-BP	153S-D52JCD-D80-3B-BP

## SMC-50 Soft Starter

Internal bypass with DPI communication protocol

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
	Type 1, 12, 3R (IP54)						
108	30	40	75	100	150S-D10JCD	152S-D10JCD-J20	153S-D10JCD-D17
135	40	50	100	125	150S-D13JCD	152S-D13JCD-J20	153S-D13JCD-D25
201	60	75	150	150	150S-D20JCD	152S-D20JCD-J40	153S-D20JCD-D25
251	75	100	200	200	150S-D25JCD	152S-D25JCD-J40	153S-D25JCD-D40
317	100	125	250	300	150S-D31JCD	152S-D31JCD-J60	153S-D31JCD-D40
361	125	150	300	350	150S-D37JCD	152S-D37JCD-J60	153S-D37JCD-D80
480	150	200	400	500	150S-D48JCD	152S-D48JCD-J80	153S-D48JCD-D80

## 2 COMMAND AND INDICATION DEVICES

Push buttons, selector switches, pilot light and emergency stop kits are 22.5 mm

### SMC-3, SMC Flex And SMC-50

Kit Description	Catalog Number
Push Button, Metal, Start-Stop	198-SSPBM
Selector Switch, Metal, Hand-Off-Auto	198-3SSM
Selector Switch, Metal, On-Off/Hand-Auto	198-2SSM
Selector Switch, Metal, Hand-Off-Auto with Push Button, Metal, Start-Stop	198-3SSPBM
Selector Switch, Metal, Hand-Auto/On-Off with Push Button, Metal, Start-Stop	198-2SSPBM
Pilot Light, Red LED	198-RUPL
Pilot Light, Green LED	198-GUPL
Pilot Light, White/Amber LED	198-WUPL
Push-to-test, Red LED	198-RUPPLM
Push-to-test, Green LED	198-GUPPLM
Push-to-test, White/Amber LED	198-WUPPLM



198-RUPL



198-SSPBM



198-3SSM



198-ESP

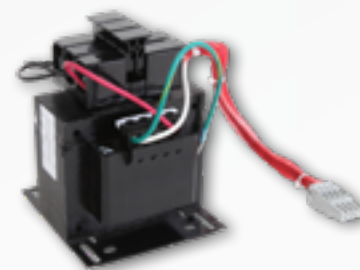
### SMC Flex and SMC-50

Kit Description	Catalog Number
Push Button, N.C., Momentary, Stop	198-PBM
Emergency Stop	198-ESP

## 3 TRANSFORMER KITS

### SMC-3 and SMC Flex

Controller Current [A]	Capacity	VA	208V x 120V	240V x 120V	460V x 120V	575V x 120V
108, 135, 251, 317, 361, 480	Extra Capacity (6YP)	200	1497-HD200	1497-AD200	1497-BD200	1497-CD200
	Extra Capacity (6XP)	350	1497-HD350	1497-AD350	1497-BD350	1497-CD350
	Extra Capacity (6YP)	500	1497-HD500	1497-AD500	1497-BD500	1497-CD500



### SMC-50

Controller Current [A]	Capacity	VA	208V x 120V	240V x 120V	460V x 120V	575V x 120V
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
361, 420, 520	Extra Capacity	750	1497-HD750	1497-AD750	1497-BD750	1497-CD750

## 4 ADDITIONAL ACCESSORIES

### SMC-3

Auxiliary Contact Blocks	Catalog Number
Side mounted, 1 N.O.	150-CA10
Side mounted, 2 N.O.	150-CA20
Side mounted, 1 N.C.	150-CA01
Side mounted, 1 N.O./1 N.C.	150-CA11
<b>Protective Modules</b>	
Protective Modules	Catalog Number
480V AC, 108...480 A Controllers (line and/or load)	150-F84L
600V AC, 108...480 A (line and/or load)	150-F86L
<b>IEC Terminal Line or Load Side Covers</b>	
IEC Terminal Line or Load Side Covers	Catalog Number
108...135 A Controllers	150-TC1
201...251 A Controllers	150-TC2
317...480 A Controllers	150-TC3



150-CA11

### SMC Flex

Protective Modules	Catalog Number
480V, 90...520 A Controllers	150-F84L
600V, 90...520 A Controllers	150-F86L

IEC Terminal Line or Load Side Covers	Catalog Number
108...135 A Controllers	150-TC1
201...251 A Controllers	150-TC2
317...480 A Controllers	150-TC3

Human Interface and Communication Modules	Catalog Number
Hand-held Human Interface Modules LCD Display, Full Numeric Keypad	20-HIM-A3
Door-Mounted Human Interface Modules Remote (Panel Mount) LCD Display, Full Numeric Keypad	20-HIM-C6S
Cable Kit (Male-Female) 1 m (3.3 ft)	1202-H10
DPI/SCANport™ One to Two Port Splitter Cable	1203-S03
DeviceNet™ Communication Adapter	20-COMM-D
EtherNet/IP™ Communication Adapter	20-COMM-E
Dual-port EtherNet/IP™ Communication Adapter	20-COMM-ER



20-HIM-A3



20-COMM-ER

## 4 ADDITIONAL ACCESSORIES

### SMC-50

Option Modules	Catalog Number
PTC, Ground Fault, and Current Feedback Option Module	150-SM2
Analog I/O Option Module: two analog inputs (voltage or current) and two analog outputs (voltage or current)	150-SM3
Digital I/O Option Module: four 100...240V AC inputs and three relay outputs	150-SM4
Parameter Configuration Module – DIP switch and rotary dial	150-SM6

Converter Modules	Catalog Number
Three-Phase Current Monitoring Module, 30...180 A	825-MCM180
Three-Phase Current Monitoring Module, 181...520 A	825-MCM20
Connection Cable (Replacement)	825-MCA
Core Balance Ground Fault Sensor 100:1 turns ratio	825-CBCT

Protective Modules	Catalog Number
480V 90...520 A Controllers	150-F84L
600V 90...520 A Controllers	150-SDBK

External Bypass Kits for Solid-State Controller	Catalog Number
210...320 A Controllers	150-SCBK
361...520 A Controllers	1203-S03

IEC Terminal Line or Load Covers	Catalog Number
90...180 A Controllers	150-TC1

Human Interface and Communication Modules	Catalog Number
SMC-50 Controller – Bezel-Mounted, Enhanced, LCD, Full Numeric Keypad	20-HIM-A6
Door-Mounted HIM Remote (panel mount) LCD Display, Full Numeric Keypad	20-HIM-C6S
HIM Interface Cable, 1 m (39 in.)	20-HIM-H10
Cable Kit (Male-Female) 1 m (3.3 ft.)	1202-H10
DPI/SCANport™ One to Two Port Splitter Cable	1203-S03
DeviceNet™ Communication Adapter	20-COMM-D
EtherNet/IP™ Communication Adapter	20-COMM-E
Dual-port EtherNet/IP™ Communication Adapter	20-COMM-ER
Capacitor Module for EMC Directive Compliance	150-SMCAP

## Enclosure Accessories

Controllers in 400mm (15.7in) wide enclosures:

Controller	Non-combination	Combination Fusible Disconnect	Combination Circuit Breaker
SMC-3, SMC Flex	108...480A	108...135A	108...251A
Enclosure Accessories			
400 mm Wide Mounting rail for door installation, Rittal TS8			198-DS400
100 mm Height Enclosure mounting foot, high strength plastic			198-FB100B
100 mm Height Enclosure mounting foot, sheet steel			198-FB100B
200 mm Height Enclosure mounting foot, sheet steel			198-FB100B

Controllers in 600mm (23.6in) wide enclosures:

Controller	Non-combination	Combination Fusible Disconnect	Combination Circuit Breaker
SMC-3, SMC Flex	-	201...480A	317...480A
SMC-50	90...320A	90...320A	90...320A
Enclosure Accessories			
600 mm Wide Mounting rail for door installation, Rittal TS8			198-DS600
100 mm Height Enclosure mounting foot, high strength plastic			198-FB100B
100 mm Height Enclosure mounting foot, sheet steel			198-PL100B
200 mm Height Enclosure mounting foot, sheet steel			198-PL200B

Controllers in 1000mm (39.4in) wide enclosures

Controller	Non-combination	Combination Fusible Disconnect	Combination Circuit Breaker
SMC-50	361...520A	361...520A	361...520A
Enclosure Accessories			
1000 mm Wide Mounting rail for door installation, Rittal TS8			198-DS1000
100 mm Height Enclosure mounting foot, high strength plastic			198-FB100C
100 mm Height Enclosure mounting foot, sheet steel			198-PL100C
200 mm Height Enclosure mounting foot, sheet steel			198-PL200C

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