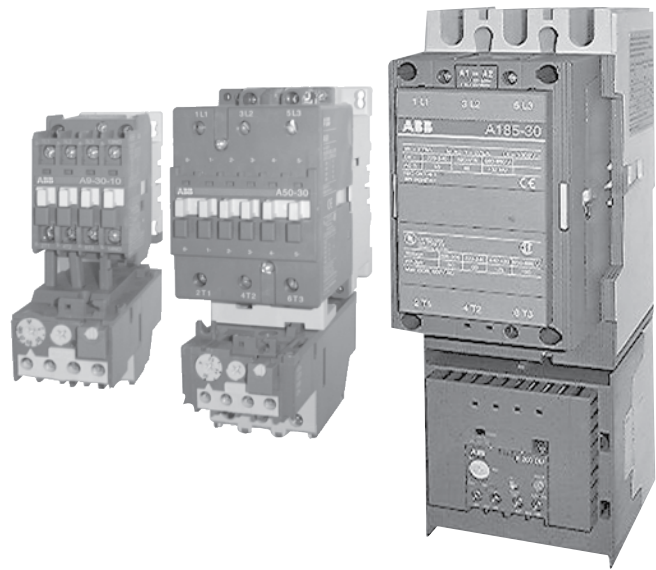
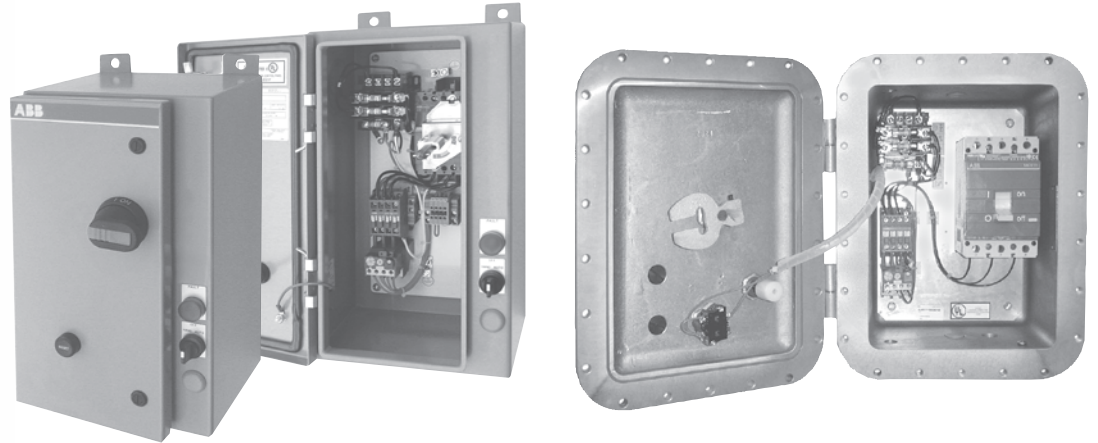




Starters  
Across the line  
Combination



# Across the line • Combination Starters

## General information

### Field modification kits

#### A Starters

#### Start-Stop pushbutton kit – dual element

3

Contactactor/starter size	Catalog number	List price
A9 – AF750	MPSSK	<b>\$ 38</b>

For field installation on NEMA 1 enclosures. Kit includes one dual element pushbutton and hardware. ①

#### Start-Stop pushbutton kit

Contactactor/starter size	Catalog number	List price
A9 – AF750	MP4SSK4	<b>\$ 48</b>

For field installation on all enclosures. Kit includes two momentary pushbuttons and hardware. ①

#### Fwd-Rev-Stop pushbutton kit

Contactactor/starter size	Catalog number	List price
A9 – AF750	MPFRK-4	<b>\$ 120</b>

For field installation on all enclosures. Kit includes three momentary pushbuttons and hardware. ①

#### 2 Position selector switch kit

Contactactor/starter size	Catalog number	List price
A9 – AF750	MPSL2K-4	<b>\$ 90</b>

For field installation on all enclosures. Labels for ON-OFF are included. Kits include mounting hardware. ①

#### 3 Position selector switch kit

Contactactor/starter size	Catalog number	List price
A9 – AF750	MPSL3K-4	<b>\$ 90</b>

For field installation on all enclosures. Labels for HAND-OFF-AUTO are included. Kits include mounting hardware. ①

#### Pilot light kits

Contactactor/starter size	Voltage	Catalog number	List price
A9 – AF750	120	MPPLK-41	<b>\$ 90</b>
	240	MPPLK-42	
	480V	MPPLK-44	

For field installation on all enclosures. ①

#### Reset button kits

Contactactor/starter size	Catalog number	List price
A9 – AF750	KPR3-104B	<b>\$ 14</b>

For field installation on all enclosures. ①

① For use with UL Type 3R, 4, 4X, 12 & 13.

# General information Factory modifications

Starters

3

## Control cover accessories — NEMA 1, 3R, 12, 4, 4X

Description	Suffix code	List price adder
Start-Stop pushbutton	A	\$ 72
Fwd-rev-stop pushbutton	B	360
2 position selector switch (Std. On-Off)	C	72
3 position selector switch (Std. Hand-Off-Auto)	D	72
LED Pilot light, Red, RUN (Std)	E	135
LED Pilot light, Green, Off (Std)	R	135
Start-Stop pushbutton & pilot light	F	207
Fwd-rev-stop pushbutton & pilot light	G	496
2 position selector switch & pilot light	H	207
3 position selector switch (HOA) & pilot light	J	207
Fast-slow-stop pushbutton	K	360
Fast-slow-stop pushbutton & pilot light	L	495
Fast-slow-off-auto selector switch	M	150
Emergency stop	P	100
F suffix + 1NO & 1NC auxiliary contact	T	237
J suffix + 1NO & 1NC auxiliary contact	U	237
Pushbutton (standard START)	Y	36

## Special modifications

Description	Suffix code	List price adder
<b>Contactors</b>		
Coil surge suppressor	S	\$ 75
<b>Relays</b>		
Type N control relay (4 pole) N.O.	1	225
Phase failure phase reversal with over and undervoltage relay	2	300
Electronic timer (On Delay)	5	300
Electronic timer (Off Delay)	6	300
Ground fault protection	GF	2,250
<b>For multi-speed controllers</b>		
Compelling relay	CPR	300
Accelerating relay	ACR	300
Decelerating	DCR	300
<b>Meter &amp; metering</b>		
Current monitor (single CT)	CT	375
Ammeter (single CT w/meter) ②	AM	705
Voltmeter ②	VM	1,200
Voltmeter & Voltmeter switch ②	VMS	1,800
Elapsed time meter ②	ETM	375
Operation counter ②	OC	560
Wattmeter ②	WM	3,650

## Control circuit transformer — A9 - AF750 Standard size with fused secondary

Primary	Sec-ondary	Hz	Coil suffix	Starter Size	Std. CCT VA	List price adder	Extra VA CCT	Suffix code	List price adder
208	120	50/60	A	A9 - A40	50	\$ 360	50VA	V	\$ 150
240	120	50/60	B	A9 - A40 ①	50	630	75VA	W	200
480	120	50/60	C	A50 - A75	75	435	100VA	X	250
600	120	50/60	D	A110	100	560	200VA	Z	400
208	24	50/60	E	A145 - A185	150	720			
240	24	50/60	F	A260	250	795			
480	24	50/60	G						
600	24	50/60	H						

## Additional auxiliary contact blocks — A9 - AF750

Contact configuration	Suffix code	A9 - AF750 List price adder
1 N.O & 1 N.C.	8	\$ 30
2 N.O & 2 N.C.	9	60

## Fuses — set of three

Fuse switch size	List price adder
30A	\$ 80
60A	100
100A	250
200A	375
400A	900

## 2 Speed combination starters

Starter size	Non-fusible switch price adder	Fusible switch price adder	MCCB or MCP price adder
A9 (A9N00)	\$ 990	\$ 1,008	\$ 1,287
A12	990	1008	1287
A16 (A16N0)	990	1008	1287
A26 (A26N1)	990	1008	1287
A30	990	1224	1350
A40	990	1224	1350
A50 (A50N2)	1152	1224	1350
A63	1230	1350	1785
A75 (A75N3)	1494	1602	1809
A110	2310	2565	2982
A145 (A145N4)	3042	3366	4158
A185	3300	3735	4533
A210	3450	3825	6000
A260 (A260N5)	3744	4068	6849
A300	4200	6000	8750
AF400	6600	9450	9030
AF460	8200	11,100	9475
AF580	8400	11,800	10,200
AF750	9000	12,450	12,900

Utilize non-combination starter pricing with these price adders. Price class will change when adding disconnect / breaker to Discount Schedule ACE.

## Hazardous location enclosure accessories — NEMA 7 & 9

Item	Suffix code	List price adder
3R Breather / drain	A	\$ 80
Start PB green	B	180
Stop PB red	C	180
St/St dual PB	D	360
Em. Stop mush momentary	E	220
Em. Stop mush maintained	F	460
Black PB N.O. auxiliary	G	180
Black PB N.C. auxiliary	H	180
Pilot light	J	180
Illuminated PB	K	460
Push-to-test pilot light	L	450
Potentiometer	M	460
2-pos Selector Maintained	N	260
2-pos Selector spring L to R	P	280
2-pos Selector spring R to L	Q	280
3-pos Selector sw. main	R	260
3-pos Selector spring L to R	S	280
3-pos Selector spring R to L	T	280
3-pos Selector spring to C	U	280
2-pos Selector key operated	V	450
3-pos Selector key operated	W	450

① NEMA 7 and 9.

② For NEMA 7/9, add \$800 to the list price adder of the meter to include a view window on the enclosure door.

# General information

## Catalog number explanation

**1 1 S F 1- 2 C 1 J**

3

**UL rated starter size**

- 1 – A9    B – A145    J – A9N00 (NEMA size 00)
- 2 – A12   C – A185   K – A16N0 (NEMA size 0)
- 3 – A16   D – A210   L – A26N1 (NEMA size 1)
- 4 – A26   E – A260   M – A50N2 (NEMA size 2)
- 5 – A30   F – A300   N – A75N3 (NEMA size 3)
- 6 – A40   G – AF400   P – A145N4 (NEMA size 4)
- 7 – A50   H – AF460   Q – A260N5 (NEMA size 5)
- 8 – A63   T – AF580   R – AF460N6 (NEMA size 6)
- 9 – A75   U – AF750   S – AF750N7 (NEMA size 7)
- A – A110

**Starter type**

- 1 – Non-reversing
- 2 – Reversing
- 3 – 2 speed, 2 winding or 1 winding

**Single phase**

- S – Single phase (Insert only for single phase)

**Combination type**

- N – Non-fusible disconnect
- F – Fusible disconnect
- B – Thermal magnetic or electronic trip type circuit breaker (MCCB)
- M – Motor Circuit Protection (MCP)
- J – Fusible disconnect (with fuses, size base on the HP or FLA x 1.75)
- R – Non-fusible disconnect with trailing Class R fuse block with fuses
- G – Non-fusible disconnect with trailing Class R fuse block

**Enclosure**

- 1 – NEMA / UL Type 1
- 2 – NEMA / UL Type 12
- 3 – NEMA / UL Type 3R
- 4 – NEMA / UL Type 4
- X – NEMA / UL Type 4XSS
- P – NEMA / UL Type 4X PL
- 7 – UL Type 7

**Coil voltage / CCT**

**Coil voltage selection – A9 - A300**

Hz	Contactor type	Volts									
		24	110	120	208	220	240	440	480	500	600
60	A	1	2	3		4	5	6		7	
50	A	1	2			4				7	

**Coil voltage selection – AF400 - AF750 ①**

Hz	Contactor type	Volts	
		100 - 250	250 - 500
50/60	AF	70	71

**Control transformer voltage selection chart**

Hz	Type	Volts			
		200-208/120	240/120	460 - 480/120	575 - 600/120
		A	B	C	D
50/60	Type	200-208/24	240/24	460 - 480/24	575 - 600/24
	A/AF	E	F	G	H

**Overload range**

See Overload relay selection chart, see page 3.6 - 3.7

**Accessories**

(See Factory Modifications, page 3.3)

**Fuse clip**

- 1 – 30A, 600V Class J
- 2 – 60A, 600V Class J
- 3 – 100A, 600V Class J
- 4 – 200A, 600V Class J
- 5 – 400A, 600V Class J
- 6 – 600A, 600V Class J
- 7 – 800A, 600V Class J
- 8 – 1200A, 600V Class J
- 9 – 2000A, 600V Class J

**Circuit breaker amp rating (200V - 600V)**

- 1 – 15A    B – 90A    M – 400A
- 2 – 20A    C – 100A    N – 450A
- 3 – 25A    D – 125A    O – 500A
- 4 – 30A    E – 150A    P – 600A
- 5 – 35A    F – 175A    Q – 700A
- 6 – 40A    G – 200A    R – 800A
- 7 – 50A    H – 225A    S – 900A
- 8 – 60A    J – 250A    T – 1000A
- 9 – 70A    K – 300A    U – 1200A
- A – 80A    L – 350A    V – 2500A

**MCP amp rating (200V - 600V)**

- 1 – 3A    7 – 150A    D – 700A
- 2 – 5A    8 – 250A    E – 800A
- 3 – 10A    9 – 400A    F – 900A
- 4 – 25A    A – 450A    G – 1000A
- 5 – 50A    B – 500A    H – 1200A
- 6 – 100A    C – 600A    J – 2500A

NOTE: For AF50 - AF300 starters, consult factory.  
① For AF400 - AF750 only.

# General information

## Motor data

### Ampere ratings of 3 phase, AC induction motors

Horse power	110 – 120V			200 – 208V			220 – 240V			380 – 415V		440 – 480V			550 – 600V		
	Single phase	Two phase	Three phase	Single phase	Two phase	Three phase	Single phase	Two phase	Three phase	Single phase	Three phase	Single phase	Two phase	Three phase	Single phase	Two phase	Three phase
1/10	3.0	—	—	1.65	—	—	1.5	—	—	1.0	—	—	—	—	—	—	—
1/8	3.8	—	—	2.1	—	—	1.9	—	—	1.2	—	—	—	—	—	—	—
1/6	4.4	—	—	2.4	—	—	2.2	—	—	1.4	—	—	—	—	—	—	—
1/4	5.8	—	—	3.2	—	—	2.9	—	—	1.8	—	—	—	—	—	—	—
1/3	7.2	—	—	4.0	—	—	3.6	—	—	2.3	—	—	—	—	—	—	—
1/2	9.8	4.0	4.4	5.4	2.2	2.4	4.9	2.0	2.2	3.2	1.3	2.5	1.0	1.1	2.0	0.8	0.9
3/4	13.8	4.8	6.4	7.6	2.6	3.5	6.9	2.4	3.2	4.5	1.8	3.5	1.2	1.6	2.8	1.0	1.3
1	16.0	6.4	8.4	8.8	3.6	4.6	8.0	3.2	4.2	5.1	2.3	4.0	1.6	2.1	3.2	1.3	1.7
1 1/2	20.0	9.0	12.0	11.0	5.0	6.6	10.0	4.5	6.0	6.4	3.3	5.0	2.3	3.0	4.0	1.8	2.4
2	24.0	11.8	13.6	13.2	6.5	7.5	12.0	5.9	6.8	7.7	4.3	6.0	3.0	3.4	4.8	2.4	2.7
3	34.0	16.6	19.2	18.7	9.2	10.6	17.0	8.3	9.6	10.9	6.1	8.5	4.2	4.8	6.8	3.3	3.9
5	56.0	26.4	30.4	30.8	14.5	16.8	28.0	13.2	15.2	17.9	9.7	14.0	6.6	7.6	11.2	5.3	6.1
7 1/2	80.0	38.0	44.0	44.0	21.0	24.2	40.0	19.0	22.0	27.0	14.0	21.0	9.0	11.0	16.0	8.0	9.0
10	100.0	48.0	56.0	55.0	26.4	30.8	50.0	24.0	28.0	33.0	18.0	26.0	12.0	14.0	20.0	10.0	11.0
15	135.0	72.0	84.0	75.0	39.6	46.2	68.0	36.0	42.0	44.0	27.0	34.0	18.0	21.0	27.0	14.0	17.0
20	—	94.0	108.0	96.8	52.0	60.0	88.0	47.0	54.0	56.0	34.0	44.0	23.0	27.0	35.0	19.0	22.0
25	—	118.0	136.0	121.0	65.0	75.0	110.0	59.0	68.0	70.0	44.0	55.0	29.0	34.0	44.0	24.0	27.0
30	—	138.0	160.0	150.0	76.0	88.0	136.0	69.0	80.0	87.0	51.0	68.0	35.0	40.0	54.0	28.0	32.0
40	—	180.0	208.0	194.0	100.0	115.0	176.0	90.0	104.0	112.0	66.0	88.0	45.0	52.0	70.0	36.0	41.0
50	—	226.0	260.0	238.0	125.0	143.0	216.0	113.0	130.0	139.0	83.0	108.0	56.0	65.0	86.0	45.0	52.0
60	—	—	—	—	147.0	160.0	—	133.0	154.0	—	103.0	—	67.0	77.0	—	53.0	62.0
75	—	—	—	—	183.0	212.0	—	166.0	192.0	—	128.0	—	83.0	96.0	—	66.0	77.0
100	—	—	—	—	240.0	273.0	—	218.0	248.0	—	165.0	—	109.0	124.0	—	87.0	99.0
125	—	—	—	—	—	344.0	—	—	312.0	—	208.0	—	135.0	156.0	—	108.0	125.0
150	—	—	—	—	—	396.0	—	—	360.0	—	240.0	—	156.0	180.0	—	125.0	144.0
200	—	—	—	—	—	528.0	—	—	480.0	—	320.0	—	208.0	240.0	—	167.0	192.0
250	—	—	—	—	—	663.0	—	—	602.0	—	403.0	—	—	302.0	—	—	242.0
300	—	—	—	—	—	—	—	—	—	—	482.0	—	—	361.0	—	—	289.0
350	—	—	—	—	—	—	—	—	—	—	560.0	—	—	414.0	—	—	336.0
400	—	—	—	—	—	—	—	—	—	—	636.0	—	—	477.0	—	—	382.0
500	—	—	—	—	—	—	—	—	—	—	786.0	—	—	590.0	—	—	472.0

NOTE: The above values of full-load currents are typical for motors running at speeds normal for belted motors and motors with normal torque characteristics. Whenever possible, use the actual motor nameplate full-load current when selecting motor control products.

## General information

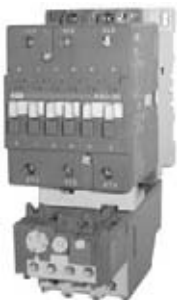
### Standard thermal overload relays

#### Standard – Thermal, Type TA, Class 10 & Electronic, Type E, Class 10, 20 & 30

3



A9 &amp; TA25



A50 &amp; TA75

For contactor	Setting range A	Replace Δ with suffix code on starter catalog number	Catalog number
A/AL/AE9 – A/AL/AE40	0.1 – 0.16	A	TA25DU0.16
	0.16 – 0.25	B	TA25DU0.25
	0.25 – 0.4	C	TA25DU0.4
	0.4 – 0.63	D	TA25DU0.63
	0.63 – 1.0	E	TA25DU1.0
	1.0 – 1.4	F	TA25DU1.4
	1.3 – 1.8	G	TA25DU1.8
	1.7 – 2.4	H	TA25DU2.4
	2.2 – 3.1	J	TA25DU3.1
	2.8 – 4.0	K	TA25DU4.0
	3.5 – 5.0	L	TA25DU5.0
	4.5 – 6.5	M	TA25DU6.5
	6.0 – 8.5	N	TA25DU8.5
	7.5 – 11	P	TA25DU11
	10 – 14	Q	TA25DU14
	13 – 19	R	TA25DU19
18 – 25	S	TA25DU25	
24 – 32	T	TA25DU32	
A/AL/AE30 – A/AL/AE40	18 – 25	A	TA42DU25
	22 – 32	B	TA42DU32
	29 – 42	C	TA42DU42
A/AE/AF50 – A/AE/AF75	18 – 25	A	TA75DU25
	22 – 32	B	TA75DU32
	29 – 42	C	TA75DU42
	36 – 52	D	TA75DU52
	45 – 63	E	TA75DU63
	60 – 80	F	TA75DU80
A/AE/AF110	29 – 42	C	TA80DU42
	36 – 52	D	TA80DU52
	45 – 63	E	TA80DU63
	60 – 80	F	TA80DU80
	65 – 90	A	TA110DU90
	80 – 110	B	TA110DU110
A/AF145 – A/AF185	65 – 90	A	TA200DU90
	80 – 110	B	TA200DU110
	100 – 135	C	TA200DU135
	110 – 150	D	TA200DU150
	130 – 175	E	TA200DU175
	150 – 200	F	TA200DU200
A/AF210 – A/AF300	130 – 185	A	TA450DU185 ①
	165 – 235	B	TA450DU235 ①
	220 – 310	C	TA450DU310 ①
A/AF400 – A/AF460	170 – 500	E5	E500DU500 ②
A/AF580 – A/AF750	270 – 800	E8	E800DU800 ②

NOTE: Overloads on this page are used as standard and do not require a price adder.

① TA450 overloads require mounting kits for installation.

② Not suitable for single-phase motors or direct current (DC) motors.

# General information

## Electronic overload relays

Starters

3



A145 & E200

### Optional – Electronic, Type E, Class 10, 20 & 30 Selectable

For contactor	Setting range	Suffix code	Catalog number ①	List price adder
A/AL/AE9 – A/AL/AE16	0.1 – 0.32	A1	E16DU0.32	<b>\$ 33</b>
	0.3 – 1.0	B1	E16DU1.0	
	0.9 – 2.7	C1	E16DU2.7	
	2.0 – 6.3	D1	E16DU6.3	
	5.7 – 18.9	E1	E16DU18.9	
A/AL/AE26 – A/AL/AE40	9 – 30	E1	E45DU30	<b>42</b>
	15 – 45	E2	E45DU45	<b>49</b>
A/AE/AF50 – A/AE/AF75 A/AE/AF110	27 – 80	E1	E80DU80	<b>86</b>
	50 – 140	E1	E140DU140	<b>96</b>
A/AF145 – A/AF185	65 – 200	E2	E200DU200	<b>100</b>
A/AF210 – A/AF300	105 – 320	E3	E320DU320	<b>287</b>
AF400 – AF460	170 – 500	E5	E500DU500	<b>Std ②</b>
AF580 – AF750	270 – 800	E8	E800DU800	<b>Std ②</b>

① Not suitable for single-phase motors and direct current (DC) motors.  
 ② Included in standard list price of starter.

## General information

### Enclosures

3

Type enclosure	For use with	Dimensions H x W x D (inches)	Catalog number	List price
IP65	A9 – A16 Contactors & starters, blank cover	7 x 3.5 x 5.2	EKA16S-0	<b>\$ 113</b>
	A9 – A16 Contactors & starters, start & stop/reset		EKA16S-A	<b>135</b>
	A9 – A16 Contactors & starters, reset only		EKA16S-R	<b>135</b>
NEMA 1 Lift off cover	A9 – A26 Contactors, non-reversing & reversing starters A30 – A75 Contactors, non-reversing & reversing starters	11.5 x 7 x 6 13 x 9 x 7	EK-N1A9A26 EK-N1A30A75	<b>263</b> <b>282</b>
	A9 – A40 Non-reversing starters + CCT A9 – A40 Reversing contactors A9 – A40 Reversing starters	10 x 8 x 6	EK-11H	<b>240</b>
NEMA 1 Indoor metal hinged cover	A50 – A75 Contactors A50 – A75 Non-reversing starters + CCT A50 – A75 Reversing starters	14 x 12 x 8	EK-12	<b>308</b>
	A95 – A110 Contactors A95 – A110 Non-reversing starters + CCT	24 x 12 x 8	EK-13	<b>608</b>
NEMA 1, 3R 4, 4X & 12 Plastic	A9 – A40 Contactors A9 – A40 Non-reversing starters + CCT A9 – A40 Reversing starters	10 x 8 x 7	EK-W	<b>240</b>
	A50 – A75 Contactors A50 – A75 Non-reversing starters + CCT A50 – A75 Reversing starters	12 x 10 x 7	EK-W2	<b>330</b>
NEMA 12 Indoor metal dusttight	A9 – A40 Contactors A9 – A40 Non-reversing starters A9 – A40 Reversing contactors A9 – A40 Reversing starters	10 x 8 x 6	EK-24	<b>270</b>
	A50 – A75 Contactors + CCT A50 – A75 Non-reversing starters + CCT A50 – A75 Reversing starters	14 x 12 x 8	EK-22	<b>405</b>
NEMA 3R Outdoor metal	A9 – A40 Contactors + CCT A9 – A40 Non-reversing starters + CCT A9 – A40 Reversing contactors A9 – A40 Reversing starters	10 x 8 x 6	EK-31	<b>338</b>
	A50 – A75 Contactors + CCT A50 – A75 Non-reversing starters + CCT A50 – A75 Reversing contactors A50 – A75 Reversing starters A95 – A110 Contactors + CCT A110 Non-reversing starters + CCT A110 Non-reversing starters + CCT	14 x 12 x 8	EK-32	<b>653</b>

NOTE : (1) All enclosures come standard with reset button and predrilled back panel.



# General information

## Enclosure rating definitions

### Introduction

An enclosure is a surrounding case constructed to provide a degree of protection to personnel against accidental contact with the enclosed equipment and to provide a degree of protection to the enclosed equipment against specified environmental conditions.

A brief description of the more common types of enclosures used by the electrical industry relating to their environmental capabilities follows.

Refer to NEMA Standards Publication for more information regarding applications, features and design tests.

Individual NEMA product Standards Publications or third party certification standards may contain additional requirements for product testing and performance.

### Definitions pertaining to nonhazardous locations



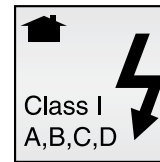
Type 1

Enclosures are intended for indoor use primarily to provide a degree of protection against limited amounts of falling dirt. (NEMA Standard 7-15-1991.)



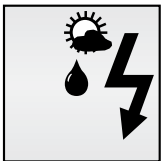
Type 4X

Enclosures are intended for indoor or outdoor use primarily to provide a degree of protection against corrosion, windblown dust and rain, splashing water, hose-directed water and damage from external ice formation. (NEMA Standard 1-10-1979)



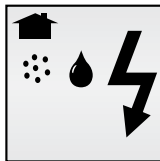
Type 7

Enclosures are intended for indoor use in locations classified as Class I, Groups, A, B, C, or D, as defined in the National Electrical Code. (NEMA Standard 7-15-1991.)



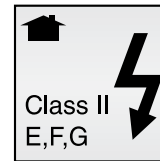
Type 3R

Enclosures are intended for outdoor use primarily to provide a degree of protection against rain, sleet and damage from external ice formation. (NEMA Standard 7-15-1991.)



Type 12

Enclosures are intended for indoor use primarily to provide a degree of protection against circulating dust, falling dirt, and dripping noncorrosive liquids. (NEMA Standard 7-15-1991.)



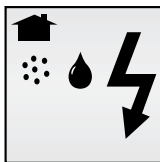
Type 9

Enclosures are intended for indoor use in locations classified as Class II, Groups E, F, or G, as defined in the National Electrical Code. (NEMA Standard 7-15-1991.)



Type 4






Enclosures are intended for indoor or outdoor use primarily to provide a degree of protection against windblown dust and rain, splashing water, hose-directed water and damage from external ice formation. (NEMA Standard 1-10-1979.)



Type 13

Enclosures are intended for indoor use primarily to provide a degree of protection against dust, spraying of water, oil and noncorrosive coolant. (NEMA Standard 1-10-1979.)

### Legend

-  – Indoors
-  – Outdoors
-  – Water
-  – Dirt/dust
-  – Corrosion






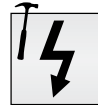



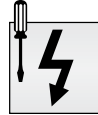












## General information

### IP Environmental ratings

### IP ratings

3

indicate the degree of protection against dust, liquids and impacts. The IP degrees of protection are defined by the French standard NFC 20-010. To rate a device's degrees of protection, the letters IP are followed by up to three numbers. These numbers are defined as follows:

first number protection against solid objects	second number protection against liquids	third number protection against mechanical impacts
<p><b>IP 0</b>  no protection</p>	<p><b>IP 0</b>  no protection</p>	<p><b>IP 0</b>  no protection</p>
<p><b>1</b>  protected against solid objects over 50mm (e.g. accidental touch by hands.)</p>	<p><b>1</b>  protected against vertically falling rain or condensation</p>	<p><b>1</b>  impact 0.225 joule 150g falling from 15cm</p>
<p><b>2</b>  protected against solid objects over 12mm (e.g. fingers)</p>	<p><b>2</b>  protected against direct sprays of water up to 15° from vertical</p>	<p><b>2</b>  impact 0.375 joule 250g falling from 15cm</p>
<p><b>3</b>  protected against solid objects over 2.5mm (tools &amp; wires)</p>	<p><b>3</b>  protected against sprays to 60° from vertical</p>	<p><b>3</b>  impact 0.50 joule 250g falling from 20cm</p>
<p><b>4</b>  protected against solid objects over 1mm (small tools &amp; small wires)</p>	<p><b>4</b>  protected against water sprayed from all directions</p>	<p><b>5</b>  impact 2.00 joule 500g falling from 40cm</p>
<p><b>5</b>  protected against dust (no harmful deposit)</p>	<p><b>5</b>  protected against low pressure jets of water from all directions</p>	<p><b>7</b>  impact 6.00 joule 1.5kg falling from 40cm</p>
<p><b>6</b>  totally protected against dust</p>	<p><b>6</b>  protected from strong jets of water (e.g. for use on ship decks)</p>	<p><b>9</b>  impact 20.00 joule 5 kg falling from 40cm</p>
	<p><b>7</b>  protected against the effects of immersion between 15cm and 1m</p>	

# Across the line Starters



## Across the line starters

Open & enclosed

A9 – AF750

3



### Description

#### A9 – AF750

- Maximum UL horsepower ratings
- UL508A Panel Program, #E105450
- NEMA sizes (00 – 7) available
- Compact space-saving design
- Standard auxiliary contact configurations:
  - A9 – A40 1 NO
  - A50 – AF750 1 NO & 1 NC
- Additional auxiliary contact blocks are available
- Consult factory for DC ratings & DC control operation
- Fast, snap-on DIN rail mounting (A9 - A110)
- Double break contact design
- Snap-on front and side mounted accessories include mechanical latch, pneumatic timer and 1 & 4 pole auxiliary contact blocks (A9 – A110)
- Easy coil change
- Captive terminal screws
- NEMA, UL, CSA, and most other international standards
- cUL marked
- Operates over an extended voltage range of 85% to 110% of rated control voltage
- Screwdriver guide holes

For reduced voltage starters, consult factory.

### Enclosure types

- NEMA 1 (Indoor metal)
- NEMA 3R (Outdoor metal)
- NEMA 12 (Metal dusttight)
- NEMA 4X (Stainless steel)
- NEMA 4 (Water tight)
- NEMA 1, 3R, 4, 4X, & 12 (Plastic)
- IP 65 plastic A9 – A16 starters
- NEMA 7 & 9
  - Class I, Group C, D, Div 1 & 2
  - Class II, Groups E, F, & G, Div 1 & 2
  - Class III, 4X

### Overload relay protection

Starters, sizes A9–A300, have Class 10 adjustable thermal bimetallic overload relay protection as standard.

Sizes AF400 – AF750, have selectable Class 10, 20, 30 adjustable electronic overload relay protection as standard.

Electronic overload relay protection is available for other starter sizes.

## Starter selection by motor horsepower & voltage

### Maximum UL/CSA ratings, three phase

3

Motor horsepower				Open Complete starter		Starter components						
3-phase, 1800 RPM ①				Catalog number	List price	Contactors		Overload relays				
200V	230V	460V	575V			Catalog number	List price	Catalog number	List price			
—	—	—	1/4	11-2C	<b>\$ 165</b>	A9-30-10-84	<b>\$ 78</b>	TA25DU0.4 (0.25 – .4)	<b>\$ 63</b>			
—	—	1/4, 1/3	1/3	11-2D		A9-30-10-84		TA25DU0.63 (0.4 – .63)				
—	—	—	1/2	11-2E		A9-30-10-84		TA25DU1.0 (0.63 – 1.0)				
—	—	1/2	3/4	11-2F		A9-30-10-84		TA25DU1.4 (1.0 – 1.4)				
—	—	3/4	—	11-2G		A9-30-10-84		TA25DU1.8 (1.3 – 1.8)				
—	1/2	1	1.5	11-2H		A9-30-10-84		TA25DU2.4 (1.7 – 2.4)				
1/2	—	1.5	2	11-2J		A9-30-10-84		TA25DU3.1 (2.2 – 3.1)				
3/4	3/4	2	—	11-2K		A9-30-10-84		TA25DU4.0 (2.8 – 4.0)				
—	1	—	3	11-2L		A9-30-10-84		TA25DU5.0 (3.5 – 5.0)				
1	1.5	3	5	11-2M		A9-30-10-84		TA25DU6.5 (4.5 – 6.5)				
2	2	5	—	11-2N		A9-30-10-84		TA25DU8.5 (6.0 – 8.5)				
—	—	—	7.5	11-2P		A9-30-10-84		TA25DU11 (7.5 – 11)				
3	3	7.5	10	21-2Q		<b>171</b>		A12-30-10-84		<b>84</b>	TA25DU14 (10 – 14)	
5	5	10	15	31-2R		<b>200</b>		A16-30-10-84		<b>102</b>	TA25DU19 (13 – 19)	
—	7.5	15	20	41-2S	<b>294</b>	A26-30-10-84	<b>183</b>	TA25DU25 (18 – 25)				
7.5	10	20	25	41-2T		A26-30-10-84		TA25DU32 (24 – 32)				
10	10	—	—	51-2B	<b>365</b>	A30-30-10-84	<b>252</b>	TA42DU32 (22 – 32)	<b>78</b>			
—	—	25	30	51-2C				TA42DU42 (29 – 42)				
10	15	30	40	61-2C	<b>423</b>	A40-30-10-84	<b>297</b>	TA42DU42 (29 – 42)				
15	—	40	50	71-2D	<b>458</b>	A50-30-11-84	<b>330</b>	TA75DU52 (36 – 52)	<b>102</b>			
—	20	—	—	71-2E		A50-30-11-84		TA75DU63 (45 – 63)				
20	—	—	—	81-2F	<b>522</b>	A63-30-11-84	<b>372</b>	TA75DU80 (60 – 80)	<b>102</b>			
—	—	50	60	81-2F		A63-30-11-84						
25	30	60	75	91-2F	<b>563</b>	A75-30-11-84	<b>413</b>					
30	40	75	100	A1-2B	<b>765</b>	A110-30-11-84	<b>480</b>	TA110DU110 (80 – 110)	<b>165</b>			
40	—	—	—	B1-2C	<b>1,315</b>	A145-30-11-84	<b>825</b>	TA200DU135 (100 – 135)	<b>225</b>			
—	50	100	125	B1-2D				TA200DU150 (110 – 150)				
50	60	125	150	C1-2E	<b>1,730</b>	A185-30-11-84	<b>1,290</b>	TA200DU175 (130 – 175)				
60	75	150	200	D1-2E3	<b>2,422</b>	A210-30-11-84	<b>1,635</b>					
75	100	200	250	E1-2E3	<b>3,027</b>	A260-30-11-84	<b>1,815</b>	E320DU320 (105-320)	<b>775</b>			
100	—	250	300	F1-2E3	<b>3,177</b>	A300-30-11-84	<b>1,875</b>					
125	125, 150	350	400	G1-70E5	<b>4,125</b>	AF400-30-11-70	<b>3,120</b>	E500DU500 (170 – 500)	<b>865</b>			
150	200	400	500	H1-70E5	<b>9,375</b>	AF460-30-11-70	<b>4,425</b>					
200	250	500	600	T1-70E8	<b>12,400</b>	AF580-30-11-70	<b>6,900</b>	E800DU800 (270 – 800)	<b>950</b>			
250	300	600	700	U1-70E8	<b>13,350</b>	AF750-30-11-70	<b>7,200</b>					

**CAUTION:** The above ratings are based on average motor FLA. Actual FLA on the motor nameplate should be used for overload relay setting.

### Coil voltage selection

All AC operated catalog numbers include a 120VAC coil. To select other coil voltages, substitute the code from the Coil Voltage Selection Chart for the two digits after the last dash in the catalog number.

Ex.: A 240V coil is required for an A75 starter: 91-4F

### D.C. operated starters

If DC operation is required, consult factory.

### Factory modifications

See page 3.3

### Coil voltage selection – A9 - A300

Hz	Contactor type	Volts									
		24	110	120	208	220	240	440	480	500	600
60	A	1	2	3	4	5	6	7	7	7	
50	A	1	2		4			7			

### Coil voltage selection – AF400 - AF750 ①

Hz	Contactor type	Volts	
		100 - 250	250 - 500
50/60	AF	70	71

### Control transformer voltage selection chart

Hz	Type	Volts			
		200-208/120	240/120	460 - 480/120	575 - 600/120
		A	B	C	D
50/60	A/AF	A	B	C	D
	Type	200-208/24	240/24	460 - 480/24	575 - 600/24
	A/AF	E	F	G	H

NOTE: For motors with RPM greater or less than 1800 RPM, check full load amp rating on motor nameplate to ensure proper overload protection.

For AF50 – AF 300 starters, consult factory.

① For AF400 - AF750 only.

# Starter selection by motor horsepower & voltage NEMA sizes & ratings, three phase

Starters

3

NEMA size	Motor horsepower				Open Complete starter		Starter components				
	3-phase, 1800 RPM ①				Catalog number	List price	Contactors		Overload relays		
	200V	230V	460V	575V			Catalog number	List price	Catalog number	List price	
00	—	—	—	1/4	J1-2C	\$ 165	A9N00-30-10-84	\$ 78	TA25DU0.4 (0.25 - .4)	\$ 63	
	—	—	—	1/3	J1-2D		A9N00-30-10-84		TA25DU0.63 (0.4 - .63)		
	—	—	1/4	1/2	J1-2E		A9N00-30-10-84		TA25DU1.0 (0.63 - 1.0)		
	—	1/4	1/3,1/2	—	J1-2F		A9N00-30-10-84		TA25DU1.4 (1.0 - 1.4)		
	—	1/3	3/4	3/4	J1-2G		A9N00-30-10-84		TA25DU1.6 (1.3 - 1.6)		
	1/3,1/4	1/2	1	1	J1-2H		A9N00-30-10-84		TA25DU2.4 (1.7 - 2.4)		
	1/2	—	—	1.5, 2	J1-2J		A9N00-30-10-84		TA25DU3.1 (2.2 - 3.1)		
	3/4	3/4	1.5, 2	—	J1-2K		A9N00-30-10-84		TA25DU4.0 (2.8 - 4.0)		
	—	1	—	—	J1-2L		A9N00-30-10-84		TA25DU5.0 (3.5 - 5.0)		
	1	1.5	—	—	J1-2M		A9N00-30-10-84		TA25DU6.5 (4.5 - 6.5)		
1.5	—	—	—	J1-2N	A9N00-30-10-84	TA25DU8.5 (6.0 - 8.5)					
0	—	—	—	3	K1-2L	200	A16N0-30-10-84	102	TA25DU5.0 (3.5 - 5.0)	\$ 63	
	—	—	3	5	K1-2M		A16N0-30-10-84		TA25DU6.5 (4.5 - 6.5)		
	2	2	5	—	K1-2N		A16N0-30-10-84		TA25DU8.5 (6.0 - 8.5)		
	3	3	—	—	K1-2P		A16N0-30-10-84		TA25DU11 (7.5 - 11)		
1	—	—	—	7.5	L1-2P	294	A26N1-30-10-84	183	TA25DU11 (7.5 - 11)	\$ 63	
	—	—	7.5	10	L1-2Q		A26N1-30-10-84		TA25DU14 (10 - 14)		
	5	5	10	—	L1-2R		A26N1-30-10-84		TA25DU19 (13 - 19)		
	7.5	7.5	—	—	L1-2S		A26N1-30-10-84		TA25DU25 (18 - 25)		
2	—	—	—	15	M1-2R	458	A50N2-30-11-84	330	TA25DU19 (13 - 19) ②	\$ 63	
	—	—	15	20	M1-2A		A50N2-30-11-84		TA75DU25 (18 - 25)		
	—	10	20	25	M1-2B		A50N2-30-11-84		TA75DU32 (22 - 32)		
	10	15	25	—	M1-2C		A50N2-30-11-84		TA75DU42 (29 - 42)		
3	—	—	—	30	N1-2C	563	A75N3-30-11-84	413	TA75DU42 (29 - 42)	\$ 63	
	15	—	30	40	N1-2D		A75N3-30-11-84		TA75DU52 (36 - 52)		
	20	20	40	50	N1-2E		A75N3-30-11-84		TA75DU63 (45 - 63)		
	25	25,30	50	—	N1-2F		A75N3-30-11-84		TA75DU80 (60 - 80)		
4	—	—	60	60, 75	P1-2A	1,315	A145N4-30-11-84	825	TA200DU90 (65 - 90)	\$ 63	
	30	40	75	100	P1-2B		A145N4-30-11-84		TA200DU110 (80 - 110)		
	40	50	100	—	P1-2C		A145N4-30-11-84		TA200DU135 (100 - 135)		
5	50,60,75	60,75,100	125,150,200	200	Q1-2E3	3,027	A260N5-30-11-84	1,815	E320DU320 (105-320)	\$ 63	
	—	100	200	—							
6	100, 125 150	125,150 200	250, 300 400	250,300 400	R1-70E5	5,700	AF460N6-3011-70	4,425	E500DU500 (170 - 500)	865	
7	—	250, 300	500, 600	500, 600	S1-70E8	8,646	AF750N7-3011-70	7,200	E800DU800 (270 - 800)	950	

**CAUTION:** The above ratings are based on average motor FLA. Actual FLA on the motor nameplate should be used for overload relay setting.

### Coil voltage selection

All AC operated catalog numbers include a 120VAC coil. To select other coil voltages, substitute the code from the Coil Voltage Selection Chart for the two digits after the last dash in the catalog number.

Ex.: A 240V coil is required for an A75 starter: N1-4F

### D.C. operated starters

If DC operation is required, consult factory.

### Factory modifications

See page 3.3

### Coil voltage selection – A9 - A300

Hz	Contactor type	Volts									
		24	110	120	208	220	240	440	480	500	600
60	A	1		2	3		4	5	6		7
50	A	1	2			4				7	

### Coil voltage selection – AF400 - AF750 ①

Hz	Contactor type	Volts	
		100 - 250	250 - 500
50/60	AF	70	71

### Control transformer voltage selection chart

Hz	Type	Volts			
		200-208/120	240/120	460 - 480/120	575 - 600/120
		A	B	C	D
50/60	Type	200-208/24	240/24	460 - 480/24	575 - 600/24
	A/AF	E	F	G	H

NOTE: For motors with RPM greater or less than 1800 RPM, check full load amp rating on motor nameplate to ensure proper overload protection.

For AF50 - AF 300 starters, consult factory.

① AF400 - AF750 only.

② Overload to be base mounted.

## Selection by motor horsepower

### UL/CSA Starters with electronic overload

3

Motor horsepower 3 Phase, 1800 RPM				Open Complete starter		Starter components			
200V	230V	460V	575V	Catalog number	List Price	Contactor Catalog number	List Price	Overload relay Catalog number	List Price
—	—	—	1/4	11-2B1	<b>\$ 198</b>	A9-30-10-84	<b>\$ 78</b>	E16DU1.0 (0.3 - 1.0)	<b>\$ 96</b>
—	—	1/4,1/3	1/3						
—	—	—	1/2	11-2C1		A9-30-10-84		E16DU2.7 (0.9-2.7)	
—	—	1/2	3/4						
—	—	3/4	—						
—	1/2	1	1 1/2	11-2D1		A9-30-10-84		E16DU6.3 (2.0-6.3)	
1/2	—	1 1/2	2						
3/4	3/4	2	—						
—	1	—	3	11-2E1		A9-30-10-84		E16DU18.9 (5.7-18.9)	
1	1 1/2	3	5						
2	2	5	7 1/2	21-2E1	<b>204</b>	A12-30-10-84	<b>84</b>	E45DU30 (9-30)	<b>105</b>
3	3	7 1/2	10	31-2E1	<b>233</b>	A16-30-10-84	<b>102</b>		
5	5	10	15	41-2E1	<b>336</b>	A26-30-10-84	<b>183</b>	E45DU45 (15-45)	<b>112</b>
—	7 1/2	15	20						
7 1/2	10	20	25	51-2E2	<b>414</b>	A30-30-10-84	<b>252</b>	E80DU80 (27-80)	<b>188</b>
10	10	—	—						
—	—	25	30	61-2E2	<b>472</b>	A40-30-10-84	<b>297</b>	E140DU140 (50-140)	<b>261</b>
10	15	30	40						
15	20	40	50	71-2E1	<b>544</b>	A50-30-11-84	<b>330</b>	E200DU200 (60-200)	<b>325</b>
20	—	50	60	81-2E1	<b>608</b>	A63-30-11-84	<b>372</b>		
25	30	60	75	91-2E1	<b>649</b>	A75-30-11-84	<b>413</b>	E320DU320 (100-320)	<b>775</b>
30	—	—	—	A1-2E1	<b>861</b>	A110-30-11-84	<b>480</b>		
—	40	75	100						
40	50	100	125	B1-2E2	<b>1,415</b>	A145-30-11-84	<b>825</b>	E500DU500 (150-500)	<b>865</b>
50	60	125	150	C1-2E2	<b>1,830</b>	A185-30-11-84	<b>1,290</b>		
60	75	150	200	D1-2E3	<b>2,422</b>	A210-30-11-84	<b>1,635</b>	E800DU800 (250-800)	<b>950</b>
75	100	200	250	E1-2E3	<b>3,027</b>	A260-30-11-84	<b>1,815</b>		
100	—	250	300	F1-2E3	<b>3,177</b>	A300-30-11-84	<b>1,875</b>	AF400-30-11-70	<b>3,120</b>
125	5/6	350	400	G1-70E5	<b>4,125</b>	AF400-30-11-70	<b>3,120</b>		
150	200	400	500	H1-70E5	<b>5,700</b>	AF460-30-11-70	<b>4,425</b>	AF580-30-11-70	<b>6,900</b>
200	250	500	600	T1-70E8	<b>8,346</b>	AF580-30-11-70	<b>6,900</b>		
250	300	600	700	U1-70E8	<b>8,646</b>	AF750-30-11-70	<b>7,200</b>		

# Selection by motor horsepower

## NEMA Starters with electronic overload

Starters

3

NEMA size	Motor horsepower				Open Complete starter		Starter components					
	3-phase, 1800 RPM				Catalog number	List price	Contactors		Overload relays			
	200V	230V	460V	575V			Catalog number	List price	Catalog number	List price		
00	—	—	—	1/4	J1-2A1	\$ 198	A9N00-30-10-84	\$ 78	E16DU0.32 (0.1 - 0.32)	\$ 96		
	—	—	—	1/3	J1-2B1		A9N00-30-10-84		E16DU1.0 (0.3 - 1.0)	96		
	—	—	1/4	1/2	J1-2B1		A9N00-30-10-84		E16DU2.7 (0.9 - 2.7)	96		
	—	1/4	1/3,1/2	—	J1-2C1		A9N00-30-10-84					
	—	1/3	3/4	3/4	J1-2C1		A9N00-30-10-84		E16DU6.3 (2.0 - 6.3)	96		
	1/3,1/4	1/2	1	1	J1-2C1		A9N00-30-10-84					
	1/2	—	—	1.5, 2	J1-2D1		A9N00-30-10-84		E16DU18.9 (5.7 - 18.9)	96		
	3/4	3/4	1.5, 2	—	J1-2D1		A9N00-30-10-84					
	—	1	—	—	J1-2D1		A9N00-30-10-84		E16DU6.3 (2.0 - 6.3)	96		
	1	1.5	—	—	J1-2E1		A9N00-30-10-84					
1.5	—	—	—	J1-2E1	A9N00-30-10-84	E16DU18.9 (5.7 - 18.9)	96					
0	—	—	—	3	K1-2D1	233	A16N0-30-10-84	102	E16DU6.3 (2.0 - 6.3)	96		
	—	—	3	5	K1-2D1		A16N0-30-10-84		E16DU18.9 (5.7 - 18.9)	96		
	2	2	5	—	K1-2E1		A16N0-30-10-84		E16DU18.9 (5.7 - 18.9)	96		
	3	3	—	—	K1-2E1		A16N0-30-10-84					
1	—	—	—	7.5	L1-2E1	336	A26N1-30-10-84	183	E45DU30 (9 - 30)	105		
	—	—	7.5	10	L1-2E1		A26N1-30-10-84					
	5	5	10	—	L1-2E1		A26N1-30-10-84					
	7.5	7.5	—	—	L1-2E1		A26N1-30-10-84					
2	—	—	—	15	M1-2E1	544	A50N2-30-11-84	330	E45DU45 (15 - 45)	112		
	—	—	15	20	M1-2E1		A50N2-30-11-84					
	—	10	20	25	M1-2E1		A50N2-30-11-84				E80DU80 (27 - 80)	188
	10	15	25	—	M1-2E1		A50N2-30-11-84					
3	—	—	—	30	N1-2E1	649	A75N3-30-11-84	413	E80DU80 (27 - 80)	188		
	15	—	30	40	N1-2E1		A75N3-30-11-84					
	20	20	40	50	N1-2E1		A75N3-30-11-84					
	25	25,30	50	—	N1-2E1		A75N3-30-11-84					
4	—	—	60	60, 75	P1-2E2	1,415	A145N4-30-11-84	825	E200DU200 (60 - 200)	325		
	30	40	75	100	P1-2E2		A145N4-30-11-84					
	40	50	100	—	P1-2E2		A145N4-30-11-84					
5	50	60	125	—	Q1-2E3	3,027	A260N5-30-11-84	1,815	E320DU320 (105-320)	775		
	60	75	150	200								
	75	100	200	—								
6	—	100	200	—	R1-70E5	5,700	AF460N6-3011-70	4,425	E500DU500 (170 - 500)	865		
	100	125	250	250								
	125	150	300	300								
7	150	200	400	400	S1-70E8	8,646	AF750N7-3011-70	7,200	E800DU800 (270 - 800)	950		
	—	250	500	500								
	—	300	600	600								

# Non-reversing A9 - AF750 Three phase

3

UL motor switching current	Contactor size	Maximum ratings - UL Listed				Open type	UL Type 1 (Indoor metal)		UL type 3R (Outdoor metal)			
		Maximum motor horsepower ratings					Catalog number	List price	Catalog number	List price	Catalog number	List price
		200/208V	230/240V	480/480V	575/600V							
<b>UL rated</b>												
9	A9	2	2	5	7.5	11-2Δ	\$ 165	111-2Δ	\$ 255	113-2Δ	\$ 330	
11	A12	3	3	7.5	10	21-2Δ	171	211-2Δ	285	213-2Δ	360	
17	A16	5	5	10	15	31-2Δ	200	311-2Δ	300	313-2Δ	383	
28	A26	7.5	10	20	25	41-2Δ	294	411-2Δ	405	413-2Δ	465	
34	A30	10	10	25	30	51-2Δ	365	511-2Δ	473	513-2Δ	533	
42	A40	10	15	30	40	61-2Δ	423	611-2Δ	525	613-2Δ	578	
54	A50	15	20	40	50	71-2Δ	458	711-2Δ	600	713-2Δ	719	
65	A63	20	25	50	50	81-2Δ	522	811-2Δ	713	813-2Δ	795	
80	A75	25	30	60	75	91-2Δ	563	911-2Δ	975	913-2Δ	1,058	
110	A110	30	40	75	100	A1-2Δ	765	A11-2Δ	1,170	A13-2Δ	1,515	
130	A145	40	50	100	125	B1-2Δ	1,315	B11-2Δ	1,765	B13-2Δ	2,130	
156	A185	50	60	125	150	C1-2Δ	1,730	C11-2Δ	2,400	C13-2Δ	2,805	
192	A210	60	75	150	200	D1-2Δ	2,135	D11-2Δ	2,650	D13-2Δ	3,375	
248	A260	75	100	200	250	E1-2Δ	2,740	E11-2Δ	3,825	E13-2Δ	4,650	
302	A300	100	100	250	300	F1-2Δ	2,890	F11-2Δ	4,125	F13-2Δ	4,875	
414	AF400	125	150	350	400	G1-70Δ	4,125	G11-70Δ	7,857	G13-70Δ	8,625	
480	AF460	150	200	400	500	H1-70Δ	5,700	H11-70Δ	9,375	H13-70Δ	9,435	
590	AF580	200	250	500	600	T1-70Δ	8,346	T11-70Δ	12,400	T13-70Δ	13,465	
810	AF750	250	300	600	700	U1-70Δ	8,646	U11-70Δ	13,350	U13-70Δ	14,325	

<b>NEMA rated</b>											
NEMA size	Contactor size	Continuous current	200V	230V	460/575V						
00	A9	9	1.5	1.5	2	J1-2Δ	\$ 165	J11-2Δ	\$ 255	J13-2Δ	\$ 330
0	A16	18	3	3	5	K1-2Δ	200	K11-2Δ	300	K13-2Δ	383
1	A26	27	7.5	7.5	10	L1-2Δ	294	L11-2Δ	405	L13-2Δ	465
2	A50	45	10	15	25	M1-2Δ	458	M11-2Δ	600	M13-2Δ	719
3	A75	90	25	30	50	N1-2Δ	563	N11-2Δ	975	N13-2Δ	1,058
4	A145	135	40	50	100	P1-2Δ	1,315	P11-2Δ	1,765	P13-2Δ	2,130
5	AF260	270	75	100	200	Q1-2Δ	2,740	Q11-2Δ	3,825	Q13-2Δ	4,650
6	AF460	540	150	200	400	R1-70Δ	5,700	R11-70Δ	9,375	R13-70Δ	9,435
7	AF750	810	—	300	600	S1-70Δ	8,646	S11-70Δ	13,350	S13-70Δ	14,325

Δ Overload relay suffix code. Select from the overload relay selection chart on pages 3.6 - 3.7.

### Coil voltage selection

All AC operated catalog numbers include a 120VAC coil. To select other coil voltages, substitute the code from the Coil Voltage Selection Chart for the suffix code after the last dash in the catalog number.

Ex.: A 240V coil is required for an A75 starter: 91-4F

### D.C. operated starters

If DC operation is required, consult factory.

### Factory modifications

See page 3.3

### Control transformer option

Contactor size	VA rating	List price adder
A9 - A40	50	360
A9 - A40 (N7 & 9)	50	630 ②
A50 - A75	75	435
A95 - A110	100	560
A145 - A185	150	720
A210 - A300	250	795
AF400 - AF460	150	720
AF580 - AF750	250	795

Reference page 3.3 for Extra VA under all (Control Transformer Options chart)

### Coil voltage selection - A9 - A300

Hz	Contactor type	Volts									
		24	110	120	208	220	240	440	480	500	600
60	A	1	2	3		4	5	6		7	
50	A	1	2			4				7	

### Coil voltage selection - AF400 - AF750 ①

Hz	Contactor type	Volts	
		100 - 250	250 - 500
50/60	AF	70	71

### Control transformer voltage selection chart

Hz	Volts				
	Type	200-208/120	240/120	460 - 480/120	575 - 600/120
	A/AF	A	B	C	D
50/60	Type	200-208/24	240/24	460 - 480/24	575 - 600/24
	A/AF	E	F	G	H

NOTE: For AF50 - AF 300 starters, consult factory.

① AF400 - AF750 only.

② NEMA 7 & 9 Enclosed starter only.



# Non-reversing A9 - AF750 Three phase

Starters

3

UL Type 12 (Metal dustight)		UL Type 4 (Watertight)		UL Type 4X (Stainless steel)		UL Type 1, 3R, 4, 4X & 12 (Plastic)		UL Type 7 & 9 non-reversing (Explosion proof)	
Catalog number	List price	Catalog number	List price	Catalog number	List price	Catalog number	List price	Catalog number	List price
<b>UL rated</b>									
112-2Δ	\$ 330	114-2Δ	\$ 495	11X-2Δ	\$ 645	11P-2Δ	\$ 315	117-2Δ	\$ 1,500
212-2Δ	360	214-2Δ	540	21X-2Δ	713	21P-2Δ	345	217-2Δ	1,560
312-2Δ	383	314-2Δ	570	31X-2Δ	743	31P-2Δ	360	317-2Δ	1,590
412-2Δ	465	414-2Δ	630	41X-2Δ	831	41P-2Δ	443	417-2Δ	1,680
512-2Δ	533	514-2Δ	690	51X-2Δ	885	51P-2Δ	510	517-2Δ	2,040
612-2Δ	578	614-2Δ	1,050	61X-2Δ	1,275	61P-2Δ	555	617-2Δ	2,410
712-2Δ	719	714-2Δ	1,103	71X-2Δ	1,328	71P-2Δ	698	717-2Δ	2,600
812-2Δ	795	814-2Δ	1,170	81X-2Δ	1,410	81P-2Δ	773	817-2Δ	3,350
912-2Δ	1,058	914-2Δ	1,425	91X-2Δ	2,010	91P-2Δ	1,035	917-2Δ	3,900
A12-2Δ	1,515	A14-2Δ	2,100	A1X-2Δ	2,813	A1P-2Δ	1,440	A17-2Δ	5,550
B12-2Δ	2,130	B14-2Δ	2,700	B1X-2Δ	3,375	B1P-2Δ	1,950	B17-2Δ	6,040
C12-2Δ	2,805	C14-2Δ	3,340	C1X-2Δ	3,900	C1P-2Δ	2,440	C17-2Δ	8,100
D12-2Δ	3,375	D14-2Δ	3,900	D1X-2Δ	4,785	D1P-2Δ	3,000	D17-2Δ	9,600
E12-2Δ	4,650	E14-2Δ	5,175	E1X-2Δ	5,815	E1P-2Δ	4,200	E17-2Δ	11,740
F12-2Δ	4,875	F14-2Δ	5,400	F1X-2Δ	6,040	F1P-2Δ	4,425	F17-2Δ	11,965
G12-70Δ	8,625	G14-70Δ	9,000	G1X-70Δ	9,855	Consult factory	—	Consult factory	—
H12-70Δ	10,380	H14-70Δ	10,800	H1X-70Δ	11,700	Consult factory	—	Consult factory	—
T12-70Δ	13,465	T14-70Δ	14,250	T1X-70Δ	14,590	Consult factory	—	Consult factory	—
U12-70Δ	14,325	U14-70Δ	14,850	U1X-70Δ	15,745	Consult factory	—	Consult factory	—
<b>NEMA rated</b>									
J12-2Δ	\$ 330	J14-2Δ	\$ 495	J1X-2Δ	\$ 645	J1P-2Δ	\$ 315	J17-2Δ	\$ 1,500
K12-2Δ	383	K14-2Δ	570	K1X-2Δ	743	K1P-2Δ	360	K17-2Δ	1,590
L12-2Δ	465	L14-2Δ	630	L1X-2Δ	831	L1P-2Δ	443	L17-2Δ	1,680
M12-2Δ	719	M14-2Δ	1,103	M1X-2Δ	1,328	M1P-2Δ	698	M17-2Δ	2,600
N12-2Δ	1,058	N14-2Δ	1,425	N1X-2Δ	2,010	N1P-2Δ	1,035	N17-2Δ	3,900
P12-2Δ	2,130	P14-2Δ	2,700	P1X-2Δ	3,375	P1P-2Δ	1,950	P17-2Δ	6,040
Q12-2Δ	4,650	Q14-2Δ	5,175	Q1X-2Δ	5,815	Q1P-2Δ	4,200	Q17-2Δ	11,740
R12-70Δ	10,380	R14-70Δ	10,800	R1X-70Δ	11,700	Consult factory	—	Consult factory	—
S12-70Δ	14,325	S14-70Δ	14,850	S1X-70Δ	15,745	Consult factory	—	Consult factory	—

Δ Overload relay suffix code. Select from the overload relay selection chart on pages 3.6 - 3.7.

# Non-reversing A9 - A185 Single phase

3

UL motor switching current	Contactor size	Maximum ratings - UL Listed		Open type		UL Type 1 (Indoor metal)	
		Maximum motor horsepower ratings		Catalog number	List price	Catalog number	List price
		115V	230V				
<b>UL rated</b>							
9	A9	1/2	1	11S-2Δ	\$ 165	11S1-2Δ	\$ 255
11	A12	3/4	2	21S-2Δ	171	21S1-2Δ	285
17	A16	1	3	31S-2Δ	200	31S1-2Δ	300
28	A26	1.5	5	41S-2Δ	294	41S1-2Δ	405
34	A30	2	7.5	51S-2Δ	372	51S1-2Δ	473
42	A40	3	7.5	61S-2Δ	423	61S1-2Δ	525
54	A50	3	7.5	71S-2Δ	458	71S1-2Δ	600
65	A63	5	10	81S-2Δ	522	81S1-2Δ	713
80	A75	7.5	15	91S-2Δ	563	91S1-2Δ	975
110	A110	10	20	A1S-2Δ	765	A1S1-2Δ	1,170
130	A145	10	25	B1S-2Δ	1,315	B1S1-2Δ	1,765
156	A185	15	30	C1S-2Δ	1,730	C1S1-2Δ	2,400

<b>NEMA rated</b>								
NEMA size	Contactor size	Continuous current						
			115V	200V				
00	A9	9	1/3	1	J1S-2Δ	\$ 165	J1S1-2Δ	\$ 255
0	A16	18	1	2	K1S-2Δ	200	K1S1-2Δ	300
1	A26	27	2	3	L1S-2Δ	294	L1S1-2Δ	405
2	A50	45	3	7.5	M1S-2Δ	458	M1S1-2Δ	600

Δ Overload relay suffix code. Select from the overload relay selection chart on pages 3.6 - 3.7.

### Coil voltage selection

All AC operated catalog numbers include a 120VAC coil. To select other coil voltages, substitute the code from the Coil Voltage Selection Chart for the suffix code after the last dash in the catalog number.

Ex.: A 240V coil is required for an A75 starter: 91S-4F

### D.C. operated starters

If DC operation is required, consult factory.

### Factory modifications

See page 3.3

### Coil voltage selection – AF400 - AF750 ①

Hz	Contactor type	Volts	
		100 - 250	250 - 500
50/60	AF	70	71

### Control transformer voltage selection chart

Hz	Type	Volts			
		200-208/120	240/120	460 - 480/120	575 - 600/120
50/60	A/AF	A	B	C	D
	Type	200-208/24	240/24	460 - 480/24	575 - 600/24
	A/AF	E	F	G	H

### Control transformer option

Contactor size	VA rating	List price adder
A9 - A30	50	\$ 360
A40 - A75	75	435
A95 - A110	100	560
A145 - A185	150	720

# Non-reversing A9 - A185 Single phase

Starters

3

UL Type 3R (Outdoor metal)		UL Type 12 (Metal dusttight)		UL Type 4 (Watertight)		UL Type 4X (Stainless steel)		UL Type 1, 3R, 4, 4X & 12 (Plastic)	
Catalog number	List price	Catalog number	List price	Catalog number	List price	Catalog number	List price	Catalog number	List price
<b>UL rated</b>									
11S3-2Δ	<b>\$ 330</b>	11S2-2Δ	<b>\$ 330</b>	11S4-2Δ	<b>\$ 495</b>	11SX-2Δ	<b>\$ 645</b>	11SP-2Δ	<b>\$ 315</b>
21S3-2Δ	<b>360</b>	21S2-2Δ	<b>360</b>	21S4-2Δ	<b>540</b>	21SX-2Δ	<b>713</b>	21SP-2Δ	<b>345</b>
31S3-2Δ	<b>383</b>	31S2-2Δ	<b>383</b>	31S4-2Δ	<b>570</b>	31SX-2Δ	<b>743</b>	31SP-2Δ	<b>360</b>
41S3-2Δ	<b>465</b>	41S2-2Δ	<b>465</b>	41S4-2Δ	<b>630</b>	41SX-2Δ	<b>831</b>	41SP-2Δ	<b>443</b>
51S3-2Δ	<b>533</b>	51S2-2Δ	<b>533</b>	51S4-2Δ	<b>690</b>	51SX-2Δ	<b>885</b>	51SP-2Δ	<b>510</b>
61S3-2Δ	<b>578</b>	61S2-2Δ	<b>578</b>	61S4-2Δ	<b>1,050</b>	61SX-2Δ	<b>1,275</b>	61SP-2Δ	<b>555</b>
71S3-2Δ	<b>719</b>	71S2-2Δ	<b>719</b>	71S4-2Δ	<b>1,103</b>	71SX-2Δ	<b>1,328</b>	71SP-2Δ	<b>698</b>
81S3-2Δ	<b>795</b>	81S2-2Δ	<b>795</b>	81S4-2Δ	<b>1,170</b>	81SX-2Δ	<b>1,410</b>	81SP-2Δ	<b>773</b>
91S3-2Δ	<b>1,058</b>	91S2-2Δ	<b>1,058</b>	91S4-2Δ	<b>1,425</b>	91SX-2Δ	<b>2,010</b>	91SP-2Δ	<b>1,035</b>
A1S3-2Δ	<b>1,515</b>	A1S2-2Δ	<b>1,515</b>	A1S4-2Δ	<b>2,100</b>	A1SX-2Δ	<b>2,813</b>	A1SP-2Δ	<b>1,440</b>
B1S3-2Δ	<b>2,130</b>	B1S2-2Δ	<b>2,130</b>	B1S4-2Δ	<b>2,700</b>	B1SX-2Δ	<b>3,375</b>	B1SP-2Δ	<b>1,950</b>
C1S3-2Δ	<b>2,805</b>	C1S2-2Δ	<b>2,805</b>	C1S4-2Δ	<b>3,340</b>	C1SX-2Δ	<b>3,900</b>	C1SP-2Δ	<b>2,440</b>
<b>NEMA rated</b>									
J1S3-2Δ	<b>\$ 330</b>	J1S2-2Δ	<b>\$ 330</b>	J1S4-2Δ	<b>\$ 495</b>	J1SX-2Δ	<b>\$ 645</b>	J1SP-2Δ	<b>\$ 315</b>
K1S3-2Δ	<b>383</b>	K1S2-2Δ	<b>383</b>	K1S4-2Δ	<b>570</b>	K1SX-2Δ	<b>743</b>	K1SP-2Δ	<b>360</b>
L1S3-2Δ	<b>465</b>	L1S2-2Δ	<b>465</b>	L1S4-2Δ	<b>630</b>	L1SX-2Δ	<b>831</b>	L1SP-2Δ	<b>443</b>
M1S3-2Δ	<b>719</b>	M1S2-2Δ	<b>719</b>	M1S4-2Δ	<b>1,103</b>	M1SX-2Δ	<b>1,328</b>	M1SP-2Δ	<b>698</b>

Δ Overload relay suffix code. Select from the overload relay selection chart on pages 3.6 - 3.7.

# Reversing A9 - AF750 Three phase

3

UL motor switching current	Contactor size	Maximum ratings - UL Listed				Open type	UL Type 1 (Indoor metal)		UL type 3R (Outdoor metal)			
		Maximum motor horsepower ratings					Catalog number	List price	Catalog number	List price	Catalog number	List price
		200/208V	230/240V	480/480V	575/600V							
<b>UL rated</b>												
9	A9	2	2	5	7.5	12-2Δ	\$ 342	121-2Δ	\$ 510	123-2Δ	\$ 630	
11	A12	3	3	7.5	10	22-2Δ	387	221-2Δ	585	223-2Δ	705	
17	A16	5	5	10	15	32-2Δ	443	321-2Δ	630	323-2Δ	750	
28	A26	7.5	10	20	25	42-2Δ	503	421-2Δ	810	423-2Δ	900	
34	A30	10	10	25	30	52-2Δ	675	521-2Δ	953	523-2Δ	1,043	
42	A40	10	15	30	40	62-2Δ	765	621-2Δ	1,080	623-2Δ	1,305	
54	A50	15	20	40	50	72-2Δ	1,152	721-2Δ	1,395	723-2Δ	1,763	
65	A63	20	25	50	50	82-2Δ	1,515	821-2Δ	1,780	823-2Δ	2,310	
80	A75	25	30	60	75	92-2Δ	1,620	921-2Δ	1,905	923-2Δ	2,813	
110	A110	30	40	75	100	A2-2Δ	1,800	A21-2Δ	2,970	A23-2Δ	3,630	
130	A145	40	50	100	125	B2-2Δ	2,997	B21-2Δ	3,570	B23-2Δ	4,275	
156	A185	50	60	125	150	C2-2Δ	3,996	C21-2Δ	4,755	C23-2Δ	5,215	
192	A210	60	75	150	200	D2-2Δ	4,650	D21-2Δ	5,580	D23-2Δ	6,255	
248	A260	75	100	200	250	E2-2Δ	5,436	E21-2Δ	7,615	E23-2Δ	8,355	
302	A300	100	100	250	300	F2-2Δ	6,190	F21-2Δ	8,070	F23-2Δ	8,835	
414	AF400	125	150	350	400	G2-70Δ	7,980	G21-70Δ	15,450	G23-70Δ	16,125	
480	AF460	150	200	400	500	H2-70Δ	14,550	H21-70Δ	22,482	H23-70Δ	23,230	
590	AF580	200	250	500	600	T2-70Δ	19,755	T21-70Δ	25,800	T23-70Δ	26,250	
810	AF750	250	300	600	700	U2-70Δ	21,105	U21-70Δ	29,250	U23-70Δ	30,225	

<b>NEMA rated</b>											
NEMA size	Contactor size	Continuous current	200V	230V	460/575V						
00	A9	9	1.5	1.5	2	J2-2Δ	\$ 342	J21-2Δ	\$ 510	J23-2Δ	\$ 630
0	A16	18	3	3	5	K2-2Δ	443	K21-2Δ	630	K23-2Δ	750
1	A26	27	7.5	7.5	10	L2-2Δ	503	L21-2Δ	810	L23-2Δ	900
2	A50	45	10	15	25	M2-2Δ	1,152	M21-2Δ	1,395	M23-2Δ	1,763
3	A75	90	25	30	50	N2-2Δ	1,620	N21-2Δ	1,905	N23-2Δ	2,813
4	A145	135	40	50	100	P2-2Δ	2,997	P21-2Δ	3,570	P23-2Δ	4,275
5	A260	270	75	100	200	Q2-2Δ	5,436	Q21-2Δ	7,615	Q23-2Δ	8,355
6	AF460	540	150	200	400	R2-70Δ	14,550	R21-70Δ	22,482	R23-70Δ	23,230
7	AF750	810	—	300	600	S2-70Δ	21,105	S21-70Δ	29,250	S23-70Δ	30,225

Δ Overload relay suffix code. Select from the overload relay selection chart on pages 3.6 - 3.7.

### Coil voltage selection

All AC operated catalog numbers include a 120VAC coil. To select other coil voltages, substitute the code from the Coil Voltage Selection Chart for the suffix code after the last dash in the catalog number.

Ex.: A 240V coil is required for an A75 starter: 92-4F

### D.C. operated starters

If DC operation is required, consult factory.

### Factory modifications

See page 3.3

### Control transformer option

Contactor size	VA rating	List price adder
A9 - A40	50	\$ 360
A50 - A75	75	435
A95 - A110	100	560
A145 - A185	150	720
A210 - A300	250	795
AF400 - AF460	150	720
AF580 - AF750	250	795

Reference page 3.3 for Extra VA under all (Control Transformer Options chart)

### Coil voltage selection – A9 - A300

Hz	Contactor type	Volts									
		24	110	120	208	220	240	440	480	500	600
60	A	1		2	3		4	5	6		7
50	A	1	2			4					7

### Coil voltage selection – AF400 - AF750 ①

Hz	Contactor type	Volts	
		100 - 250	250 - 500
50/60	AF	70	71

### Control transformer voltage selection chart

Hz	Volts				
	Type	200-208/120	240/120	460 - 480/120	575 - 600/120
	A/AF	A	B	C	D
50/60	Type	200-208/24	240/24	460 - 480/24	575 - 600/24
	A/AF	E	F	G	H

NOTE: For AF50 - AF 300 starters, consult factory.

① AF400 - AF750 only.

# Reversing A9 - AF750 Three phase

UL Type 12 (Metal dustight)		UL Type 4 (Watertight)		UL Type 4X (Stainless steel)		UL Type 1, 3R, 4, 4X & 12 (Plastic)	
Catalog number	List price	Catalog number	List price	Catalog number	List price	Catalog number	List price
<b>UL rated</b>							
122-2Δ	<b>\$ 630</b>	124-2Δ	<b>\$ 810</b>	12X-2Δ	<b>\$ 1,125</b>	12P-2Δ	<b>\$ 608</b>
222-2Δ	<b>705</b>	224-2Δ	<b>915</b>	22X-2Δ	<b>1,230</b>	22P-2Δ	<b>683</b>
322-2Δ	<b>750</b>	324-2Δ	<b>990</b>	32X-2Δ	<b>1,313</b>	32P-2Δ	<b>765</b>
422-2Δ	<b>900</b>	424-2Δ	<b>1,125</b>	42X-2Δ	<b>1,725</b>	42P-2Δ	<b>960</b>
522-2Δ	<b>1,043</b>	524-2Δ	<b>1,313</b>	52X-2Δ	<b>1,868</b>	52P-2Δ	<b>1,103</b>
622-2Δ	<b>1,305</b>	624-2Δ	<b>1,500</b>	62X-2Δ	<b>2,010</b>	62P-2Δ	<b>1,230</b>
722-2Δ	<b>1,763</b>	724-2Δ	<b>1,875</b>	72X-2Δ	<b>2,213</b>	72P-2Δ	<b>1,530</b>
822-2Δ	<b>2,310</b>	824-2Δ	<b>2,588</b>	82X-2Δ	<b>3,143</b>	82P-2Δ	<b>1,695</b>
922-2Δ	<b>2,813</b>	924-2Δ	<b>3,113</b>	92X-2Δ	<b>3,600</b>	92P-2Δ	<b>2,250</b>
A22-2Δ	<b>3,630</b>	A24-2Δ	<b>3,900</b>	A2X-2Δ	<b>4,479</b>	A2P-2Δ	<b>3,230</b>
B22-2Δ	<b>4,275</b>	B24-2Δ	<b>4,650</b>	B2X-2Δ	<b>5,665</b>	B2P-2Δ	<b>3,804</b>
C22-2Δ	<b>5,215</b>	C24-2Δ	<b>5,550</b>	C2X-2Δ	<b>6,555</b>	C2P-2Δ	<b>4,640</b>
D22-2Δ	<b>6,255</b>	D24-2Δ	<b>6,640</b>	D2X-2Δ	<b>7,680</b>	D2P-2Δ	<b>5,566</b>
E22-2Δ	<b>8,355</b>	E24-2Δ	<b>9,340</b>	E2X-2Δ	<b>11,995</b>	E2P-2Δ	<b>7,434</b>
F22-2Δ	<b>8,835</b>	F24-2Δ	<b>10,015</b>	F2X-2Δ	<b>12,055</b>	F2P-2Δ	<b>7,861</b>
G22-70Δ	<b>16,125</b>	G24-70Δ	<b>17,100</b>	G2X-70Δ	<b>20,690</b>	Consult factory	—
H22-70Δ	<b>23,230</b>	H24-70Δ	<b>23,625</b>	H2X-70Δ	<b>24,250</b>	Consult factory	—
T22-70Δ	<b>26,250</b>	T24-70Δ	<b>27,000</b>	T2X-70Δ	<b>28,500</b>	Consult factory	—
U22-70Δ	<b>30,225</b>	U24-70Δ	<b>31,275</b>	U2X-70Δ	<b>32,625</b>	Consult factory	—
<b>NEMA rated</b>							
J22-2Δ	<b>\$ 630</b>	J24-2Δ	<b>\$ 810</b>	J2X-2Δ	<b>\$ 1,125</b>	J2P-2Δ	<b>\$ 608</b>
K22-2Δ	<b>750</b>	K24-2Δ	<b>990</b>	K2X-2Δ	<b>1,313</b>	K2P-2Δ	<b>765</b>
L22-2Δ	<b>900</b>	L24-2Δ	<b>1,125</b>	L2X-2Δ	<b>1,725</b>	L2P-2Δ	<b>960</b>
M22-2Δ	<b>1,763</b>	M24-2Δ	<b>1,875</b>	M2X-2Δ	<b>2,213</b>	M2P-2Δ	<b>1,530</b>
N22-2Δ	<b>2,813</b>	N24-2Δ	<b>3,113</b>	N2X-2Δ	<b>3,600</b>	N2P-2Δ	<b>2,250</b>
P22-2Δ	<b>4,275</b>	P24-2Δ	<b>4,650</b>	P2X-2Δ	<b>5,665</b>	P2P-2Δ	<b>3,804</b>
Q22-2Δ	<b>8,355</b>	Q24-2Δ	<b>9,340</b>	Q2X-2Δ	<b>11,995</b>	Q2P-2Δ	<b>7,434</b>
R22-70Δ	<b>23,230</b>	R24-70Δ	<b>23,625</b>	R2X-70Δ	<b>24,250</b>	Consult factory	—
S22-70Δ	<b>30,225</b>	S24-70Δ	<b>31,275</b>	S2X-70Δ	<b>32,625</b>	Consult factory	—

Δ Overload relay suffix code. Select from the overload relay selection chart on pages 3.6 - 3.7.

## 2 Speed, 1 winding A9 - AF750 Three phase

3

UL motor switching current	Contactor size	Maximum ratings - UL Listed				Open type		UL Type 1 (Indoor metal)		UL type 3R (Outdoor metal)	
		Maximum motor horsepower ratings				Catalog number	List price	Catalog number	List price	Catalog number	List price
		200/208V	230/240V	480/480V	575/600V						
UL rated											
9	A9	2	2	5	7.5	13-2Δ1Δ	\$ 504	131-2Δ1Δ	\$ 690	133-2Δ1Δ	\$ 810
11	A12	3	3	7.5	10	23-2Δ1Δ	525	231-2Δ1Δ	771	233-2Δ1Δ	891
17	A16	5	5	10	15	33-2Δ1Δ	581	331-2Δ1Δ	837	333-2Δ1Δ	957
28	A26	7.5	10	20	25	43-2Δ1Δ	752	431-2Δ1Δ	1,097	433-2Δ1Δ	1,187
34	A30	10	10	25	30	53-2Δ1Δ	1,038	531-2Δ1Δ	1,316	533-2Δ1Δ	1,406
42	A40	10	15	30	40	63-2Δ1Δ	1,259	631-2Δ1Δ	1,577	633-2Δ1Δ	1,802
54	A50	15	20	40	50	73-2Δ1Δ	1,697	731-2Δ1Δ	1,940	733-2Δ1Δ	2,307
65	A63	20	25	50	50	83-2Δ1Δ	2,150	831-2Δ1Δ	2,195	833-2Δ1Δ	2,945
80	A75	25	30	60	75	93-2Δ1Δ	2,307	931-2Δ1Δ	2,592	933-2Δ1Δ	3,500
110	A110	30	40	75	100	A3-2Δ1Δ	2,681	A31-2Δ1Δ	3,851	A33-2Δ1Δ	4,511
130	A145	40	50	100	125	B3-2Δ1Δ	4,506	B31-2Δ1Δ	5,079	B33-2Δ1Δ	5,784
156	A185	50	60	125	150	C3-2Δ1Δ	5,845	C31-2Δ1Δ	6,605	C33-2Δ1Δ	7,059
192	A210	60	75	150	200	D3-2Δ1Δ	6,895	D31-2Δ1Δ	7,825	D33-2Δ1Δ	8,500
248	A260	75	100	200	250	E3-2Δ1Δ	8,535	E31-2Δ1Δ	10,710	E33-2Δ1Δ	11,455
302	A300	100	100	250	300	F3-2Δ1Δ	9,171	F31-2Δ1Δ	11,391	F33-2Δ1Δ	12,155
414	AF400	125	150	350	400	G3-70Δ1Δ	10,100	G31-70Δ1Δ	19,460	G33-70Δ1Δ	20,135
480	AF460	150	200	400	500	H3-70Δ1Δ	17,995	H31-70Δ1Δ	28,910	H23-70Δ1Δ	29,652
590	AF580	200	250	500	600	T3-70Δ1Δ	23,735	T31-70Δ1Δ	35,400	T33-70Δ1Δ	35,850
810	AF750	250	300	600	700	U3-70Δ1Δ	26,645	U31-70Δ1Δ	39,195	U33-70Δ1Δ	40,170

NEMA rated											
NEMA size	Contactor size	Continuous current	200V	230V	460/575V						
00	A9	9	1.5	1.5	2	J3-2Δ1Δ	\$ 504	J31-2Δ1Δ	\$ 690	J33-2Δ1Δ	\$ 810
0	A16	18	3	3	5	K3-2Δ1Δ	581	K31-2Δ1Δ	837	K33-2Δ1Δ	957
1	A26	27	7.5	7.5	10	L3-2Δ1Δ	752	L31-2Δ1Δ	1,097	L33-2Δ1Δ	1,187
2	A50	45	10	15	25	M3-2Δ1Δ	1,697	M31-2Δ1Δ	1,940	M33-2Δ1Δ	2,307
3	A75	90	25	30	50	N3-2Δ1Δ	2,307	N31-2Δ1Δ	2,589	N33-2Δ1Δ	3,500
4	A145	135	40	50	100	P3-2Δ1Δ	4,506	P31-2Δ1Δ	5,079	P33-2Δ1Δ	5,784
5	A260	270	75	100	200	Q3-2Δ1Δ	8,535	Q31-2Δ1Δ	10,710	Q33-2Δ1Δ	11,455
6	AF460	540	150	200	400	R3-70Δ1Δ	17,995	R31-70Δ1Δ	28,910	R33-70Δ1Δ	29,652
7	AF750	810	—	300	600	S3-70Δ1Δ	26,645	S31-70Δ1Δ	39,195	S33-70Δ1Δ	40,170

Δ Overload relay suffix code. Select from the overload relay selection chart on pages 3.6 - 3.7. 1st Δ low speed; 2nd Δ high speed.

### Description

Motors that have separate windings for each speed provide more combinations of speed variations. Multi-speed starters from ABB Control are available for constant horsepower, constant torque and variable torque motors.

#### Constant horsepower

Motors that maintain the same horsepower regardless of speed are called constant horsepower motors. These motors are used in applications like metal working.

#### Constant torque

Motors that maintain constant torque at all speeds are called constant torque motors. In applications like conveyors, horsepower varies directly with speed.

#### Variable torque motors

Motors that produce a torque characteristic which varies as the square of the speed are called variable torque motors and are used in applications like blowers and fans.

### Control transformer option

Contactor size	VA rating	List price adder
A9 - A40	50	\$ 360
A50 - A75	75	435
A95 - A110	100	560
A145 - A185	150	720
A210 - A300	250	795
AF400 - AF460	150	720
AF580 - AF750	250	795

Reference page 3.3 for Extra VA under all (Control Transformer Options chart)

### Coil voltage selection

All AC operated catalog numbers include a 120VAC coil. To select other coil voltages, substitute the code from the Coil Voltage Selection Chart for the suffix code after the last dash in the catalog number.

Ex.: A 240V coil is required for an A110 starter: A3-4Δ1Δ

### D.C. operated starters

If DC operation is required, consult factory.

### Factory modifications

See page 3.3

### Coil voltage selection - A9 - A300

Hz	Contactor type	Volts									
		24	110	120	208	220	240	440	480	500	600
60	A	1		2	3		4	5	6		7
50	A	1	2				4				7

### Coil voltage selection - AF400 - AF750 ①

Hz	Contactor type	Volts	
		100 - 250	250 - 500
50/60	AF	70	71

### Control transformer voltage selection chart

Hz	Type	Volts			
		200-208/120	240/120	460 - 480/120	575 - 600/120
		A/AF	A	B	C
50/60	Type	200-208/24	240/24	460 - 480/24	575 - 600/24
	A/AF	E	F	G	H

NOTE: For AF50 - AF 300 starters, consult factory.

① AF400 - AF750 only.

## 2 Speed, 1 winding

### A9 - AF750

### Three phase

UL Type 12 (Metal dustight)		UL Type 4 (Watertight)		UL Type 4X (Stainless steel)		UL Type 1, 3R, 4, 4X & 12 (Plastic)	
Catalog number	List price	Catalog number	List price	Catalog number	List price	Catalog number	List price
<b>UL rated</b>							
132-2Δ1Δ	<b>\$ 810</b>	134-2Δ1Δ	<b>\$ 1,020</b>	13X-2Δ1Δ	<b>\$ 1,305</b>	13P-2Δ1Δ	<b>\$ 788</b>
232-2Δ1Δ	<b>891</b>	234-2Δ1Δ	<b>1,095</b>	23X-2Δ1Δ	<b>1,416</b>	23P-2Δ1Δ	<b>869</b>
332-2Δ1Δ	<b>957</b>	334-2Δ1Δ	<b>1,215</b>	33X-2Δ1Δ	<b>1,520</b>	33P-2Δ1Δ	<b>972</b>
432-2Δ1Δ	<b>1,187</b>	434-2Δ1Δ	<b>1,515</b>	43X-2Δ1Δ	<b>2,012</b>	43P-2Δ1Δ	<b>1,247</b>
532-2Δ1Δ	<b>1,406</b>	534-2Δ1Δ	<b>1,688</b>	53X-2Δ1Δ	<b>2,231</b>	53P-2Δ1Δ	<b>1,466</b>
632-2Δ1Δ	<b>1,802</b>	634-2Δ1Δ	<b>2,100</b>	63X-2Δ1Δ	<b>2,507</b>	63P-2Δ1Δ	<b>1,727</b>
732-2Δ1Δ	<b>2,307</b>	734-2Δ1Δ	<b>2,528</b>	73X-2Δ1Δ	<b>2,757</b>	73P-2Δ1Δ	<b>2,075</b>
832-2Δ1Δ	<b>2,945</b>	834-2Δ1Δ	<b>3,285</b>	83X-2Δ1Δ	<b>3,777</b>	83P-2Δ1Δ	<b>2,330</b>
932-2Δ1Δ	<b>3,500</b>	934-2Δ1Δ	<b>3,788</b>	93X-2Δ1Δ	<b>4,287</b>	93P-2Δ1Δ	<b>2,835</b>
A32-2Δ1Δ	<b>4,511</b>	A34-2Δ1Δ	<b>4,800</b>	A3X-2Δ1Δ	<b>5,358</b>	A3P-2Δ1Δ	<b>4,300</b>
B32-2Δ1Δ	<b>5,784</b>	B34-2Δ1Δ	<b>6,265</b>	B3X-2Δ1Δ	<b>7,175</b>	B3P-2Δ1Δ	<b>5,513</b>
C32-2Δ1Δ	<b>7,059</b>	C34-2Δ1Δ	<b>7,440</b>	C3X-2Δ1Δ	<b>8,400</b>	C3P-2Δ1Δ	<b>6,729</b>
D32-2Δ1Δ	<b>8,500</b>	D34-2Δ1Δ	<b>8,890</b>	D3X-2Δ1Δ	<b>9,925</b>	D3P-2Δ1Δ	<b>8,103</b>
E32-2Δ1Δ	<b>11,455</b>	E34-2Δ1Δ	<b>12,940</b>	E3X-2Δ1Δ	<b>15,090</b>	E3P-2Δ1Δ	<b>10,919</b>
F32-2Δ1Δ	<b>12,155</b>	F34-2Δ1Δ	<b>13,425</b>	F3X-2Δ1Δ	<b>16,275</b>	F3P-2Δ1Δ	<b>11,586</b>
G32-70Δ1Δ	<b>20,135</b>	G34-70Δ1Δ	<b>21,600</b>	G3X-70Δ1Δ	<b>24,700</b>		
H32-70Δ1Δ	<b>29,652</b>	H34-70Δ1Δ	<b>30,000</b>	H3X-70Δ1Δ	<b>30,675</b>		
T32-70Δ1Δ	<b>35,850</b>	T34-70Δ1Δ	<b>36,225</b>	T3X-70Δ1Δ	<b>38,097</b>		
U32-70Δ1Δ	<b>40,170</b>	U34-70Δ1Δ	<b>40,875</b>	U3X-70Δ1Δ	<b>42,570</b>		
<b>NEMA rated</b>							
J32-2Δ1Δ	<b>\$ 810</b>	J34-2Δ1Δ	<b>\$ 1,020</b>	J3X-2Δ1Δ	<b>\$ 1,305</b>	J3P-2Δ1Δ	<b>\$ 788</b>
K32-2Δ1Δ	<b>957</b>	K34-2Δ1Δ	<b>1,215</b>	K3X-2Δ1Δ	<b>1,520</b>	K3P-2Δ1Δ	<b>972</b>
L32-2Δ1Δ	<b>1,187</b>	L34-2Δ1Δ	<b>1,515</b>	L3X-2Δ1Δ	<b>2,012</b>	L3P-2Δ1Δ	<b>1,247</b>
M32-2Δ1Δ	<b>2,307</b>	M34-2Δ1Δ	<b>2,528</b>	M3X-2Δ1Δ	<b>2,757</b>	M3P-2Δ1Δ	<b>2,075</b>
N32-2Δ1Δ	<b>3,500</b>	N34-2Δ1Δ	<b>3,788</b>	N3X-2Δ1Δ	<b>4,287</b>	N3P-2Δ1Δ	<b>2,835</b>
P32-2Δ1Δ	<b>5,748</b>	P34-2Δ1Δ	<b>6,265</b>	P3X-2Δ1Δ	<b>7,175</b>	P3P-2Δ1Δ	<b>5,513</b>
Q32-2Δ1Δ	<b>11,455</b>	Q34-2Δ1Δ	<b>12,940</b>	Q3X-2Δ1Δ	<b>15,090</b>	Q3P-2Δ1Δ	<b>10,919</b>
R32-70Δ1Δ	<b>29,652</b>	R34-70Δ1Δ	<b>30,000</b>	R3X-70Δ1Δ	<b>30,675</b>		
S32-70Δ1Δ	<b>40,170</b>	S34-70Δ1Δ	<b>40,875</b>	S3X-70Δ1Δ	<b>42,570</b>		

Δ Overload relay suffix code. Select from the overload relay selection chart on pages 3.6 - 3.7. 1st Δ low speed; 2nd Δ high speed.

## 2 Speed, 2 winding A9 - AF750 Three phase

3

UL motor switching current	Contactor size	Maximum ratings - UL Listed				Open type	UL Type 1 (Indoor metal)		UL type 3R (Outdoor metal)			
		Maximum motor horsepower ratings					Catalog number	List price	Catalog number	List price	Catalog number	List price
		200/208V	230/240V	480/480V	575/600V							
<b>UL rated</b>												
9	A9	2	2	5	7.5	13-2Δ2Δ	\$ 396	131-2Δ2Δ	\$ 582	133-2Δ2Δ	\$ 702	
11	A12	3	3	7.5	10	23-2Δ2Δ	426	231-2Δ2Δ	657	233-2Δ2Δ	777	
17	A16	5	5	10	15	33-2Δ2Δ	476	331-2Δ2Δ	702	333-2Δ2Δ	822	
28	A26	7.5	10	20	25	43-2Δ2Δ	552	431-2Δ2Δ	882	433-2Δ2Δ	972	
34	A30	10	10	25	30	53-2Δ2Δ	747	531-2Δ2Δ	1,025	533-2Δ2Δ	1,115	
42	A40	10	15	30	40	63-2Δ2Δ	834	631-2Δ2Δ	1,152	633-2Δ2Δ	1,377	
54	A50	15	20	40	50	73-2Δ2Δ	1,224	731-2Δ2Δ	1,467	733-2Δ2Δ	1,835	
65	A63	20	25	50	50	83-2Δ2Δ	1,587	831-2Δ2Δ	1,632	833-2Δ2Δ	2,382	
80	A75	25	30	60	75	93-2Δ2Δ	1,692	931-2Δ2Δ	1,977	933-2Δ2Δ	2,885	
110	A110	30	40	75	100	A3-2Δ2Δ	1,872	A31-2Δ2Δ	3,042	A33-2Δ2Δ	3,702	
130	A145	40	50	100	125	B3-2Δ2Δ	3,069	B31-2Δ2Δ	3,642	B33-2Δ2Δ	4,347	
156	A185	50	60	125	150	C3-2Δ2Δ	4,068	C31-2Δ2Δ	4,827	C33-2Δ2Δ	5,285	
192	A210	60	75	150	200	D3-2Δ2Δ	4,722	D31-2Δ2Δ	5,652	D33-2Δ2Δ	6,327	
248	A260	75	100	200	250	E3-2Δ2Δ	5,500	E31-2Δ2Δ	7,685	E33-2Δ2Δ	8,427	
302	A300	100	100	250	300	F3-2Δ2Δ	6,340	F31-2Δ2Δ	8,142	F33-2Δ2Δ	8,905	
414	AF400	125	150	350	400	G3-70Δ2Δ	6,855	G31-70Δ2Δ	15,522	G33-70Δ2Δ	16,197	
480	AF460	150	200	400	500	H3-70Δ2Δ	13,560	H31-70Δ2Δ	22,554	H23-70Δ2Δ	23,300	
590	AF580	200	250	500	600	T3-70Δ2Δ	18,660	T31-70Δ2Δ	25,872	T33-70Δ2Δ	26,332	
810	AF750	250	300	600	700	U3-70Δ2Δ	20,025	U31-70Δ2Δ	29,322	U33-70Δ2Δ	30,297	

<b>NEMA rated</b>											
NEMA size	Contactor size	Continuous current	200V	230V	460/575V						
00	A9	9	1.5	1.5	2	J3-2Δ2Δ	\$ 396	J31-2Δ2Δ	\$ 582	J33-2Δ2Δ	\$ 702
0	A16	18	3	3	5	K3-2Δ2Δ	476	K31-2Δ2Δ	702	K33-2Δ2Δ	822
1	A26	27	7.5	7.5	10	L3-2Δ2Δ	552	L31-2Δ2Δ	882	L33-2Δ2Δ	972
2	A50	45	10	15	25	M3-2Δ2Δ	1,224	M31-2Δ2Δ	1,467	M33-2Δ2Δ	1,835
3	A75	90	25	30	50	N3-2Δ2Δ	1,692	N31-2Δ2Δ	1,977	N33-2Δ2Δ	2,885
4	A145	135	40	50	100	P3-2Δ2Δ	3,069	P31-2Δ2Δ	3,642	P33-2Δ2Δ	4,347
5	A260	270	75	100	200	Q3-2Δ2Δ	5,508	Q31-2Δ2Δ	7,685	Q33-2Δ2Δ	8,427
6	AF460	540	150	200	400	R3-70Δ2Δ	13,560	R31-70Δ2Δ	22,554	R33-70Δ2Δ	23,300
7	AF750	810	—	300	600	S3-70Δ2Δ	20,025	S31-70Δ2Δ	29,322	S33-70Δ2Δ	30,297

Δ Overload relay suffix code. Select from the overload relay selection chart on pages 3.6 - 3.7. 1st Δ low speed; 2nd Δ high speed.

### Description

Motors that have separate windings for each speed provide more combinations of speed variations. Multi-speed starters from ABB Control are available for constant horsepower, constant torque and variable torque motors.

#### Constant horsepower

Motors that maintain the same horsepower regardless of speed are called constant horsepower motors. These motors are used in applications like metal working.

#### Constant torque

Motors that maintain constant torque at all speeds are called constant torque motors. In applications like conveyors, horsepower varies directly with speed.

#### Variable torque motors

Motors that produce a torque characteristic which varies as the square of the speed are called variable torque motors and are used in applications like blowers and fans.

### Control transformer option

Contactor size	VA rating	List price adder
A9 - A40	50	\$ 360
A50 - A75	75	435
A95 - A110	100	560
A145 - A185	150	720
A210 - A300	250	795
AF400 - AF460	150	720
AF580 - AF750	250	795

Reference page 3.3 for Extra VA under all (Control Transformer Options chart)

NOTE: For AF50 - AF 300 starters, consult factory.  
Ⓢ AF400 - AF 750 only.

### Coil voltage selection

All AC operated catalog numbers include a 120VAC coil. To select other coil voltages, substitute the code from the Coil Voltage Selection Chart for the suffix code after the last dash in the catalog number.

Ex.: A 240V coil is required for an A110 starter: A3-4Δ2Δ

### D.C. operated starters

If DC operation is required, consult factory.

### Factory modifications

See page 3.3

### Coil voltage selection - A9 - A300

Hz	Contactor type	Volts									
		24	110	120	208	220	240	440	480	500	600
60	A	1		2	3		4	5	6		7
50	A	1	2				4				7

### Coil voltage selection - AF400 - AF750 Ⓢ

Hz	Contactor type	Volts	
		100 - 250	250 - 500
50/60	AF	70	71

### Control transformer voltage selection chart

Hz	Volts				
	Type	200-208/120	240/120	460 - 480/120	575 - 600/120
	A/AF	A	B	C	D
50/60	Type	200-208/24	240/24	460 - 480/24	575 - 600/24
	A/AF	E	F	G	H



## 2 Speed, 2 winding A9 - AF750 Three phase

UL Type 12 (Metal dustight)		UL Type 4 (Watertight)		UL Type 4X (Stainless steel)		UL Type 1, 3R, 4, 4X & 12 (Plastic)	
Catalog number	List price	Catalog number	List price	Catalog number	List price	Catalog number	List price
<b>UL rated</b>							
132-2Δ2Δ	<b>\$ 702</b>	134-2Δ2Δ	<b>\$ 915</b>	13X-2Δ2Δ	<b>\$ 1,197</b>	13P-2Δ2Δ	<b>\$ 680</b>
232-2Δ2Δ	<b>777</b>	234-2Δ2Δ	<b>990</b>	23X-2Δ2Δ	<b>1,302</b>	23P-2Δ2Δ	<b>755</b>
332-2Δ2Δ	<b>822</b>	334-2Δ2Δ	<b>1,065</b>	33X-2Δ2Δ	<b>1,385</b>	33P-2Δ2Δ	<b>837</b>
432-2Δ2Δ	<b>972</b>	434-2Δ2Δ	<b>1,200</b>	43X-2Δ2Δ	<b>1,797</b>	43P-2Δ2Δ	<b>1,032</b>
532-2Δ2Δ	<b>1,115</b>	534-2Δ2Δ	<b>1,388</b>	53X-2Δ2Δ	<b>1,940</b>	53P-2Δ2Δ	<b>1,175</b>
632-2Δ2Δ	<b>1,377</b>	634-2Δ2Δ	<b>1,545</b>	63X-2Δ2Δ	<b>2,082</b>	63P-2Δ2Δ	<b>1,302</b>
732-2Δ2Δ	<b>1,835</b>	734-2Δ2Δ	<b>1,988</b>	73X-2Δ2Δ	<b>2,285</b>	73P-2Δ2Δ	<b>1,602</b>
832-2Δ2Δ	<b>2,382</b>	834-2Δ2Δ	<b>2,513</b>	83X-2Δ2Δ	<b>3,215</b>	83P-2Δ2Δ	<b>1,767</b>
932-2Δ2Δ	<b>2,885</b>	934-2Δ2Δ	<b>3,090</b>	93X-2Δ2Δ	<b>3,672</b>	93P-2Δ2Δ	<b>2,200</b>
A32-2Δ2Δ	<b>3,702</b>	A34-2Δ2Δ	<b>3,863</b>	A3X-2Δ2Δ	<b>4,550</b>	A3P-2Δ2Δ	<b>3,300</b>
B32-2Δ2Δ	<b>4,347</b>	B34-2Δ2Δ	<b>4,650</b>	B3X-2Δ2Δ	<b>5,735</b>	B3P-2Δ2Δ	<b>3,919</b>
C32-2Δ2Δ	<b>5,285</b>	C34-2Δ2Δ	<b>5,740</b>	C3X-2Δ2Δ	<b>6,627</b>	C3P-2Δ2Δ	<b>4,857</b>
D32-2Δ2Δ	<b>6,327</b>	D34-2Δ2Δ	<b>6,510</b>	D3X-2Δ2Δ	<b>7,752</b>	D3P-2Δ2Δ	<b>5,899</b>
E32-2Δ2Δ	<b>8,427</b>	E34-2Δ2Δ	<b>9,150</b>	E3X-2Δ2Δ	<b>12,065</b>	E3P-2Δ2Δ	<b>7,512</b>
F32-2Δ2Δ	<b>8,905</b>	F34-2Δ2Δ	<b>9,750</b>	F3X-2Δ2Δ	<b>13,025</b>	F3P-2Δ2Δ	<b>7,990</b>
G32-70Δ2Δ	<b>16,197</b>	G34-70Δ2Δ	<b>17,100</b>	G3X-70Δ2Δ	<b>20,760</b>		
H32-70Δ2Δ	<b>23,300</b>	H34-70Δ2Δ	<b>23,700</b>	H3X-70Δ2Δ	<b>24,320</b>		
T32-70Δ2Δ	<b>26,322</b>	T34-70Δ2Δ	<b>27,000</b>	T3X-70Δ2Δ	<b>28,570</b>		
U32-70Δ2Δ	<b>30,297</b>	U34-70Δ2Δ	<b>30,900</b>	U3X-70Δ2Δ	<b>32,697</b>		
<b>NEMA rated</b>							
J32-2Δ2Δ	<b>\$ 702</b>	J34-2Δ2Δ	<b>\$ 915</b>	J3X-2Δ2Δ	<b>\$ 1,197</b>	J3P-2Δ2Δ	<b>\$ 680</b>
K32-2Δ2Δ	<b>822</b>	K34-2Δ2Δ	<b>1,065</b>	K3X-2Δ2Δ	<b>1,385</b>	K3P-2Δ2Δ	<b>837</b>
L32-2Δ2Δ	<b>972</b>	L34-2Δ2Δ	<b>1,200</b>	L3X-2Δ2Δ	<b>1,797</b>	L3P-2Δ2Δ	<b>1,032</b>
M32-2Δ2Δ	<b>1,835</b>	M34-2Δ2Δ	<b>1,988</b>	M3X-2Δ2Δ	<b>2,285</b>	M3P-2Δ2Δ	<b>1,602</b>
N32-2Δ2Δ	<b>2,885</b>	N34-2Δ2Δ	<b>3,090</b>	N3X-2Δ2Δ	<b>3,672</b>	N3P-2Δ2Δ	<b>2,200</b>
P32-2Δ2Δ	<b>4,347</b>	P34-2Δ2Δ	<b>4,650</b>	P3X-2Δ2Δ	<b>5,735</b>	P3P-2Δ2Δ	<b>3,919</b>
Q32-2Δ2Δ	<b>8,427</b>	Q34-2Δ2Δ	<b>9,150</b>	Q3X-2Δ2Δ	<b>12,065</b>	Q3P-2Δ2Δ	<b>7,512</b>
R32-70Δ2Δ	<b>23,300</b>	R34-70Δ2Δ	<b>23,700</b>	R3X-70Δ2Δ	<b>24,320</b>		
S32-70Δ2Δ	<b>30,297</b>	S34-70Δ2Δ	<b>30,900</b>	S3X-70Δ2Δ	<b>32,697</b>		

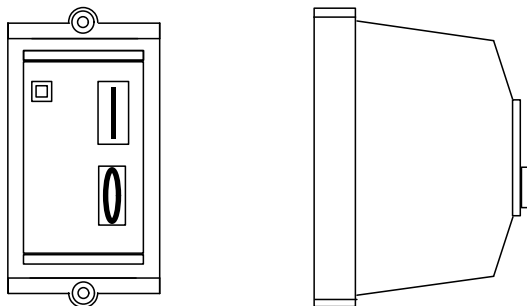
Δ Overload relay suffix code. Select from the overload relay selection chart on pages 3.6 - 3.7. 1st Δ low speed; 2nd Δ high speed.

# Plastic enclosed, IP65

## A9 - A16

### Three phase & single phase

3



#### Enclosed – Three phase

Maximum motor horsepower ratings				Catalog number with blank cover	List price	Catalog number with reset only	List price	Catalog number with start & stop/reset	List price
208V	240V	480V	575V/600V						
2	2	5	7.5	A9SD-84Δ	<b>\$ 233</b>	A9SD-84ΔR	<b>\$ 240</b>	A9SD-84ΔA	<b>\$ 278</b>
3	3	7.5	10	A12SD-84Δ	<b>248</b>	A12SD-84ΔR	<b>255</b>	A12SD-84ΔA	<b>293</b>
5	5	10	15	A16SD-84Δ	<b>278</b>	A16SD-84ΔR	<b>293</b>	A16SD-84ΔA	<b>330</b>

Δ Overload Relay suffix code. Select from the overload relay selection chart on page 3.6.

#### Enclosed – Single phase

Maximum motor horsepower ratings		Catalog number with blank cover	List price	Catalog number with reset only	List price	Catalog number with start & stop/reset	List price
115V	230V						
1/2	1	A9SSD-84Δ	<b>\$ 233</b>	A9SSD-84ΔR	<b>\$ 240</b>	A9SSD-84ΔA	<b>\$ 278</b>
3/4	2	A12SSD-84Δ	<b>248</b>	A12SSD-84ΔR	<b>255</b>	A12SSD-84ΔA	<b>293</b>
1	3	A16SSD-84Δ	<b>278</b>	A16SSD-84ΔR	<b>293</b>	A16SSD-84ΔA	<b>330</b>

#### Overload relay selection chart

For contactor sizes	Current range (motor fla)	Catalog number	Starter suffix code	
A16 A12 A9	0.1 – 0.16	TA25DU0.16	A	
	0.16 – 0.25	TA25DU0.25	B	
	0.25 – 0.4	TA25DU0.4	C	
	0.4 – 0.63	TA25DU0.63	D	
	0.63 – 1.0	TA25DU1.0	E	
	1.0 – 1.4	TA25DU1.4	F	
	1.4 – 1.8	TA25DU1.8	G	
	1.7 – 2.4	TA25DU2.4	H	
	2.2 – 3.1	TA25DU3.1	J	
	2.8 – 4.0	TA25DU4.0	K	
	3.5 – 5.0	TA25DU5.0	L	
	4.5 – 6.5	TA25DU6.5	M	
	6.0 – 8.5	TA25DU8.5	N	
	7.5 – 11	TA25DU11	P	
		10 – 14	TA25DU14	Q
		13 – 19	TA25DU19	R

#### Coil voltage selection

All AC operated catalog numbers include a 120VAC coil. To select other coil voltages, substitute the code from the Coil Voltage Selection Chart for the suffix code after the last dash in the catalog number.

Ex.: A 240V coil is required for an A9 starter: A9SD-80E

#### D.C. operated starters

If DC operation is required, consult factory.

#### Coil voltage selection – A9 - A16 starters

Hz	Cntr type	Volts															
		12	24	48	110	120	125	208	220	240	277	380	415	440	480	500	600
60	A		81	83	84	84		34	36	80	42		86	86	51	53	55
50	A		81	83	84				80				85	86			55

## Approximate dimensions

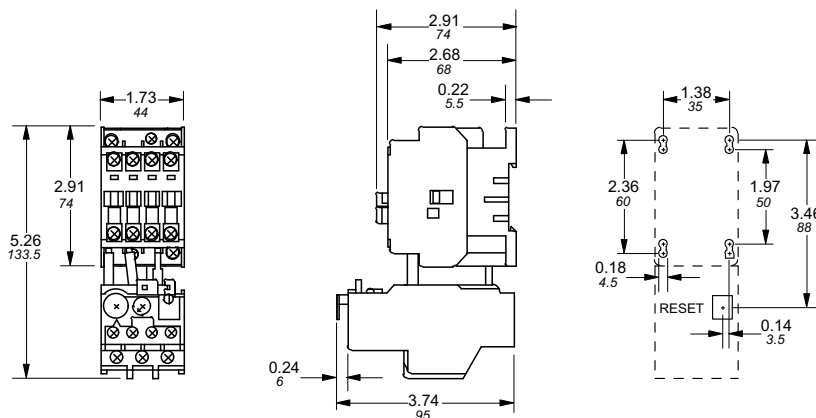
A/AE9 – A/AE16 ①

AC/DC operated, 3 pole

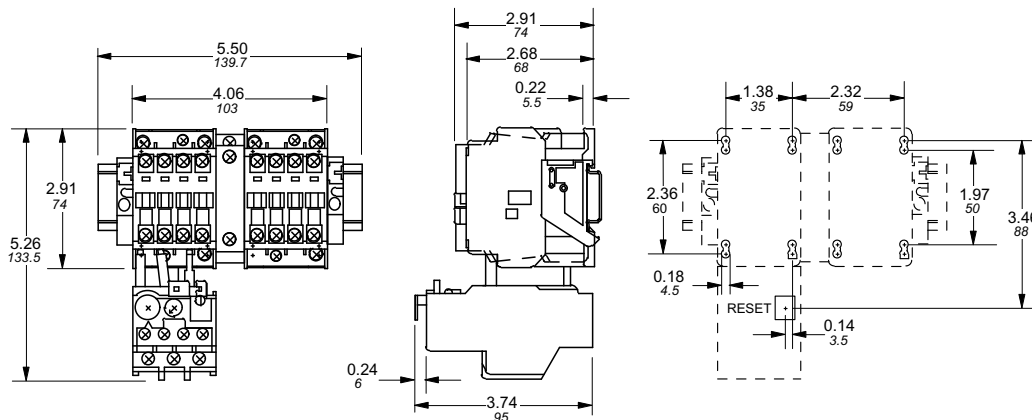
00.00 Inches  
00.00 [Millimeters]

3

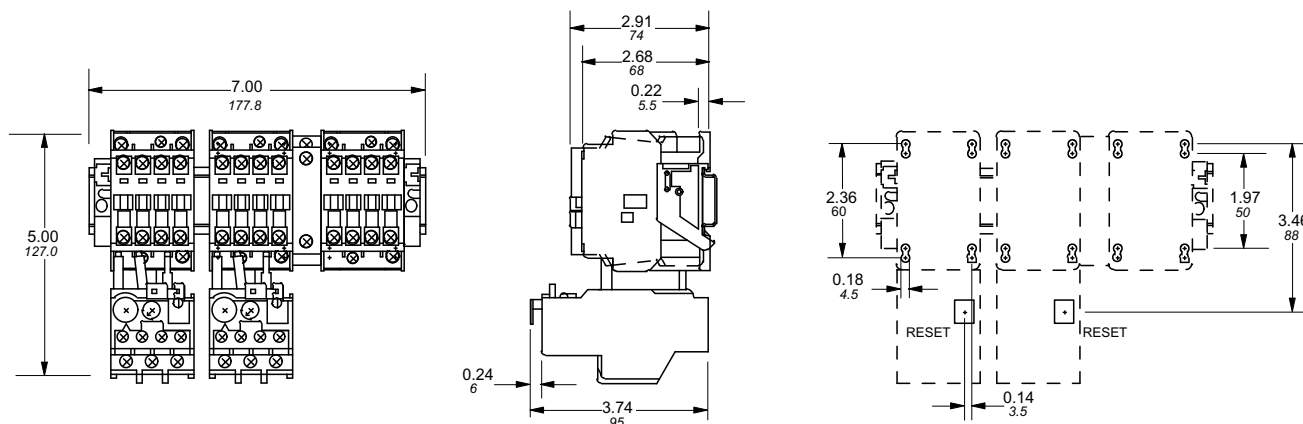
### A/AE9 – A/AE16 + TA25 – Starter



### A/AE9 – A/AE16 + VM5 or VE5 + TA25 – Reversing starter



### A/AE9 – A/AE16 – 2 Speed, 1 winding starter



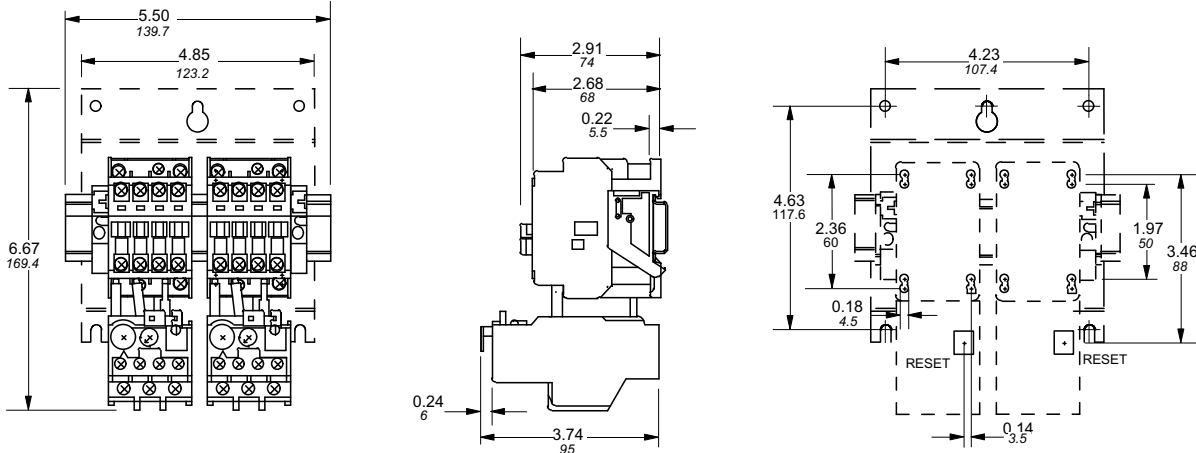
① Starter/contact size.

**Approximate dimensions**  
A/AE9 – A/AE26 ①  
AC/DC operated, 3 pole

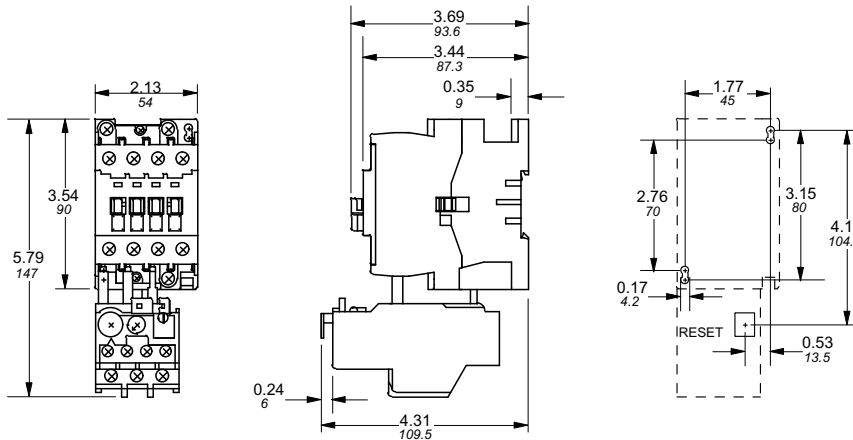
00.00 Inches  
00.00 [Millimeters]

**A/AE9 – A/AE16 – 2 Speed, 2 winding starter**

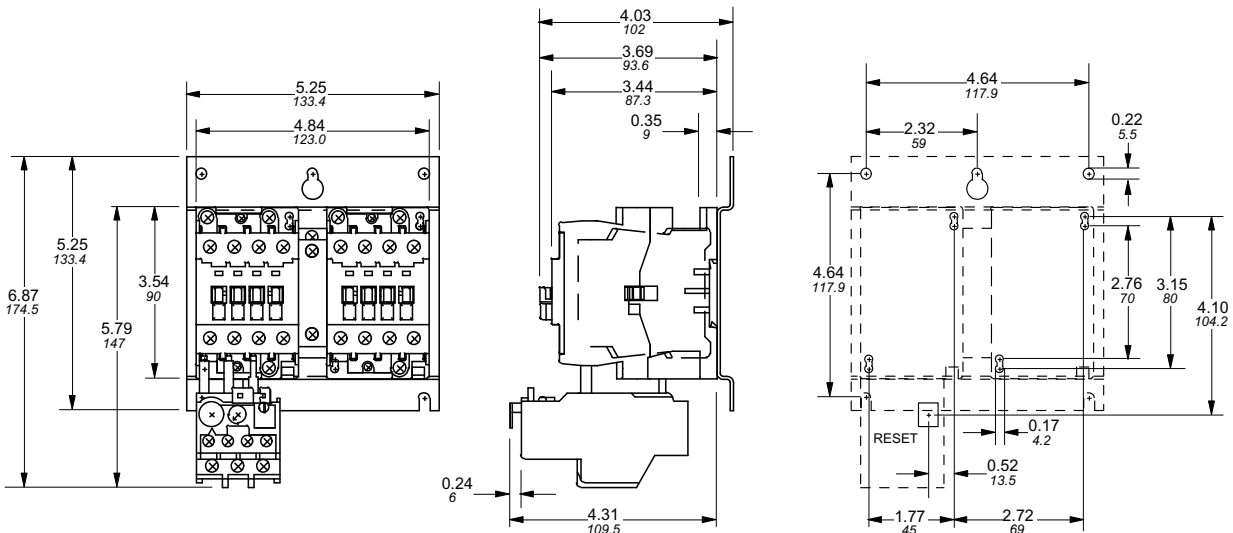
3



**A/AE26 + TA25 – Starter**



**A/AE26 + VM5 or VE5 + TA25 – Reversing starter**



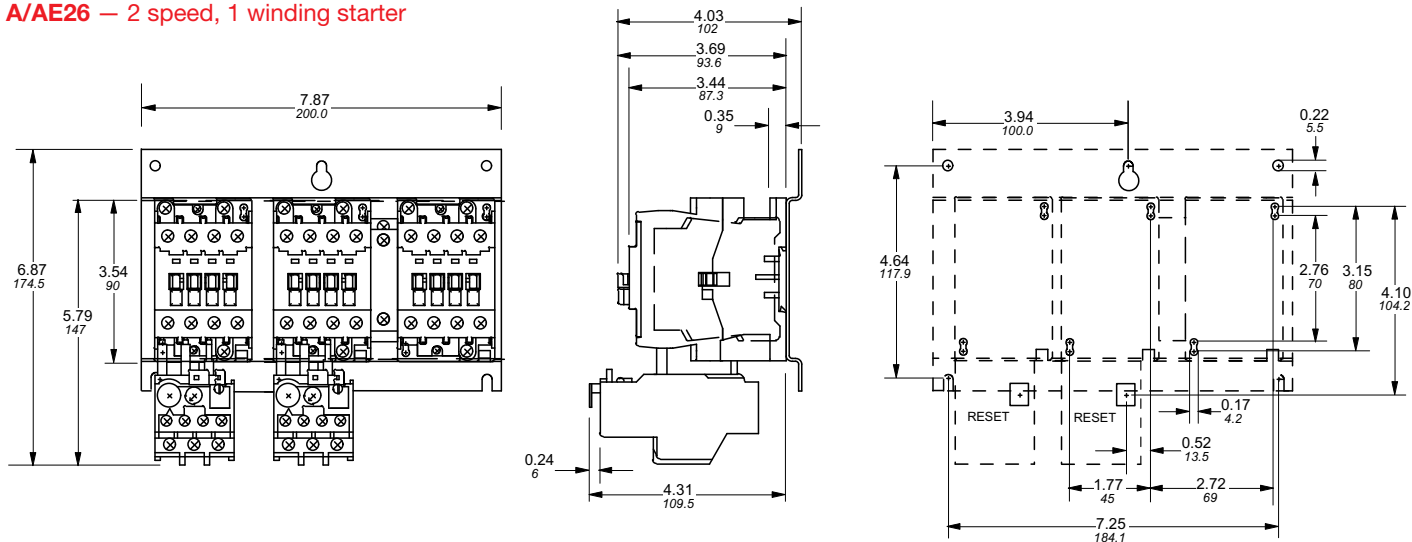
① Starter/contactor size.

**Approximate dimensions**  
A/AE26 to A/AE40 ①  
AC/DC operated, 3 pole

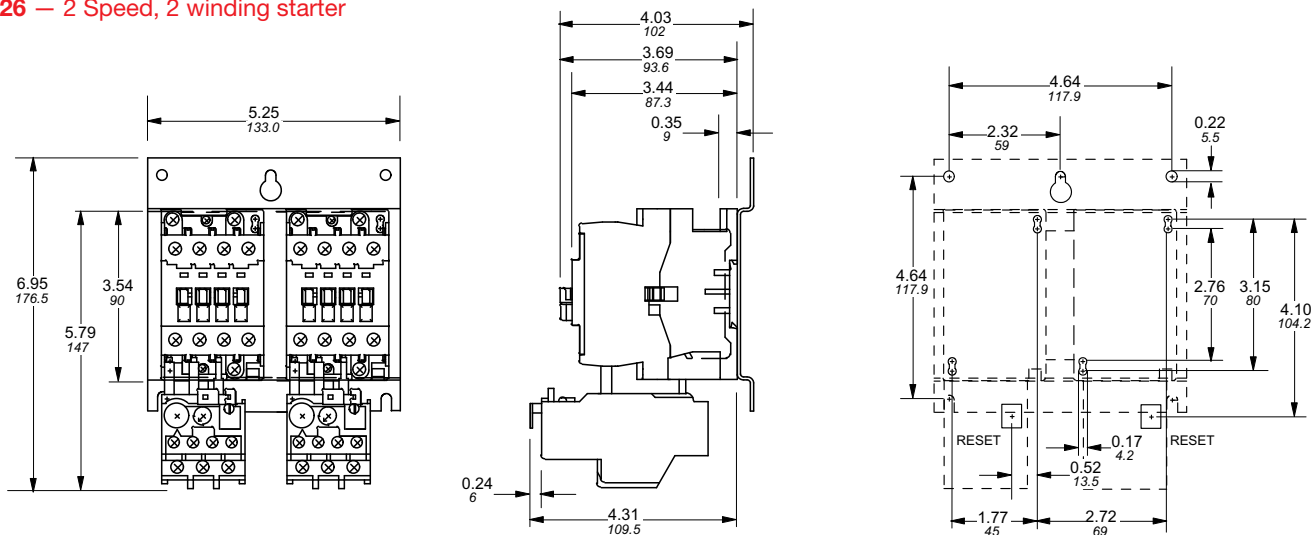
00.00 Inches  
00.00 [Millimeters]

3

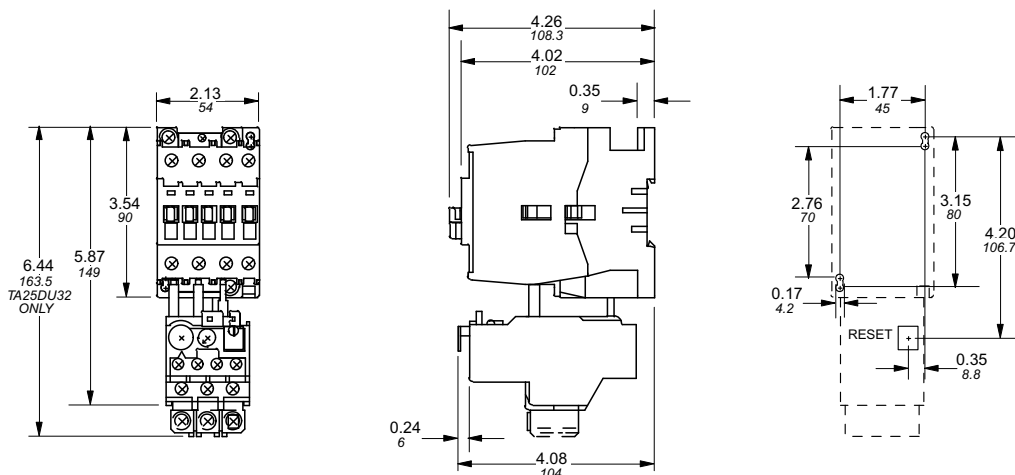
**A/AE26 – 2 speed, 1 winding starter**



**A/AE26 – 2 Speed, 2 winding starter**



**A/AE30 & A/AE40 + TA25 – Starter**



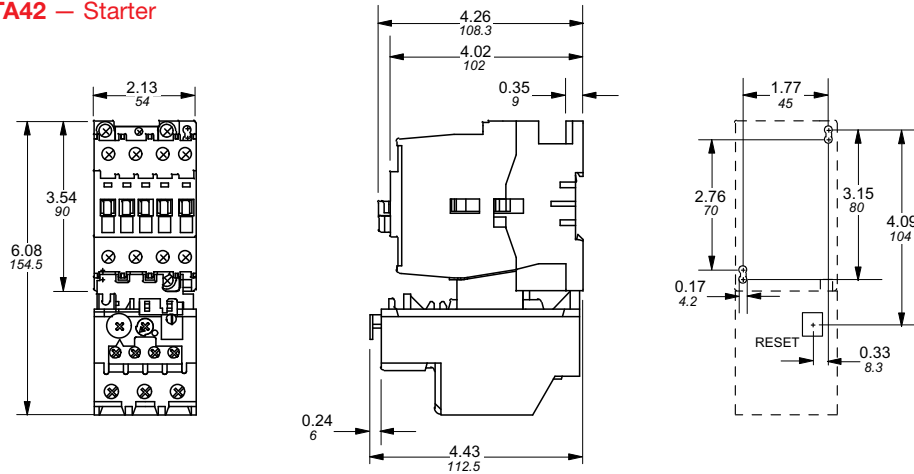
① Starter/contactors size.

**Approximate dimensions**  
A/AE30 – A/AE40 ①  
AC/DC operated, 3 pole

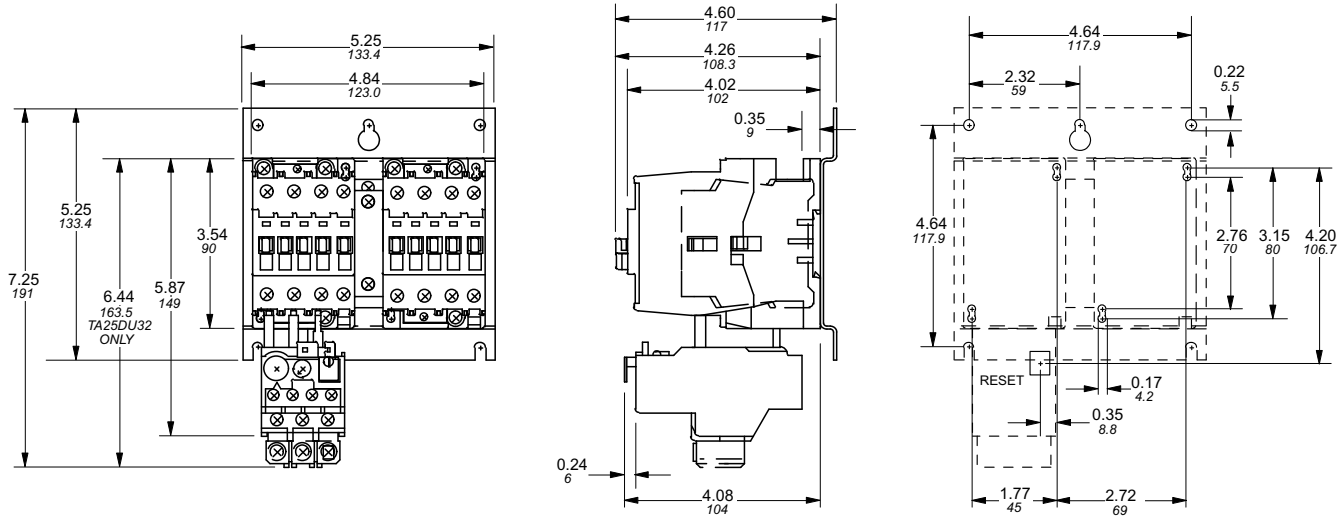
00.00 Inches  
00.00 [Millimeters]

**A/AE30 & A/AE40 + TA42 – Starter**

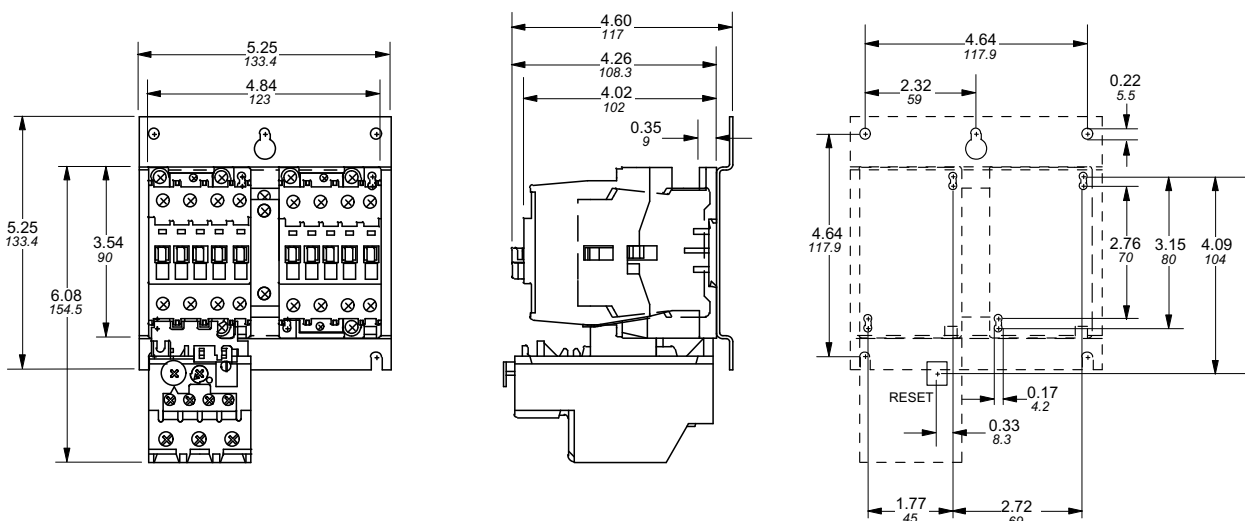
3



**A/AE30 & A/AE40 + VM5 or VE5 + TA25 – Reversing starter**



**A/AE30 & A/AE40 + VM5 or VE5 + TA42 – Reversing starter**

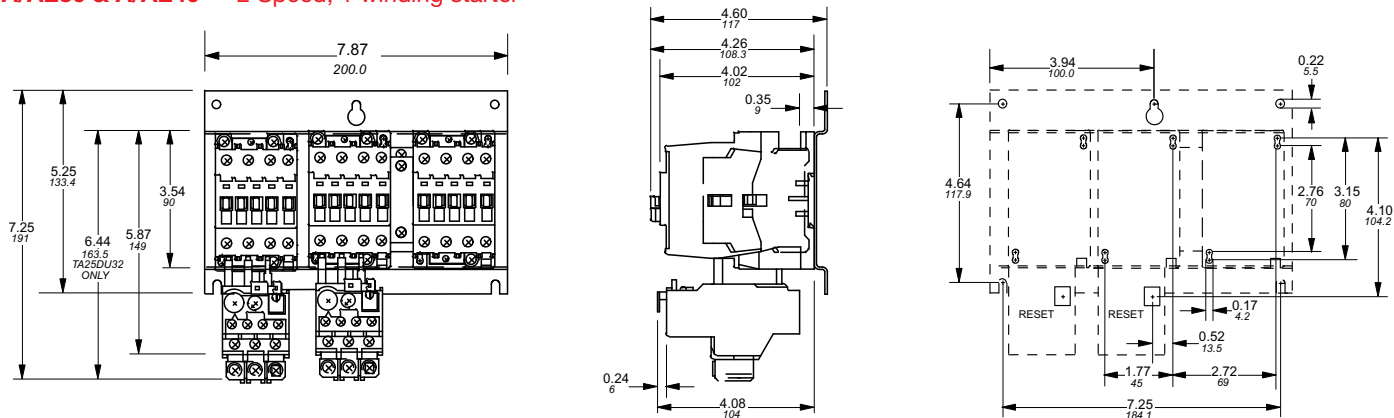


① Starter/contactator size.

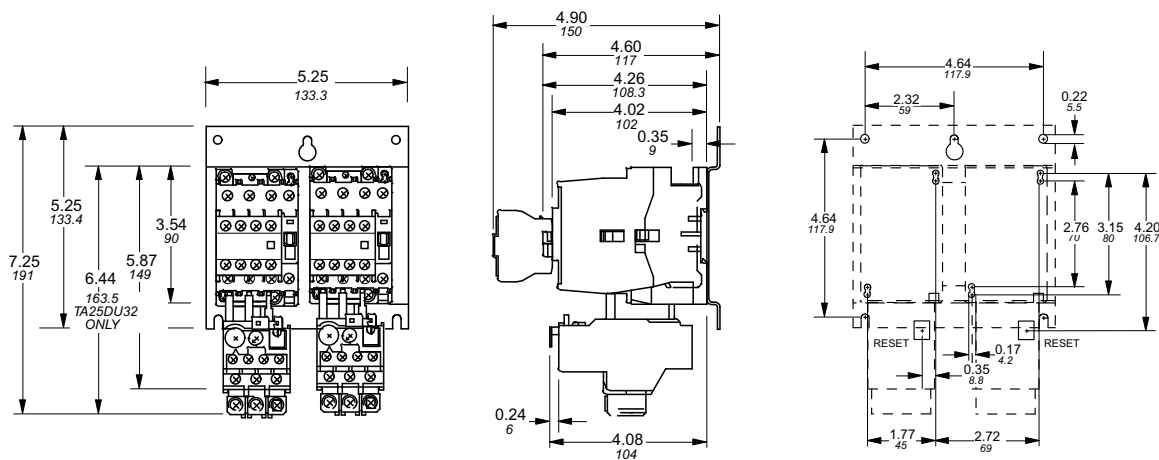
**Approximate dimensions**  
**A/AE30 – A/AE75 ①**  
**AC/DC operated, 3 pole**

00.00 Inches  
 00.00 [Millimeters]

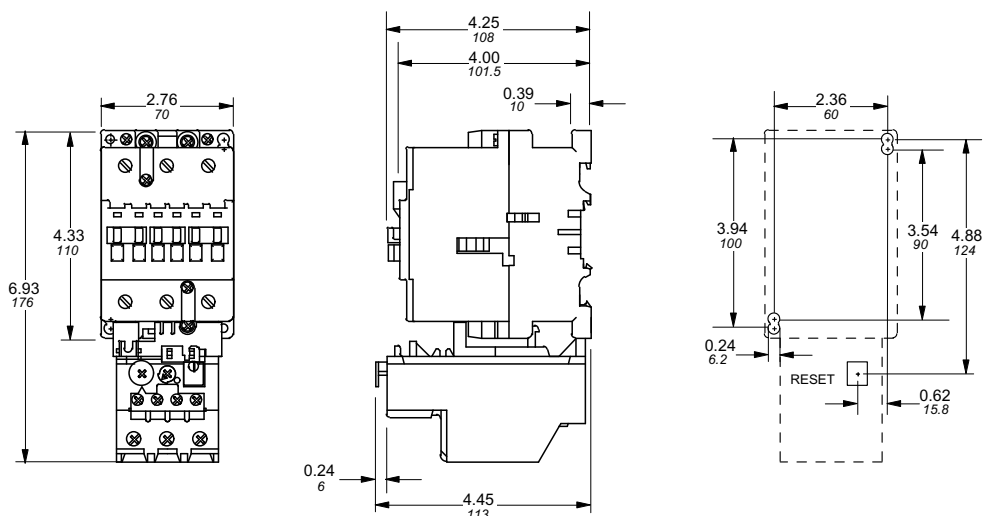
**A/AE30 & A/AE40 – 2 Speed, 1 winding starter**



**A/AE30 & A/AE40 – 2 Speed, 2 winding starter**



**A/AE50 – A/AE75 + TA75 – Starter**



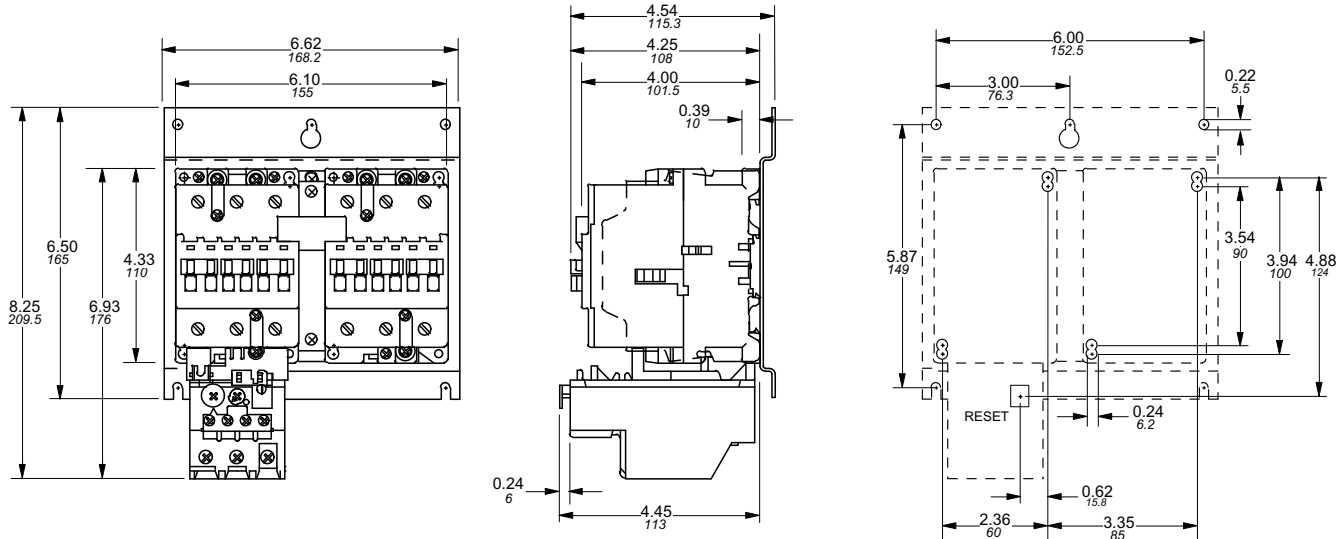
① Starter/contactor size.

**Approximate dimensions**  
A/AE50 – A/AE75 ①  
AC/DC operated, 3 pole

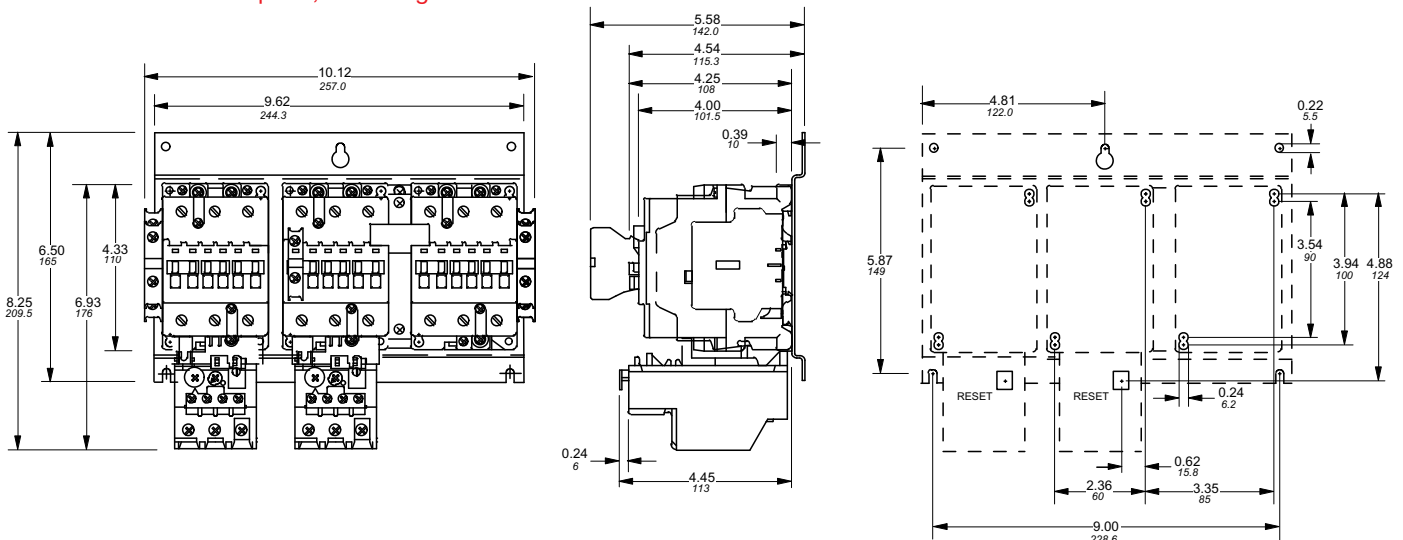
00.00 Inches  
00.00 [Millimeters]

**A/AE50 – A/AE75 + VM5 or VE5 + TA75 – Reversing starter**

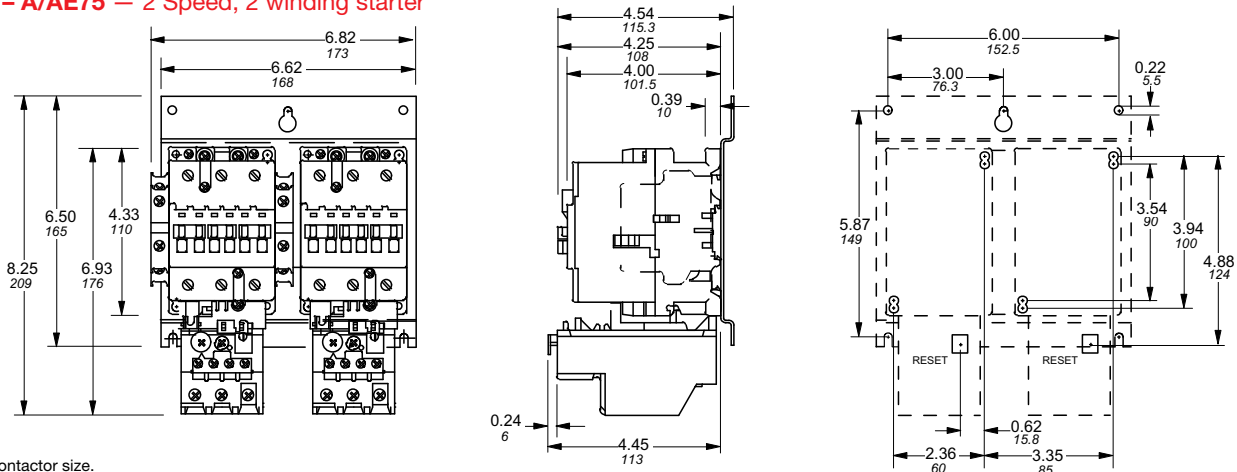
3



**A/AE50 – A/AE75 – 2 Speed, 1 winding starter**



**A/AE50 – A/AE75 – 2 Speed, 2 winding starter**



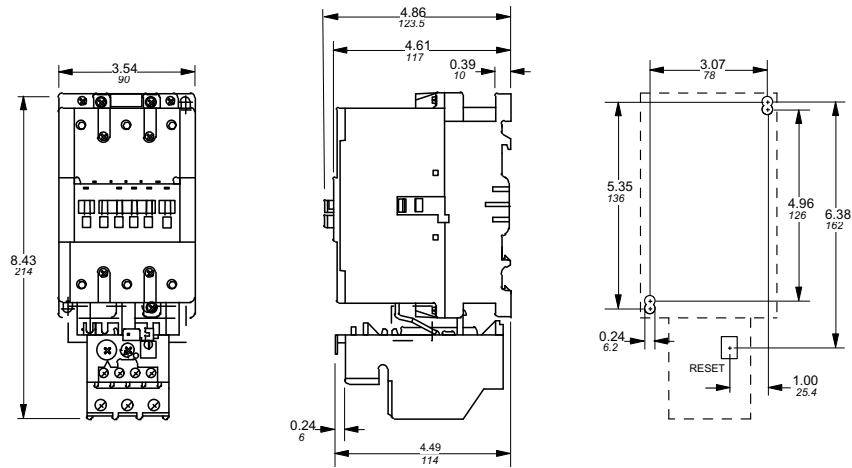
① Starter/contactor size.



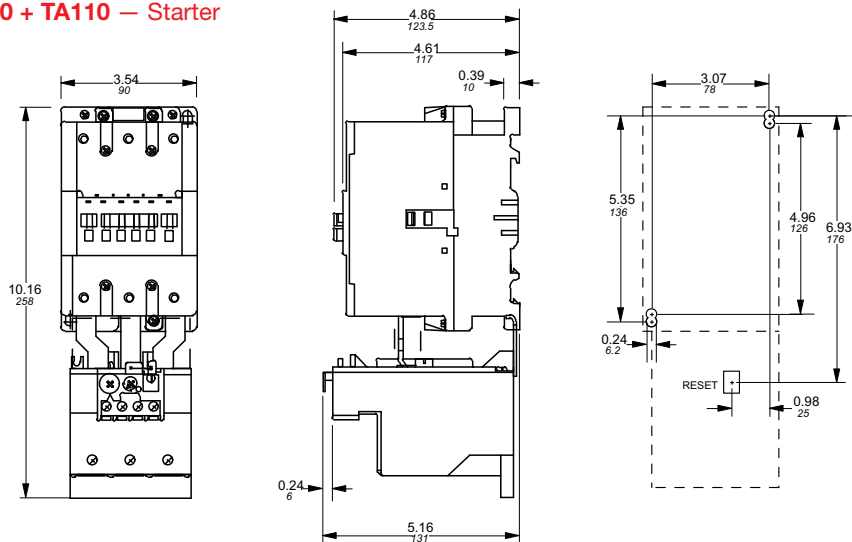
**Approximate dimensions**  
A/AE/AF95 & A/AE/AF110 ①  
AC/DC operated, 3 pole

00.00 Inches  
00.00 [Millimeters]

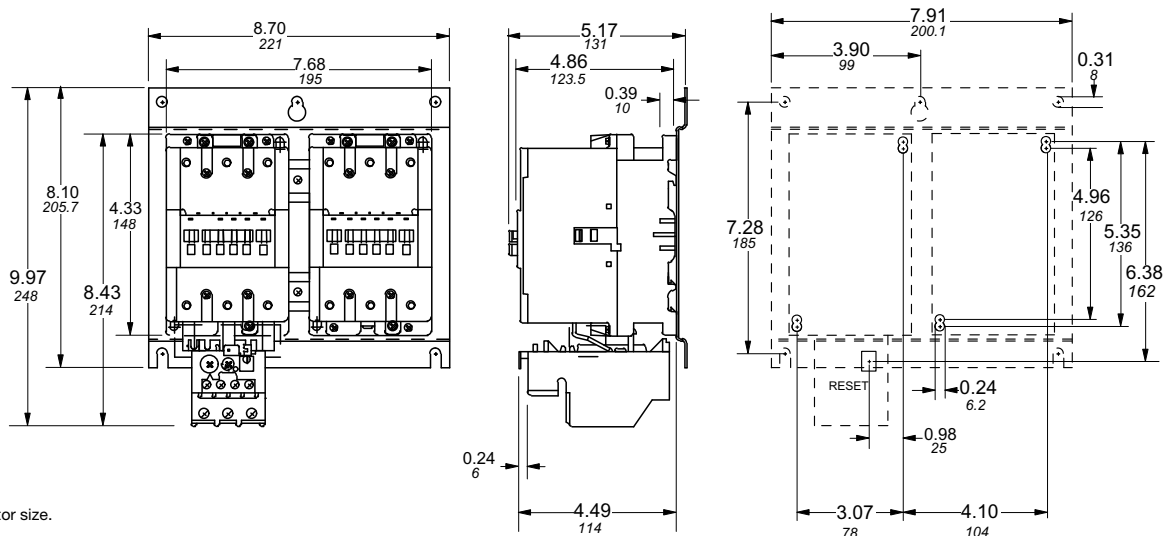
**A/AE/AF95 & A/AE/AF110 + TA80 – Starter**



**A/AE/AF95 & A/AE/AF110 + TA110 – Starter**



**A/AE/AF95 & A/AE/AF110 + VE5 + TA80 – Reversing starter**



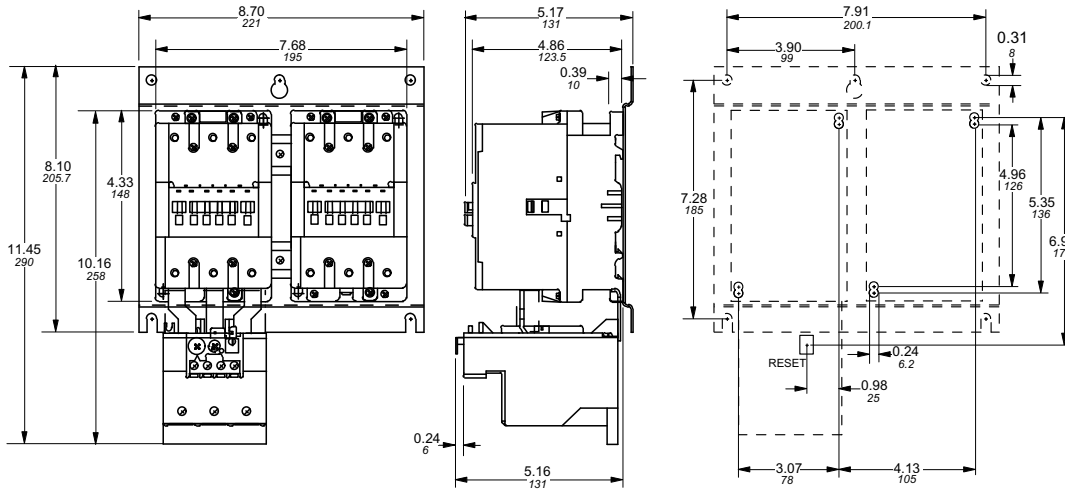
① Starter/contact size.

## Approximate dimensions AC/DC operated, 3 pole A/AE/AF95 & A/AE/AF110 ①

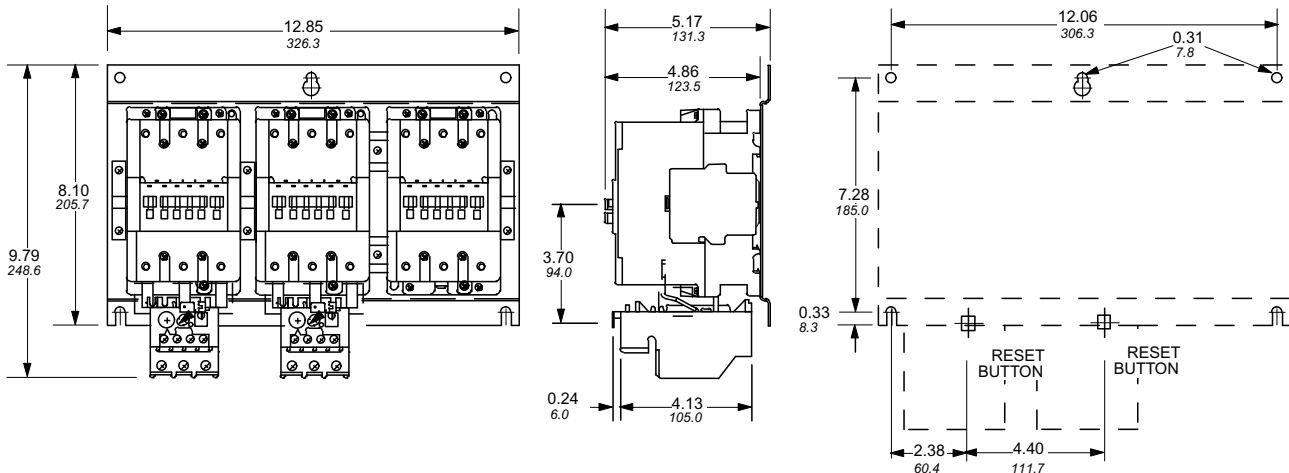
00.00 Inches  
00.00 [Millimeters]

### A/AE/AF95 & A/AE/AF110 + VE5 + TA110 — Reversing starter

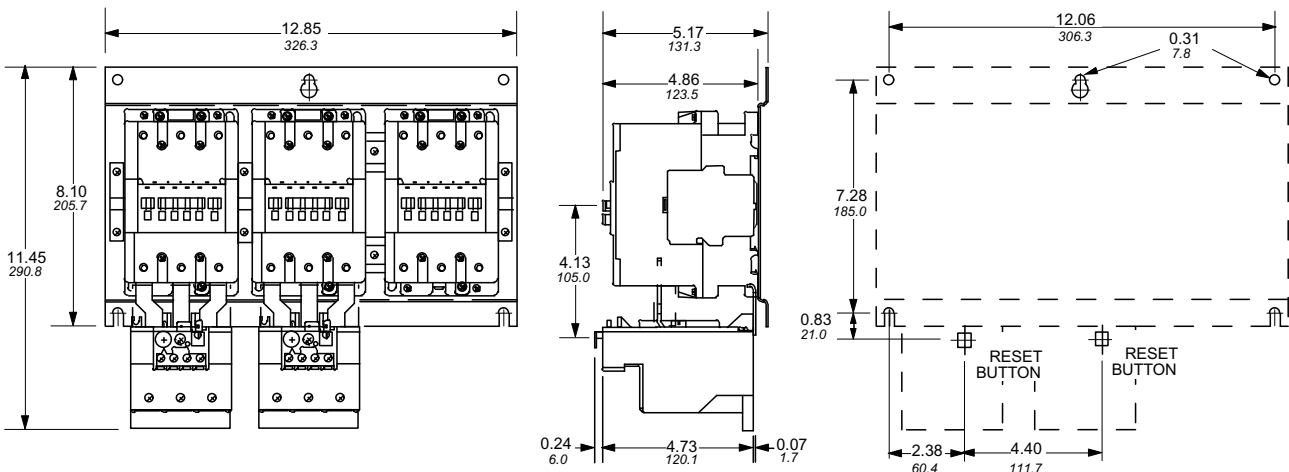
3



### A/AE/AF95 & A/AE/AF110 + TA80 — 2 Speed, 1 winding starter



### A/AE/AF95 & A/AE/AF110 + TA110 — 2 Speed, 1 winding starter

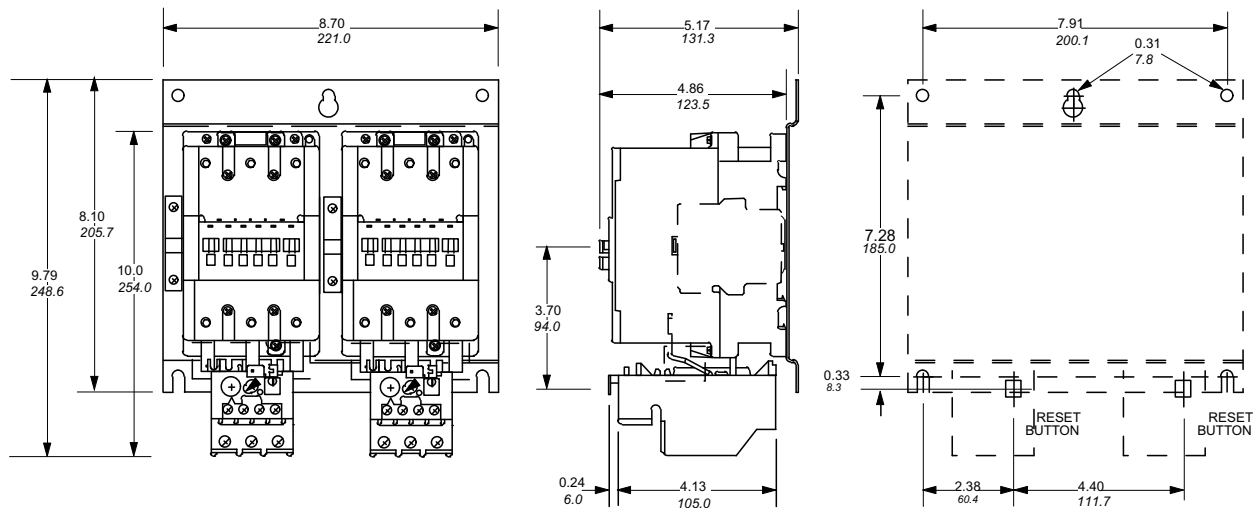


① Starter/contactors size.

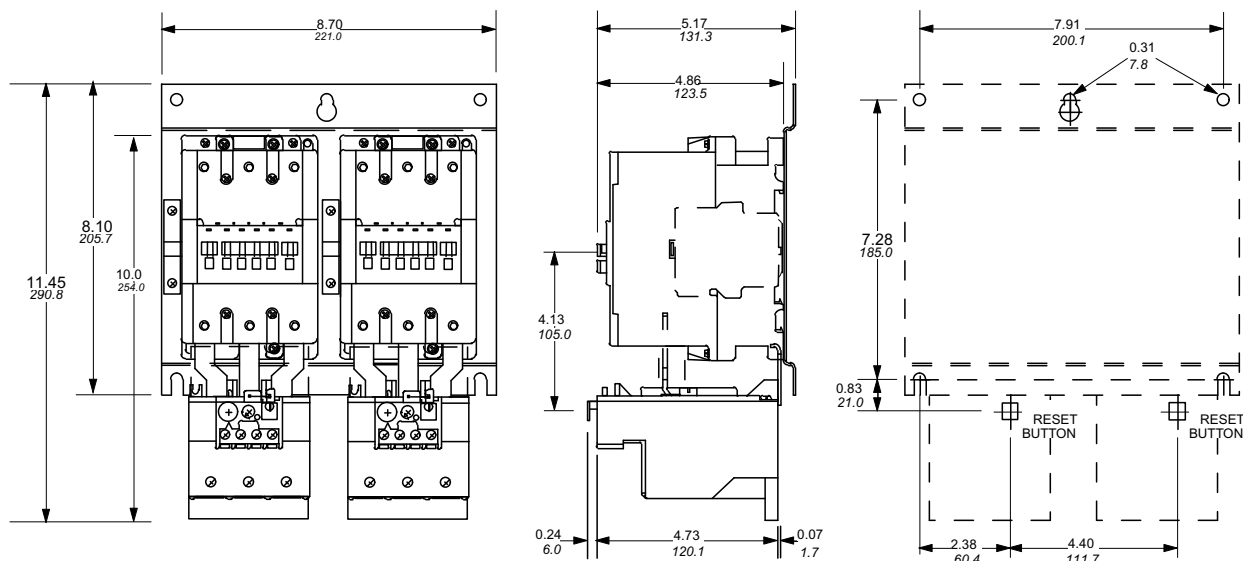
## Approximate dimensions AC/DC operated, 3 pole A/AE/AF95 & A/AE/AF110 ①

00.00 Inches  
00.00 [Millimeters]

### A/AE/AF95 & A/AE/AF110 + TA80 – 2 Speed, 2 winding starter



### A/AE/AF95 & A/AE/AF110 + TA110 – 2 Speed, 2 winding starter



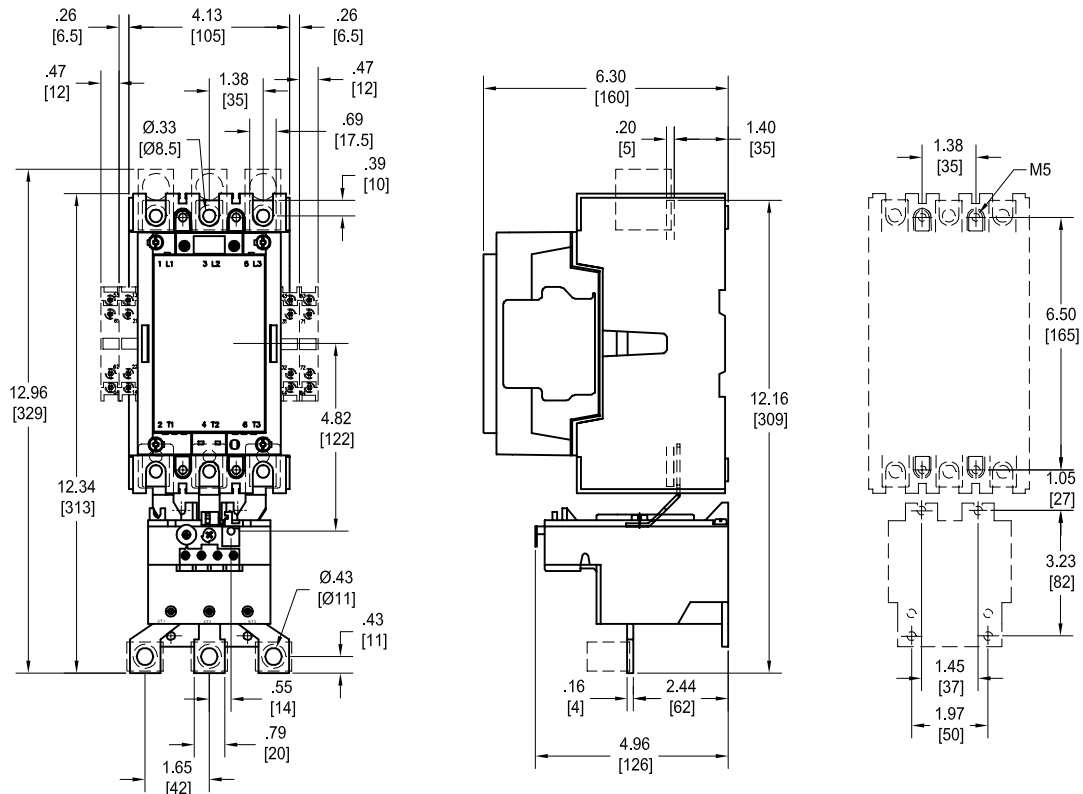
① Starter/contactor size.

## Approximate dimensions AC/DC operated, 3 pole A/AF145 & A/AF185 ①

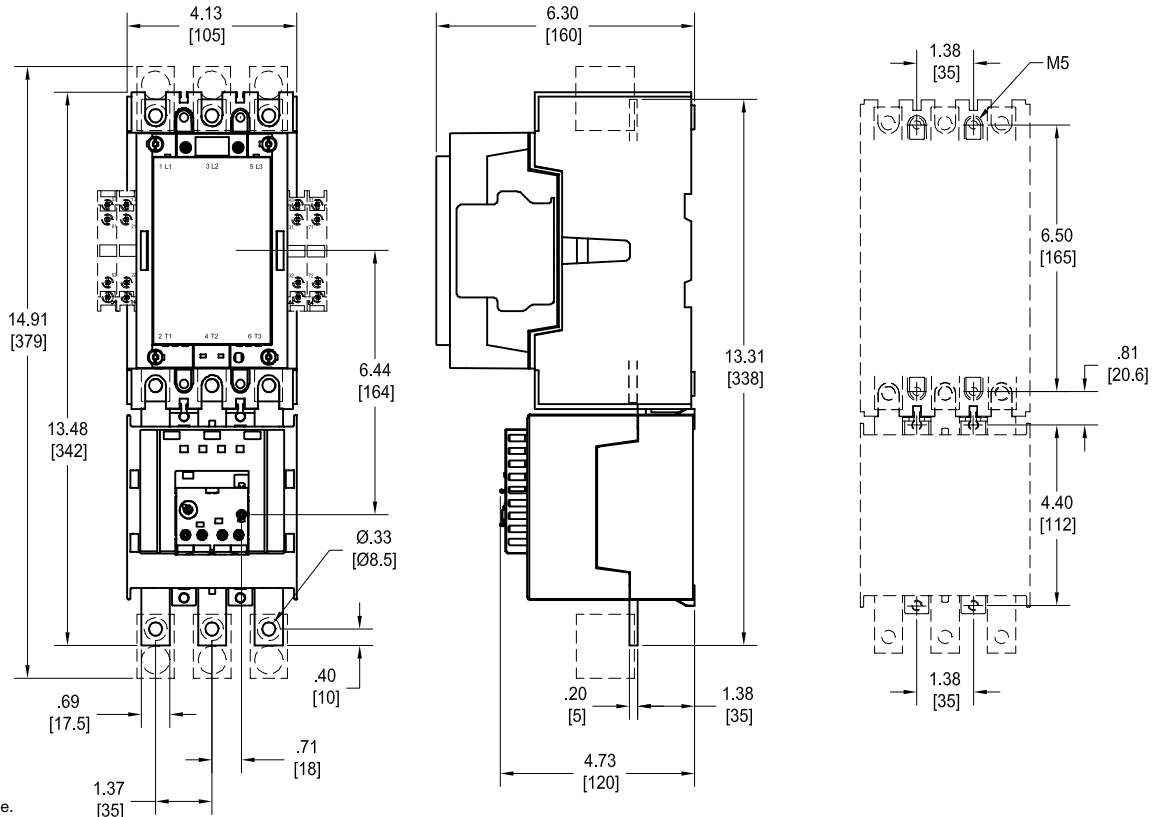
00.00 — Inches  
00.00 — [Millimeters]

### A/AF145 – A/AF185 + TA200 – Starter

3



### A/AF145 – A/AF185 + E200 – Starter



① Starter/contactor size.

# Approximate dimensions

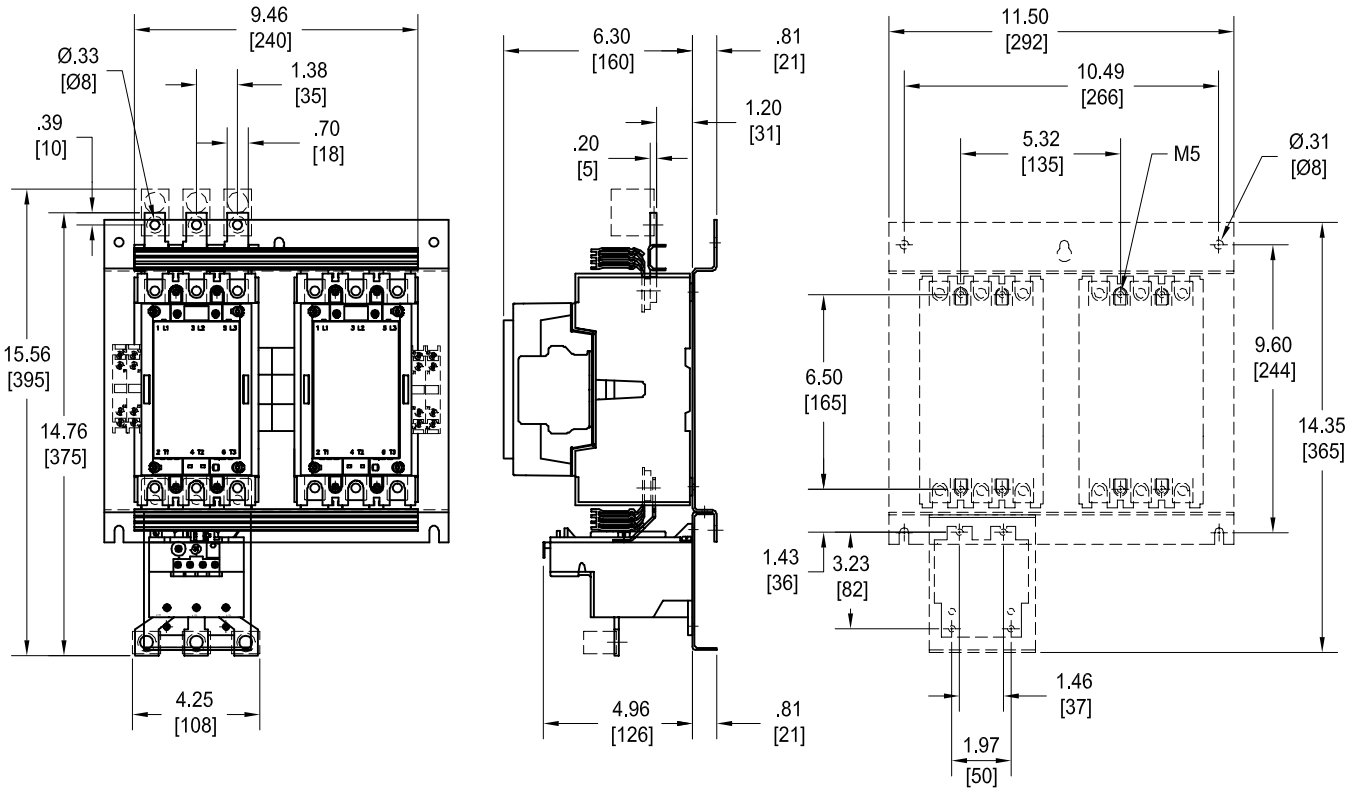
## AC/DC operated, 3 pole

### A/AF145 & A/AF210 ①

Across the  
Line Starters

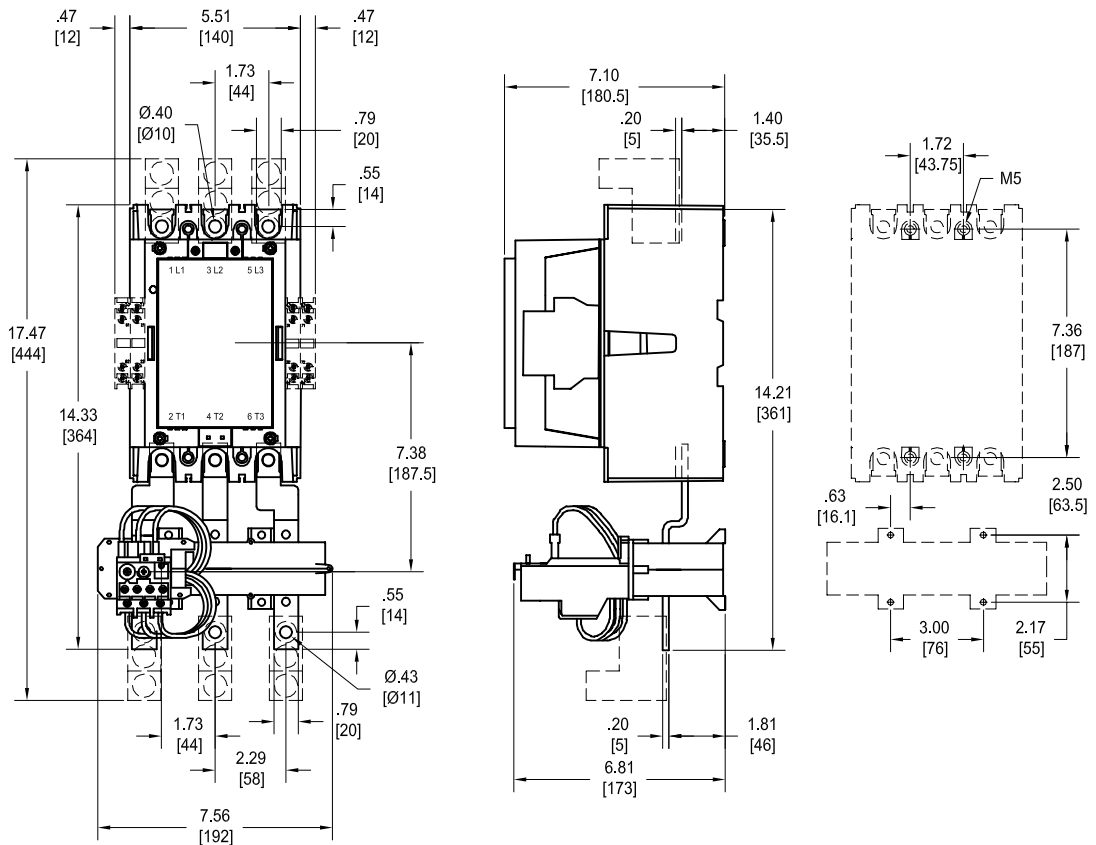
00.00 Inches  
00.00 [Millimeters]

#### A/AF145 – A/AF185 + TA200 – Reversing starter



3

#### A210 – A300 + TA450 – Starter



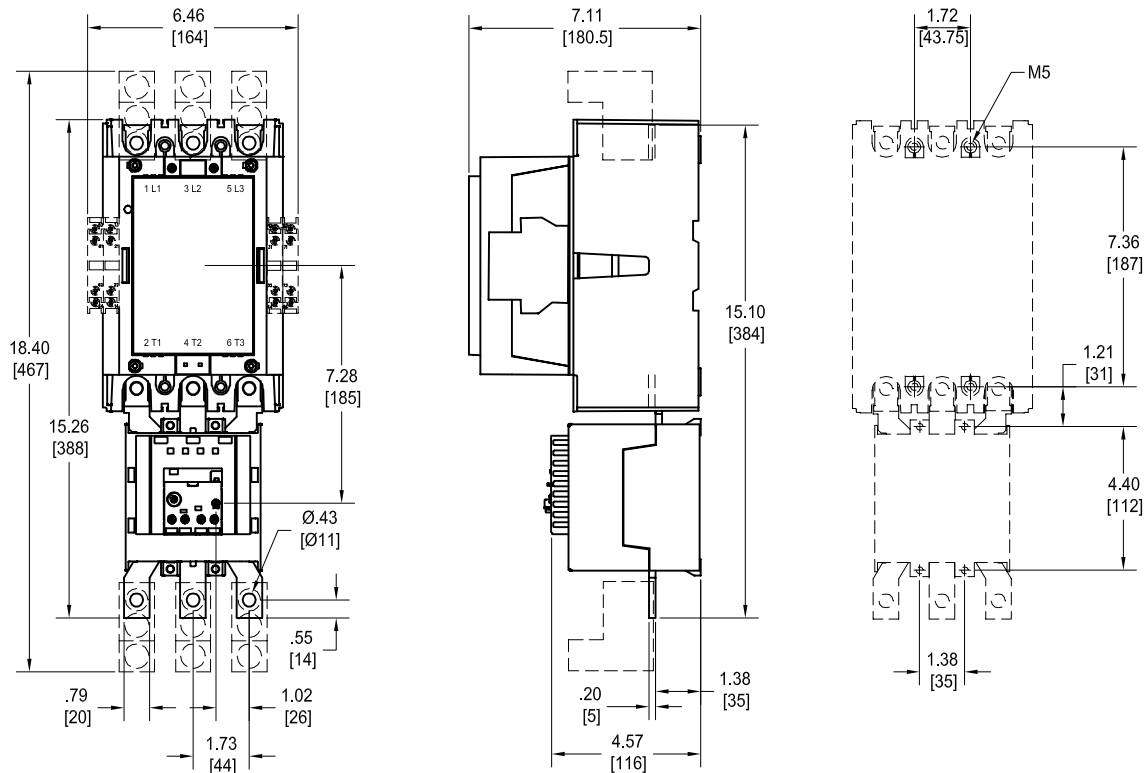
① Starter/contact size.

## Approximate dimensions AC/DC operated, 3 pole A/AF210 ①

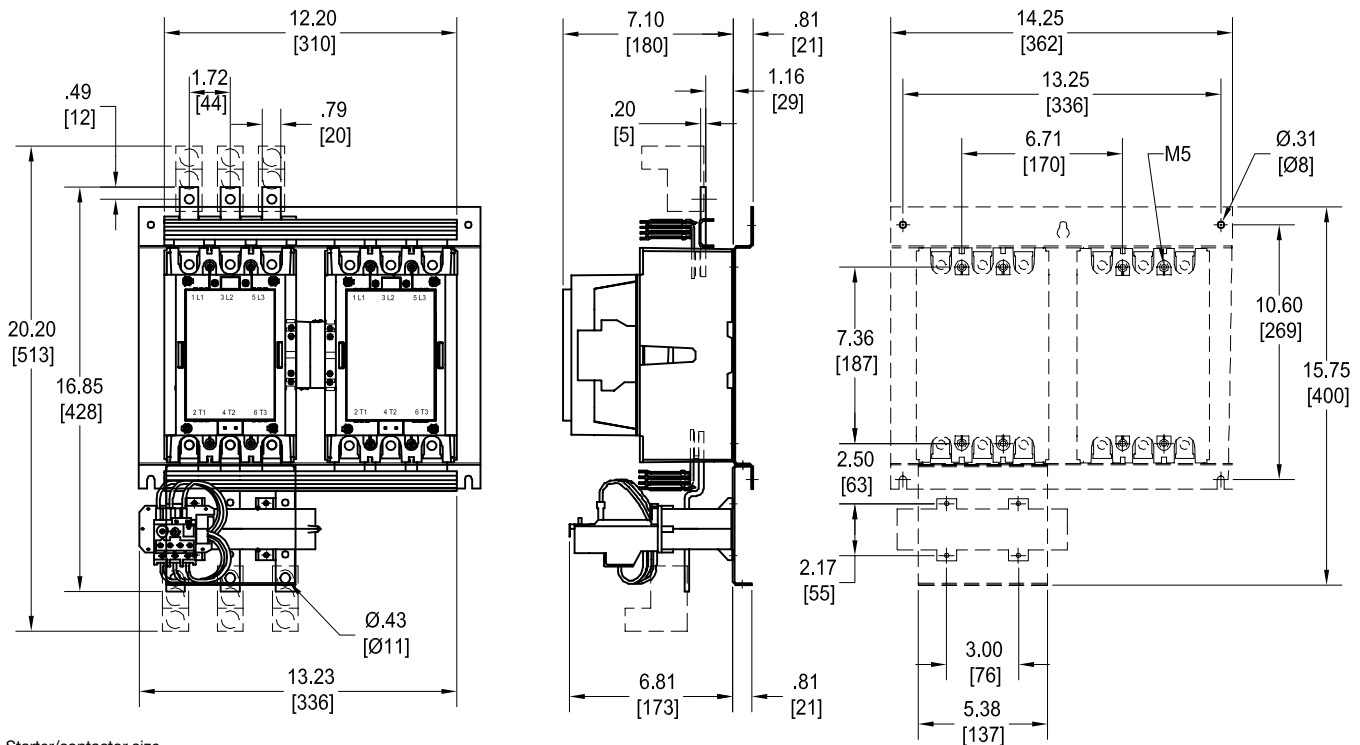
00.00 Inches  
00.00 [Millimeters]

### A210 - A300 + E320 - Starter

3



### A210 - A300 + TA450 - Reversing starter

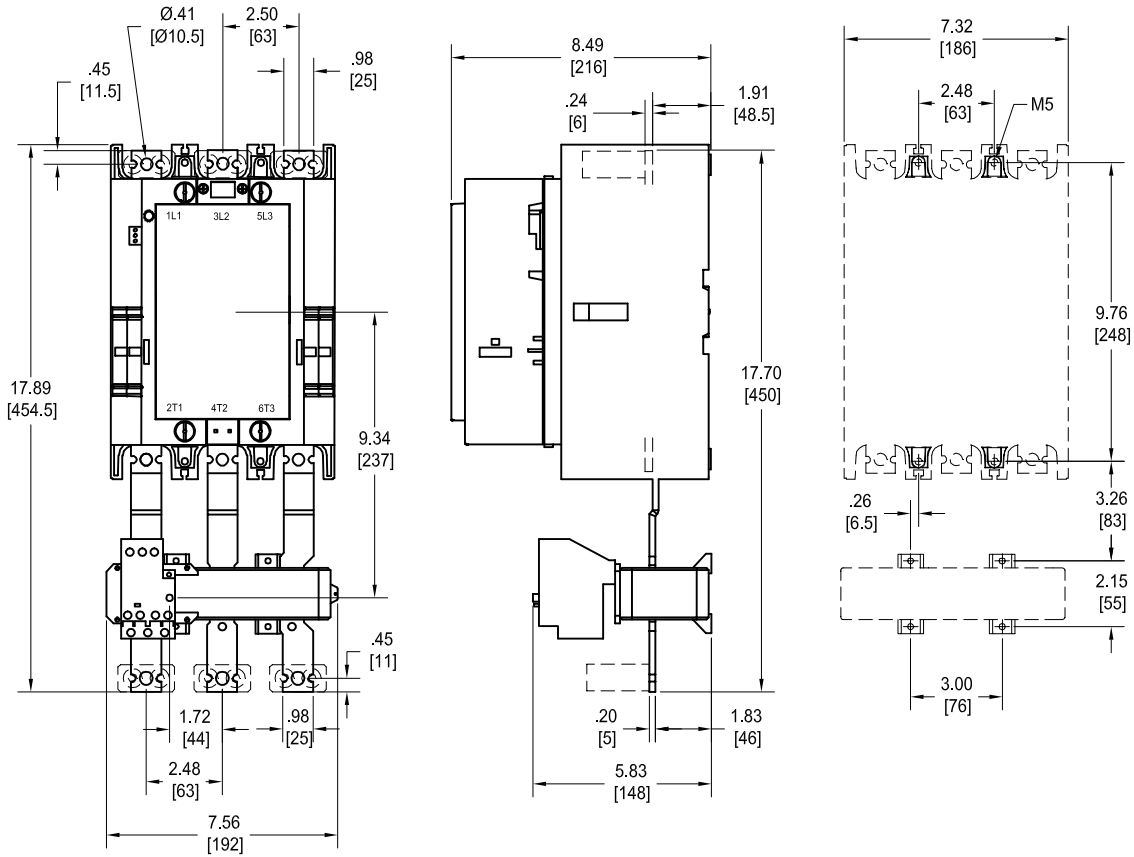


① Starter/contactator size.

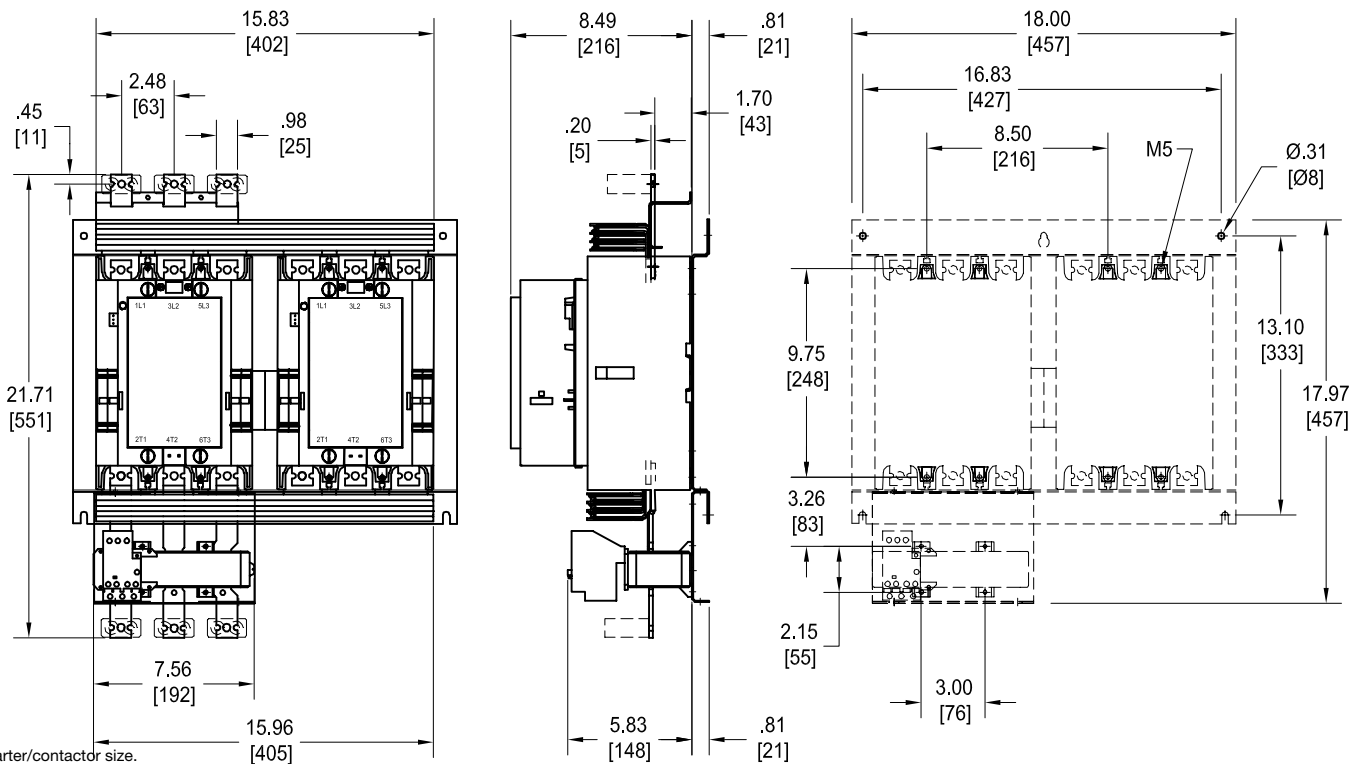
**Approximate dimensions**  
AC/DC operated, 3 pole  
A/AF400 & A/AF460 ①

00.00 — Inches  
00.00 — [Millimeters]

**AF400 – AF460 + E500 – Starter**



**AF400 – AF460 + E500 – Reversing starter**



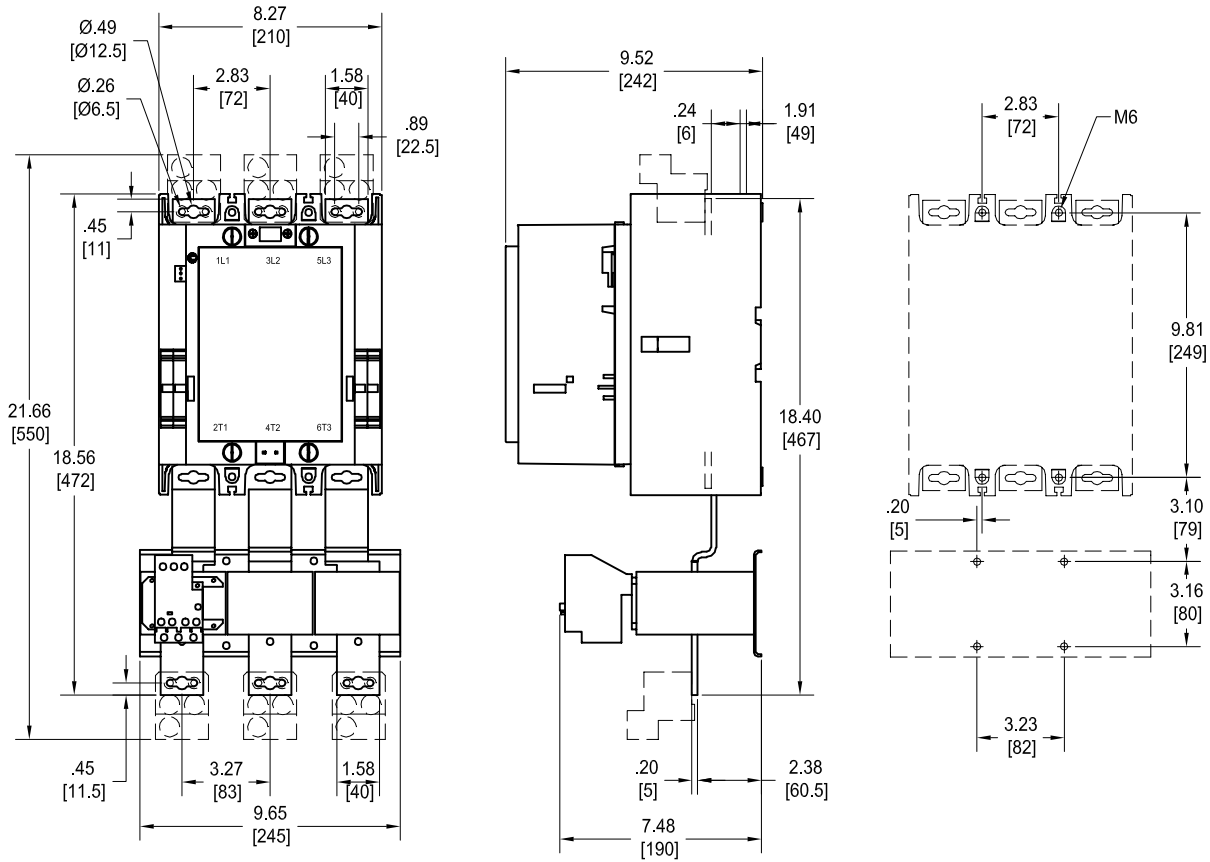
① Starter/contactors size.

**Approximate dimensions**  
AC/DC operated, 3 pole  
A/AF580 & A/AF750 ①

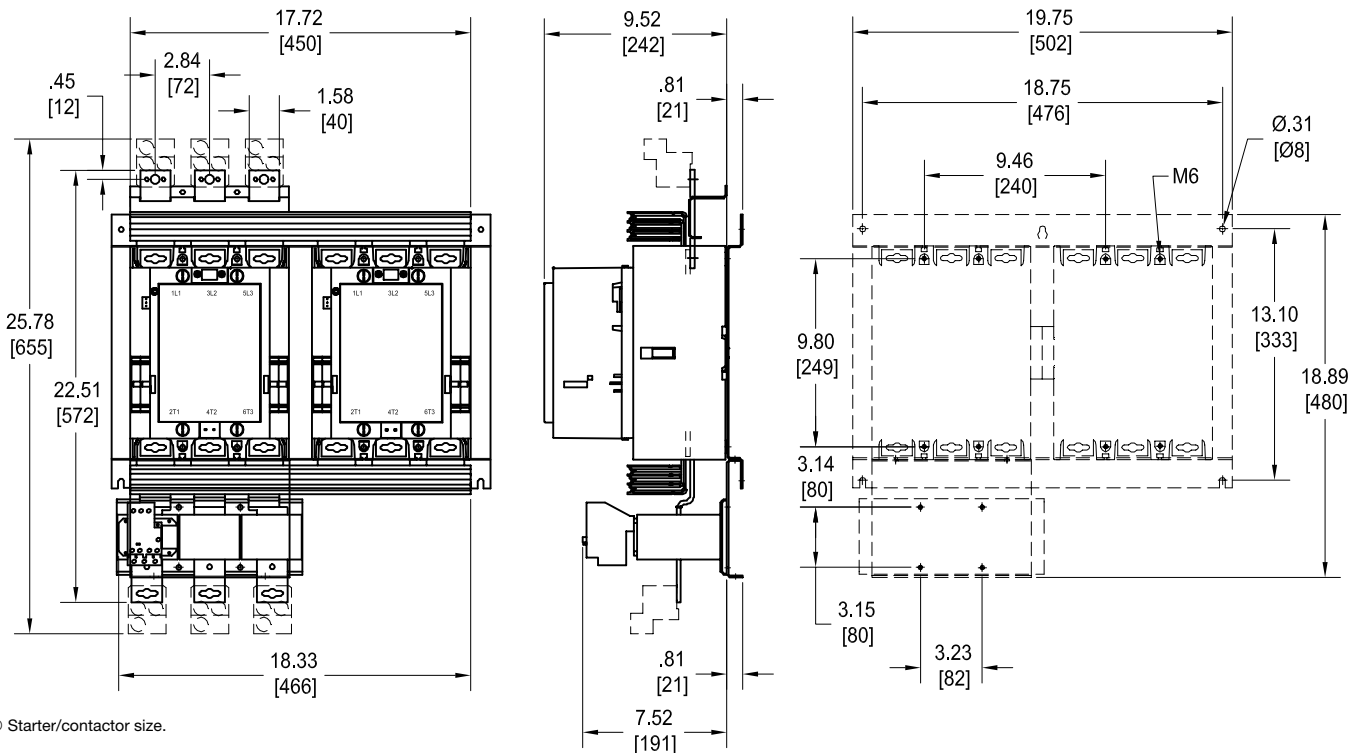
00.00 Inches  
00.00 [Millimeters]

**AF580 – AF750 + E800 – Starter**

3



**AF580 – AF750 + E800 – Reversing starter**



① Starter/contactator size.



# Approximate dimensions

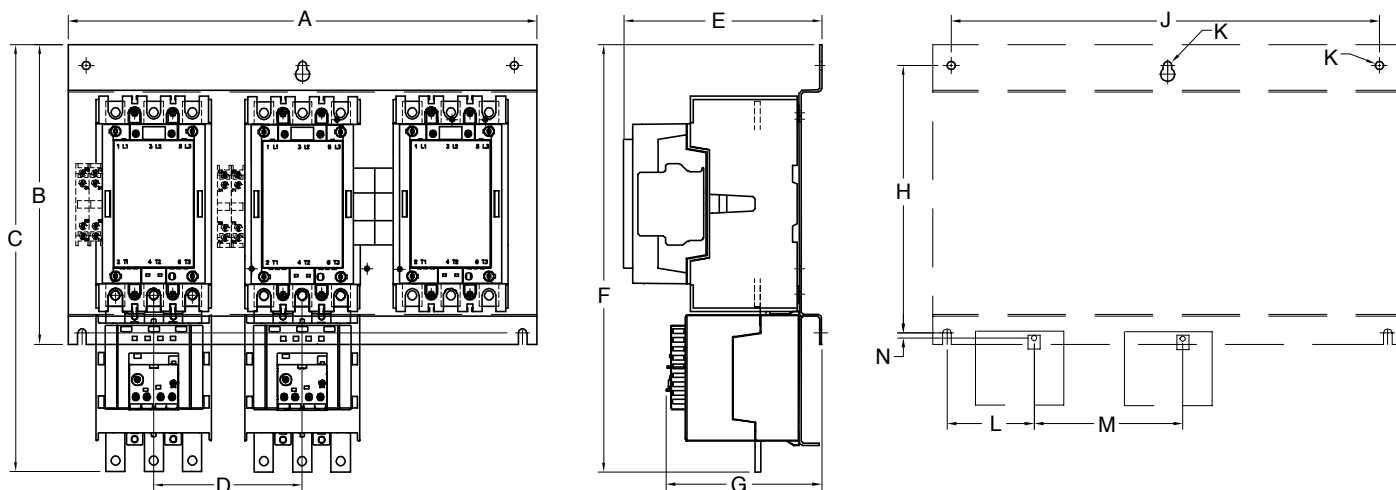
## 2 speed, 1 winding

### A/AE26 – AF750, AC & DC operated, 3 pole ①

Across the  
Line Starters

00.00 Inches  
00.00 [Millimeters]

#### A26 – AF750 – 2 Speed, 1 winding starter



3

Item	A	B	C	D	E	F	G	H	J	K	L	M	N
A26	7.87 200	5.25 133	6.87 175	2.6 66	4.03 102	5.78 147	4.64 118	4.64 118	7.23 184	0.22 6	1.54 39	2.35 60	0.36 9
A30 - A40	7.87 200	5.25 133	7.25 191	2.43 62	4.6 117	5.85 149	4.42 112	4.64 118	7.23 184	0.22 6	1.56 40	2.33 59	0.36 9
A50 - A75	9.62 244	6.5 165	8.25 210	3.13 80	5.58 142	6.9 175	4.45 113	5.87 149	9 229	0.22 6	1.88 48	3 76	0.2 5
A110+TA80	12.85 326	8.1 206	9.79 249	4.08 104	5.17 131	8.34 212	4.93 125	7.28 185	12.06 306	0.31 8	2.38 60	4.4 112	0.33 8
A95-A110+TA110	12.85 326	8.1 206	11.45 291	4 102	5.17 131	9.4 239	5.4 137	7.28 185	12.06 306	0.31 8	2.38 60	4.4 112	0.83 21
A145-A185+TA200	16.81 427	10.75 273	14.6 371	5.33 135	7.1 180	14.73 374	5.77 147	9.6 244	15.36 390	0.31 8	2.57 65	5.33 135	0.42 11
A145-A185+E200	16.81 427	10.75 273	15.33 371	5.33 135	7.1 180	15.34 389	5.58 142	9.6 244	15.36 390	0.31 8	-	-	-
A210-A300+E320	20.92 531	11.75 298	16.98 431	6.71 170	7.92 201	17.02 432	5.6 142	10.6 269	19.62 498	0.31 8	-	-	-
AF400-AF460+E500	26.33 669	14.25 362	19.61 498	4.96 126	9.27 235	19.53 496	6.62 168	13.1 333	25.33 643	0.31 8	-	-	-
AF580-AF750+E800	29.75 756	14.25 362	20.2 513	6.54 166	10.3 269	20.25 514	8.33 212	13.1 333	28.75 730	0.31 8	-	-	-

① Starter/contact size.

## Approximate dimensions

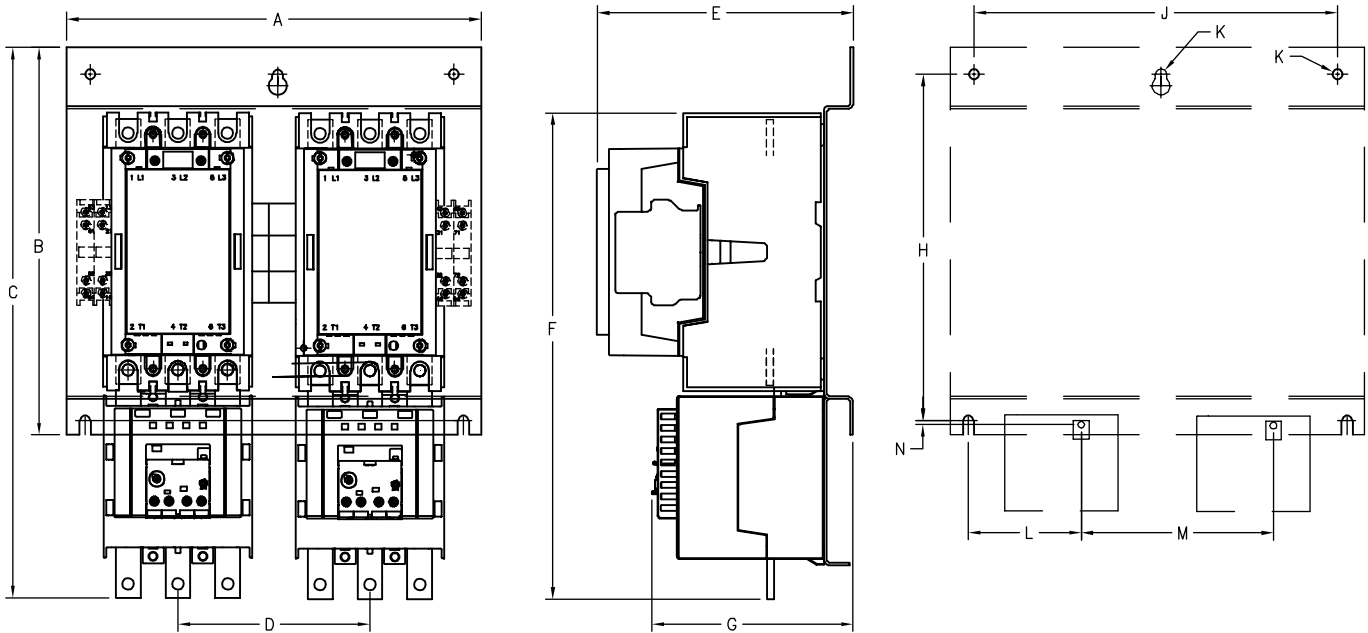
### 2 speed, 2 winding

### A/AE26 – AF750, AC & DC operated, 3 pole ①

00.00 Inches  
00.00 [Millimeters]

#### A26 – AF750 – 2 Speed, 2 winding starter

3

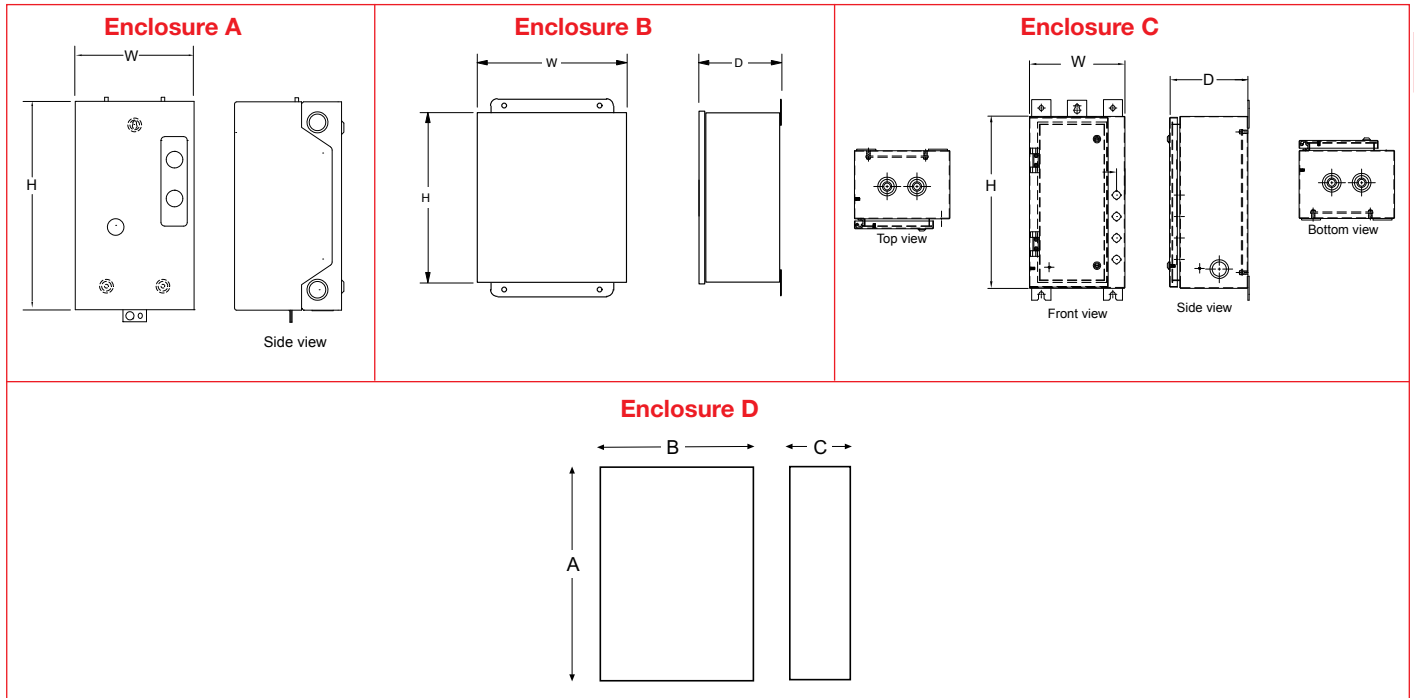


Item	A	B	C	D	E	F	G	H	J	K	L	M	N
A26	5.25 133	5.79 147	6.95 177	2.6 66	4.02 102	5.78 147	4.64 118	4.64 118	4.64 118	0.22 6	1.77 45	2.72 69	0.36 9
A30 - A40	5.25 133	5.25 133	7.25 191	2.43 62	4.9 150	5.85 149	4.42 112	4.64 118	4.64 118	0.22 6	1.77 45	2.72 69	0.36 9
A50 - A75	6.62 168	6.5 165	8.25 210	3.42 87	4.54 115	6.9 175	4.82 122	5.87 149	6 152	0.22 6	2.36 60	3.35 85	0.2 5
A110	8.7 221	8.1 206	11.45 291	4.14 105	5.17 131	9.39 239	5.42 138	7.28 185	7.91 200	0.31 8	2.36 60	4.4 111	0.83 21
A145-A185+TA200	11.5 292	10.75 273	14.6 371	3.31 84	7.03 179	12.69 322	5.7 145	9.6 244	10.09 256	0.31 8	3.13 80	5.33 135	0.51 13
A145-A185+E200	11.5 292	10.75 273	15.27 388	2.76 70	7.11 181	13.48 342	5.58 142	9.6 244	10.09 256	0.31 8	-	-	-
A210-A300+TA450	11.5 292	10.75 273	14.35 364.5	2.76 70	7.11 180	14.18 360	6.81 173	9.6 244	10.09 256	0.31 8	-	-	-
A210-A300+E320	14.25 362	11.75 298	16.98 431	3.45 88	7.92 201	15.29 388	5.6 142	10.6 269	12.84 326	0.31 8	-	-	-
AF400-AF460+E500	18 457	14.25 362	19.61 498	2.48 63	9.3 236	16.68 423	6.62 168	11.32 288	16.83 427	0.31 8	-	-	-
AF580-AF750+E800	19.75 502	14.25 362	20.2 513	3.27 83	10.05 255	17.41 442	8.33 212	13.1 333	18.75 476	0.31 8	-	-	-

① Starter/contactor size.

# Approximate dimensions Across the line w/CCT Across the line, reversing w/CCT

00.00 Inches  
00.00 [Millimeters]



3

### Across the line with CCT

Starter Size	Enclosure type	Encl Dwg	H	W	D
A9 - A40	1	A	11	6	5
	3R	B	10	8	6
	4	B	10	8	6
	12	B	10	8	6
	4X Stainless	D	10	8	6
	4X plastic w/o CCT 7 ①	D	10	8	6
A30 - A75	1	A	13	9	7
	3R	C	18	10	8
	4	C	18	10	8
	12	C	18	10	8
	4X Stainless	D	14	12	6
	4X plastic 7 ①	D	14	12	7
A50 - A75	1	C	24	12	8
	3R	C	24	12	8
	4	C	24	12	8
	12	C	24	12	8
	4X Stainless	D	20	16	8
	4X plastic 7 ①	D	20	16	8
A95 - A110	1	C	24	12	8
	3R	C	24	12	8
	4	C	24	12	8
	12	C	24	12	8
	4X Stainless	D	20	16	8
	4X plastic 7 ①	D	18	12	6
A145 - A185	1	C	36	24	13
	3R	C	36	24	13
	4	C	36	24	13
	12	C	36	24	13
	4X Stainless	D	30	24	8
	4X plastic 7 ①	D	30	20	12
A210 - A300	1	C	36	24	13
	3R	C	36	24	13
	4	C	36	24	13
	12	C	36	24	13
	4X Stainless	D	36	24	12
	4X plastic 7 ①	D	40	20	12
AF400 - AF460	1	C	48	24	13
	3R	C	48	24	13
	4	C	48	24	13
	12	C	48	24	13
	4X Stainless	D	42	30	10
	AF580 - AF750	1	C	48	24
3R		C	48	24	13
4		C	48	24	13
12		C	48	24	13
4X Stainless		D	48	36	16

① Type 7 explosion-proof enclosure inside dimensions.

### Across the line, reversing with CCT

Starter Size	Enclosure type	Encl Dwg	H	W	D
A9 - A40	1	C	18	10	8
	3R	C	18	10	8
	4	C	18	10	8
	12	C	18	10	8
A9-A16	4X Stainless	D	10	8	6
	4X plastic	D	10	8	6
A26-A75	4X Stainless	D	14	12	6
	4X plastic	D	14	12	7
A50 - A110	1	C	24	12	8
	3R	C	24	12	8
	4	C	24	12	8
	12	C	24	12	8
A95-A110	4X Stainless	B	20	16	8
	4X plastic	D	20	16	8
A145 - A185	1	C	36	24	13
	3R	C	36	24	13
	4	C	36	24	13
	12	C	36	24	13
	4X Stainless	D	30	24	8
	4X plastic	D	30	20	12
A210 - A300	1	C	48	24	13
	3R	C	48	24	13
	4	C	48	24	13
	12	C	48	24	13
	4X Stainless	D	36	24	12
	4X plastic	D	40	20	12
AF400 - AF460	1	C	48	24	13
	3R	C	48	24	13
	4	C	48	24	13
	12	C	48	24	13
	4X Stainless	D	42	30	10
AF580-AF750	1	C	48	24	13
	3R	C	48	24	13
	4	C	48	24	13
	12	C	48	24	13
	4X Stainless	D	60	36	16

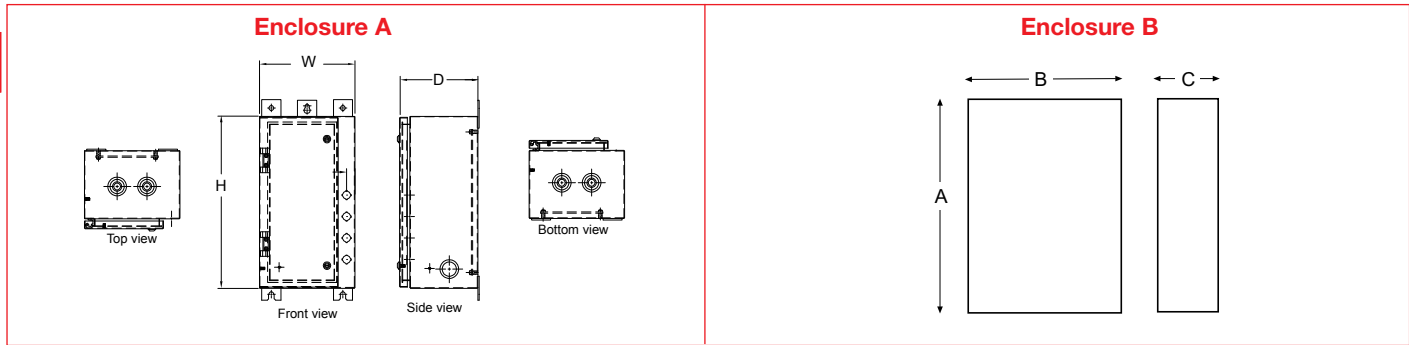
Dimensions subject to change; please consult factory for construction dimension.

- Enclosures have KO's in:
- Type 1-Top & Bottom
  - Type 3R- Bottom Only
  - Type 4,12- None

## Approximate dimensions 2 Speed, 1 Winding w/CCT 2 Speed, 2 Winding w/CCT

00.00 Inches  
00.00 [Millimeters]

3



### Across the line and 2 speed, 1 wind with CCT

Starter Size	Enclosure type	Encl Dwg	H	W	D
A9 - A40	1	A	24	12	8
	3R	A	24	12	8
	4	A	24	12	8
	12	A	24	12	8
	4X Stainless	B	14	12	6
	4X plastic	B	14	12	7
A50 - A110	1	A	36	24	12
	3R	A	36	24	12
	4	A	36	24	12
	12	A	36	24	12
	4X Stainless	B	20	16	8
	4X plastic	B	20	16	8
A145 - A185	1	A	36	24	12
	3R	A	36	24	12
	4	A	36	24	12
	12	A	36	24	12
	4X Stainless	B	30	24	8
	4X plastic	B	30	20	12
A210 - A300	1	A	48	24	13
	3R	A	48	24	13
	4	A	48	24	13
	12	A	48	24	13
	4X Stainless	B	36	24	12
	4X plastic	B	40	30	20
AF400 - AF460	1	B	42	36	12
	3R	B	42	36	12
	4	B	42	36	12
	12	B	42	36	12
	4X Stainless	B	42	30	10
AF580 - AF750	1	B	48	36	16
	3R	B	48	36	16
	4	B	48	36	16
	12	B	48	36	16
	4X Stainless	B	48	36	16

### Across the line and 2 speed, 2 wind with CCT

Starter Size	Enclosure type	Encl Dwg	H	W	D
A9 - A40	1	A	18	10	8
	3R	A	18	10	8
	4	A	18	10	8
	12	A	18	10	8
A50 - A75	1	A	24	12	8
	3R	A	24	12	8
	4	A	24	12	8
A9 - A75	12	A	24	12	8
	4X Stainless	B	14	12	6
	4X plastic	B	14	12	7
A95 - A110	1	A	24	12	8
	3R	A	24	12	8
	4	A	24	12	8
	12	A	24	12	8
	4X Stainless	B	20	16	8
	4X plastic	B	20	16	8
A145 - A185	1	A	36	24	12
	3R	A	36	24	12
	4	A	36	24	12
	12	A	36	24	12
A210 - AF750	4X Stainless	B	30	24	8
	4X plastic	B	30	20	12
	1	A	48	24	13
A210 - A300	3R	A	48	24	13
	4	A	48	24	13
	12	A	48	24	13
AF400 - AF460	4X Stainless	B	36	24	12
	4X plastic	B	40	20	12
AF580 - AF750	4X Stainless	B	42	30	10
	4X Stainless	B	48	36	16

Dimensions subject to change; please consult factory for construction dimension.

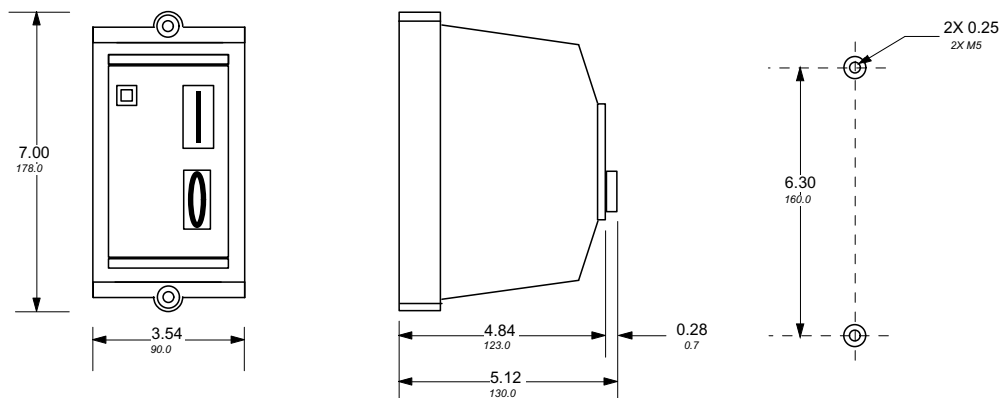
- Enclosures have KO's in:
- Type 1-Top & Bottom
  - Type 3R- Bottom Only
  - Type 4,12- None

# Approximate dimensions Plastic enclosed, IP65

Across the  
Line Starters

00.00 Inches  
00.00 [Millimeters]

## Plastic enclosed, IP65



3

# Circuit diagrams

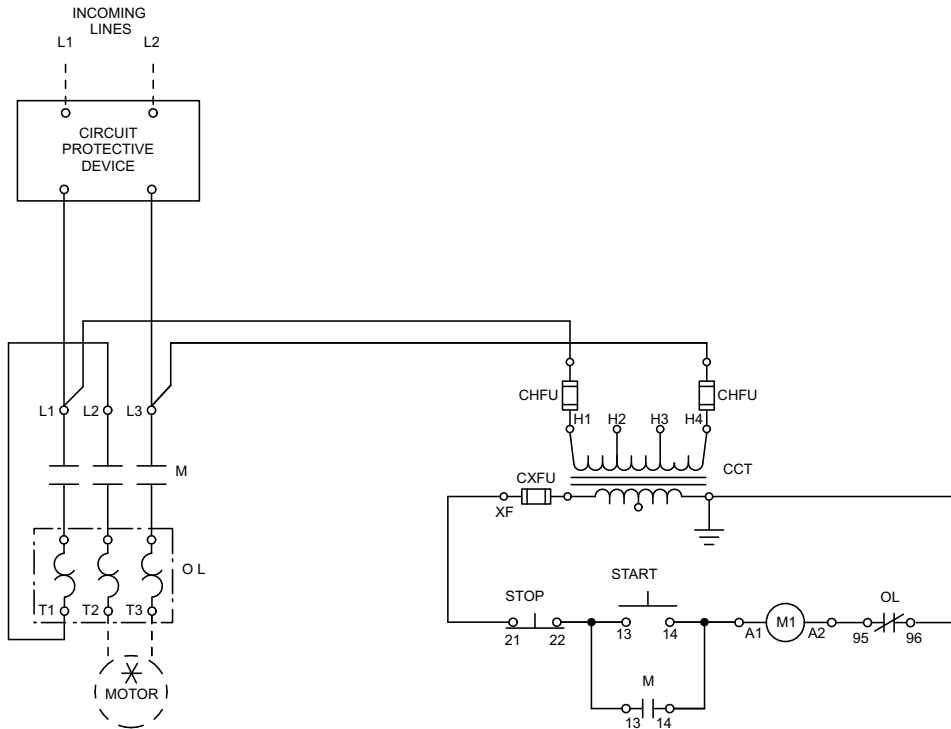
## Non-reversing, single phase

### A9 – A185

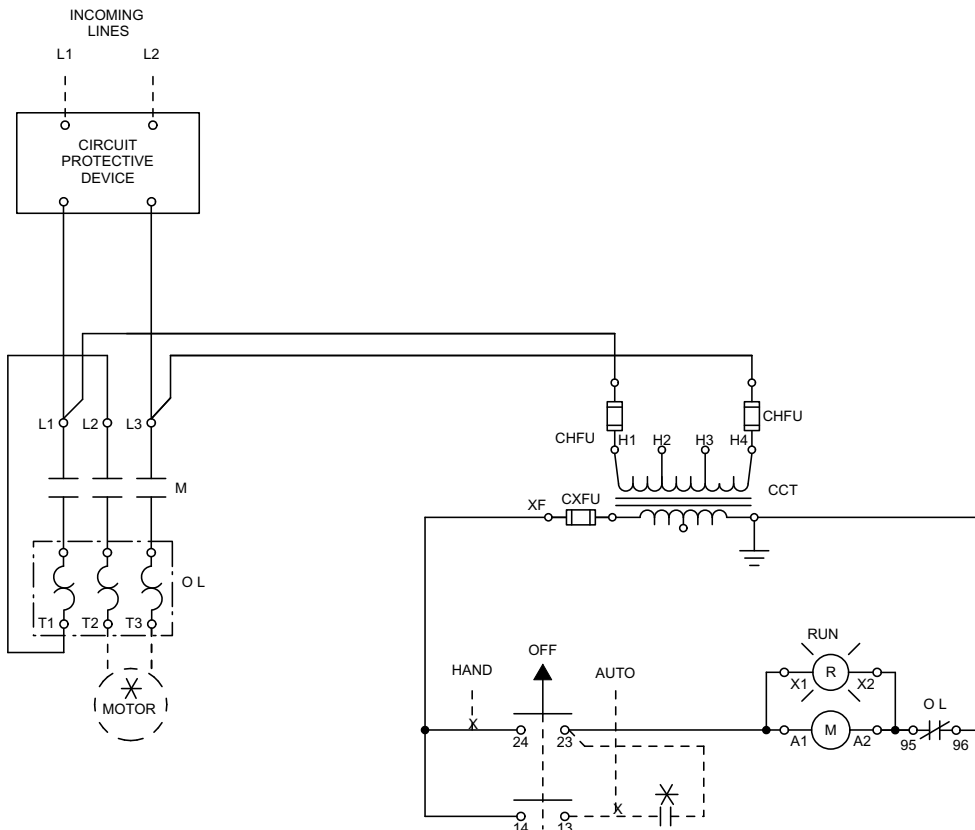
00.00 Inches  
00.00 [Millimeters]

Non-reversing, single phase – A9 - A185 shown with control circuit transformer, START-STOP

3



Non-reversing, single phase – A9 - A185 shown with control circuit transformer, HOA, pilot light



# Circuit diagrams

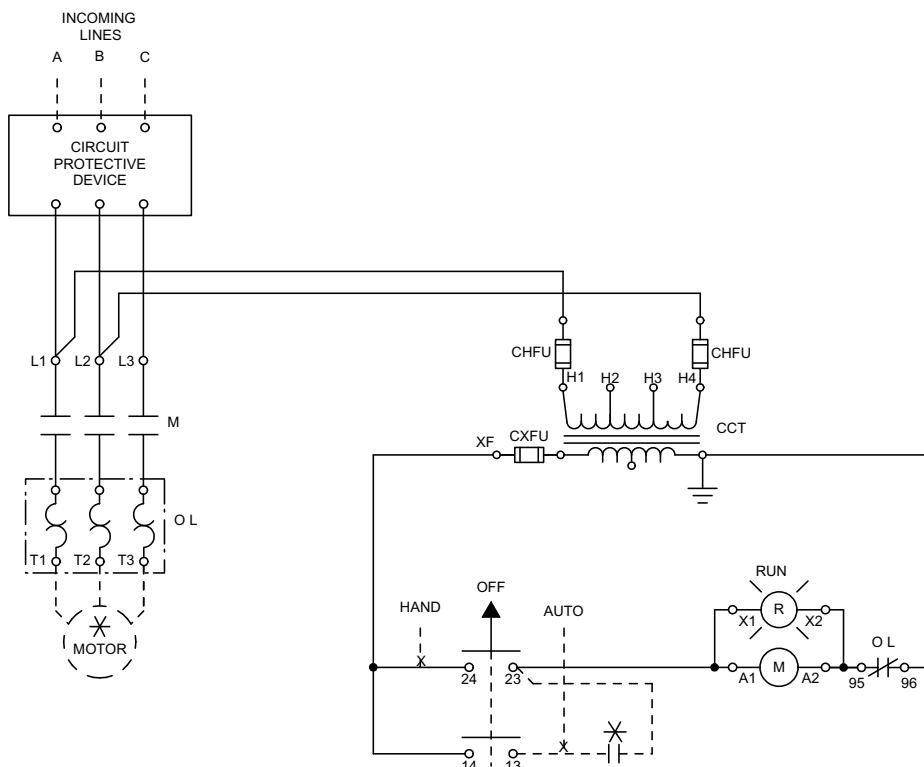
## Non-reversing, reversing

### A9 – AF750

00.00 Inches  
00.00 [Millimeters]

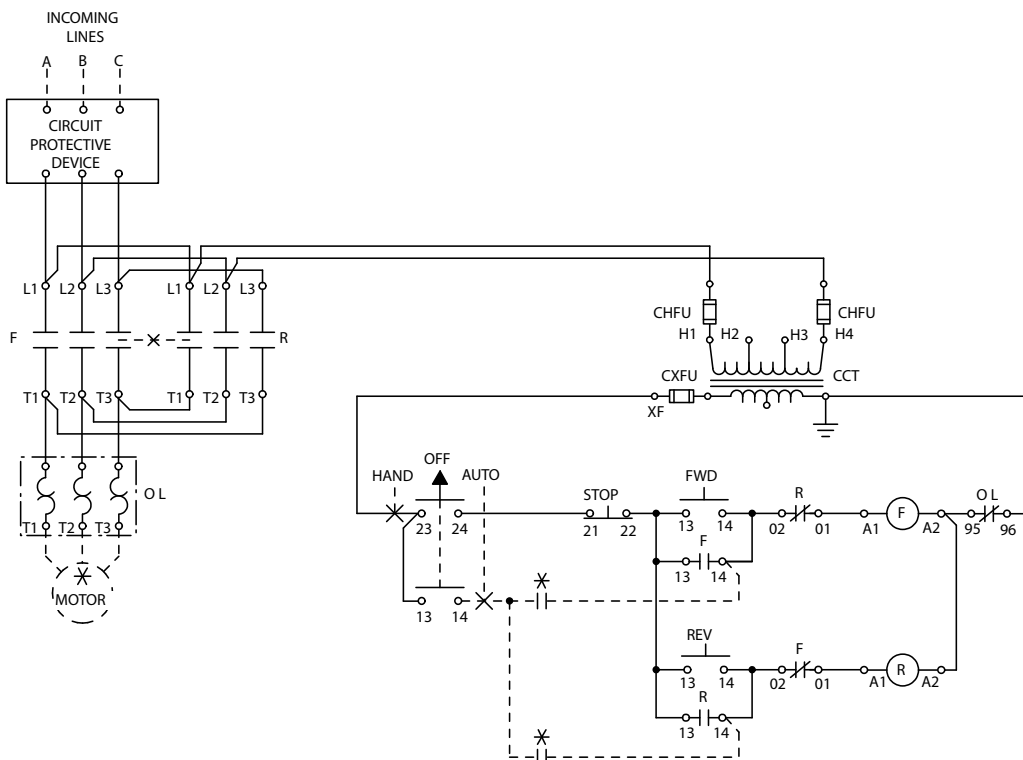
#### Non-reversing

A9 – AF750 shown with control circuit transformer, HOA, pilot light



#### Reversing

A9 – AF750 shown with control circuit transformer, HOA, STOP, FWD, REV



# Circuit diagrams

## 2 Speed, 1 Winding; 2 Speed, 2 Winding

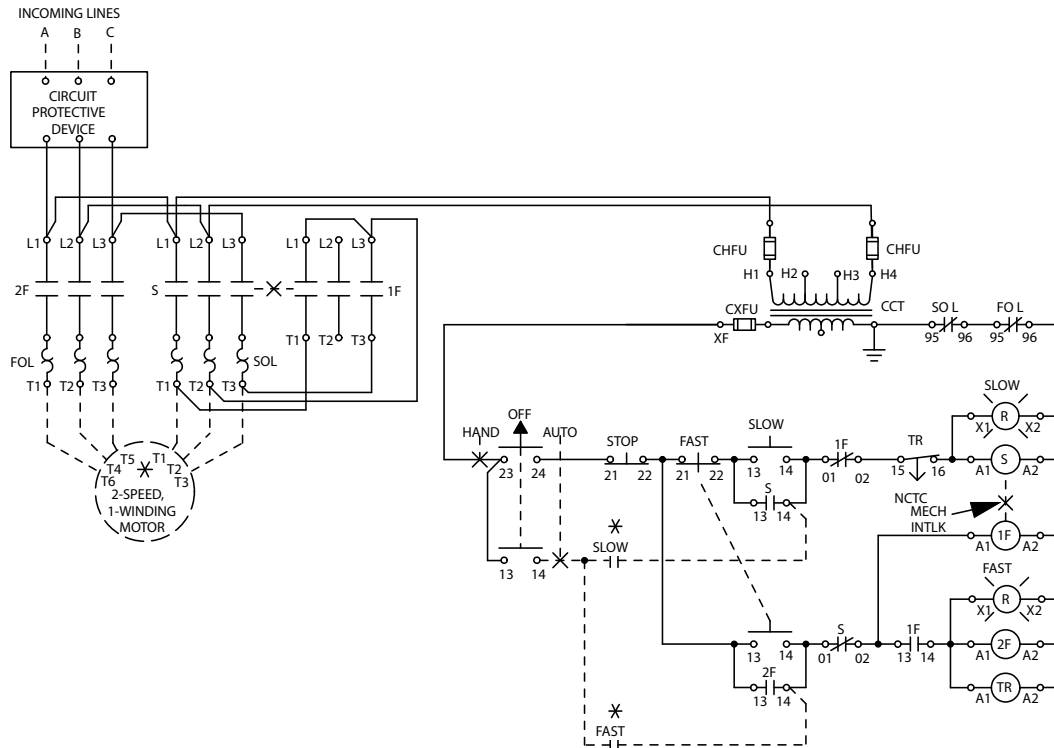
### A9 – AF750

00.00 Inches  
00.00 [Millimeters]

#### 2 Speed, 1 winding – constant or variable torque, selective control

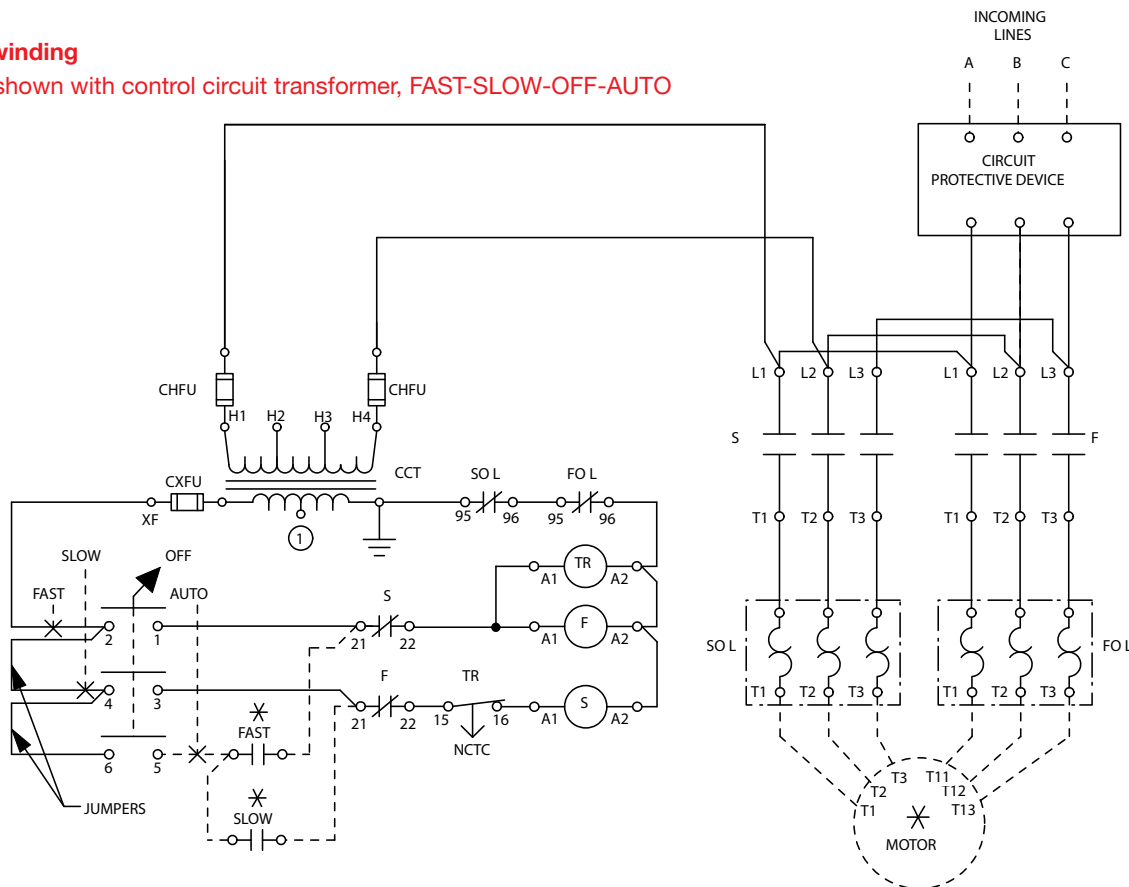
3

A9 – AF750 shown with control circuit transformer, HOA, STOP-FAST-SLOW, pilot lights



#### 2 Speed, 2 winding

A9 – AF750 shown with control circuit transformer, FAST-SLOW-OFF-AUTO





# Combination Starters



## Combination starters

Enclosed  
A9 – AF750

3



### Description

#### A9 – AF750

- Maximum UL/CSA horsepower ratings
- Available with ABB non-fusible or fusible disconnect switches and MCP, thermal magnetic or electronic trip type circuit breakers
- Compact space saving design
- Standard auxiliary contact configurations:
  - A9 – A40 1 N.O.
  - A50 – AF750 1 N.O. & 1 N.C.
- Double break contact design
- Lowest possible contact bounce
- Early make & late break auxiliary contacts available
- Operates over an extended voltage range of 85% to 110% of rated control voltage
- UL listed

For reduced voltage starters, consult factory.

### Overload relay protection

Starters, sizes A9–A185, have Class 10 adjustable thermal bimetallic overload relay protection as standard.

Sizes AF400 – AF750, have selectable Class 10, 20, 30 adjustable electronic overload relay protection as standard.

Electronic overload relay protection is available for other starter sizes.

# General information Factory modifications

## Control cover accessories — NEMA 1, 3R, 12, 4, 4X

Description	Suffix code	List price adder
Start-Stop pushbutton	A	\$ 72
Fwd-rev-stop pushbutton	B	360
2 position selector switch (Std. On-Off)	C	72
3 position selector switch (Std. Hand-Off-Auto)	D	72
LED Pilot light, Red, RUN (Std)	E	135
LED Pilot light, Green, Off (Std)	R	135
Start-Stop pushbutton & pilot light	F	207
Fwd-rev-stop pushbutton & pilot light	G	496
2 position selector switch & pilot light	H	207
3 position selector switch (HOA) & pilot light	J	207
Fast-slow-stop pushbutton	K	360
Fast-slow-stop pushbutton & pilot light	L	495
Fast-slow-off-auto selector switch	M	150
Emergency stop	P	100
F suffix + 1NO & 1NC auxiliary contact	T	237
J suffix + 1NO & 1NC auxiliary contact	U	237
Pushbutton (standard START)	Y	36

## Special modifications

Description	Suffix code	List price adder
<b>Contactors</b>		
Coil surge suppressor	S	\$ 75
<b>Relays</b>		
Type N control relay (4 pole) N.O.	1	225
Phase failure phase reversal with over and undervoltage relay	2	300
Electronic timer (On Delay)	5	300
Electronic timer (Off Delay)	6	300
Ground fault protection	GF	2,250
<b>For multi-speed controllers</b>		
Compelling relay	CPR	300
Accelerating relay	ACR	300
Decelerating	DCR	300
<b>Meter &amp; metering</b>		
Current monitor (single CT)	CT	375
Ammeter (single CT w/meter) ②	AM	705
Voltmeter ②	VM	1,200
Voltmeter & Voltmeter switch ②	VMS	1,800
Elapsed time meter ②	ETM	375
Operation counter ②	OC	560
Wattmeter ②	WM	3,650

## Control circuit transformer — A9 - AF750

### Standard size with fused secondary

Primary	Sec-ondary	Hz	Coil suffix	Starter Size	Std. CCT VA	List price adder	Extra VA CCT	Suffix code	List price adder
208	120	50/60	A	A9 - A40	50	\$ 360	50VA	V	\$ 150
240	120	50/60	B	A9 - A40 ①	50	630	75VA	W	200
480	120	50/60	C	A50 - A75	75	435	100VA	X	250
600	120	50/60	D	A110	100	560	200VA	Z	400
208	24	50/60	E	A145 - A185	150	720			
240	24	50/60	F	A260	250	795			
480	24	50/60	G						
600	24	50/60	H						

## Additional auxiliary contact blocks — A9 - AF750

Contact configuration	Suffix code	A9 - AF750 List price adder
1 N.O & 1 N.C.	8	\$ 30
2 N.O & 2 N.C.	9	60

## Fuses — set of three

Fuse switch size	List price adder
30A	\$ 80
60A	100
100A	250
200A	375
400A	900

## 2 Speed combination starters

Starter size	Non-fusible switch price adder	Fusible switch price adder	MCCB or MCP price adder
A9 (A9N00)	\$ 990	\$ 1,008	\$ 1,287
A12	990	1008	1287
A16 (A16N0)	990	1008	1287
A26 (A26N1)	990	1008	1287
A30	990	1224	1350
A40	990	1224	1350
A50 (A50N2)	1152	1224	1350
A63	1230	1350	1785
A75 (A75N3)	1494	1602	1809
A110	2310	2565	2982
A145 (A145N4)	3042	3366	4158
A185	3300	3735	4533
A210	3450	3825	6000
A260 (A260N5)	3744	4068	6849
A300	4200	6000	8750
AF400	6600	9450	9030
AF460	8200	11,100	9475
AF580	8400	11,800	10,200
AF750	9000	12,450	12,900

Utilize non-combination starter pricing with these price adders. Price class will change when adding disconnect / breaker to Discount schedule ACE [EW] [EW].

## Hazardous location enclosure accessories — NEMA 7 & 9

Item	Suffix code	List price adder
3R Breather / drain	A	\$ 80
Start PB green	B	180
Stop PB red	C	180
St/St dual PB	D	360
Em. Stop mush momentary	E	220
Em. Stop mush maintained	F	460
Black PB N.O. auxiliary	G	180
Black PB N.C. auxiliary	H	180
Pilot light	J	180
Illuminated PB	K	460
Push-to-test pilot light	L	450
Potentiometer	M	460
2-pos Selector Maintained	N	260
2-pos Selector spring L to R	P	280
2-pos Selector spring R to L	Q	280
3-pos Selector sw. main	R	260
3-pos Selector spring L to R	S	280
3-pos Selector spring R to L	T	280
3-pos Selector spring to C	U	280
2-pos Selector key operated	V	450
3-pos Selector key operated	W	450

① NEMA 7 and 9.

② For NEMA 7/9, add \$800 to the list price adder of the meter to include a view window on the enclosure door.

# General information

## Catalog number explanation

Combination starters

3

**1 1 S F 1-2 C 1 J**

### UL rated starter size

1 – A9    B – A145    J – A9N00 (NEMA size 00)  
 2 – A12    C – A185    K – A16N0 (NEMA size 0)  
 3 – A16    D – A210    L – A26N1 (NEMA size 1)  
 4 – A26    E – A260    M – A50N2 (NEMA size 2)  
 5 – A30    F – A300    N – A75N3 (NEMA size 3)  
 6 – A40    G – AF400    P – A145N4 (NEMA size 4)  
 7 – A50    H – AF460    Q – A260N5 (NEMA size 5)  
 8 – A63    T – AF580    R – AF460N6 (NEMA size 6)  
 9 – A75    U – AF750    S – AF750N7 (NEMA size 7)  
 A – A110

### Starter type

1 – Non-reversing  
 2 – Reversing  
 3 – 2 speed, 2 winding or 1 winding

### Single phase

S – Single phase (Insert only for single phase)

### Combination type

N – Non-fusible disconnect  
 F – Fusible disconnect  
 B – Thermal magnetic or electronic trip type circuit breaker (MCCB)  
 M – Motor Circuit Protection (MCP)  
 J – Fusible disconnect (with fuses, size base on the HP or FLA x 1.75)  
 R – Non-fusible disconnect with trailing Class R fuse block with fuses  
 G – Non-fusible disconnect with trailing Class R fuse block

### Enclosure

1 – NEMA / UL Type 1  
 2 – NEMA / UL Type 12  
 3 – NEMA / UL Type 3R  
 4 – NEMA / UL Type 4  
 X – NEMA / UL Type 4XSS  
 P – NEMA / UL Type 4X PL  
 7 – UL Type 7

### Coil voltage / CCT

#### Coil voltage selection – A9 - A300

Hz	Contactor type	Volts									
		24	110	120	208	220	240	440	480	500	600
60	A	1	2	3			4	5	6		7
50	A	1	2			4				7	

#### Coil voltage selection – AF400 - AF750 ①

Hz	Contactor type	Volts	
		100 - 250	250 - 500
50/60	AF	70	71

#### Control transformer voltage selection chart

Hz	Type	Volts			
		200-208/120	240/120	460 - 480/120	575 - 600/120
50/60	A/AF	A	B	C	D
	Type	200-208/24	240/24	460 - 480/24	575 - 600/24
	A/AF	E	F	G	H

### Overload range

See Overload relay selection chart, see page 3.6 - 3.7

### Accessories

(See Factory Modifications, page 3.3)

### Fuse clip

1 – 30A, 600V Class J  
 2 – 60A, 600V Class J  
 3 – 100A, 600V Class J  
 4 – 200A, 600V Class J  
 5 – 400A, 600V Class J  
 6 – 600A, 600V Class J  
 7 – 800A, 600V Class J  
 8 – 1200A, 600V Class J  
 9 – 2000A, 600V Class J

### Circuit breaker amp rating (200V - 600V)

1 – 15A    B – 90A    M – 400A  
 2 – 20A    C – 100A    N – 450A  
 3 – 25A    D – 125A    O – 500A  
 4 – 30A    E – 150A    P – 600A  
 5 – 35A    F – 175A    Q – 700A  
 6 – 40A    G – 200A    R – 800A  
 7 – 50A    H – 225A    S – 900A  
 8 – 60A    J – 250A    T – 1000A  
 9 – 70A    K – 300A    U – 1200A  
 A – 80A    L – 350A    V – 2500A

### MCP amp rating (200V - 600V)

1 – 3A    7 – 150A    D – 700A  
 2 – 5A    8 – 250A    E – 800A  
 3 – 10A    9 – 400A    F – 900A  
 4 – 25A    A – 450A    G – 1000A  
 5 – 50A    B – 500A    H – 1200A  
 6 – 100A    C – 600A    J – 2500A

NOTE: For AF50 - AF300 starters, consult factory.

① For AF400 - AF750 only.

# Non-fusible disconnect switch type

## A9 - AF750

### Non-reversing, three phase

3

UL motor switching current	Contactor size	Maximum ratings - UL Listed				UL Type 1 (Indoor metal)		UL type 3R (Outdoor metal)		UL Type 12 (Metal dusttight)	
		Maximum motor horsepower ratings				Catalog number	List price	Catalog number	List price	Catalog number	List price
		200/208V	230/240V	480/480V	575/600V						
<b>UL rated</b>											
9	A9	2	2	5	7.5	11N1-2Δ	\$ 825	11N3-2Δ	\$ 1,005	11N2-2Δ	\$ 1,005
11	A12	3	3	7.5	10	21N1-2Δ	855	21N3-2Δ	1,035	21N2-2Δ	1,035
17	A16	5	5	10	15	31N1-2Δ	885	31N3-2Δ	1,065	31N2-2Δ	1,065
28	A26	7.5	10	20	25	41N1-2Δ	968	41N3-2Δ	1,148	41N2-2Δ	1,148
34	A30	10	10	25	30	51N1-2Δ	1,050	51N3-2Δ	1,230	51N2-2Δ	1,230
42	A40	10	15	30	40	61N1-2Δ	1,155	61N3-2Δ	1,335	61N2-2Δ	1,335
54	A50	15	20	40	50	71N1-2Δ	1,650	71N3-2Δ	1,830	71N2-2Δ	1,830
65	A63	20	25	50	50	81N1-2Δ	1,875	81N3-2Δ	2,055	81N2-2Δ	2,055
80	A75	25	30	60	75	91N1-2Δ	2,295	91N3-2Δ	2,775	91N2-2Δ	2,775
110	A110	30	40	75	100	A1N1-2Δ	2,865	A1N3-2Δ	3,765	A1N2-2Δ	3,765
130	A145	40	50	100	125	B1N1-2Δ	3,675	B1N3-2Δ	4,890	B1N2-2Δ	4,890
156	A185	50	60	125	150	C1N1-2Δ	4,050	C1N3-2Δ	5,250	C1N2-2Δ	5,250
192	A210	60	75	150	200	D1N1-2Δ	5,685	D1N3-2Δ	7,650	D1N2-2Δ	7,650
248	A260	75	100	200	250	E1N1-2Δ	6,090	E1N3-2Δ	8,085	E1N2-2Δ	8,085
302	A300	100	100	250	300	F1N1-2Δ	7,080	F1N3-2Δ	8,850	F1N2-2Δ	8,850
414	AF400	125	150	350	400	G1N1-2Δ	11,250	G1N3-2Δ	12,285	G1N2-2Δ	12,285
480	AF460	150	200	400	500	H1N1-70Δ	17,100	H1N3-70Δ	18,900	H1N2-70Δ	18,900
590	AF580	200	250	500	600	T1N1-70Δ	20,490	T1N3-70Δ	22,290	T1N2-70Δ	22,290
810	AF750	250	300	600	700	U1N1-70Δ	21,990	U1N3-70Δ	25,050	U1N2-70Δ	25,050

<b>NEMA rated</b>											
NEMA size	Contactor size	Continuous current	200V	230V	460/575V						
00	A9	9	1.5	1.5	2	J1N1-2Δ	\$ 825	J1N3-2Δ	\$ 1,005	J1N2-2Δ	\$ 1,005
0	A16	18	3	3	5	K1N1-2Δ	885	K1N3-2Δ	1,065	K1N2-2Δ	1,065
1	A26	27	7.5	7.5	10	L1N1-2Δ	968	L1N3-2Δ	1,148	L1N2-2Δ	1,148
2	A50	45	10	15	25	M1N1-2Δ	1,650	M1N3-2Δ	1,830	M1N2-2Δ	1,830
3	A75	90	25	30	50	N1N1-2Δ	2,295	N1N3-2Δ	2,775	N1N2-2Δ	2,775
4	A145	135	40	50	100	P1N1-2Δ	3,675	P1N3-2Δ	4,890	P1N2-2Δ	4,890
5	A260	270	75	100	200	Q1N1-2Δ	6,090	Q1N3-2Δ	8,085	Q1N2-2Δ	8,085
6	AF460	540	150	200	400	R1N1-70Δ	17,100	R1N3-70Δ	18,900	R1N2-70Δ	18,900
7	AF750	810	—	300	600	S1N1-70Δ	21,990	S1N3-70Δ	25,050	S1N2-70Δ	25,050

Δ Overload relay suffix code. Select from the overload relay selection chart on pages 3.6 - 3.7. Overload relays are required for all combination starters. If overload relay is provided by customer, substitute an "X" in place of the Δ and then subtract list price of overload relay from combination starter's list price.

Example: 11N1-2X      \$ 825      List  
    - 63      - OLR  
    \$ 762      Net price

### Coil voltage selection

All AC operated catalog numbers include a 120VAC coil. To select other coil voltages, substitute the code from the Coil Voltage Selection Chart for the suffix code after the last dash in the catalog number.

Ex.: A 240V coil is required for an A75 starter: 91N1-4F

To select starter with control transformer, substitute the code from the Control transformer voltage selector chart for the two digits after the last dash in the catalog number.

Ex.: A 480V primary voltage with a 120V secondary voltage is required for an A75 starter: 91N1-CF

### Control transformer option

Contactor size	VA rating	List price adder
A9 - A40	50	\$ 360
A50 - A75	75	435
A95 - A110	100	560
A145 - A185	150	720
A210 - A300	250	795
AF400 - AF460	150	720
AF580 - AF750	250	795

Reference page 3.50 for Extra VA under all (Control Transformer Options chart)

### Factory modifications

See page 3.50

### Coil voltage selection - A9 - A300

Hz	Contactor type	Volts									
		24	110	120	208	220	240	440	480	500	600
60	A	1		2	3		4	5	6		7
50	A	1	2			4				7	

### Coil voltage selection - AF400 - AF750

Hz	Contactor type	Volts	
		100 - 250	250 - 500
50/60	AF	70	71

### Control transformer voltage selection chart

Hz	Volts				
	Type	200-208/120	240/120	460 - 480/120	575 - 600/120
	A/AF	A	B	C	D
50/60	Type	200-208/24	240/24	460 - 480/24	575 - 600/24
	A/AF	E	F	G	H

NOTES: For AF50 - AF 300 starters, consult factory.

① AF400 - AF750 only.

## Non-fusible disconnect switch type A9 - AF750 Non-reversing, three phase

Combination  
starters

3

UL Type 4 (Watertight)		UL Type 4X (Stainless steel)		UL Type 1, 3R, 4, 4X & 12 (Plastic)	
Catalog number	List price	Catalog number	List price	Catalog number	List price
<b>UL rated</b>					
11N4-2Δ	<b>\$ 1,290</b>	11NX-2Δ	<b>\$ 1,600</b>	11NP-2Δ	<b>\$ 945</b>
21N4-2Δ	<b>1,320</b>	21NX-2Δ	<b>1,630</b>	21NP-2Δ	<b>975</b>
31N4-2Δ	<b>1,365</b>	31NX-2Δ	<b>1,675</b>	31NP-2Δ	<b>1,005</b>
41N4-2Δ	<b>1,448</b>	41NX-2Δ	<b>1,790</b>	41NP-2Δ	<b>1,088</b>
51N4-2Δ	<b>1,613</b>	51NX-2Δ	<b>2,110</b>	51NP-2Δ	<b>1,170</b>
61N4-2Δ	<b>1,800</b>	61NX-2Δ	<b>2,500</b>	61NP-2Δ	<b>1,275</b>
71N4-2Δ	<b>2,190</b>	71NX-2Δ	<b>3,100</b>	71NP-2Δ	<b>1,770</b>
81N4-2Δ	<b>2,535</b>	81NX-2Δ	<b>3,550</b>	81NP-2Δ	<b>1,995</b>
91N4-2Δ	<b>3,015</b>	91NX-2Δ	<b>4,000</b>	91NP-2Δ	<b>2,415</b>
A1N4-2Δ	<b>4,163</b>	A1NX-2Δ	<b>5,530</b>	A1NP-2Δ	<b>3,225</b>
B1N4-2Δ	<b>5,175</b>	B1NX-2Δ	<b>6,450</b>	B1NP-2Δ	<b>4,360</b>
C1N4-2Δ	<b>5,775</b>	C1NX-2Δ	<b>7,650</b>	C1NP-2Δ	<b>5,100</b>
D1N4-2Δ	<b>9,150</b>	D1NX-2Δ	<b>12,000</b>	D1NP-2Δ	<b>8,300</b>
E1N4-2Δ	<b>9,600</b>	E1NX-2Δ	<b>16,500</b>	E1NP-2Δ	<b>8,750</b>
F1N4-2Δ	<b>10,350</b>	F1NX-2Δ	<b>21,000</b>	F1NP-2Δ	<b>9,750</b>
G1N4-2Δ	<b>13,800</b>	G1NX-2Δ	<b>25,800</b>	G1NP-2Δ	—
H1N4-70Δ	<b>20,700</b>	H1NX-70Δ	<b>27,900</b>	—	—
T1N4-70Δ	<b>24,750</b>	T1NX-70Δ	<b>32,550</b>	—	—
U1N4-70Δ	<b>26,850</b>	U1NX-70Δ	<b>34,800</b>	—	—
<b>NEMA rated</b>					
J1N4-2Δ	<b>\$ 1,290</b>	J1NX-2Δ	<b>\$ 1,600</b>	J1NP-2Δ	<b>\$ 945</b>
K1N4-2Δ	<b>1,365</b>	K1NX-2Δ	<b>1,675</b>	K1NP-2Δ	<b>1,005</b>
L1N4-2Δ	<b>1,448</b>	L1NX-2Δ	<b>1,780</b>	L1NP-2Δ	<b>1,088</b>
M1N4-2Δ	<b>2,190</b>	M1NX-2Δ	<b>3,100</b>	M1NP-2Δ	<b>1,770</b>
N1N4-2Δ	<b>3,015</b>	N1NX-2Δ	<b>4,000</b>	N1NP-2Δ	<b>2,415</b>
P1N4-2Δ	<b>5,175</b>	P1NX-2Δ	<b>6,450</b>	P1NP-2Δ	<b>4,360</b>
Q1N4-2Δ	<b>9,600</b>	Q1NX-2Δ	<b>16,500</b>	Q1NP-2Δ	<b>8,750</b>
R1N4-70Δ	<b>20,700</b>	R1NX-70Δ	<b>27,900</b>	—	—
S1N4-70Δ	<b>26,850</b>	S1NX-70Δ	<b>34,800</b>	—	—

Δ Overload relay suffix code. Select from the overload relay selection chart on pages 3.6 - 3.7. Overload relays are required for all combination starters. If overload relay is provided by customer, substitute an "X" in place of the Δ and then subtract list price of overload relay from combination starter's list price.

# Fusible disconnect switch type

## A9 - AF750

### Non-reversing, three phase

3

UL motor switching current	Contactor size	Maximum ratings - UL Listed					UL Type 1 (Indoor metal)		UL type 3R (Outdoor metal)		UL Type 12 (Metal dusttight)	
		Maximum motor horsepower ratings					Catalog number	List price	Catalog number	List price	Catalog number	List price
		200/208V	230/240V	480/480V	575/600V	Fuse clip rating amp/volts						
<b>UL rated</b>												
9	A9	2	2	5	7.5	30/600	11F1-2Δ1	\$ 885	11F3-2Δ1	\$ 1,065	11F2-2Δ1	\$ 1,065
11	A12	3	3	7.5	10	30/600	21F1-2Δ1	915	21F3-2Δ1	1,095	21F2-2Δ1	1,095
17	A16	5	5	10	15	30/600	31F1-2Δ1	945	31F3-2Δ1	1,125	31F2-2Δ1	1,125
28	A26	7.5	10	20	25	60/600	41F1-2Δ2	1,020	41F3-2Δ2	1,230	41F2-2Δ2	1,230
34	A30	10	10	25	30	60/600	51F1-2Δ2	1,095	51F3-2Δ2	1,313	51F2-2Δ2	1,313
42	A40	10	15	30	40	60/600	61F1-2Δ2	1,185	61F3-2Δ2	1,418	61F2-2Δ2	1,418
54	A50	15	20	40	50	100/600	71F1-2Δ3	1,725	71F3-2Δ3	1,913	71F2-2Δ3	1,913
65	A63	20	25	50	50	100/600	81F1-2Δ3	1,980	81F3-2Δ3	2,138	81F2-2Δ3	2,138
80	A75	25	30	60	75	200/600	91F1-2Δ4	2,445	91F3-2Δ4	2,858	91F2-2Δ4	2,858
110	A110	30	40	75	100	200/600	A1F1-2Δ4	2,925	A1F3-2Δ4	3,818	A1F2-2Δ4	3,818
130	A145	40	50	100	125	200/600	B1F1-2Δ4	3,735	B1F3-2Δ4	5,184	B1F2-2Δ4	5,183
156	A185	50	60	125	150	400/600	C1F1-2Δ5	4,650	C1F3-2Δ5	5,500	C1F2-2Δ5	5,400
192	A210	60	75	150	200	400/600	D1F1-2Δ5	6,870	D1F3-2Δ5	8,850	D1F2-2Δ5	8,850
248	A260	75	100	200	250	400/600	E1F1-2Δ5	7,680	E1F3-2Δ5	9,930	E1F2-2Δ5	9,930
302	A300	100	100	250	300	400/600	F1F1-2Δ5	8,100	F1F3-2Δ5	10,350	F1F2-2Δ5	10,350
414	AF400	125	150	350	400	600/600	G1F1-2Δ6	11,895	G1F3-2Δ6	12,600	G1F2-2Δ6	12,600
480	AF460	150	—	—	—	600/600	H1F1-70Δ6	16,890	H1F3-70Δ6	19,560	H1F2-70Δ6	19,560
480	AF460	150	200	400	500	800/600	H1F1-70Δ7	18,750	H1F3-70Δ7	21,600	H1F2-70Δ7	21,600
590	AF580	200	250	500	600	1200/600	T1F1-70Δ8	22,050	T1F3-70Δ8	25,050	T1F2-70Δ8	25,050
810	AF750	250	300	600	700	1200/600	U1F1-70Δ8	23,550	U1F3-70Δ8	28,050	U1F2-70Δ8	28,050

<b>NEMA rated</b>												
NEMA size	Contactor size	Continuous current	200V	230V	460/575V							
00	A9	9	1.5	1.5	2	30/600	J1F1-2Δ1	\$ 885	J1F3-2Δ1	\$ 1,065	J1F2-2Δ1	\$ 1,065
0	A16	18	3	3	5	30/600	K1F1-2Δ1	945	K1F3-2Δ1	1,125	K1F2-2Δ1	1,125
1	A26	27	—	7.5	10	30/600	L1F1-2Δ1	1,020	L1F3-2Δ1	1,230	L1F2-2Δ1	1,230
1	A26	27	7.5	—	—	60/600	L1F1-2Δ2	1,020	L1F3-2Δ2	1,230	L1F2-2Δ2	1,230
2	A50	45	10	15	25	60/600	M1F1-2Δ2	1,725	M1F3-2Δ2	1,913	M1F2-2Δ2	1,913
3	A75	90	—	—	50	100/600	N1F1-2Δ3	2,021	N1F3-2Δ3	2,434	N1F2-2Δ3	2,434
3	A75	90	25	30	—	200/600	N1F1-2Δ4	2,445	N1F3-2Δ4	2,858	N1F2-2Δ4	2,858
4	A145	135	40	50	100	200/600	P1F1-2Δ4	3,735	P1F3-2Δ4	5,183	P1F2-2Δ4	5,183
5	A260	270	75	100	200	400/600	Q1F1-2Δ5	7,680	Q1F3-2Δ5	9,930	Q1F2-2Δ5	9,930
6	AF460	540	150	—	—	600/600	R1F1-70Δ6	16,890	R1F3-70Δ6	19,560	R1F2-70Δ6	19,560
6	AF460	540	—	200	400	800/600	R1F1-70Δ7	18,750	R1F3-70Δ7	21,600	R1F2-70Δ7	21,600
7	AF750	810	—	300	600	1200/600	S1F1-70Δ8	23,550	S1F3-70Δ8	28,050	S1F2-70Δ8	28,050

Δ Overload relay suffix code. Select from the overload relay selection chart on pages 3.6 - 3.7. Overload relays are required for all combination starters. If overload relay is provided by customer, substitute an "X" in place of the Δ and then subtract list price of overload relay from combination starter's list price.

Example: 11F1-2X1 \$ 885 List  
- 63 - OLR  
\$ 823 Net price

### Coil voltage selection

All AC operated catalog numbers include a 120VAC coil. To select other coil voltages, substitute the code from the Coil Voltage Selection Chart for the suffix code after the last dash in the catalog number.

Ex.: A 240V coil is required for an A75 fused starter: 91F4-4F4

To select starter with control transformer, substitute the code from the Control transformer voltage selector chart for the two digits after the last dash in the catalog number.

Ex.: A 480V primary voltage with a 120V secondary voltage is required for an A75 starter: 91F1-CF

### Coil voltage selection - A9 - A300

Hz	Contactor type	Volts									
		24	110	120	208	220	240	440	480	500	600
60	A	1		2	3		4	5	6		7
50	A	1	2			4				7	

### Coil voltage selection - AF400 - AF750

Hz	Contactor type	Volts	
		100 - 250	250 - 500
50/60	AF	70	71

### Control transformer voltage selection chart

Hz	Volts				
	Type	200-208/120	240/120	460 - 480/120	575 - 600/120
	A/AF	A	B	C	D
50/60	Type	200-208/24	240/24	460 - 480/24	575 - 600/24
	A/AF	E	F	G	H

### Control transformer option

Contactor size	VA rating	List price adder
A9 - A40	50	\$ 360
A50 - A75	75	435
A95 - A110	100	560
A145 - A185	150	720
A210 - A300	250	795
AF400 - AF460	150	720
AF580 - AF750	250	795

Reference page 3.50 for Extra VA under all (Control Transformer Options chart)

### Factory modifications

See page 3.50

NOTES: Power fuses are not included as standard.  
For AF50 - AF 300 starters, consult factory.  
① AF400 - AF750 only.

# Fusible disconnect switch type A9 - AF750 Non-reversing, three phase

Combination  
starters

3

UL Type 4 (Watertight)		UL Type 4X (Stainless steel)		UL Type 1, 3R, 4, 4X & 12 (Plastic)	
Catalog number	List price	Catalog number	List price	Catalog number	List Price
<b>UL rated</b>					
11F4-2Δ1	\$ 1,350	11FX-2Δ1	\$ 1,800	11FP-2Δ1	\$ 1,005
21F4-2Δ1	1,380	21FX-2Δ1	1,830	21FP-2Δ1	1,035
31F4-2Δ1	1,425	31FX-2Δ1	1,860	31FP-2Δ1	1,065
41F4-2Δ2	1,530	41FX-2Δ2	1,965	41FP-2Δ2	1,148
51F4-2Δ2	1,688	51FX-2Δ2	2,295	51FP-2Δ2	1,230
61F4-2Δ2	1,898	61FX-2Δ2	2,685	61FP-2Δ2	1,335
71F4-2Δ3	2,400	71FX-2Δ3	3,340	71FP-2Δ3	1,830
81F4-2Δ3	2,640	81FX-2Δ3	3,600	81FP-2Δ3	2,055
91F4-2Δ4	3,300	91FX-2Δ4	4,020	91FP-2Δ4	2,475
A1F4-2Δ4	4,275	A1FX-2Δ4	5,850	A1FP-2Δ4	3,550
B1F4-2Δ4	5,685	B1FX-2Δ4	7,455	B1FP-2Δ4	4,880
C1F4-2Δ5	6,200	C1FX-2Δ5	8,865	C1FP-2Δ5	5,400
D1F4-2Δ5	9,600	D1FX-2Δ5	12,375	D1FP-2Δ5	8,800
E1F4-2Δ5	10,950	E1FX-2Δ5	16,800	E1FP-2Δ5	10,100
F1F4-2Δ5	12,000	F1FX-2Δ5	22,350	F1FP-2Δ5	11,200
G1F4-2Δ6	14,663	G1FX-2Δ6	26,400	—	—
H1F4-70Δ6	21,360	H1FX-70Δ6	26,955	—	—
H1F4-70Δ7	23,400	H1FX-70Δ7	28,995	—	—
T1F4-70Δ8	27,000	T1FX-70Δ8	37,350	—	—
U1F4-70Δ8	30,000	U1FX-70Δ8	39,000	—	—
<b>NEMA rated</b>					
J1F4-2Δ1	\$ 1,350	J1FX-2Δ1	\$ 1,800	J1FP-2Δ1	\$ 1,005
K1F4-2Δ1	1,425	K1FX-2Δ1	1,860	K1FP-2Δ1	1,065
L1F4-2Δ1	1,530	L1FX-2Δ1	1,965	L1FP-2Δ1	1,148
L1F4-2Δ2	1,530	L1FX-2Δ2	1,965	L1FP-2Δ2	1,148
M1F4-2Δ2	2,400	M1FX-2Δ2	3,240	M1FP-2Δ2	1,830
N1F4-2Δ3	2,876	N1FX-2Δ3	3,596	N1FP-2Δ3	2,051
N1F4-2Δ4	3,300	N1FX-2Δ4	4,020	N1FP-2Δ4	2,475
P1F4-2Δ4	5,685	P1FX-2Δ4	7,455	P1FP-2Δ4	4,880
Q1F4-2Δ5	10,950	Q1FX-2Δ5	16,800	Q1FP-2Δ5	10,100
R1F4-70Δ6	21,360	R1FX-70Δ6	26,955	—	—
R1F4-70Δ7	23,400	R1FX-70Δ7	28,995	—	—
S1F4-70Δ8	30,000	S1FX-70Δ8	39,000	—	—

Δ Overload relay suffix code. Select from the overload relay selection chart on pages 3.6 - 3.7. Overload relays are required for all combination starters. If overload relay is provided by customer, substitute an "X" in place of the Δ and then subtract list price of overload relay from combination starter's list price.

### Maximum short circuit ratings for UL listed combination starters

Contactors size	Switch/fuse at 600VAC	KA at 600VAC
A9	CF30/30J	200
A12	CF30/30J	
A16	CF30/30J	
A26	F60/60J	
A30	F60/60J	
A40	F100/100J	
A50	F100/100J	
A63	OES200/200J	
A75	OES200/200J	
A95	OES200/200J	
A110	OES200/200J	
A145	OES400/400J	
A185	OES400/400J	
A210	OES400/400J	
A260	OES400/400J or OES600/600J	
A300	OES400/400J or OES600/600J	
AF400	OES600/600J	
AF460	OES800/800L	
AF580	OETL1200W/1200L fuses	
AF750	OETL1200W/1200L fuses	

# Fusible disconnect switch type

## A9 - AF750

### Reversing, three phase

3

UL motor switching current	Contactor size	Maximum ratings - UL Listed					UL Type 1 (Indoor metal)		UL type 3R (Outdoor metal)		UL Type 12 (Metal dustight)	
		Maximum motor horsepower ratings					Catalog number	List price	Catalog number	List price	Catalog number	List price
		200/208V	230/240V	480/480V	575/600V	Fuse clip rating amp/volts						
<b>UL rated</b>												
9	A9	2	2	5	7.5	30/600	12F1-2Δ1	\$ 1,140	12F3-2Δ1	\$ 1,320	12F2-2Δ1	\$ 1,320
11	A12	3	3	7.5	10	30/600	22F1-2Δ1	1,230	22F3-2Δ1	1,410	22F2-2Δ1	1,410
17	A16	5	5	10	15	30/600	32F1-2Δ1	1,290	32F3-2Δ1	1,470	32F2-2Δ1	1,470
28	A26	7.5	10	20	25	60/600	42F1-2Δ2	1,425	42F3-2Δ2	1,635	42F2-2Δ2	1,635
34	A30	10	10	25	30	60/600	52F1-2Δ2	1,643	52F3-2Δ2	1,860	52F2-2Δ2	1,860
42	A40	10	15	30	40	60/600	62F1-2Δ2	1,860	62F3-2Δ2	2,093	62F2-2Δ2	2,093
54	A50	15	20	40	50	100/600	72F1-2Δ3	2,438	72F3-2Δ3	2,625	72F2-2Δ3	2,625
65	A63	20	25	50	50	100/600	82F1-2Δ3	2,850	82F3-2Δ3	3,008	82F2-2Δ3	3,008
80	A75	25	30	60	75	200/600	92F1-2Δ4	3,600	92F3-2Δ4	4,013	92F2-2Δ4	4,013
110	A110	30	40	75	100	200/600	A2F1-2Δ4	4,290	A2F3-2Δ4	5,183	A2F2-2Δ4	5,183
130	A145	40	50	100	125	200/600	B2F1-2Δ4	5,970	B2F3-2Δ4	7,418	B2F2-2Δ4	7,418
156	A185	50	60	125	150	400/600	C2F1-2Δ5	8,010	C2F3-2Δ5	8,760	C2F2-2Δ5	8,760
192	A210	60	75	150	200	400/600	D2F1-2Δ5	10,905	D2F3-2Δ5	12,885	D2F2-2Δ5	12,885
248	A260	75	100	200	250	400/600	E2F1-2Δ5	12,165	E2F3-2Δ5	14,415	E2F2-2Δ5	14,415
302	A300	100	100	250	300	400/600	F2F1-2Δ5	13,560	F2F3-2Δ5	15,810	F2F2-2Δ5	15,810
414	AF400	125	150	350	400	600/600	G2F1-2Δ6	17,880	G2F3-2Δ6	18,585	G2F2-2Δ6	18,585
480	AF460	150	—	—	—	600/600	H2F1-70Δ6	29,175	H2F3-70Δ6	32,025	H2F2-70Δ6	32,025
480	AF460	150	200	400	500	800/600	H2F1-70Δ7	31,035	H2F3-70Δ7	33,885	H2F2-70Δ7	33,885
590	AF580	200	250	500	600	1200/600	T2F1-70Δ8	39,435	T2F3-70Δ8	42,435	T2F2-70Δ8	42,435
810	AF750	250	300	600	700	1200/600	U2F1-70Δ8	42,285	U2F3-70Δ8	46,785	U2F2-70Δ8	46,785

NEMA size	Contactor size	Continuous current	NEMA rated			Catalog number	List price	Catalog number	List price	Catalog number	List price	
			200V	230V	460/575V							
00	A9	9	1.5	1.5	2	30/600	J2F1-2Δ1	\$ 1,140	J2F3-2Δ1	\$ 1,320	J2F2-2Δ1	\$ 1,320
0	A16	18	3	3	5	30/600	K2F1-2Δ1	1,290	K2F3-2Δ1	1,470	K2F2-2Δ1	1,470
1	A26	27	—	7.5	10	30/600	L2F1-2Δ1	1,425	L2F3-2Δ1	1,635	L2F2-2Δ1	1,635
1	A26	27	7.5	—	—	60/600	L2F1-2Δ2	1,425	L2F3-2Δ2	1,635	L2F2-2Δ2	1,635
2	A50	45	10	15	25	60/600	M2F1-2Δ2	2,438	M2F3-2Δ2	2,625	M2F2-2Δ2	2,625
3	A75	90	—	—	50	100/600	N2F1-2Δ3	3,176	N2F3-2Δ3	3,589	N2F2-2Δ3	3,589
3	A75	90	25	30	—	200/600	N2F1-2Δ4	3,600	N2F3-2Δ4	4,013	N2F2-2Δ4	4,013
4	A145	135	40	50	100	200/600	P2F1-2Δ4	5,970	P2F3-2Δ4	7,418	P2F2-2Δ4	7,418
5	A260	270	75	100	200	400/600	Q2F1-2Δ5	12,165	Q2F3-2Δ5	14,415	Q2F2-2Δ5	14,415
6	AF460	540	150	—	—	600/600	R2F1-70Δ6	29,175	R2F3-70Δ6	32,025	R2F2-70Δ6	32,025
6	AF460	540	—	200	400	800/600	R2F1-70Δ7	31,035	R2F3-70Δ7	33,885	R2F2-70Δ7	33,885
7	AF580	810	—	300	600	1200/600	S2F1-70Δ8	42,285	S2F3-70Δ8	46,785	S2F2-70Δ8	46,785

Δ Overload relay suffix code. Select from the overload relay selection chart on pages 3.6 - 3.7. Overload relays are required for all combination starters. If overload relay is provided by customer, substitute an "X" in place of the Δ and then subtract list price of overload relay from combination starter's list price. Example: 12F1-2X1 \$ 1140 List - 63 - OLR \$ 1077 Net price

### Coil voltage selection

All AC operated catalog numbers include a 120VAC coil. To select other coil voltages, substitute the code from the Coil Voltage Selection Chart for the suffix code after the last dash in the catalog number.

Ex.: A 240V coil is required for an A75 starter: 92F1-4F4

To select starter with control transformer, substitute the code from the Control transformer voltage selector chart for the two digits after the last dash in the catalog number.

Ex.: A 480V primary voltage with a 120V secondary voltage is required for an A75 starter: 92F1-CF4

### Coil voltage selection - A9 - A300

Hz	Contactor type	Volts									
		24	110	120	208	220	240	440	480	500	600
60	A	1		2	3		4	5	6		7
50	A	1	2			4					7

### Coil voltage selection - AF400 - AF750

Hz	Contactor type	Volts	
		100 - 250	250 - 500
50/60	AF	70	71

### Control transformer voltage selection chart

Hz	Volts				
	Type	200-208/120	240/120	460 - 480/120	575 - 600/120
	A/AF	A	B	C	D
50/60	Type	200-208/24	240/24	460 - 480/24	575 - 600/24
	A/AF	E	F	G	H

### Control transformer option

Contactor size	VA rating	List price adder
A9 - A40	50	\$ 360
A50 - A75	75	435
A95 - A110	100	560
A145 - A185	150	720
A210 - A300	250	795
AF400 - AF460	150	720
AF580 - AF750	250	795

Reference page 3.50 for Extra VA under all (Control Transformer Options chart)

### Factory modifications

See page 3.50

NOTES: Power fuses are not included as standard. For AF50 - AF 300 starters, consult factory. ① AF400 - AF750 only.



# Fusible disconnect switch type A9 - AF750 Reversing, three phase

Combination  
starters

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UL Type 4 (Watertight)		UL Type 4X (Stainless steel)		UL Type 1, 3R, 4, 4X & 12 (Plastic)	
Catalog number	List price	Catalog number	List price	Catalog number	List Price
<b>UL rated</b>					
12F4-2Δ1	\$ 1,425	11FX-2Δ1	\$ 1,955	11FP-2Δ1	\$ 1,275
22F4-2Δ1	1,515	21FX-2Δ1	2,045	21FP-2Δ1	1,365
32F4-2Δ1	1,575	31FX-2Δ1	2,105	31FP-2Δ1	1,425
42F4-2Δ2	1,763	41FX-2Δ2	2,270	41FP-2Δ2	1,560
52F4-2Δ2	1,988	51FX-2Δ2	2,745	51FP-2Δ2	1,778
62F4-2Δ2	2,213	61FX-2Δ2	3,260	61FP-2Δ2	1,995
72F4-2Δ3	2,850	71FX-2Δ3	3,855	71FP-2Δ3	2,573
82F4-2Δ3	3,225	81FX-2Δ3	4,370	81FP-2Δ3	2,985
92F4-2Δ4	4,200	91FX-2Δ4	5,075	91FP-2Δ4	3,735
A2F4-2Δ4	5,550	A1FX-2Δ4	7,115	A1FP-2Δ4	4,600
B2F4-2Δ4	7,800	B1FX-2Δ4	9,690	B1FP-2Δ4	7,600
C2F4-2Δ5	9,225	C1FX-2Δ5	12,225	C1FP-2Δ5	9,000
D2F4-2Δ5	13,238	D1FX-2Δ5	16,410	D1FP-2Δ5	13,000
E2F4-2Δ5	15,150	E1FX-2Δ5	21,285	E1FP-2Δ5	14,885
F2F4-2Δ5	16,530	F1FX-2Δ5	27,810	F1FP-2Δ5	16,200
G2F4-2Δ6	20,625	G1FX-2Δ6	32,385	—	—
H2F4-70Δ6	33,540	H1FX-70Δ6	39,420	—	—
H2F4-70Δ7	35,400	H1FX-70Δ7	41,280	—	—
T2F4-70Δ8	45,150	T1FX-70Δ8	54,735	—	—
U2F4-70Δ8	48,450	U1FX-70Δ8	57,735	—	—

<b>NEMA rated</b>					
J2F4-2Δ1	\$ 1,425	J2FX-2Δ1	\$ 1,955	J2FP-2Δ1	\$ 1,275
K2F4-2Δ1	1,575	K2FX-2Δ1	2,105	K2FP-2Δ1	1,425
L2F4-2Δ1	1,763	L2FX-2Δ1	2,270	L2FP-2Δ1	1,560
L2F4-2Δ2	1,763	L2FX-2Δ2	2,270	L2FP-2Δ2	1,560
M2F4-2Δ2	2,850	M2FX-2Δ2	3,855	M2FP-2Δ2	2,573
N2F4-2Δ3	3,776	N2FX-2Δ3	4,651	N2FP-2Δ3	3,311
N2F4-2Δ4	4,200	N2FX-2Δ4	5,075	N2FP-2Δ4	3,735
P2F4-2Δ4	7,800	P2FX-2Δ4	9,690	P2FP-2Δ4	7,600
Q2F4-2Δ5	1,515	Q2FX-2Δ5	21,285	Q2FP-2Δ5	14,885
R2F4-70Δ6	33,540	R2FX-70Δ6	39,420	—	—
R2F4-70Δ7	35,400	R2FX-70Δ7	41,280	—	—
S2F4-70Δ8	48,450	S2FX-70Δ8	57,735	—	—

Δ Overload relay suffix code. Select from the overload relay selection chart on pages 3.6 - 3.7. Overload relays are required for all combination starters. If overload relay is provided by customer, substitute an "X" in place of the Δ and then subtract list price of overload relay from combination starter's list price.

## Maximum short circuit ratings for UL listed combination starters

Contactor size	Switch/fuse at 600VAC	KA at 600VAC
A9	CF30/30J	200
A12	CF30/30J	
A16	CF30/30J	
A26	F60/60J	
A30	F60/60J	
A40	F100/100J	
A50	F100/100J	
A63	OES200/200J	
A75	OES200/200J	
A95	OES200/200J	
A110	OES200/200J	
A145	OES400/400J	
A185	OES400/400J	
A210	OES400/400J	
A260	OES400/400J or OES600/600J	
A300	OES400/400J or OES600/600J	
AF400	OES600/600J	
AF460	OES800/800L	
AF580	OETL1200W/1200L fuses	
AF750	OETL1200W/1200L fuses	

# Circuit breaker type

## A9 - AF750

### Non-reversing, three phase

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UL motor switching current	Contactor size	Maximum ratings - UL Listed				UL Type 1 (Indoor metal)		UL type 3R (Outdoor metal)		UL Type 12 (Metal dustight)	
		Maximum motor horsepower ratings				Catalog number	List price	Catalog number	List price	Catalog number	List price
		200/208V	230/240V	480/480V	575/600V						
<b>UL rated</b>											
9	A9	2	2	5	7.5	11M1-2Δ‡	\$ 930	11M3-2Δ‡	\$ 1,110	11M2-2Δ‡	\$ 1,110
11	A12	3	3	7.5	10	21M1-2Δ‡	960	21M3-2Δ‡	1,140	21M2-2Δ‡	1,140
17	A16	5	5	10	15	31M1-2Δ‡	990	31M3-2Δ‡	1,170	31M2-2Δ‡	1,170
28	A26	7.5	10	20	25	41M1-2Δ‡	1,073	41M3-2Δ‡	1,253	41M2-2Δ‡	1,253
34	A30	10	10	25	30	51M1-2Δ‡	1,155	51M3-2Δ‡	1,335	51M2-2Δ‡	1,335
42	A40	10	15	30	40	61M1-2Δ‡	1,260	61M3-2Δ‡	1,440	61M2-2Δ‡	1,440
54	A50	15	20	40	50	71M1-2Δ‡	1,755	71M3-2Δ‡	1,935	71M2-2Δ‡	1,935
65	A63	20	25	50	50	81M1-2Δ‡	2,070	81M3-2Δ‡	2,160	81M2-2Δ‡	2,160
80	A75	25	30	60	75	91M1-2Δ‡	2,550	91M3-2Δ‡	2,880	91M2-2Δ‡	2,880
110	A110	30	40	75	100	A1M1-2Δ‡	2,970	A1M3-2Δ‡	3,870	A1M2-2Δ‡	3,870
130	A145	40	50	100	125	B1M1-2Δ‡	4,020	B1M3-2Δ‡	5,235	B1M2-2Δ‡	5,235
156	A185	50	60	125	150	C1M1-2Δ‡	4,950	C1M3-2Δ‡	5,610	C1M2-2Δ‡	5,610
192	A210	60	75	150	200	D1M1-2Δ‡	7,080	D1M3-2Δ‡	9,045	D1M2-2Δ‡	9,045
248	A260	75	100	200	250	E1M1-2Δ‡	8,160	E1M3-2Δ‡	10,155	E1M2-2Δ‡	10,155
302	A300	100	100	250	300	F1M1-2Δ‡	8,850	F1M3-2Δ‡	10,650	F1M2-2Δ‡	10,650
414	AF400	125	150	350	400	G1M1-2Δ‡	12,450	G1M3-2Δ‡	12,990	G1M2-2Δ‡	12,990
480	AF460	150	200	400	500	H1M1-70Δ‡	19,350	H1M3-70Δ‡	21,150	H1M2-70Δ‡	21,150
590	AF580	200	250	500	600	T1M1-70Δ‡	22,650	T1M3-70Δ‡	24,450	T1M2-70Δ‡	24,450
810	AF750	250	300	600	700	U1M1-70Δ‡	24,150	U1M3-70Δ‡	27,330	U1M2-70Δ‡	27,330

Δ Overload relay suffix code. Select from the overload relay selection chart on pages 3.6 - 3.7. Overload relays are required for all combination starters. If overload relay is provided by customer, substitute an "X" in place of the Δ and then subtract list price of overload relay from combination starter's list price.  
‡ MCP or breaker rating. See codes on page 3.51.

Example: 11M1-2X      \$ 930 List  
                                     - 63 - OLR  
                                     \$ 867 Net price

### Coil voltage selection

All AC operated catalog numbers include a 120VAC coil. To select other coil voltages, substitute the code from the Coil Voltage Selection Chart for the suffix code after the last dash in the catalog number.

Ex.: A 240V coil is required for an A75 combination starter: 91M1-4Δ

To select starter with control transformer, substitute the code from the Control transformer voltage selector chart for the two digits after the last dash in the catalog number.

Ex.: A 480V primary voltage with a 120V secondary voltage is required for an A75 starter: 91M1-CF

### Coil voltage selection - A9 - A300

Hz	Contactor type	Volts									
		24	110	120	208	220	240	440	480	500	600
60	A	1		2	3		4	5	6		7
50	A	1	2			4					7

### Coil voltage selection - AF400 - AF750 ①

Hz	Contactor type	Volts	
		100 - 250	250 - 500
50/60	AF	70	71

### Control transformer voltage selection chart

Hz	Volts				
	Type	200-208/120	240/120	460 - 480/120	575 - 600/120
	A/AF	A	B	C	D
50/60	Type	200-208/24	240/24	460 - 480/24	575 - 600/24
	A/AF	E	F	G	H

### Factory modifications

See page 3.50

### Maximum short circuit rating for UL listed combination starters

Contactor	Maximum MCP 480VAC	KA at 480VAC	MCP 600VAC	KA at 600VAC
A9	S3L050MW	35	S3L010MW	35
A12	S3L050MW	35	S3L010MW	35
A16	S3L050MW	35	-	-
A26	S3L100MW	35	S3L100MW	35
A30	S3L150MW	65	-	-
A40	S3L150MW	65	-	-
A50	S3L150MW	85	S3L150MW	35
A63	S4L250MW	85	-	-
A75	S4L250MW	85	-	-
A95	S4L250MW	85	S4L250MW	35
A110	S4L250MW	85	S4L250MW	35
A145	S5L400MW	65	S4L250MW	10
A185	S5L400MW	85	S4L250MW	10
A210	S6L800MW	85	S4L250MW	18
A260	S6L800MW	85	S5L400MW	18
A300	S6L800MW	85	S5L400MW	18
AF400	S7H1200MW	85	Consult factory	
AF460	S7H1200MW	85		
AF580	S7H1200MW	85		
AF750	S7H1200MW	85		

For thermal magnetic molded case breakers, consult factory.

### Control transformer option

Contactor size	VA rating	List price adder
A9 - A40	50	360
A9 - A40 (N7 & 9)	50	630 ②
A50 - A75	75	435
A95 - A110	100	560
A145 - A185	150	720
A210 - A300	250	795
AF400 - AF460	150	720
AF580 - AF750	250	795

Reference page 3.50 for extra VA under all (Control Transformer Options chart)

NOTES: MCPs are supplied as standard. Thermal magnetic/electronic trip type breakers can be supplied by substituting the letter "B" in place of the "M". List price is the same.

Example: 1183-2Δ‡, \$ 1110.00.  
For AF50 - AF300 starters, consult factory.

- ① AF400 - AF750 only.
- ② NEMA 7 & 9 Enclosed starter only.

# Circuit breaker type A9 - AF750 Non-reversing, three phase

Combination  
starters

3

UL Type 4 (Watertight)		UL Type 4X (Stainless steel)		UL Type 1, 3R, 4, 4X & 12 (Plastic)		UL Listed 7 & 9 non-reversing (Explosion proof)	
Catalog number	List price	Catalog number	List price	Catalog number	List price	Catalog number	List price
<b>UL rated</b>							
11M4-2Δ‡	<b>\$ 1,260</b>	11MX-2Δ‡	<b>\$ 1,835</b>	11MP-2Δ‡	<b>\$ 1,050</b>	11M7-2Δ‡	<b>\$ 2,660</b>
21M4-2Δ‡	<b>1,290</b>	21MX-2Δ‡	<b>1,865</b>	21MP-2Δ‡	<b>1,080</b>	21M7-2Δ‡	<b>2,850</b>
31M4-2Δ‡	<b>1,320</b>	31MX-2Δ‡	<b>1,895</b>	31MP-2Δ‡	<b>1,110</b>	31M7-2Δ‡	<b>3,030</b>
41M4-2Δ‡	<b>1,410</b>	41MX-2Δ‡	<b>2,000</b>	41MP-2Δ‡	<b>1,193</b>	41M7-2Δ‡	<b>3,105</b>
51M4-2Δ‡	<b>1,500</b>	51MX-2Δ‡	<b>2,330</b>	51MP-2Δ‡	<b>1,275</b>	51M7-2Δ‡	<b>3,480</b>
61M4-2Δ‡	<b>1,635</b>	61MX-2Δ‡	<b>2,720</b>	61MP-2Δ‡	<b>1,380</b>	61M7-2Δ‡	<b>3,860</b>
71M4-2Δ‡	<b>2,115</b>	71MX-2Δ‡	<b>3,275</b>	71MP-2Δ‡	<b>1,875</b>	71M7-2Δ‡	<b>4,150</b>
81M4-2Δ‡	<b>2,438</b>	81MX-2Δ‡	<b>3,635</b>	81MP-2Δ‡	<b>2,100</b>	81M7-2Δ‡	<b>5,540</b>
91M4-2Δ‡	<b>3,225</b>	91MX-2Δ‡	<b>4,055</b>	91MP-2Δ‡	<b>2,520</b>	91M7-2Δ‡	<b>6,850</b>
A1M4-2Δ‡	<b>4,200</b>	A1MX-2Δ‡	<b>6,050</b>	A1MP-2Δ‡	<b>3,700</b>	A1M7-2Δ‡	<b>11,370</b>
B1M4-2Δ‡	<b>5,588</b>	B1MX-2Δ‡	<b>7,650</b>	B1MP-2Δ‡	<b>5,400</b>	B1M7-2Δ‡	<b>13,595</b>
C1M4-2Δ‡	<b>6,300</b>	C1MX-2Δ‡	<b>9,150</b>	C1MP-2Δ‡	<b>6,150</b>	C1M7-2Δ‡	<b>14,475</b>
D1M4-2Δ‡	<b>9,713</b>	D1MX-2Δ‡	<b>12,510</b>	D1MP-2Δ‡	<b>9,500</b>	D1M7-2Δ‡	<b>17,775</b>
E1M4-2Δ‡	<b>10,950</b>	E1MX-2Δ‡	<b>17,250</b>	E1MP-2Δ‡	<b>10,650</b>	—	—
F1M4-2Δ‡	<b>12,000</b>	F1MX-2Δ‡	<b>22,800</b>	F1MP-2Δ‡	<b>11,500</b>	—	—
G1M4-2Δ‡	<b>13,800</b>	G1MX-2Δ‡	<b>26,850</b>	—	—	—	—
H1M4-70Δ‡	<b>22,500</b>	H1MX-70Δ‡	<b>28,995</b>	—	—	—	—
T1M4-70Δ‡	<b>26,850</b>	T1MX-70Δ‡	<b>36,000</b>	—	—	—	—
U1M4-70Δ‡	<b>30,000</b>	U1MX-70Δ‡	<b>37,650</b>	—	—	—	—

Δ Overload relay suffix code. Select from the overload relay selection chart on pages 3.6 - 3.7. Overload relays are required for all combination starters. If overload relay is provided by customer, substitute an "X" in place of the Δ and then subtract list price of overload relay from combination starter's list price.

‡ MCP or breaker rating. See codes on page 3.51.

### Motor circuit protector data

Motor full load amperes	MCP continuous rating	Suffix code ‡	Catalog number	Starter size	1.5X	2X	4X	5X	6X	7X	8X	9X	10X	11X	12X
.92 - 2.76	3	1	S3L003MW	0	—	—	12	15	18	21	24	27	30	33	36
1.53 - 4.61	5	2	S3L005MW	0	—	—	20	25	30	35	40	45	50	55	60
3.07 - 9.23	10	3	S3L010MW	0	—	—	40	50	60	70	80	90	100	110	120
7.69 - 23.08	25	4	S3L025MW	1	—	—	100	125	150	175	200	225	250	275	300
15.38 - 46.15	50	5	S3L050MW	2	—	—	200	250	300	350	400	450	500	550	600
30.77 - 92.31	100	6	S3L100MW	3	—	—	400	500	600	700	800	900	1000	1100	1200
46.15 - 138.46	150	7	S3L150MW	4	—	—	600	750	900	1050	1200	1350	1500	1650	1800
28.85 - 230.77	250	8	S4L250MW	4	375	500	1000	—	1500	—	2000	—	2500	—	3000
46.15 - 369.23	400	9	S5L400MW	5	600	800	1600	—	2400	—	3200	—	4000	—	4800
69.23 - 553.85	600	C	S6L600MW	6	900	1200	2400	—	3600	—	4800	—	6000	—	7200
92.31 - 738.46	800	E	S6L800MW	7	1200	1600	3200	—	4800	—	6400	—	8000	—	9600
115.38 - 923.07	1000	G	S7H1000MW	7	1500	2000	4000	—	6000	—	8000	—	10,000	—	12,000
138.46 - 1107.69	1200	H	S7H1200MW	7	1800	2400	4800	—	7200	—	9600	—	12,000	—	14,400

# Circuit breaker type

## A9 - AF750, NEMA rated

### Non-reversing, three phase

3

NEMA size	Contactor size	Continuous current	Maximum ratings - UL Listed			UL Type 1 (Indoor metal)		UL type 3R (Outdoor metal)		UL Type 12 (Metal dusttight)	
			Maximum motor horsepower ratings			Catalog number	List price	Catalog number	List price	Catalog number	List price
			200V	230V	460/575V						
<b>UL rated</b>											
00	A9	9	1.5	1.5	2	J1M1-2Δ‡	\$ 930	J1M3-2Δ‡	\$ 1,110	J1M2-2Δ‡	\$ 1,110
0	A16	18	3	3	5	K1M1-2Δ‡	990	K1M3-2Δ‡	1,170	K1M2-2Δ‡	1,170
1	A26	27	7.5	7.5	10	L1M1-2Δ‡	1,073	L1M3-2Δ‡	1,253	L1M2-2Δ‡	1,253
2	A50	45	10	15	25	M1M1-2Δ‡	1,755	M1M3-2Δ‡	1,935	M1M2-2Δ‡	1,935
3	A75	90	25	30	50	N1M1-2Δ‡	2,550	N1M3-2Δ‡	2,880	N1M2-2Δ‡	2,880
4	A145	135	40	50	100	P1M1-2Δ‡	4,020	P1M3-2Δ‡	5,235	P1M2-2Δ‡	5,235
5	A260	270	75	100	200	Q1M1-2Δ‡	8,160	Q1M3-2Δ‡	10,155	Q1M2-2Δ‡	10,155
6	AF460	540	150	200	400	R1M1-70Δ‡	21,150	R1M3-70Δ‡	21,150	R1M2-70Δ‡	21,155
7	AF750	810	—	300	600	S1M1-70Δ‡	24,150	S1M3-70Δ‡	27,330	S1M2-70Δ‡	27,300

Δ Overload relay suffix code. Select from the overload relay selection chart on pages 3.6 - 3.7. Overload relays are required for all combination starters. If overload relay is provided by customer, substitute an "X" in place of the Δ and then subtract list price of overload relay from combination starter's list price.  
 ‡ MCP or breaker rating. See codes on page 3.51.

Example: JIM1-2X      \$ 930      List  
                                      - 63      - OLR  
                                      \$ 867      Net price

### Coil voltage selection

All AC operated catalog numbers include a 120VAC coil. To select other coil voltages, substitute the code from the Coil Voltage Selection Chart for the suffix code after the last dash in the catalog number.

Ex.: A 240V coil is required for an A75 starter: N1M1-4Δ

To select starter with control transformer, substitute the code from the Control transformer voltage selector chart for the two digits after the last dash in the catalog number.

Ex.: A 480V primary voltage with a 120V secondary voltage is required for an A75 starter: N1M1-CF

### Coil voltage selection – A9 - A300

Hz	Contactor type	Volts									
		24	110	120	208	220	240	440	480	500	600
60	A	1		2	3		4	5	6		7
50	A	1	2			4					7

### Coil voltage selection – AF400 - AF750 ①

Hz	Contactor type	Volts	
		100 - 250	250 - 500
50/60	AF	70	71

### Control transformer voltage selection chart

Hz	Volts				
	Type	200-208/120	240/120	460 - 480/120	575 - 600/120
	A/AF	A	B	C	D
50/60	Type	200-208/24	240/24	460 - 480/24	575 - 600/24
	A/AF	E	F	G	H

### Control transformer option

Contactor size	VA rating	List price adder
A9 - A40	50	360
A9 - A40 (N7 & 9)	50	630 ②
A50 - A75	75	435
A95 - A110	100	560
A145 - A185	150	720
A210 - A300	250	795
AF400 - AF460	150	720
AF580 - AF750	250	795

Reference page 3.50 for Extra VA under all (Control Transformer Options chart)

### Maximum short circuit rating for UL listed combination starters

Contactor	Maximum MCP 480VAC	KA at 480VAC	MCP 600VAC	KA at 600VAC
A9	S3L050MW	35	S3L010MW	35
A12	S3L050MW	35	S3L010MW	35
A16	S3L050MW	35	—	—
A26	S3L100MW	35	S3L100MW	35
A30	S3L150MW	65	—	—
A40	S3L150MW	65	—	—
A50	S3L150MW	85	S3L150MW	35
A63	S4L250MW	85	—	—
A75	S4L250MW	85	—	—
A95	S4L250MW	85	S4L250MW	35
A110	S4L250MW	85	S4L250MW	35
A145	S5L400MW	65	S4L250MW	10
A185	S5L400MW	85	S4L250MW	10
A210	S6L800MW	85	S4L250MW	18
A260	S6L800MW	85	S5L400MW	18
A300	S6L800MW	85	S5L400MW	18
AF400	S7H1200MW	85	Consult factory	
AF460	S7H1200MW	85		
AF580	S7H1200MW	85		
AF750	S7H1200MW	85		

For thermal magnetic molded case breakers, consult factory.

### Factory modifications

See page 3.50

NOTES: MCPs are supplied as standard. Thermal magnetic breakers can be supplied by substituting the letter "B" in place of the "M". List price is the same. Example: J1B3-2Δ‡, \$ 1110.00.  
 For AF50 - AF300 starters, consult factory.

- ① AF400 - AF750 only.
- ② NEMA 7 & 9 Enclosed starter only.

## Circuit breaker type A9 - AF750, NEMA rated Non-reversing, three phase

Combination  
starters

3

UL Type 4 (Watertight)		UL Type 4X (Stainless steel)		UL Type 1, 3R, 4, 4X & 12 (Plastic)		UL Listed 7 & 9 non-reversing (Explosion proof)	
Catalog number	List price	Catalog number	List price	Catalog number	List price	Catalog number	List price
<b>UL rated</b>							
J1M4-2Δ‡	\$ 1,260	J1MX-2Δ‡	\$ 1,835	J1MP-2Δ‡	\$ 1,050	J1M7-2Δ‡	\$ 2,660
K1M4-2Δ‡	1,320	K1MX-2Δ‡	1,895	K1MP-2Δ‡	1,110	K1M7-2Δ‡	3,030
L1M4-2Δ‡	1,410	L1MX-2Δ‡	2,000	L1MP-2Δ‡	1,193	L1M7-2Δ‡	3,105
M1M4-2Δ‡	2,115	M1MX-2Δ‡	3,275	M1MP-2Δ‡	1,875	M1M7-2Δ‡	4,150
N1M4-2Δ‡	3,225	N1MX-2Δ‡	4,055	N1MP-2Δ‡	2,520	N1M7-2Δ‡	6,850
P1M4-2Δ‡	5,588	P1MX-2Δ‡	7,650	P1MP-2Δ‡	5,400	P1M7-2Δ‡	13,595
Q1M4-2Δ‡	10,950	Q1MX-2Δ‡	17,250	Q1MP-2Δ‡	18,650	—	—
R1M4-70Δ‡	22,500	R1MX-70Δ‡	28,995	—	—	—	—
S1M4-70Δ‡	30,000	S1MX-70Δ‡	37,650	—	—	—	—

Δ Overload relay suffix code. Select from the overload relay selection chart on pages 3.6 - 3.7. Overload relays are required for all combination starters. If overload relay is provided by customer, substitute an "X" in place of the Δ and then subtract list price of overload relay from combination starter's list price.

‡ MCP or breaker rating. See codes on page 3.51.

### Motor circuit protector data

Motor full load amperes	MCP continuous rating	Suffix code ‡	Catalog number	Starter size	1.5X	2X	4X	5X	6X	7X	8X	9X	10X	11X	12X
.92 - 2.76	3	1	S3L003MW	0	—	—	12	15	18	21	24	27	30	33	36
1.53 - 4.61	5	2	S3L005MW	0	—	—	20	25	30	35	40	45	50	55	60
3.07 - 9.23	10	3	S3L010MW	0	—	—	40	50	60	70	80	90	100	110	120
7.69 - 23.08	25	4	S3L025MW	1	—	—	100	125	150	175	200	225	250	275	300
15.38 - 46.15	50	5	S3L050MW	2	—	—	200	250	300	350	400	450	500	550	600
30.77 - 92.31	100	6	S3L100MW	3	—	—	400	500	600	700	800	900	1000	1100	1200
46.15 - 138.46	150	7	S3L150MW	4	—	—	600	750	900	1050	1200	1350	1500	1650	1800
28.85 - 230.77	250	8	S4L250MW	4	375	500	1000	—	1500	—	2000	—	2500	—	3000
46.15 - 369.23	400	9	S5L400MW	5	600	800	1600	—	2400	—	3200	—	4000	—	4800
69.23 - 553.85	600	C	S6L600MW	6	900	1200	2400	—	3600	—	4800	—	6000	—	7200
92.31 - 738.46	800	E	S6L800MW	7	1200	1600	3200	—	4800	—	6400	—	8000	—	9600
115.38 - 923.07	1000	G	S7H1000MW	7	1500	2000	4000	—	6000	—	8000	—	10,000	—	12,000
138.46 - 1107.69	1200	H	S7H1200MW	7	1800	2400	4800	—	7200	—	9600	—	12,000	—	14,400

# Circuit breaker type A9 - AF750 Reversing, three phase

3

UL motor switching current	Contactor size	Maximum ratings - UL Listed				UL Type 1 (Indoor metal)		UL type 3R (Outdoor metal)		UL Type 12 (Metal dustight)	
		Maximum motor horsepower ratings				Catalog number	List price	Catalog number	List price	Catalog number	List price
		200/208V	230/240V	480/480V	575/600V						
<b>UL rated</b>											
9	A9	2	2	5	7.5	12M1-2Δ‡	\$ 1,185	12M3-2Δ‡	\$ 1,365	12M2-2Δ‡	\$ 1,365
11	A12	3	3	7.5	10	22M1-2Δ‡	1,275	22M3-2Δ‡	1,455	22M2-2Δ‡	1,455
17	A16	5	5	10	15	32M1-2Δ‡	1,335	32M3-2Δ‡	1,515	32M2-2Δ‡	1,515
28	A26	7.5	10	20	25	42M1-2Δ‡	1,478	42M3-2Δ‡	1,658	42M2-2Δ‡	1,658
34	A30	10	10	25	30	52M1-2Δ‡	1,703	52M3-2Δ‡	1,883	52M2-2Δ‡	1,883
42	A40	10	15	30	40	62M1-2Δ‡	1,935	62M3-2Δ‡	2,115	62M2-2Δ‡	2,115
54	A50	15	20	40	50	72M1-2Δ‡	2,468	72M3-2Δ‡	2,648	72M2-2Δ‡	2,648
65	A63	20	25	50	50	82M1-2Δ‡	2,899	82M3-2Δ‡	3,030	82M2-2Δ‡	3,030
80	A95	25	30	60	75	92M1-2Δ‡	2,940	92M3-2Δ‡	4,035	92M2-2Δ‡	4,035
110	A110	30	40	75	100	A2M1-2Δ‡	4,200	A2M3-2Δ‡	5,235	A2M2-2Δ‡	5,235
130	A145	40	50	100	125	B2M1-2Δ‡	4,335	B2M3-2Δ‡	7,470	B2M2-2Δ‡	7,470
156	A185	50	60	125	150	C2M1-2Δ‡	6,285	C2M3-2Δ‡	8,970	C2M2-2Δ‡	8,970
192	A210	60	75	150	200	D2M1-2Δ‡	8,310	D2M3-2Δ‡	13,080	D2M2-2Δ‡	13,080
248	A260	75	100	200	250	E2M1-2Δ‡	8,160	E2M3-2Δ‡	14,640	E2M2-2Δ‡	14,640
302	A300	100	100	250	300	F2M1-2Δ‡	11,115	F2M3-2Δ‡	16,110	F2M2-2Δ‡	16,110
414	AF400	125	150	350	400	G2M1-2Δ‡	18,435	G2M3-2Δ‡	18,975	G2M2-2Δ‡	18,975
480	AF460	150	200	400	500	H2M1-70Δ‡	31,635	H2M3-70Δ‡	33,435	H2M2-70Δ‡	33,435
590	AF585	200	250	500	600	T2M1-70Δ‡	40,035	T2M3-70Δ‡	41,835	T2M2-70Δ‡	41,835
810	AF750	250	300	600	700	U2M1-70Δ‡	42,885	U2M3-70Δ‡	46,065	U2M2-70Δ‡	46,065

Δ Overload relay suffix code. Select from the overload relay selection chart on pages 3.6 - 3.7. Overload relays are required for all combination starters. If overload relay is provided by customer, substitute an "X" in place of the Δ and then subtract list price of overload relay from combination starter's list price.

‡ MCP or breaker rating. See codes on page 3.51.

Example: 12M1-2X      \$ 1185      List  
    - 63              - OLR  
    \$ 1122              Net price

### Coil voltage selection

All AC operated catalog numbers include a 120VAC coil. To select other coil voltages, substitute the code from the Coil Voltage Selection Chart for the suffix code after the last dash in the catalog number.

Ex.: A 240V coil is required for an A75 starter: 92M1-4Δ

To select starter with control transformer, substitute the code from the Control transformer voltage selector chart for the two digits after the last dash in the catalog number.

Ex.: A 480V primary voltage with a 120V secondary voltage is required for an A75 starter: 92M1-CF

### Factory modifications

See page 3.3

### Coil voltage selection – A9 - A300

Hz	Contactor type	Volts									
		24	110	120	208	220	240	440	480	500	600
60	A	1		2	3		4	5	6		7
50	A	1	2			4					7

### Coil voltage selection – AF400 - AF750 ①

Hz	Contactor type	Volts	
		100 - 250	250 - 500
50/60	AF	70	71

### Control transformer voltage selection chart

Hz	Volts				
	Type	200-208/120	240/120	460 - 480/120	575 - 600/120
	A/AF	A	B	C	D
50/60	Type	200-208/24	240/24	460 - 480/24	575 - 600/24
	A/AF	E	F	G	H

### Maximum short circuit rating for UL listed combination starters

Contactor	Maximum MCP 480VAC	KA at 480VAC	MCP 600VAC	KA at 600VAC
A9	S3L050MW	35	S3L010MW	35
A12	S3L050MW	35	S3L010MW	35
A16	S3L050MW	35	—	—
A26	S3L100MW	35	S3L100MW	35
A30	S3L150MW	65	—	—
A40	S3L150MW	65	—	—
A50	S3L150MW	85	S3L150MW	35
A63	S4L250MW	85	—	—
A75	S4L250MW	85	—	—
A95	S4L250MW	85	S4L250MW	35
A110	S4L250MW	85	S4L250MW	35
A145	S5L400MW	65	S4L250MW	10
A185	S5L400MW	85	S4L250MW	10
A210	S6L800MW	85	S4L250MW	18
A260	S6L800MW	85	S5L400MW	18
A300	S6L800MW	85	S5L400MW	18
AF400	S7H1200MW	85	Consult factory	
AF460	S7H1200MW	85		
AF580	S7H1200MW	85		
AF750	S7H1200MW	85		

For thermal magnetic molded case breakers, consult factory.

### Control transformer option

Contactor size	VA rating	List price adder
A9 - A40	50	\$ 360
A50 - A75	75	435
A95 - A110	100	560
A145 - A185	150	720
A210 - A300	250	795
AF400 - AF460	150	720
AF580 - AF750	250	795

Reference page 3.50 for extra VA under all (Control Transformer Options chart)

NOTES: MCPs are supplied as standard. Thermal magnetic/electronic trip type breakers can be supplied by substituting the letter "B" in place of the "M". List price is the same.

Example: 12G1-2Δ‡, \$ 1185.00.

For AF50 - AF300 starters, consult factory.

① AF400 - AF750 only.

# Circuit breaker type A9 - AF750 Reversing, three phase

Combination  
starters

3

UL Type 4 (Watertight)		UL Type 4X (Stainless steel)		UL Type 1, 3R, 4, 4X & 12 (Plastic)	
Catalog number	List price	Catalog number	List price	Catalog number	List price
<b>UL rated</b>					
12M4-2Δ‡	\$ 1,515	12MX-2Δ‡	\$ 2,090	12MP-2Δ‡	\$ 1,320
22M4-2Δ‡	1,605	22MX-2Δ‡	2,180	22MP-2Δ‡	1,410
32M4-2Δ‡	1,688	32MX-2Δ‡	2,240	32MP-2Δ‡	1,470
42M4-2Δ‡	1,800	42MX-2Δ‡	2,405	42MP-2Δ‡	1,703
52M4-2Δ‡	2,100	52MX-2Δ‡	2,878	52MP-2Δ‡	1,853
62M4-2Δ‡	2,438	62MX-2Δ‡	3,395	62MP-2Δ‡	2,085
72M4-2Δ‡	2,963	72MX-2Δ‡	3,988	72MP-2Δ‡	2,618
82M4-2Δ‡	3,338	82MX-2Δ‡	4,505	82MP-2Δ‡	3,090
92M4-2Δ‡	4,200	92MX-2Δ‡	5,210	92MP-2Δ‡	3,855
A2M4-2Δ‡	5,663	A2MX-2Δ‡	7,415	A2MP-2Δ‡	4,700
B2M4-2Δ‡	7,950	B2MX-2Δ‡	9,885	B2MP-2Δ‡	7,620
C2M4-2Δ‡	9,638	C2MX-2Δ‡	12,510	C2MP-2Δ‡	9,250
D2M4-2Δ‡	13,650	D2MX-2Δ‡	16,545	D2MP-2Δ‡	13,300
E2M4-2Δ‡	15,450	E2MX-2Δ‡	21,735	E2MP-2Δ‡	15,000
F2M4-2Δ‡	18,150	F2MX-2Δ‡	28,260	F2MP-2Δ‡	17,600
G2M4-2Δ‡	21,000	G2MX-2Δ‡	32,835	—	—
H2M4-70Δ‡	35,850	H2MX-70Δ‡	41,280	—	—
T2M4-70Δ‡	45,000	T2MX-70Δ‡	53,385	—	—
U2M4-70Δ‡	48,338	U2MX-70Δ‡	56,385	—	—

Δ Overload relay suffix code. Select from the overload relay selection chart on pages 3.6 - 3.7. Overload relays are required for all combination starters. If overload relay is provided by customer, substitute an "X" in place of the Δ and then subtract list price of overload relay from combination starter's list price.

‡ MCP or breaker rating. See codes on page 3.51.

### Motor circuit protector data

Motor full load amperes	MCP continuous rating	Suffix code ‡	Catalog number	Starter size	1.5X	2X	4X	5X	6X	7X	8X	9X	10X	11X	12X
.92 - 2.76	3	1	S3L003MW	0	—	—	12	15	18	21	24	27	30	33	36
1.53 - 4.61	5	2	S3L005MW	0	—	—	20	25	30	35	40	45	50	55	60
3.07 - 9.23	10	3	S3L010MW	0	—	—	40	50	60	70	80	90	100	110	120
7.69 - 23.08	25	4	S3L025MW	1	—	—	100	125	150	175	200	225	250	275	300
15.38 - 46.15	50	5	S3L050MW	2	—	—	200	250	300	350	400	450	500	550	600
30.77 - 92.31	100	6	S3L100MW	3	—	—	400	500	600	700	800	900	1000	1100	1200
46.15 - 138.46	150	7	S3L150MW	4	—	—	600	750	900	1050	1200	1350	1500	1650	1800
28.85 - 230.77	250	8	S4L250MW	4	375	500	1000	—	1500	—	2000	—	2500	—	3000
46.15 - 369.23	400	9	S5L400MW	5	600	800	1600	—	2400	—	3200	—	4000	—	4800
69.23 - 553.85	600	C	S6L600MW	6	900	1200	2400	—	3600	—	4800	—	6000	—	7200
92.31 - 738.46	800	E	S6L800MW	7	1200	1600	3200	—	4800	—	6400	—	8000	—	9600
115.38 - 923.07	1000	G	S7H1000MW	7	1500	2000	4000	—	6000	—	8000	—	10,000	—	12,000
138.46 - 1107.69	1200	H	S7H1200MW	7	1800	2400	4800	—	7200	—	9600	—	12,000	—	14,400

# Circuit breaker type

## A9 - AF750, NEMA rated

### Reversing, three phase

3

NEMA size	Contactor size	Continuous current	Maximum ratings - UL Listed			UL Type 1 (Indoor metal)		UL type 3R (Outdoor metal)		UL Type 12 (Metal dusttight)	
			Maximum motor horsepower ratings			Catalog number	List price	Catalog number	List price	Catalog number	List price
			200V	230V	460/575V						
<b>UL rated</b>											
00	A9	9	1.5	1.5	2	J2M1-2Δ‡	\$ 1,185	J2M3-2Δ‡	\$ 1,365	J2M2-2Δ‡	\$ 1,365
0	A16	18	3	3	5	K2M1-2Δ‡	1,335	K2M3-2Δ‡	1,515	K2M2-2Δ‡	1,515
1	A26	27	7.5	7.5	10	L2M1-2Δ‡	1,478	L2M3-2Δ‡	1,658	L2M2-2Δ‡	1,658
2	A50	45	10	15	25	M2M1-2Δ‡	2,468	M2M3-2Δ‡	2,648	M2M2-2Δ‡	2,648
3	A75	90	25	30	50	N2M1-2Δ‡	3,705	N2M3-2Δ‡	4,035	N2M2-2Δ‡	4,035
4	A145	135	40	50	100	P2M1-2Δ‡	6,285	P2M3-2Δ‡	7,470	P2M2-2Δ‡	7,470
5	A260	270	75	100	200	Q2M1-2Δ‡	14,645	Q2M3-2Δ‡	14,640	Q2M2-2Δ‡	14,640
6	AF460	540	150	200	400	R2M1-70Δ‡	31,635	R2M3-70Δ‡	33,435	R2M2-70Δ‡	33,435
7	AF750	810	—	300	600	S2M1-70Δ‡	42,885	S2M3-70Δ‡	46,065	S2M2-70Δ‡	46,065

Δ Overload relay suffix code. Select from the overload relay selection chart on pages 3.6 - 3.7. Overload relays are required for all combination starters. If overload relay is provided by customer, substitute an "X" in place of the Δ and then subtract list price of overload relay from combination starter's list price.

‡ MCP or breaker rating. See codes on page 3.51.

Example: A9NSRM1-84X \$ 1185 List  
 - 63 - OLR  
 \$ 1122 Net price

### Coil voltage selection

All AC operated catalog numbers include a 120VAC coil. To select other coil voltages, substitute the code from the Coil Voltage Selection Chart for the suffix code after the last dash in the catalog number.

Ex.: A 240V coil is required for an A75 starter: N2M1-4Δ

To select starter with control transformer, substitute the code from the Control transformer voltage selector chart for the two digits after the last dash in the catalog number.

Ex.: A 480V primary voltage with a 120V secondary voltage is required for an A75 starter: N2M1-CF

### Coil voltage selection – A9 - A300

Hz	Contactor type	Volts									
		24	110	120	208	220	240	440	480	500	600
60	A	1		2	3		4	5	6		7
50	A	1	2			4					7

### Coil voltage selection – AF400 - AF750 ①

Hz	Contactor type	Volts	
		100 - 250	250 - 500
50/60	AF	70	71

### Control transformer voltage selection chart

Hz	Volts				
	Type	200-208/120	240/120	460 - 480/120	575 - 600/120
	A/AF	A	B	C	D
50/60	Type	200-208/24	240/24	460 - 480/24	575 - 600/24
	A/AF	E	F	G	H

### Maximum short circuit rating for UL listed combination starters

Contactor	Maximum MCP 480VAC	KA at 480VAC	MCP 600VAC	KA at 600VAC
A9	S3L050MW	35	S3L010MW	35
A12	S3L050MW	35	S3L010MW	35
A16	S3L050MW	35	—	—
A26	S3L100MW	35	S3L100MW	35
A30	S3L150MW	65	—	—
A40	S3L150MW	65	—	—
A50	S3L150MW	85	S3L150MW	35
A63	S4L250MW	85	—	—
A75	S4L250MW	85	—	—
A95	S4L250MW	85	S4L250MW	35
A110	S4L250MW	85	S4L250MW	35
A145	S5L400MW	65	S4L250MW	10
A185	S5L400MW	85	S4L250MW	10
A210	S6L800MW	85	S4L250MW	18
A260	S6L800MW	85	S5L400MW	18
A300	S6L800MW	85	S5L400MW	18
AF400	S7H1200MW	85	Consult factory	
AF460	S7H1200MW	85		
AF580	S7H1200MW	85		
AF750	S7H1200MW	85		

For thermal magnetic molded case breakers, consult factory.

### Factory modifications

See page 3.3

### Control transformer option

Contactor size	VA rating	List price adder
A9 - A40	50	\$ 360
A50 - A75	75	435
A95 - A110	100	560
A145 - A185	150	720
A210 - A300	250	795
AF400 - AF460	150	720
AF580 - AF750	250	795

Reference page 3.50 for extra VA under all (Control Transformer Options chart)

NOTES: MCPs are supplied as standard. Thermal magnetic/electronic trip type breakers can be supplied by substituting the letter "B" in place of the "M". List price is the same.

Example: J2B1-2Δ‡, \$ 1185.00.

For AF50 - AF300 starters, consult factory.

① AF400 - AF750 only.



## Circuit breaker type A9 - AF750, NEMA rated Reversing, three phase

Combination  
starters

3

UL Type 4 (Watertight)		UL Type 4X (Stainless steel)		UL Type 1, 3R, 4, 4X & 12 (Plastic)	
Catalog number	List price	Catalog number	List price	Catalog number	List price
<b>UL rated</b>					
J2M4-2Δ‡	<b>\$ 1,515</b>	J2MX-2Δ‡	<b>\$ 2,090</b>	J2MP-2Δ‡	<b>\$ 1,320</b>
K2M4-2Δ‡	<b>1,688</b>	K2MX-2Δ‡	<b>1,335</b>	K2MP-2Δ‡	<b>1,470</b>
L2M4-2Δ‡	<b>1,800</b>	L2MX-2Δ‡	<b>2,405</b>	L2MP-2Δ‡	<b>1,703</b>
M2M4-2Δ‡	<b>2,963</b>	M2MX-2Δ‡	<b>3,988</b>	M2MP-2Δ‡	<b>2,618</b>
N2M4-2Δ‡	<b>4,200</b>	N2MX-2Δ‡	<b>5,210</b>	N2MP-2Δ‡	<b>3,855</b>
P2M4-2Δ‡	<b>7,950</b>	P2MX-2Δ‡	<b>9,885</b>	P2MP-2Δ‡	<b>7,620</b>
Q2M4-2Δ‡	<b>15,450</b>	Q2MX-2Δ‡	<b>21,735</b>	Q2MP-2Δ‡	<b>15,000</b>
R2M4-70Δ‡	<b>35,850</b>	R2MX-70Δ‡	<b>41,280</b>	—	—
S2M4-70Δ‡	<b>48,338</b>	S2MX-70Δ‡	<b>56,385</b>	—	—

Δ Overload relay suffix code. Select from the overload relay selection chart on pages 3.6 - 3.7. Overload relays are required for all combination starters. If overload relay is provided by customer, substitute an "X" in place of the Δ and then subtract list price of overload relay from combination starter's list price.

‡ MCP or breaker rating. See codes on page 3.51.

### Motor circuit protector data

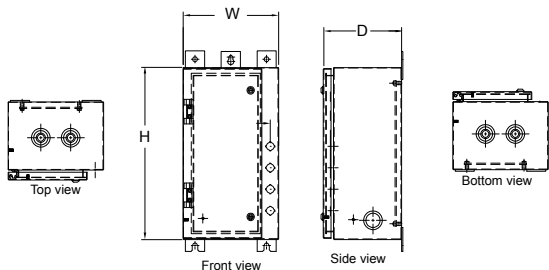
Motor full load amperes	MCP continuous rating	Suffix code ‡	Catalog number	Starter size	1.5X	2X	4X	5X	6X	7X	8X	9X	10X	11X	12X
.92 - 2.76	3	1	S3L003MW	0	—	—	12	15	18	21	24	27	30	33	36
1.53 - 4.61	5	2	S3L005MW	0	—	—	20	25	30	35	40	45	50	55	60
3.07 - 9.23	10	3	S3L010MW	0	—	—	40	50	60	70	80	90	100	110	120
7.69 - 23.08	25	4	S3L025MW	1	—	—	100	125	150	175	200	225	250	275	300
15.38 - 46.15	50	5	S3L050MW	2	—	—	200	250	300	350	400	450	500	550	600
30.77 - 92.31	100	6	S3L100MW	3	—	—	400	500	600	700	800	900	1000	1100	1200
46.15 - 138.46	150	7	S3L150MW	4	—	—	600	750	900	1050	1200	1350	1500	1650	1800
28.85 - 230.77	250	8	S4L250MW	4	375	500	1000	—	1500	—	2000	—	2500	—	3000
46.15 - 369.23	400	9	S5L400MW	5	600	800	1600	—	2400	—	3200	—	4000	—	4800
69.23 - 553.85	600	C	S6L600MW	6	900	1200	2400	—	3600	—	4800	—	6000	—	7200
92.31 - 738.46	800	E	S6L800MW	7	1200	1600	3200	—	4800	—	6400	—	8000	—	9600
115.38 - 923.07	1000	G	S7H1000MW	7	1500	2000	4000	—	6000	—	8000	—	10,000	—	12,000
138.46 - 1107.69	1200	H	S7H1200MW	7	1800	2400	4800	—	7200	—	9600	—	12,000	—	14,400

## Approximate dimensions

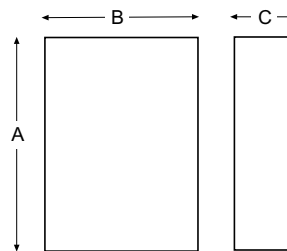
Non-fusible, across the line  
Fusible, across the line

3

Enclosure A



Enclosure B



Non-fusible across the line w/CCT

Starter Size	Enclosure type	Encl Dwg	H	W	D
A9 - A40	1	A	18	10	8
	3R	A	18	10	8
	4	A	18	10	8
	12	A	18	10	8
	4X Stainless	B	10	8	6
4X plastic	B	10	8	7	
A50 - A110	1	A	24	12.5	8
	3R	A	24	12.5	8
	4	A	24	12.5	8
	12	A	24	12.5	8
4X Stainless	B	14	12	6	
	B	14	12	7	
4X plastic	B	20	16	8	
	B	20	16	8	
A95 - A110	1	A	36	24	12
	3R	A	36	24	12
	4	A	36	24	12
	12	A	36	24	12
	4X Stainless	B	30	24	8
4X plastic	B	30	20	12	
A210 - A300	1	A	48	24	13
	3R	A	48	24	13
	4	A	48	24	13
	12	A	48	24	13
	4X Stainless	B	36	24	12
4X plastic	B	40	30	20	
AF400	1	B	42	36	12
	3R	B	42	36	12
	4	B	42	36	12
	12	B	42	36	12
	4X Stainless	B	42	30	10
AF460	1	B	42	36	12
	3R	B	42	30	10
	4	B	42	30	10
	12	B	42	30	10
	4X Stainless	B	42	30	10
AF580	1	B	48	36	16
	3R	B	48	36	16
	4	B	48	36	16
	12	B	48	36	16
	4X Stainless	B	48	36	16
AF750	1	—	—	—	—
	3R	B	48	36	16
	4	B	48	36	16
	12	B	48	36	16
	4X Stainless	B	48	36	16

Fusible across the line w/CCT

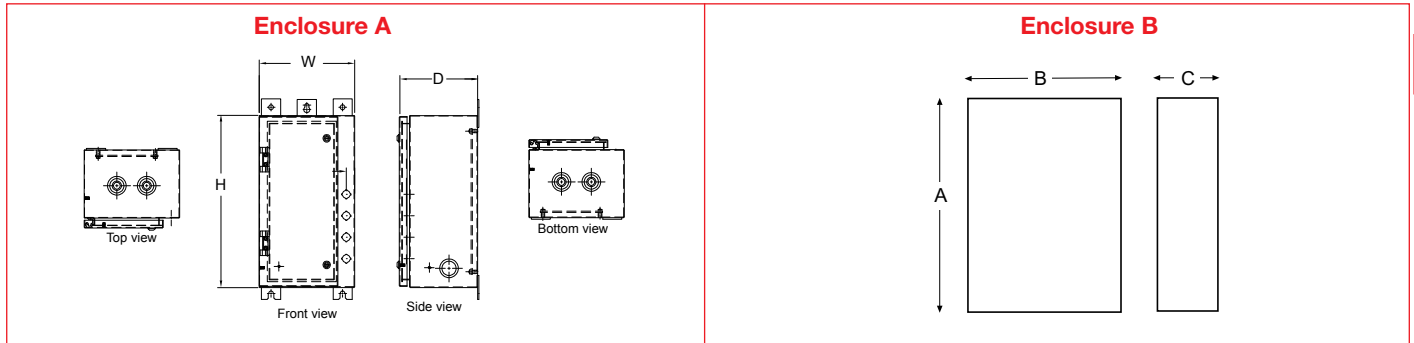
Starter Size	Enclosure type	Encl Dwg	H	W	D
A9 - A40	1	A	18	10	8
	3R	A	18	10	8
	4	A	18	10	8
	12	A	18	10	8
	4X Stainless	B	14	12	6
4X plastic	B	14	12	7	
A50 - A110	1	A	24	12.5	8
	3R	A	24	12.5	8
	4	A	24	12.5	8
	12	A	24	12.5	8
4X Stainless	B	20	16	8	
	B	20	16	8	
4X plastic	B	20	16	8	
	B	20	16	8	
A145 - A185	1	A	36	24	12
	3R	A	36	24	12
	4	A	36	24	12
	12	A	36	24	12
	4X Stainless	B	30	24	8
4X plastic	B	30	20	12	
A210 - A300	1	A	48	24	13
	3R	A	48	24	13
	4	A	48	24	13
	12	A	48	24	13
	4X Stainless	B	36	24	12
4X plastic	B	40	30	20	
AF400	1	B	42	36	12
	3R	B	42	36	12
	4	B	42	36	12
	12	B	42	36	12
	4X Stainless	B	42	30	10
AF460	1	B	42	36	12
	3R	B	42	30	10
	4	B	42	30	10
	12	B	42	30	10
	4X Stainless	B	42	30	10
AF580 - AF750	1	B	48	36	16
	3R	B	48	36	16
	4	B	48	36	16
	12	B	48	36	16
	4X Stainless	B	48	36	16

Dimensions subject to change; please consult factory for construction dimension.

- Enclosures have KO's in:
- Type 1-Top & Bottom
  - Type 3R- Bottom Only
  - Type 4,12- None

**Approximate dimensions**  
 Non-fusible, across the line, reversing  
 Fusible, across the line, reversing

3



**Fusible across the line reversing w/CCT**

Starter Size	Enclosure type	Encl Dwg	H	W	D
A9 - A40	1	A	18	10	8
	3R	A	18	10	8
	4	A	18	10	8
	12	A	18	10	8
	4X Stainless	B	14	12	8
	4X plastic	B	14	12	8
A50 - A110	1	A	24	12.5	8
	3R	A	24	12.5	8
	4	A	24	12.5	8
	12	A	24	12.5	8
A50 - A75	4X Stainless	B	20	16	8
	4X plastic	B	20	16	8
A110	4X Stainless	B	24	20	8
	4X plastic	B	30	20	12
A145 - A185	1	A	36	24	12
	3R	A	36	24	12
	4	A	36	24	12
	12	A	36	24	12
	4X Stainless	B	30	24	12
	4X plastic	B	30	30	12
A210 - A300	1	A	48	24	13
	3R	A	48	24	13
	4	A	48	24	13
	12	A	48	24	13
	4X Stainless	B	36	36	12
	4X plastic	B	40	30	12
AF400 - AF460	1	B	48	36	12
	3R	B	48	36	12
	4	B	48	36	12
	12	B	48	36	12
	4X Stainless	B	48	36	12
AF580 - AF750	1	B	60	36	16
	3R	B	60	36	16
	4	B	60	36	16
	12	B	60	36	16
	4X Stainless	B	60	36	16

Dimensions subject to change; please consult factory for construction dimension.

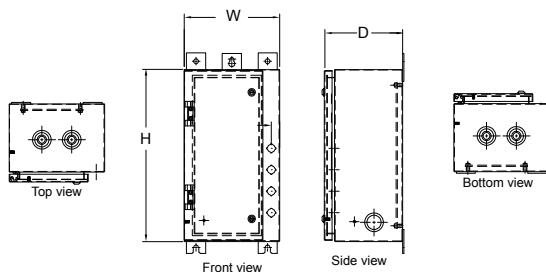
Enclosures have KO's in:

- Type 1- Top & Bottom
- Type 3R- Bottom Only
- Type 4,12- None

## Approximate dimensions Circuit breaker, across the line Reversing, non-fused w/CCT

3

Enclosure A



Circuit breaker across the line with CCT

Starter Size	Enclosure type	Encl Dwg	H	W	D
A9 - A16 (S3)	1	A	18	10	8
	3R	A	18	10	8
	4	A	18	10	8
	12	A	18	10	8
A9 - A40	4X Stainless	B	16	12	8
	4X plastic	B	14	12	7
A9-A26 A40	7 ⊕	B	14	10	6
	7 ⊕	B	18	12	6
A26 - A75 (S3)	1	A	24	12.5	8
	3R	A	24	12.5	8
	4	A	24	12.5	8
	12	A	24	12.5	8
A50 - A75	4X Stainless	B	16	12	8
	4X plastic	B	14	12	7
	7 ⊕	B	18	12	6
A95 - A110 (S3)	1	A	24	12.5	8
	3R	A	24	12.5	8
	4	A	24	12.5	8
	12	A	24	12.5	8
	4X Stainless 4X plastic 7 ⊕	B B B	20 20 24	16 16 16	8 8 6
A145 - A185 (S3, S4)	1	A	36	24	12
	3R	A	36	24	12
	4	A	36	24	12
	12	A	36	24	12
	4X Stainless 4X plastic 7 ⊕	B B B	30 30 30	24 24 18	12 12 8
A210 - A300 (S4, S5)	1	A	48	24	13
	3R	A	48	24	13
	4	A	48	24	13
	12	A	48	24	13
	4X Stainless 4X plastic 7 ⊕	B B B	36 40 36	24 30 18	12 20 8
AF400 (S6)	1	A	48	24	13
	3R	A	48	24	13
	4	A	48	24	13
	12	A	48	24	13
	4X Stainless 4X plastic	B B	42 40	36 40	10 11
AF460 (S6)	1	A	48	24	13
	3R	A	48	24	13
	4	A	48	24	13
	12	A	48	24	13
AF580 (S6)	1	A	48	24	13
	3R	A	48	24	13
	4	A	48	24	13
	12	A	48	24	13
AF750 (S7)	1	A	48	24	13
	3R	A	48	24	13
	4	A	48	24	13
	12	A	48	24	13
AF750 (S7)	4X Stainless	B	48	36	16
	1	A	48	24	13
	3R	A	48	24	13
	4	A	48	24	13
AF750 (S7)	12	A	48	24	13
	4X Stainless	B	60	36	16
	1	A	48	24	13
	3R	A	48	24	13

Circuit breaker across the line reversing with CCT

Starter Size	Enclosure type	Encl Dwg	H	W	D
A9 - A16 (S3)	1	A	18	10	8
	3R	A	18	10	8
	4	A	18	10	8
	12	A	18	10	8
A9 - A40	4X Stainless	B	16	12	8
	4X plastic	B	14	12	7
A50 - A75 (S3)	1	A	24	12.5	8
	3R	A	24	12.5	8
	4	A	24	12.5	8
	12	A	24	12.5	8
95 - A110 (S3)	4X Stainless	B	20	16	8
	4X plastic	B	20	16	8
	1	A	24	12.5	8
	3R	A	24	12.5	8
A145 (S3)	4	A	24	12.5	8
	12	A	24	12.5	8
	4X Stainless	B	24	20	8
	4X plastic	B	30	20	12
A185 (S3, S4)	1	A	36	24	12
	3R	A	36	24	12
	4	A	36	24	12
	12	A	36	24	12
	4X Stainless 4X plastic	B B	30 32	24 24	12 12
A210 - A300 (S4, S5)	1	A	48	24	13
	3R	A	48	24	13
	4	A	48	24	13
	12	A	48	24	13
	4X Stainless 4X plastic	B B	36 40	24 30	12 12
A300 (S6)	1	A	48	24	13
	3R	A	48	24	13
	4	A	48	24	13
	12	A	48	24	13
	4X Stainless 4X plastic	B B	42 40	30 30	10 12
AF400 - AF460 (S6)	1	B	48	36	16
	3R	B	48	36	16
	4	B	48	36	16
	12	B	48	36	16
AF580 - AF750 (S7)	4X Stainless	B	48	36	16
	1	B	60	36	16
	3R	B	60	36	16
	4	B	60	36	16
AF580 - AF750 (S7)	12	B	60	36	16
	4X Stainless	B	60	36	16
	1	B	60	36	16
	3R	B	60	36	16

Dimensions subject to change; please consult factory for construction dimension.

- Enclosures have KO's in:
- Type 1-Top & Bottom
  - Type 3R- Bottom Only
  - Type 4,12- None

⊕ Type 7 explosion-proof enclosure inside dimensions.

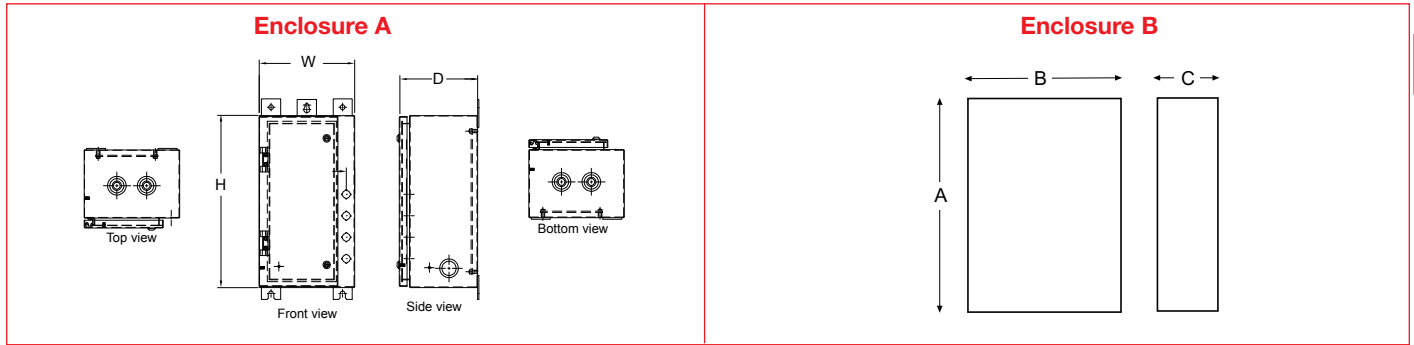
# Approximate dimensions

## Reversing fused combination

## Reversing breaker combination w/CCT

Combination starters

3



Fusible across the line reversing w/CCT

Starter Size	Enclosure type	Encl Dwg	H	W	D
A9 - A40	1	A	18	10	8
	3R	A	18	10	8
	4	A	18	10	8
	12	A	18	10	8
	4X Stainless	B	14	12	8
	4X plastic	B	14	12	8
A50 - A110	1	A	24	12.5	8
	3R	A	24	12.5	8
	4	A	24	12.5	8
	12	A	24	12.5	8
A50 - A75	4X Stainless	B	20	16	8
	4X plastic	B	20	16	8
A110	4X Stainless	B	24	20	8
	4X plastic	B	30	20	12
A145 - A185	1	A	36	24	12
	3R	A	36	24	12
	4	A	36	24	12
	12	A	36	24	12
	4X Stainless	B	30	24	12
	4X plastic	B	30	30	12
A210 - A300	1	A	48	24	13
	3R	A	48	24	13
	4	A	48	24	13
	12	A	48	24	13
	4X Stainless	B	36	36	12
	4X plastic	B	40	30	12
AF400 - AF460	1	B	48	36	12
	3R	B	48	36	12
	4	B	48	36	12
	12	B	48	36	12
	4X Stainless	B	48	36	12
AF580 - AF750	1	B	60	36	16
	3R	B	60	36	16
	4	B	60	36	16
	12	B	60	36	16
	4X Stainless	B	60	36	16

Circuit breaker across the line reversing with CCT

Starter Size	Enclosure type	Encl Dwg	H	W	D
A9 - A40 (S3)	1	A	24	12.5	8
	3R	A	24	12.5	8
	4	A	24	12.5	8
	12	A	24	12.5	8
	4X Stainless	B	14	12	6
	4X plastic	B	14	12	7
	4X plastic	B	14	12	7
A50 - A75 (S3)	1	A	24	12.5	8
	3R	A	24	12.5	8
	4	A	24	12.5	8
	12	A	24	12.5	8
	4X Stainless	B	20	16	8
95 - A110 (S3)	4X plastic	B	20	16	8
	1	A	36	24	12
	3R	A	36	24	12
	4	A	36	24	12
A145 (S3)	12	A	36	24	12
	4X Stainless	B	30	24	12
	4X plastic	B	30	20	12
	1	A	36	24	12
	3R	A	36	24	12
	4	A	36	24	12
A185 (S3,S4)	12	A	36	24	12
	4X Stainless	B	30	24	12
	4X plastic	B	30	20	12
	1	A	48	24	13
	3R	A	48	24	13
A210 - A300 (S4, S5)	4	A	48	24	13
	12	A	48	24	13
	4X Stainless	B	36	24	12
	4X plastic	B	40	20	12
	1	A	48	24	13
A300 (S6)	3R	A	48	24	13
	4	A	48	24	13
	12	A	48	24	13
	4X Stainless	B	36	24	12
AF400 - AF460 (S6)	4X plastic	B	40	20	12
	1	B	60	36	12
	3R	B	60	36	12
	4	B	60	36	12
	12	B	60	36	12
AF580 - AF750 (S7)	4X Stainless	B	60	36	12
	1	B	87	36	24
	3R	B	87	36	24
	4	B	87	36	24
	12	B	87	36	24
4X Stainless	B	87	36	24	

Dimensions subject to change; please consult factory for construction dimension.

- Enclosures have KO's in:
- Type 1-Top & Bottom
  - Type 3R- Bottom Only
  - Type 4,12- None

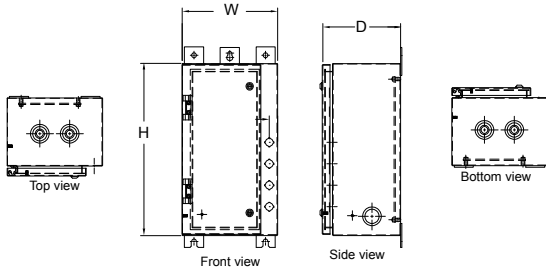
## Approximate dimensions

2 Speed, 1 winding, non-fused w/CCT

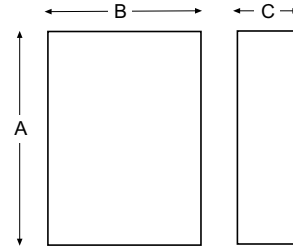
2 Speed, 1 winding, fused combination w/CCT

3

Enclosure A



Enclosure B



### 2 speed, 1 wind non-fused with CCT

Starter Size	Enclosure type	Encl Dwg	H	W	D
A9 - A40	1	A	24	12.5	8
	3R	A	24	12.5	8
	4	A	24	12.5	8
	12	A	24	12.5	8
	4X Stainless	B	14	12	6
	4X plastic	B	14	12	7
	1	A	36	24	12
A50 - A110	3R	A	36	24	12
	4	A	36	24	12
	12	A	36	24	12
A50-75	4X Stainless	B	20	16	8
	4X plastic	B	20	16	8
A145-A185	1	A	36	36	12
	3R	A	36	36	12
	4	A	36	36	12
	12	A	36	36	12
A110-A185	4X Stainless	B	36	36	12
	4X plastic	B	40	30	20
A210 - A300	1	A	48	24	13
	3R	A	48	24	13
	4	A	48	24	13
	12	A	48	24	13
	4X Stainless	B	42	36	13
	4X plastic	B	40	40	12
AF400 - AF460	1	B	60	36	12
	3R	B	60	36	12
	4	B	60	36	12
	12	B	60	36	12
	4X Stainless	B	60	36	12
AF580 - AF750	1	B	87	36	24
	3R	B	87	36	24
	4	B	87	36	24
	12	B	87	36	24
	4X Stainless	B	87	36	24

### 2 speed, 1 wind fused with CCT

Starter Size	Enclosure type	Encl Dwg	H	W	D
A9 - A40	1	A	24	12	8
	3R	A	24	12	8
	4	A	24	12	8
	12	A	24	12	8
	4X Stainless	B	20	16	8
	4X plastic	B	20	16	8
A50 - A110	1	A	36	24	12
	3R	A	36	24	12
	4	A	36	24	12
	12	A	36	24	12
A50-75	4X Stainless	B	20	16	8
	4X plastic	B	20	16	8
A145-A185	1	A	36	36	12
	3R	A	36	36	12
	4	A	36	36	12
	12	A	36	36	12
A110-A185	4X Stainless	B	36	36	12
	4X plastic	B	40	30	20
A210 - A300	1	A	48	24	13
	3R	A	48	24	13
	4	A	48	24	13
	12	A	48	24	13
	4X Stainless	B	42	36	13
	4X plastic	B	40	40	12
AF400 - AF460	1	B	60	36	12
	3R	B	60	36	12
	4	B	60	36	12
	12	B	60	36	12
	4X Stainless	B	60	36	12
AF580 - AF750	1	B	87	36	24
	3R	B	87	36	24
	4	B	87	36	24
	12	B	87	36	24
	4X Stainless	B	87	36	24

Dimensions subject to change; please consult factory for construction dimension.

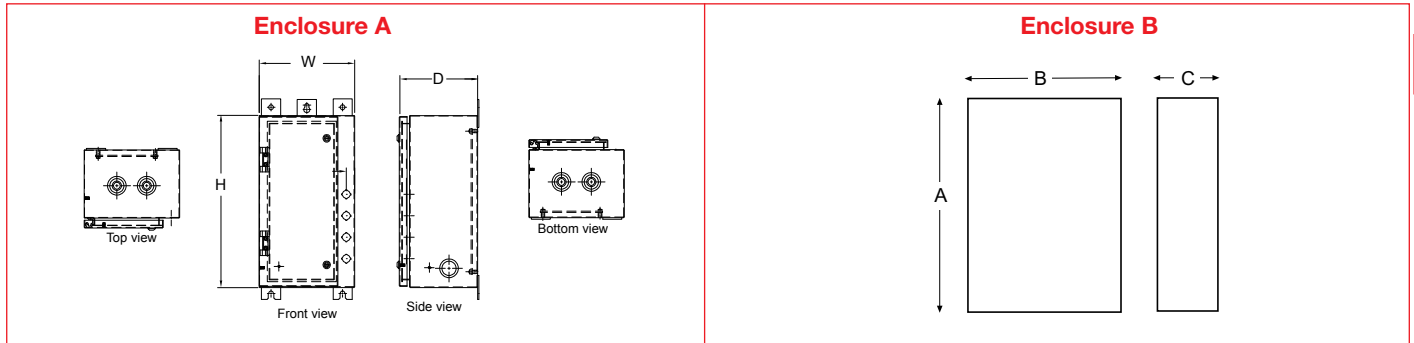
Enclosures have KO's in:

- Type 1-Top & Bottom
- Type 3R- Bottom Only
- Type 4,12- None

# Approximate dimensions 2 Speed, 1 winding, breaker combination w/CCT

Combination  
starters

3



## 2 speed, 1 wind Breaker with CCT

Starter Size	Enclosure type	Encl Dwg	H	W	D
A9 - A40	1	A	24	12.5	8
	3R	A	24	12.5	8
	4	A	24	12.5	8
	12	A	24	12.5	8
	4X Stainless	B	20	16	8
	4X plastic	B	20	16	8
A50 - A75	1	A	36	24	12
	3R	A	36	24	12
	4	A	36	24	12
	12	A	36	24	12
	4X Stainless	B	20	16	8
	4X plastic	B	20	16	8
A110	1	A	36	24	12
	3R	A	36	24	12
	4	A	36	24	12
	12	A	36	24	12
	4X Stainless	B	30	24	8
	4X plastic	B	30	20	12
A145 - A185	1	A	36	36	12
	3R	A	36	36	12
	4	A	36	36	12
	12	A	36	36	12
	4X Stainless	B	36	36	12
	4X plastic	B	40	30	20
A210 - A300	1	A	48	24	13
	3R	A	48	24	13
	4	A	48	24	13
	12	A	48	24	13
	4X Stainless	B	42	36	13
	4X plastic	B	40	30	20
AF400 - AF460	1	B	60	36	12
	3R	B	60	36	12
	4	B	60	36	12
	12	B	60	36	12
	4X Stainless	B	60	36	12
AF580 - AF750	1	B	87	36	24
	3R	B	87	36	24
	4	B	87	36	24
	12	B	87	36	24
	4X Stainless	B	87	36	24

Dimensions subject to change; please consult factory for construction dimension.

- Enclosures have KO's in:
- Type 1-Top & Bottom
  - Type 3R- Bottom Only
  - Type 4,12- None

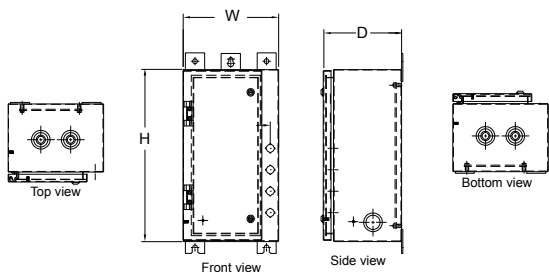
## Approximate dimensions

2 Speed - 2 Winding, Non-fused w/CCT

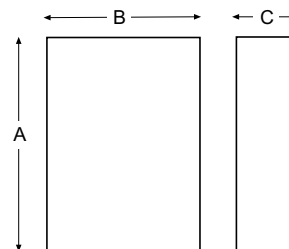
2 Speed - 2 Winding, Fused combination w/CCT

3

Enclosure A



Enclosure B



### 2 speed - 2 wind, non-fusible with CCT

Starter Size	Enclosure type	Encl Dwg	H	W	D
A9 - A40	1	A	18	10	8
	3R	A	18	10	8
	4	A	18	10	8
	12	A	18	10	8
A50 - A75	1	A	24	12.5	8
	3R	A	24	12.5	8
	4	A	24	12.5	8
	12	A	24	12.5	8
A9 - A75	4X Stainless	B	14	12	6
	4X plastic	B	14	12	7
A95 - A110	1	A	24	12.5	8
	3R	A	24	12.5	8
	4	A	24	12.5	8
	12	A	24	12.5	8
	4X Stainless	B	20	16	8
A145 - A185	4X plastic	B	20	16	8
	1	A	36	24	12
	3R	A	36	24	12
	4	A	36	24	12
A210 - A300	12	A	36	24	12
	4X Stainless	B	30	24	8
	4X plastic	B	30	20	12
	1	A	48	24	13
	3R	A	48	24	13
AF400 - AF460	4	A	48	24	13
	12	A	48	24	13
	4X Stainless	B	36	24	12
	4X plastic	B	40	20	12
AF580 - AF750	1	B	60	36	12
	3R	B	60	36	12
	4	B	60	36	12
	12	B	60	36	12
AF580 - AF750	4X Stainless	B	60	36	12
	1	B	87	36	24
	3R	B	87	36	24
	4	B	87	36	24
AF580 - AF750	12	B	87	36	24
	4X Stainless	B	87	36	24

### 2 speed, 2 wind fusible with CCT

Starter Size	Enclosure type	Encl Dwg	H	W	D
A9 - A40	1	A	18	10	8
	3R	A	18	10	8
	4	A	18	10	8
	12	A	18	10	8
A50 - A75	1	A	24	12.5	8
	3R	A	24	12.5	8
	4	A	24	12.5	8
	12	A	24	12.5	8
A9 - A75	4X Stainless	B	14	12	6
	4X plastic	B	14	12	7
A95 - A110	1	A	36	24	12
	3R	A	36	24	12
	4	A	36	24	12
	12	A	36	24	12
	4X Stainless	B	30	24	8
A145 - A185	4X plastic	B	30	20	12
	1	A	36	36	12
	3R	A	36	36	12
	4	A	36	36	12
A210 - A300	12	A	36	36	12
	4X Stainless	B	36	36	12
	4X plastic	B	40	30	20
	1	A	48	24	13
	3R	A	48	24	13
AF400 - AF460	4	A	48	24	13
	12	A	48	24	13
	4X Stainless	B	42	36	13
	4X plastic	B	40	20	12
AF400 - AF460	1	B	60	36	12
	3R	B	60	36	12
	4	B	60	36	12
	12	B	60	36	12
AF580 - AF750	4X Stainless	B	60	36	12
	1	B	87	36	24
	3R	B	87	36	24
	4	B	87	36	24
AF580 - AF750	12	B	87	36	24
	4X Stainless	B	87	36	24

Dimensions subject to change; please consult factory for construction dimension.

Enclosures have KO's in:

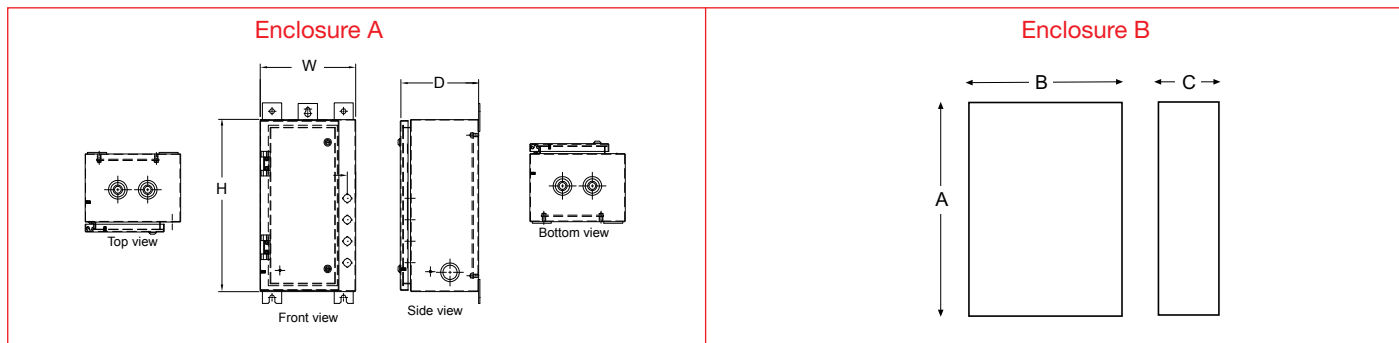
- Type 1-Top & Bottom
- Type 3R- Bottom Only
- Type 4,12- None



## Approximate dimensions 2 Speed - 2 Winding, breaker combination w/CCT

Combination  
starters

3



### 2 speed, 2 wind breaker with CCT

Starter Size	Enclosure type	Encl Dwg	H	W	D
A9 - A40	1	A	24	12.5	8
	3R	A	24	12.5	8
	4	A	24	12.5	8
	12	A	24	12.5	8
	4X Stainless	B	14	12	6
	4X plastic	B	14	12	7
A50 - A75	1	A	24	12.5	8
	3R	A	24	12.5	8
	4	A	24	12.5	8
	12	A	24	12.5	8
	4X Stainless	B	20	16	8
	4X plastic	B	20	16	8
A95 - A110	1	A	36	24	12
	3R	A	36	24	12
	4	A	36	24	12
	12	A	36	24	12
	4X Stainless	B	20	16	8
	4X plastic	B	20	16	8
A145 - A185	1	A	36	24	12
	3R	A	36	24	12
	4	A	36	24	12
	12	A	36	24	12
	4X Stainless	B	30	24	8
	4X plastic	B	30	20	12
A210 - A300	1	A	48	24	13
	3R	A	48	24	13
	4	A	48	24	13
	12	A	48	24	13
	4X Stainless	B	36	24	12
	4X plastic	B	40	20	12
AF400 - AF460	1	B	60	36	12
	3R	B	60	36	12
	4	B	60	36	12
	12	B	60	36	12
	4X Stainless	B	60	36	12
AF580 - AF750	1	B	87	36	24
	3R	B	87	36	24
	4	B	87	36	24
	12	B	87	36	24
	4X Stainless	B	87	36	24

Dimensions subject to change; please consult factory for construction dimension.

- Enclosures have KO's in:
- Type 1- Top & Bottom
  - Type 3R- Bottom Only
  - Type 4,12- None

