



NEMA Bulletin 300 Line Enclosed Contactor and Starter Specifications

Bulletins 300, 302, 303, 305, 306, 307, 309, 312, 313, 1232T, and 1233T

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Summary of Changes

This publication contains the following new or updated information. This list includes substantive updates only and is not intended to reflect all changes.

Topic	Pages
Added replacement parts for field installation.	13

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. Use ProposalWorks™ software to help you configure your enclosed contactor or starter. ProposalWorks software is available from rok.auto/systemtools.

Non-combination Contactors and Starters

300
-
A
-
F
-
D
-
A2C
-
1

a
b
c
d
e
f

a	
Bulletin Number	
Code	Description
300	Non-combination contactor
305	Non-combination reversing starter
309	Non-combination starter

b	
NEMA Size	
Code	Description
A	NEMA size 0
B	NEMA size 1
C	NEMA size 2
D	NEMA size 3
E	NEMA size 4
F	NEMA size 5
G	NEMA size 6
H	NEMA size 7
J	NEMA size 8

c	
Enclosure Type	
Code	Description
A	Type 1
F	Type 3R/4/12
C	Type 4/4X stainless steel

d	
Line Voltage/Control Voltage	
Code	Description
D	120V AC, 60 Hz Separate control (non-combo)
H	208V AC, 50/60 Hz Common/transformer control
A	240V AC, 50/60 Hz Common/transformer control
B	480V AC, 50/60 Hz Common/transformer control
C	600V AC, 50/60 Hz Common/transformer control
HD	208V AC/120V 50/60 Hz Separate control
AD	240V AC/120V, 50/60 Hz Separate control
BD	480V AC/120V, 50/60 Hz Separate control
CD	600V AC/120V, 50/60 Hz Separate control (except sizes 4...6)
HJ	208V AC/24V, 50/60 Hz Separate control and/or transformer control
AJ	240V AC/24V, 50/60 Hz Separate control and/or transformer control
BJ	480V AC/24V, 50/60 Hz Separate control and/or transformer control
CJ	600V AC/24V, 50/60 Hz Separate control and/or transformer control

e	
Overload Relay	
Code	Description
XXX	Provision for field-installed overload relay
-A2C	E100™ overload, 0.2...1.0 A
-A2E	E100 overload, 1.0...5.0 A
-A2F	E100 overload, 3.2...16 A
-A2G	E100 overload, 5.4...27 A
-A2J	E100 overload, 11...55 A
-A2L	E100 overload, 20...100 A
-A2M	E100 overload, 40...200 A
-A2N	E100 overload, 60...300 A
-A2R	E100 overload, 120...600 A
-EBV	E300™ overload, Voltage/current/ground fault sensing module, 4 IN/3 OUT
-EBI	E300 overload, current sensing module, 4 IN/3 OUT
-EBG	E300 overload, current/ground fault sensing module, 4 IN/3 OUT
-ENV	E300 overload, Voltage/current/ground fault sensing module, 2 IN/2 OUT
-ENI	E300 overload, current sensing module, 2 IN/2 OUT
-ENG	E300 overload, current/ground fault sensing module, 2 IN/2 OUT
-930	Three-pole contactor with N.O. aux contact (Bulletin 300 only)

f
Options—see page 4

f			
Options (Note: Some options require a quote from Engineering. See ProposalWorks from rok.auto/systemtools for details.)			
Code	Description	Code	Description
-1	START/STOP push button (Bul. 300, 309)	-21	Separate control 1-pole fusing
	Forward-OFF-Reverse push button (Bul. 305 only)	-22	Separate control 2-pole fusing
-1E	ON/OFF push button	-412	Metal handle
-3	HAND-OFF-AUTO selector switch (Bul. 300, 309)	-415	Plug-in control relay, 1-pole
	FOR-OFF-REV selector switch (Bul. 305 only)	-416	Plug-in control relay, 2-pole
-3E	ON/OFF selector switch	-417	Plug-in timing relay, ON-Delay
-3H	HAND-AUTO selector switch	-418	Plug-in timing relay, OFF-Delay
-13	START/STOP and HAND-OFF-AUTO switch	-425	Hour meter
-4R	Red LED pilot light	-427	Lightning arrestor
-4G	Green LED pilot light	-428	Ammeter
-4RG	Red and green LED pilot lights	-429	Ground fault relay
-4GR	Red and green LED pilot lights	-430	Undervoltage relay
-4RA	Red and amber LED pilot lights	-6P	Standard control circuit transformer
-4GA	Green and amber LED pilot lights	-6XP	100 W extra-capacity control circuit transformer
-5R	Red LED push-to-test pilot light	-6XXP	200 W extra-capacity control circuit transformer
-5G	Green LED push-to-test pilot light	-TB6	6 Spring-clamp terminal blocks
-5RG	Red and green LED push-to-test pilot lights	-TB12	12 Spring-clamp terminal blocks
-5GR	Red and green LED push-to-test pilot lights	-900	2 N.O. auxiliary contacts on starter
-5RA	Red and amber LED push-to-test pilot lights	-901	N.O./N.C. auxiliary contact on starter
-5GA	Green and amber LED push-to-test pilot lights	-90011	2N.O./2N.C. auxiliary contacts on starter
-17	Surge suppressor on starter	-HNG	Hinged enclosure

Combination Contactors and Starters

Examples that are given in this section are not intended to be used for product selection. Not all combinations produce a valid catalog number. Use ProposalWorks to help you configure your enclosed contactor or starter. ProposalWorks is available from rok.auto/systemtools.

302
-
A
A
D
-
A2C
-
J03
-
1

a
b
c
d
e
f
g

a	
Bulletin Number	
Code	Description
302	Fusible disconnect combination contactor
303	Circuit breaker combination contactor
306	Fusible disconnect combination contactor
307	Circuit breaker combination reversing starter
312	Fusible disconnect combination non-reversing starter
313	Circuit breaker combination non-reversing starter

b	
NEMA Size	
Code	Description
A	NEMA size 0
B	NEMA size 1
C	NEMA size 2
D	NEMA size 3
E	NEMA size 4
F	NEMA size 5
G	NEMA size 6
H	NEMA size 7
J	NEMA size 8

c	
Enclosure Type	
Code	Description
A	Type 1
F	Type 3R/4/12
C	Type 4/4X Stainless steel

d	
Line Voltage/Control Voltage	
Code	Description
D	120V AC, 60 Hz Separate control (non-combo)
H	208V AC, 50/60 Hz Common/transformer control
A	240V AC, 50/60 Hz Common/transformer control
B	480V AC, 50/60 Hz Common/transformer control
C	600V AC, 50/60 Hz Common/transformer control
HD	208V AC/120V, 50/60 Hz Separate control
AD	240V AC/120V, 50/60 Hz Separate control
BD	480V AC/120V, 50/60 Hz Separate control
CD	600V AC/120V, 50/60 Hz Separate control (except sizes 4...6)
HJ	208V AC/24V, 50/60 Hz Separate control and/or transformer control
AJ	240V AC/24V, 50/60 Hz Separate control and/or transformer control
BJ	480V AC/24V, 50/60 Hz Separate control and/or transformer control
CJ	600V AC/24V, 50/60 Hz Separate control and/or transformer control

e
Overload Relay—see page 5

f
Fuse Clip/Circuit Breaker—see page 5

g
Options—see page 5

e	
Overload Relay	
Code	Description
-XXX	Provision for field-installed overload relay
-A2C	E100 overload, 0.2...1.0 A (Bulletin 306, 312 Only)
-A2E	E100 overload, 1.0...5.0 A
-A2F	E100 overload, 3.2...16 A
-A2G	E100 overload, 5.4...27 A
-A2J	E100 overload, 11...55 A
-A2L	E100 overload, 20...100 A
-A2M	E100 overload, 40...200 A
-A2N	E100 overload, 60...300 A
-A2R	E100 overload, 120...600 A
-EBV	E300 overload, Voltage/current/ground fault sensing module, 4 IN/3 OUT
-EBI	E300 overload, current sensing module, 4 IN/3 OUT
-EBG	E300 overload, current/ground fault sensing module, 4 IN/3 OUT
-ENV	E300 overload, Voltage/current/ground fault sensing module, 2 IN/2 OUT
-ENI	E300 overload, current sensing module, 2 IN/2 OUT
-ENG	E300 overload, current/ground fault sensing module, 2 IN/2 OUT
-930	Three-pole contactor with N.O. aux contact (Bulletin 300 only)

f			
Fuse Clip/Circuit Breaker			
Code	Description	Code	Description
-J03	30 A Class J	-R40	400 A Class R
-J06	60 A Class J	-R60	600 A Class R
-J10	100 A Class J	-C15	15 A Circuit breaker
-J20	200 A Class J	-C30	30 A Circuit breaker
-J40	400 A Class J	-C50	50 A Circuit breaker
-J60	600 A Class J	-D10	100 A Circuit breaker
-L80	800 A Class L	-D12	125 A Circuit breaker
-L12	1200 A Class L	-D15	150 A Circuit breaker
-L16	1600 A Class L	-D30	300 A Circuit breaker
-R03	30 A Class R	-D40	400 A Circuit breaker
-R06	60 A Class R	-D60	600 A Circuit breaker
-R10	100 A Class R	-D80	800 A Circuit breaker
-R20	200 A Class R		

g			
Options (Note: Some options require a quote from Engineering. See ProposalWorks from rok.auto/systemtools for details.)			
Code	Description	Code	Description
-1	START/STOP push button (Bul 302, 303, 312, 313)	-900	2 N.O. auxiliary contacts on starter
	Forward-OFF-Reverse push button (Bul. 306, 307)	-901	N.O./N.C. auxiliary contacts on starter
-1E	ON/OFF push button	-900T1	2 N.O./2 N.C. auxiliary contacts on starter
-1L	Illuminated START/STOP push button	-98	N.O. auxiliary contact on disconnect or circuit breaker
-3	HAND-OFF-AUTO selector switch (Bul. 302, 303, 312, 313)	-99	N.C. auxiliary contact on disconnect or circuit breaker
	FOR-OFF-REV selector switch (Bul. 306, 307)	-989	N.O./N.C. auxiliary contact on disconnect or circuit breaker
-3E	ON/OFF selector switch	-415	Plug-in control relay (SPST)
-3H	HAND-AUTO selector switch	-416	Plug-in control relay (DPST)
-13	START/STOP and HAND-OFF-AUTO Quick Connect kit	-TB6	6 Spring-clamp terminal blocks
-4R	Red LED pilot light	-TB12	12 Spring-clamp terminal blocks
-4G	Green LED pilot light	-VH	External vault handle
-4RG	Red and green LED pilot lights	-17	Surge suppressor on starter
-4GR	Red and green LED pilot lights	-21	Separate control 1-pole fusing
-4RA	Red and amber LED pilot lights	-22	Separate control 2-pole fusing
-4GA	Green and amber LED pilot lights	-412	Metal handle
-5R	Red LED push-to-test pilot light	-417	Plug-in timing relay (ON-Delay)
-5G	Green LED push-to-test pilot light	-418	Plug-in timing relay (OFF-Delay)
-5RG	Red and green LED push-to-test pilot lights	-425	Hour meter
-5GR	Red and green LED push-to-test pilot lights	-427	Lightning arrestor
-5RA	Red and amber LED push-to-test pilot lights	-428	Ammeter
-5GA	Green and amber LED push-to-test pilot lights	-429	Ground fault relay
-6P	Standard control circuit transformer	-430	Undervoltage relay
-6XP	100 W extra-capacity control circuit transformer		
-6XXP	200 W extra-capacity control circuit transformer		

Pump Control Panels

Examples that are given in this section are not intended to be used for product selection. Not all combinations produce a valid catalog number. Use ProposalWorks to help you configure your enclosed contactor or starter. ProposalWorks is available from rok.auto/systemtools.

1232T - **B** **N** **H** - **A2C** - **J03** - **3**
 a b c d e f g

a	
Bulletin Number	
Code	Description
1232T	Fusible pump panel
1233T	Circuit breaker pump panel

b	
NEMA Size	
Code	Description
B	NEMA size 1
C	NEMA size 2
D	NEMA size 3
E	NEMA size 4
F	NEMA size 5
G	NEMA size 6
H	NEMA size 7
J	NEMA size 8

c	
Enclosure Type	
Code	Description
N	Type 3R

d	
Line Voltage/Control Voltage	
Code	Description
H	208V AC, 50/60 Hz Common/transformer control
A	240V AC, 50/60 Hz Common/transformer control
B	480V AC, 50/60 Hz Common/transformer control
C	600V AC, 50/60 Hz Common/transformer control
HD	208V AC/120V, 50/60 Hz Separate control
AD	240V AC/120V, 50/60 Hz Separate control
BD	480V AC/120V, 50/60 Hz Separate control
CD	600V AC/120V, 50/60 Hz Separate control (except sizes 4...6)

e	
Overload Relay	
Code	Description
-XXX	Provision for field-installed overload relay
-A1C	0.2...1.0 A, E100 overload, Trip Class 10 (Bul. 1232T only)
-A2C	0.2...1.0 A, E100 overload, Trip Class 20
-A1E	1.0...5.0 A, E100 overload, Trip Class 10
-A2E	1.0...5.0 A, E100 overload, Trip Class 20
-A1F	3.2...16 A, E100 overload, Trip Class 10
-A2F	3.2...16 A, E100 overload, Trip Class 20
-A1G	5.4...27 A, E100 overload, Trip Class 10
-A2G	5.4...27 A, E100 overload, Trip Class 20
-A1J	11...55 A, E100 overload, Trip Class 10
-A2J	11...55 A, E100 overload, Trip Class 20
-A1L	20...100 A, E100 overload, Trip Class 10
-A2L	20...100 A, E100 overload, Trip Class 20
-A1M	40...200 A, E100 overload, Trip Class 10
-A2M	40...200 A, E100 overload, Trip Class 20
-A1N	60...300 A, E100 overload, Trip Class 10
-A2N	60...300 A, E100 overload, Trip Class 20
-A1R	120...600 A, E100 overload, Trip Class 10
-A2R	120...600 A, E100 overload, Trip Class 20

f	
Fuse Clip/Circuit Breaker	
Code	Description
-J03	30 A Class J
-J06	60 A Class J
-J10	100 A Class J
-J20	200 A Class J
-J40	400 A Class J
-J60	600 A Class J
-L80	800 A Class L
-R03	30 A Class R
-R06	60 A Class R
-R10	100 A Class R
-R20	200 A Class R
-R40	400 A Class R
-R60	600 A Class R
-C15	15 A Circuit breaker
-C30	30 A Circuit breaker
-C50	50 A Circuit breaker
-D10	100 A Circuit breaker
-D12	125 A Circuit breaker
-D15	150 A Circuit breaker
-D30	300 A Circuit breaker
-D40	400 A Circuit breaker
-D60	600 A Circuit breaker
-D80	800 A Circuit breaker

g
Options—see page 7

g	
Options	
Code	Description
—	START and HAND-OFF-AUTO (standard on pump panels)
-3	HAND-OFF-AUTO selector switch
-4G	Green LED pilot light
-4GR	Red and green LED pilot lights
-4R	Red LED pilot light
-4RG	Red and green LED pilot lights
-4I2	Metal handle
-6P	Standard control circuit transformer
-6XP	100 W extra-capacity control circuit transformer
-XL	Extra space enclosure
-900	2 N.O. Auxiliary contact on starter
-901	N.O/N.C. Auxiliary contact on starter
-90011	2 N.O/2 N.C. Auxiliary contact on starter
-HUB	Enclosure with hub at the top for top-entry wiring

Specifications

Table 1 - Mechanical Ratings

NEMA Size	Mechanical Life (Millions of Operations)	Maximum Number of Auxiliary Contacts	Operating Time [ms]	
			Pick-up (Average)	Drop-out (Average)
0	13	8	15...30	10...60
1	13	8		
2	12	8		
3	10	8	20...40	
4	1.5	4	20...55	40...70
5	0.8	4	30...60	45...80
6	0.5	4	50...120	33...70

Table 2 - Environmental Ratings

Bulletin	NEMA Size	Operating Position	Storage Range	Operating Range	Altitude	Humidity
300	0	Vertical	-55...+80 °C (-67...+176 °F)	-25...+60 °C (-13...+140 °F)	2000 m	5...95% non-condensing
	1					
	2					
	3		-40...+70 °C (-40...+158 °F)			
	4					
	5					
6						
305, 309, 302, 303, 306, 307, 312, 313, 1232T, 1233T	0	Vertical	-40...+80 °C (-40...+176 °F)	+40 °C (104 °F)	2000 m	5...95% non-condensing
	1					
	2					
	3					
	4					
	5					
6						

Table 3 - Construction

Bulletin	NEMA Size	Wire size for Power terminals [AWG]		Required Torque [lb-in]	
		Line	Load	Line	Load
300	0	16...10	16...10	22	22
	1	14...4	14...4	25	25
	2	14...4	14...4	25	25
	3	14...1	14...1	40	40
	4	3...3/0	3...3/0	80	80
	5	4...400	4...400	325	375
	6	2/0...500	2/0...500	325	275
305, 309	0	16...10	14...6	22	22
	1	14...4	14...6	25	22
	2	14...4	14...6	25	22
	3	14...1	12...1	40	35
	4	3...3/0	3...3/0	80	80
	5	4...400	4...400	325	375
	6	2/0...500	2/0...500	325	275
302	0	#14...1/0	16...10	45	22
	1	#14...1/0	14...4	45	25
	2	#14...1/0	14...4	45	25
	3	#14...1/0	14...1	50	40
	4	#6...250MCM	3...3/0	275	80
	5	(2)#1/0...250MCM	4...400	325	375
	6	(2)#1/0...350MCM	2/0...500	325	275
312, 1232T	0	#14...1/0	14...6	45	22
	1	#14...1/0	14...6	45	22
	2	#14...1/0	14...6	45	22
	3	#14...1/0	12...1	50	35
	4	#6...250MCM	3...3/0	275	80
	5	(2)#1/0...250MCM	4...400	325	375
	6	(2)#1/0...350MCM	2/0...500	325	275
303	0	#14...1/0	16...10	62	22
	1	#14...1/0	14...4	62	25
	2	#14...1/0	14...4	62	25
	3	#14...1/0	14...1	62	40
	4	#10...350MCM ⁽¹⁾	3...3/0	124	80
	5	#250...500MCM	4...400	380	375
	6	(2)#250...500MCM	2/0...500	275	275
313, 1233T	0	#14...1/0	14...6	62	22
	1	#14...1/0	14...6	62	22
	2	#14...1/0	14...6	62	22
	3	#14...1/0	12...1	62	35
	4	#10...350MCM ⁽¹⁾	3...3/0	124	80
	5	#250...500MCM	4...400	380	375
	6	(2)#250...500MCM	2/0...500	275	275

(1) Wire range is for J-Frame. For G-Frame breakers, wire range is #14...1 AWG.

Table 4 - Short-circuit Rating—300 Line Combination Contactors and Starters: Bulletin 300, 302, 303, 305, 306, 307, 309, 312, 313, 1232T, 1233T

Bulletin 300, 302, 305, 306, 309, 312, 1232T (Fusible)					Bulletin 300, 303, 305, 307, 309, 313, 1233T (Circuit Breaker)			Bul 300, 305, 309 with 12 x 7 x 5 in. (305 x 178 x 127 mm) enclosure with lift-off cover							
NEMA Size	Fuse Type	Overload Code	Available Short Circuit Ampere RMS Symmetrical [A]		NEMA Size	Available Short Circuit Ampere RMS Symmetrical [A]		Class J or R Fuses		Circuit Breaker					
			480V Max.	600V max.		480V Max.	600V max.	600V max.		480V Max.	600V max.				
0	H, J, R	ATC, A2C	—	100,000	0 ⁽¹⁾	65,000	25,000	0	30	5 kA	15	5 kA	15	5 kA	
1		All	—		1			35,000	1	30	5 kA	50	5 kA	15	5 kA
2			—		2				60	5 kA	50	5 kA	50	5 kA	
3			—		3				4	5	6				
4	H, R	All	65,000	10,000	4	35,000	4	5	6	5	6				
5					5		6	5	6						
6					6		5	6	5	6					
0...6	J	All	—	100,000											

(1) Except for starters that use 0.2...1.0 A, E100 overload relays.

Table 5 - AC Coil Data

NEMA Size	Operating Volt Amperes [VA]		Operating Times (AC)		Heat Dissipation [W]	Coil Operating Limits, 50/60 Hz, (x Voltage)	
	50/60 Hz		Closing Delay [ms]	Opening Delay [ms]		Pick up	Drop out
	Inrush	Sealed					
0	70	8	15...30	10...60	4.7	85...10%	30...60%
1	80	9			11.2		
2	130	10			11.5		
3	200	16	20...40	17.5			
4 ⁽¹⁾	130	6	20...55	40...70	33		
5 ⁽¹⁾	385	17.5	30...60	45...80	46.5		
6 ⁽¹⁾	955	12	50...120	33...70	68		

(1) Based on 100...250V AC coil type voltage. Different coil type may draw higher or lower inrush or sealed current.

Table 6 - Auxiliary Contacts (NEMA A600) AC Ratings – Bulletin 100-ES, 100-F, 100-S

Maximum AC Contact Rating Per Pole						
AC Rating Designation	Maximum Voltage 60 Hz 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

Table 7 - Auxiliary Contacts (NEMA A600) DC Ratings – Bulletin 100-ES, 100-F, 100-S

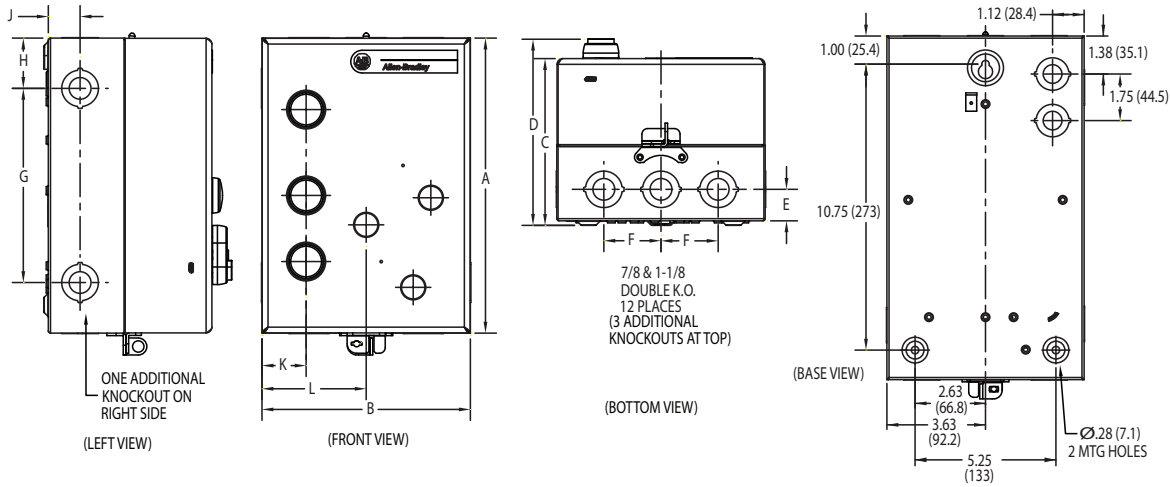
Auxiliary Contact ⁽¹⁾	DC Rating Designation	125V DC	250V DC	Maximum DC Contact Rating per Pole
100-ES1-11 100-ES2-11	P600	1.1 A	0.55 A	5 A
100-ES3-11 100-ES4-11	Q300	0.55 A	0.27 A	2.5 A
100-F... 100-S...	Q600	0.55 A	0.27 A	2.5 A

(1) See publications [100-TD013](#) and [300-TD003](#) for additional contactor and auxiliary contact specifications.

Approximate Dimensions

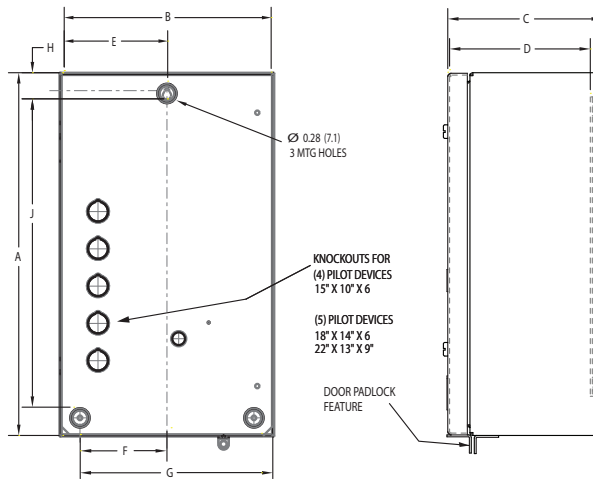
Approximate dimensions are shown in inches (millimeters). Dimensions are not intended for manufacturing purposes.

Figure 1 - Bulletins 300, 305, and 309 Contactors and Starters, 3-Pole— Type 1 General-purpose Lift-off Enclosure



NEMA Size/ Current Rating	Dimensions in Inches (Millimeters)										
	A Height	B Width	C Depth	D	E	F	G	H	J	K	L
0...2 (without control transformer)	12.81 (325)	7.25 (184)	5.51 (140)	6.06 (154)	1.22 (31)	2.38 (60)	8.88 (226)	1.94 (49)	1.22 (31)	1.46 (37)	3.63 (92)

Figure 2 - Bulletins 300, 305, and 309 Contactors and Starters, 3-Pole—Type 1 Hinged Enclosure — with or without Control Transformer

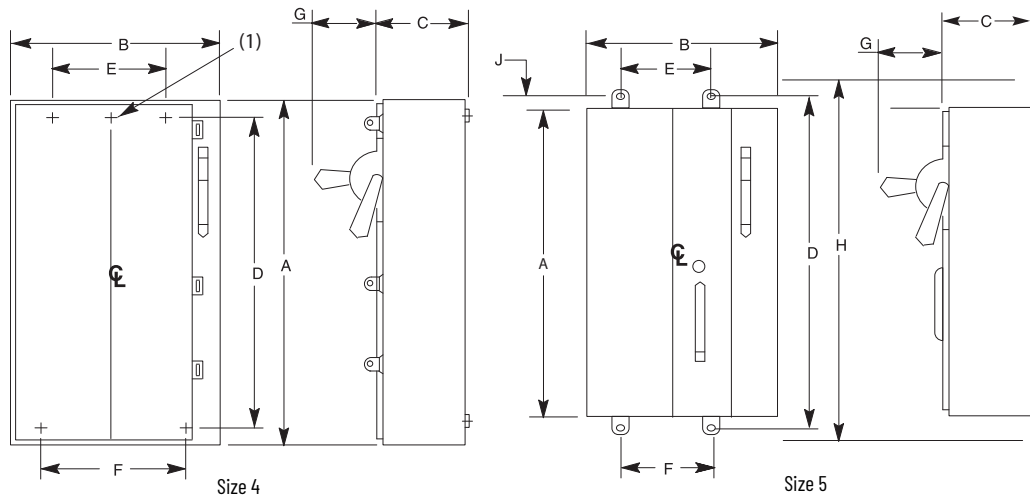


NEMA Size/ Current Rating	Bulletin No.	Dimensions in Inches (Millimeters)								
		A Height	B Width	C Depth	D	E Mounting	F Mounting	G Mounting	H	J (Mounting)
0...2	300, 309 with transformer	15.00 (381)	10.00 (254)	6.39 (162)	5.82 (148)	5.00 (127)	3.75 (95)	7.50 (191)	1.08 (27)	12.75 (324)
0...3	305	18.00 (457)	14.00 (356)	6.39 (162)	5.83 (148)	7.00 (178)	5.75 (146)	11.50 (292)	1.00 (25)	15.75 (400)
3	300, 309									
4	300, 305, 309	22.00 (559)	13.00 (330)	8.50 (216)	7.89 (201)	6.50 (165)	5.25 (133)	10.50 (267)	1.08 (27)	19.75 (502)



For Types 3R/12, 4/4X, 4X, and Bolted Type 7 & 9 and 3R, 7 & 9 dimensions, contact your local Rockwell Automation sales office or Allen-Bradley distributor.

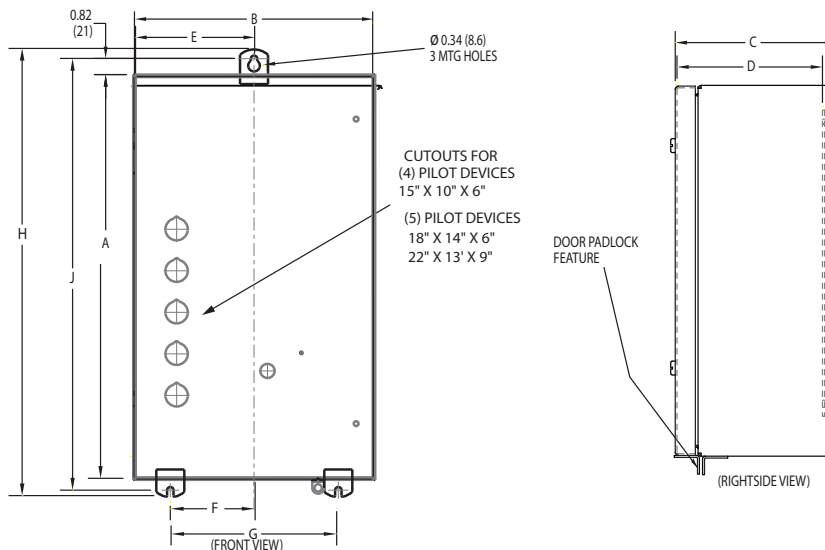
Figure 3 - Bulletins 300, 305, 309, 302, 303, 306, 307, 312, and 313 Contactors and Starters—Type 1 General-purpose Painted Enclosure



NEMA Size	Bulletin No.	Approximate Dimensions in Inches (Millimeters)							Approximate Shipping Weight [lb (kg)]
		A Height	B Width	C Depth	D Mounting	E Mounting	F Mounting	G Handle Depth	
0...2	302, 306, 312	27.50 (968)	10.50 (267)	8.25 (210)	25.13 (639)	(1)	5.25 (133)	5.56 (141)	40 (18.14)
0...3	303, 306, 313								
3	302, 306, 312 Class R	30 (762)	20.5 (521)	9.88 (251)	27.63 (702)	15.25 (387)	15.25 (387)	5.56 (141)	90 (40.82)
4	303, 307, 313								
4	302, 306, 312	50 (1270)	22 (559)	11.19 (284)	47.63 (1210)	15.25 (387)	15.25 (387)	5.56 (141)	250 (113.4)
5...6	300, 305, 309								
5...6	302, 303, 306, 307, 312, 313	56 (1422)	30.5 (775)	13.79 (350)	57.63 (1463)	20 (508)	25.25 (641)	7.62 (194)	360 (163.3)

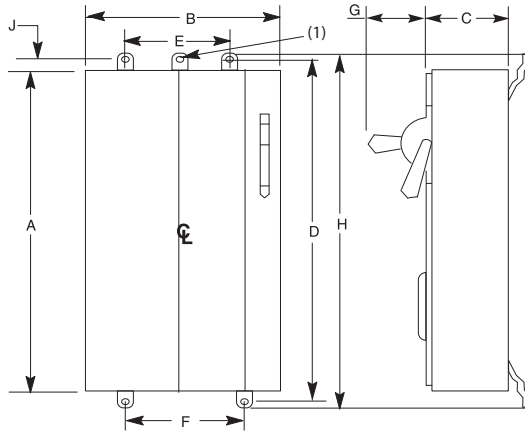
(1) Sizes 0, 1, and 2 have one top-mounting hole that is on the center line. Larger size enclosures have two top-mounting holes that are located as shown.

Figure 4 - Bulletins 300, 305, and 309 Contactors and Starters, 3-Pole—Type 3R/12 Rainproof, Dusttight, 4/4X Watertight, Metallic Enclosure – with or without Control Transformer



NEMA Size/ Current Rating	Bulletin No.	Approximate Dimensions in Inches (Millimeters)								
		A Height	B Width	C Depth	D	E Mounting	F Mounting	G Mounting	H	J Mounting
0...2	300 and 309 with transformer	15.00 (381)	10.00 (254)	6.45 (164)	5.82 (148)	5.00 (127)	3.00 (76)	6.00 (152)	17.23 (438)	16.38 (416)
0...3	305	18.00 (457)	14.00 (356)	6.45 (164)	5.83 (148)	7.00 (178)	5.00 (127)	10.00 (254)	20.23 (514)	19.38 (492)
3	300, 309									
4	300, 305, 309	22.00 (559)	13.00 (330)	8.57 (218)	7.89 (201)	6.50 (165)	4.43 (113)	9.00 (229)	24.23 (615)	23.38 (594)

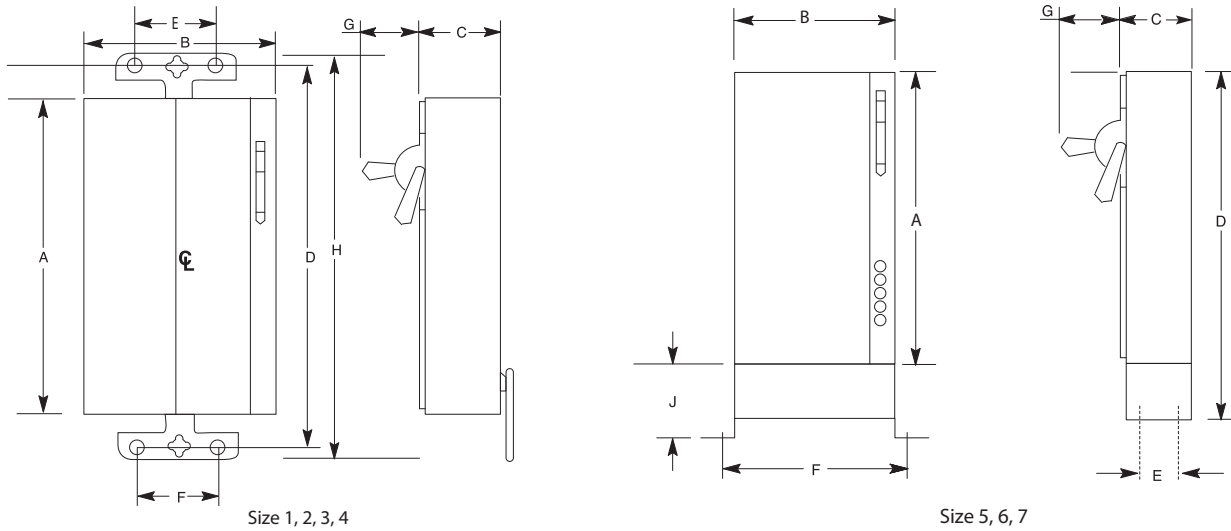
Figure 5 - Bulletins 300, 305, 309, 302, 303, 306, 307, 312, and 313 Contactors and Starters—Type 3R/4/12 Rainproof, Dusttight – Industrial Use Enclosures



NEMA Size	Bulletin No.	Approximate Dimensions in Inches (Millimeters)								Approximate Shipping Weight [lb (kg)]	
		A Height	B Width	C Depth	D Mounting	E Mounting	F Mounting	G Handle Depth	H		J
0...2	302, 306, 312	27.50 (698)	10.50 (267)	8.25 (210)	28.88 (733)	(1)	5.25 (133)	5.56 (141)	29.88 (759)	0.81 (21)	40 (18.14)
0...3	303, 306, 313										
3	302, 306, 312 Class R	30 (762)	20.5 (521)	10.19 (259)	31.38 (797.05)	15.25 (387)	15.25 (387)	5.56 (141)	32.38 (822)	0.81 (21)	90 (40.82)
4	303, 307, 313										
4	302, 306, 312	50 (1270)	22 (559)	11.5 (292)	51.38 (1305)	15.25 (387)	15.25 (387)	5.56 (141)	52.38 (1330)	0.71 (18)	250 (113.4)
5...6	300, 305, 309										
5...6	302, 303, 306, 307, 312, 313	56 (1422)	30.5 (775)	13.79 (350)	57.63 (313)	20 (508)	25.25 (641)	7.62 (194)	62.62 (1590)	1 (25.4)	360 (163.3)

- (1) Sizes 0, 1, and 2 have one top-mounting hole that is on the center line. All sizes in large enclosures have two top-mounting holes that are located as shown.
- (2) Fusible disconnect switch with Class J fuses.
- (3) Fusible disconnect switch with Class R fuses.

Figure 6 - Bulletins 1232T and 1233T Pump Panels—Type 3R (Enclosure Code “N”) Rainproof Enclosures



Bulletin No.	Size	Approximate Dimensions in Inches (Millimeters)								Approximate Shipping Weight [lb (kg)]	
		A Height	B Width	C Depth	D Mounting	E Mounting	F Mounting	G Handle Depth	H		J
1232T	1...2	27.50 (698)	10.5 (267)	8.26 (210)	28.88 (733)	(1)	7 (178)	5.56 (141)	29.75 (756)	—	40 (18.14)
1233T	1...3										
1232T	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)
1233T	4										
1232T	4	50 (1270)	22 (559)	9.90 (251)	54.88 (1394)	15.25 (387)	15.25 (387)	5.56 (141)	56.38 (1432)	—	250 (113.4)
1232T, 1233T	5...6	56 (1422)	30.5 (775)	13.78 (350)	65.68 (1668)	11 (279)	33.84 (860)	7.62 (194)	—	9.68 (246)	360 (163.3)

- (1) Sizes 1 and 2 have one top-mounting hole that is on the center line. All sized in large enclosures have two top mounting holes that are located as shown.

Replacement Parts for Field Installation

Contactors Accessories

Coils

Coil Voltage [60 Hz]	NEMA Starter Size (Code)	Cat. No.
120V	0 (A)	TA473
208...240V	0 (A)	TA296
480V	0 (A)	TA475
120V	1 (B)	TC473
208...240V	1 (B)	TC296
480V	1 (B)	TC475
120V	2 (C)	TD473
208...240V	2 (C)	TD296
480V	2(C)	TD475
120V	3 (D)	TE473
208...240V	3 (D)	TE296
480V	3 (D)	TD475
100...250V AC/DC	4 (E)	CE903
100...250V AC/DC with PLC interface	4 (E)	CEE903
250...500V AC/DC	4 (E)	CE904
250...500V AC/DC with PLC interface	4 (E)	CEE904
48...130V AC/DC	5 (F)	TG910
100...250V AC/DC with PLC interface	5 (F)	CFE911
250...500V AC/DC with PLC interface	5 (F)	CFE912
48...130V AC/DC	6 (G)	THE902
100...250V AC/DC with PLC interface	6 (G)	THE903
250...500V AC/DC with PLC interface	6 (G)	THE904

Auxiliary Contacts

Auxiliary Contact - Contactor	NEMA Starter Size (Code)	Cat. No.
Side-mount, N.C. auxiliary	0...3 (A...D)	100-SB01
Side-mount, N.O. auxiliary	0...3 (A...D)	100-SB10
Side-mount, (2) N.C. auxiliary	0...3 (A...D)	100-SB02
Side-mount, N.O./N.C. auxiliary	0...3 (A...D)	100-SB11
Side-mount, (2) N.O. auxiliary	0...3 (A...D)	100-SB20
Side-mount, N.O./N.C. late-break auxiliary	0...3 (A...D)	100-SBL11
Top-mount, N.O./N.C. auxiliary	0...3 (A...D)	100-FB11
Top-mount, (2) N.O./N.C. auxiliary	0...3 (A...D)	100-FB22
Side-mount, N.O./N.C. auxiliary	4...5 (E...F)	100-ES1-11
Side-mount, N.O./N.C. auxiliary	6 (G)	100-ES3-11

Auxiliary Contact Kits

Auxiliary Contact Kits (snap-together wiring)	NEMA Starter Size (Code)	Cat. No.
N.O./N.C.	0...3 (A...D)	198-SA11
N.O./N.C.	4...5 (E...F)	198-ES1-11

Voltage Control Accessories

Transformers

Size [VA]	Primary Voltage [V AC]	Secondary Voltage [V AC]	Cat. No.
50 ⁽¹⁾	208	120	1497-HD50
50 ⁽¹⁾	240	120	1497-AD50
50 ⁽¹⁾	480	120	1497-BD50
50 ⁽¹⁾	600	120	1497-CD50
50 ⁽¹⁾	208	24	1497-HJ50
50 ⁽¹⁾	240	24	1497-AJ50
50 ⁽¹⁾	480	24	1497-BJ50
50 ⁽¹⁾	600	24	1497-CJ50
80	208	120	1497-HD80
80	240	120	1497-AD80
80	480	120	1497-BD80
80	600	120	1497-CD80
80	208	24	1497-HJ80
80	240	24	1497-AJ80
80	480	24	1497-BJ80
80	600	24	1497-CJ80
130	208	120	1497-HD130
130	240	120	1497-AD130
130	480	120	1497-BD130
130	600	120	1497-CD130
130	208	24	1497-HJ130
130	240	24	1497-AJ130
130	480	24	1497-BJ130
130	600	24	1497-CJ130
200	208	120	1497-HD200
200	240	120	1497-AD200
200	480	120	1497-BD200
200	600	120	1497-CD200
200	208	24	1497-HJ200
200	240	24	1497-AJ200
200	480	24	1497-BJ200
200	600	24	1497-CJ200
250	208	120	1497-HD250
250	240	120	1497-AD250
250	480	120	1497-BD250
250	600	120	1497-CD250
250	208	24	1497-HJ250
250	240	24	1497-AJ250
250	480	24	1497-BJ250
250	600	24	1497-CJ250
350	208	120	1497-HD350
350	240	120	1497-AD350
350	480	120	1497-BD350
350	600	120	1497-CD350
350	208	24	1497-HJ350
350	240	24	1497-AJ350
350	480	24	1497-BJ350
350	600	24	1497-CJ350
500	208	120	1497-HD500
500	240	120	1497-AD500
500	480	120	1497-BD500
500	600	120	1497-CD500
500	208	24	1497-HJ500
500	240	24	1497-AJ500
500	480	24	1497-BJ500
500	600	24	1497-CJ500

(1) For Bulletin numbers 300, 305, and 309 Lift-off panel only.

Fuseholder Kits

Description	Cat. No.
1P with fuse ⁽¹⁾	599-FB1
2P with fuse ⁽²⁾	599-FB2

- (1) For separate control, remove wire 1L1 and jumper. Wire 120V directly to the bottom of the fuse holder terminals. Wire neutral to N on the terminal block.
- (2) For separate control, remove 1L1 and 1L2 wires. Wire 120V and neutral directly to the bottom of the fuse holder terminals.

Disconnect Accessories

Disconnect Switches

Size [A]	NEMA Starter Size (Code)	Cat. No.
30	0...1 (A...B)	1494U-D30
60	2 (C)	1494U-D60
100	3 (D)	1494U-D100
200	4 (E)	1494U-D200
400	5 (F)	1494U-D400
600	6 (G)	1494V-DS600

Phase Barrier Kits

Phase Barrier Kits - 1494U Disconnect	NEMA Starter Size (Code)	Cat. No.
30...60 A disconnect, fuse block	0...2 (A...C)	1494U-PB31
100 A disconnect, fuse block	3 (D)	1494U-PB31
200 A disconnect, fuse block	4 (E)	—
400 A disconnect, fuse block	5 (F)	—

Trailer Fuse Blocks

Trailer Fuse Blocks - Disconnect	Switch Size	NEMA Starter Size (Code)	Cat. No.
30 A, 250...600V, Class H, J, R	30 A	0...1 (A...B)	1494U-F30
60 A, 250...600V, Class H, J, R	60 A	2 (C)	1494U-F60
100 A, 250...600V, Class H, J, R	100 A	3 (D)	1494U-F100
200 A, 250...600V, Class H, J, R	200 A	4 (E)	1494U-F200
400 A, 250...600V, Class H, J, R	400 A	5 (F)	1494U-F400

Trailer Fuse Blocks - 1494F Disconnect	Switch Size	NEMA Starter Size (Code)	Cat. No.
600 A, 250...600V, Class H, includes fuse clips	600 A	6 (G)	1491-N621
600 A, 250...600V, Class J, fuses are bolted to terminals	600 A	6 (G)	1494V-FS600
600 A, 250...600V, Class R, includes fuse clips	600 A	6 (G)	1491-R621

Fuse Clips

Fuse Clips - 1494U Disconnect	NEMA Starter Size (Code)	Cat. No.
1...30 A, 250V AC, Class H	0...2 (A...C)	1494U-FC302J
1...30 A, 250V AC, Class J	0...2 (A...C)	1494U-FC30J
1...30 A, 250V AC, Class R	0...2 (A...C)	1494U-FC302R
1...30 A, 600V AC, Class H	0...2 (A...C)	1494U-FC30J
1...30 A, 600V AC, Class J	0...2 (A...C)	1494U-FC30J
1...30 A, 600V AC, Class R	0...2 (A...C)	1494U-FC30R
31...60 A, 250V AC, Class H	0...2 (A...C)	1494U-FC30J
31...60 A, 250V AC, Class J	0...2 (A...C)	1494U-FC60J
31...60 A, 250V AC, Class R	0...2 (A...C)	1494U-FC30R
31...60 A, 600V AC, Class H	0...2 (A...C)	1494U-FC60J
31...60 A, 600V AC, Class J	0...2 (A...C)	1494U-FC60J
31...60 A, 600V AC, Class R	0...2 (A...C)	1494U-FC60R
61...100 A, 250V AC, Class H	3 (D)	1494U-FC100J
61...100 A, 250V AC, Class J	3 (D)	1494U-FC100J
61...100 A, 250V AC, Class R	3 (D)	1494U-FC100R
61...100 A, 600V AC, Class H	3 (D)	1494U-FC100J
61...100 A, 600V AC, Class J	3 (D)	1494U-FC100J
61...100 A, 600V AC, Class R	3 (D)	1494U-FC100R

Fuse Clips - 1494F Disconnect	NEMA Starter Size (Code)	Cat. No.
61...100 A, 250V AC, Class H	4 (E)	1401-N44
61...100 A, 250V AC, Class J	4 (E)	1401-N44
61...100 A, 250V AC, Class R	4 (E)	1401-N53
61...100 A, 600V AC, Class H	4 (E)	1401-N44
61...100 A, 600V AC, Class J	4 (E)	1401-N44
61...100 A, 600V AC, Class R	4 (E)	1401-N53
101...200 A, 250V AC, Class H	5 (F)	1401-N45
101...200 A, 250V AC, Class J	5 (F)	1401-N45
101...200 A, 250V AC, Class R	5 (F)	1401-N54
101...200 A, 600V AC, Class H	5 (F)	1401-N45
101...200 A, 600V AC, Class J	5 (F)	1401-N45
101...200 A, 600V AC, Class R	5 (F)	1401-N54
201...400 A, 250V AC, Class H	5 (F)	1401-N46
201...400 A, 250V AC, Class J	5 (F)	1401-N46
201...400 A, 250V AC, Class R	5 (F)	1401-N55
201...400 A, 600V AC, Class H	5 (F)	1401-N46
201...400 A, 600V AC, Class J	5 (F)	1401-N46
201...400 A, 600V AC, Class R	5 (F)	1401-N55

Auxiliary Contacts

Auxiliary Contact - Disconnect	NEMA Starter Size (Code)	Cat. No.
N.O. auxiliary	0...4 (A...E)	1494U-N0
N.C. auxiliary	0...4 (A...E)	1494U-NC
N.O. auxiliary	5 (F)	1495-N8
N.C. auxiliary	5 (F)	1495-N9
Electrical interlock, N.O./N.C. auxiliary	5 (F)	1495-N43
Electrical interlock, (2) N.O./ (2) N.C. auxiliary	5 (F)	1495-N44

Auxiliary Contact - 1494F Disconnect	NEMA Starter Size (Code)	Cat. No.
N.O. auxiliary and adapter kit ⁽¹⁾	6 (G)	595-A, 595-N1
N.C. auxiliary and adapter kit ⁽¹⁾	6 (G)	595-B, 595-N1
Electrical interlock, N.O./N.C. auxiliary and adapter kit ⁽¹⁾	6 (G)	1495-N34, 1495-N36
Electrical interlock, (2) N.O./ (2) N.C. auxiliary and adapter kit ⁽¹⁾	6 (G)	1495-N35, 1495-N36

(1) One adapter kit is required for each auxiliary contact. Two auxiliaries maximum per each disconnect switch.

Fuse Covers

NEMA Starter Size (Code)	Switch Rating [A]	Fuse Class	Fuse Clip Rating [A]		Cat. No.
			250V	600V	
0...1 (A...B)	30	non-fusible	—	—	1494U-PC1
0...1 (A...B)	30	H, R	30	—	
2 (C)	60	H, R	60	—	
0...1 (A...B)	30	J	30	30	
2 (C)	60	J	60	60	
2 (C)	60	non-fusible	—	—	1494U-PC3
3 (D)	100	non-fusible	—	—	
0...1 (A...B)	30	H, R	—	30	
2 (C)	60	H, R	—	60	
3 (D)	100	J	100	100	
3 (D)	100	H, R	100	100	1494U-PC200
4 (E)	200	non-fusible	—	—	
4 (E)	200	J, H, R	200	200	1494U-PC400
5 (F)	400	non-fusible	—	—	
5 (F)	400	J, H, R	400	200	1495-N61
6 (G)	600	non-fusible	—	—	
6 (G)	600	J, H, R	600	600	

Lug Connectors (3 per package)

Lug Kits- 1494U Disconnect	NEMA Starter Size (Code)	Wire Size	Material	Cat. No.
30...60 A disconnect, 30...60 A fuse block	0...2 (A...C)	#14...#2	Aluminum	1494U-LA36
			Copper	1494U-LC36
100 A disconnect, 100 A fuse block	3 (D)	#14...#1/0	Aluminum	1494U-LA100
			Copper	1494U-LC100
200 A disconnect, 200 A fuse block	4 (E)	#6...#250 MCM	Aluminum	1494U-LA200
			Copper	1494U-LC200
400 A disconnect, 400 A fuse block	5 (F)	(1) #1/0...#300 MCM	Aluminum/Copper	1494U-LA400
		(1) #1/0...#250 MCM	Copper	1494R-N14
600 A disconnect, 600 A fuse block	6 (G)	(2) #1/0...#500 MCM	Aluminum/Copper	1494U-LA600
		(2) #1/0...#350 MCM	Copper	1494R-N10
		(2) #1/0...#350 MCM	Copper	1494R-N11 ⁽¹⁾
		(1) #1/0...#500 MCM	Copper	1494R-N12

(1) For use with Cat. No. 1491-N621 or 1491-R621 fuse blocks.

Circuit Breaker Accessories

Circuit Breaker Accessories

Circuit Breaker Size [A]	Horsepower [Hp]	Voltage [V]	NEMA Size (Code)	Circuit Breaker Cat. No.		Circuit Breaker Lugs Cat. No.		Required Number of Lug Cat. Nos. (3 per package)
				480 V	600 V	480 V	600 V	
15	0.1...0.34	200...230	0...1 (A...B)	140MG-G8P-C15	-	140G-G-TLC13	140G-H-TLC13	1
15	0.1...1	460						
15	0.1...1	575						
15	0.5...1	200...230						
15	1.5...3	460						
15	1.5...3	575						
15	1.5...3	200...230						
15	5...7.5	460						
15	5...7.5	575	-	140MG-H8P-C15				
30	5	200	1...2 (B...C)	140MG-G8P-C30	-	140G-G-TLC13	140G-H-TLC13	1
30	5...7.5	230						
30	10...15	460						
30	10...15	575						
50	5...10	200	1...3 (B...D)	140MG-G8P-C50	-	140G-G-TLC13	140G-H-TLC13	1
50	10	230						
50	20...25	460						
50	20...30	575						
100	15...25	200...230	2...4 (C...E)	140MG-G8P-D10	-	140G-G-TLC13	140G-H-TLC13	1
100	30...50	460						
100	40...50	575						
150	30	200	3...4 (D...E)	140MG-J8P-D15	-	140G-J-TLC13	140G-H-TLC13	1
150	30...40	230						
150	60...75	460						
150	75...100	575						
250	100	460						
400	75	200	5 (F)	140MG-K8P-D40	-	140G-K-TLC13	140G-H-TLC13	1
400	100	230						
400	550...60	200						
400	60...75	230						
400	125...150	460						
400	200	460						
250	125	575						
400	150...200	575	140MG-J8P-D25	140G-J-TLC13	140G-H-TLC13	1		
			140MG-K8P-D30	140G-K-TLC13	140G-H-TLC13	2		
600	100...200	200...240	6 (G)	140MG-M8P-D60	-	140G-M-TLC23	140G-H-TLC13	1
	250...400	480...600						

Auxiliary Contacts

Auxiliary Contact - Circuit Breaker	NEMA Starter Size (Code)	Cat. No.
one normally open, (1) N.O.	0...5 (A...F)	1495-N85
one normally closed, (1) N.C.	0...5 (A...F)	1495-N86

Overload Relays

E100 Solid State Overload, Field-selectable Trip Class

NEMA Size (Code)	Overload Code	Overload Cat. No.	External Current Transformer (CT) Cat. No.	CT Ratio	Current Range [A]	Reset	Trip Class
0 (A)	-A1C, -A2C	193-1EEBB	—	—	0.2...1.0	Manual	10, 20
0 (A)	-A1E, -A2E	193-1EECB	—	—	1.0...5.0	Manual	10, 20
0 (A)	-A1F, -A2F	193-1EEDB	—	—	3.2...16	Manual	10, 20
0 (A)	-A1G, -A2G	193-1EEEB	—	—	5.4...27	Manual	10, 20
1, 2 (B, C)	-A1G, -A2G	193-1EEED	—	—	5.4...27	Manual	10, 20
1, 2 (B, C)	-A1J, -A2J	193-1EEFD	—	—	11...55	Manual	10, 20
3 (D)	-A1L, -A2L	193-1EEGE	—	—	20...100	Manual	10, 20
4 (E)	-A1M, -A2M	193-1EFJZ	1411-AL-201	200:5	40...200	Manual/Auto	10, 15, 20, 30
5 (F)	-A1N, -A2N	193-1EFKZ	1411-AL-301	300:5	60...300	Manual/Auto	10, 15, 20, 30
6 (G)	-A1R, -A2R	193-1EFMZ	1411-180SHT-601	600:5	120...500	Manual/Auto	10, 15, 20, 30

E300 Advanced Solid State Overload with Networking

NEMA Size (Code)	Overload Code	Sensing Module Cat. No.	External Current Transformer (CT) Cat. No.	CT Ratio	Current Range [A]	Description
0 (A)	-EBV	193-ESM-VIG-30A-C23	—	—	0.5...30	Voltage/Current/Ground Fault; I/O: 4 Inputs, 3 Outputs; 120V Control; EtherNet/IP™
	-EBI	193-ESM-I-30A-C23	—	—	0.5...30	Current; I/O: 4 Inputs, 3 Outputs; 120V Control; EtherNet/IP
	-EBG	193-ESM-IG-30A-C23	—	—	0.5...30	Current/Ground Fault; I/O: 4 Inputs, 3 Outputs; 120V Control; EtherNet/IP
1 (B)	-EBV	193-ESM-VIG-30A-C55	—	—	0.5...30	Voltage/Current/Ground Fault; I/O: 4 Inputs, 3 Outputs; 120V Control; EtherNet/IP
	-EBI	193-ESM-I-30A-C55	—	—	0.5...30	Current; I/O: 4 Inputs, 3 Outputs; 120V Control; EtherNet/IP
	-EBG	193-ESM-IG-30A-C55	—	—	0.5...30	Current/Ground Fault; I/O: 4 Inputs, 3 Outputs; 120V Control; EtherNet/IP
2 (C)	-EBV	193-ESM-VIG-60A-C55	—	—	6...60	Voltage/Current/Ground Fault; I/O: 4 Inputs, 3 Outputs; 120V Control; EtherNet/IP
	-EBI	193-ESM-I-60A-C55	—	—	6...60	Current; I/O: 4 Inputs, 3 Outputs; 120V Control; EtherNet/IP
	-EBG	193-ESM-IG-60A-C55	—	—	6...60	Current/Ground Fault; I/O: 4 Inputs, 3 Outputs; 120V Control; EtherNet/IP
3 (D)	-EBV	193-ESM-VIG-100A-C97	—	—	10...100	Voltage/Current/Ground Fault; I/O: 4 Inputs, 3 Outputs; 120V Control; EtherNet/IP
	-EBI	193-ESM-I-100A-C97	—	—	10...100	Current; I/O: 4 Inputs, 3 Outputs; 120V Control; EtherNet/IP
	-EBG	193-ESM-IG-100A-C97	—	—	10...100	Current/Ground Fault; I/O: 4 Inputs, 3 Outputs; 120V Control; EtherNet/IP
4 (E)	-ENV	193-ESM-VIG-30A-E3T	1411-AL-201	200:5	20...1200	Voltage/Current/Ground Fault; I/O: 4 Inputs, 3 Outputs; 120V Control; EtherNet/IP
	-ENI	193-ESM-I-30A-E3T	1411-AL-201	200:5	20...1200	Current; I/O: 4 Inputs, 3 Outputs; 120V Control; EtherNet/IP
	-ENG	193-ESM-IG-30A-E3T	1411-AL-201	200:5	20...1200	Current/Ground Fault; I/O: 4 Inputs, 3 Outputs; 120V Control; EtherNet/IP
5 (F)	-ENV	193-ESM-VIG-30A-E3T	1411-AL-301	300:5	30...1800	Voltage/Current/Ground Fault; I/O: 4 Inputs, 3 Outputs; 120V Control; EtherNet/IP
	-ENI	193-ESM-I-30A-E3T	1411-AL-301	300:5	30...1800	Current; I/O: 4 Inputs, 3 Outputs; 120V Control; EtherNet/IP
	-ENG	193-ESM-IG-30A-E3T	1411-AL-301	300:5	30...1800	Current/Ground Fault; I/O: 4 Inputs, 3 Outputs; 120V Control; EtherNet/IP
6 (G)	-ENV	193-ESM-VIG-30A-E3T	1411-AL-601	600:5	120...3600	Voltage/Current/Ground Fault; I/O: 4 Inputs, 3 Outputs; 120V Control; EtherNet/IP
	-ENI	193-ESM-I-30A-E3T	1411-AL-601	600:5	120...3600	Current; I/O: 4 Inputs, 3 Outputs; 120V Control; EtherNet/IP
	-ENG	193-ESM-IG-30A-E3T	1411-AL-601	600:5	120...3600	Current/Ground Fault; I/O: 4 Inputs, 3 Outputs; 120V Control; EtherNet/IP

E300 Common Modules

E300 Module Type	Cat. No.
Control Module	193-E10-43-120
Communication Module	193-ECM-ETR

Pilot Device Accessories

Pilot Light Kits

Pilot Light Kits	Cat. No. ⁽¹⁾
Type 4/12, red LED	599-PLF-xxxR
Type 4/12, green LED	599-PLF-xxxG
Type 4/12, amber/white LED	599-PLF-xxxAW
Type 4X, red LED	599-PLC-xxxR
Type 4X, green LED	599-PLC-xxxG
Type 4X, amber/white LED	599-PLC-xxxAW
Push-To-Test Pilot Light Kits	
Type 4/12, red LED	599-PTF-xxxR
Type 4/12, green LED	599-PTF-xxxG
Type 4/12, amber/white LED	599-PTF-xxxAW
Type 4X, red LED	599-PTC-xxxR
Type 4X, green LED	599-PTC-xxxG
Type 4X, amber/white LED	599-PTC-xxxAW
Forward/Reverse Pilot Light Kits	
Type 1, 3R/4/12, FOR-REV/HI-LO, red LED	599-PLF-xxxR-FR
Type 1, 3R/4/12, FOR-REV/HI-LO, green LED	599-PLF-xxxG-FR
Type 4X, FOR-REV/HI-LO, red LED	599-PLC-xxxR-FR
Type 4X, FOR-REV/HI-LO, green LED	599-PLC-xxxG-FR
Forward/Reverse, Push-To-Test Pilot Light Kits	
Type 1, 3R/4/12, FOR-REV/HI-LO, red LED	599-PTF-xxxR-FR
Type 1, 3R/4/12, FOR-REV/HI-LO, green LED	599-PTF-xxxG-FR
Type 4X, FOR-REV/HI-LO, red LED	599-PTC-xxxR-FR
Type 4X, FOR-REV/HI-LO, green LED	599-PTC-xxxG-FR

(1) Complete the cat. no. by selecting a voltage code for xxx. see the table below:

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

Push Button Kits

Push Button Kits	Cat. No.
Type 4/12, START-STOP	599-PBF-SS
Type 4/12, ON-OFF	599-PBF-00
Type 4/12, FOR-OFF-REV	599-PBF-FOR
Type 4/12, illuminated START-STOP	599-PBF-SSL120
Type 4X, START-STOP	599-PBC-SS
Type 4X, ON-OFF	599-PBC-00
Type 4X FOR-OFF-REV	599-PBC-FOR
Type 4X, illuminated START-STOP	599-PBC-SSL120

Selector Switch Kits

Selector Switch Kits	Cat. No.
Type 4/12, HAND-OFF-AUTO	599-SSF-HOA
Type 4/12, FOR-OFF-REV	599-SSF-FOR
Type 4/12, HIGH-OFF-LOW	599-SSF-HOL
Type 4/12, FOR-REV-STOP	599-SSF-FRS
Type 4/12, ON-OFF/HAND-AUTO	599-SSF-00
Type 4/12, HAND-OFF-AUTO/START-STOP	599-SSF-HOASS
Type 4/12, HAND-AUTO/START-STOP	599-SSF-HASS
Type 4X, HAND-OFF-AUTO	599-SSC-HOA
Type 4X, FOR-OFF-REV	599-SSC-FOR
Type 4X, HIGH-OFF-LOW	599-SSC-HOL
Type 4X, FOR-REV-STOP	599-SSC-FRS
Type 4X, ON-OFF/HAND-AUTO	599-SSC-00
Type 4X, HAND-OFF-AUTO/START-STOP	599-SSC-HOASS
Type 4X, HAND-AUTO/START-STOP	599-SSC-HASS

Enclosure Accessories

Door Safety Hardware Kits

Enclosure Size [Height x Width x Depth]	NEMA Starter Size (Code)	Enclosure Type F	Cat. No.
27 x 10 x 8.2 in. (68.6 x 25.4 x 20.8 cm)	0...2 (A...C)	3R/4/12	1494F-V1
30 x 20 x 9.7 in. (76.2 x 50.8 x 24.6 cm)	0...4 (A...E)		1494F-V2
50 x 22 x 11.1 in. (127 x 55.9 x 28.2 cm)	3...4 (D...E)		1494F-V3
56 x 30 x 14 in. (142.2 x 76.2 x 35.6 cm)	5...6 (F...G)		1494F-V4

Hole Plugs

Hole Plugs	NEMA Starter Size (Code)	Enclosure Type	Cat. No.
30.5 mm hole plug for pilot devices	0...6 (A...G)	all	800T-N1
19.5 mm hole plug for resets and door safety hardware			598-N1

External Reset Kits

NEMA Starter Size (Code)	Enclosure Type	Cat. No.
0...3, 5 (A...D, F)	1, 3R, 3R/4/12	1493-N21
4 (E)	1, 3R, 3R/4/12	1493-N31
0...3, 5 (A...D, F)	4/4X	1493-N22
4 (E)	4/4X	1493-N32

Service Entrance Grounding Kits

NEMA Starter Size (Code)	Cat. No.
0...2 (A...C)	599-GR1
3...5 (D...F)	599-GR2

Mounting Feet and Door Fastener

	NEMA Starter Size (Code)	Enclosure Type	Cat. No.
Wall-mount feet	0...4 (A...E)	1, 3R, 3R/4/12	598-N2
Floor-mount feet	5...7 (F...H)	3R	598-N5
Door Fastener	1...5 (B...F)	3R	598-N4

Handle Kits with Universal Link for Switch and Breaker

Painted Metal	NEMA Starter Size (Code)	Enclosure Type	Cat. No.
5-1/2 in. (14 cm) handle base	0...5 (A...F)	1, 3R, 3R/4/12	1494U-HM1
7-1/2 in. (19 cm) handle base	5 (F)		1494F-M2
7-1/2 in. (19 cm) handle base for 600 A disconnect switch	6 (G)		1494V-H2 ⁽¹⁾
7-1/2 in. (19 cm) handle base for 800 A / 1200 A circuit breaker	6 (G)		1494F-M3
Stainless Steel			
5-1/2 in. (14 cm) handle base	0...5 (A...F)	4/4X	1494U-HS1
7-1/2 in. (19 cm) handle base	5 (F)		1494F-S2
7-1/2 in. (19 cm) handle base for 600 A disconnect switch	6 (G)		1494V-S2 ⁽¹⁾
Molded Handle			
5-1/2 in. (14 cm) handle base	0...5 (A...F)	1, 3R, 4/4X	1494U-HP1

(1) These handles require 1494V-RB1 or 1494V-RB2 connecting rods.

System Accessories

Relays and Relay Sockets

Timing Relays - 120V AC, On Delay (8-pin socket required)	Cat. No.
0.1...10 s timing range	700-HT12AA1
1...180 s timing range	700-HT12BA1
Timing Relays - 120V AC, Off Delay (11-pin socket required)	
0.1...10 s timing range	700-HT22AA1
1...180 s timing range	700-HT22BA1
Control Relays - 2 Pole (8-pin socket required)	
2 Form C, 120V	700-HA32A1
Control Relays - 3 Pole (11-pin socket required)	
3 Form C, 120V	700-HA33A1
Relay Sockets	
8-pin socket (10 per package)	700-HN125
11-pin socket (10 per package)	700-HN126

Notes:

Additional Resources

These documents contain additional information concerning related products from Rockwell Automation.

Resource	Description
NEMA Space Saving Contactors and Starters Specifications, publication 300-TD003	Provides product selection and specifications for Bul. 300, 300S, 305, and 309 contactors.
IEC Contactor Specifications, publication 100-TD013	Provides product selection and specifications for Bul. 100 IEC contactors.
Pump Panel Specifications, publication 1232-TD001	Provides specifications for Bulletin 1232 and 1233 pump panels.
Industrial Components Preventive Maintenance, Enclosures, and Contact Ratings Specifications, publication IC-TD002	Provides a quick reference tool for Allen-Bradley® industrial automation controls and assemblies.
Safety Guidelines for the Application, Installation, and Maintenance of Solid-state Control, publication SGI-1.1	Designed to harmonize with NEMA Standards Publication No. ICS 1.1-1987 and provides general guidelines for the application, installation, and maintenance of solid-state control in the form of individual devices or packaged assemblies incorporating solid-state components.
Industrial Automation Wiring and Grounding Guidelines, publication 1770-4.1	Provides general guidelines for installing a Rockwell Automation industrial system.
Product Certifications website, rok.auto/certifications .	Provides declarations of conformity, certificates, and other certification details.

You can view or download publications at rok.auto/literature.

Rockwell Automation Support

Use these resources to access support information.

Technical Support Center	Find help with how-to videos, FAQs, chat, user forums, and product notification updates.	rok.auto/support
Knowledgebase	Access Knowledgebase articles.	rok.auto/knowledgebase
Local Technical Support Phone Numbers	Locate the telephone number for your country.	rok.auto/phonesupport
Literature Library	Find installation instructions, manuals, brochures, and technical data publications.	rok.auto/literature
Product Compatibility and Download Center (PCDC)	Download firmware, associated files (such as AOP, EDS, and DTM), and access product release notes.	rok.auto/pcdc

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Rockwell Otomasyon Ticaret A.Ş. Kar Plaza İş Merkezi E Blok Kat:6 34752, İçerenköy, İstanbul, Tel: +90 (216) 5698400 EEE Yönetmeliğine Uygundur

Connect with us.    

rockwellautomation.com ————— expanding **human possibility**[™]

AMERICAS: Rockwell Automation, 1201 South Second Street, Milwaukee, WI 53204-2496 USA, Tel: (1) 414.382.2000, Fax: (1) 414.382.4444

EUROPE/MIDDLE EAST/AFRICA: Rockwell Automation NV, Pegasus Park, De Kleetlaan 12a, 1831 Diegem, Belgium, Tel: (32) 2 663 0600, Fax: (32) 2 663 0640

ASIA PACIFIC: Rockwell Automation, Level 14, Core F, Cyberport 3, 100 Cyberport Road, Hong Kong, Tel: (852) 2887 4788, Fax: (852) 2508 1846