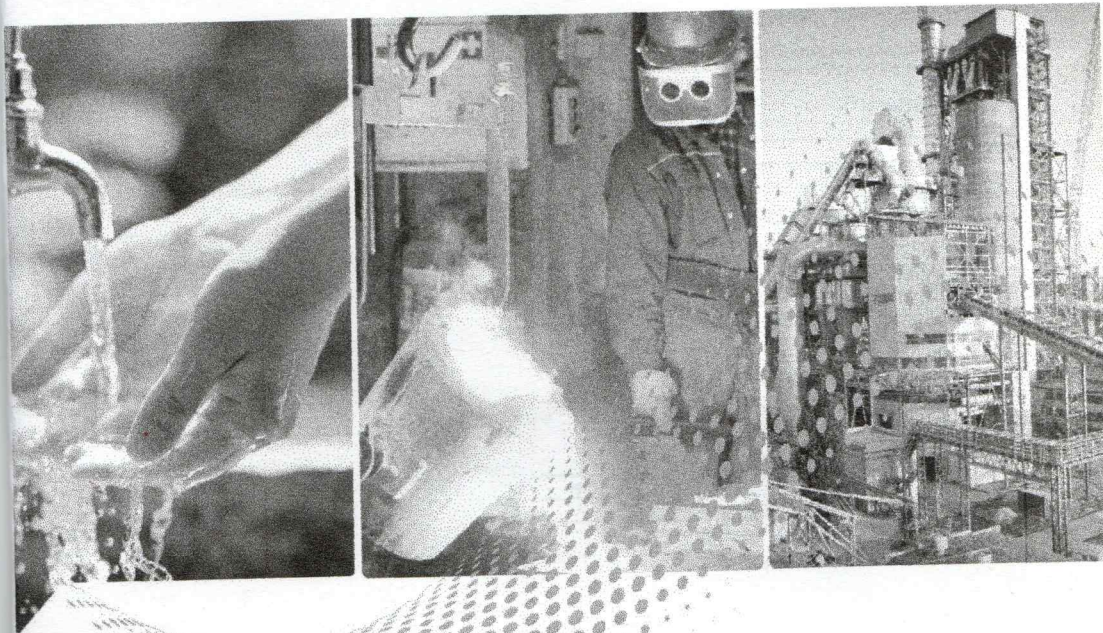




NEMA Open Type Contactors and Starters

Bulletin Numbers 500, 500F, 505, 509, 520



Allen-Bradley

by ROCKWELL AUTOMATION

Selection Guide

What's Inside

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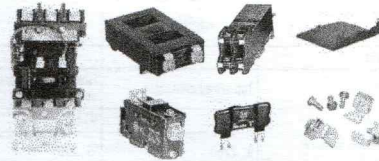
Ordering Options

Depending on the type of open style contactor or starter that choose, you can decide which ordering method suits your needs best.

- Individual Components: You select individual catalog numbers of each component and accessory, to build up a contactor or starter.
- Modular Kits: You select one catalog number. This catalog number will include your selected accessories which are all shipped together (unassembled), along with the base contactor or starter. This method saves lead time.
- Factory Assembled: You select one catalog string and the factory assembles your selected options and accessories to the contactor or starter, before it gets shipped.

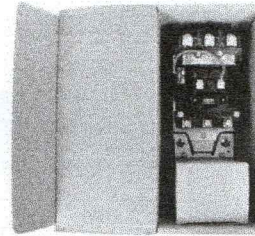
Individual Component

- Multiple Catalog Numbers
- Multiple Components
- Standard Lead Time



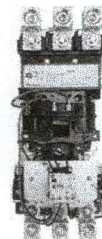
Modular Kit

- One Catalog Number
- Pre-packaged Kit of Multiple Components
- Shorter Lead Time

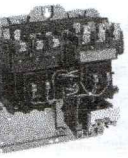
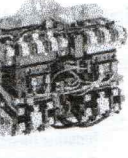


Factory Assembled

- One Catalog Number
- Fully Assembled Device
- Standard Lead Time



Product Comparison

					
Bulletin	500	500F	509	505	520
Description	Top-wired contactor	Feed-through wired contactor	Reversing starter	Non-reversing starter	Multi-speed starter
NEMA Sizes	00...5	0...5	00...5	00...5	0...5
Continuous Ampere Rating [A]	9...2250	18...270	9...270	9...270	18...270
Availability	NEMA sizes 0...4: modular kits and individual components NEMA sizes 00 and 5: factory assembled	NEMA sizes 0...4: modular kits and individual components NEMA size 5: factory assembled	NEMA sizes 0...4: modular kits and individual components NEMA sizes 00 and 5: factory assembled	NEMA size 00...5: factory assembled	NEMA size 0...5: factory assembled
Standards	- NEMA/EEMAC ICS2 (Industrial Controls and Systems) - UL 508 - CSA C22.2, No. 14 - ABS 4/5.115 - USCG 46 CFR 111.70 - IEEE 45		- NEMA/EEMAC ICS 2 (Industrial Controls and Systems) - UL 508 - CSA C22.2, No. 14 - ABS 4/5.115 - USCG 46 CFR 111.70		- NEMA/EEMAC ICS (Industrial Controls and Systems) - UL 508 - CSA C22.2, No. 14 - ABS 4/5.115
Certifications	- UL Listed (File No. E3125; Guide No. NLDX) (File No. E10314; Guide No. NPKR) - CSA Certified (LR1234) - CE Marked (Per EN 60947) - American Bureau of Shipping		- UL Listed (File No. E3125; Guide No. NLDX) - CSA Certified (File LR 1234) - CE Marked (per EN 60947-4-1) - American Bureau of Shipping (ABS) - Hazardous Location: UL Listed (File No. E10314), CSA Certified (File No. LR 11924)		- UL Listed (File No. E3125; Guide No. NLDX) - CSA Certified (File LR 1234) - Hazardous Location: UL Listed (File No. E10314), CSA Certified (File No. LR 11924)
Product Selection	page 5	page 9	page 13	page 17	page 19
Accessories and Renewal Parts	page 23				
Specifications	page 27				
Approximate Dimensions	page 33	page 33	page 47	page 35	page 47

Bulletin 500 Top-Wired Contactor

Catalog Number Explanation

Examples that are given in this section are not intended to be used for product selection. Not all combinations produce a valid catalog number. For accurate catalog number configuration, use the ProposalWorks™ application which is available from rok.auto/systemtools.

Bulletin 500 top-wired contactors can be ordered as modular kits or individual components, as follows:

- Modular kit (sizes 0...4) (single catalog number, pre-stocked modular components shipped in one carton to reduce lead time)
- User assembled (sizes 0...4) (list of kitted components)
- Factory assembled (sizes 00 and 5) (single catalog number)

500 - B 0 D 930 - 17
a b c d e f

a	
Bulletin Number	
Code	Description
500	Top-wired contactor
500DC	Top-wired contactor with DC coil voltage selected

c	
Enclosure Type	
Code	Description
0	No enclosure

e	
Number of Poles	
Code	Description
930	Three power poles and one N.O. auxiliary contact
940	Four power poles and one N.O. auxiliary contact
950	Five power poles and one N.O. auxiliary contact

b	
NEMA Size	
Code	Description
T	00
A	0
B	1
C	2
D	3
E	4
F	5

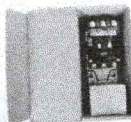
d		
Nominal Coil Voltage		
Code	Voltage	Frequency
A	220V 240V	50 Hz 60 Hz
B	440V 480V	50 Hz 60 Hz
C	550V 600V	50 Hz 60 Hz
D	110V 120V	50 Hz 60 Hz
F	277V	60 Hz
H	208V	60 Hz
I	415V	50 Hz
J	24V	50/60 Hz
N	380V	50 Hz
VG ⁽¹⁾	125...250V DC	—
VL ⁽¹⁾	24V DC	—

f	
Options	
Code	Description
17	Surge suppressor for 120 or 240V AC coil
90 ⁽²⁾	One N.O. auxiliary contact
91 ⁽²⁾	One N.C. auxiliary contact

(1) DC coil voltages are only available for NEMA sizes 0...3. When ordering a DC coil voltage, add "DC" to the catalog number.
Example: 500DC-60VL-930.

(2) Up to six combinations of auxiliary contacts can be selected. For example, Code 90011 indicates two N.O. contacts and two N.C. contacts.

Modular Kit Product Selection

Base Contactor – NEMA Sizes 0...4⁽¹⁾

NEMA Size	Continuous Ampere Rating [A]	Maximum Horsepower Rating (Full Load Current Must Not Exceed Continuous Ampere Rating)						600V AC Maximum, 60 Hz		
		1-Phase Motor Voltage ⁽²⁾		3-Phase Motor Voltage				3 Power Poles	4 Power Poles	5 Power Poles
		115V	230V	200V	230V	50 Hz		Cat. No. ⁽³⁾	Cat. No. ⁽³⁾	Cat. No. ⁽³⁾
						380...415V	460...575V			
00	9	0.33	1	1.5	1.5	2	2	(4)	(4)	—
0	18	1	2	3	3	5	5	500-A0@930	500-A0@940	500-A0@950
1	27	2	3	7.5	7.5	10	10	500-B0@930	500-B0@940	500-B0@950
2	45	3	7.5	10	15	25	25	500-C0@930	500-C0@940	500-C0@950
3	90	7.5	15	25	30	50	50	500-D0@930	500-D0@940	500-D0@950
4	135	—	—	40	50	75	100	500-E0@930	500-E0@940	500-E0@950
5	270	—	—	75	100	150	200	(4)	(4)	—

- (1) Includes a 120V AC coil and one N.O. auxiliary contact, as standard.
 (2) NEMA sizes 0...3 can be wired for 3-phase or 1-phase applications, but 1-phase coil codes are no longer valid.
 (3) The cat. nos. as listed are incomplete. Select a value from the Voltage Code table to complete each cat. no.
 Example: To select a 120V AC coil voltage, Cat. No. 500-A0@940 becomes Cat. No. 500-A0@940.
 (4) See NEMA Sizes 00 and 5 on page 8.

⚡ Voltage Code

Note: The base contactor includes a 120V AC coil as standard. For all other voltages, an alternate coil will be included in the modular kit for field installation.

[V]	24	110	120	125	208	220	240	250	277	380	415	440	480	550	600
AC, 50 Hz	J	D	—	—	—	—	—	—	—	—	—	—	—	—	—
AC, 60 Hz	J	—	D	—	H	—	A	—	F	—	—	—	B	—	C
DC ⁽¹⁾	VL	—	—	VG	—	—	—	VG	—	—	—	—	—	—	—

- (1) DC coil voltages are only available for NEMA sizes 0...3. When ordering a DC coil voltage, add "DC" to the catalog number.
 Example: 500DC-B0VL-930.

Modular Kit Options

Options	
Code	Description
17	Surge suppressor for 120 or 240V AC coil
9d ⁽¹⁾	One N.O. auxiliary contact
9n ⁽¹⁾	One N.C. auxiliary contact

- (1) Up to six combinations of auxiliary contacts can be selected. For example, Code 90011 indicates two N.O. contacts and two N.C. contacts.

Example: Catalog Number 500-C0@930-17-90 includes a NEMA size 2, 3-pole contactor with a 120V AC coil, a surge suppressor, and one N.O. auxiliary contact.

Components Product Selection

NEMA Sizes 0...4

						
Base Contactor	Coil	Auxiliary Contact - Contactor	Surge Suppressor	Power Pole	Top Wire Kit	Load-side Terminal Shield

Base Contactor

NEMA Size	Continuous Ampere Rating [A]	Cat. No.
0	18	500F-A00930
1	27	500F-B00930
2	45	500F-C00930
3	90	500F-D00930
4	135	500F-E00930

Coils

Voltage	NEMA Size			
	0...1	2	3	4
24V, 50/60 Hz	CB013	CC013	CD013	CE013
110V, 50 Hz	CB236	CC236	CD236	CE236
120V, 60 Hz	CB236	CC236	CD236	CE236
208V, 60 Hz	CB249	CC249	CD249	CE249
220V, 50 Hz	CB254	CC254	CD254	CE254
240V, 60 Hz	CB254	CC254	CD254	CE254
277V, 60 Hz	CB260	CC260	CD260	CE260
380V, 50 Hz	CB354	CC354	CD354	CE354
415V, 50 Hz	CB357	CC357	CD357	CE357
440V, 50 Hz	CB273	CC273	CD273	CE273
480V, 60 Hz	CB273	CC273	CD273	CE273
550V, 50 Hz	CB278	CC278	CD278	CE278
600V, 60 Hz	CB278	CC278	CD278	CE278
24V DC	599-B24DC	599-C24DC	599-D24DC	—
125...250V DC	599-B250DC	599-C250DC	599-D250DC	—

Note: The base contactor includes a 120V AC coil as standard. For all other voltages, an alternate coil will be included in the modular kit for field installation.

Auxiliary Contact - Contactors

NEMA Size	Description	Cat. No.
0...5	1 N.O.	595-A
	2 N.O.	595-AA
	1 N.C.	595-B
	2 N.C.	595-BB
	1 N.O. and 1 N.C.	595-AB

Surge Suppressor

NEMA Size	Description	Cat. No.
0...5	12...120V AC	599-K04
	240...264V AC Varistor	599-KA04

Power Pole Adders

NEMA Size	Description	Cat. No.
0...1	1 N.O.	599-P01A
2		599-P2A
3		599-P3A
4		599-P4A

Top Wiring Kit

NEMA Size	Cat. No.
0...1	599-TW01
2	599-TW2
3	599-TW3
4	599-TW4

Terminal Shield Kit

NEMA Size	Cat. No.
0...2	599-TS02
3, 4	599-TS34

Factory Assembled Product Selection

NEMA Sizes 00 and 5⁽¹⁾

NEMA Size	Continuous Ampere Rating [A]	Maximum Horsepower Rating (Full Load Current Must Not Exceed Continuous Ampere Rating)						600V AC Maximum, 60 Hz		
		1-Phase Motor Voltage		3-Phase Motor Voltage				3 Power Poles Cat. No. ⁽²⁾	4 Power Poles Cat. No. ⁽²⁾	5 Power Poles Cat. No. ⁽²⁾
		115V	230V	200V	230V	380...415V	460...575V			
						50 Hz				
00	9	0.33	1	1.5	1.5	2	2	500-FO-930	—	—
0	18	1	2	3	3	5	5	(3)	(3)	(3)
1	27	2	3	7.5	7.5	10	10	(3)	(3)	(3)
2	45	3	7.5	10	15	25	25	(3)	(3)	(3)
3	90	7.5	15	25	30	50	50	(3)	(3)	(3)
4	135	—	—	40	50	75	100	500-FO-930	500-FO-940	—
5	270	—	—	75	100	150	200	—	—	—

(1) Includes a 120V AC coil and one N.O. auxiliary contact, as standard.

(2) The cat. nos. as listed are incomplete. Select a value from the Voltage Code table to complete each cat. no.
Example: To select a 120V AC coil voltage, Cat. No. 500-FO-930 becomes Cat. No. 500-FO930.

(3) See Base Contactor — NEMA Sizes 0...4 on page 6.

⊗ Voltage Code

Note: The base contactor includes a 120V AC coil as standard. For all other voltages, an alternate coil will be included in the modular kit for field installation.

[V]	24	110	120	125	208	220	240	250	277	380	415	440	480	550	600
AC, 50 Hz	J	D	—	—	—	—	—	—	—	—	—	—	B	—	C
AC, 60 Hz	J	—	D	—	H	—	A	—	F	—	—	—	—	—	—
DC ⁽¹⁾	VL	—	—	VG	—	—	—	VG	—	—	—	—	—	—	—

(1) DC coil voltages are only available for NEMA sizes 0...3. When ordering a DC coil voltage, add "DC" to the catalog number.
Example: 500DC-FOVL-930.

Bulletin 500F Feed-Through Contactor

Catalog Number Explanation

Examples that are given in this section are not intended to be used for product selection. Not all combinations produce a valid catalog number. For accurate catalog number configuration, use the ProposalWorks™ application which is available from rok.auto/systemtools.

Bulletin 500F feed-through contactors can be ordered as modular kits or individual components, as follows:

- Modular kit (sizes 0...4) (single catalog number, pre-stocked modular components shipped in one carton to reduce lead time)
- User assembled (sizes 0...4) (list of kitted components)
- Factory assembled (size 5) (single catalog number)

500F - B 0 D 930 - 17
a b c d e f

a	
Bulletin Number	
Code	Description
500F	Feed-through contactor
500FC	Feed-through contactor with DC voltage coil

c	
Enclosure Type	
Code	Description
0	No enclosure

e	
Number of Poles	
Code	Description
930	Three power poles and one N.O. auxiliary contact

b	
NEMA Size	
Code	Description
A	0
B	1
C	2
D	3
E	4
F	5

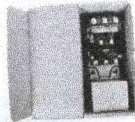
d		
Nominal Coil Voltage		
Code	Voltage	Frequency
A	220V 240V	50 Hz 60 Hz
B	440V 480V	50 Hz 60 Hz
C	550V 600V	50 Hz 60 Hz
D	110V 120V	50 Hz 60 Hz
F	277V	60 Hz
H	208V	60 Hz
I	415V	50 Hz
J	24V	50/60 Hz
N	380V	50 Hz
VL ⁽¹⁾	24V DC	—
VS ⁽¹⁾	125...250V DC	—

f	
Options	
Code	Description
17	Surge suppressor for 120 or 240V AC coil
90 ⁽²⁾	One N.O. auxiliary contact
91 ⁽²⁾	One N.C. auxiliary contact

(1) DC coil voltages are only available for NEMA sizes 0...3. When ordering a DC coil voltage, add "C" to the catalog number.
Example: 500FC-80VL-930.

(2) Up to six combinations of auxiliary contacts can be selected. For example, Code 90011 indicates two N.O. contacts and two N.C. contacts.

Product Selection – Modular Kits



Base Contactor – NEMA Sizes 0...4⁽¹⁾

Base Contactor — NEMA Sizes 0...4 ^{1/2}										
NEMA Size	Continuous Ampere Rating [A]	Maximum Horsepower Rating (Full Load Current Must Not Exceed Continuous Ampere Rating)								
		1-Phase Motor Voltage		3-Phase Motor Voltage				600V AC Maximum, 60 Hz		
		115V	230V	200V	230V	50 Hz	460...575V			3 Power Poles Cat. No. (2)
						380...415V				
0	18	1	2	3	3	5	5	500F-AD-930		
1	27	2	3	7.5	7.5	10	10	500F-B0-930		
2	45	3	7.5	10	15	25	25	500F-C0-930		
3	90	7.5	15	25	30	50	50	500F-D0-930		
4	135	—	—	40	50	75	100	500F-E0-930		
5	270	—	—	75	100	150	200	(3)		

- (1) Includes a 120V AC coil and one N.O. auxiliary contact, as standard.
 (2) The cat. nos. as listed are incomplete. Select a value from the Voltage Code table to complete each cat. no.
 Example: To select a 120V AC coil voltage, Cat. No. 500F-AD-930 becomes Cat. No. 500F-AD0930.
 (3) See NEMA Size 5 on page 12 for NEMA size 5 contactors.

⊗ Voltage Code

Note: The base contactor includes a 120V AC coil as standard. For all other voltages, an alternate coil will be included in the modular kit for field installation.

[V]	24	110	120	125	208	220	240	250	277	380	415	440	480	550	600
AC, 50 Hz	J	D	—	—	—	—	—	—	—	—	—	—	—	—	—
AC, 60 Hz	J	—	D	—	H	—	A	—	F	—	—	—	B	—	C
DC ⁽¹⁾	VL	—	—	VG	—	—	—	VG	—	—	—	—	—	—	—

- (1) DC coil voltages are only available for NEMA sizes 0...3. When ordering a DC coil voltage, add "C" to the catalog number.
 Example: 500FC-B0VL-930.

Modular Kit Options

Options	
Code	Description
17	Surge suppressor for 120 or 240V AC coil
90 ⁽¹⁾	One N.O. auxiliary contact
91 ⁽¹⁾	One N.C. auxiliary contact

- (1) Up to six combinations of auxiliary contacts can be selected. For example, Code 90011 indicates two N.O. contacts and two N.C. contacts.

Example: Catalog Number 500F-C0D930-17-90 includes a NEMA size 2, 3-pole contactor with a 120V AC coil, a surge suppressor, and one N.O. auxiliary contact.

Product Selection – Components

NEMA Sizes 0...4

			
Base Contactor	Coil	Auxiliary Contact – Contactor	Surge Suppressor

Base Contactor

NEMA Size	Continuous Ampere Rating [A]	Cat. No.
0	18	500F-A00930
1	27	500F-B00930
2	45	500F-C00930
3	90	500F-D00930
4	135	500F-E00930

Coils

Voltage	NEMA Size			
	0...1	2	3	4
	Cat. No.	Cat. No.	Cat. No.	Cat. No.
24V, 50/60 Hz	C8013	CC013	CD013	CE013
110V, 50 Hz	C8236	CC236	CD236	CE236
120V, 60 Hz	C8236	CC236	CD236	CE236
208V, 60 Hz	C8249	CC249	CD249	CE249
220V, 50 Hz	C8254	CC254	CD254	CE254
240V, 60 Hz	C8254	CC254	CD254	CE254
277V, 60 Hz	C8260	CC260	CD260	CE260
380V, 50 Hz	C8354	CC354	CD354	CE354
415V, 50 Hz	C8357	CC357	CD357	CE357
440V, 50 Hz	C8273	CC273	CD273	CE273
480V, 60 Hz	C8273	CC273	CD273	CE273
550V, 50 Hz	C8278	CC278	CD278	CE278
600V, 60 Hz	C8278	CC278	CD278	CE278
24V DC	599-B24DC	599-C24DC	599-D24DC	—
125...250V DC	599-B250DC	599-C250DC	599-D250DC	—

Note: The base contactor includes a 120V AC coil as standard. For all other voltages, an alternate coil will be included in the modular kit for field installation.

Auxiliary Contact – Contactors

NEMA Size	Description	Cat. No.
0...5	1 N.O.	595-A
	2 N.O.	595-AA
	1 N.C.	595-B
	2 N.C.	595-BB
	1 N.O. and 1 N.C.	595-AB

Surge Suppressor

NEMA Size	Description	Cat. No.
0...5	12...120V AC	599-K04
	240...264V AC Varistor	599-KA04

Product Selection – Factory Assembled

NEMA Size 5⁽¹⁾

NEMA Size 5 ⁽¹⁾									
NEMA Size	Continuous Ampere Rating [A]	Maximum Horsepower Rating (Full Load Current Must Not Exceed Continuous Ampere Rating)							 600V AC Maximum, 60 Hz 3 Power Poles Cat. No. ⁽²⁾
		1-Phase Motor Voltage			3-Phase Motor Voltage				
		115V	230V	200V	230V	50 Hz	460...575V	Cat. No. ⁽²⁾	
						380...415V			
0	18	1	2	3	3	5	5	(3)	
1	27	2	3	7.5	7.5	10	10	(3)	
2	45	3	7.5	10	15	25	25	(3)	
3	90	7.5	15	25	30	50	50	(3)	
4	135	—	—	40	50	75	100	(3)	
5	270	—	—	75	100	150	200	500F-F08930	

(1) Includes a 120V AC coil and one N.O. auxiliary contact, as standard.

(2) The cat. no. as listed is incomplete. Select a value from the Voltage Code table to complete the cat. no.
Example: To select a 120V AC coil voltage, Cat. No. 500F-F08930 becomes Cat. No. 500F-F0D930.

(3) See Base Contactor – NEMA Sizes 0...4 on page 10 for NEMA size 0...4 contactors.

⊗ Voltage Code

Note: The base contactor includes a 120V AC coil as standard. For all other voltages, an alternate coil will be included in the modular kit for field installation.

[V]	24	110	120	125	208	220	240	250	277	380	415	440	480	550	600
AC, 50 Hz	J	D	—	—	—	—	—	—	—	—	—	—	—	B	C
AC, 60 Hz	J	—	D	—	H	—	A	—	F	—	—	—	—	—	—

Bulletin 509 Non-Reversing Starter

Catalog Number Explanation

Examples that are given in this section are not intended to be used for product selection. Not all combinations produce a valid catalog number. For accurate catalog number configuration, use the ProposalWorks™ application which is available from rok.auto/systemtools.

Bulletin 509 non-reversing starters can be ordered as modular kits or individual components, as follows:

- Modular kit (sizes 0...4) (single catalog number, pre-stocked modular components shipped in one carton to reduce lead time)
- Factory assembled (sizes 00 and 5) (single catalog number)

509 - B 0 D - A2E - T7
a b c d e f

a	
Bulletin Number	
Code	Description
509	Non-reversing starter
5090C	Non-reversing starter with DC coil voltage selected

b	
NEMA Size	
Code	Description
T	00
A	0
B	1
C	2
D	3
E	4
F	5

c	
Enclosure Type	
Code	Description
0	No enclosure

d		
Nominal Coil Voltage		
Code	Voltage	Frequency
A	220V 240V	50 Hz 60 Hz
B	440V 480V	50 Hz 60 Hz
C	550V 600V	50 Hz 60 Hz
D	110V 120V	50 Hz 60 Hz
F	277V	60 Hz
H	208V	60 Hz
I	415V	50 Hz
J	24V	50/60 Hz
N	380V	50 Hz
VG ⁽¹⁾	125...250V DC	—
VL ⁽¹⁾	24V DC	—

e		
Eutectic Overload Relay		
Code	Description	
blank	Eutectic alloy ⁽³⁾	
E100 Solid-state Overload Relay		
Code	NEMA Size	Full Load Current Adjustment Range [A]
3-Phase		
A2A	00	0.1...0.5
A2C	00, 0, 1	0.2...1.0
A2E	00, 0, 1	1.0...5.0
A2F	00, 0, 1	3.2...16
A2G	0, 1, 2	5.4...27
A2J	1, 2	11...55
A2L	3	20...100
A2M	4	30...150
A2N	5	60...300

f	
Options	
Code	Description
9	One N.O. auxiliary contact for use on Eutectic overload relay
9A	One N.C. auxiliary contact for use on Eutectic overload relay
17	Surge suppressor for 120 or 240V AC coil
90 ⁽²⁾	One N.O. auxiliary contact for use on starter
91 ⁽²⁾	One N.C. auxiliary contact for use on starter

(1) DC coil voltages are only available for NEMA sizes 0...3. When ordering a DC coil voltage, add "DC" to the catalog number.
Example: 5090C-B0VL-A2E.

(2) Up to six combinations of auxiliary contacts can be selected. For example, Code 90011 indicates two N.O. contacts and two N.C. contacts.

(3) Starters with eutectic alloy overload relays require three heater elements. See Heater Elements Specifications Technical Data, publication 582-T0010, for heater element selection.

Product Selection – Modular Kits

Base Starter – NEMA Sizes 0...4⁽¹⁾

Heater Elements – Starters with eutectic alloy overload relay require three heater elements. See Heater Elements Specifications Technical Data, publication 592-TD010, for heater element selection.

NEMA Size	Continuous Ampere Rating [A]	Maximum Horsepower Rating (Full Load Current Must Not Exceed Continuous Ampere Rating)						
		1-Phase Motor Voltage ⁽²⁾		3-Phase Motor Voltage				600V AC Maximum, 60 Hz
		115V	230V	200V	230V	50 Hz	460...575V	3 Power Poles
						380...415V		Cat. No. ⁽³⁾
00	9	0.33	1	1.5	1.5	2	2	(4)
0	18	1	2	3	3	5	5	509-A0 
1	27	2	3	7.5	7.5	10	10	509-B0 
2	45	3	7.5	10	15	25	25	509-C0 
3	90	7.5	15	25	30	50	50	509-D0 
4	135	—	—	40	50	75	100	509-E0 
5	270	—	—	75	100	150	200	(4)

(1) The starters include a 120V AC coil and one N.O. auxiliary contact, as standard.

(2) NEMA sizes 0...3 can be wired for 3-phase or 1-phase applications, but 1-phase coil codes are no longer valid.

(3) The cat. nos. as listed are incomplete. Select a value from the Voltage Code table and a value from the Overload Relay Code table, to complete each cat. no.
Example: To select a 240V AC coil voltage with a E100 overload relay (1...5 A), Cat. No. 509-A0  becomes Cat. No. 509-ADA-A2E.

(4) See NEMA Size 00 and 5 for NEMA size 00 and 5 starter product selection.

⊗ Voltage Code

Note: The base contactor includes a 120V AC coil as standard. For all other voltages, an alternate coil will be included in the modular kit for field installation.

[V]	24	110	120	125	208	220	240	250	277	380	415	440	480	550	600
AC, 50 Hz	J	D	—	—	—	—	—	—	—	—	—	—	—	—	—
AC, 60 Hz	J	—	D	—	H	—	A	—	F	—	—	—	B	—	C
DC ⁽¹⁾	VL	—	—	VG	—	—	—	VG	—	—	—	—	—	—	—

(1) DC coil voltages are only available for NEMA sizes 0...3. When ordering a DC coil voltage, add "DC" to the catalog number. Example: 509DC-80VL.

⊗ Overload Relay Code

Code	Description
blank	Eutectic alloy

E100 Solid-state Overload Relay (3-phase)		
Code	NEMA Size	Full Load Current Adjustment Range [A]
A2C	00, 0, 1	0.2...1.0
A2E	00, 0, 1	1.0...5.0
A2F	00, 0, 1	3.2...16
A2G	0, 1, 2	5.4...27
A2J	1, 2	11...55
A2L	3	20...100
A2M	4	30...150
A2N	5	60...300

Modular Kit Options

Code	Description
9	One N.O. auxiliary contact for use on Eutectic overload relay
9A	One N.C. auxiliary contact for use on Eutectic overload relay
17	Surge suppressor for 120 or 240V AC coil

Code	Description
9 ⁽¹⁾	One N.O. auxiliary contact
9 ⁽¹⁾	One N.C. auxiliary contact

(1) Up to six combinations of auxiliary contacts can be selected. For example, Code 90011 indicates two N.O. contacts and two N.C. contacts.

Example: Catalog Number 509-C00-A2E-17-90 includes a NEMA size 2 starter with a 120V AC coil, E100 overload relay, a surge suppressor, and one N.O. auxiliary contact.

Components Product Selection

NEMA Sizes 0...4

						
Base Contactor	Eutectic Overload Relay	E100 Solid-state Overload Relay	Coil	Auxiliary Contact — Contactor	Surge Suppressor	Auxiliary Contact — Eutectic Overload Relay

Base Contactor

NEMA Size	Continuous Ampere Rating [A]	Cat. No.
0	18	500F-A0D930
1	27	500F-B0D930
2	45	500F-C0D930
3	90	500F-D0D930
4	135	500F-E0D930

Eutectic Overload Relay

NEMA Size	Cat. No.
0...1	592-EUTB
2	592-EUTC
3	592-EUTD
4	592-EUTE

E100 Solid-state Overload Relay

NEMA Size	Current Range [A]	Cat. No.
00, 0, 1	0.2...1.0	592-IEFBC
00, 0, 1	1.0...5.0	592-IEFCC
00, 0, 1	3.2...16	592-IEFDC
0, 1, 2	5.4...27	592-IEFEC
1, 2, 3	11...55	592-IEFFC
3	20...100	592-IEFGD
4	30...150	592-IEFHE
5	60...300	592-IEFKF

Eutectic Alloy Overload Relay Accessory — Auxiliary Contact⁽¹⁾

NEMA Size	Description	Cat. No.
0...2	1 N.O.	595-A02
	1 N.C.	595-B02
3...4	1 N.O.	595-A34 ⁽²⁾
	1 N.C.	595-B34 ⁽³⁾

(1) Auxiliary contact for solid-state overload relays is included with the product.

(2) Auxiliary contact mounted on right-hand side of the overload relay provides N.O. contact function. Auxiliary contact mounted on left-hand side of the overload relay provides N.C. contact function.

(3) To be mounted on the right-hand side of the overload, to provide additional AC contact function.

Coils

Voltage	NEMA Size			
	0...1	2	3	4
Cat. No.	Cat. No.	Cat. No.	Cat. No.	Cat. No.
24V, 50/60 Hz	CB013	CC013	CD013	CE013
110V, 50 Hz	CB236	CC236	CD236	CE236
120V, 60 Hz	CB236	CC236	CD236	CE236
208V, 60 Hz	CB249	CC249	CD249	CE249
220V, 50 Hz	CB254	CC254	CD254	CE254
240V, 60 Hz	CB254	CC254	CD254	CE254
277V, 60 Hz	CB260	CC260	CD260	CE260
380V, 50 Hz	CB354	CC354	CD354	CE354
415V, 50 Hz	CB357	CC357	CD357	CE357
440V, 50 Hz	CB273	CC273	CD273	CE273
480V, 60 Hz	CB273	CC273	CD273	CE273
550V, 50 Hz	CB278	CC278	CD278	CE278
600V, 60 Hz	CB278	CC278	CD278	CE278
24V DC	599-B24DC	599-C24DC	599-D24DC	—
125...250V DC	599-B250DC	599-C250DC	599-D250DC	—

Note: The base contactor includes a 120V AC coil as standard. For all other voltages, an alternate coil will be included in the modular kit for field installation.

Auxiliary Contact — Contactors

NEMA Size	Description	Cat. No.
0...5	1 N.O.	595-A
	2 N.O.	595-AA
	1 N.C.	595-B
	2 N.C.	595-BB
	1 N.O. and 1 N.C.	595-AB

Surge Suppressor

NEMA Size	Description	Cat. No.
0...5	12...120V AC	599-K04
	240...264V AC Varistor	599-KA04

Product Selection – Factory Assembled

NEMA Size 00 and 5⁽¹⁾

Heater Elements – Starters with eutectic alloy overload relay require three heater elements. See Heater Elements Specifications Technical Data, publication 592-T0010, for heater element selection.

NEMA Size	Continuous Ampere Rating [A]	Maximum Horsepower Rating (Full Load Current Must Not Exceed Continuous Ampere Rating)						
		1-Phase Motor Voltage		3-Phase Motor Voltage				600V AC Maximum, 60 Hz
		115V	230V	200V	230V	50 Hz	460...575V	3 Power Poles
						380...415V		Cat. No. ⁽²⁾
00	9	0.33	1	1.5	1.5	2	2	509-T00-0 
0	18	1	2	3	3	5	5	(3)
1	27	2	3	7.5	7.5	10	10	(3)
2	45	3	7.5	10	15	25	25	(3)
3	90	7.5	15	25	30	50	50	(3)
4	135	—	—	40	50	75	100	(3)
5	270	—	—	75	100	150	200	509-F00-0 

(1) Includes a 120V AC coil and one N.O. auxiliary contact, as standard.

(2) The cat. nos. as listed are incomplete. Select a value from the Voltage Code table and a value from the Voltage Code table, to complete each cat. no.

Example: To select a 240V AC coil voltage with a E100 overload relay (60...300 A), Cat. No. 509-F00-0 becomes Cat. No. 509-FOA-A2N.

(3) See Base Starter – NEMA Sizes 0...4 on page 14 for NEMA size 0...4 starters.

⊗ Voltage Code

Note: The base starter includes a 120V AC coil as standard. For all other voltages, an alternate coil will be included in the modular kit for field installation.

[V]	24	110	120	125	208	220	240	250	277	380	415	440	480	550	600
AC, 50 Hz	J	D	—	—	—	—	—	—	—	—	—	—	—	—	—
AC, 60 Hz	J	—	D	—	H	—	A	—	F	—	—	—	B	—	C

⊗ Overload Relay Code

Code	Description
blank	Eutectic alloy

E100 Solid-state Overload Relay (3-phase)		
Code	NEMA Size	Full Load Current Adjustment Range [A]
A2C	00, 0, 1	0.2...1.0
A2E	00, 0, 1	1.0...5.0
A2F	00, 0, 1	3.2...16
A2N	5	60...300

Options

Code	Description
9	One N.O. auxiliary contact for use on Eutectic overload relay
9A	One N.C. auxiliary contact for use on Eutectic overload relay
17	Surge suppressor for 120 or 240V AC coil
90 ⁽¹⁾	One N.O. auxiliary contact
91 ⁽¹⁾	One N.C. auxiliary contact

(1) Up to six combinations of auxiliary contacts can be selected. For example, Code 90011 indicates two N.O. contacts and two N.C. contacts.

Example: Catalog Number 509-F00-A2N-17-90 includes a NEMA size 5 starter with a 120V AC coil, E100 overload relay, a surge suppressor, and one N.O. auxiliary contact.

Catalog Number Explanation

Examples that are given in this section are not intended to be used for product selection. Not all combinations produce a valid catalog number. For accurate catalog number configuration, use the ProposalWorks™ application which is available from rok.auto/systemtools.

505 - B 0 D - A2E - 17
a b c d e f

a	
Bulletin Number	
Code	Description
505	Reversing starter
505V	Vertically-arranged reversing starter ⁽¹⁾

b	
NEMA Size	
Code	Description
T	00
A	0
B	1
C	2
D	3
E	4
F	5

c	
Enclosure Type	
Code	Description
0	No enclosure

d		
Nominal Coil Voltage		
Code	Voltage	Frequency
A	220V 240V	50 Hz 60 Hz
B	440V 480V	50 Hz 60 Hz
C	550V 600V	50 Hz 60 Hz
D	110V 120V	50 Hz 60 Hz
F	277V	60 Hz
H	208V	60 Hz
I	415V	50 Hz
J	24V	50/60 Hz
N	380V	50 Hz

e		
Overload Relay		
Code	Description	
blank	Eutectic alloy	
23	no overload relay	
E100 Plus Solid-state Overload Relay (3-phase)		
Code	NEMA Size	Full Load Current Adjustment Range [A]
A2A	00	0.1...0.5
A2C	00, 0, 1	0.2...1.0
A2E	00, 0, 1	1.0...5.0
A2F	00, 0, 1	3.2...16
A2G	0, 1, 2	5.4...27
A2J	1, 2	11...55
A2L	3	20...100
A2M	4	30...150
A2N	5	60...300

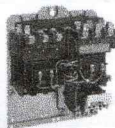
f	
Options	
Code	Description
17	Surge suppressor for 120 or 240V AC coil
87A	On-delay timer
87B	Off-delay timer
90 ⁽²⁾	One N.O. auxiliary contact for use on contactor
91 ⁽²⁾	One N.C. auxiliary contact for use on contactor
97 ⁽³⁾	One N.C.L.B. auxiliary contact for use on contactor

(1) Only available for NEMA sizes 0...5.

(2) Up to six combinations of auxiliary contacts can be selected. For example, Code **90011** indicates two N.O. contacts and two N.C. contacts.

(3) Up to three combinations of auxiliary contacts can be selected. For example, Code **977** indicates two N.C.L.B. contacts.

Factory Assembled Product Selection



NEMA Sizes 00...5

NEMA Size	Continuous Ampere Rating [A]	Maximum Horsepower Rating (Full Load Current Must Not Exceed Continuous Ampere Rating)				 600V AC Maximum, 60 Hz
		3-Phase Motor Voltage				
		200V	230V	50 Hz		
				380...415V	460...575V	
					3 Power Poles	
					Cat. No. ⁽¹⁾	
00	9	1.5	1.5	2	2	505-T0 
0	18	3	3	5	5	505-A0 
1	27	7.5	7.5	10	10	505-B0 
2	45	10	15	25	25	505-C0 
3	90	25	30	50	50	505-D0 
4	135	40	50	75	100	505-E0 
5	270	75	100	150	200	505-F0 

(1) The cat. nos. as listed are incomplete. Select a value from the Voltage Code table and a value from the Overload Relay Code table, to complete each cat. no.
 Example: To select a 120V AC coil voltage with a 3-phase, E1 Plus overload relay, Cat. No. 505-F0 becomes Cat. No. 505-F0D-A2L.

⊗ Voltage Code

Note: The base contactor includes a 120V AC coil as standard. For all other voltages, an alternate coil will be included in the modular kit for field installation.

[V]	24	110	120	125	208	220	240	250	277	380	415	440	480	550	600
AC, 50 Hz	J	D	—	—	—	—	—	—	—	—	—	—	—	—	—
AC, 60 Hz	J	—	D	—	H	—	A	—	F	—	—	—	B	—	C

⊗ Overload Relay Code

Code	Description
blank	Eutectic alloy
23	no overload relay

E100 Plus Solid-state Overload Relay (3-phase)		
Code	NEMA Size	Full Load Current Adjustment Range [A]
A2A	00	0.1...0.5
A2C	00, 0, 1	0.2...1.0
A2E	00, 0, 1	1.0...50
A2F	00, 0, 1	3.2...16
A2G	0, 1, 2	5.4...27
A2J	1, 2	11...55
A2L	3	20...100
A2M	4	30...150
A2N	5	60...300

Bulletin 520 Multi-Speed Starter

Catalog Number Explanation

Examples that are given in this section are not intended to be used for product selection. Not all combinations produce a valid catalog number. For accurate catalog number configuration, use the ProposalWorks™ application which is available from rok.auto/systemtools.

520G - A 0 D - A2C - A2C - 17
a b c d e e f

a		c			e		
Bulletin Number		Enclosure Type			Overload Relay		
Code	Description	Code	Description		Code	Description	
520G	2-speed constant horsepower starter	0	No enclosure		blank	Eutectic alloy	
520F	2-speed constant/variable torque starter				23	no overload relay	
520E	2-speed separate winding starter				E100 Solid-state Overload Relay		
520V ⁽¹⁾	Vertically-arranged starter ⁽²⁾				Code	NEMA Size	Full Load Current Adjustment Range [A]
b		d			A2C	0, 1	0.2...1.0
NEMA Size		Nominal Coil Voltage			A2E	0, 1	1.0...5.0
Code	Description	Code	Voltage	Frequency	A2F	0, 1	3.2...16
A	0	A	220V 240V	50 Hz 60 Hz	A2G	0, 1, 2	5.4...27
B	1	B	440V 480V	50 Hz 60 Hz	A2J	1, 2, 3	11...55
C	2	C	550V 600V	50 Hz 60 Hz	A2L	3	20...100
D	3	D	110V 120V	50 Hz 60 Hz	A2M	4	30...150
E	4	F	277V	60 Hz	A2N	5	60...300
F	5	H	208V	60 Hz			
		I	415V	50 Hz			
		J	24V	50/60 Hz			
		N	380V	50 Hz			
					f		
					Options		
					Code	Description	
					17	Surge suppressor for 120 or 240V AC coil	
					g0 ⁽³⁾	One N.O. auxiliary contact for use on contactor	
					g1 ⁽³⁾	One N.C. auxiliary contact for use on contactor	
					g7 ⁽⁴⁾	One N.C.L.B. auxiliary contact for use on contactor	

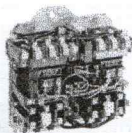
(1) Add code G, F, or E after 520V, to order your desired vertically-arranged starter.

(2) Only available for NEMA sizes 0...5.

(3) Up to six combinations of auxiliary contacts can be selected. For example, Code **900T1** indicates two N.O. contacts and two N.C. contacts.

(4) Up to three combinations of auxiliary contacts can be selected. For example, Code **977** indicates two N.C.L.B. contacts.

Factory Assembled Product Selection



Constant or Variable Torque — NEMA Sizes 0...5

Heater Elements — Starters with eutectic alloy overload relay require three heater elements. See Heater Elements Specifications Technical Data, publication 582-TDQ10, for heater element selection.

NEMA Size	Continuous Ampere Rating [A]	Maximum Horsepower Rating (Full Load Current Must Not Exceed Continuous Ampere Rating)				600V AC Maximum, 60 Hz, with 3-phase Overload Protection	
		3-Phase Motor Voltage				2-speed Separate Winding (3-pole)	2-speed Consequent Pole (5-pole)
		200V	230V	50 Hz 380...415V	460...575V	Cat. No. ⁽¹⁾⁽²⁾	Cat. No. ⁽¹⁾
0	18	3	3	5	5	520E-A0- 	520F-A0- 
1	27	7.5	7.5	10	10	520E-B0- 	520F-B0- 
2	45	10	15	25	25	520E-C0- 	520F-C0- 
3	90	25	30	50	50	520E-D0- 	520F-D0- 
4	135	40	50	75	100	520E-E0- 	520F-E0- 
5	270	75	100	150	200	520E-F0- 	520F-F0- 

(1) The cat. nos. as listed are incomplete. Select a value from the Voltage Code table and a two values from the Overload Relay Code table, to complete each cat. no.

Example: To select a 240V AC coil voltage with a E1 Plus overload relay, Cat. No. 520E-F0- becomes Cat. No. 520E-F0A-12N-42N.

(2) These starters are for wye-connected motor windings, not for open delta-connected motor windings. Use Consequent Pole starters for open delta-connected motor windings.

(3) For proper overload relay selection when low speed full load currents are less than 77 A, contact your local Rockwell Automation sales office or Allen-Bradley distributor.

Voltage Code

Note: The base contactor includes a 120V AC coil as standard. For all other voltages, an alternate coil will be included in the modular kit for field installation.

[V]	24 ⁽¹⁾	110	120	125	208	220	240	250	277	380	415	440	480	550	600
AC, 50 Hz	J	D	—	—	—	—	—	—	—	—	—	—	—	—	—
AC, 60 Hz	J	—	D	—	H	—	A	—	F	—	—	—	B	—	C

(1) When using 24V coils on sizes 4 or 5, an interposing relay may be required. For coil VA values, see AC Operating Coils on page 26.

Overload Relay Code

Select two overload relay codes to complete the cat. no. The first code is for the high-speed overload relay and the second code is for the low-speed overload relay. You cannot choose a solid-state overload relay for the low-speed overload relay. It can only be eutectic or no overload relay.

Code	Description
blank	Eutectic alloy
23	no overload relay

E100 Solid-state Overload Relay (3-phase) ⁽¹⁾		
Code	NEMA Size	Full Load Current Adjustment Range [A]
A2C	00, 0, 1	0.2...1.0
A2E	00, 0, 1	1.0...50
A2F	00, 0, 1	3.2...16
A2G	0, 1, 2	5.4...27
A2J	1, 2	11...55
A2L	3	20...100
A2M	4	30...150
A2N	5	60...300

(1) Only available for high-speed overload relay.

Constant Horsepower — NEMA Sizes 0...5

Heater Elements — Starters with eutectic alloy overload relay require three heater elements. See Heater Elements Specifications Technical Data, publication 582-TD010, for heater element selection.

NEMA Size	Continuous Ampere Rating [A]	Maximum Horsepower Rating (Full Load Current Must Not Exceed Continuous Ampere Rating)				600V AC Maximum, 60 Hz, with 3-phase Overload Protection	
		3-Phase Motor Voltage				2-speed Separate Winding (3-pole)	2-speed Consequent Pole (5-pole)
		200V	230V	50 Hz 380...415V	460...575V	Cat. No. ⁽¹⁾⁽²⁾	Cat. No. ⁽¹⁾
0	18	2	2	3	3	520E-A0	520G-A0
1	27	5	5	7.5	7.5	520E-B0	520G-B0
2	45	7.5	10	20	20	520E-C0	520G-C0
3	90	20	25	40	40	520E-D0	520G-D0
4	135	30	40	60	75	520E-E0	520G-E0
5	270	60	75	100	150	520E-F0	520G-F0

(1) The cat. nos. as listed are incomplete. Select a value from the Voltage Code table and a two values from the Overload Relay Code table, to complete each cat. no.
Example: To select a 240V AC coil voltage with a E1 Plus overload relay, Cat. No. 520E-F0 becomes Cat. No. 520E-FOA-A2N-A2N.

(2) These starters are for wye-connected motor windings, not for open delta-connected motor windings. Use Consequent Pole starters for open delta-connected motor windings.

Note: The base contactor includes a 120V AC coil as standard. For all other voltages, an alternate coil will be included in the modular kit for field installation.

⊗ Voltage Code

[V]	24 ⁽¹⁾	110	120	125	208	220	240	250	277	380	415	440	480	550	600
AC, 50 Hz	J	D	—	—	—	—	—	—	—	—	—	—	—	—	—
AC, 60 Hz	J	—	D	—	H	—	A	—	F	—	—	—	B	—	C

(1) When using 24V coils on sizes 4 or 5, an interposing relay may be required. For coil VA values, see AC Operating Coils on page 26.

⊕ Overload Relay Code

Code	Description
blank	Eutectic alloy
23	no overload relay

Select two overload relay codes to complete the cat. no. The first code is for the high-speed overload relay and the second code is for the low-speed overload relay.

E100 Solid-state Overload Relay (3-phase)		
Code	NEMA Size	Full Load Current Adjustment Range [A]
A2C	00, 0, 1	0.2...1.0
A2E	00, 0, 1	1.0...50
A2F	00, 0, 1	3.2...16
A2G	0, 1, 2	5.4...27
A2J	1, 2	11...55
A2L	3	20...100
A2M	4	30...150
A2N	5	60...300

Notes: