Bulletin 513 Non-Reversing Circuit Breaker Type

Configuration of a Basic Combination Starter

The information below is for reference purposes only. Not all combinations will produce a valid cat. no. Refer to the tables on the following pages for product selection.

Example Cat. No.

512 – A A CD – A2E – 1 – 24R – 90

a b c d e f

a	
Bulletin No.	
Bulletin No.	**Description**
502	Combination contactor with disconnect switch
503	Combination contactor with circuit breaker
506	Reversing combination starter with disconnect switch
506X	Reversing combination starter with disconnect switch in a narrow enclosure
507	Reversing combination starter with circuit breaker
507X	Reversing combination starter with circuit breaker in a narrow enclosure
512	Non-reversing combination starter with disconnect switch
512H	Non-reversing combination starter with disconnect switch (Horizontal)
512M	Non-reversing combination starter with disconnect switch – extra panel space
512V	Non-reversing vacuum combination starter with disconnect switch
513	Non-reversing combination starter with circuit breaker
513H	Non-reversing combination starter with circuit breaker (Horizontal)
513M	Non-reversing combination starter with circuit breaker – extra panel space
513V	Non-reversing vacuum combination starter with circuit breaker
522E	2-speed, 2-winding, full voltage, multi-speed combination starter with disconnect switch
522F	2-speed, 1-winding, constant or variable torque, full voltage, multi-speed combination starter with disconnect switch
522G	2-speed, 1-winding, constant horsepower, full voltage, multi-speed combination starter with disconnect switch
523E	2-speed, 2-winding, full voltage, multi-speed combination starter with circuit breaker
523F	2-speed, 1-winding, constant or variable torque, full voltage, multi-speed combination starter with circuit breaker
523G	2-speed, 1-winding, constant horsepower, full voltage, multi-speed combination starter with circuit breaker
1232	Pump panel with disconnect switch (Narrow)
1232X	Pump panel with disconnect switch (Extra space)
1232V	Pump panel with vacuum contactor and disconnect switch (Extra space)
1233	Pump panel with circuit breaker (Narrow)
1233X	Pump panel with circuit breaker (Extra space)
1233V	Pump panel with vacuum contactor and circuit breaker (Extra space)

b	
Starter Size	
NEMA Size Code	**NEMA Size**
A	0
B	1
C	2
D	3
E	4
F	5
G	6
H	7

c

Enclosure Type

Code	Type
A	Type 1: General purpose, painted metal enclosure with spring latch door fastener, external overload relay reset, and non-metallic handle
F	Type 3R/4/12: Rainproof, watertight, dusttight, painted metal enclosure with screw fasteners, external overload relay reset, and non-metallic handle
J	Type 3R/4/12: Rainproof, watertight, dusttight, painted metal enclosure with door safety hardware, metal handle, and NO external overload relay reset
D	Type 3R/4/12: Rainproof, watertight, dusttight, painted metal enclosure with door safety hardware, external overload relay reset, and metal handle
N	Type 3R: Rainproof, painted metal enclosure with screw fasteners, external overload relay reset, and a non-metallic handle
C	Type 4/4X: Watertight corrosion-resistant stainless steel enclosure with screw fasteners, external overload relay reset, and a stainless steel handle
K	Type 12: Hazardous location (Class II, Division 2, Group F + G and Class III, Divisions 1 + 2) painted metal enclosure with screw fasteners, NO external overload relay reset, and a non-metallic handle.
L	Type 12: Hazardous location (Class II, Division 2, Group F + G and Class III, Divisions 1 + 2) painted metal enclosure with screw fasteners, external overload relay reset, and a non-metallic handle.
E	Type 7/9: Hazardous location bolted enclosure, metal handle.
H	Type 3R/7/9: Hazardous location bolted enclosure, rain proof, metal handle.
U	Type 3R/7/9: Hazardous location Unilock enclosure, rain proof, metal handle.

d

Coil Voltage

Voltage Code	Description	Line Voltage [V]	Coil Voltage [V]
H	Common Control (without transformer)	208	208
A		240	240
B		480	480
C		600	600
H	Transformer Control⋆	208	120
A		240	120
B		480	120
C		600	120
HD	Separate Control (without transformer)	208	120
AD		240	120
BD		480	120
CD		600	120

e

Overload Relay

Code	Description
None	Eutectic Alloy
See E1 Plus Solid-State Three-Phase Overload Relay (Selectable Class 10, 20, or 30) (Automatic/Manual Reset)	Solid-State

f

Options

See **Modifications for Combination Devices**

⋆ **Note:**
When selecting a factory-installed control circuit transformer use the Transformer Control Voltage Suffix Code to denote the transformer primary voltage. The transformer secondary voltage and starter coil will both be 120V AC by default. Example: **Cat. No. 512-BAB-6P-24R** will have a transformer with a 480V primary voltage, 120V secondary voltage, and a 120V starter coil voltage.

Heater Elements — Starters with eutectic alloy overhead relays require 3 heater elements. Located on Eutectic Alloy Overload Relay Heater Elements.

NEMA Size	Continuous Ampere Rating [A]§	Maximum Horsepower Rating *Full Load Current Must Not Exceed Continuous Ampere Rating* — Motor Voltages				Type 1 General Purpose	Type 3R/4/12 Rainproof, Waterproof, Dusttight	Type 3R/4/12 Rainproof, Waterproof, Dusttight (Door Safety Hardware)	Type 4/4X Watertight Corrosion-Resistant Stainless Steel
		200V	230V	460V	575V	Cat. No.⋆ ‡	Cat. No.⋆ ‡	Cat. No.⋆ ‡	Cat. No.⋆ ‡
0	18	0…1/3	0…1/3	–	–	513-AA⊗-✪-32	513-AF⊗-✪-32	513-AJ⊗-✪-32	513-AC⊗-✪-32
		1/2…1	1/2…1	0…1	0…1	513-AA⊗-✪-35	513-AF⊗-✪-35	513-AJ⊗-✪-35	513-AC⊗-✪-35
		1-1/2…3	1-1/2…3	1-1/2…3	1-1/2…3	513-AA⊗-✪-38	513-AF⊗-✪-38	513-AJ⊗-✪-38	513-AC⊗-✪-38
		–	–	5	5	513-AA⊗-✪-39	513-AF⊗-✪-39	513-AJ⊗-✪-39	513-AC⊗-✪-39
1	27	0…1/3	0…1/3	–	–	513-BA⊗-✪-32	513-BF⊗-✪-32	513-BJ⊗-✪-32	513-BC⊗-✪-32
		1/2…1	1/2…1	0…1	0…1	513-BA⊗-✪-35	513-BF⊗-✪-35	513-BJ⊗-✪-35	513-BC⊗-✪-35
		1-1/2…3	1-1/2…3	1-1/2…3	1-1/2…3	513-BA⊗-✪-38	513-BF⊗-✪-38	513-BJ⊗-✪-38	513-BC⊗-✪-38
		5	–	–	–	513-BA⊗-✪-39	513-BF⊗-✪-39	513-BJ⊗-✪-39	513-BC⊗-✪-39
		7-1/2	5…7-1/2	5…7-1/2	5…7-1/2	513-BA⊗-✪-40	513-BF⊗-✪-40	513-BJ⊗-✪-40	513-BC⊗-✪-40
		–	–	10	10	513-BA⊗-✪-41	513-BF⊗-✪-41	513-BJ⊗-✪-41	513-BC⊗-✪-41
2	45	10	10	–	–	513-CA⊗-✪-41	513-CF⊗-✪-41	513-CJ⊗-✪-41	513-CC⊗-✪-41
		–	15	15	15	513-CA⊗-✪-42	513-CF⊗-✪-42	513-CJ⊗-✪-42	513-CC⊗-✪-42
		–	–	20…25	20…25	513-CA⊗-✪-44	513-CF⊗-✪-44	513-CJ⊗-✪-44	513-CC⊗-✪-44

⋆ To order starters (0 through 4) with current limiters, add the letter **"C"** at the end of the listed Cat. No. Example: **Cat. No. 513-AA⊗-✪-35C**.

‡ To order Visa-Window Breakers for certain mining applications (Canada only), add the letter **"V"** to the Cat. No. Example: **Cat. No. 513-BA⊗-✪-35V**.

§ When controlling high efficiency motors – consult your local Allen-Bradley distributor for proper circuit breaker selection.

⊗ Coil Voltage Code

The cat. no. as listed is incomplete. Select a Coil Voltage Code from the table below to complete the cat. no.
Example: **Cat. No. 513-BA⊗-✪-35** becomes **Cat. No. 513-BAB-✪-35**. For other voltages, consult your local Rockwell Automation sales office or Allen‑Bradley distributor.

	[V]	208	230…240	460…480	575…600
Common Control	AC, 60 Hz	H	A	B	C
Transformer Control (See Configuration of a Basic Combination Starter Note)					
120V Separate Control (without transformer)		AD	AD	CD	CD

✪ Overload Relay Code

Use to order solid-state overload relay. Do not use when ordering eutectic alloy overload relay. The cat. no. as listed is incomplete. Select an overload relay code from E1 Plus Solid-State Three-Phase Overload Relay (Selectable Class 10, 20, or 30) (Automatic/Manual Reset) to complete the cat. no.
Example: **Cat. No. 513-BAB-32** becomes **Cat. No. 513-BAB-A2F-32**.

Heater Elements — Starters with eutectic alloy overhead relays require 3 heater elements. Located on Eutectic Alloy Overload Relay Heater Elements.

NEMA Size	Continuous Ampere Rating [A]§	Maximum Horsepower Rating *Full Load Current Must Not Exceed Continuous Ampere Rating*				Hazardous Locations			
		Motor Voltage				Type 1 *General Purpose*	Type 3R/4/12 *Rainproof, Waterproof, Dustlight*	Type 3R/4/12 *Rainproof, Waterproof, Dustlight (Door Safety Hardware)*	Type 4/4X *Watertight Corrosion-Resistant Stainless Steel*
		200V	230V	460V	575V	Cat. No.‡	Cat. No.‡	Cat. No.‡	Cat. No.‡
3	90	15…25	20…25	–	–	513-DA⊗-✪-44	513-DF⊗-✪-44	513-DJ⊗-✪-44	513-DC⊗-✪-44
		–	30	–	30	513-DA⊗-✪-45	513-DF⊗-✪-45	513-DJ⊗-✪-45	513-DC⊗-✪-45
		–	–	30…50	40…50	513-DA⊗-✪-47	513-DF⊗-✪-47	513-DJ⊗-✪-47	513-DC⊗-✪-47
4	135	30	–	–	–	513-EA⊗-✪-45	513-EF⊗-✪-45	513-EJ⊗-✪-45	513-EC⊗-✪-45
		40	40	–	–	513-EA⊗-✪-46	513-EF⊗-✪-46	513-EJ⊗-✪-46	513-EC⊗-✪-46
		–	50	–	–	513-EA⊗-✪-47	513-EF⊗-✪-47	513-EJ⊗-✪-47	513-EC⊗-✪-47
		–	–	–	60	513-EA⊗-✪-48	513-EF⊗-✪-48	513-EJ⊗-✪-48	513-EC⊗-✪-48
		–	–	60…75	–	513-EA⊗-✪-49	513-EF⊗-✪-49	513-EJ⊗-✪-49	513-EC⊗-✪-49
		–	–	100	75…100	513-EA⊗-✪-50	513-EF⊗-✪-50	513-EJ⊗-✪-50	513-EC⊗-✪-50
5	270	50…60	–	–	–	513-FA⊗-✪-48	513-FF⊗-✪-48	513-FJ⊗-✪-48	513-FC⊗-✪-48
		75	60…75	–	–	513-FA⊗-✪-49	513-FF⊗-✪-49	513-FJ⊗-✪-49	513-FC⊗-✪-49
		–	100	–	–	513-FA⊗-✪-50	513-FF⊗-✪-50	513-FJ⊗-✪-50	513-FC⊗-✪-50
		–	–	–	125	513-FA⊗-✪-51	513-FF⊗-✪-51	513-FJ⊗-✪-51	513-FC⊗-✪-51
		–	–	125…150	–	513-FA⊗-✪-52	513-FF⊗-✪-52	513-FJ⊗-✪-52	513-FC⊗-✪-52
		–	–	200	150…200	513-FA⊗-✪-54	513-FF⊗-✪-54	513-FJ⊗-✪-54	513-FC⊗-✪-54
6	540	100	–	–	–	–	513-GF⊗-✪-50T	–	513-GC⊗-✪-50T
		125	125	–	–	–	513-GF⊗-✪-51T	–	513-GC⊗-✪-51T
		150	150	–	–	–	513-GF⊗-✪-52T	–	513-GC⊗-✪-52T
		–	200	–	–	–	513-GF⊗-✪-54T	–	513-GC⊗-✪-54T
		–	–	250	250	–	513-GF⊗-✪-56T	–	513-GC⊗-✪-56T
		–	–	300	300	–	513-GF⊗-✪-57T	–	513-GC⊗-✪-57T
		–	–	–	350	–	513-GF⊗-✪-58T	–	513-GC⊗-✪-58T
		–	–	–	–	–	513-GF⊗-✪-59T	–	513-GC⊗-✪-59T
7	810	–	250	–	–	–	513-HF⊗-✪-56T	–	–
		–	300	–	–	–	513-HF⊗-✪-57T	–	–
		–	–	450…500	–	–	513-HF⊗-✪-61T	–	–
		–	–	–	450…600	–	513-HF⊗-✪-62T	–	–

⋆ For Type 3R applications it is **necessary** that a drain or breather and drain fitting be added to the enclosure.

‡ To order Visa-Window Breakers for certain mining applications (Canada only), add the letter **"V"** to the Cat. No. Example: **Cat. No. 513-BU⊗-✪-35V**.

§ When controlling high efficiency motors – consult your local Allen-Bradley distributor for proper circuit breaker selection.

⊗ Coil Voltage Code

The cat. no. as listed is incomplete. Select a Coil Voltage Code from the table below to complete the cat. no.
Example: **Cat. No. 513-BA⊗-✪-35** becomes **Cat. No. 513-BAA-✪-35**. For other voltages, consult your local Rockwell Automation sales office or Allen Bradley distributor.

	[V]	208	230…240	460…480	575…600
Common Control	AC, 60 Hz	**H**	**A**	**B**	**C**
Transformer Control (See Configuration of a Basic Combination Starter Note)					
120V Separate Control (without transformer)		**AD**	**AD**	**CD**	**CD**

✪ Overload Relay Code

Use to order solid-state overload relay. Do not use when ordering eutectic alloy overload relay. The cat. no. as listed is incomplete. Select an overload relay code from E1 Plus Solid-State Three-Phase Overload Relay (Selectable Class 10, 20, or 30) (Automatic/Manual Reset) to complete the cat. no.
Example: **Cat. No. 513-BAB-✪-32** becomes **Cat. No. 513-BAB-A2F-32**.

Heater Elements — Starters with eutectic alloy overhead relays require 3 heater elements. Located on Eutectic Alloy Overload Relay Heater Elements.

NEMA Size	Continuous Ampere Rating [A]♦	Maximum Horsepower Rating *Full Load Current Must Not Exceed Continuous Ampere Rating*				Hazardous Locations		
						Unilock Enclosure	Bolted Enclosure	
		Motor Voltage				Type 3R/7 & 9 *Class I, Groups C & D Class II, Groups E, F & G* – Divisions 1 & 2 –	Type 3R/7 & 9 *Class I, Groups C & D Class II, Groups E, F & G* – Divisions 1 & 2 –	Type 7 & 9 *Class I, Groups C & D Class II, Groups E, F & G* – Divisions 1 & 2 –
		200V	230V	460V	575V	Cat. No.⋆ ‡	Cat. No.⋆ ‡ §	Cat. No.‡
0	18	0…1/3	0…1/3	–	–	513-AU⊗-✪-32	513-AH⊗-✪-32	513-AE⊗-✪-32
		1/2…1	1/2…1	0…1	0…1	513-AU⊗-✪-35	513-AH⊗-✪-35	513-AE⊗-✪-35
		1-1/2…3	1-1/2…3	1-1/2…3	1-1/2…3	513-AU⊗-✪-38	513-AH⊗-✪-38	513-AE⊗-✪-38
		–	–	5	5	513-AU⊗-✪-39	513-AH⊗-✪-39	513-AE⊗-✪-39
1	27	0…1/3	0…1/3	–	–	513-BU⊗-✪-32	513-BH⊗-✪-32	513-BE⊗-✪-32
		1/2…1	1/2…1	0…1	0…1	513-BU⊗-✪-35	513-BH⊗-✪-35	513-BE⊗-✪-35
		1-1/2…3	1-1/2…3	1-1/2…3	1-1/2…3	513-BU⊗-✪-38	513-BH⊗-✪-38	513-BE⊗-✪-38
		5	–	–	–	513-BU⊗-✪-39	513-BH⊗-✪-39	513-BE⊗-✪-39
		7-1/2	5…7-1/2	5…7-1/2	5…7-1/2	513-BU⊗-✪-40	513-BH⊗-✪-40	513-BE⊗-✪-40
		–	–	10	10	513-BU⊗-✪-41	513-BH⊗-✪-41	513-BE⊗-✪-41
2	45	10	10	–	–	513-CU⊗-✪-41	513-CH⊗-✪-41	513-CE⊗-✪-41
		–	15	15	15	513-CU⊗-✪-42	513-CH⊗-✪-42	513-CE⊗-✪-42
		–	–	20…25	20…25	513-CU⊗-✪-44	513-CH⊗-✪-44	513-CE⊗-✪-44
3	90	15…25	20…25	–	–	513-DU⊗-✪-44	513-DH⊗-✪-44	513-DE⊗-✪-44
		–	30	–	30	513-DU⊗-✪-45	513-DH⊗-✪-45	513-DE⊗-✪-45
		–	–	30…50	40…50	513-DU⊗-✪-47	513-DH⊗-✪-47	513-DE⊗-✪-47
4	135	30	–	–	–	513-EU⊗-✪-45	513-EH⊗-✪-45	513-EE⊗-✪-45
		40	40	–	–	513-EU⊗-✪-46	513-EH⊗-✪-46	513-EE⊗-✪-46
		–	50	–	–	513-EU⊗-✪-47	513-EH⊗-✪-47	513-EE⊗-✪-47
		–	–	–	60	513-EU⊗-✪-48	513-EH⊗-✪-48	513-EE⊗-✪-48
		–	–	60…75	–	513-EU⊗-✪-49	513-EH⊗-✪-49	513-EE⊗-✪-49
		–	–	100	75…100	513-EU⊗-✪-50	513-EH⊗-✪-50	513-EE⊗-✪-50
5	270♣	50…60	50…60	50…60	50…60	513-FU⊗-✪-48	513-FH⊗-✪-48	513-FE⊗-✪-48
		75	60…75	–	–	513-FU⊗-✪-49	513-FH⊗-✪-49	513-FE⊗-✪-49
		–	100	–	–	513-FU⊗-✪-50	513-FH⊗-✪-50	513-FE⊗-✪-50
		–	–	–	125	513-FU⊗-✪-51	513-FH⊗-✪-51	513-FE⊗-✪-51
		–	–	125…150Δ	–	513-FU⊗-✪-52	513-FH⊗-✪-52	513-FE⊗-✪-52
		–	–	200	150…200	513-FU⊗-✪-54	513-FH⊗-✪-54	513-FE⊗-✪-54

⋆ For Type 3R applications it is **necessary** that a drain or breather and drain fitting be added to the enclosure.

‡ To order Visa-Window Breakers for certain mining applications (Canada only), add the letter **"V"** to the Cat. No. Example: **Cat. No. 513-BU⊗-✪-35V**.

§ Includes drain and cover with gasket.

♣ NEMA size 5 Unilock enclosed starters have a continuous ampere rating of 210 A.

Δ Bolted Enclosure suitable for use on motors from 125…200 HP, 460V.

♦ When controlling high efficiency motors – consult your local Allen-Bradley distributor for proper circuit breaker selection.

⊗ Coil Voltage Code

The cat. no. as listed is incomplete. Select a Coil Voltage Code from the table below to complete the cat. no.
Example: **Cat. No. 513-BU⊗-✪-35** becomes **Cat. No. 513-BUA-✪-35**. For other voltages, consult your local Rockwell Automation sales office or Allen Bradley distributor.

	[V]	208	230…240	460…480	575…600
Common Control	AC, 60 Hz	H	A	B	C
Transformer Control (See Configuration of a Basic Combination Starter Note)					
120V Separate Control (without transformer)		AD	AD	CD	CD

✪ Overload Relay Code

Use to order solid-state overload relay. Do not use when ordering eutectic alloy overload relay. The cat. no. as listed is incomplete. Select an overload relay code from E1 Plus Solid-State Single-Phase Overload Relay (Selectable Class 10, 20, or 30) (Automatic/Manual Reset) to complete the cat. no.
Example: **Cat. No. 513-BUB-✪-35** becomes **Cat. No. 513-BUB-A2E-35**.

Modifications for Combination Devices

For Use on Bulletins 502, 502L, 503, 503L, 506, 506X, 507, 507X, 512, 512H, 512M, 512V, 513, 513H, 513M, 513V, 522, 522E, 522F, 522G, 523, 523E, 523F, 523G, 530, 532, 533, 540, 542, 543, 570, 572, 573, 1242, 1243, 1272, 1273, 1232X, 1232V, 1233X, and 1233V

Description of Modification			Suffix No.	Enclosure Type	NEMA Size							
					0	1	2	3	4	5	6	7
Pilot Devices in Cover or Flange												
Full Voltage Non-Reversing Single Speed Starters	START-STOP push button		1 1 1 1	1 3R/4/12, 4/4X Bolted♣ UnilockΔ	A A A A	A A A A	A A A A	A A A A	A A A A	A A A A	NA A NA NA	NA A NA NA
	ON-OFF push button		1E 1E 1E 1E	1 3R/4/12, 4/4X Bolted♣ UnilockΔ	A A A A	A A A A	A A A A	A A A A	A A A A	A A A A	NA A NA NA	NA A NA NA
	START-STOP illuminated push button		1L 1L	1 3R/4/12, 4/4X	A A	A A	A A	A A	A A	A A	NA NA	NA NA
	HAND-OFF-AUTO selector switch		3 3 3 3	1 3R/4/12, 4/4X Bolted♣ UnilockΔ	A A A A	A A A A	A A A A	A A A A	A A A A	A A A A	NA A NA NA	NA A NA NA
	OFF-ON selector switch		3E 3E 3E 3E	1 3R/4/12, 4/4X Bolted♣ UnilockΔ	A A A A	A A A A	A A A A	A A A A	A A A A	A A A A	NA A NA NA	NA A NA NA
	HAND-AUTO selector switch		3H 3H 3H 3H	1 3R/4/12, 4/4X Bolted♣ UnilockΔ	A A A A	A A A A	A A A A	A A A A	A A A A	A A A A	NA A NA NA	NA A NA NA
	PILOT LIGHT	Transformer Type — incandescent bulb	4⋆ ‡ 4⋆ ‡ 4⋆ ‡	1, 3R/4/12, 4/4X, 3R Bolted♣ UnilockΔ	A A A	A A A	A A A	A A A	A A A	A A A	A NA NA	A NA NA
		Transformer Type—LED bulb	4L⋆ ‡	1, 3R/4/12, 4/4X, 3R Bolted♣	A A	A A	A A	A A	A A	A A	A NA	A NA
	PUSH-TO-TEST PILOT LIGHT Transformer—incandescent bulb		5⋆ ‡ 5⋆ ‡	1, 3R/4/12, 4/4X, 3R Bolted♣	A A	A A	A A	A A	A A	A A	A NA	A NA
			5L⋆ ‡	1, 3R/4/12, 4/4X, 3R Bolted♣	A A	A A	A A	A A	A A	A A	A NA	A NA
	START-STOP push button and HAND-OFF-AUTO selector switch **(unwired)**		13 13	All listed All listed	A A	A A	A A	A A	A A	A A	A A	A A
Full Voltage Reversing and Multi-Speed Starters	FOR-REV-STOP push button	Bulletin 506…507	1	1, 3R/4/12, 4/4X	A	A	A	A	A	A	NA	NA
		Bulletin 507	1	Bolted♣	A	A	A	A	A	A	NA	NA
	FOR-OFF-REV selector switch (Bulletin 506…507)		3 3 3	1, 3R/4X12, 4/4X, 3R Bolted♣ UnilockΔ	A A A	A A A	A A A	A A A	A A A	A A A	NA NA NA	NA NA NA
	HAND-AUTO		3H 3H 3H 3H	1 3R/4/12, 4/4X, Bolted♣ UnilockΔ	A A A A	A A A A	A A A A	A A A A	A A A A	A A A A	NA NA NA NA	NA NA NA NA
	HIGH-LOW-STOP push button	Bulletin 522…523	1	1, 3R/4/12, 4/4X	A	A	A	A	A	A	NA	NA
		Bulletin 523	1	Bolted♣	A	A	A	A	A	A	NA	NA
	HIGH-OFF-LOW selector switch	Bulletin 522…523	3	1, 3R/4/12, 4/4X	A	A	A	A	A	A	NA	NA
		Bulletin 523	3	Bolted♣	A	A	A	A	A	A	NA	NA
	HIGH-LOW-OFF-AUTO selector switch		3J	1, 3R/4/12, 4/4X	A	A	A	A	A	A	NA	NA
	PILOT LIGHT (2)	Transformer Type — Incandescent Bulb	4‡ §	1, 3R/4/12, 4/4X	A	A	A	A	A	A	NA	NA
		Transformer Type—LED Bulb	4L§	1, 3R/4/12, 4/4X	A	A	A	A	A	A	NA	NA
	PUSH-TO-TEST PILOT LIGHT	Transformer— Incandescent Bulb	5‡	1, 3R/4/12, 4/4X	A	A	A	A	A	A	NA	NA
		Transformer—LED Bulb	5L*	1, 3R/4/12, 4/4X	A	A	A	A	A	A	NA	NA

A = Available
NA = Not Available

⋆ "OFF" pilot lights for non-reversing and non-multi-speed applications require a normally closed auxiliary contact (-91).

‡ The suffix number is incomplete. Specify the lens with the following letters: **A** = Amber; **B** = Blue; **C** = Clear; **G** = Green; **R** = Red; **W** = White.

§ For multi-speed and reversing starters, one pilot light for each container. Add additional letter to identify two lens colors. The first letter specifies "FORWARD" or "HIGH", or "ON"; the second letter specifies "REVERSE" or "LOW" , or "OFF"; e.g. **4AG**.

♣ Bolted suitable for Type 3R, 7 & 9.

Δ Unilock suitable for Type 7 & 9 or Type 3R, 7 & 9 with the addition of a drain or breather and drain.

Description of Modification		Suffix No.	Enclosure Type	NEMA Size							
				0	1	2	3	4	5	6	7
Control Circuit Transformers Includes 2 Primary Fuses and 1 Secondary Fuse	With standard capacity, 60 or 50 Hz With standard capacity with fuse covers With standard capacity, 60 or 50 Hz With standard capacity, 60 or 50 Hz	6P 6PC 6P 6P	1, 3R/4X/12, 4/4X, 3R 1, 3R/4X/12, 4/4X, 3R Bolted⋆ Unilock‡	A A A A	A A A A	A A A A	A A A A	A A A	A A A	A A NA NA	A A NA NA

	With 100 W extra capacity, 60 or 50 Hz With 100 W extra capacity with fuse covers With 100 W extra capacity, 60 or 50 Hz With 100 W extra capacity, 60 or 50 Hz		6XP 6XPC 6XP 6XP	1, 3R/4X/12, 4/4X, 3R 1, 3R/4X/12, 4/4X, 3R Bolted⋆ Unilock‡	A A A A	A A A A	A A A A	A A A A	A A A A	A A A A	A A NA NA	A A NA NA
	With 200VA capacity With 200VA capacity with fuse covers With 200 W extra capacity, 60 or 50 Hz With 200 W extra capacity with fuse covers		6XXP 6XXPC 6YP 6YPC	1, 3R/4X/12, 4/4X, 3R 1, 3R/4X/12, 4/4X, 3R 1, 3R/4X/12, 4/4X, 3R 1, 3R/4X/12, 4/4X, 3R	A A A A	A A A A	A A A A	NA NA A A	NA NA A A	NA NA A A	NA NA NA NA	NA NA NA NA
	With 300 W extra capacity, 60 or 50 Hz With 300 W extra capacity with fuse covers		6XYP 6XYPC	1, 3R/4X/12, 4/4X, 3R 1, 3R/4X/12, 4/4X, 3R	A A	A A	A A	A A	A A	A A	NA NA	NA NA
	With 400 W extra capacity, 60 or 50 Hz With 400 W extra capacity with fuse covers		6YYP 6YYPC	1, 3R/4X/12, 4/4X, 3R 1, 3R/4X/12, 4/4X, 4X	A A	A A	A A	A A	A A	A A	NA NA	NA NA
Auxiliary Contacts	Auxiliary contact installed on contactors	N.O. N.C.	90§ 91§	1, 3R/4X/12, 4/4X Bolted	A A	A A	A A	A A	A A	A A	A NA	A NA
	Auxiliary contact — contactor (four maximum) N.C. — late break		97	1, 3R/4/12, 4/4X, 3R	A	A	A	A	A	A	NA	NA
	Auxiliary contact installed on disconnect	N.O. N.C.	98 99	1, 3R/4/12, 4/4X, 3R 1, 3R/4/12, 4/4X, 3R	A A	A A	A A	A A	A A	A A	A A	A A
	Auxiliary contact installed on circuit breaker (external to breaker) to operate with handle (two maximum)	N.O. N.O. N.O.	98 98 98	1, 3R/4X/12, 4/4X, 3R Bolted⋆ Unilock‡	A A A	A A A	A A A	A A A	A A A	A A A	A NA NA	A NA NA
		N.C. N.C. N.C.	99 99 99	1, 3R/4X/12, 4/4X, 3R Bolted⋆ Unilock‡	A A A	A A A	A A A	A A A	A A A	A A A	A NA NA	A NA NA
Control Circuit	Control circuit fuse block less transformer	1 Fuse — Fuse Included	21	All listed	A	A	A	A	A	A	A	A
		1 Fuse with Protective Cover — Fuse Included	21C	All listed	A	A	A	A	A	A	A	A
		2 Fuses — Fuses Included	22	All listed	A	A	A	A	A	A	A	A
		2 Fuse with Protective Cover — Fuse Included	22C	All listed	A	A	A	A	A	A	A	A
	Surge suppression for 120V or 240V AC Coil		17	All listed	A	A	A	A	A	A	NA	NA
	Terminal blocks (**Cat No. 1492-HC6**)	6-Point Block	TB6	All listed	A	A	A	A	A	A	A	A
	Terminal blocks (**Cat No. 1492-HC12**)	12-Point Block	TB12	1, 3R/4X/12, 4/4X, 3R	A	A	A	A	A	A	A	A
Overload Relays (Eutectic Alloy)	N.O. alarm contact adder (Bulletin 592)		9	1, 3R/4X/12, 4/4X, 3R Bolted⋆ Unilock‡	A	A	A	A	A	A	NA	NA
	N.C. alarm contact adder (Bulletin 592)		9A		A	A	A	A	A	A	NA	NA
	Omit overload relays	For Bulletins 506, 506X, 507, 507X Deduct	23	1, 3R/4X/12, 4/4X, 3R Bolted⋆ Unilock‡	A	A	A	A	A	A	NA	NA
		For Bulletins 522, 523 Deduct	23		A	A	A	A	A	A	NA	NA
Accessories	3-phase Powermonitor (Timemark Model 258)		400	1, 3R/4X/12, 4/4X, 3R Bolted (3R, 7 & 9) Unilock (7 & 9)	A	A	A	A	A	A	A	A
	Bulletin 596 (used on Bulletin 500…509), 3-pole maximum	On Delay Off Delay	87A 87B		A a	A A	A A	A A	A A	A A	NA NA	NA NA
	Form A compelling relay (used on Bulletin 522…523)		70	1, 3R/4/12, 4/4X Bolted⋆	A	A	A	A	A	A	NA	NA
	Form B auto. seq. accelerating relay for each higher speed (used on Bulletin 522…523)		71	1, 3R/4/12, 4/4X Bolted⋆	A	A	A	A	A	A	NA	NA
	Form C auto. seq. decelerating relay for each higher speed (used on Bulletin 522…523)		72	1, 3R/4/12, 4/4X Bolted⋆	A	A	A	A	A	A	NA	NA

A = Available
NA = Not Available

⋆ Bolted suitable for Type 3R, 7 & 9.

‡ Unilock suitable for Type 7 & 9 or Type 3R, 7 & 9 with the addition of a drain or a breather and drain. White LED option not available, incandescent only.

§ For Bulletins 506, 507, 522 and 523 devices. One auxiliary contact is installed on each of the two contactors.

Description of Modification			Suffix No.	Enclosure Type	NEMA Size							
					0	1	2	3	4	5	6	7
Circuit Breakers	Marine Requirements		345	–	A	A	A	A	A	A	NA	NA
	Current Limiters	Add the letter “C” to the instantaneous circuit breaker no. code.	C	1, 3R/4X/12, 4/4X, 3R	A	A	A	A	A	A	NA	NA
	Thermal Magnetic Circuit Breakers	Add the letter “T” to the circuit breaker no. code.	T	1, 3R/4X/12, 4/4X, 3R	A	A	A	A	A	A	S	S
	Current Limiters	Add the letter “D” to the inverse time circuit breaker no. code.	D	1, 3R/4X/12, 4/4X, 3R	A	A	A	A	A	A	NA	NA
Accessories	Enclosure	Breather	136	Bolted⋆	A	A	A	A	A	A	NA	NA
		Breather and drain	137	Unilock and Bolted⋆ ‡	A	A	A	A	A	A	NA	NA
		Drain	138	Bolted and Unilock⋆ ‡	A	A	A	A	A	A	NA	NA
	Enclosure Door Viewing Window		203W	1, 3R/4/12, 3R	A	A	A	A	A	A	NA	NA
	Handles For Disconnect Switch or Circuit Breaker	Painted metal Stainless steel Molded plastic (deduct)	412 413 419	1, 3R/4/12, 3R 4/4X 1, 3R/4/12, 4/4X, 3R	A A A	A A A	A A A	A A A	A A A	S S NA	S S NA	S S NA
	Fuse Cover	Protective fuse cover for disconnect switch	414	1, 3R/4/12, 4/4X, 3R	A	A	A	A	A	A	NA	NA
	Control Relay (Plug-In)	2-Pole 3-Pole	415 416	1, 3R/4/12, 4/4X, 3R	A A	A A	A A	A A	A A	A A	A A	A A
	Timing Relay (Plug-In)	On-Delay Off-Delay	417 418	1, 3R/4/12, 4/4X, 3R	A A	A A	A A	A A	A A	A A	A A	A A
	Electrical Interlock	Early Break (1 N.O. and 1 N.C.) Early Break (2 N.O. and 2 N.C.)	420 421	1, 3R/4/12, 4/4X, 3R 1, 3R/4/12, 4/4X, 3R	A A	A A	A A	A A	A A	A A	NA NA	NA NA
	Bracket Mounting Feet for Pump Panels§		424	3R	NA	A	A	A	A	A	NA	NA
	Elapsed Time Meter (ENM - Series T50)		425	3R/4/4X/12	NA	A	A	A	A	A	A	A
	Protective Covers for Contactors and Starters		426	1, 3R/12, 4/4X, 4	NA	A	A	A	A	A	NA	NA

A = Available
NA = Not Available
S = Standard

⋆ Bolted suitable for Type 7 & 9 or Type 3R, 7, & 9.

‡ Unilock suitable for Type 7 & 9 or Type 3R, 7, & 9 with the addition of a drain or a breather and drain.

§ Pump panel comes standard with pole mounting bracket.

Contactor Accessories

		
Bulletin	**500DC — Electronic DC Coil Controller**	
Features	• Compact size - NEMA sizes 0...3 • Versatility - Fully assembled unit or as a retro-fit kit • LED status indication - LED diagnostics determine if the controller is functioning correctly • Low power consumption - Draws 3.5 watts steady state • Built-in thermal protection - The controller is protected from over temperature • Reverse polarity protection - Should the wiring be reversed during installation or coil change, no damage will occur	
NEMA Size	0...1, 2, and 3	
DC Voltage	• 24V	• 125...250V
Min. DC Inrush Switching Requirement for Logic Control Device	• 6.7 A • 8.2 A • 16.5 A	• 4.9 A • 7.0 A • 14.3 A
Certifications	• cULus Listed (File No. E14840, Guide No. NKCR, NKCR7) • CE mark (per EN 60947-5-1)	
Example Cat. No.	An example of a factory-assembled contactor catalog number is **Cat. No. 500DC-BOVL930**. For further details visit the on-line catalog.	
For Use With	**Bulletin 509 (See Bulletin 509 Open Type Full Voltage Starter).** **For Bulletins 505 and 520, consult your local Rockwell Automation sales office or Allen-Bradley distributor.**	

For use on Bulletins 1232X, 1232V, 1233X, and 1233V

Description		NEMA Size	Cat. No.
	**Coils (60 Hz)** 115…120V	0…1	CB-236
	200…208V		CB-249
	230…240V		CB-254
	460…480V		CB-273
	575…600V		CB-278
	115…120V	2	CC-236
	200…208V		CC-249
	230…240V		CC-254
	460…480V		CC-273
	575…600V		CC-278
	115…120V	3	CD-236
	200…208V		CD-249
	230…240V		CD-254
	460…480V		CD-273
	575…600V		CD-278
	115…120V	4	CE-236
	200…208V		CE-249
	230…240V		CE-254
	460…480V		CE-273
	575…600V		CE-278
	115…120V	5 (SER. L)	AF-236
	200…208V		AF-249
	230…240V		AF-254
Note: For complete listing of coils available, see Bulletin 500 Line of Contactors and Starters (excluding Modular Kits)	460…480V		AF-273
	575…600V	5	AF-278
Surge Suppressor — Made to be easily mounted directly across the coil terminals of contactors and starters with 120V or 240V AC coils. The purpose of the suppressor is to limit voltage transients for applications requiring interface with solid-state components. One suppressor is required per coil.			
	RC Module AC Operating Mechanism 24…48V AC, 50/60 Hz	00*	100-FSC48
	110…280V AC, 50/60 Hz		100-FSC280
	380…480V AC, 50/60 Hz		100-FSC480
	**Varistor Module** AC/DC Operating Mechanism 12…55V AC/ 12…77V DC	00*	100-FSV55
Cat. No. 100-FSC280	56…136V AC/ 78…180V DC		100-FSV136
	137…277V AC/ 181…350V DC		100-FSV277
	278…575V AC		100-FSV575
	12…120V AC	0…5	599-K04
	240…264V AC Varistor		599-KA04
	12…120V AC	6	199-FSMA1‡
	12…120V AC Varistor		199-GSMA1§
Cat. No. 599-K04	120V AC	7…8	700-N24

* For non-combination starters only.

‡ For use on the interposing relay.

§ For use on the contactor or starter.

Description		NEMA Size	Cat. No.
	**Terminal and Lug Covers**	0…1	599-TC01N
	Line side terminal covers	2	599-TC2N
		3	599-TC3N
		4	599-TC4N
		5	599-TC5N
	Line side terminal covers (reversing)	0…1	599-TC01R
	Tie Point Terminal	0…2	599-TP02
		3…5	599-TP34

Description	For Use With	No. of Poles	NEMA Size	Cat. No.
Protective Covers	500/F/FL, 500L, 500LP, 505	3	0…1	599-PC01
	509, 505, 520E (2), 520F/G	3	0…1	599-PS01♦
	500L, 500LP	5	0…1	599-PC01-5♠
	520F/G	5	0…1	599-PS01-5♦
	500/F/FL, 500L, 500LP, 505	3	2	599-PC2
	509, 505, 520E (2), 520F/G	3	2	599-PS2♦
	500L, 500LP	5	2	599-PC2-5♠
	520F/G	5	2	599-PS2-5♦
	500/F/FL, 500L, 500LP, 505	3	3	599-PC3
	509, 505, 520E (2), 520F/G	3	3	599-PS3♦
	500L, 500LP	5	3	599-PC3-5♠
	520F/G	5	3	599-PS3-5♦
	500/F/FL, 500L, 500LP, 505	3	4	599-PC4
	509, 505, 520E (2), 520F/G	3	4	599-PS4♦
	500L, 500LP	5	4	599-PC4-5♠
	520F/G	5	4	599-PS4-5♦
	500/F/FL, 500L, 500LP	3	5	599-PC5
Cat. No. 599-PS01	509	3	5	599-PS5♦

♠ Used on 5-pole contactors and starters.

♦ Bul. 592 Eutectic alloy or solid-state overload relays.

Timer Attachment Kit — A pneumatic timer attachment may be field installed in the space of two adjacent auxiliary contact blocks. Timing units are available for either ON-Delay or OFF-Delay operation with a timed set of one (1) N.O. and one (1) N.C. snap-action contacts that are electrically isolated.
Repetitive accuracy within the timer range is approximately ±10% provided a minimum reset time of 75 ms is allowed.
Note:

- Sizes 0…5: Timers can be added to the left- or right-hand side of the contactor body. On Size 00 they can be mounted to the front of the contactor.
- Size 0, 1 and 2: Timers cannot be used on the same side as power pole adders.
- Size 2 Devices: The operating coil must be changed. See Bulletin 500 Line of Contactors and Starters (excluding Modular Kits) and refer to the size 2 operating coil listing. Order the coil listed for a 4-…5-pole device.

Note: These coils can also be factory installed.

- Enclosed Devices: Please contact your local Rockwell Automation sales office or Allen-Bradley distributor.

Contact Ratings: NEMA A600 (10 A, 600V AC max.)
NEMA P300 (5 A, 300V DC max.)

Description		NEMA Size	Cat. No.
	**On-Delay**	00♣	100-FPTA30
	On-Delay		100-FPTA180
	Off-Delay		100-FPTB30
	Off-Delay		100-FPTB180
	Left-hand ON Delay	0…5	596-TL32
	Left-hand OFF Delay		596-TL33
	Right-hand ON Delay		596-TR32
Cat No. 596-TR32	Right-hand OFF Delay		596-TR33

♣ For open type, non-combination starters only.

Description		NEMA Size	Cat. No.
Auxiliary Contact — Contactors	1 N.O.	0…5	595-A
	2 N.O.	0…5	595-AA
	1 N.C.	0…5	595-B
	2 N.C.	0…5	595-BB
	1 N.O. and N.C.	0…5	595-AB
	1 N.C.L.B.	0…5	595-BL
	1 N.O.	6	195-GA10
	1 N.O.	7	Δ 1495-J6
	2 N.O.	6	195-GA20
	2 N.O.	7…8	Δ 1495-K6
	2 N.O.	9	Δ 1495-K8
	1 N.C.	6	195-GB01
	1 N.C.	7…9	Δ 1495-J6
	2 N.C.	6	195-GB02
	2 N.C.	7…8	Δ 1495-K6
	2 N.C.	9	Δ 1495-K8
	1 N.O. and N.C.	6	195-GB11
	2 N.O.	7…8	Δ 1495-K6
	2 N.O.	9	Δ 1495-K8
	1 N.C.L.B.	6	195-GL01

Δ The normally open contacts can easily be changed to normally closed in the field.

Power Pole Adders — The 1 N.O. and 1 N.C. power poles may be field added to all size 0…4 Bulletin 500 line contactors and starters except the Bulletin 500L and 500FL. Two- and three-pole contactors will accept a maximum of two adder poles and four-pole devices will accept one adder pole. Each adder pole kit includes a mechanical load balancer to be used when only one power pole is added.
Note: When power poles are added to Size 2, 3, or 4 (2- or 3-pole devices) the operating coil must be changed. Refer to the listing for the size of your contactor or starter. Order the operating coil listed for a 4-…5-pole device.
Note: These coils can also be factory installed.

Description		NEMA Size	Cat. No.
	1 N.O.	0…1	599-P01A
	1 N.C.		599-P01B
	1 N.C. Late Break		599-P01BL
	1 N.O.	2	599-P2A
	1 N.C.		599-P2B
	1 N.C. Late Break		599-P2BL
	1 N.O.	3	599-P3A
	1 N.C.		599-P3B
Cat. No. 599-P01A (1 N.O.) Size 0…1, 27 Amps.	1 N.O.	4	599-P4A
	1 N.C.		599-P4B

Contactor Kick-off Springs — For horizontal mounting of 2- or 3-pole Bulletin 500 contactors and starters.
Note: When kick-off springs are added to Size 2, 3 or 4, the operating coil must be changed. Refer to the listing for the size of your contactor or starter. Order the operating coil listed for a 4-pole device.
Note: These coils can also be factory installed.

Description		NEMA Size	Cat. No.
	—	0…1	599-N11
		2	599-N12
		3	599-N13
		4…5	599-N14

	Wire Size	NEMA Size	Cat. No.
	**Lug Connectors (3 per package)**		
	#14…8 AWG Wire	0…1	*
	#14…4 AWG Wire	2	1494R-N1
	#8…1/0 AWG Wire	3	1494R-N2
	#6…4/0 AWG Wire	4	1494R-N3
Cat. No. 1494R-N3	1 of #1/0…350 MCM Wire	5	42450-804-01

* All terminals of the 30 A switches are furnished with self-lifting pressure plate connectors as standard.

Description			NEMA Size	Cat. No.
	Terminal Lug Kit	Two #1/0 150…500 MCM 1 required per terminal	6	199-LJ1
	Terminal Lug Kit	#4 AWG…500 MCM 3 required per terminal for Size 7 and 4 required per terminal for Size 8	7…8	199-LG1

Description		NEMA Size	Cat. No.
Auxiliary Contact Adder Decks — The same 2- and 4-pole auxiliary contact blocks in various combinations of normally open and normally closed will slide and snap on to the front of the contactor. Adder decks have convenient backed out wire clamps to make lugging of control wires unnecessary. **Fits on Open Type devices only.**			
	2 N.O.	00	100-FA20
	1 N.O. -1 N.C.		100-FA11
	2 N.C.		100-FA02
	4 N.O.		100-FA40
	3 N.O.-1 N.C.		100-FA31
	2 N.O. -2 N.C.		100-FA22
4-pole	4 N.C.		100-FA04
24V DC Interface Module — Mounts to the top of the contactor. It provides a 24V DC, 0.5 w input signal that can be used to operate the 110…240V AC coil of the contactor. **Fits on Open Type devices only.**			
	—	00	100-JE
Latch Attachment — On the front of the contactor. **Fits on Open Type devices only.**			
	—	00	100-FL11⊗
Interposing Contactor — For open type Bulletin 500 and 500L.	120V, 60 Hz	6	500-NX100D
	240V, 60 Hz	6	500-NX100A
Top Wiring Kit — Consists of (3) power lugs for the purpose of making extra connections to the load side of the contactor. A second set of overload relays can be wired to these lugs if two motors are being controlled by a single contactor.			
	—	0…1	599-TW01
	—	2	599-TW2
	—	3	599-TW3
	—	4	599-TW4
Cat No. 599-TW01	—	5	599-TW5P

⊗ Voltage Suffix Code

The cat. no. as listed is incomplete. Select a voltage suffix code from the table below to complete the Cat. No.
Example: 120V, 60 Hz: **Cat. No. 100-FL11**⊗ becomes **Cat. No. 100-FL11D**. For other voltages, please consult your local Rockwell Automation sales office or Allen Bradley distributor.

[V]	24	48	100	110	120	230…240	240	277	380…400	400…415	400	480
50 Hz	K	Y	KP	D	—	VA	T	—	N	G	B	—
60 Hz	J	—	—	—	D	—	A	T	—	—	N	B

§ To complete cat. no., insert in the third position the desired numeric symbol (0…5) or one of the following letters — A, B, C, D, E, F, H, L, M, P, R, S, T, U, or W.

Description		Enclosure Type	NEMA Size	Cat. No.
		**Adapter Plates —** For replacement of: • Allen-Bradley (Bulletin 709 Series K) • Cutler Hammer (Citation & Freedom Series) • Furnas (Class 14 and ESP 100) • General Electric (Series 300) • Joslyn-Clark (Type HP) • Square D (Type S) • Westinghouse (A200 and W200 Advantage)	1 (hinged), 3R, 3R/4/12, 4/4X (stainless)	0, 1	599-CP01
				2	599-CP2

For use on Bulletins 1232V, 1233V

Contactors are supplied with one normally open and one normally closed auxiliary contact (A600 rating) as standard. Additional auxiliary contacts, two normally open and two normally closed, can be added in the field.

Description	Cat. No.
Auxiliary Contact (10 A @ 600V)	1195C-N3
Auxiliary Contact (10 mA @ 5V DC)	1195C-N4

Overload Accessories

For use on Bulletins 500, 500F, 500FL, 500L, 500LP, 502, 502L, 503, 503L, 505, 505V, 506, 506X, 507, 507X, 509, 512, 512H, 512M, 512V, 513, 513H, 513M, 513V, 520, 520V, 522, 523, 530, 532, 533, 540, 542, 543, 570, 572, 573, 1242, 1243, 1272, 1273, 1282, 1283, 1232X, 1232V, 1233X, and 1233V

Description		NEMA Size	Cat. No.
	**Auxiliary Contact —** For eutectic alloy overload relays only⋆		
	1 N.O.	00, 3-phase‡	595-A00
	1 N.C.	00, 3-phase‡	595-B00
	1 N.O.	0…2, 5…9	595-A02
Auxillary Contact — For eutectic alloy overload relays only⋆ **Contact Ratings —** NEMA A600 (10 A, 600V AC max.) NEMA P300 (5 A, 300V DC max.)	1 N.C.		595-B02
	1 N.O.	3…4	595-A34§
	1 N.C.		595-B34♣

Description		Max. Continuous Current Rating [A]	Cat. No.
	**DIN Rail Mounting Adapter** for Bulletin 592 compact type 3-pole overload relays	40	599-MP1
	DIN Rail Mounting Adapter for Bulletin 592 compact type 1-pole overload relays	62	599-MP2

⋆ Auxiliary contact for solid-state overload relays is included in the product.
‡ Non-combination starters only.
§ Auxiliary contact mounted on right-hand side of overload relay provides N.O. contact function. Auxiliary contact mounted on left-hand side of overload relay provides N.C. contact function.
♣ To be mounted on right-hand side of overload to provide additional AC contact function.

Voltage Control Accessories

For use on Bulletins 500, 500F, 500L, 500LP, 502, 502L, 503, 503L, 505, 505V, 506, 506X, 507, 507X, 509, 512, 512H, 512M, 512V, 513, 513H, 513M, 513V, 520, 520V, 522, 523, 530, 532, 533, 540, 542, 543, 570, 572, 573, 1242, 1243, 1272, 1273, 1282, 1283, 1232X, 1232V, 1233X, and 1233V; excluding Modular Kits

Control Circuit Transformer with Top-Mounted Fuse Block Kits (pre-wired)⋆ ‡

	NEMA Size	Primary Voltage	Capacity – 120V Secondary Voltage									
			Standard		100 W Extra		200 W Extra		300 W Extra		400 W Extra	
			VA	Cat. No.	VA	Cat. No.	VA	Cat. No.	VA	Cat. No.	VA	Cat. No.
	0…2	208V	80	1497-N1PK	130	1497-N15PK	250	1497-N7PK	350	1497-N10PK	500	1497-N18PK
		240V & 480V		1497-N2PK		1497-N16PK		1497-N8PK		1497-N11PK		1497-N19PK
		600V		1497-N3PK		1497-N17PK		1497-N9PK		1497-N12PK		1497-N20PK
	3	208V	200	1497-N4PK	250	1497-N7PK	350	1497-N10PK	500	1497-N18PK	500	1497-N18PK
		240V & 480V		1497-N5PK		1497-N8PK		1497-N11PK		1497-N19PK		1497-N19PK
		600V		1497-N6PK		1497-N9PK		1497-N12PK		1497-N20PK		1497-N20PK
	4	208V	250	1497-N7PK	350	1497-N10PK	500	1497-N18PK	–	–	–	–
		240V & 480V		1497-N8PK		1497-N11PK		1497-N19PK	–	–	–	–
		600V		1497-N9PK		1497-N12PK		1497-N20PK	–	–	–	–
	5	208V	350	1497-N10PK	500	1497-N18PK	–	–	–	–	–	–
		240V & 480V		1497-N11PK		1497-N19PK	–	–	–	–	–	–
		600V		1497-N12PK		1497-N20PK	–	–	–	–	–	–
	6	208V	500	1497-N18PK	–	–	–	–	–	–	–	–
		240V & 480V		1497-N19PK	–	–	–	–	–	–	–	–
		600V		1497-N20PK	–	–	–	–	–	–	–	–

⋆ Transformers for NEMA sizes 7…9 are included as standard.

‡ Type 4/4X non-metallic enclosures and Type 7 & 9 hazardous location enclosures require transformers with separately mounted fuse blocks. For a complete listing of transformers, see Control Transformers.

Control Circuit Transformers with Top Mounted Fuse Blocks§ ‡

	NEMA Size	Primary Voltage/ 3 Pole Fuse Block	Capacity – 120V Secondary Voltage	
			Standard	
			VA	Cat. No.
	0…2	208V	80	1497-B-HXDX-3-N
		240V & 480V		1497-B-BASX-3-N
		600V		1497-B-CXSX-3-N
	3	208V	200	1497-D-HXDX-3-N
		240V & 480V		1497-D-BASX-3-N
		600V		1497-D-CXSX-3-N
	4	208V	250	1497-E-HXDX-3-N
		240V & 480V		1497-E-BASX-3-N
		600V		1497-E-CXSX-3-N
	5	208V	350	1497-F-HXDX-3-N
		240V & 480V		1497-F-BASX-3-N
		600V		1497-F-CXSX-3-N

§ Transformers can be installed in Type 1, 3R, 3R/4/12 painted enclosures and Type 4/4X stainless steel enclosures.

‡ Type 4/4X non-metallic enclosures and Type 7 & 9 hazardous location enclosures require transformers with separately mounted fuse blocks. For a complete listing of transformers, see Control Transformers.

For use on Bulletins 500, 500F, 500L, 500LP, 502, 502L, 503, 503L, 505, 505V, 506, 506X, 507, 507X, 509, 512, 512H, 512M, 512V, 513, 513H, 513M, 513V, 520, 520V, 522, 523, 530, 532, 533, 540, 542, 543, 570, 572, 573, 1242, 1243, 1272, 1273, 1282, 1283, 1232X, 1232V, 1232X, and 1233V; excluding Modular Kits

For Use When Fuse Block Is Not Integrated with the Transformers

Cat. No. 1491-R165
1-Pole Fuse Block

Cat. No. 1491-R167
2-Pole Fuse Block

Cat. No. 1491-R171
3-Pole Fuse Block

Cat. No. 1491-R169
3-Pole Fuse Block

Cat. No. 1491-R150
*Fuse Cover without Fuse*Δ

These control circuit fusing kits are intended to be used for control circuit transformer protection and protection of control circuits capable of delivering no more than 200 000 RMS symmetrical amperes, 600V maximum. (Fuses not included.)

Description⋆	Cat. No.
One-pole kit — panel-mounted (midget fuse)‡	1491-R165
Control Circuit Fuse Block For Class CC rejection type fuses (fuses not included)‡	1491-R162
Two-pole kit — panel-mounted (two midget fuses)‡	1491-R167
Three-pole kit — panel-mounted (one midget fuse/two Class CC fuses)‡	1491-R169
Three-pole kit — panel-mounted (three Class CC fuses)	1491-R171
Single-pole kit — Bulletin 500 line controller mounted (Class CC fuses)§	599-FR04
One-pole kit — panel-mounted (31…60 A Class J fuse)	1491-R173
One-pole kit — panel-mounted (61…100 A Class J fuse)	1491-R175

⋆ For control circuit transformers with a 350 VA or larger rating, it is recommended that Bussmann Type FNQ-R, Ferraz-Shawmut Type ATDR, Littelfuse Type KLDR time delay fuses, or equivalent be used for primary fusing.

‡ These kits use only Class CC or midget fuses (rated 0.5…30 A) such as those offered by the following manufacturers:
- Bussmann KTK-R
- Ferraz-Shawmut ATM R
- Littelfuse KLK

§ **Cat. No. 599-FR04** is rated for 6 A fuse maximum. Controller mounting applies to size 0…5 devices only.

Δ One cover per pole is required. Example: transformer with top-mounted fuse block requires three covers. Fuse block kit for separate control requires two covers. Fuses not included.

Description		NEMA Size	Cat. No.
	Single-pole kit — Bulletin 500 line controller mounted (Class CC fuses)	0…5	599-FR04

Note: One cover per pole is required. Example: transformer with top-mounted fuse block requires three covers. Fuse block kit for separate control requires two covers.

Disconnect Switch Accessories

For use on Bulletins 502, 502L, 506, 506X, 512, 512H, 512M, 512V, 522, 532, 542, 572, 1242, 1272, 1282, 1232X, and 1232V

	Description	NEMA Size	Cat. No.
	**Fuse Clips**		
	0...30 A, 250V AC, Class H	0...2	1401-N41
	0...30 A, 250V AC, Class J 0...30 A, 600V AC, Class H 0...30 A, 600V AC, Class J 31...60 A, 250V AC, Class H	1...3	1401-N42
	31...60 A, 250V AC, Class J 31...60 A, 600V AC, Class H 31...60 A, 600V AC, Class J	1...3	1401-N43
	61...100 A, 250V AC, Class H 61...100 A, 250V AC, Class J 61...100 A, 600V AC, Class H 61...100 A, 600V AC, Class J	2...4	1401-N44
	101...200 A, 250V AC, Class H 101...200 A, 250V AC, Class J 101...200 A, 600V AC, Class H 101...200 A, 600V AC, Class J	3...5	1401-N45
	201...400 A, 250V AC, Class H 201...400 A, 250V AC, Class J 201...400 A, 600V AC, Class H 201...400 A, 600V AC, Class J	4...5	1401-N46
	0...30 A, 250V AC, Class R 0...30 A, 600V AC, Class R	0...2‡	1401-N50
	31...60 A, 250V AC, Class R		1401-N51
	31...60 A, 600V AC, Class R	1...3	1401-N52
	61...100 A, 250V AC, Class R 61...100 A, 600V AC, Class R	2...4	1401-N53
	101...200 A, 250V AC, Class R 101...200 A, 600V AC, Class R	3...5	1401-N54
	201...400 A, 250V AC, Class R 201...400 A, 600V AC, Class R	5...6	1401-N55
	0...30 A, 250V AC HRC Form II Fusing⋆ 0...30 A, 600V AC HRC Form II Fusing⋆ 31...60 A, 250V AC HRC Form II Fusing⋆ 31...60 A, 600V AC HRC Form II Fusing⋆	0...2‡ 1...3	♠
	**Auxiliary Contacts for Disconnect Switches** 1 N.O.	0...5	1495-N8
	1 N.C.	0...5	1495-N9

⋆ HRC Form II fusing for Canada only.

‡ For 0...30 A only.

♠ Fuse clip not required. Fuse bolts directly to switch and trailer fuse block.

Description		For Use With	Cat. No.
Lug Connectors (3 per package)		1494C, 1494F, 1494G, and 1494V Disconnect Switches	
Disconnect Size [A]	**Wire Size**		
30	#14…8 AWG Wire		⋆
60	#14…4 AWG Wire		♣ 1494R-N1
100	#8…1/0 AWG Wire		♣ 1494R-N2
200	#6…4/0 AWG Wire		♣ 1494R-N3
400	(2) #1/0…250 MCM AWG		1494R-N14
400	#4 AWG…500 MCM Wire (oversized)		1494R-N15
600	(2) of #1/0…350 MCM Wire		♣ 1494R-N10
600	(2) of #1/0…350 MCM Wire	1491-N621 or 1491-R621 600 A fuse blocks	Δ 1494R-N11

Cat. No. 1494R-N3

Protective Fuse Covers

Switch Rating [A]	Fuse Class	Fuse Clip Rating [A]		Cat. No.
		250V	600V	
30 30 60 30 60 60 100	Non-fusible H, R H, R J J Non-fusible Non-fusible	— 30 60 30 60 — —	— — — 30 60 — —	1495-N64
30 60 100	H, R H, R J	— — 100	30 60 100	1495-N65
100	H, R J	100 200	100 200	1495-N66
200 200	Non-fusible H, J, R J	— — 200 400	— — 200 400	♦ 1495-N67
200 200	Non-fusible H, J, R	— 200	— 200	♠ 1495-N62
400 400	Non-fusible H, J, R	— 400	— 400	♦ 1495-N68
400 400	Non-fusible H, J, R	— 400	— 400	♠ 1495-N63
600	Non-fusible J	— 600	— 600	♦ 1495-N61

⋆ All terminals of the 30 A switches are furnished with self-lifting pressure plate connectors (N56, N57, and N58) as standard.

♣ Each kit contains three lugs.

Δ Each kits contains two lugs.

♦ Switch with right-hand mechanism.

♠ Switch with left-hand mechanism.

Circuit Breaker Accessories

For use on Bulletins 503, 503L, 507, 507X, 513, 513H, 513M, 513V, 523, 533, 543, 573, 1243, 1273, 1283, 1233X, and 1233V

Description		NEMA Size	Cat. No.
	**Circuit Breaker Kits**		
	3 A, 0…1/3 Hp @ 200 and 230V 3 A, 0…1 Hp @ 460 and 575V	0…1	1401-N60
	7 A, 0.5…1 Hp @ 200 and 230V 7 A, 1.5…3 Hp @ 460 and 575V	0…1	1401-N61
	15 A, 1.5…3 Hp @ 200 and 230V 15 A, 5…7.5 Hp @ 460 and 575V	0…1	1401-N62
	30 A, 5 Hp @ 200V 30 A, 5…7.5 Hp @ 230V 30 A, 10…15 Hp @ 460 and 575V	1…2	1401-N63
	50 A, 5…10 Hp @ 200V 50 A, 10 Hp @ 230V 50 A, 20…25 Hp @ 460V 50 A, 20…30 Hp @ 575V	1…3	1401-N64
	100 A, 15…25 Hp @ 200 and 230V 100 A, 30…50 Hp @ 460V 100 A, 40…50 Hp @ 575V	2…4	1401-N65
	150 A, 30 Hp @ 200V 150 A, 30…40 Hp @ 230V 150 A, 60…75 Hp @ 460V 150 A, 75…100 Hp @ 575 V	3…4	1401-N66
	250 A, 125 Hp @ 575V	5	1401-N68
	250 A, 50…60 Hp @ 200V 250 A, 60…75 Hp @ 230V		1401-N69
	**Auxiliary Contacts for Disconnect Switches**		1495-N8
	One normally open (1 N.O.) Adapter kit may be required. ⋆ Bolted — One normally open (1 N.O.)‡ Unilock — One normally open (1 N.O.)‡	0…5§ 4…5♣	
	One normally closed (1 N.C.) Adapter kit may be required.⋆ Bolted — One normally closed (1 N.C.)‡ Unilock — One normally closed (1 N.C.)‡	0…5	1495-N9
	Unilock — One normally open (1 N.O.)‡	0…2	1495-N14
	Unilock — One normally closed (1 N.C.)‡	0…2	1495-N15
	HMCP Circuit Breaker Adapter Kits (for mounting 1 or 2 auxiliary contacts) 400 A Frame‡	5	1495-N16
	150 A Frame	3…4	1495-N21
	250 A Frame - Enclosure Type 1, 3R/4/12, 3R and 4/4X (stainless steel) 250 A Frame - Enclosure Type 7 & 9 (bolted & Unilock) and 4/4X (non-metallic)	4…5Δ 0…5♦	1495-N22
	250 A Frame - Enclosure Type 1, 3R/4/12, 3R, and 4/4X (stainless steel)	4	1495-N23
	Unilock — 150 A Frame‡	3…4	1495-N21
	Unilock — 250 A Frame‡	4…5	1495-N22

⋆ Contact Ratings — NEMA B600 and NEMA P600.

‡ Not available on larger sizes 6…9.

§ For Bolted and 1 N.O.

♣ For Unilock 1 N.C.

Δ For Enclosure Type 1.

♦ For Enclosure Types 7 & 9.

Pilot Device Accessories

For use on Bulletins 500, 500F, 500L, 500LP, 502, 502L, 503, 503L, 505, 505V, 506, 506X, 507, 507X, 509, 512, 512H, 512M, 512V, 513, 513H, 513M, 513V, 520, 520V, 522, 523, 530, 532, 533, 540, 542, 543, 570, 572, 573, 1242, 1243, 1272, 1273, 1282, 1283, 1232X, 1232V, 1233X, and 1233V

Description	Enclosure Type	NEMA Size	Cat. No.
	**Selector Switch Kits**		
OFF-ON/HAND-OFF-AUTO⋆ ‡	1 (lift-off)	00…2	599-SSL
			599-SS2L
HAND-OFF-AUTO	1, 3R/4/12	0…5	599-SS09HJ
	4, 4X (stainless steel and non-metallic)		599-SS09HS
OFF-ON	1, 3R/4/12		599-SS09OJ
	4, 4X (stainless steel and non-metallic)		599-SS09OS
FOR-OFF-REV	1, 3R/4/12		599-SS09RJ
	4, 4X (stainless steel and non-metallic)		599-SS09RS
TEST-OFF-AUTO (spring return from TEST)	1, 3R/4/12		599-SS09TJ
	4, 4X (stainless steel and non-metallic)		599-SS09TS
FOR-OFF-REV (Unilock)	3R, 7 & 9	0…2	1481-N48
OFF-ON (Unilock)			1481-N54
HAND-OFF-AUTO (Unilock)			1481-N55
OFF-ON (Unilock)		3…5	1481-N59
HAND-OFF-AUTO (Unilock)			1481-N60
FOR-OFF-REV (Unilock)			1481-N62
	**Push Button Kits**		
START-STOP⋆ ‡	1 (lift-off)	00…2	599-PBL
START-STOP	1, 3R/4/12	0…5	599-PB09SJ
	4, 4X (stainless steel and non-metallic)		599-PB09SS
FOR-REV-STOP	1, 3R/4/12		599-PB09RJ
	4, 4X (stainless steel and non-metallic)		599-PB09RS
HIGH-LOW-STOP	1, 3R/4/12		599-PB09WJ
	4, 4X (stainless steel and non-metallic)		599-PB09WS
START-STOP (Unilock)	7 & 9	0…2	1481-N53
		3…5	1481-N58
START-STOP (bolted)		0…9	Use 800H-DPH16AAXX64

⋆ Must order mounting bracket (**Cat. No. 599-BRL**) separately.

‡ For Type 1, lift-off, non-combination starters only (Bulletins 500, 500L, 505, and 509).

Description			Enclosure Type	NEMA Size	Cat. No.
	**Pilot Light Kits§** 120V		1, 3R/4/12	0...5	599-PL09DJ
	120V		4, 4X (stainless steel and non-metallic)		599-PL09DS
	240V		1, 3R/4/12		599-PL09AJ
	240V		4, 4X (stainless steel and non-metallic)		599-PL09AS
	480V		1, 3R/4/12		599-PL09BJ
	480V		4, 4X (stainless steel and non-metallic)		599-PL09BS
	600V		1, 3R/4/12		599-PL09CJ
	600V		4, 4X (stainless steel and non-metallic)		599-PL09CS
	ON* ‡ Δ	120V AC	1 (lift-off)	00...2	599-PLLD
		240V AC			599-PLLA
	Optional Pilot Light Lens Covers Red		All	0...5	800T-N26R
	Green				800T-N26G
	Amber				800T-N26A
	Blue				800T-N26B
	Clear				800T-N26C
	White				800T-N26W
	ON (Unilock 120V) — Red‡ ♣		3R, 7 & 9 (Unilock)	0...5	1481-N56A120R
	ON (Unilock 120V) — Green‡ ♣				1481-N56A120G
	**Push-to-Test Pilot Light Kits§** 120V		1, 3R/4/12	0...5	599-PT09DJ
	120V		4, 4X (stainless steel and non-metallic)		599-PT09DS
	240V		1, 3R/4/12		599-PT09AJ
	240V		4, 4X (stainless steel and non-metallic)		599-PT09AS
	480V		1, 3R/4/12		599-PT09BJ
	480V		4, 4X (stainless steel and non-metallic)		599-PT09BS
	600V		1, 3R/4/12		599-PT09CJ
	600V		4, 4X (stainless steel and non-metallic)		599-PT09CS
	Optional Push-to-Test Pilot Light Lens Covers Red		All	0...5	800T-N40
	Green				800T-N41
	Amber				800T-N42
	Blue				800T-N43
	Clear				800T-N45
	White				800T-N44
	Mounting bracket‡		All lift-off pilot devices, Type 1	00...2	599-BRL

* Must order mounting bracket (**Cat. No. 599-BRL**) separately.

‡ For Type 1, lift-off, non-combination starters only (Bulletins 500, 500L, 505, and 509).

§ Pilot light kits and push-to-test pilot light kits include one green and one red cover as standard.

♣ An adapter (**Cat. No. 1481-N61**) is required for each pilot light added to Size 3, 4, and 5 Unilock enclosures.

Δ Supplied with red lens only.

Note: Bulletins 505 and 520 with two pilot lights are supplied in hinged enclosures, with or without control circuit transformers.

Description		Enclosure Type	NEMA Size	Cat. No.
	ON ‡ (Unilock) — Red Lens (120V)	3R, 7 & 9 (Unilock)	0...5	1481-N56A120R
	ON ‡ (Unilock) — Green Lens (120V)			1481-N56A120G
	Transformers for pilot lights 240V, 60 Hz and 220V, 50 Hz⋆		00...5	1481-NX1
	480V, 60 Hz and 440V, 50 Hz			1481-NX2
	600V, 60 Hz and 550V, 50 Hz			1481-NX3
	**Replacement Bulbs for all Pilot Lights** 120V coil voltage - incandescent Amber, green, red, or blue lens color	—	—	800T-N169
	120V coil voltage - LED Amber lens color	—	—	800T-N320A
	Green lens color	—	—	800T-N320G
	Red lens color	—	—	800T-N320R
	Blue lens color	—	—	800T-N320B
	240/480/600V coil voltage - incandescent Amber, green, red, or blue lens color	—	—	800T-N65
	240/480/600V coil voltage - LED Amber lens color	—	—	800T-N318A
	Green lens color	—	—	800T-N318G
	Red lens color	—	—	800T-N318R
	Blue lens color	—	—	800T-N318B
	Additional Pilot Devices Additional pilot devices	1, 3R/4/12	0...9	Use Bulletin 800T devices (See Bulletin 800T/800H 30.5 mm Push Buttons)
	Additional pilot devices	4/4X, 4X	0...9	Use Bulletin 800H Type 4X devices (See Bulletin 800T/800H 30.5 mm Push Buttons)
	Additional pilot devices (bolted)	3R, 7 & 9	0...9	Use Bulletin 800H Type 7 & 9 devices (See Bulletin 800H/Hazardous Location Push Buttons)

⋆ When the control voltage is other than 120V, 60 Hz or 110V, 50 Hz it is necessary to also use one of the following transformers.

‡ An adaptor (**Cat. No. 1481-N61**) is required for each pilot light added to size 3, 4, and 5 Unilock enclosures.

Enclosure Accessories

For use on Bulletins 500, 500F, 500L, 500LP, 502, 502L, 503, 503L, 505, 505V, 506, 506X, 507, 507X, 509, 512, 512H, 512M, 512V, 513, 513H, 513M, 513V, 520, 520V, 522, 523, 530, 532, 533, 540, 542, 543, 570, 572, 573, 1242, 1243, 1272, 1273, 1282, 1283, 1232X, 1232V, 1233X, and 1233V

Description		Enclosure Type	NEMA Size	Cat. No.
	**Non-metallic Conduit Connectors** 1/2 in. (12.7 mm)	4, 4X (stainless steel and non-metallic)	0…1	1490-N1
	3/4 in. (19 mm)			1490-N9
	1 in. (24.5 mm)			1490-N10
	1-1/4 in. (31.75 mm)		2	1490-N11
	1-1/2 in. (38.1 mm)		3	1490-N5
	2 in. (50.8 mm)		4	1490-N6
	2-1/2 in. (63.5 mm)			1490-N7
	3 in. (76.2 mm)		5	1490-N8
	**Grounding Adapters** 1/2 in. (12.7 mm), #14…10 AWG	4, 4X (stainless steel and non-metallic)‡	0…1	1490-N19
	3/4 in. (19 mm), #14…8 AWG			1490-N20
	1 in. (24.5 mm), #14…8 AWG			1490-N21
	1-1/4 in. (31.75 mm), #14…4 AWG		2	1490-N22
	1-1/2 in. (38.1 mm), #8…1/0 AWG		3	1490-N23
	2 in. (50.8 mm), #8…1/0 AWG		4	1490-N24
	2-1/2 in. (63.5 mm), #6…2/0 AWG			1490-N25
	3 in. (76.2 mm), #6…4/0 AWG		5	1490-N26
	**Handle Kits with Universal Link for Switch and Breaker** Painted Metal 5-1/2 in. base	1, 3R, 3R/4/12⋆	0…4	1494F-M1
	Painted Metal 7-1/2 in. base		5	1494F-M2
	Stainless Steel 5-1/2 in. base	4/4X (stainless steel)	0…4	1494F-S1
	Stainless Steel 7-1/2 in. base		5	1494F-S2
	Nonmetallic Handle 5-1/2 in. base	1, 3R, 3R/4/12, 4/4X (non-metallic)	0…4	1494F-P1
	**Hole Plugs** 30.5 mm hole plug for pilot devices	All	0…5	800T-N1
	Enclosure Hole Plugs			598-N1

⋆ For combination starters only.

‡ Bulletin 1490 grounding adapters are available for use with these conduit hubs. These bushings provide a convenient method of connecting a ground wire to the conduit system. See conduit connector (hub) above proper size.

Description		Enclosure Type	NEMA Size	Cat. No.
	**Door Safety Hardware Kits Enclosure Size (H x W x D)** 27 x 10 x 8.2 in.	3R/4/12‡	0…2	1494F-V1
	30 x 20 x 9.7 in.		0…4	1494F-V2
	50 x 22 x 11.1 in.		3…4	1494F-V3
	56 x 30 x 14 in.		5	1494F-V4
	Breather Bulletin 505, 507, 509, and 513 — Unilock and bolted Class I, Groups C and D Class II, Groups E, F and GΔ §		0…5	1401-N1
	Drain Bulletin 505, 507, 509, and 513 — Unilock and bolted Class I, Groups C and D Class II, Groups E, F and GΔ §			1401-N2
	Breather Drain Combination♣ Bulletin 505, 507, 509, and 513 — Unilock and bolted Class I, Groups C and D Class II, Groups E, F and GΔ §			1401-N3
	**Ground Lug Kits**		0…2	599-GR1
			3…5	599-GR2
			6…7	599-GR3

Description of Accessory Kit	Size 0…2	Size 3	Size 4	Size 5	Size 6…9
	Cat. No.	Cat. No.	Cat. No.	Cat. No.	Cat. No.
Reset Buttons (Each Kit Contains One Reset)					
Type 1, 3R/12 Bulletin 506…507 — One Kit Required Per Starter Bulletin 512…513 — One Kit Required Per Starter Bulletin 522…523 — Two Kits Required Per Starter	1493-N21	1493-N21	1493-N31♠	—	—
				1493-N21♦	—
				—	—
Type 4/4X	—	—	1493-N32	—	—
Pneumatic Timer Mounting Plate Adapter (For Mtg. Bulletin 849A Timer) Bulletin 509 and 513 — UnilockΔ	1401-N4	—	—	—	—

‡ Converts combination starter enclosure **F** to enclosure code **D** or **J** with door safety hardware.

§ Standard on bolted Type 3R, 7 & 9.

♣ The breather-drain combination can be in enclosure top as a breather or bottom as a drain. Specify (2) when both functions are required.

Δ Unilock suitable for Types 7 & 9 or Types 3R, 7 & 9 with the addition of a drain or a breather and drain.

♦ For Bulletins 512…513 only.

♠ Also use for NEMA sizes 0…2 lift-off enclosure.

System Accessories

For use on Bulletins 500, 500F, 500L, 500LP, 502, 502L, 503, 503L, 505, 505V, 506, 506X, 507, 507X, 509, 512, 512H, 512M, 512V, 513, 513H, 513M, 513V, 520, 520V, 522, 523, 530, 532, 533, 540, 542, 543, 570, 572, 573, 1242, 1243, 1272, 1273, 1282, 1283, 1232X, 1232V, 1233X, and 1233V

Description		Enclosure Type	NEMA Size	Cat. No.
	**Power Monitor Kit**⋆ ‡ 3-phase, 240V AC — (Time Mark Model A258)	1 (hinged), 3R, 3R/4/12, 4/4X (stainless)	0…7	599-PM1
	3-phase, 480V AC — (Time Mark Model A258B)			599-PM2
	**Terminal Block**⋆ Panel Mount (6 point)§	1 (hinged), 3R, 3R/4/12, 4/4X (stainless)	0…7	1492-HC6
	**Timing Relays**⋆ 120V AC, ON-Delay — 8-pin socket (Cat. No. 700-HN125) required 0.1…10 s	1 (hinged), 3R, 3R/4/12, 4/4X (stainless)	0…7	700-HT12AU120
	120V AC, ON-Delay — 8-pin socket (Cat. No. 700-HN125) required 1.0…180 s			700-HT12BU120
	120V AC, OFF-Delay — 11-pin socket (Cat. No. 700-HN126) required 0.1…10 s	1 (hinged), 3R, 3R/4/12, 4/4X (stainless)	0…7	700-HT22AU120
	120V AC, OFF-Delay — 11-pin socket (Cat. No. 700-HN126) required 1.0…180 s	1 (hinged), 3R, 3R/4/12, 4/4X (stainless)	0…7	700-HT22BU120
	**Control Relays**⋆ DPDT 2-pole 2 Form C Single AgNi Contact	1 (hinged), 3R, 3R/4/12, 4/4X (stainless)	0…7	700-HA32A1
	3PDT 3-pole 3 Form C Single AgNi Contact	1 (hinged), 3R, 3R/4/12, 4/4X (stainless)	0…7	700-HA33A1
	**Relay Sockets**⋆ 8-pin socket	1 (hinged), 3R, 3R/4/12, 4/4X (stainless)	0…7	700-HN125
	11-pin socket		0…7	700-HN126

⋆ For combination starters only.

‡ 3-phase power monitor kit includes the time mark phase monitor and socket.

§ Up to two 6-point terminal blocks may be added to each combination starter.

Electrical Ratings

NEMA Size	Load Voltage [V]	Continuous Current Rating [A]	Service Limit Current Rating [A]⋆	Maximum Hp Rating (Non-plugging and non-jogging duty)		Maximum Hp Rating (Plugging and jogging duty)‡		Transformer Primary Switching kVa Rating (Inrush Current ≤ 20 times Continuous Current)		Transformer Primary Switching kVa Rating (Inrush Current = 20 to 40 times Continuous Current)		Capacitor Switching kVAR§	Maximum Circuit Closing Inrush Current [A] Peak Including Offset
				1Ø	3Ø	1Ø	3Ø	1Ø	3Ø	1Ø	3Ø	3Ø	3Ø
00	115 200 230 380 460 575	9	11	1/3 – 1 – – –	– 1-1/2 1-1/2 1-1/2 2 2	1/4 – 1/2 – – –	– 1 1 1 1-1/2 1-1/2	– – – – – –	– – – – – –	– – – – – –	– – – – – –	– – – – – –	87
0	115 200 230 380 460 575	18	21	1 – 2 – – –	– 3 3 5 5 5	1/2 – 1 – – –	– 1-1/2 1-1/2 1-1/2 2 2	0.6 – 1.2 – 2.4 3	– 1.8 2.1 – 4.2 5.2	0.3 – 0.6 – 1.2 1.5	– 0.9 1 – 2.1 2.6	– – – – – –	140
1	115 200 230 380 460 575	27	32	2 – 3 – – –	– 7-1/2 7-1/2 10 10 10	1 – 2 – – –	– 3 3 5 5 5	1.2 – 2.4 – 4.9 6.2	– 3.6 4.3 – 8.5 11	0.6 – 1.2 – 2.5 3.1	– 1.8 2.1 – 4.3 5.3	– – 6 – 13.5 17	288
1P	115 230	36	42	3 5	– –	1-1/2 3	– –	– –	– –	– –	– –	– –	– –
2	115 200 230 380 460 575	45	52	3 – 7-1/2 – – –	– 10 15 25 25 25	2 – 5 – – –	– 7-1/2 10 15 15 15	2.1 – 4.1 – 8.3 10	– 6.3 7.2 – 14 18	1 – 2.1 – 4.2 5.2	– 3.1 3.6 – 7.2 8.9	– – 12 – 25 31	483
3	115 200 230 380 460 575	90	104	7-1/2 – 15 – – –	– 25 30 50 50 50	7-1/2 – 15 – – –	– 15 20 30 30 30	4.1 – 8.1 – 16 20	– 12 14 – 28 35	2 – 4.1 – 8.1 10	– 6.1 7.0 – 14 18	– – 27 – 53 67	947
4	115 200 230 380 460 575	135	156	– – – – – –	– 40 50 75 100 100	– – – – – –	– 25 30 50 60 60	6.8 – 14 – 27 34	– 20 23 – 47 59	3.4 – 6.8 – 14 17	– 10 12 – 23 29	– – 40 – 80 100	1581
5	115 200 230 380 460 575	270	311	– – – – – –	– 75 100 150 200 200	– – – – – –	– 60 75 125 150 150	14 – 27 – 54 68	– 41 47 – 94 117	6.8 – 14 – 27 34	– 20 24 – 47 59	– – 80 – 160 200	3163
6	115 200 230 380 460 575	540	621	– – – – – –	– 150 200 300 400 400	– – – – – –	– 125 150 250 300 300	27 – 54 – 108 135	– 81 94 – 188 234	14 – 27 – 54 68	– 41 47 – 94 117	– – 160 – 320 400	6326
7	230 460 575	810	932	– – –	300 600 600	– – –	– – –	– – –	– – –	– – –	– – –	240 480 600	9470
8	230 460 575	1215	1400	– – –	450 900 900	– – –	– – –	– – –	– – –	– – –	– – –	360 720 900	14205
9	230 460 575	2250	2590	– – –	800 1600 1600	– – –	– – –	– – –	– – –	– – –	– – –	665 1325 1670	25380

⋆ **Service-Limit Current Ratings —** The service-limit current ratings shown represent the maximum rms current, in amperes, which the controller shall be permitted to carry for protracted periods in normal service. At service-limit current ratings, temperature rises shall be permitted to exceed those obtained by testing the controller at its continuous current rating. The current rating of overload relays or the trip current of other motor protective devices used shall not exceed the service-limit current rating of the controller.

‡ **Plugging or Jogging Service —** The listed horsepower ratings are recommended for those applications requiring repeated interruption of stalled motor current encountered in rapid motor reversal in excess of five openings or closings per minute and shall not be more than ten in a ten minute period.

§ If maximum available current (at capacitor terminals) is greater than 3000 A, please contact your local Rockwell Automation sales office, Allen-Bradley distributor, or NEMA ICS-2 Standard.

Mechanical Ratings

NEMA Size	Mechanical Life (Millions of Operations)	Maximum Number of Auxiliary Contacts	Operating Time [ms]	
			Pick-up (Average)	Drop-out (Average)
00	10	5	20	16
0	10	8	21	16
1	10	8	22	14
1P	10	8	22	14
2	10	8	27	13
3	5	8	37	20
4	5	8	27	20
5	5	8	25	18
6	5	4	25…79	10…22
7	–	8	88	40
8	–	8	88	45
9	–	8	118	84

Construction

NEMA Size	Wire Size for Power Terminals	Required Torque on Power Terminal Wire Clamps and Pressure Connectors or Lugs	Type of Power Terminal	Contact Material		Requirements for Sizing of Wire
				Power Contacts	Auxiliary Contacts	
00	#16…10 AWG	9 lb•in	Pressure terminals	Silver alloy	Silver	All wire rated 167 °F (75 °C) or higher must be sized per the local Electrical Code for 167°F (75 °C) wire.
0	#14…10 AWG	20 lb•in	Saddle or wire clamps			
1	#14…8 AWG	20 lb•in				
2	#14…4 AWG	45 lb•in	Pressure terminals			
3	#8…1/0 AWG	150 lb•in				
4	#6…4/0 AWG	275 lb•in				
5	#4 AWG…500 MCM	375 lb•in				
6	Lugs sold separately. See Contactor Accessories .					
7						
8						
9	Direct bus connections only.					

Environmental

NEMA Size	Operating Position	Operating Temperature Range	Altitude	Corrosion-Resistance
00	Horizontal	Starters with eutectic alloy Overload relay -13…+149 °F (-25…+65 °C) Starters with SMP Overload relay -13…+131 °F (-25…+55 °C) (provided condensation is prevented)	10 000 feet before derating	All metal parts are treated for corrosion-resistance
0	Vertical			
1				
1P				
2				
3				
4				
5				
6	Horizontal			
7	Vertical			
8				
9				

Short Circuit Rating

Combination contactors and starters with disconnect switch: Bulletin 502, 506, 512, 522E, 522F, 522G, and 1232X

Combination Contactors and Starters with Disconnect Switch: Bulletin 502, 506, 512, 522E, 522F, 522G, and 1232X			
NEMA Size	**Fuse Type**	**Available Short Circuit Amperes RMS Symmetrical [A]**	**Maximum Voltage [V]**
0...3	H, K	5000	600
4...5	H, K	10 000	
0...5	J, R	100 000	
6	L	18 000	
7	L	18 000	
Combination Lighting Contactors with Disconnect Switch: Bulletin 502L			
Lighting Contactor Rating [A]	**Fuse Type**	**Available Short Circuit Amperes RMS Symmetrical [A]**	**Maximum Voltage [V]**
20...100	H, K	5000	600
200...300	H, K	10 000	
20...300	J, R	100 000	
Combination Contactors and Starters with Circuit Breaker: Bulletin 503, 507, 513, 523E, 523F, 523G, and 1233X⋆			
Enclosure Type	**NEMA Size**	**Available Short Circuit Amperes RMS Symmetrical [A]**	**Maximum Voltage [V]**
1, 3R, 3R/4/12, 4/4X (stainless)	0...2	42 000	480
	3...5	65 000	
Unilock 3R, 7, & 9	0...2	42 000	
	3...5	65 000	
Bolted 3R, 7, & 9	0...2	65 000	
3R, 3R/4/12, 4/4X (stainless)	6	18 000	
	7	25 000	
1, 3R, 3R/4/12, 4/4X (stainless)	0...4	25 000	600
	5	35 000	
Unilock 3R, 7, & 9	0...3	5000	
	4...5	10 000	
Bolted 3R, 7, & 9	0...2	5000	
3R, 3R/4/12, 4/4X (stainless)	6	18 000	
	7	25 000	
Combination Lighting Contactors with Circuit Breaker: Bulletin 503L⋆			
Enclosure Type	**Lighting Contactor Rating [A]**	**Available Short Circuit Amperes RMS Symmetrical [A]**	**Maximum Voltage [V]**
1, 3R, 3R/4/12, 4/4X (stainless)	20...300	65 000	480
Unilock 3R, 7, & 9	20...300	65 000	
Bolted 3R, 7, & 9	20...300	65 000	
1, 3R, 3R/4/12, 4/4X (stainless)	20...300	25 000	600
Unilock 3R, 7, & 9	20...100	5000	
Unilock 3R, 7, & 9	20...300	10 000	
Bolted 3R, 7, & 9	20...300	5000	

⋆ For the most up-to-date SCCRs, please see the on-line Industrial Controls catalog at www.ab.com/catalogs.

Combination Contactors and Starters with Disconnect Switch: Bulletin 502, 506, 512, 522E, 522F, 522G, and 1232X			
NEMA Size	**Fuse Type**	**Available Short Circuit Amperes RMS Symmetrical [A]**	**Maximum Voltage [V]**
0...3	H, K	5000	600
4...5	H, K	10 000	
0...5	J, R	100 000	
6	L	18 000	
7	L	18 000	

AC Coil Data

NEMA Size	Operating Volt Amperes Burden [VA]		Heat Dissipation [W]	Coil Operating Limits
	60 Hz Coils			
	Inrush	Sealed		
00	70	8	2.7	85…110%
0	192	29	5.9	
1 & 1P	192	29	5.9	
2 (2…3 poles)	240	29	5.9	
2 (4…5 poles)	315	38	5.9	
	60 Hz Coils			
	Inrush	Sealed		
00	70	8	2.7	85…110%
0	192	29	5.9	
1 & 1P	192	29	5.9	
2 (2…3 poles)	240	29	5.9	
2 (4…5 poles)	315	38	5.9	
3 (2…3 poles)	660	45	10	
3 (4…5 poles)	840	58	10	
4 (2…3 poles)	1225	69	14.8	
4 (4…5 poles)	1490	96	14.8	
5 (Series L)	1490	96	19.8	
6⋆	4860	254	65.7	
6 (Interposing relay)	52.44	3.96	–	
7‡	Economized DC Coil		–	
7 (Interposing relay)	74.40	9.84	–	
8§	Economized DC Coil		–	
8 (Interposing relay)	74.40	9.84	–	
9♣	Economized DC Coil		–	
9 (Interposing relay)	144	19.20	–	

⋆ This rating is for the size 6 contactor coil only. All starters are shipped with an interposing relay as standard.

‡ Size 7 starters are shipped with a 250 VA control circuit transformer and an interposing relay with a 120V coil. Voltage is then rectified to DC for the contactor coil.

§ Size 8 starters are shipped with a 350 VA control circuit transformer and an interposing relay with a 120V coil. Voltage is then rectified to DC for the contactor coil.

♣ Size 9 starters are shipped with a 750 VA control circuit transformer and an interposing relay with a 120V coil. Voltage is then rectified to DC for the contactor coil.

Auxiliary Contacts (NEMA A600 and P300) — Bulletin 595, 596

Maximum AC Contact Rating Per Pole						
AC Rating Designation	Maximum Voltage 60 or 50 Hz	[A]		Continuous Carrying Current [A]	[VA]	
		Make	Break		Make	Break
A600	120	60	6	10	7200	720
	240	30	3	10	7200	720
	480	15	1.5	10	7200	720
	600	12	1.2	10	7200	720
Maximum DC Contact Rating Per Pole for 595, 596 Auxiliary Contacts (Maximum Continuous Carrying Current is 5 A)						
DC Rating Designation	125V DC		250V DC		600V DC	
P300	0.55 A		0.55 A (Requires 2 Contacts in Series)		–	
	1.1 A (Requires 2 Contacts in Series)					

Load-Life Curves

Bulletin 500 Line contactors and starters are designed to provide superior performance in a variety of applications. These load-life curves are based on Rockwell Automation tests according to the requirements defined in IEC 947-4. Actual contact life may vary based on the application, duty cycle, and environmental conditions from that indicated by the curves.
To find the contactor's estimated electrical life, follow these guidelines:

- Choose the appropriate graph that most closely approximates the utilization category of the application.

- Locate the intersection of the life-load curve of the appropriate contactor with the application's operational current (I_e) found on the horizontal axis.
- Read the estimated contact life in millions of operations along the vertical axis.

Contact Life for Mixed Utilization Categories AC3 and AC4

In many applications, the utilization category cannot be defined as either purely AC3 or AC4. In those applications, the electrical life of the contactor can be estimated from the following equation:

$$L_{mixed} = \frac{L_{AC3}}{1 + P_{AC4}\left(\frac{L_{AC3}}{L_{AC4}} - 1\right)}$$

Where:

L_{mixed} = Approximate contact life for a mixed AC3/AC4 utilization category application

L_{AC3} = Approximate contact life in operations for AC3 utilization category (from AC3 life-load curves below)

L_{AC4} = Approximate contact life in operations for AC4 utilization category (from AC4 life-load curves below)

P_{AC4} = Percentage of AC4 operations

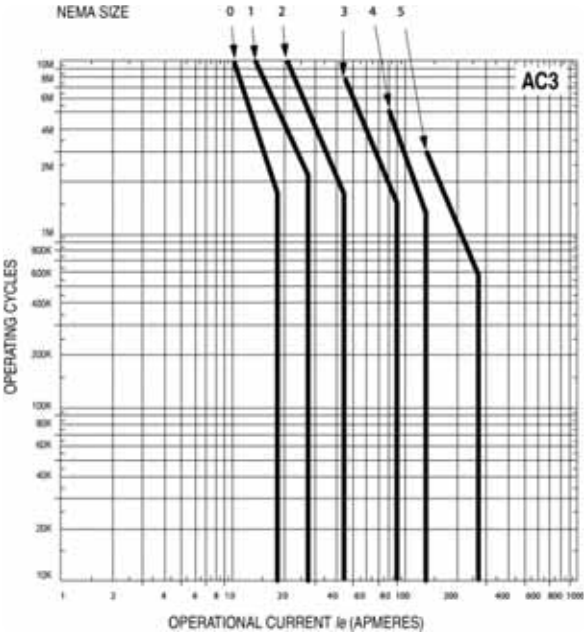
Utilization Categories

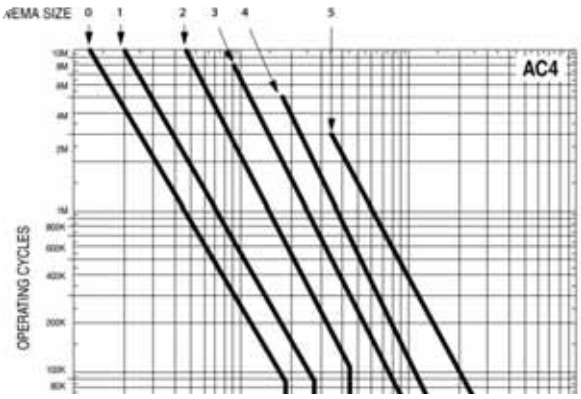
Category Typical Duty

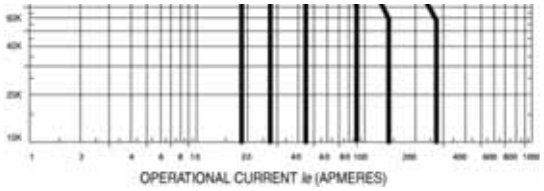
AC3 Starting of squirrel cage motors and switching off only after the motor is up to speed.

AC4 Starting of squirrel cage motors with inching and plugging duty.

Bulletin 500 Load/ Life Curves — AC3 and AC4







Full Load Motor Currents

3-Phase Motor Currents

Full Load Currents of 3-Phase, 60 Hertz AC Induction Motors

The full load currents listed below are “average values” for horsepower rated motors of several manufacturers at the more common rated voltages and speeds. These “average values”, along with the similar values listed in the U. S. National Electrical Code (NEC), should be used only as a guide for selecting suitable components for the Motor Branch Circuit. The rated full load current, shown on the motor nameplate, may vary considerably from the listed value depending on the specific motor design.

ATTENTION: The motor nameplate full load current should always be used in determining the rating of the devices used for Motor Running Overcurrent Protection.

HP	RPM⋆	Full Load Current [A]					
		208V	240V	480V	600V	2200V	4000V
1/4	**3600**	1.20	1.04	0.52	0.42	–	–
	1800	1.39	1.20	0.60	0.48	–	–
	1200	1.62	1.40	0.70	0.56	–	–
	900	–	–	–	–	–	–
1/3	**3600**	1.48	1.28	0.64	0.51	–	–
	1800	1.69	1.46	0.73	0.58	–	–
	1200	1.89	1.64	0.82	0.66	–	–
	900	–	–	–	–	–	–
1/2	**3600**	2.08	1.80	0.90	0.72	–	–
	1800	2.54	2.20	1.10	0.88	–	–
	1200	2.89	2.50	1.25	1.00	–	–
	900	–	–	–	–	–	–
3/4	**3600**	2.89	2.50	1.25	1.00	–	–
	1800	3.47	3.00	1.50	1.20	–	–
	1200	3.81	3.30	1.65	1.32	–	–
	900	–	–	–	–	–	–
1	**3600**	3.51	3.04	1.52	1.22	–	–
	1800	4.25	3.68	1.84	1.47	–	–
	1200	4.60	3.98	1.99	1.59	–	–
	900	–	–	–	–	–	–
1-1/2	**3600**	5.04	4.36	2.18	1.74	–	–
	1800	5.80	5.02	2.51	2.01	–	–
	1200	6.49	5.62	2.81	2.25	–	–
	900	–	–	–	–	–	–
2	**3600**	6.51	5.64	2.82	2.26	–	–
	1800	7.18	6.22	3.11	2.49	–	–
	1200	8.20	7.10	3.55	2.84	–	–
	900	–	–	–	–	–	–
3	**3600**	9.24	8.00	4.00	3.20	–	–
	1800	10.4	9.04	4.52	3.62	–	–
	1200	11.6	10.1	5.04	4.03	–	–
	900	–	–	–	–	–	–
5	**3600**	15.7	13.6	6.80	5.44	–	–
	1800	15.9	13.8	6.88	5.50	–	–
	1200	18.6	16.1	8.07	6.46	–	–
	900	–	–	–	–	–	–
7-1/2	**3600**	22.1	19.1	9.57	7.66	–	–
	1800	25.0	21.7	10.8	8.66	–	–
	1200	26.6	23.1	11.5	9.22	–	–
	900	–	–	–	–	–	–
10	**3600**	29.7	25.7	12.9	10.3	–	–
	1800	31.5	27.3	13.7	10.9	–	–
	1200	32.9	28.4	14.2	11.4	–	–
	900	–	–	–	–	–	–
15	**3600**	43.0	37.2	18.6	14.9	–	–
	1800	46.7	40.4	20.2	16.2	–	–
	1200	49.1	42.5	21.3	17.0	–	–
	900	–	–	–	–	–	–
	600	–	–	–	–	–	–
20	**3600**	59.2	51.3	25.6	20.5	5.2	2.9
	1800	59.6	51.6	25.8	20.6	5.3	3.0
	1200	61.7	53.4	26.7	21.4	5.4	3.1
	900	–	–	–	–	5.8	3.2
	600	–	–	–	–	6.4	3.5
25	**3600**	70.9	61.4	30.7	24.6	6.3	3.4
	1800	74.7	64.7	32.3	25.9	6.5	3.6
	1200	76.0	65.8	32.9	26.3	6.7	3.7
	900	–	–	–	–	6.9	3.8
	600	–	–	–	–	8.1	4.4

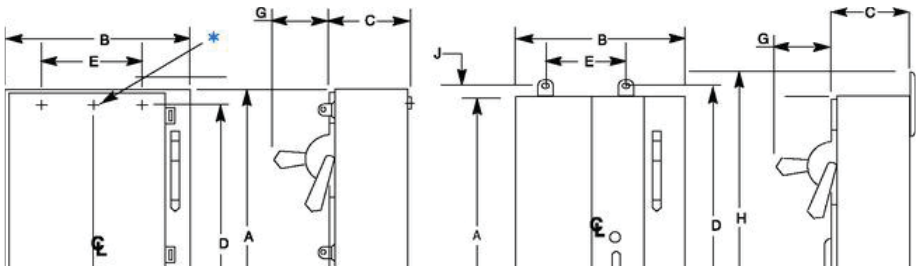
⋆ Synchronous speed nameplate is usually less due to slip.

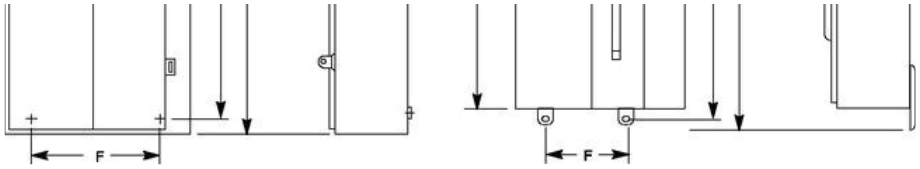
HP	RPM⋆	Full Load Current [A]					
		208V	240V	480V	600V	2200V	4000V
50	**3600**	141	122	61.2	49.0	–	–
	1800	144	125	62.3	49.8	12.3	6.8
	1200	147	127	63.4	50.7	12.4	6.8
	900	–	–	–	–	13.1	7.2
	600	–	–	–	–	14.2	7.8
60	**3600**	165	143	71.6	57.3	–	–
	1800	172	149	74.3	59.4	14.6	8.0
	1200	173	150	74.9	59.9	14.9	8.2
	900	–	–	–	–	15.4	8.5
	600	–	–	–	–	16.7	9.2

75	**3600**	204	177	88.5	70.8	–	–
	1800	211	183	91.4	73.1	18.0	9.9
	1200	215	186	93.1	74.5	18.2	10.0
	900	–	–	–	–	19.0	10.5
	600	–	–	–	–	21.0	11.6
100	**3600**	267	231	116	92.6	–	–
	1800	276	239	119	95.5	23.6	13.0
	1200	281	243	122	97.2	24.2	13.3
	900	–	–	–	–	24.8	13.6
	600	–	–	–	–	26.4	14.5
	450	–	–	–	–	29.8	16.4
125	**3600**	333	288	144	115	–	–
	1800	340	294	147	118	29.2	16.1
	1200	347	300	150	120	29.9	16.4
	900	–	–	–	–	30.9	17.0
	720	–	–	–	–	31.3	17.2
	600	–	–	–	–	32.8	18.0
	450	–	–	–	–	36.0	19.8
150	**3600**	397	344	172	138	–	–
	1800	404	350	175	140	34.8	19.1
	1200	414	358	179	143	35.5	19.5
	900	–	–	–	–	37.0	20.4
	720	–	–	–	–	37.0	20.4
	600	–	–	–	–	38.8	21.3
	450	–	–	–	–	42.0	23.1
200	**3600**	524	454	227	182	–	–
	1800	531	460	230	184	46.7	25.7
	1200	538	466	233	186	47.0	25.9
	900	–	–	–	–	49.4	27.2
	720	–	–	–	–	49.0	27.0
	600	–	–	–	–	50.9	28.0
	450	–	–	–	–	53.7	29.5
250	**3600**	642	556	278	222	–	–
	1800	658	570	285	228	57.5	31.6
	1200	682	590	295	236	58.5	32.2
	900	–	–	–	–	61.5	33.8
	720	–	–	–	–	61.5	33.8
	600	–	–	–	–	61.0	33.6
	450	–	–	–	–	65.3	35.9
	360	–	–	–	–	70.0	38.5
300	**3600**	774	670	335	268	–	–
	1800	790	684	342	274	69.0	38.0
	1200	804	696	348	278	70.0	38.5
	900	–	–	–	–	73.5	40.4
	600	–	–	–	–	72.3	39.8
	450	–	–	–	–	76.0	41.8
	360	–	–	–	–	82.8	45.5
350	**3600**	–	748	374	299	–	–
	1800	–	762	381	305	–	–
	1200	–	774	387	310	–	–
400	**3600**	–	874	437	350	–	–
	1800	–	892	446	357	–	–
	1200	–	902	451	361	–	–
450	**3600**	–	972	486	389	–	–
	1800	–	992	496	397	–	–
	1200	–	1004	502	402	–	–
500	**3600**	–	1074	537	430	–	–
	1800	–	1096	548	438	–	–
	1200	–	1108	554	443	–	–

Approximate dimensions are shown in inches (millimeters). Dimensions are not intended to be used for manufacturing purposes.

Type 1 (Enclosure Code "A") General Purpose Painted Enclosure for Bulletins 500, 500L, 502, 502L, 503, 503L, 505, 506, 506X, 507, 507X, 509, 512, 512M, 512V, 513, 513M, 513V, 520E, 520F, 520G, 522E, 522F, 522G, 523E, 523F, 523G, 530, 532, 533, 540, 542, 543, 570, 572 and 573



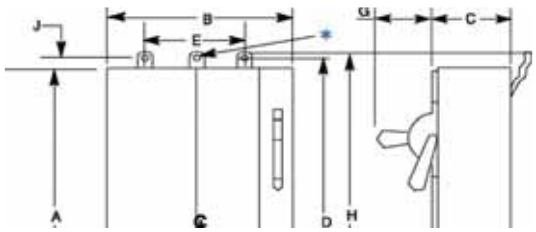


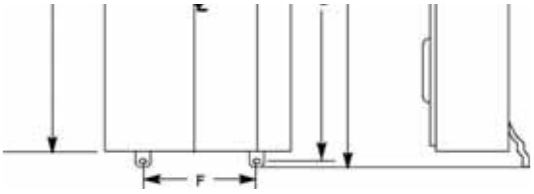
Size 1…4 Size 5

NEMA Size	Bulletin No.	Approximate Dimensions in Inches (Millimeters)							Approx. Shipping Weight [lb (kg)]
		A Height	B Width	C Depth	D Mounting	E Mounting	F Mounting	G Handle Depth	
0…2	506X, 507X	27.50 (968)	10.50 (267)	8.25 (210)	25.13 (639)	*	5.25 (133)	5.56 (141)	40 (18.14)
0…2	502, 502L, 503, 503L, 512, 513								
0…2	506, 507, 512M, 513M, 522E, 522F, 522G, 523E, 523F, 523G	30 (762)	20.5 (521)	9.88 (251)	27.63 (702)	15.25 (387)	15.25 (387)	5.56 (141)	90 (40.82)
3	502, 502L, 503, 503L, 505, 512, 513, 520E, 520F, 520G								
4	500, 500L, 503, 503L, 509, 513								
1PW, 2PW	530, 532, 533								
1YD	540, 542, 543								
3	506, 507, 522E, 522F, 522G, 523E, 523F, 523G	50 (1270)	22 (559)	11.19 (284)	47.63 (1210)	15.25 (387)	15.25 (387)	5.56 (141)	250 (113.4)
4	500LP, 505, 506, 507, 520E, 520F, 520G, 522E, 522F, 522G, 523E, 523F, 523G								
	502, 502L, 512								
5	500, 500L, 505, 509, 520E, 520F, 520G								
3PW	530, 532, 533								
2YD, 3YD	540, 542, 543								
2	570, 572, 573								
5	502, 502L, 503, 503L, 506, 506X, 507, 507X, 512, 513, 523E, 523F, 523G	56 (1422)	30.5 (775)	13.79 (350)	57.63 (1463)	20 (508)	25.25 (641)	7.62 (194)	360 (163.3)
6	500, 500L,505, 509, 520E								
4PW	530, 532, 533								
5PW	532, 533								
4YD	540, 542, 543								
3, 4	570, 572, 573								
5YD	540, 542, 543	60 (1524)	37.38 (949)	16.00 (406)	61.69 (1567)	33.88 (861)	33.88 (861)	7.62 (194)	420 (190.5)
5, 6	570, 572, 573								
5	522E, 522F, 522G								
5PW	530								

* Sizes 0, 1, and 2 have one top mounting hole located on the center line. Larger size enclosures have two top mounting holes located as shown.

Type 3R/4/12 (Enclosure Codes "D", "F", and "J") Rainproof, Dusttight — Industrial Use Enclosures for Bulletins 500, 500L, 502, 502L, 503, 503L, 505, 506, 506X, 507, 507X, 509, 512, 512M, 512V, 513, 513M, 513V, 520E, 520F, 520G, 522E, 522F, 522G, 523E, 523F, 523G, 530, 532, 533, 540, 542, 543, 570, 572 and 573





NEMA Size	Bulletin No.	Approximate Dimensions in Inches (Millimeters)									Approx. Shipping Weight [lb (kg)]
		A Height	B Width	C Depth	D Mounting	E Mounting	F Mounting	G Handle Depth	H	J	
0...2	506X, 507X	27.50 (698)	10.50 (267)	8.25 (210)	28.88 (733)	*	5.25 (133)	5.56 (141)	29.88 (759)	0.81 (21)	40 (18.14)
	502, 507, 503, 503L, 512, 513										
	506, 507, 512M, 513M, 522E, 522F, 522G, 523E, 523F, 523G	30 (762)	20.5 (521)	10.19 (259)	31.38 (797.05)	15.25 (387)	15.25 (387)	5.56 (141)	32.38 (822)	0.81 (21)	90 (40.82)
3	502, 507, 503, 503L, 505, 512, 513, 520E, 520F, 520G										
4	500, 500L, 509, 513										
1PW, 2PW	530, 532, 533										
1YD	540, 542, 543										
3	506, 507, 522E, 522F, 522G, 523E, 523F, 523G	50 (1270)	22 (559)	11.5 (292)	51.38 (1305)	15.25 (387)	15.25 (387)	5.56 (141)	52.38 (1330)	0.71 (18)	250 (113.4)
4	500LP, 502, 502L, 505, 507, 512, 520E, 520F, 520G, 522E, 522F, 522G, 523E, 523F, 523G										
5	500, 500L, 509, 520E, 520F, 520G										
3PW	530, 532, 533										
2YD, 3YD	540, 542, 543										
2	570, 572, 573										
4PW	530, 532, 533	56 (1422)	30.5 (775)	13.79 (350)	57.63 (313)	20 (508)	25.25 (641)	7.62 (194)	62.62 (1590)	1 (25.4)	360 (163.3)
5PW	532, 533										
4YD	540, 542, 543										
3, 4	570, 572, 573										
5	502, 502L, 503, 503L, 506, 512, 513, 523E, 523F, 523G										
6	500, 500L, 505, 509, 512‡ , 513, 520E										
6	512§	60 (1524)	37.38 (949)	16 (906)	61.69 (1567)	33.88 (861)	33.88 (861)	7.62 (194)	63.5 (1613)	1.5 (38)	420 (190.5)
5	522E, 522F, 522G										
5PW	530										
5YD	540, 542, 543										
5, 6	570, 572, 573										
7	512, 513	84 (2134)	39.5 (1003)	18 (457)	–	–	–	7.62 (194)	–	–	650 (249.8)

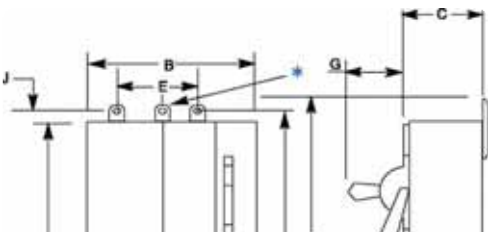
* Sizes 0, 1, and 2 have one top mounting hole located on the center line. All sizes in large enclosures have two top mounting holes located as shown.

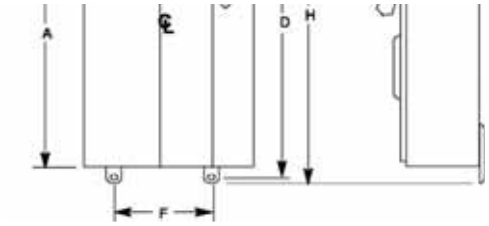
‡ Fusible disconnect switch with Class J fuses.

§ Fusible disconnect switch with Class R fuses.

Approximate dimensions are shown in inches (millimeters). Dimensions are not intended to be used for manufacturing purposes.

Type 4/4X (Enclosure Codes "C") Stainless Steel — Industrial Use Enclosures for Bulletins 500, 500L, 502, 502L, 503, 503L, 505, 506, 507, 509, 512, 512M, 513, 513M, 520E, 520F, 520G, 522E, 522F, 522G, 523E, 523F, and 523G



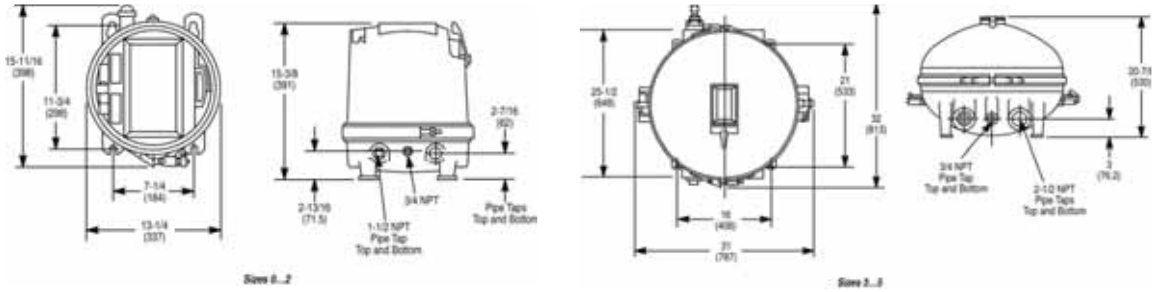


NEMA Size	Bulletin No.	A Height	B Width	C Depth	D Mounting	E Mounting	F Mounting	G Handle Depth	H	J	Approx. Shipping Weight [lb (kg)]
0...2	502, 502L, 503, 503L, 512, 513	27.50 (698)	10.50 (267)	8.25 (210)	28.88 (733)	*	7 (178)	5.56 (141)	29.75 (756)	0.81 (21)	40 (18.14)
0...2	506, 507, 512M, 513M, 522E, 522F, 522G, 523E, 523F, 523G,	30 (762)	20.5 (521)	9.88 (251)	31.38 (797)	17 (432)	17 (432)	5.56 (141)	32.26 (819)	0.81 (21)	90 (40.82)
3	502, 502L, 503, 503L, 505, 512, 513, 520E, 520F, 520G										
4	500, 500L, 503, 503L, 509, 513										
3	506, 507, 522E, 522F, 522G, 523E, 523F, 523G	50 (1270)	22 (559)	11.19 (284)	51.38 (1305)	18.5 (470)	18.5 (470)	5.56 (141)	52.26 (1327)	0.81 (21)	250 (113.4)
4	500LP, 502, 502L, 505, 506, 507, 512, 520E, 520F, 520G, 522F, 523G, 523E, 523F, 523G										
5	500, 500L, 505, 509, 520E, 520F, 520G										
5...6	503, 503L 507, 513, 523E, 523F, 523G	56 (1422)	30.5 (775)	12.34 (313)	57.63 (1464)	20 (508)	25.25 (641)	5.56 (141)	58.62 (1489)	1 (25.4)	360 (163.3)
5	512							7.62 (194)			
6	500, 500L, 505, 509, 512‡ , 520E										
5...6	502, 502L 506										

* Sizes 0, 1, and 2 have one top mounting hole located on the center line. All sizes in large enclosures have two top mounting holes located as shown.

‡ Fusible disconnect switch with Class J fuses.

Unilock Enclosures — Type 3R, 7 & 9, Class I (Enclosure Code "U") Groups C & D, Class II, Groups E, F & G — Divisions 1& 2 for Bulletins 505, 509, and 513



Bolted Enclosures — Type 3R, 7 & 9, Class I, Groups C & D, Class II, Groups E, F, & G — Divisions 1 & 2 for Bulletins 503, 503L, 507, 513 Starters

NEMA Size	Bulletins 503, 503L, 513		Bulletin 507	
	with CCT*	without CCT*	with CCT*	without CCT*
0	Figure 3A	Figure 3A	Figure 3B‡	Figure 3A
1	Figure 3A	Figure 3A	Figure 3B‡	Figure 3A
2	Figure 3A	Figure 3A	Figure 3B	Figure 3B

3	Figure 3B	Figure 3B	Figure 3C	Figure 3C
4	Figure 3C	Figure 3C	Figure 3D	Figure 3D
5	Figure 3D	Figure 3D	—	—

⋆ CCT=Control circuit transformer

‡ Figure 3A should be used for 80VA maximum transformers.

Figure 3A

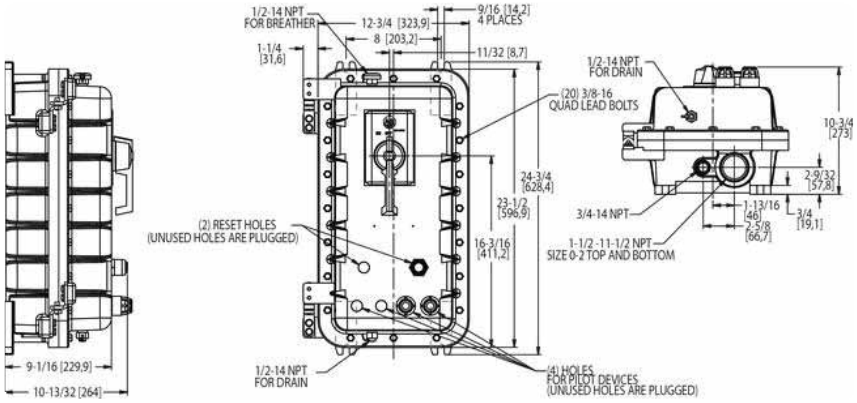


Figure 3B

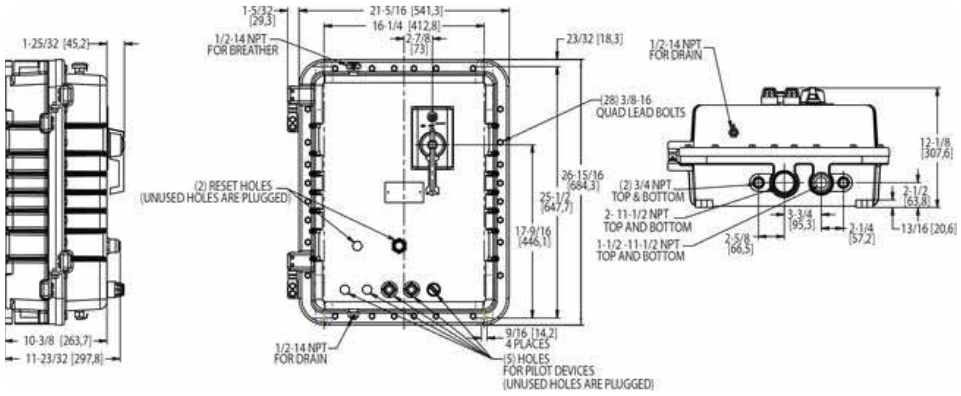


Figure 3C

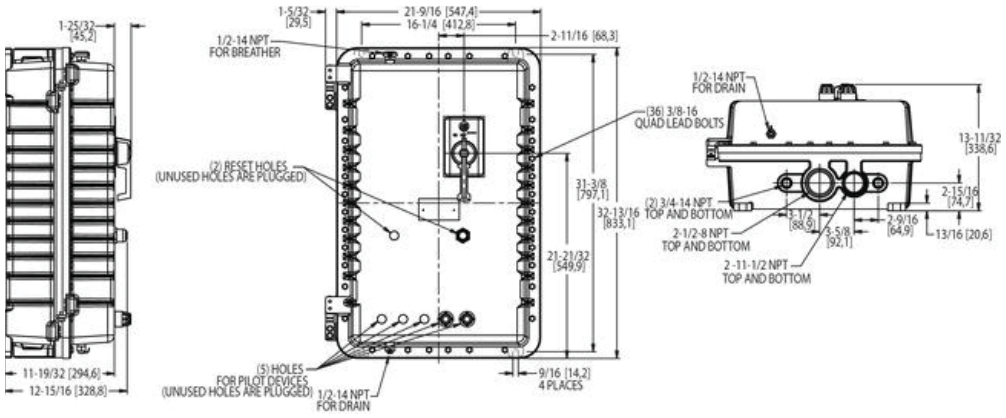
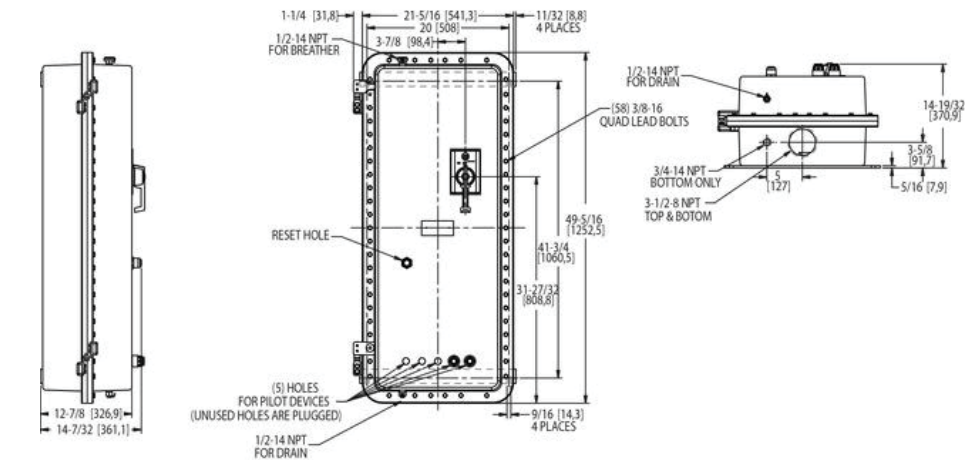


Figure 3D



Used on Size 00, Series D

Used on Size 0…5

AC Operating Coils

Voltage [V]	Frequency [Hz]	Size 00	Size 0…1 Size 15/20…30 A		Size 2 Size 60 A	
		Series D	2-…3-Pole⋆ ‡	4-Pole⋆ 4-…5-Pole‡	2-Pole⋆ 2-…3-Pole‡	3-…4-Pole⋆ 4-…5-Pole‡
		Part. No.				
24	50	TA407	–	–	–	–
	60	TA013	CB013		CC013	CC013C
110 120	50 60	TA473	CB236		CC236	CC236C
200…208	60	TA049	CB249		CC249	CC249C
220 240	50 60	TA474♣	CB254		CC254	CC254C
277	60	TA480	CB260		CC260	CC260C
380	50	TA071	CB354	CB354C	CC354	CC354C
415	50	TA457	CB357	CB357C	CC357	CC357C
440 480	50 60	TA475	CB273		CC273	CC273C
		–				
550	50	TA476	CB278		CC278	CC278C
600	60					

Voltage [V]	Frequency [Hz]	Size 3 Size 100 A		Size 4 Size 200 A		Size 5 Size 300 A	
		2-Pole⋆ 2-…3-Pole‡	3-…4-Pole⋆ 4-…5-Pole‡	2-Pole⋆ 2-…3-Pole‡	3-…4-Pole⋆ 4-…5-Pole‡	Series L	
		Part. No.					
24	60	CD013	CD013C	–	–	–	–
110 120	50 60	CD236	CD236C	CE236	CE236C	AF236	
200…208	60	CD249	CD249C	CE249	CE249C	AF249	
220 240	50 60	CD254	CD254C	CE254	CE254C	AF254	
277	60	CD260	CD260C	CE260	CE260C	AF260	
380	50	CD354	CD354C	CE354	CE354C	AF354	
415	50	CD357	CD357C	CE357	CE357C	AF357	
440 480	50 60	CD273	CD273C	CE273	CE273C	AF273	
550 600	50 60	CD278	CD278C	CE278	CE278C	AF278	

⋆ For non-motor loads (Bulletin 500L).

‡ For motor rated contactors and starters.

♣ Also for 240V, 60Hz.

Single Pole Contact Kit — Sizes 00…5 (Includes Front and Rear Stationary Contact, Movable Contact and Contact Spring)

Motor Rated Contactors and Starters (Bulletin 500, 505, 509, and 520)		
Size		Part No.
0	§	40410-331-51
1	§	40410-331-52
1P	§	40410-331-55
2	§	40420-322-51
3		40430-300-51

Non-Motor Rated Contactors (Bulletin 500L)			
Size	No. of Poles		Part No.
15/20 A	2…3	§	40410-331-53
30 A	2…3	§	40410-331-54
60 A	2…3	§	40420-322-52
100 A	2…3		40430-300-52
	4		40430-300-53
200 A	2…3		40440-325-52

	4	40440-300-51		4	40440-325-53
	—		300 A (Series A)	2	Z-34119
				3	Z-34120
	5 (Series L&1)	42450-805-01	300 A (Series L)	2...3	42450-805-02
	6 (Series B,C,&1)	40783-802-02	540A (Series B&C)	3	40783-802-02

Manual Reset (Eutectic Alloy) Overload Relays
Heater Elements — *Order heater elements as a separate item. See* ***Eutectic Alloy Overload Relay Heater Elements*** *for heater element selection tables.*

Size	Cat. No.	
3-Phase or 1-Phase (3 elements)		
00 (Series B & D)	592-JOV16	
0, 1	592-EUTB	
2	592-EUTC	
3	592-EUTD	
4	592-EUTE	
5	592-BOV16	
1-Phase (1 element)		
Size	**Part No.**	
00 (Series B & D)	Cat. No. 592-BOV4	
0, 1	♦	42185-804-01
1P	♦	40185-803-01
2	♦	40185-804-01
3	♦	40185-805-01

Note: Auxiliary contacts on Size 3 and 4 overload relays are replaceable. Order Cat. No. 595-A34. See Overload Accessories for complete information.

§ Not for use on Power Pole Adders. Replace complete Power Pole Adder Kit with one selected from the listing on Contactor Accessories .

♦ Mounting plate is not included.

Power Pole Adder Kit (Used Only for 4- and 5-Pole Devices)

Motor Rated Contactors and Starters	
Size	**Cat. No.**
0...1	599-P01A
2	599-P2A
3	599-P3A
4	599-P4A
Non-Motor Rated Contactors	
Rating [A]	**Part No.**
15/20	40410-452-04
30	40410-452-08
60	40420-452-04
100	40430-453-51
200	40440-452-51
300	42450-600-01