

Modifications — Factory Installed

NEMA Combination Contactors/Starters

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	A	A	A	A	A	A	NA	NA		
		1	3R/4/12, 4/4X	A	A	A	A	A	A	A	A		
		1	Bolted	A	A	A	A	A	A	A	NA		
		1	Unilock	A	A	A	A	A	A	NA	NA		
	ON-OFF push button	1E	1	A	A	A	A	A	A	A	NA	NA	
		1E	3R/4/12, 4/4X	A	A	A	A	A	A	A	A	A	
		1E	Bolted	A	A	A	A	A	A	A	NA	NA	
		1E	Unilock	A	A	A	A	A	A	NA	NA		
	START-STOP illuminated push button	1L	1	A	A	A	A	A	A	A	NA	NA	
		1L	3R/4/12, 4/4X	A	A	A	A	A	A	A	NA	NA	
	HAND-OFF-AUTO selector switch	3	1	A	A	A	A	A	A	A	NA	NA	
		3	3R/4/12, 4/4X	A	A	A	A	A	A	A	A	A	
		3	Bolted	A	A	A	A	A	A	A	NA	NA	
		3	Unilock	A	A	A	A	A	A	NA	NA		
	OFF-ON selector switch	3E	1	A	A	A	A	A	A	A	NA	NA	
		3E	3R/4/12, 4/4X	A	A	A	A	A	A	A	A	A	
		3E	Bolted	A	A	A	A	A	A	A	NA	NA	
		3E	Unilock	A	A	A	A	A	A	NA	NA		
	HAND-AUTO selector switch	3H	1	A	A	A	A	A	A	A	NA	NA	
		3H	3R/4/12, 4/4X	A	A	A	A	A	A	A	A	A	
		3H	Bolted	A	A	A	A	A	A	A	NA	NA	
		3H	Unilock	A	A	A	A	A	A	NA	NA		
PILOT LIGHT	Transformer Type — incandescent bulb	4*⌘	1, 3R/4/12, 4/4X, 3R	A	A	A	A	A	A	A	A		
		4*⌘	Bolted	A	A	A	A	A	A	NA	NA		
		4*⌘	Unilock	A	A	A	A	A	A	NA	NA		
Transformer Type—LED bulb		4L*⌘	1, 3R/4/12, 4/4X, 3R	A	A	A	A	A	A	A	A		
PUSH-TO-TEST PILOT LIGHT Transformer—incandescent bulb		5*⌘	1, 3R/4/12, 4/4X, 3R	A	A	A	A	A	A	A	A		
		5*⌘	Bolted	A	A	A	A	A	A	A	A		
		5L*⌘	1, 3R/4/12, 4/4X, 3R	A	A	A	A	A	A	A	A		
START-STOP push button and HAND-OFF-AUTO selector switch (unwired)			13	1	A	A	A	A	A	A	A		
			13	3R/4/12, 4/4X	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 (7 & 9)	A	A	A	A	A	A	NA	NA	
	FOR-OFF-REV selector switch (Bulletin 506...507)		3	1, 3R/4X12, 4/4X, 3R	A	A	A	A	A	A	NA	NA	
			3	Bolted	A	A	A	A	A	A	NA	NA	
			3	Unilock	A	A	A	A	A	A	NA	NA	
	HAND-AUTO		3H	1	A	A	A	A	A	A	A	NA	NA
			3H	3R/4/12, 4/4X,	A	A	A	A	A	A	A	NA	NA
			3H	Bolted	A	A	A	A	A	A	A	NA	NA
			3H	Unilock	A	A	A	A	A	A	A	NA	NA
	HIGH-LOW-STOP push button	Bulletin 522...523	1	1, 3R/4/12, 4/4X	A	A	A	A	A	A	A	NA	NA
		Bulletin 523	1	Bolted	A	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	A	NA	NA
		Bulletin 523	3	Bolted	A	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	A	NA	NA
		Transformer Type—LED Bulb	4L†	1, 3R/4/12, 4/4X	A	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	A	NA	NA
Transformer—LED Bulb		5L*	1, 3R/4/12, 4/4X	A	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; **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**.

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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, Continued

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	6P	1, 3R/4X/12, 4/4X, 3R	A	A	A	A	A	A	A	A
	With standard capacity with fuse covers	6PC	1, 3R/4X/12, 4/4X, 3R	A	A	A	A	A	A	A	A
	With standard capacity, 60 or 50 Hz	6P	Bolted*	A	A	A	A	A	A	NA	NA
	With standard capacity, 60 or 50 Hz	6P	Unilock*	A	A	A	A	A	A	NA	NA
	With 100 W extra capacity, 60 or 50 Hz	6XP	1, 3R/4X/12, 4/4X, 3R	A	A	A	A	A	A	A	A
	With 100 W extra capacity with fuse covers	6XPC	1, 3R/4X/12, 4/4X, 3R	A	A	A	A	A	A	A	A
	With 100 W extra capacity, 60 or 50 Hz	6XP	Bolted*	A	A	A	A	A	A	NA	NA
	With 100 W extra capacity, 60 or 50 Hz	6XP	Unilock*	A	A	A	A	A	A	NA	NA
	With 200VA capacity	6XXP	1, 3R/4X/12, 4/4X, 3R	A	A	A	NA	NA	NA	NA	NA
	With 200VA capacity with fuse covers	6XXPC	1, 3R/4X/12, 4/4X, 3R	A	A	A	NA	NA	NA	NA	NA
	With 200 W extra capacity, 60 or 50 Hz	6YP	1, 3R/4X/12, 4/4X, 3R	A	A	A	A	A	A	NA	NA
	With 200 W extra capacity with fuse covers	6YPC	1, 3R/4X/12, 4/4X, 3R	A	A	A	A	A	A	NA	NA
	With 300 W extra capacity, 60 or 50 Hz	6YYP	1, 3R/4X/12, 4/4X, 3R	A	A	A	A	A	A	NA	NA
	With 300 W extra capacity with fuse covers	6YYP	1, 3R/4X/12, 4/4X, 3R	A	A	A	A	A	A	NA	NA
Auxiliary Contacts	Auxiliary contact installed on contactors	N.O. 90† N.C. 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. 98 N.C. 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. 98 N.O. 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. 99 N.C. 99 N.C. 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
	1 Fuse — Fuse Included	21	1, 3R/4X/12, 4/4X, 3R	A	A	A	A	A	A	A	A
	1 Fuse with Protective Cover — Fuse Included	21C	1, 3R/4X/12, 4/4X, 3R	A	A	A	A	A	A	A	A
	2 Fuses — Fuses Included	22	1, 3R/4X/12, 4/4X, 3R	A	A	A	A	A	A	A	A
	2 Fuse with Protective Cover — Fuse Included	22C	1, 3R/4X/12, 4/4X, 3R	A	A	A	A	A	A	A	A
	Surge suppression for 120V or 240V AC Coil	17	1, 3R/4X/12, 4/4X, 3R Bolted* Unilock*	A	A	A	A	A	A	NA	NA
Control Circuit	Terminal blocks (Cat No. 1492-HC6)	6-Point Block TB6	1, 3R/4X/12, 4/4X, 3R	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
	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
Overload Relays (Eutectic Alloy)	N.C. alarm contact adder (Bulletin 592)	9A	1, 3R/4X/12, 4/4X, 3R Bolted* Unilock*	A	A	A	A	A	A	NA	NA
	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
	Omit overload relays	23	1, 3R/4X/12, 4/4X, 3R Bolted* Unilock*	A	A	A	A	A	A	NA	NA
	For Bulletins 522, 523 Deduct	23	1, 3R/4X/12, 4/4X, 3R Bolted* Unilock*	A	A	A	A	A	A	NA	NA
Accessories	3-phase Powermonitor (Timemark Model 258)	400	1, 3R/4X/12, 4/4X, 3R	A	A	A	A	A	A	A	A
	Bulletin 596 (used on Bulletin 500...509), 3-pole maximum	On Delay 87A Off Delay 87B	1, 3R/4X/12, 4/4X, 3R Bolted (3R, 7 & 9) Unilock (7 & 9)	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	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	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	A	A	A	A	A	A	NA	NA

A = Available

NA = Not Available

* 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. 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.



Allen-Bradley

www.ab.com/catalogs Preferred availability cat. nos. are bold.

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NEMA Combination Contactors/Starters

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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		Breather	136	Bolted*	A	A	A	A	A	A	NA	NA
	Enclosure	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	412	1, 3R/4/12, 3R	A	A	A	A	A	S	S	S
		Stainless steel	413	4/4X	A	A	A	A	A	S	S	S
		Molded plastic (deduct)	419	1, 3R/4/12, 4/4X, 3R	A	A	A	A	A	NA	NA	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	415	1, 3R/4/12, 4/4X, 3R	A	A	A	A	A	A	A	A
		3-Pole	416		A	A	A	A	A	A	A	A
	Timing Relay (Plug-In)	On-Delay	417	1, 3R/4/12, 4/4X, 3R	A	A	A	A	A	A	A	A
		Off-Delay	418		A	A	A	A	A	A	A	A
	Electrical Interlock	Early Break (1 N.O. and 1 N.C.)	420	1, 3R/4/12, 4/4X, 3R	A	A	A	A	A	A	NA	NA
		Early Break (2 N.O. and 2 N.C.)	421	1, 3R/4/12, 4/4X, 3R	A	A	A	A	A	A	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	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.



Contactors Accessories

For use on Bulletins 500, 500F, 500L, 500FL, 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.
	0...1	Coils (60 Hz) 115...120V CB-236
		200...208V CB-249
		230...240V CB-254
		460...480V CB-273
		575...600V CB-278
	2	115...120V CC-236
		200...208V CC-249
		230...240V CC-254
		460...480V CC-273
		575...600V CC-278
	3	115...120V CD-236
		200...208V CD-249
		230...240V CD-254
		460...480V CD-273
		575...600V CD-278
	4	115...120V CE-236
		200...208V CE-249
		230...240V CE-254
		460...480V CE-273
		575...600V CE-278
	5 (SER. L)	115...120V AF-236
		200...208V AF-249
		230...240V AF-254
		460...480V AF-273
		575...600V AF-278

Note: For complete listing of coils available, see page 1-157

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
			100-FSC280
			100-FSC480
	Varistor Module AC/DC Operating Mechanism 12...55V AC/ 12...77V DC	00*	100-FSV55
			100-FSV136
			100-FSV277
			100-FSV575
			599-K04
			599-KA04
			199-FSMA1*
			199-GSMA1†
	120V AC	7...8	700-N24

Cat. No. 100-FSC280

Cat. No. 599-K04

* For non-combination starters only.

* For use on the interposing relay.

† For use on the contactor or starter.

Description	NEMA Size	Cat. No.
	0...1 2 3 4 5	599-TC01N
		599-TC2N
		599-TC3N
		599-TC4N
		599-TC5N
	0...1 0...2	599-TC01R
		599-TP02
	3...5	599-TP34

Description	For Use With	No. of Poles	NEMA Size	Cat. No.
	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
	509	3	5	599-PS5 ➤

⚡ Used on 5-pole contactors and starters.

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

Accessories — Field Installed

NEMA Non-Combination Contactors/Starters and Combination Contactors/Starters

Contactor Accessories, continued

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

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 $\pm 10\%$ 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 [T-1678929] 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	100-FPTA30
	On-Delay	100-FPTA180
	Off-Delay	100-FPTB30
	Off-Delay	100-FPTB180
Left-hand ON Delay	00§	596-TL32
		596-TL33
		596-TR32
		596-TR33
Left-hand OFF Delay	0...5	596-TL32
		596-TL33
		596-TR32
		596-TR33

Cat No. 596-TR32

§ For open type, non-combination starters only.

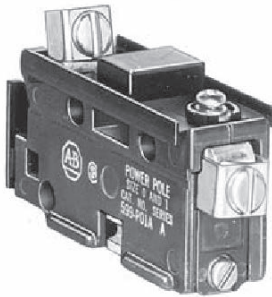
Description	NEMA Size	Cat. No.
Auxiliary Contact — Contactors	1 N.O.	595-A
	2 N.O.	595-AA
	1 N.C.	595-B
	2 N.C.	595-BB
	1 N.O. and N.C.	595-AB
	1 N.C.L.B.	595-BL
	1 N.O.	195-GA10
	1 N.O.	1495-J6
	2 N.O.	195-GA20
	2 N.O.	1495-K6
	2 N.O.	1495-K8
	1 N.C.	195-GB01
	1 N.C.	1495-J6
	2 N.C.	195-GB02
	2 N.C.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

♣ 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.	599-P01A
	1 N.C.	599-P01B
	1 N.C. Late Break	599-P01BL
	1 N.O.	599-P2A
1 N.C.	2	599-P2B
	1 N.C. Late Break	599-P2BL
	1 N.O.	599-P3A
	1 N.C.	599-P3B
1 N.O.	4	599-P4A
	1 N.C.	599-P4B

Cat. No. 599-P01A (1 N.O.)
Size 0...1, 27 Amps.

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
2 of #1/0...350 MCM Wire	5	42450-804-01

Cat. No. 1494R-N3

* 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
	Terminal Lug Kit	#4 AWG...500 MCM 3 required per terminal for Size 7 and 4 required per terminal for Size 8
	6	199-LJ1
	7...8	199-LG1

Contactor Accessories, continued

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	NEMA Size	Cat. No.
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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.**



4-pole

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 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 24...240V AC coil of the contactor. **Fits on Open Type devices only.**



—	00	100-JE
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Latch Attachment — On the front of the contactor. **Fits on Open Type devices only.**



—	00	100-FL11 ⊗
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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.



Cat No. 599-TW01

—	0...1	599-TW01
—	2	599-TW2
—	3	599-TW3
—	4	599-TW4
—	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.



Accessories — Field Installed

NEMA Non-Combination Contactors/Starters and Combination Contactors/Starters

Contactor Accessories, continued

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

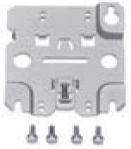
For use on Bulletins 512V, 513V, 1232V, 1233V

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* Contact Ratings — NEMA A600 (10 A, 600V AC max.) NEMA P300 (5 A, 300V DC max.)	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
	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 page 8-39.

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 page 8-39.



Voltage Control Accessories, continued

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

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.

‡ 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	1...3	1401-N42
	0...30 A, 600V AC, Class H		
	0...30 A, 600V AC, Class J		
	31...60 A, 250V AC, Class H		
	31...60 A, 250V AC, Class J	1...3	1401-N43
	31...60 A, 600V AC, Class H		
	31...60 A, 600V AC, Class J		
	61...100 A, 250V AC, Class H	2...4	1401-N44
	61...100 A, 250V AC, Class J		
	61...100 A, 600V AC, Class H		
	61...100 A, 600V AC, Class J		
	101...200 A, 250V AC, Class H	3...5	1401-N45
	101...200 A, 250V AC, Class J		
	101...200 A, 600V AC, Class H		
	101...200 A, 600V AC, Class J		
	201...400 A, 250V AC, Class H	4...5	1401-N46
	201...400 A, 250V AC, Class J		
	201...400 A, 600V AC, Class H		
	201...400 A, 600V AC, Class J		
	0...30 A, 250V AC, Class R	0...2*	1401-N50
	0...30 A, 600V AC, Class R		1401-N51
	31...60 A, 250V AC, Class R		
	31...60 A, 600V AC, Class R	1...3	1401-N52
	61...100 A, 250V AC, Class R	2...4	1401-N53
	61...100 A, 600V AC, Class R		
	101...200 A, 250V AC, Class R	3...5	1401-N54
	101...200 A, 600V AC, Class R		
	201...400 A, 250V AC, Class R	5...6	1401-N55
	201...400 A, 600V AC, Class R		
	0...30 A, 250V AC HRC Form II Fusing*	0...2* 1...3	⌘
	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*		
	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.

Accessories — Field Installed

NEMA Non-Combination Contactors/Starters and Combination Contactors/Starters

Disconnect Switch Accessories, continued

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

1



Cat. No. 1494R-N3

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	#6...250 MCM AWG 16 mm ² ...120 mm ²		1494R-N14
400	#4 AWG...500 MCM Wire (oversized)		1494R-N15
600	(2) of #1/0...350 MCM Wire	1491-N621 or 1491- R621 600 A fuse blocks	§ 1494R-N10
600	(2) of #1/0...350 MCM Wire		♣ 1494R-N11



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

* 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.

♣ Each kits contains two lugs.

➤ Switch with right-hand mechanism.

⌘ Switch with left-hand mechanism.

Accessories — Field Installed

NEMA Non-Combination Contactors/Starters and Combination Contactors/Starters

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

1

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).

Pilot Device Accessories, continued

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.	
	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❄❄❄	120V AC	1 (lift-off)	00...2	599-PLLD
		240V AC			599-PLLA
	Optional Pilot Light Lens Covers		All	0...5	800T-N26R
	Red				800T-N26G
	Green				800T-N26A
Amber		800T-N26B			
Blue		800T-N26C			
Clear		800T-N26W			
White					
ON (Unilock 120V) — Red❄§		3R, 7 & 9 (Unilock)	0...5	1481-N56A120P	
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		All	0...5	800T-N40
	Red				800T-N41
	Green				800T-N42
	Amber				800T-N43
	Blue				800T-N45
Clear		800T-N44			
White					
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.

⚡ 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.



Accessories — Field Installed

NEMA Non-Combination Contactors/Starters and Combination Contactors/Starters

Pilot Device Accessories, continued

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.
	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		—	—
	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 page 10-2)	
Additional pilot devices	4/4X, 4X	0...9	Use Bulletin 800H Type 4X devices (See page 10-2)	
Additional pilot devices (bolted)	3R, 7 & 9	0...9	Use Bulletin 800H Type 7 & 9 devices (See page 10-152)	

* 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.

NEMA Non-Combination Contactors/Starters and Combination Contactors/Starters

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	4, 4X (stainless steel and non-metallic)	0...1	1490-N1
	1/2 in. (12.7 mm)			1490-N9
	3/4 in. (19 mm)			1490-N10
	1 in. (24.5 mm)		2	1490-N11
	1-1/4 in. (31.75 mm)			1490-N5
	1-1/2 in. (38.1 mm)		3	1490-N6
	2 in. (50.8 mm)		4	1490-N7
	2-1/2 in. (63.5 mm)		5	1490-N8
	Grounding Adapters	4, 4X (stainless steel and non-metallic)*	0...1	1490-N19
	1/2 in. (12.7 mm), #14...10 AWG			1490-N20
	3/4 in. (19 mm), #14...8 AWG			1490-N21
	1 in. (24.5 mm), #14...8 AWG		2	1490-N22
	1-1/4 in. (31.75 mm), #14...4 AWG			1490-N23
	1-1/2 in. (38.1 mm), #8...1/0 AWG		3	1490-N24
	2 in. (50.8 mm), #8...1/0 AWG		4	1490-N25
	2-1/2 in. (63.5 mm), #6...2/0 AWG		5	1490-N26
	Handle Kits with Universal Link for Switch and Breaker	1, 3R, 3R/4/12*	0...4	1494F-M1
	Painted Metal 5-1/2 in. base			1494F-M2
	Painted Metal 7-1/2 in. base	4/4X (stainless steel)	0...4	1494F-S1
	Stainless Steel 5-1/2 in. base			1494F-S2
	Stainless Steel 7-1/2 in. base	1, 3R, 3R/4/12, 4/4X (non-metallic)	0...4	1494F-P1
	Nonmetallic Handle 5-1/2 in. base			
	Hole Plugs	All	0...5	800T-N1
	30.5 mm hole plug for pilot devices			598-N1
	19.5 mm hole plug for resets and door safety hardware			

* For combination starters only.

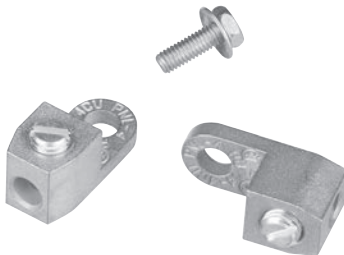
* Bulletin 1490 grounding adapters are available for use with these conduit hubs. These bushings provide a convenient method of connecting a ground wire to the conduit system. See conduit connector (hub) above proper size.

Accessories — Field Installed

NEMA Non-Combination Contactors/Starters and Combination Contactors/Starters

For use on Bulletins 500, 500F, 500L, 500LP, 502, 502L, 503, 503L, 505, 505V, 506, 506X, 507, 507X, 509, 512, 512M, 512V, 513, 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

Enclosure Accessories, continued

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 G♣‡		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 G♣‡			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 G♣‡			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 — Unilock♣	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.

♣ 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.



NEMA Specifications

NEMA Non-Combination and Combination Contactors/Starters

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		
00	115	9	11	1/3	—	1/4	—	—	—	—	—	—	87
	200			—	1-1/2	—	1	—	—	—	—	—	
	230			1	1-1/2	1/2	1	—	—	—	—	—	
	380			—	1-1/2	—	1	—	—	—	—	—	
	460			—	2	—	1-1/2	—	—	—	—	—	
	575			—	2	—	1-1/2	—	—	—	—	—	
0	115	18	21	1	—	1/2	—	0.6	—	0.3	—	—	140
	200			—	3	—	1-1/2	—	1.8	—	0.9	—	
	230			2	3	1	1-1/2	1.2	2.1	0.6	1	—	
	380			—	5	—	1-1/2	—	—	—	—	—	
	460			—	5	—	2	2.4	4.2	1.2	2.1	—	
	575			—	5	—	2	3	5.2	1.5	2.6	—	
1	115	27	32	2	—	1	—	1.2	—	0.6	—	—	288
	200			—	7-1/2	—	3	—	3.6	—	1.8	—	
	230			3	7-1/2	2	3	2.4	4.3	1.2	2.1	6	
	380			—	10	—	5	—	—	—	—	—	
	460			—	10	—	5	4.9	8.5	2.5	4.3	13.5	
	575			—	10	—	5	6.2	11	3.1	5.3	17	
1P	115	36	42	3	—	1-1/2	—	—	—	—	—	—	—
	230			5	—	3	—	—	—	—	—	—	
2	115	45	52	3	—	2	—	2.1	—	1	—	—	483
	200			—	10	—	7-1/2	—	6.3	—	3.1	—	
	230			7-1/2	15	5	10	4.1	7.2	2.1	3.6	12	
	380			—	25	—	15	—	—	—	—	—	
	460			—	25	—	15	8.3	14	4.2	7.2	25	
	575			—	25	—	15	10	18	5.2	8.9	31	
3	115	90	104	7-1/2	—	7-1/2	—	4.1	—	2	—	—	947
	200			—	25	—	15	—	12	—	6.1	—	
	230			15	30	15	20	8.1	14	4.1	7.0	27	
	380			—	50	—	30	—	—	—	—	—	
	460			—	50	—	30	16	28	8.1	14	53	
	575			—	50	—	30	20	35	10	18	67	
4	115	135	156	—	—	—	—	6.8	—	3.4	—	—	1581
	200			—	40	—	25	—	20	—	10	—	
	230			—	50	—	30	14	23	6.8	12	40	
	380			—	75	—	50	—	—	—	—	—	
	460			—	100	—	60	27	47	14	23	80	
	575			—	100	—	60	34	59	17	29	100	
5	115	270	311	—	—	—	—	14	—	6.8	—	—	3163
	200			—	75	—	60	—	41	—	20	—	
	230			—	100	—	75	27	47	14	24	80	
	380			—	150	—	125	—	—	—	—	—	
	460			—	200	—	150	54	94	27	47	160	
	575			—	200	—	150	68	117	34	59	200	
6	115	540	621	—	—	—	—	27	—	14	—	—	6326
	200			—	150	—	125	—	81	—	41	—	
	230			—	200	—	150	54	94	27	47	160	
	380			—	300	—	250	—	—	—	—	—	
	460			—	400	—	300	108	188	54	94	320	
	575			—	400	—	300	135	234	68	117	400	
7	230	810	932	—	300	—	—	—	—	—	—	240	9470
	460			—	600	—	—	—	—	—	—	480	
	575			—	600	—	—	—	—	—	—	600	
8	230	1215	1400	—	450	—	—	—	—	—	—	360	14205
	460			—	900	—	—	—	—	—	—	720	
	575			—	900	—	—	—	—	—	—	900	
9	230	2250	2590	—	800	—	—	—	—	—	—	665	25380
	460			—	1600	—	—	—	—	—	—	1325	
	575			—	1600	—	—	—	—	—	—	1670	

* **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
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 page 1-113.					
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				
2				
3				
4				
5				
6	Horizontal			
7	Vertical			
8				
9				

Bulletin 500 Line
NEMA Specifications
 NEMA Non-Combination and Combination Contactors/Starters

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...5	65 000	480
Unilock 3R, 7, & 9	0...5	65 000	
Bolted 3R, 7, & 9	0...2	65 000	
1, 3R, 3R/4/12, 4/4X (stainless)	0...5	25 000	600
Unilock 3R, 7, & 9	0...3	5000	
Unilock 3R, 7, & 9	4...5	10 000	
Bolted 3R, 7, & 9	0...2	5000	
3R, 3R/4/12	6...7	10 000	
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.

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	
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^P) found on the horizontal axis.
- Read the estimated contact life in millions of operations along the vertical axis.

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.

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:

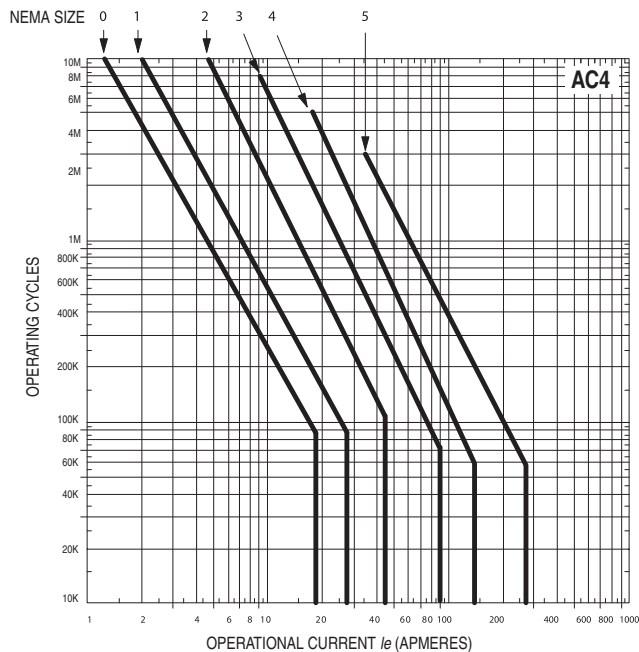
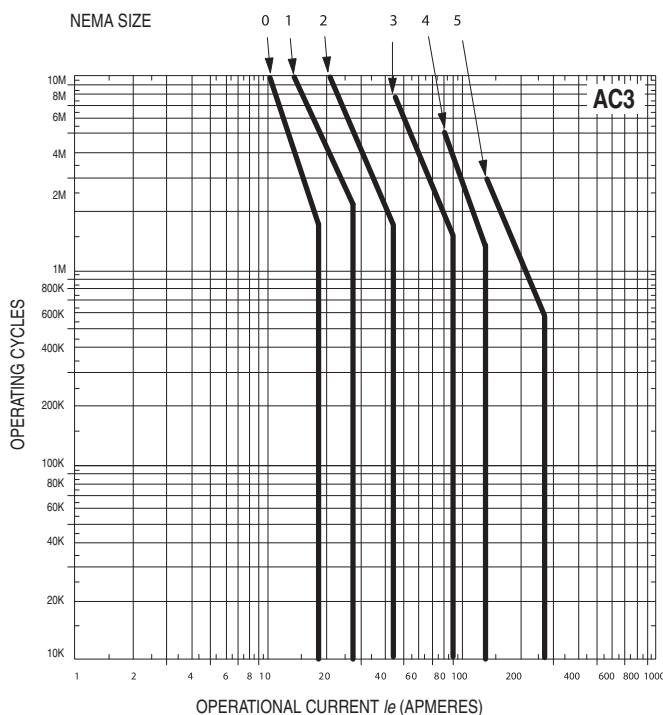
L_{mixed} = Approximate contact life for a mixed AC3/AC4 utilization category application

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

Bulletin 500 Load/ Life Curves — AC3 and AC4



Group Motor Ratings for NEMA Contactors/Starters

Manual Starters	FLA Range (Amps)	Group Rating (480V)		Contactors				
		w/o Limiter	with Limiter	Size 00	Size 0	Size 1	Size 2	Size 3
140-MN-0016	0.10...0.16	42 kA	42 kA	500-TO*	500-AO*	500-BO*	—	—
140-MN-0025	0.16...0.25	42 kA	42 kA	500-TO*	500-AO*	500-BO*	—	—
140-MN-0040	0.25...0.40	42 kA	42 kA	500-TO*	500-AO*	500-BO*	—	—
140-MN-0063	0.40...0.63	42 kA	42 kA	500-TO*	500-AO*	500-BO*	—	—
140-MN-0100	0.63...1.0	42 kA	42 kA	500-TO*	500-AO*	500-BO*	—	—
140-MN-0160	1.0...1.6	42 kA	42 kA	500-TO*	500-AO*	500-BO*	—	—
140-MN-0250	1.6...2.5	42 kA	42 kA	500-TO*	500-AO*	500-BO*	—	—
140-MN-0400	2.5...4.0	42 kA	42 kA	500-TO*	500-AO*	500-BO*	—	—
140-MN-0630	4.0...6.3	42 kA	42 kA	500-TO*	500-AO*	500-BO*	—	—
140-MN-1000	6.3...10.0	42 kA	42 kA	500-TO*	500-AO*	500-BO*	—	—
140-MN-1600	10.0...16.0	10 kA	42 kA	—	500-AO*	500-BO*	500-CO*	—
140-MN-2000	16.0...20.0	10 kA	14 kA	—	500-AO*	500-BO*	500-CO*	—
140-MN-2500	20.0...25.0	10 kA	10 kA	—	—	500-BO*	500-CO*	—
190-MN+190-P320	24.0...32.0	—	42 kA	—	—	—	500-CO*	500-DO*
190-MN+190-P400	32.0...42.0	—	30 kA	—	—	—	500-CO*	500-DO*

Manual Starters	FLA Range (Amps)	Group Rating (480V)		Starters				
		w/o Limiter	with Limiter	Size 00	Size 0	Size 1	Size 2	Size 3
140-MN-0016	0.10...0.16	42 kA	42 kA	509-TO*	509-AO*	509-BO*	—	—
140-MN-0025	0.16...0.25	42 kA	42 kA	509-TO*	509-AO*	509-BO*	—	—
140-MN-0040	0.25...0.40	42 kA	42 kA	509-TO*	509-AO*	509-BO*	—	—
140-MN-0063	0.40...0.63	42 kA	42 kA	509-TO*	509-AO*	509-BO*	—	—
140-MN-0100	0.63...1.0	42 kA	42 kA	509-TO*	509-AO*	509-BO*	—	—
140-MN-0160	1.0...1.6	42 kA	42 kA	509-TO*	509-AO*	509-BO*	—	—
140-MN-0250	1.6...2.5	42 kA	42 kA	509-TO*	509-AO*	509-BO*	—	—
140-MN-0400	2.5...4.0	42 kA	42 kA	509-TO*	509-AO*	509-BO*	—	—
140-MN-0630	4.0...6.3	42 kA	42 kA	509-TO*	509-AO*	509-BO*	—	—
140-MN-1000	6.3...10.0	42 kA	42 kA	509-TO*	509-AO*	509-BO*	—	—
140-MN-1600	10.0...16.0	10 kA	42 kA	—	509-AO*	509-BO*	509-CO*	—
140-MN-2000	16.0...20.0	10 kA	14 kA	—	509-AO*	509-BO*	509-CO*	—
140-MN-2500	20.0...25.0	10 kA	10 kA	—	—	509-BO*	509-CO*	—
190-MN+190-P320	24.0...32.0	—	42 kA	—	—	—	509-CO*	509-DO*
190-MN+190-P400	32.0...42.0	—	30 kA	—	—	—	509-CO*	509-DO*

* Cat. No. is incomplete. Refer to page 1-31.

* Cat. No. is incomplete. Refer to page 1-46.

NEMA Specifications

NEMA Non-Combination and Combination Contactors/Starters

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	—	—	—	—	—	—
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
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
30	3600	85.7	74.2	37.1	29.7	—	—
	1800	88.2	76.4	38.2	30.5	7.8	4.3
	1200	91.6	79.3	39.7	31.7	8.0	4.4
	900	—	—	—	—	8.2	4.5
40	3600	111	96.0	48.0	38.4	—	—
	1800	117	102	50.8	40.6	10.0	5.5
	1200	119	103	51.7	41.4	10.3	5.7
	900	—	—	—	—	10.6	5.8
600	3600	—	—	—	—	11.5	6.3

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
60	3600	—	—	—	—	14.2	7.8
	1800	165	143	71.6	57.3	—	—
	1200	172	149	74.3	59.4	14.6	8.0
	900	173	150	74.9	59.9	14.9	8.2
75	3600	—	—	—	—	15.4	8.5
	1800	204	177	88.5	70.8	—	—
	1200	211	183	91.4	73.1	18.0	9.9
	900	215	186	93.1	74.5	18.2	10.0
100	3600	—	—	—	—	19.0	10.5
	1800	267	231	116	92.6	—	—
	1200	276	239	119	95.5	23.6	13.0
	900	281	243	122	97.2	24.2	13.3
125	3600	—	—	—	—	24.8	13.6
	1800	—	—	—	—	26.4	14.5
	1200	—	—	—	—	29.8	16.4
	900	—	—	—	—	—	—
150	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
200	3600	—	—	—	—	31.3	17.2
	1800	—	—	—	—	32.8	18.0
	1200	—	—	—	—	36.0	19.8
	900	—	—	—	—	—	—
250	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
300	3600	—	—	—	—	37.0	20.4
	1800	—	—	—	—	38.8	21.3
	1200	—	—	—	—	42.0	23.1
	900	—	—	—	—	—	—
350	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
400	3600	—	—	—	—	49.0	27.0
	1800	—	—	—	—	50.9	28.0
	1200	—	—	—	—	53.7	29.5
	900	—	—	—	—	—	—
450	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
500	3600	—	—	—	—	61.5	33.8
	1800	—	—	—	—	61.0	33.6
	1200	—	—	—	—	65.3	35.9
	900	—	—	—	—	70.0	38.5
600	3600	—	—	—	—	—	—
	1800	774	670	335	268	—	—
	1200	790	684	342	274	69.0	38.0
	900	804	696	348	278	70.0	38.5
700	3600	—	—	—	—	73.5	40.4
	1800	—	—	—	—	72.3	39.8
	1200	—	—	—	—	76.0	41.8
	900	—	—	—	—	82.8	45.5
800	3600	—	748	374	299	—	—
	1800	—	762	381	305	—	—
	1200	—	774	387	310	—	—
	900	—	—	—	—	—	—
900	3600	—	874	437	350	—	—
	1800	—	892	446	357	—	—
	1200	—	902	451	361	—	—
	900	—	—	—	—	—	—
1000	3600	—	972	486	389	—	—
	1800	—	992	496	397	—	—
	1200	—	1004	502	402	—	—
	900	—	—	—	—	—	—
1100	3600	—	1074	537	430	—	—
	1800	—	1096	548	438	—	—
	1200	—	1108	554	443	—	—
	900	—	—	—	—	—	—

* Synchronous speed nameplate is usually less due to slip.

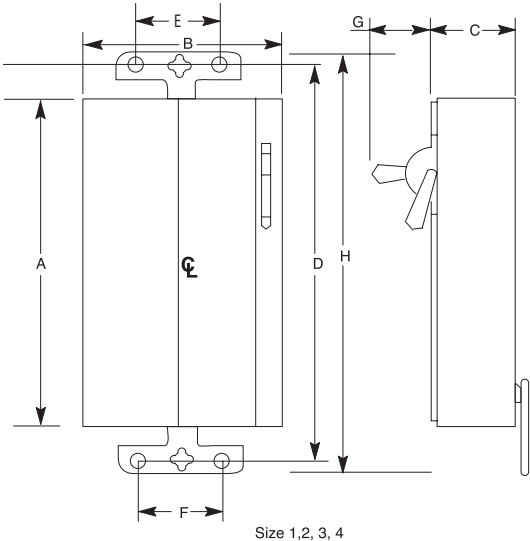
Bulletin 500 Line

Approximate Dimensions

For NEMA AC Contactors

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

Type 3R (Enclosure Code "N") Rainproof - Narrow Enclosure for Bulletins 1232 and 1233



NEMA Size	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	
1...2	27.50 (698)	10.5 (267)	8.26 (210)	28.88 (733)	*	7 (178)	5.56 (141)	29.75 (756)	40 (18.14)
3	30 (762)	20.5 (521)	8.72 (221)	34.88 (886)	10 (254)	10 (254)	5.56 (141)	36.38 (924)	90 (40.82)

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

Bulletin 500 Line of Contactors and Starters (excluding Modular Kits)



Used on Size 00, Series B



Used on Size 00, Series D



Used on Size 0...5

1

AC Operating Coils							
Voltage [V]	Frequency [Hz]	Size 00		Size 0...1 Size 15/20...30 A		Size 2 Size 60 A	
		Series B	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	GA407	TA407	—	—	—	—
	60	GA013	TA013	CB013		CC013	CC013C
110 120	50	GA473‡	TA473	CB236		CC236	CC236C
	60	—					
200...208	60	GA049	TA049	CB249		CC249	CC249C
220 240	50	GA474§	TA474§	CB254		CC254	CC254C
	60	—					
277	60	GA060	TA480	CB260		CC260	CC260C
380	50	GA454	TA071	CB354	CB354C	CC354	CC354C
415	50	GA457	TA457	CB357	CB357C	CC357	CC357C
440 480	50	GA475	TA475	CB273		CC273	CC273C
	60	—	—				
550	50	—	TA476	CB278		CC278	CC278C
600	60	GA476					
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	CD236	CD236C	CE236	CE236C	AF236	
	60						
200...208	60	CD249	CD249C	CE249	CE249C	AF249	
220 240	50	CD254	CD254C	CE254	CE254C	AF254	
	60						
277	60	CD260	CD260C	CE260	CE260C	AF260	
380	50	CD354	CD354C	CE354	CE354C	AF354	
415	50	CD357	CD357C	CE357	CE357C	AF357	
440 480	50	CD273	CD273C	CE273	CE273C	AF273	
	60						
550 600	50 60	CD278	CD278C	CE278	CE278C	AF278	

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

* For motor rated contactors and starters.

‡ Also for 120V, 60Hz.

§ Also for 240V, 60Hz.

Bulletin 500 Line of Contactors and Starters (excluding Modular Kits), Continued

1

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)			Non-Motor Rated Contactors (Bulletin 500L)			
Size	†	Part No.	Size	No. of Poles	†	Part No.
0	‡	40410-331-51	15/20 A	2...3	‡	40410-331-53
1	‡	40410-331-52	30 A	2...3	‡	40410-331-54
1P	‡	40410-331-55	60 A	2...3	‡	40420-322-52
2	‡	40420-322-51	100 A	2...3		40430-300-52
				4		40430-300-53
3		40430-300-51	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)		42450-805-01	300 A (Series L)	2...3		42450-805-02
6 (Series B&C)		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 page 1-167 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 page 1-112 for complete information.

‡ Not for use on Power Pole Adders. Replace complete Power Pole Adder Kit with one selected from the listing on page 1-112.

➤ 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

Starters Without Overload Relays for Field Assembly of Starters Using Bulletin 592 Overload Relays ❖

These products are intended for field installation of Bulletin 592 Eutectic, or 592 electronic overload relays (select Bulletin 592 overload relays from page 1-161...page 1-164). The overload relays ship in a starter carton with provisions for mounting the overload relay (includes a starter mounting plate, screws/bolts, and instructions).

Eutectic Alloy Overload Relays — Overload relay codes do not apply. Use Cat. No. as listed in the product selection tables. Select heater elements from page 1-167.

❖ All Sizes — No overload relay.

Bulletins 520, 522, and 523 require two overload relays.

Bulletins 530, 1282, and 1283 require two overload relays. When selecting the proper electronic overload relay or heater, divide motor nameplate full load amperes by 2.00. Use this value to select the proper overload relays.

Bulletins 540, 1242, and 1243 have one overload relay. When selecting the proper electronic overload relay or heater, divide motor nameplate full load amperes by 1.73. Use this value to select the proper overload relays.

E1 Plus Solid-State Three-Phase Overload Relay (Selectable Class 10, 20, or 30) (Automatic/Manual Reset)

For use with Bulletins 505, 505V, 506, 507, 509, 512, 512M, 513, 520, 522, 523, 530, 532, 533, 540, 542, 543, 570, 572, 573, 1232, 1232X, 1233, 1233X, 1242, 1243, 1272, 1273, 1282, and 1283. ⚡ ➤ ❖

NEMA Size	Full Load Current Adjustment Range [A]	Overload Relay Code
		Class 10, 15, 20, 30
00	0.1...0.5	A2A
	0.2...1.0	A2C
	1.0...5.0	A2E
	3.2...16	A2F
0, 1 1PW 1YD	0.2...1.0	A2C
	1.0...5.0	A2E
	3.2...16	A2F
	5.4...27	A2G
1	9...45	A2J
	5.4...27	A2G
2 2PW 2YD	9...45	A2J
	18...90	A2L
3 3PW 3YD	30...150	A2M
	60...300	A2N
4 4PW 4YD	120...600	A2R
	256...810	A2T
5	384...1215	A2U
6	800...2250	A2V

E1 Plus Solid-State Single-Phase Overload Relay (Selectable Class 10, 20, or 30) (Automatic/Manual Reset)

For use with Bulletins 505, 505V, 506, 507, 509, 512, 512M, 513, 520, 522, 523, 530, 532, 533, 540, 542, 543, 570, 572, 573, 1232, 1232X, 1233, 1233X, 1242, 1243, 1272, 1273, 1282, and 1283. ⚡ ➤ ❖

NEMA Size	FLC Adjustment Range [A]	Overload Relay Code
00	1.0...5.0	S2E
	3.2...16	S2F
	5.4...27	S2G
0...2	1.0...5.0	S2E
	3.2...16	S2F
	5.4...27	S2G
	9...45	S2J
3	18...90	S2L

➤ These overload relays have an interposing relay with a 120V AC coil.

⚡ Bulletins 520, 522, and 523 require two overload relay codes to complete the Cat. No. The first code will denote the high speed overload relay and the second code will denote the low speed overload relay.

➤ Bulletins 530, 532, 533, 1282, and 1283 have two overload relays and require two overload relay codes to complete the Cat. No. When selecting the proper overload relay, divide motor nameplate full load amperes by 2.00. Use this value to select the proper overload relay codes.

❖ Bulletins 540, 542, 543, 1242, and 1243 have one overload relay. When selecting the proper overload relay, divide motor nameplate full load amperes by 1.73. Use this value to select the proper overload relay code.

E3 Electronic Overload Relay: 2 Inputs/1 Output

For use with Bulletins 509, 512, 512M, 513, 530, 532, 533, 540, 542, 543, 570, 572, 573, 1232, 1232X, 1233, 1233X, 1242, 1243, 1272, 1273, 1282, and 1283.

NEMA Size	FLC Adjustment Range [A]	Overload Relay Code❖
00	1...5	EC1A
	3...15	EC1B
0...2	1...5	EC1A
	3...15	EC1B
	5...25	EC1C
	9...45	EC1D
3	9...45	EC1D
	18...90	EC1E
4	28...140	EC1F
5	60...302	EC1H
6	125...630	EC1K

E3 Plus Electronic Overload Relay: 4 Inputs/2 Outputs, Built-In Ground Fault Sensor, PTC Thermistor Input

For use with Bulletins 505, 505V, 506, 507, 509, 512, 512M, 513, 520, 522, 523, 530, 532, 533, 540, 542, 543, 570, 572, 573, 1232, 1232X, 1233, 1233X, 1242, 1243, 1272, 1273, 1282, and 1283; **excluding Modular Kits.***

NEMA Size	FLC Adjustment Range [A]	Overload Relay Code❖
00	1...5	EC2A
	3...15	EC2B
0...2	1...5	EC2A
	3...15	EC2B
	5...25	EC2C
	9...45	EC2D
3	9...45	EC2D
	18...90	EC2E
4	28...140	EC2F
5	60...302	EC2H

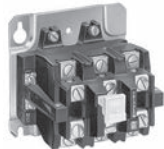
* Bulletin 520 requires two overload relay codes to complete the cat. no. The first code will denote the high speed overload relay and the second code will denote the low speed overload relay.

❖ Rockwell Automation recommends using 120 or 240V AC coils on all NEMA Starters with E3 or E3 Plus electronic overload relays. When using coil voltages other than 120 or 240V AC, consult your local Rockwell Automation sales office or Allen-Bradley distributor.



Overload Relays

1

					
Bulletin	592-EE	592-EC1	592-EC2/EC3	592-EC5	592
Type	E1 Plus Electronic Overload Relay	E3 Electronic Overload Relay	E3 Plus Electronic Overload Relay	E3 Plus Electronic Overload Relay	Eutectic Alloy Overload Relay
Rated Current (Range)	0.1...800 A	0.4...5000 A			0.2...2250 A
NEMA Operating Voltage, Nominal	600V				
IEC Operating Voltage, Nominal	690/1000V	690/1000V			—
Overload Type	Electronic	Microprocessor-Based			Euctectic Alloy
Trip Class (Fixed)	—	—			10, 20, 30
Trip Class (Adjustable)	10, 15, 20, 30	5...30			—
Ambient Temperature Compensated	✓	✓	✓	✓	—
Reset Type	Automatic and Manual	Automatic and Manual	Automatic and Manual	Automatic and Manual	Manual Only
Adjustment Range	5:1	5:1	5:1	5:1	—
Phase Loss	3 s	Adjustable Delay	Adjustable Delay	Adjustable Delay	—
Ground (Earth) Fault	Optional	—	Sensitive	Sensitive	—
Overcurrent (Jam) Detection	Optional	✓	✓	✓	—
Stall Detection	—	✓	✓	✓	—
Underload Detection	—	✓	✓	✓	—
Current Imbalance	—	✓	✓	✓	—
PTC Thermistor Monitoring	Optional	—	✓	✓	—
Warning Settings	—	✓	✓	✓	—
N.C. Trip Contact	✓	✓	✓	✓	✓
N.O. Alarm Contact	✓	—	—	—	✓ (Option)
No. of Outputs	—	1	2	2	—
No. of Inputs	—	2	4	6	—
ODVA (DeviceNet) Conformance	Optional	✓	✓	✓	—
Variable Frequency Drive (VFD) Compatible	—	✓	✓	✓	✓
Voltage Detection	—	—	—	✓	—
Power Monitoring	—	—	—	✓	—
Product Selection	Page 1-161	Page 1-163			Page 1-164

NEMA Pump Control Panels

Product Overview/Product Selection



Bulletin 1232 - NEMA Pump Control Panels — Narrow Enclosure

- Narrow enclosure size when extra panel space is not required
- NEMA starter sizes 1...3
- Fusible disconnect switch
- Painted metal enclosure: Type 3R
- Overload relays: Eutectic supplied as standard, solid-state available as an option.
- Modifications — factory installed
- Accessories — field installed
- Service entrance rated

A Bulletin 1232 pump control panel (with fusible disconnect switch) consists of a Bulletin 509 starter mounted in an enclosure.

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 Approximate Dimensions..... 1-150

Standards Compliance

UL 508
 CSA C22.2 No. 14

Certifications

cULus Listed (File No. E125316, Guide No. NKJH, NKJH7)

Heater Elements — Starters with eutectic alloy overload relays require 3 heater elements. Located on page 1-167.

NEMA Size	Continuous Ampere Rating [A]	Maximum Horsepower Rating Full Load Current Must Not Exceed Continuous Ampere Rating				Line Voltage [V]	Fuse Clip Rating Amperes [A] Fuses not included. Select per NEC ⚡	Type 3R Rainproof with Narrow Enclosure Cat. No.*
		AC Motor Voltage						
		60 Hz	60 Hz	50 Hz	60 Hz			
		200V	230V	380...415V	460...575V			
1	27	7-1/2	7-1/2	—	—	208...240	30	1232-BN⚡-⚡-24
		—	—	10	10	480...600	30	1232-BN⚡-⚡-24
		7-1/2	7-1/2	—	—	208...240	60	1232-BN⚡-⚡-25
		—	—	10	10	480...600	60	1232-BN⚡-⚡-25
2	45	10	15	—	—	208...240	60	1232-CN⚡-⚡-25
		—	—	25	25	480...600	60	1232-CN⚡-⚡-25
		10	15	—	—	208...240	100	1232-CN⚡-⚡-26
		—	—	25	25	480...600	100	1232-CN⚡-⚡-26
3	90	25	30	—	—	208...240	100	1232-DN⚡-⚡-26
		—	—	50	50	480...600	100	1232-DN⚡-⚡-26
		25	30	—	—	208...240	200	1232-DN⚡-⚡-27
		—	—	50	50	480...600	200	1232-DN⚡-⚡-27

* Class R fuse clips can be supplied as a factory option in place of Class H clips. To order Class R fuse clips, add an "R" after the cat. no. Example: **Cat. No. 1232-BN - -24** becomes **Cat. No. 1232-BN - -24R**. Class H fuse clips will accept Class R fuses. However, only Class R fuse clips are the rejection type which limit their use to Class R fuses. To order Class J fuse clips, add a "J" after the cat. no. Example: **Cat. No. 1232-BN - -24** becomes **Cat. No. 1232-BN - -24J**.

⚡ Some applications may require time-delay fuses when this size fuse clip is used.

⊗ 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. 1232-BNØ-Ø-24** becomes **Cat. No. 1232-BNA-Ø-24**. For other voltages, consult your local Rockwell Automation sales office or Allen-Bradley distributor.

Voltage⚡ [V]		208	230...240	460...480	575...600
Common Control	AC, 60 Hz	H	A	B	C
Transformer Control§		AD	AD	CD	CD
120V Separate Control (without transformer)		AD	AD	CD	CD

‡ Starters are suitable for use on 50 Hz. Consult your local Rockwell Automation sales office or Allen-Bradley distributor.

§ When selecting a factory-installed control circuit transformer, use the Common Control Voltage Suffix Code to denote the transformer primary voltage. The starter coil and transformer secondary voltage will both be 120V by default. Example: **Cat. No. 1232-BNB-6P-24** will have a transformer with a 480V primary/120V secondary voltage and a 120V starter coil. If a starter coil voltage other than 120V is desired, a second Voltage Suffix Code must be added to denote the coil/transformer secondary voltage. Example: **Cat. No. 1232-BNB-6P-24** will have a transformer with a 480V primary/24V secondary and a 24V starter coil.

⚡ 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 page 1-159 to complete the cat. no.

Example: **Cat. No. 1232-BNA-Ø-24** becomes **Cat. No. 1232-BNA-A2E-24**.



Allen-Bradley

www.ab.com/catalogs Preferred availability cat. nos. are **bold**.

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