

Definite Purpose Contactors and Starters

20–40 A Compact Contactor



25–60 A Starter



Enclosed Starter



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Product Overview

Eaton offers the most complete line of Definite Purpose (DP) contactors in the industry. Originally designed for heating, ventilation, air conditioning and refrigeration (HVACR) applications, Eaton’s DP contactors are designed to handle the most challenging installations. Terminal variations, FLA range, electrical life and an encapsulated design have made Eaton’s DP products best in class.

Application Description

Designed for service in applications such as refrigeration, air conditioning and resistance heating and Eaton’s DP products are manufactured to high standards for quality and reliability. They are subjected to stringent quality assurance inspections and testing procedures. The life expectancy, both electrical and mechanical, will meet or exceed industry performance requirements for Definite Purpose devices. Eaton’s high quality and robust design has made it a solution for a variety of applications including, HVAC-R, industrial machinery and commercial applications.

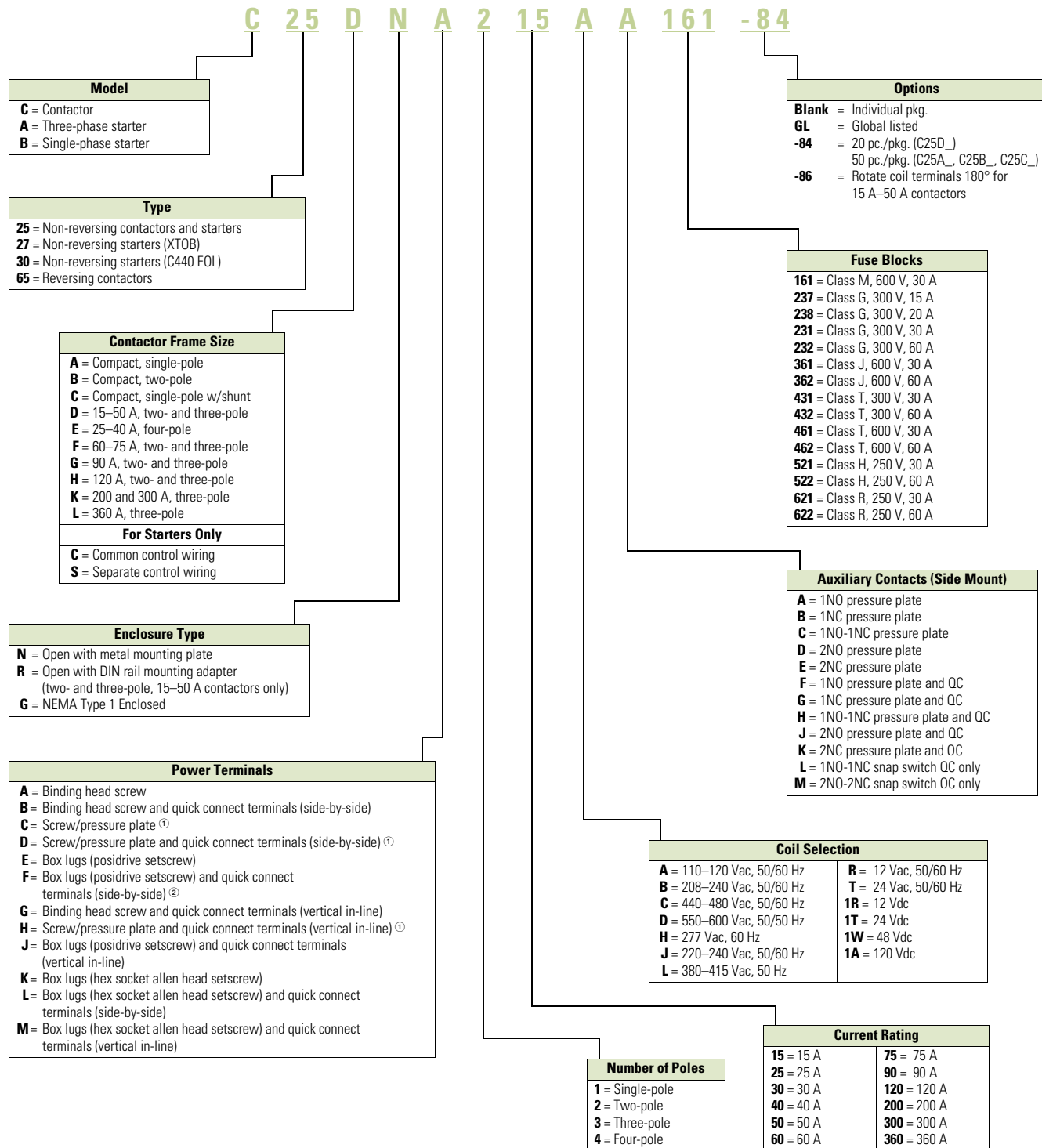
If more detailed technical information is required—specifications, ratings, and so on—contact your local Eaton distributor or sales office.

Features

- Completely encased design impervious to dust and other environmental elements
- 15–360 A contactor ratings
- Single-, two-, three- and four-pole configurations
- Contactors and starters
- Open components and enclosed designs

Catalog Number Selection

Definite Purpose Control—Contactors and Starters



Notes

- ① Not available on 50 A devices.
- ② Vertical in-line quick connect terminals on 60A and 75A F frame.

20–40 A, Compact Single- and Two-Pole—C25



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20–40 A, Compact Single- and Two-Pole—C25

Product Description

Eaton’s 20–40 A, single- and two-pole, Type C25 contactors feature a compact, efficient design with a low VA coil and straight-through wiring. The contactor housing design effectively limits dust and other contaminants from the magnet structure, which reduces or eliminates noise. These economically priced, UL recognized/CSA certified, ampere rated devices are well suited for use in heating/air conditioning, refrigeration, data processing and food service applications.

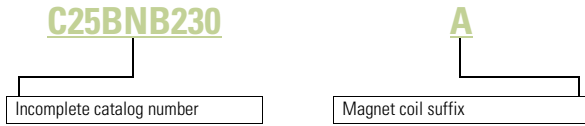
Standards and Certifications

- UL Recognized Components: UL File Number E1491, Guides NLDX2 and NLDX8
- CSA Certified Components: CSA C22.2 No. 14-05, File Number 238083 Class 3211 84
- IEC 60947-4-1
- EN 60947-4-1
- ARI 780/790 Standard
- CE
- RoHS Compliance



Catalog Number Selection

20–40 A, Compact Single- and Two-Pole—C25






When Ordering Specify

- Catalog number plus magnet coil suffix, see below
- Modify catalog number for any options required, see Options, **Page V5-T4-6**

Product Selection

Compact Contactors—Open Type

	Ampere Rating ^①			Locked Rotor		Maximum Motor (hp)		Maximum Motor (kW)		Catalog Number ^{②③}	
	Inductive Full Load	Resistive		240–277 V	480 V	575 V	115 V	230 V	115 V		230 V
Single-Pole	Single-Pole										
	25	30	150	—	—	—	2	3	1.5	2.2	C25ANB125_
	30	40	150	75	50	—	2	5	1.5	3.7	C25ANB130_
	40	50	240	—	—	—	3	7-1/2	2.2	5.5	C25ANB140_
Single-Pole with Shunt	Single-Pole with Shunt										
	25	30	150	—	—	—	2	3	1.5	2.2	C25CNB125_
	30	40	150	75	50	—	2	5	1.5	3.7	C25CNB130_
	40	50	240	—	—	—	3	7-1/2	2.2	5.5	C25CNB140_
Two-Pole	Two-Pole										
	20	30	120	100	80	—	1-1/2	3	1.1	2.2	C25BNB220_
	25	35	150	125	100	—	2	3	1.5	2.2	C25BNB225_
	30	40	150	125	100	—	2	5	1.5	3.7	C25BNB230_
	40	50	240	200	160	—	3	7-1/2	2.2	5.5	C25BNB240_

Magnet Coil Suffix

AC Coil Voltage 50/60 Hz	Coil Suffix
24	T
110–120	A
208–240	B
277	H
380–415 (50 Hz), 440–480 (60 Hz)	C

Notes

- ① Rating per pole.
- ② Incomplete catalog number. Replace underscore (_) in catalog number with coil suffix letter from the table above.
- ③ Bulk pack quantities are available in quantities of 50, contact local sales office.

Options

When Ordering Specify

To order replace letter in the **6th** position of catalog number with letter **F**. Example: C25BN**F**240A.

Compact Factory Installed Options

Description

Box lugs with quick connects for 20–40 A contactors

Single-pole

Single-pole with shunt

Two-pole

Technical Data and Specifications

20–40 A, Compact Single- and Two-Pole—C25

Description	Specification
Insulation voltage	690 V
Current rated and hp/kw rated contacts	Double break
Magnet coil	Class F, 155 °C
Contact arc covers	Standard on all contactors
Standard power terminals	5/16 in hex washer head screws Quad (4) quick connect terminals on all line and load terminals Box lugs available as option
Line and load terminal designations	Marked on contactors
Operating temperature range	–13 °F to 158 °F (–25 °C to 70 °C)
Terminal wire range	
Hex washer head screws	6–10 AWG, 30 lb-in torque rating
Box lugs	6–10 AWG, 35 lb-in torque rating 8 AWG, 40 lb-in torque rating 6–4 AWG, 45 lb-in torque rating
Mounting position	Vertical, horizontal or tabletop

Coil Characteristics

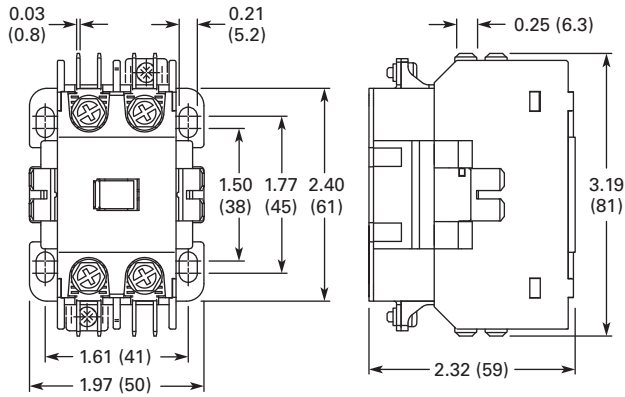
AC Coil Voltage 50/60 Hz	Maximum Inrush VA		Maximum Sealed VA		Sealed Watts
	50 Hz	60 Hz	50 Hz	60 Hz	60 Hz
Single-Pole (with shunt)					
24	55	40	10.0	7.5	3.0
120	55	40	10.0	7.5	3.0
208/240	55	40	10.0	7.5	3.0
277	55	40	10.0	7.5	3.0
Two-Pole					
24	55	45	10.5	8.0	3.5
120	55	45	10.5	8.0	3.5
208/240	55	45	10.5	8.0	3.5
277	55	45	10.5	8.0	3.5
480	55	45	10.5	8.0	3.5

Dimensions

Approximate Dimensions in Inches (mm)

20–40 A, Compact Single- and Two-Pole—C25

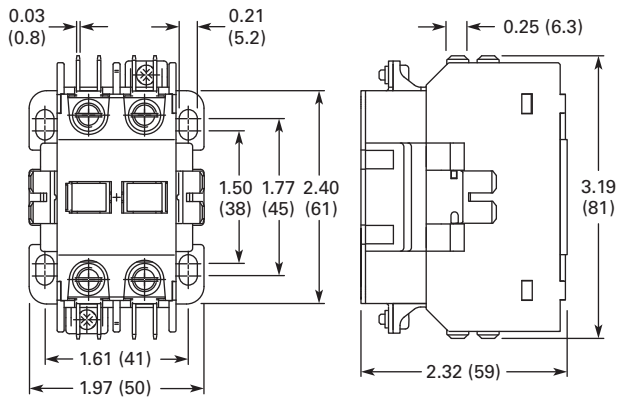
Single-Pole and Single-Pole + Shunt



Approximate Shipping Weight

0.5 lb (0.2 kg)

Two-Pole



Approximate Shipping Weight

0.7 lb (0.3 kg)

15–360 A, Two-, Three- and Four-Pole—C25



15–360 A, Two-, Three- and Four-Pole—C25

Product Description

Eaton offers the most comprehensive line of definite purpose contactors in the industry. Initially designed as an HVAC and refrigeration product, the C25 line is now the market leader and the product of choice for many OEMs and contractors serving diverse markets. Featuring current ratings between 15 A and 360 A, the contactors are dual-rated for inductive and resistive ratings as well as for horsepower and kilowatt ratings.

Other terminal configurations are available, see **Page V5-T4-10**. Contactors will accept add-on auxiliary contacts—order factory assembled or as kits for field installation.

The separately available snap-on mechanical interlock permits interlocking two contactors for reversing or two-speed applications.

Contactors between 15 A and 50 A are offered as two different lines—Standard and Global Listed.

Standard DP Contactors (15–50 A, Two- and Three-Pole)

The standard line of C25 DP contactor features:

- Pressure plates and quick connects are standard on 15–30 A contactors
- Lugs and quick connects are standard on 40 A and 50 A contactors
- Highest electrical life in its class—minimum 200,000 operations
- Universal baseplate allows for easy retrofit of competitive units (optional DIN rail mounting)
- UL recognized design in U.S. and Canada “cURus”
- Accessories including auxiliary contacts, mechanical interlocks and fuse blocks
- RoHS (Reduction of Hazardous Substances) compliant

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Standards and Certifications

- IEC/EN 60947-1 and 60947-4-1 compliance
- UL-Demko CB Scheme Certificate No: DK-27188-UL
- UL Certificate of Conformance Number: 20190222-E1491
- Compliance to UL 60947-4-1 and CSA C22.2 No. 60947-4-1-14, Low-Voltage Switchgear and Controlgear—Part 4-1: Contactors and motor-starters—Electromechanical contactors and motor-starters
- CE mark (Global line only) EN 60947-4-1
- RoHS Compliance (15 A to 50 A and 90 A)



Product Selection

When Ordering Specify

- Catalog number plus magnet coil suffix, see **Page V5-T4-10**
- Catalog numbers of accessory kits required, see Accessories, **Page V5-T4-11**
- Modify catalog number for any options required, see Options, **Page V5-T4-10**

DP Contactor

C25 Contactors—Open Type



Ampere Rating		Line Voltage	Locked Rotor	Maximum Motor (hp)		Maximum Motor (kW)		Number of Poles	Standard DP Contactors		Global Listed Line
Inductive Full Load	Resistive per Pole			Single-Phase	Three-Phase	Single-Phase	Three-Phase		With Baseplate Catalog Number ①	With DIN Rail Adapter Catalog Number ①	With Baseplate Catalog Number ①
15	20	115	90	3/4	—	0.40	—	2	C25DND215_	C25DRD215_	C25DND215_-GL
		230	90	2	3	1.5	2.2	3	C25DND315_	C25DRD315_	C25DND315_-GL
		460	75	—	5	—	3.7				
		575	60	—	5	—	3.7				
25	35	115	150	2	—	1.5	—	2	C25DND225_	C25DRD225_	C25DND225_-GL
		230	150	3	7-1/2	2.2	5.5	3	C25DND325_	C25DRD325_	C25DND325_-GL
		460	125	—	10	—	7.5	4	C25END425_	—	—
		575	100	—	10	—	7.5				
30	40	115	180	2	—	1.5	—	2	C25DND230_	C25DRD230_	C25DND230_-GL
		230	180	5	10	3.7	7.5	3	C25DND330_	C25DRD330_	C25DND330_-GL
		460	150	—	15	—	11	4	C25END430_	—	—
		575	120	—	15	—	11				
40	50	115	240	3	—	2.2	—	2	C25DNF240_	C25DRF240_	C25DNF240_-GL
		230	240	7-1/2	10	5.5	7.5	3	C25DNF340_	C25DRF340_	C25DNF340_-GL
		460	200	—	20	—	15	4	C25ENF440_	—	—
		575	160	—	20	—	15				
50	65	115	300	3	—	2.2	—	2	C25DNJ250_	C25DRJ250_	C25DNJ250_-GL
		230	300	10	15	7.5	11	3	C25DNJ350_	C25DRJ350_	C25DNJ350_-GL
		460	250	—	30	—	22				
		575	200	—	30	—	22				
60	75	115	360	5	—	3.7	—	2	C25FNF260_	—	—
		230	360	10	20	7.5	15	3	C25FNF360_	—	—
		460	300	—	40	—	30				
		575	240	—	40	—	30				
75	90	115	450	5	—	3.7	—	2	C25FNF275_	—	—
		230	450	15	20	11	18.5	3	C25FNF375_	—	—
		460	375	—	50	—	37				
		575	300	—	50	—	37				
90	120	115	540	7-1/2	—	5.5	—	2	C25GNF290_	—	—
		230	540	15	30	11	22	3	C25GNF390_	—	—
		460	450	—	50	—	37				
		575	360	—	50	—	37				
120	140	230	720	—	—	—	—	3	C25HNE3120_	—	—
		460	720								
		575	570								
200	200	240	1200	—	—	—	—	3	C25KNE3200_	—	—
		480	1200								
		600	1000								
300	300	240	1800	—	—	—	—	3	C25KNE3300_	—	—
		480	1800								
		600	1500								
360	360	240	2320	—	—	—	—	3	C25LNE3360_	—	—
		480	2320								
		600	1900								

Note

① Incomplete catalog number. Replace underscore (_) in catalog number with magnet coil suffix from table on **Page V5-T4-10**.

Magnet Coil Suffix

Voltage 60 Hertz	50 Hertz	Coil Suffix
AC ①		
12 ②	12	R
24 ③	24	T
110–120 ④	110–120 ④	A
208 ⑤	—	E
208–240 ⑥	208–240	B
240 ⑦	220	J
277	—	H
—	380–415	L
440–480	440–480	C
550–600 ⑧	550–600	D

Voltage 60 Hertz	Coil Suffix
DC ⑨	
12	1R
24	1T
48	1W
120	1A ⑩

Options

To order C25, C65, A25 and B25 contactors and starters with the factory installed options listed below, change the basic catalog number listed in the product selection table as noted.

Factory Installed Options

Description	Code Letter	Number of Poles
Terminals— 15 A through 50 A		
Binding head screws		
Without quick connect terminals	A	2-, 3-, 4-pole
With quick connect terminals (side-by-side)	B	2-, 3-, 4-pole
With quick connect terminals (vertical in-line)	G	2-, 3-pole
Screw/pressure plate ⑩		
Without quick connect terminals	C	2-, 3-, 4-pole
With quick connect terminals (side-by-side)	D	2-, 3-, 4-pole
With quick connect terminals (vertical in-line)	H	2-, 3-pole
Box lugs (#2 posidrive/slotted screw)		
Without quick connect terminals	E	2-, 3-, 4-pole ⑪
With quick connect terminals (side-by-side)	F	2-, 3-, 4-pole ⑪
With quick connect terminals (vertical in-line)	J	2-, 3-pole
Box lugs (hex socket allen head screw)		
Without quick connect terminals	K	2-, 3-pole
With quick connect terminals (side-by-side)	L	2-, 3-pole
With quick connect terminals (vertical in-line)	M	2-, 3-pole
Terminals— 60 A through 75 A ⑫		
Box lugs (slotted screw)		
Without quick connect terminals	E	2-, 3-pole
With quick connect terminals	F	2-, 3-pole

Auxiliary Contacts (Side Mount)

Add code letter listed below to complete catalog number.

Example: Change C25DND215**A** to C25DND215**AA**.

Auxiliary Contacts—Factory Installed

Description	With Standard Pressure Plate Terminals Code Letter	With Quick Connect Terminals Code Letter	Snap Switch Design with Quick Connect Terminals Code Letter
For 15 A through 90 A ⑬			
1NO	A	F	—
1NC	B	G	—
1NO-1NC	C	H	—
2NO	D	J	—
2NC	E	K	—
For 15 A through 75 A			
1NO-1NC	—	—	L
2NO-2NC	—	—	M
For 120 A through 360 A			
1NO	A	—	—
1NO-1NC	C	—	—
2NO	D	—	—
2NC	E	—	—
Special Marking (Special contactor marking, consult local sales office)			

Notes

- ① Class H AC coils available as option for 15–50 A contactor. Add 2 before AC coil suffix letter.
- ② Available through 75 A.
- ③ Available through 120 A.
- ④ 104–120 V 50/60 Hz for 60 A, 75 A and all four-pole contactors (25 A–40 A).
- ⑤ Available 120–360 A.
- ⑥ Available 15–90 A, others 240 V.
- ⑦ Available through 50 A.
- ⑧ Not available for 90 A.
- ⑨ Contactors with DC coils (only available up to 75 A) include an early break NC auxiliary contact, C320KGD1. See **Page V5-T4-63** for more details.
- ⑩ Available only for 15 A through 75 A contactors and four-pole contactors.
- ⑪ Screw/pressure plate terminals are not available on 50 A contactors.
- ⑫ Four-pole contactors have box lugs with slotted screws.
- ⑬ Replace letter in the 6th position of catalog number with code letter listed. Example: Change C25FNF250 to C25FNE250.
- ⑭ 90 A available only with binding head screw and quick connect terminals.

Accessories—Open and Enclosed Control

Auxiliary Contact Kits (Side Mounted)

Heavy-Duty Pilot Rated for 10 A at 600 Vac

Side Mounted Auxiliary Contact



Circuit	With Standard Pressure Plate Terminals Catalog Number	With Pressure Plate and Quick Connect Terminals Catalog Number
For 15 A through 75 A		
1NO	C320KG1	C320KG11
1NC	C320KG2	C320KG12
1NO-1NC	C320KG3	C320KG13
2NO	C320KG4	C320KG14
2NC	C320KG5	C320KG15

Auxiliary Contact for 90–360 A Contactors



For 90 A		
1NO	—	C320DPG10
1NC	—	C320DPG01
1NO-1NC	—	C320DPG11
2NO	—	C320DPG20

For 120 A through 360 A		
1NO	C320KGS20	—
1NC	C320KGS21	—
1NO-1NC	C320KGS22	—

Side Mounted Snap Switch



Snap Switch Design Side Mounted Auxiliary Contacts (For 15–75 A Contactors Only)

Circuit	Snap Switch Design with Quick Connect Terminals Catalog Number
1NO-1NC	C320SNP11
2NO-2NC	C320SNP22

Magnet Coil Quick Connect Terminal

Description

Extra dual quick connect terminals (U-shaped) for magnet coil terminals ①

Field Installed Options

Description	Catalog Number
Finger-proof shield for 15–50 A	49-7899KIT ②③

① To order, add suffix number **9** to the complete catalog number.
Example: C25DND215A9.

② Kit contains quantity 1 shield.

③ Not for use with Quick Connect terminals on the power poles.

Auxiliary Contact Kits (Top Mounted)

Top Mounted Auxiliary Contact



Heavy-Duty Pilot Rated for 10 A at 600 Vac

With Standard Pressure Plate Terminals		With Standard Pressure Plate Terminals	
Circuit	Catalog Number	Circuit	Catalog Number
For 15 A through 75 A ^①			
1NO	C320KGT1	1NO-2NC	C320KGT11
1NC	C320KGT2	3NC	C320KGT12
1NO-1NC	C320KGT3	4NO	C320KGT13
2NO	C320KGT4	3NO-1NC	C320KGT14
2NC	C320KGT5	2NO-2NC	C320KGT15
3NO	C320KGT9	1NO-3NC	C320KGT16
2NO-1NC	C320KGT10	4NC	C320KGT17

Mechanical Interlock



Mechanical Interlock Kit

Description	Catalog Number
Mechanical interlock kit for 15 A through 75 A	C321KM60B

Solid-State ON DELAY Timer

Side mounted on C25D, C25E and C25F frame.

This timer is designed to be **wired in series with the load** (typically a coil). When the START button is pushed (power applied to timer), the ON DELAY timing function starts. At the completion of the set timing period, timer and series wired load will both be energized.

Solid-State ON DELAY Timer



Solid-State ON DELAY Timer

Timing Range	Catalog Number ^{②③④}
0.1–1.0 seconds	C320TDN1_
1–30 seconds	C320TDN30_
5–30 minutes	C320TDN3000_

Separate Enclosures

NEMA 1 Enclosure



Separate Enclosures—NEMA 1

Application	Catalog Number
15 A through 50 A, two- and three-pole	C799B18
25 A through 40 A, four-pole	C899B001
60 A, two- and three-pole	C899B2001

Notes

- ① Not available for four-pole contactors (15–40 A).
- ② Add operating voltage suffix to catalog number (available voltages vary).
A = 120 V, **B** = 240 V, **E** = 208 V
- ③ Rated 0.5 A pilot duty—not to be used on larger contactors.
- ④ Terminal connections are quick connects only. Two per side.

Technical Data and Specifications

Standard and Global Listed Line

15–360 A, Two-, Three- and Four-Pole—C25

Description	Specification
	Standard and Global Listed
Magnet coil	Class B (C25E, F, G, H and K), 130 °C Class F (C25D and L), 155 °C Class H (C25D), 180 °C (available as factory installed option)
Contacts	Double break
Coil terminals	18 AWG (90 A)
Ambient temperature	150°F (65 °C) maximum
Terminal wire range	
#8–32 binding head screw	14–12 AWG (one conductor-solid)
#8–32 screw/pressure plate	14–8 AWG (one conductor); 14–8 AWG (two conductors)
Box lugs—15–50 A ^①	# 2 posidrive screw or 5/32 hex socket screw Upper level: 14–4 AWG (one conductor) Lower level: 14–6 AWG (one conductor)
Box lugs—60–75 A ^①	Upper level: 14–2 AWG Lower level: 14–6 AWG
Box lugs—90 A	1/0–8 AWG
Box lugs—120 A	3/0–8 AWG
Box lugs—200–300 A	350 kcmil–6 AWG
Box lugs—360 A	750 kcmil–2 AWG

Contactor Torque Ratings

Contactor Size	Terminal	Wire Range	Tightening Torque
15–50 A ^②	8–32 binding head screw	12–14 AWG	22 lb-in
		Screw/pressure plate	8–14 AWG
	Box lug	12–14 AWG	15 lb-in
		10 AWG	25 lb-in
		8 AWG	40 lb-in
60–75 A ^③	Box lug	4–6 AWG	45 lb-in
		10–14 AWG	40 lb-in
		8 AWG	45 lb-in
90 A	Box lug	3–6 AWG	50 lb-in
		1/0–8 AWG	60 lb-in
120 A	Box lug	8 AWG	40 lb-in
		4–6 AWG	45 lb-in
		3–1/0 AWG	50 lb-in
200–300 A	Box lug	6–350 kcmil	200 lb-in
360 A	Box lug	2–750 kcmil	550 lb-in

Notes

- ① The box lugs on the 15–75 A device can accept two conductors per pole.
- ② The box lugs on the 15–50 A device can accept two conductors per pole, the upper section will accept 4–14 AWG and the lower section will accept 6–14 AWG.
- ③ The box lugs on the 60–75 A device can accept two conductors per pole, the upper section will accept 3–14 AWG and the lower section will accept 6–14 AWG.

For Global Line Only

DC Ratings (Global Listed Line Only)

Voltage	Two-Pole, 15–30 A Inductive			Two-Pole, 40 A Inductive			Three-Pole, 15–30 A Inductive			Three-Pole, 40 A Inductive		
	UL/CSA		DC-3/DC-5	UL/CSA		DC-3/DC-5	UL/CSA		DC-3/DC-5	UL/CSA		DC-3/DC-5
	FLA	hp	I _e	FLA	hp	I _e	FLA	hp	I _e	FLA	hp	I _e
240 Vdc three poles in series	—	—	—	—	—	—	4	3/4	4	5	1	5
120 Vdc three poles in series	—	—	—	—	—	—	8	3/4	8	10	1	10
120 Vdc two poles in series	5.5	1/2	5.5	8	3/4	8	5.5	1/2	5.5	8	3/4	8
120 Vdc per pole	2	1/10	2	3.5	1/4	3.5	2	1/10	2	3.5	1/4	3.5
24 Vdc per pole	15	—	15	20	—	20	15	—	15	20	—	20

Lighting Duty Ratings (Global Listed Line Only)

C25D_ Inductive Rating	Tungsten and Ballast (480 V)
25 A	30 A
30 A	40 A
40 A	50 A
50 A	60 A

IEC/CE Ratings (IEC 60947-4-1, EN 60947-4-1) for 15 A through 50 A C25 D-Contactors (Global Listed Line Only)

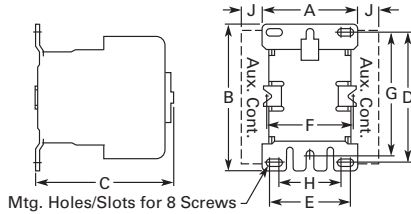
C25D_ Inductive Rating	AC-1 (I _c)		AC-3 (I _e)		AC-4 (I _e)		AC-8a	
	480 V	600 V	480 V	600 V	480 V	600 V	480 V	600 V
15 A	20 A	20 A	15 A	15 A	15 A	—	15 A	15 A
25 A	30 A	30 A	25 A	25 A	25 A	—	25 A	25 A
30 A	40 A	40 A	30 A	30 A	30 A	—	30 A	30 A
40 A	50 A	—	40 A	—	40 A	—	40 A	—
50 A	65 A	65 A	50 A	50 A	50 A	—	50 A	50 A

Dimensions

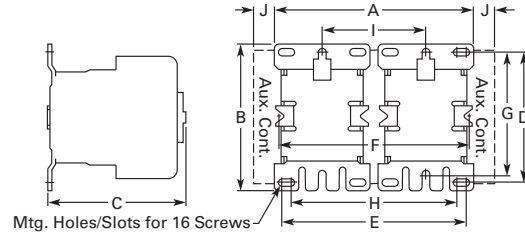
Approximate Dimensions in Inches (mm)

C25 Contactors, Open Type and Open Type—Reversing

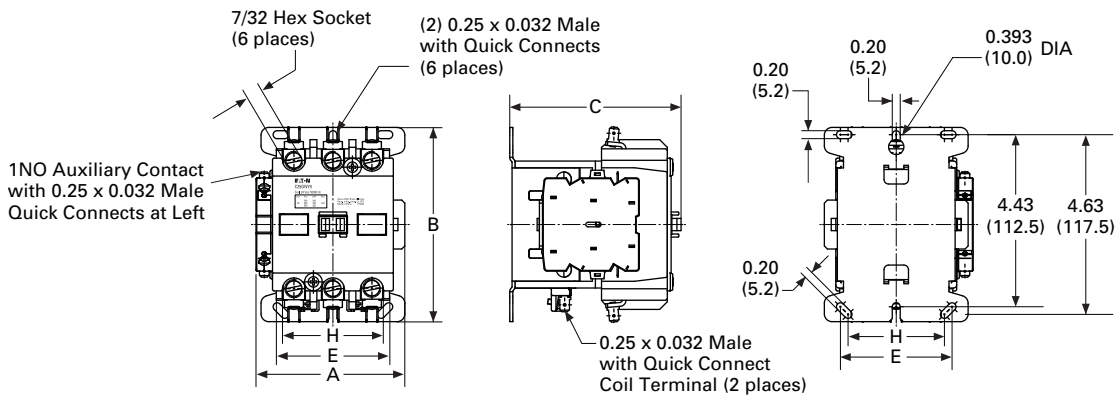
15–75 Ampere (Non-Reversing)



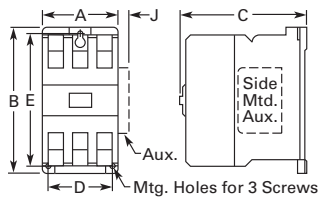
15–75 Ampere (Reversing)



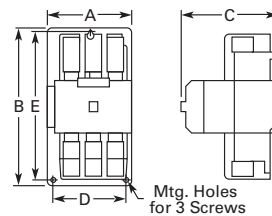
90 Ampere



120 Ampere



200–360 Ampere



Dimensions and Shipping Weights

Ampere Size	Number of Poles	Wide A	High B	Deep C	Mounting D	E	F	G	H	Side Auxiliary Contact Adder J	Shipping Weight Lb (kg)
Open Type											
15–50	2 and 3	2.40 (61.0) ①	3.75 (95.0)	3.35 (85.0)	3.25 (83.0)	2.00 (51.0)	—	3.13 (79.0)	1.50 (38.0)	0.34 (8.6)	1.3 (.6)
25–40	4	2.68 (68.0) ①	3.75 (95.0)	3.38 (86.0)	3.25 (83.0)	2.00 (51.0)	1.50 (38.0)	3.13 (79.0)	1.50 (38.0)	0.50 (12.5)	2.3 (1.0)
60–75	2 and 3	2.63 (67.0) ①	3.75 (95.0)	3.97 (101.0)	3.25 (83.0)	2.00 (51.0)	1.50 (38.0)	3.13 (79.0)	1.50 (38.0)	0.37 (9.5)	2.8 (1.3)
90	2 and 3	3.86 (98.0)	5.00 (127.0)	4.41 (112.0)	—	2.87 (73.0)	—	—	2.48 (63.0)	—	NN (NN)
120	2 and 3	3.54 (90.0)	7.17 (182.0)	5.94 (151.0)	3.00 (76.0)	6.63 (168.0)	—	—	—	0.54 (13.7)	8.5 (3.9)
200 and 300	2 and 3	7.05 (179.0)	9.11 (232.0)	7.25 (184.0)	6.00 (152.0)	8.50 (216.0)	—	—	—	—	20.0 (9.1)
360	2 and 3	7.05 (179.0)	13.12 (333.0)	7.78 (198.0)	6.00 (152.0)	12.50 (318.0)	—	—	—	—	23.0 (10.4)
Open Type—Reversing											
15–50	2 and 3	5.0 (127.0)	3.75 (95.0)	3.35 (85.0)	3.25 (83.0)	4.53 (118.0)	—	3.13 (79.0)	4.13 (105.0)	0.34 (8.6)	2.6 (1.2)
60–75	2 and 3	5.77 (147.0)	3.75 (95.0)	3.97 (101.0)	3.25 (83.0)	5.15 (131.0)	3.15 (80.0)	3.13 (79.0)	4.65 (118.0)	0.37 (9.5)	5.6 (2.5)

Note

① Add 0.30 in (8 mm) to width for C25 contactors with DC coils.

15–40 A, Three-Pole Fuse Block



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15–75 A, Reversing and Two-Speed—C65	V5-T4-19

15–40 A, Three-Pole Fuse Block

Product Description

Designed to save space and reduce installation costs, these three-pole fuse blocks will accommodate a variety of fuse classes and fuse holders to satisfy a wide range of electrical/electronic applications such as commercial space and water heaters, dishwashers, food coolers and sterilizing equipment. They are supplied either factory assembled, mounted and wired to the contactor or in kit form.

Note: Available only on three-pole, 15–50 A contactors

Product Selection

Optional Three-Pole Fuse Block

Available only on three-pole, 15–50 A contactors

Designed to save space and reduce installation costs, these three-pole fuse blocks will accommodate a variety of fuse classes and fuse holders to satisfy a wide range of electrical/electronic applications such as commercial space and water heaters, dishwashers, food coolers and sterilizing equipment. They are supplied either factory assembled, mounted and wired to the contactor or in kit form.

To order factory assembled, add suffix number from table below to catalog number of contactor listed on **Page V5-T4-9**. Example: C25DND325A**361**.

Three-Pole Fuse Block



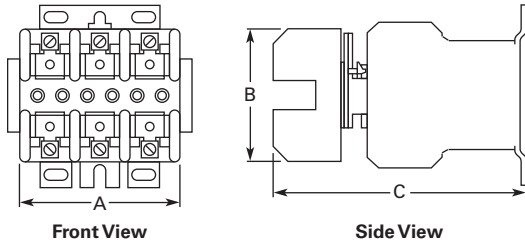
Three-Pole Fuse Blocks

Fuse Holder Volts	Amperes	Fuse Dimensions in Inches (mm)		Terminal Type	Maximum Wire Size	Factory Installed Ordering Suffix	Field Installation Kit Catalog Number
		Diameter	Length				
Class M							
600	30	0.41 (10.4)	1.50 (38.1)	Pressure plate	10 AWG Cu	161	C350KM61
Class G							
600	15	0.41 (10.4)	1.31 (33.3)	Pressure plate	10 AWG Cu	237	C350KG37
	20		1.41 (35.8)	Pressure plate	10 AWG Cu	238	C350KG38
480	30	0.41 (10.4)	1.63 (41.4)	Pressure plate	10 AWG Cu	231	C350KG31
	60		2.25 (57.2)	Box lug	2 AWG Cu/Al	232	C350KG32
Class J							
600	30	0.81 (20.6)	2.25 (57.2)	Pressure plate	10 AWG Cu	361	C350KJ61
	60	1.06 (26.9)	2.38 (60.5)	Box lug	2 AWG Cu/Al	362	C350KJ62
Class T							
300	30	0.41 (10.4)	0.88 (22.4)	Box lug	6 AWG Cu	431	C350KT31
	60	0.56 (14.2)	0.88 (22.4)	Box lug	2 AWG Cu/Al	432	C350KT32
600	30	0.56 (14.2)	1.50 (38.1)	Box lug	6 AWG Cu	461	C350KT61
	60	0.81 (20.6)	1.56 (39.6)	Box lug	2 AWG Cu/Al	462	C350KT62
Class H							
250	30	0.56 (14.2)	2.00 (50.8)	Pressure plate	10 AWG Cu	521	C350KH21
	60	0.81 (20.6)	3.00 (76.2)	Box lug	2 AWG Cu/Al	522	C350KH22
Class R							
250	30	0.56 (14.2)	2.00 (50.8)	Pressure plate	10 AWG Cu	621	C350KR21

Dimensions

Approximate Dimensions in Inches (mm)

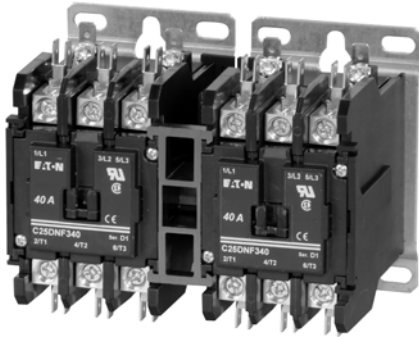
Three-Pole Fuse Block and Contactor



4

Fuse Size Class	Amperes	Volts	Wide A	High B	Deep C
G	15	600	2.41 (61)	2.81 (71)	5.14 (131)
	20		2.41 (61)	2.81 (71)	5.14 (131)
	30	480	2.41 (61)	2.81 (71)	5.14 (131)
	60		2.62 (67)	4.25 (108)	5.18 (132)
H	30	250	3.00 (76)	3.03 (77)	5.33 (135)
	60		4.22 (107)	4.75 (121)	5.86 (149)
J	30	600	4.81 (122)	4.12 (105)	5.92 (150)
	60		4.81 (122)	4.12 (105)	5.92 (150)
M	30	600	2.41 (61)	2.81 (71)	5.14 (131)
R	30	250	3.00 (76)	3.03 (77)	5.33 (135)
	60		4.22 (107)	4.75 (121)	5.86 (149)
T	30	300	3.44 (87)	2.75 (70)	5.43 (138)
	60	300	3.44 (87)	2.75 (70)	5.43 (138)
	30	600	3.75 (95)	3.19 (81)	5.36 (136)
	60	600	4.87 (124)	2.94 (75)	5.68 (144)

15–75 A, Reversing and Two-Speed—C65



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15–75 A, Reversing and Two-Speed—C65	
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Product Selection	V5-T4-20

15–75 A, Reversing and Two-Speed—C65

Product Description

Eaton's C65 reversing contactors are furnished with pressure plates and quick connect terminals as standard on 15, 25 and 30 A devices and with box lugs and quick connect terminals on 40, 50, 60 and 75 A.

Other terminal configurations are available—see Factory Installed Options on **Page V5-T4-11**. Reversing contactors will accept add-on auxiliary contacts on either side—order factory assembled or as kits for field installation. See **Page V5-T4-11**.

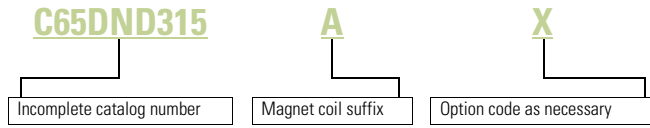
Standards and Certifications

- (15–50 A) UL Certificate of Conformance Number: 20190222-E1491. UL-Demko CB Scheme Certificate No: DK-27188-UL
- IEC/EN 60947-1 and 60947-4-1 compliance
- UL Recognized Components UL File #E-1491, Guide NLDX2
- Compliance to UL 60947-4-1 and CSA C22.2 No. 60947-4-1-14, Low-Voltage Switchgear and Controlgear—Part 4-1: Contactors and motor-starters—Electromechanical contactors and motor-starters
- CE



Catalog Number Selection

15–75 A, Reversing and Two-Speed—C65



When Ordering Specify

- Catalog number plus magnet coil suffix, see **Page V5-T4-21**
- Catalog numbers of accessory kits required, see Accessories, **Page V5-T4-11**
- Modify catalog number for any options required, see Options, **Page V5-T4-10**

Product Selection

C65 Reversing Contactor



Open Type Contactors—Unwired, Mechanically Interlocked Only

Ampere Rating	Inductive Full Load		Line Voltage	Locked Rotor	Maximum Motor (hp)		Maximum Motor (kW)		Number of Poles	Open Type with Metal Mounting Plate	Open Type with DIN Rail Adapter
	Resistive per Pole				Single-Phase	Three-Phase	Single-Phase	Three-Phase		Catalog Number ①	Catalog Number ①
15	20		115	90	3/4	—	0.40	—	2	C65DND215_	C65DRD215_
			230	90	2	3	1.5	2.2	3	C65DND315_	C65DRD315_
			460	75	—	5	—	3.7			
			575	60	—	5	—	3.7			
25	35		115	150	2	—	1.5	—	2	C65DND225_	C65DRD225_
			230	150	3	7-1/2	2.2	5.5	3	C65DND325_	C65DRD325_
			460	125	—	10	—	7.5			
			575	100	—	10	—	7.5			
30	40		115	180	2	—	1.5	—	2	C65DND230_	C65DRD230_
			230	180	5	10	3.7	7.5	3	C65DND330_	C65DRD330_
			460	150	—	15	—	11			
			575	120	—	15	—	11			
40	50		115	240	3	—	2.2	—	2	C65DNF240_	C65DRF240_
			230	240	7-1/2	10	5.5	7.5	3	C65DNF340_	C65DRF340_
			460	200	—	20	—	15			
			575	160	—	20	—	15			
50	65		115	300	3	—	2.2	—	2	C65DNJ250_	C65DRJ250_
			230	300	10	15	7.5	11	3	C65DNJ350_	C65DRJ350_
			460	250	—	30	—	22			
			575	200	—	30	—	22			
60	75		115	360	5	—	3.7	—	2	C65FNF260_	—
			230	360	10	20	7.5	15	3	C65FNF360_	—
			460	300	—	40	—	30			
			575	240	—	40	—	30			
75	90		115	450	5	—	3.7	—	2	C65FNF275_	—
			230	450	15	20	11	18.5	3	C65FNF375_	—
			460	375	—	50	—	37			
			575	300	—	50	—	37			

Note

① Incomplete catalog number. Replace underscore (_) with magnet coil suffix from **Page V5-T4-21**.

Magnet Coil Suffix

Volts 60 Hz	50 Hz	Coil Suffix ^①
12	12	R
24	24	T
110–120 ^②	110–120 ^②	A
208–240	208–240	B
240 ^③	220	J
277	—	H
—	380–415	L
440–480	440–480	C
550–600	550–600	D

Magnet Coil Options**Description**

Extra dual quick connect terminals ("U" shaped) for magnet coil terminals.
To order, add Suffix Number **9** to the complete catalog number.
Example: C65DND315A**9**.

Notes

- ① Class H AC coils available as option for 15–50 A contactor.
Add **2** before AC coil suffix letter.
- ② 104–120 V 50/60 Hz for 60 A, 75 A.
- ③ Available through 50 A.

Standard Fault Ratings

Catalog Number	Device Rating	Short Circuit Rating at 600 Vac	Max Fuse Size—Class RK5 or Equivalent Non-Time Delay	Max Fuse Size—Class RK5 or Equivalent Time Delay	Max Listed Thermal-magnetic Circuit Breaker Size
Globally Listed 15–50 A, Two- and Three-Pole					
C25D__15_-GL	15 A	5 kA	60 A	30 A	60 A
C25D__25_-GL	25 A	5 kA	100 A	50 A	100 A
C25D__30_-GL	30 A	5 kA	110 A	60 A	110 A
C25D__40_-GL	40 A	5 kA	125 A	90 A	150 A
C25D__50_-GL	50 A	5 kA	200 A	110 A	200 A
15–50 A, Two- and Three-Pole					
C25D__15_	15 A	5 kA	60 A	N/A	60 A
C25D__25_	25 A	5 kA	60 A	N/A	60 A
C25D__30_	30 A	5 kA	60 A	N/A	60 A
C25D__40_	40 A	5 kA	110 A	N/A	110 A
C25D__50_	50 A	5 kA	125 A	N/A	125 A
25–40 A, Four-Pole					
C25E__25_	25 A	5 kA	100 A	50 A	100 A
C25E__30_	30 A	5 kA	110 A	60 A	110 A
C25E__40_	40 A	5 kA	125 A	90 A	150 A
60–75 A, Two- and Three-Pole					
C25F__60_	50 A	5 kA	175 A	80 A	175 A
C25F__60_	60 A	5 kA	225 A	100 A	225 A
C25F__75_	75 A	5 kA	250 A	125 A	300 A
90 A, Two- and Three-Pole					
C25G__90_	90 A	10 kA	225 A	—	—
120 A, Two- and Three-Pole					
C25HNE_120_	90 A	10 kA	350 A	200 A	350 A
C25HNE_120_	120 A	10 kA	350 A	200 A	350 A
C25HNE_120_	140 A	10 kA	400 A	200 A	400 A
200 and 300 A, Two- and Three-Pole					
C25KNE3200_	200 A	10 kA	450 A	—	450 A
C25KNE3300_	300 A	10 kA	450 A	—	450 A
360 A, Three-Pole					
C25LNE3360_	360A	10 kA	500 A	—	600 A

High Fault Ratings

Catalog Number	Device Rating	Short Circuit Rating at 600 Vac	Max Fuse Size—Class RK5 or Equivalent Non-Time Delay	Max Fuse Size—Class RK5 or Equivalent Time Delay	Max Listed Thermal-magnetic Circuit Breaker Size
Globally Listed 15–50 A, Two- and Three-Pole					
C25D__15_-GL	15 A	100 kA	60 A	30 A	60 A
C25D__25_-GL	25 A	100 kA	100 A	50 A	60 A
C25D__30_-GL	30 A	100 kA	100 A	50 A	60 A
C25D__40_-GL	40 A	100 kA	100 A	90 A	80 A
C25D__50_-GL	50 A	100 kA	200 A	110 A	100 A
60–75 A, Two- and Three-Pole					
C25FN__60_	50 A	100 kA	100 A	—	—
C25FN__60_	60 A	100 kA	200 A	100 A	—
C25FN__60_	75 A	100 kA	300 A	150 A	—
120 A, Three-Pole					
C25HNE3120_	90 A	50 kA	—	—	250 A
C25HNE3120_	90 A	100 kA	200 A	—	—
C25HNE3120_	120 A	50 kA	—	—	250 A
C25HNE3120_	120 A	100 kA	200 A	—	—
C25HNE3120_	140 A	100 kA at 480 Vac	—	—	300 A
C25HNE3120_	140 A	100 kA	400 A Class J only	—	—

25–60 A, Single- and Three-Phase—A25, B25



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25–60 A, Single- and Three-Phase—A25, B25

Product Description

Eaton A25 and B25 Definite Purpose Starters combine the features and flexibility of the C25 Definite Purpose Contactors and Freedom Series Bi-metallic Ambient Compensated Overload Relays mounted on a common mounting plate.

Features and Benefits

Overload Relay

- Selectable manual or automatic reset operation
- Interchangeable heater packs adjustable $\pm 24\%$ to match motor FLA and calibrated for use with 1.0 and 1.15 service factor motors
- Class 10 or 20 heater packs
- Bimetallic, ambient compensated operated. Trip free mechanism
- Electrically isolated NO-NC contacts (pull RESET button to test)
- Overload trip indication
- Shrouded or fingerproof terminals to reduce possibility of electrical shock
- Single-phase sensitivity

Standards and Certifications

- IEC/EN 60947-1 and 60947-4-1 compliance
- Compliance to UL 60947-4-1 and CSA C22.2 No. 60947-4-1-14, Low-Voltage Switchgear and Controlgear—Part 4-1: Contactors and motor-starters—Electromechanical contactors and motor-starters



Catalog Number Selection

25–60 A, Single- and Three-Phase—A25, B25



When Ordering Specify

- Catalog number plus magnet coil suffix, see **Page V5-T4-25**
Example, order catalog number **A25CNC30A**
- Heater packs for specific FLA of motor, see **Pages V5-T4-27** and **V5-T4-28**

Product Selection

A25 Starter



Single- and Three-Phase Starters—Open Type

Ampere Rating	Line Voltage	Locked Rotor	Maximum Motor (hp)		Maximum Motor (kW)		Single-Phase ^{①②}		Three-Phase ^①	
			Single-Phase	Three-Phase	Single-Phase	Three-Phase	Common Control Catalog Number ^③	Separate Control Catalog Number ^③	Common Control Catalog Number ^③	Separate Control Catalog Number ^③
25	115	150	2	—	1.5	—	B25CNC25_	B25SNC25_	A25CNC25_	A25SNC25_
	230	150	3	7-1/2	2.2	5.5				
	460	125	—	10	—	7.5				
	575	100	—	10	—	7.5				
30	115	180	2	—	1.5	—	B25CNC30_	B25SNC30_	A25CNC30_	A25SNC30_
	230	180	5	10	3.7	7.5				
	460	150	—	15	—	11				
	575	120	—	15	—	11				
40	115	240	3	—	2.2	—	B25CNE40_	B25SNE40_	A25CNE40_	A25SNE40_
	230	240	7-1/2	10	5.5	7.5				
	460	200	—	20	—	15				
	575	160	—	20	—	15				
50	115	300	—	—	—	—	N/A	N/A	A25CNE50_	A25SNE50_
	230	300	—	15	—	11				
	460	250	—	30	—	22				
	575	200	—	30	—	22				
60	115	360	—	—	—	—	N/A	N/A	A25CNE60_	A25SNE60_
	230	360	—	20	—	15				
	460	300	—	40	—	30				
	575	240	—	40	—	30				

Magnet Coil Suffix

Voltage	50 Hertz	Coil Suffix	Voltage	Coil Suffix
60 Hertz			60 Hertz	
AC ^④			DC ^⑤	
12	12	R	12	1R
24	24	T	24	1T
110–120 ^⑥	110–120 ^⑥	A	48	1W
208–240	208–240	B	120	1A
240 ^⑥	220	J		
277	—	H		
—	380–415	L		
440–480	440–480	C		
550–600	550–600	D		

Notes

- ① Starters do not include heater packs. Select heater pack from tables, see **Pages V5-T4-27** and **V5-T4-28**.
- ② Set of three heater packs required for single-phase applications.
- ③ Incomplete catalog number. Replace underscore (_) with magnet coil suffix from table above.
- ④ Class H AC coils available as option for 15–50 A contactor. Add **2** before AC coil suffix letter.
- ⑤ 104–120 V 50/60 Hz for 60 A contactor.
- ⑥ Available through 50 A.
- ⑦ Starters with DC coils include an early breaking auxiliary contact, C320KGD1. See **Page V5-T4-63** for more detail.

Overload Relay

General

Overload relays are provided to protect motors, motor control apparatus and motor-branch circuit conductors against excessive heating due to motor overloads and failure to start. This definition does not include: 1) motor circuits over 600 V, 2) short-circuits, 3) ground faults and 4) fire pump control. (NEC Art. 430-31)

Time Current Characteristics

The time-current characteristics of an overload relay is an expression of performance which defines its operating time at various multiples of its current setting. Tests are run at Underwriters Laboratory (UL) in accordance with NEMA Standards and the NEC.

UL requires—

- When tested at 100 percent of its current rating, the overload relay shall trip ultimately
- When tested at 200 percent of its current rating, the overload relay shall trip in not more than 8 minutes
- When tested at 600 percent of its current rating, the overload relay shall trip in not more than 10 or 20 seconds, depending on the Class of the relay or heater packs

“Current Rating” is defined as the minimum current at which the relay will trip. Per NEC, an overload must ultimately trip at 125% of FLA (Full Load Amperes) current (heater) setting for a 1.15 service factor motor and 115% FLA for a 1.0 service

factor motor. “Current Setting” is defined as the FLA of the motor and thus the overload heater pack setting.

Example: 600% of current rating is defined as 750% (600 x 1.25) of FLA current (heater) setting for a 1.15 service factor motor. A 10 ampere heater setting must trip in 20 seconds or less at 75 amperes motor current for a Class 20 relay.

Overload Relay Setting

FLA Dial Adjustment—

For motors having a 1.15 service factor, rotate the FLA adjustment dial to correspond to the motor’s FLA rating. Estimate the dial position when the motor FLA falls between two letter values as shown in the example.

For motors having a 1.0 service factor, rotate the FLA dial single-half position counterclockwise (CCW).

Manual/Automatic Reset—

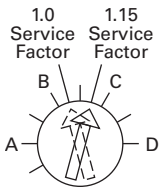
The overload relay is factory set at M for manual reset operation. For automatic reset operation, turn the reset adjustment dial to the A position as shown in the illustration.

Automatic reset is not intended for two-wire control devices.

Test for Trip Indication—

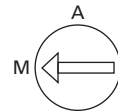
To test overload relay for trip indication when in manual reset, pull out the blue RESET button. An orange flag will appear indicating that the device has tripped. Push RESET button in to reset.

FLA Dial Adjustment



Example of 12.0 FLA setting for heater pack number H2011B showing position for 1.0 or 1.15 service factor motors.

Reset Adjustment Dial



Example of setting for manual reset.

Replacement Overload with Connectors

Starter Size	Overload Part Number
25 and 30 A	10-7125
40 and 50 A	10-7132
60 A	10-7131

Accessories

Contactors Accessories, see **Pages V5-T4-11 and V5-T4-12.**

Locking Cover for Overload Relay

Snap-on transparent or opaque plastic panel for covering access port to the overload relay trip setting dial—helps prevent accidental or unauthorized changes to trip and reset setting.

Locking Cover



Locking Cover for Overload Relay

Description	Minimum Order Quantity (Std. Pkg.)	Catalog Number
Clear cover, no accessibility	50	C320PC3
Gray cover, no accessibility, with auto only nib	50	C320PC4
Gray cover, no accessibility, with manual only nib	50	C320PC5
Gray cover with FLA dial accessibility, A, B, C, D positions and auto only nib	50	C320PC6
Gray cover with FLA dial accessibility, A, B, C, D positions and manual only nib	50	C320PC7

Separate Enclosures

Separate Enclosures—NEMA 1

Application	Catalog Number
25 and 30 A	C899B001
40, 50 and 60 A	C899B2001

Heater Packs

Fast Trip—Class 10 Heater Packs

Manual or Automatic Reset

Heater packs are shipped three to a carton.

Catalog numbers listed below are for three heater packs.

Fast Trip Ratings

Motor Full Load Ampere Rating ^①				Catalog Number ^② (Includes Three Heater Packs)
Dial Position	A	B	C	
	0.26	0.313	0.367	H2101B-3
	0.384	0.464	0.543	H2102B-3
	0.57	0.688	0.806	H2103B-3
	0.846	1.02	1.2	H2104B-3
	1.28	1.55	1.83	H2105B-3
	1.92	2.33	2.74	H2106B-3
	2.3	2.79	3.28	H2107B-3
	3.38	4.1	4.82	H2108B-3
	4.96	6.03	7.09	H2109B-3
	7.07	8.58	10.1	H2110B-3
	9.6	11.2	12.8	H2111B-3
	14.4	17.5	20.7	H2112B-3
	18.7	21.8	25	H2113B-3
	23.5	27.3	31	H2114B-3
	28.3	32.6	37	H2115B-3
	36.6	42.3	48.1	H2116B-3
	53.8	60.8	67.9	H2117B-3

Trip Curves, see **Page V5-T4-29.**

Notes

- ① For motor full load amperes between listed values, adjust dial clockwise for higher or counter-clockwise for lower motor currents. The currents listed are for 1.5 service factor motors. A position adjustment is provided for 1.0 service factor motors.
- ② Set of three heater packs are required for both single- and three-phase applications.

4.3

Definite Purpose Contactors and Starters

Starters

Standard Trip—Class 20 Heater Packs

Manual or Automatic Reset

Heater packs are shipped three to a carton.

Catalog numbers listed below are for three heater packs.

Standard Trip Ratings

Motor Full Load Ampere Rating ^①				Catalog Number ^② (Includes Three Heater Packs)
Dial Position				
A	B	C	D	
0.254	0.306	0.359	0.411	H2001B-3
0.375	0.452	0.53	0.607	H2002B-3
0.56	0.676	0.791	0.907	H2003B-3
0.814	0.983	1.15	1.32	H2004B-3
1.2	1.45	1.71	1.96	H2005B-3
1.79	2.16	2.53	2.9	H2006B-3
2.15	2.6	3.04	3.49	H2007B-3
3.23	3.9	4.56	5.23	H2008B-3
4.55	5.5	6.45	7.4	H2009B-3
6.75	8.17	9.58	11	H2010B-3
9.14	10.8	12.4	14	H2011B-3
14	16.9	19.9	22.8	H2012B-3
18.7	22.7	26.7	30.7	H2013B-3
23.5	28.5	33.5	38.5	H2014B-3
29	34	39.1	44.1	H2015B-3
39.6	45.5	51.5	57.4	H2016B-3
53.9	60.9	67.9	74.9	H2017B-3

Motor Full Load Ampere Rating ^①

Dial Position

A B C D

Catalog Number ^②
(Includes Three Heater Packs)

Trip Curves, see Page V5-T4-29.

Technical Data and Specifications

Terminal Wire Sizes

Line Side (Contactor) ^③

Terminal Type	Wire Range—Solid or Stranded	
	Power Terminals	Coil Terminals
Screw/pressure plate	8–14 AWG	12–16 AWG
Box lug: 25–50 A	4–14 AWG	12–16 AWG
Box lug: 60 A	3–14 AWG	12–16 AWG

Power Terminals—Load—Cu Only (Stranded or Solid)

Terminal	Range	Torque Rating
25 and 30 A	14–6 AWG	20 lb-in (14–10 AWG)
40, 50 and 60 A	14–2 AWG	35 lb-in (14–10 AWG) 40 lb-in (8 AWG) 45 lb-in (6–4 AWG) 50 lb-in (3–2 AWG)

Control Terminals—Cu Only

12–16 AWG stranded, 12–14 AWG solid

A25/B25 Starters

A25/B25 Starter FLA Rating	Short Circuit Rating at 600 Vac	Standard Fault Ratings			High Fault Ratings			
		Maximum Fuse—Class RK5 or Equivalent Non-Time Delay	Maximum Fuse—Class RK5 or Equivalent Time Delay	Maximum Listed Thermal-Magnetic Circuit Breaker	Short Circuit Rating at 600 Vac	Maximum Fuse—Class RK5 or Equivalent Non-Time Delay	Maximum Fuse—Class RK5 or Equivalent Time Delay	Maximum Listed Thermal-Magnetic Circuit Breaker
25 A ^④	5 kA	100 A	50 A	100 A	N/A	N/A	N/A	N/A
30 A ^④	5 kA	110 A	60 A	110 A	N/A	N/A	N/A	N/A
40 A ^④	5 kA	125 A	50 A	150 A	N/A	N/A	N/A	N/A
50 A ^④	5 kA	200 A	110 A	200 A	N/A	N/A	N/A	N/A
60 A ^⑤	5 kA	225 A	125 A	200 A	100 kA	100 A	N/A	N/A

Notes

- ① For motor full load amperes between listed values, adjust dial clockwise for higher or counter-clockwise for lower motor currents. The currents listed are for 1.5 service factor motors. A position adjustment is provided for 1.0 service factor motors.
- ② Set of three heater packs are required for both single- and three-phase applications.
- ③ Line side (contactor) torque ratings can be found on Page V5-T4-13.
- ④ Minimum enclosure volume = 245 cu-in. or Eaton Listed Cat. No. C799B11.
- ⑤ Minimum enclosure volume = 584 cu-in. or Eaton Listed Cat. No. C799B12.

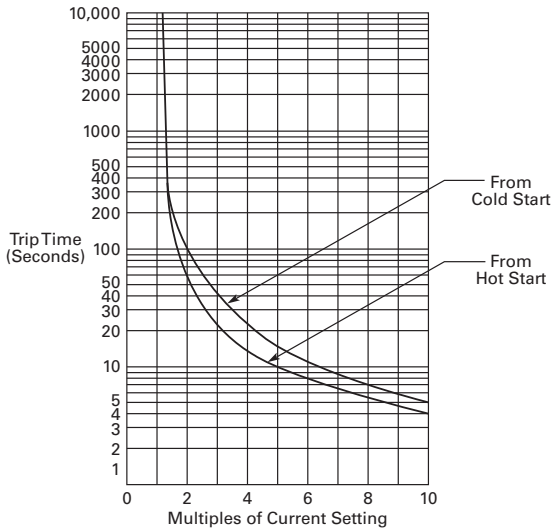
Overload Relay UL/CSA Contact Ratings Control Circuit

AC Volts	120 V	240 V	480 V	600 V
NC Contact B600				
Make and break	30 A	15 A	7.5 A	6 A
Break	3 A	1.5 A	0.75 A	0.6 A
Continuous	5 A	5 A	5 A	5 A
NO Contact C600				
Make and break	15 A	7.5 A	3.375 A	3 A
Break	1.5 A	0.75 A	0.375 A	0.3 A
Continuous	2.5 A	2.5 A	2.5 A	2.5 A

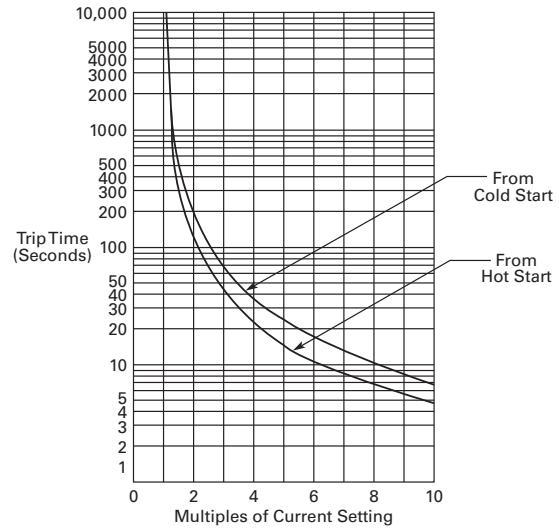
Trip Curves

Bimetallic Ambient Compensated Overload Relay—25 °C Open Rating

Class 10 Overload Relay

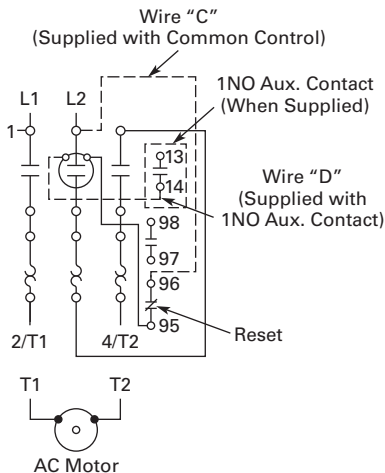


Class 20 Overload Relay

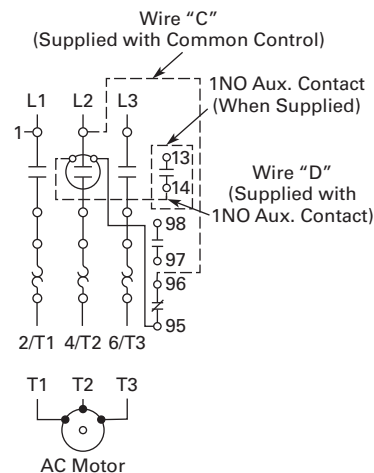


Wiring Diagrams

Single-Phase Connections



Three-Phase Connections



4.3

Definite Purpose Contactors and Starters

Starters

4

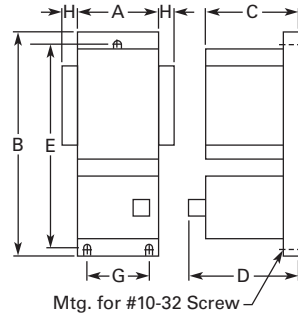
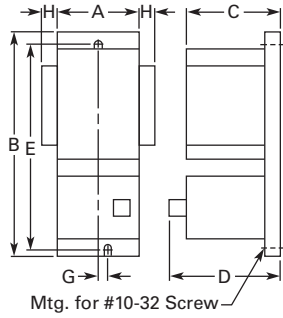
Dimensions

Approximate Dimensions in Inches (mm)

A25 and B25 Starters—Open Type

25 and 30 Ampere

40, 50 and 60 Ampere



Dimensions and Shipping Weights

Ampere Size	Wide A	High B	Deep C	Deep D	Mounting E	Mounting G	Auxiliary Contact Adder H	Shipping Weight Lb (kg)
25 and 30	2.50 (64.0)	7.14 (181.0)	3.56 (90.4)	3.69 (93.7)	6.55 (166.0)	0.20 (5.1)	0.54 (13.7)	1.8 (0.8)
40	2.56 (65.0)	8.08 (205.0)	3.50 (89.0)	3.66 (93.0)	7.50 (190.5)	2.00 (51.0)	0.54 (13.7)	1.8 (0.8)
50 and 60	2.56 (65.0)	8.08 (205.0)	4.15 (105.0)	3.66 (93.0)	7.50 (190.5)	2.00 (51.0)	0.54 (13.7)	3.6 (1.6)

15–45 A, Single- and Three-Phase—A27, B27



Contents

Description	Page
25–60 A, Single- and Three-Phase—A25, B25	V5-T4-24
15–45 A, Single- and Three-Phase—A27, B27	
Catalog Number Selection	V5-T4-32
Product Selection	V5-T4-32
Renewal Parts	V5-T4-34
Technical Data and Specifications	V5-T4-34
Trip Curve	V5-T4-38
Wiring Diagrams	V5-T4-38
Dimensions	V5-T4-39
15–75 A, Single- and Three-Phase—A30 and C440 Electronic Overload Relay	V5-T4-40

15–45 A, Single- and Three-Phase—A27, B27

Product Description

Eaton A27 and B27 Definite Purpose Starters combine the features and flexibility of the C25 Definite Purpose Contactors and **XT** Series Bi-metallic Ambient Compensated Overload Relays.

Features and Benefits

- Selectable manual or automatic reset operation
- Class 10 trip class
- Bimetallic, ambient compensated operated. Trip free mechanism
- Electrically isolated NO-NC contacts (pull TEST button to test)
- Shrouded or fingerproof terminals to reduce possibility of electrical shock
- Single-phase sensitivity

Standards and Certifications

- UL Recognized Components UL File #E-1491, Guide NLDX2
- Compliance to UL 60947-4-1 and CSA C22.2 No. 60947-4-1-14, Low-Voltage Switchgear and Controlgear—Part 4-1: Contactors and motor-starters—Electromechanical contactors and motor-starters
- 15–50 A Standard DP: The UL Certificate of Conformance Number is = 20190222-E1491



4.3

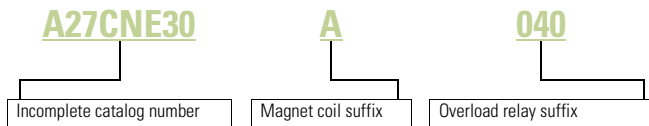
Definite Purpose Contactors and Starters

Starters

Catalog Number Selection

15–45 A, Single- and Three-Phase—A27, B27

4



When Ordering Specify

- Catalog number plus magnet coil suffix plus overload relay suffix, see **Page V5-T4-33**
Example, order catalog number **A27CNE30A040**

Product Selection

A27 Starter



Three-Phase Starter—Open Type

Ampere Rating	Inductive Full Load	Line Voltage	Locked Rotor	Maximum Motor (hp)	Maximum Motor (kW)	Common Control		Separate Control	
						Metal Mounting Plate Catalog Number ①	DIN Rail Adapter Catalog Number ①	Metal Mounting Plate Catalog Number ①	DIN Rail Adapter Catalog Number ①
15	115	115	90	—	—	A27CNC15_	A27CRC15_	A27SNC15_	A27SRC15_
	230	230	90	3	2.2				
	460	460	75	5	3.7				
	575	575	60	5	3.7				
25	115	115	150	—	—	A27CNC25_	A27CRC25_	A27SNC25_	A27SRC25_
	230	230	150	7-1/2	5.5				
	460	460	125	10	7.5				
	575	575	100	10	7.5				
30	115	115	180	—	—	A27CNE30_	A27CRE30_	A27SNE30_	A27SRE30_
	230	230	180	10	7.5				
	460	460	150	15	11				
	575	575	120	15	11				
40	115	115	240	—	—	A27CNE40_	A27CRE40_	A27SNE40_	A27SRE40_
	230	230	240	10	7.5				
	460	460	200	20	15				
	575	575	160	20	15				
45	115	115	270	—	—	A27CNE45_	A27CRE45_	A27SNE45_	A27SRE45_
	230	230	270	15	11				
	460	460	225	30	22				
	575	575	180	30	22				

Note

① Incomplete catalog number. Replace underscore (_) with magnet coil suffix and overload relay suffix from **Page V5-T4-33**.

Single-Phase Starter—Open Type, B27

Ampere Rating Inductive Full Load	Line Voltage	Locked Rotor	Maximum Motor (hp)	Maximum Motor (kW)	Common Control	DIN Rail	Separate Control	DIN Rail
					Metal Mounting Plate	Adapter	Metal Mounting Plate	Adapter
					Catalog Number ①	Catalog Number ①	Catalog Number ①	Catalog Number ①
15	115	90	3/4	0.4	B27CNC15_	B27CRC15_	B27SNC15_	B27SRC15_
	230	90	2	1.5				
	460	75	—	—				
	575	60	—	—				
25	115	150	2	1.5	B27CNC25_	B27CRC25_	B27SNC25_	B27SRC25_
	230	150	3	2.2				
	460	125	—	—				
	575	100	—	—				
30	115	180	2	1.5	B27CNE30_	B27CRE30_	B27SNE30_	B27SRE30_
	230	180	5	3.7				
	460	150	—	—				
	575	120	—	—				
40	115	240	3	2.2	B27CNE40_	B27CRE40_	B27SNE40_	B27SRE40_
	230	240	7-1/2	5.5				
	460	200	—	—				
	575	160	—	—				
45	115	270	3	2.2	B27CNE45_	B27CRE45_	B27SNE45_	B27SRE45_
	230	270	7-1/2	7.5				
	460	225	—	—				
	575	180	—	—				

Magnet Coil Suffix

Voltage 60 Hertz	50 Hertz	Coil Suffix
AC ②		
12	12	R
24	24	T
110–120	110–120	A
208–240	208–240	B
240 ③	220	J
277	—	H
—	380–415	L
440–480	440–480	C
550–600	550–600	D

Voltage 60 Hertz	Coil Suffix
DC ④	
12	1R
24	1T
48	1W
120	1A

Overload Relay Suffix

Motor Full Load Amperes	Suffix Code	For use with Contactor Ampere Range
Frame C		
0.1–0.16	P16	15–25
0.16–0.24	P24	15–25
0.24–0.4	P40	15–25
0.4–0.6	P60	15–25
0.6–1	001	15–25
1–1.6	1P6	15–25
1.6–2.4	2P4	15–25
2.4–4	004	15–25
4–6	006	15–25
6–10	010	15–25
10–16	016	15–25
16–24	024	15–25
24–32	032	15–25
Frame D		
6–10	010	30–45
10–16	016	30–45
16–24	024	30–45
24–40	040	30–45
40–57	057	30–45

Notes

- ① Incomplete catalog number. Replace underscore (_) with magnet coil suffix and overload relay suffix from tables above.
- ② Class H AC coils available as option. Add **2** before AC coil suffix letter.
- ③ Available through 45 A.
- ④ Starters with DC coils include an early breaking auxiliary contact, C320KGD1. See **Page V5-T4-63** for more detail.

Renewal Parts

Overload Relays

Motor Full Load Amperes	Suffix Code	For use with Contactor Ampere Range	Overload Relay Catalog Number
Frame C			
0.1–0.16	P16	15–25	XTOBP16CC1DP
0.16–0.24	P24	15–25	XTOBP24CC1DP
0.24–0.4	P40	15–25	XTOBP40CC1DP
0.4–0.6	P60	15–25	XTOBP60CC1DP
0.6–1	001	15–25	XTOB001CC1DP
1–1.6	1P6	15–25	XTOB1P6CC1DP
1.6–2.4	2P4	15–25	XTOB2P4CC1DP
2.4–4	004	15–25	XTOB004CC1DP
4–6	006	15–25	XTOB006CC1DP
6–10	010	15–25	XTOB010CC1DP
10–16	016	15–25	XTOB016CC1DP
16–24	024	15–25	XTOB024CC1DP
24–32	032	15–25	XTOB032CC1DP
Frame D			
6–10	010	30–45	XTOB010DC1DP
10–16	016	30–45	XTOB016DC1DP
16–24	024	30–45	XTOB024DC1DP
24–40	040	30–45	XTOB040DC1DP
40–57	057	30–45	XTOB057DC1DP

Technical Data and Specifications

Terminal Wire Sizes

Line Side (Contactor) ①	Wire Range—Solid or Stranded	
	Power Terminals	Coil Terminals
Screw/pressure plate	8–14 AWG	12–16 AWG
Box lug: 15–45 A	4–14 AWG	12–16 AWG

Note

① Line side (contactor) torque ratings can be found on **Page V5-T4-13**.

Power Terminals—Load—Cu Only (Stranded or Solid)

Terminal	Range	Torque Rating
15 and 25 A	14–8 AWG	16 lb-in (14–8 AWG)
30, 40 and 45 A	14–2 AWG	31 lb-in (14–2 AWG)

Control Terminals—Cu Only

12–16 AWG stranded, 12–14 AWG solid

Overload Relays

These tripping characteristics are the mean values of the spread at 20 °C ambient temperature in a cold state.

Tripping time depends on response current. With devices at operating temperature, the tripping time of the overload relay reduces to approximately 25% of the read off value. Specific characteristics for each individual setting range can be found in MN03402001E.

Overload Relays

Description	XTOB ... CC1 Specification	XTOB ... DC1 Specification
General		
Climatic proofing	Damp heat, constant, to IEC 60068-2-78; Damp heat, cyclic, to IEC 60 068-2-30	
Ambient temperature range ^①	-25 °C to 50 °C [-13 °F to 122 °F]	
Temperature compensation	Continuous	
Mechanical shock resistance (IEC/EN 60068-2-27)		
Half-sinusoidal shock 10 ms	10g	
Degree of protection	IP20	
Protection against direct contact when actuated from front (IEC 536)	Finger and back of hand proof	
Insulation voltage (U _i) Vac	690	
Overvoltage category/pollution degree	III/3	
Impulse withstand voltage (U _{imp}) Vac	6000	
Operational voltage (U _e) Vac	690	
Safe isolation to VDE 0106 Part 101 and Part 101/A1		
Between auxiliary contacts and main contacts (Vac)	440	
Between main contacts (Vac)	440	
Overload relay setting range	0.1–32 A	6–75 A
Temperature compensation residual error >20 °C (%/K)	≤0.25	
Current heat loss (3 conductors) w		
Lower value of setting range, W	2.5	3
Upper value of setting range, W	6	7.5
Terminal capacity	2 x (1–6)	
Solid, mm ²	2 x (1–4)	1 x 25
Flexible with ferrule, mm ²	2 x (1–6) ^②	2 x (1–10) ^③
Solid or stranded, AWG	14-8	14-2
Terminal screw	M4	M6
Tightening torque Nm (lb-in)	1.8 (16)	3.5 (31)
Tools		
Pozidrive screwdriver	Size 2	
Standard screwdriver	1 x 6	

Notes

① Ambient temperature operating range to IEC/EN 60947, PTB: -5 °C to 50 °C [23 °F to 122 °F].

② 6 mm² flexible with ferrules to DIN 46228.

③ Main contact terminal capacity, solid and stranded conductors with ferrules: When using two conductors use identical cross-section.

Overload Relays, continued

Description	XTOB ... CC1 Specification	XTOB ... DC1 Specification
Auxiliary and Control Circuit Connections		
Impulse withstand voltage (U_{imp}) Vac		6000
Overvoltage category/pollution degree		III/3
Terminal capacity		
Solid, mm ²		2 x (0.75–4)
Flexible with ferrule, mm ²		2 x (0.75–2.5)
Solid or stranded, AWG		2 x (18–12)
Terminal screw		M3.5
Tightening torque Nm (lb-in)		0.8–1.3 (7–11.5)
Tools		
PoziDrive screwdriver		Size 2
Standard screwdriver		1 x 6
Auxiliary circuit rated insulation voltage (U_j) Vac		500
Rated operational voltage (U_e) Vac		500
Safe isolation to VDE 0106 Part 101 and Part 101/A1 Between the auxiliary contacts (Vac)		240
Conventional thermal current, I_{th}		6
Rated operational current—AC-15		
NO contact		
120 V		1.5
240 V		1.5
415 V		0.5
500 V		0.5
NC contact		
120 V		1.5
240 V		1.5
415 V		0.9
500 V		0.8
Rated operational current—DC-13 L/R ≤15 ms ^①		
NO contact		
24 V		0.9
60 V		0.75
110 V		0.4
220 V		0.2
Short-circuit rating without welding maximum fuse, A gG/gL		6

Note

① Rated operational current: Making and breaking conditions to DC-13, L/R constant as stated.

A27/B27 Starters

A27/B27 FLA Rating	FLA Dial Range	Standard Fault Ratings			Max Listed Circuit Breaker (A)
		SCCR at 600 Vac	Max Fuse—Class RK5 or Equivalent Non-Time Delay (A)	Max Fuse—Class RK5 or Equivalent Time Delay (A)	
15 and 25	0.1 to 0.16 A	5 kA	1	—	—
	0.16 to 0.24 A	5 kA	1	—	—
	0.24 to 0.4 A	5 kA	1	—	—
	0.4 to 0.6 A	5 kA	1	—	—
	0.6 to 1.0 A	5 kA	3	—	—
	1.0 to 1.6 A	5 kA	6	—	—
	1.6 to 2.4 A	5 kA	6	—	—
	2.4 to 4.0 A	5 kA	15	6	15
	4 to 6 A	5 kA	20	6	20
	2.4 to 4.0 A	5 kA	15	6	15
	4 to 6 A	5 kA	20	6	20
	6 to 10 A	5 kA	20	—	20
	9 to 12 A	5 kA	20	—	20
	10 to 16 A	5 kA	60	25	20
	16 to 24 A	5 kA	90	40	90
24 to 32 A	5 kA	90	40	100	
30	6 to 10 A	5 kA	20	—	15
	10 to 16 A	5 kA	60	25	60
	16 to 24 A	5 kA	70	—	70
	24 to 40 A	5 kA	110	50	110
40	6 to 10 A	5 kA	40	20	40
	10 to 16 A	5 kA	40	—	40
	16 to 24 A	5 kA	90	40	90
	24 to 40 A	5 kA	125	50	125
	40 to 57 A	5 kA	150	—	150
45	6 to 10 A	5 kA	40	20	40
	10 to 16 A	5 kA	40	—	40
	16 to 24 A	5 kA	90	40	90
	24 to 40 A	5 kA	125	50	125
	40 to 57 A	5 kA	150	—	150

Note: A “—” indicates this type of branch circuit protection shall not be used for this starter dial range.

4.3

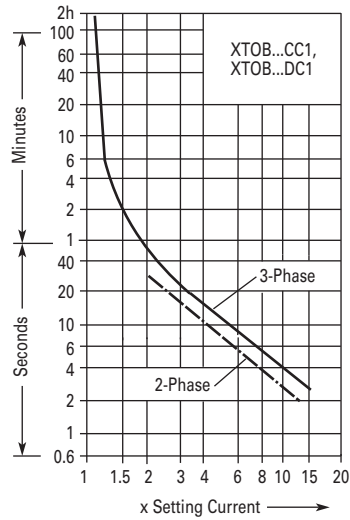
Definite Purpose Contactors and Starters

Starters

Trip Curve

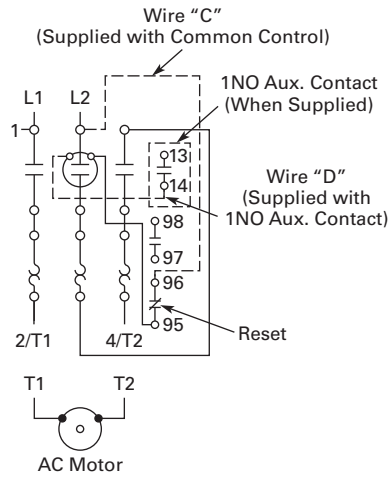
Overload Relay

4

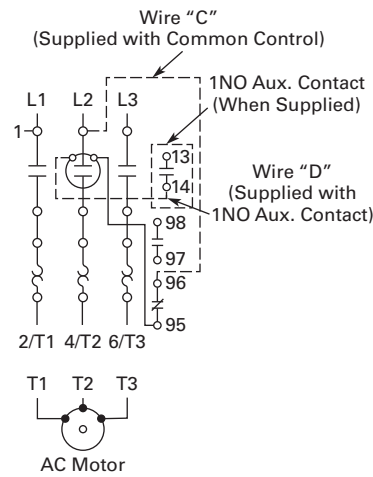


Wiring Diagrams

Single-Phase Connections



Three-Phase Connections

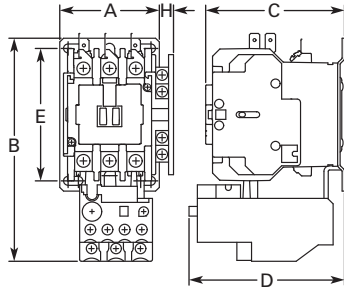


Dimensions

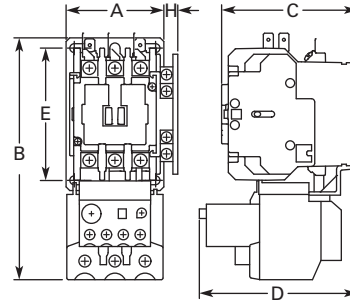
Approximate Dimensions in Inches (mm)

A27 and B27 Starters—Open Type

15 and 25 Ampere



30, 40 and 45 Ampere



Dimensions and Shipping Weights

Ampere Size	Wide A	High B	Deep C	Deep D	Mounting E	Mounting G	Auxiliary Contact Adder H	Shipping Weight Lb (kg)
15 and 25 (metal plate)	2.40 (61.0)	5.50 (139.0)	3.35 (85.0)	3.70 (94.0)	3.13 (82.6)	—	0.54 (13.7)	1.6 (0.7)
15 and 25 (DIN rail mount)	2.23 (56.5)	5.20 (133.0)	3.35 (85.0)	3.70 (94.0)	—	—	0.54 (13.7)	1.6 (0.7)
30, 40 and 45 (metal plate)	2.40 (61.0)	6.00 (152.0)	3.35 (85.0)	3.90 (98.0)	3.13 (82.6)	—	0.54 (13.7)	1.11 (0.9)
30, 40 and 45 (DIN rail mount)	2.23 (56.5)	5.70 (145.0)	3.35 (85.0)	3.90 (98.0)	—	—	0.54 (13.7)	1.11 (0.9)

15–75 A, Single- and Three-Phase—A30 and C440 Electronic Overload Relay



Contents

<i>Description</i>	<i>Page</i>
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15–75 A, Three-Phase—A30 and C440 Electronic Overload Relay

Product Description

A30 Starters

Eaton A30 Definite Purpose Starters combine the features and flexibility of the C25 Definite Purpose Contactors and C440 Electronic Overload Relays.

C440 Overload

C440 is the most compact, high-featured, economical product in its class.

C440 is a self-powered electronic overload relay available up to 100 A as a self contained unit. With external CTs, C440 can protect motor up to 1500 FLA. Available add-on accessories include remote reset capability and communication modules with I/O for DeviceNet, PROFIBUS, and Modbus.

Features

A30 Starters

- Standard version: selectable trip class (10A, 10, 20, 30) with selectable manual or auto reset
- Current adjustment range: 5:1
- Self-powered design—will accept AC voltages from 12 to 690 V 50/60 Hz
- Ambient temperature compensation
- Low heat generation
- Phase loss protection
- Phase unbalance protection
- Electrically isolated 1NO-1NC contacts (push-to-test)
- Trip status indicator

C440 Overload

- Reliable, accurate, electronic motor protection
- Easy to select, install and maintain
- Compact size
- Flexible, intelligent design
- Global product offering—available with NEMA, IEC and DP power control

Motor Control

- Two B600 alarm (NO) and fault (NC) contacts
- Test/Trip button

Motor Protection

- Thermal overload
- Phase loss
- Selectable (ON/OFF) phase unbalance
- Selectable (ON/OFF) ground fault

User Interface

- Large FLA selection dial
- Trip status indicator
- Operating mode LED
- DIP switch selectable trip class, phase unbalance and ground fault
- Selectable Auto/Manual reset

Feature Options

- Remote reset
 - 120 Vac
 - 24 Vac
 - 24 Vdc
- Tamper-proof cover

Standards and Certifications

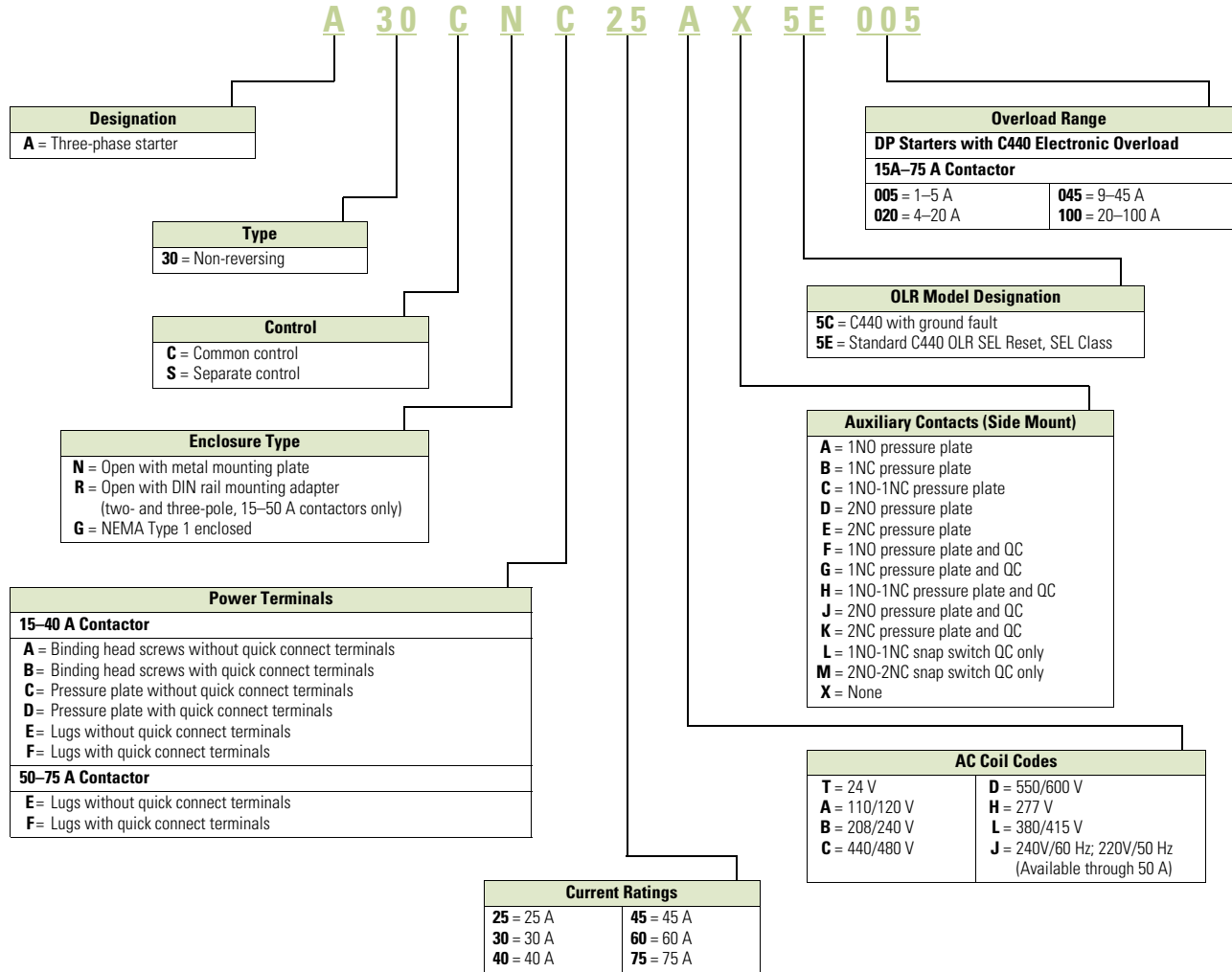
A30 Starters

- UL Recognized Components UL File #E-1491, Guide NLDX2
- Components compliant to UL 60947-4-1 and CSA C22.2 No. 60947-4-1-14, Low-Voltage Switchgear and Controlgear—Part 4-1: Contactors and motor-starters—Electromechanical contactors and motor-starters
- cRUus Components
- RoHS Certified Components



Catalog Number Selection

A30 Definite Purpose Starters



Product Selection

When Ordering Specify

- Catalog number plus AC coil code, auxiliary contact code, OLR model designation and overload range code, see below

4

A30 Starter



Three-Phase Starters—Open Type A30 with C440 Electronic Overload

Ampere Rating					Common Control		Separate Control	
Inductive Full Load	Line Voltage	Locked Rotor	Maximum Motor (hp)	Maximum Motor (kW)	Metal Mounting Plate Catalog Number ①	DIN Rail Adapter Catalog Number ①	Metal Mounting Plate Catalog Number ①	DIN Rail Adapter Catalog Number ①
25	115	150	—	—	A30CNC25_	A30CRC25_	A30SNC25_	A30SRC25_
	230	150	7-1/2	5-1/2				
	460	125	10	7-1/2				
	575	100	10	7-1/2				
30	115	180	—	—	A30CNE30_	A30CRE30_	A30SNE30_	—
	230	180	10	7-1/2				
	460	150	15	11				
	575	120	15	11				
40	115	240	—	—	A30CNE40_	A30CRE40_	A30SNE40_	A30SRE40_
	230	240	10	7-1/2				
	460	200	20	15				
	575	160	20	15				
45	115	300	—	—	A30CNE45_	A30CRE45_	A30SNE45_	A30SRE45_
	230	300	15	11				
	460	250	30	22				
	575	200	30	22				
60	115	360	—	—	A30CNE60_	—	A30SNE60_	—
	230	360	20	15				
	460	300	40	30				
	575	340	40	30				
75	115	450	—	—	A30CNE75_	—	A30SNE75_	—
	230	450	20	18-1/2				
	460	375	50	37				
	575	300	50	37				

C440 Electronic Overload Relay



C440 Electronic Overload Relay for Integrated Use with DP Contactors

C440 Overload Relay for Integrated Use with DP Contactors by Feature Set

FLA Range (Amps)	DP Contactor Rating	Suffix Code	Overload Relay Catalog Number (Standard)	Overload Relay Catalog Number (Ground Fault)
Frame D				
1–5	25–50 A	005	C440A1A005SDD	C440A2A005SDD
4–20	25–50 A	020	C440A1A020SDD	C440A2A020SDD
9–45	25–50 A	045	C440A1A045SDD	C440A2A045SDD
Frame F				
20–100	60–75 A	100	C440B1A100SDF	C440B2A100SDF




Note

① Incomplete catalog number. Replace underscore (_) with suffix, see table above.

Accessories

CT Kits

Accessories

	Description	Catalog Number
Safety Cover 	Safety Cover Clear Lexan cover that mounts on top of the FLA dial and DIP switches when closed.	ZEB-XSC
Reset Bar 	Reset Bar Assembles to the top of the overload to provide a larger target area for door mounted reset operators.	ZEB-XRB
Remote Reset 	Remote Reset Remote reset module (24 Vdc) ^①	C440-XCOM
	Remote reset module (120 Vac) ^①	ZEB-XRR-120
	Remote reset module (24 Vac) ^①	ZEB-XRR-24

Note

^① Customer can wire remote mounted button to reset module (that is, 22 mm pushbutton, catalog number M22-D-B-GB14-K10).

Technical Data and Specifications

Electronic Overload Relays up to 1500 A

Description	Specification	
	Frame D Overload (45 mm)	Frame F Overload (55 mm)
Use with Contactors		
DP contactors	25–50 A	60, 75 A
Electrical Ratings		
		Range
Operating voltage (three-phase) and frequency	690 Vac (60/50 Hz)	
FLA Range		
	0.33–1.65 A 1–5 A 4–20 A 9–45 A	20–100 A
Trip Class		
	10 A, 10, 20, 30 Selectable	
Motor Protection		
Thermal overload setting	1.05 x FLA: does not trip 1.15 x FLA: overload trip	
Feature		
		Range
Phase loss	Fixed threshold 50%	
Phase unbalance (selectable: enable/disable)	Fixed threshold 50%	
Ground fault (selectable: enable/disable)	50% of FLA dial setting >150% = 2 sec >250% = 1 sec	
Reset	Manual/automatic	
Indicators		
Trip status	Orange flag	
Mode LED	One flash: Overload operating properly Two flashes: Current is above FLA dial setting—pending trip	
Options		
Remote reset	Yes	
Reset bar	Yes	
Communication expansion module	Yes	
Communication adapter	Yes	
Capacity		
Load terminals		
Terminal capacity	12–10 AWG (4–6 mm ²) 8–6 AWG (6–16 mm ²)	6–1 AWG (16–50 mm ²)
Tightening torque	20–25 lb-in (2.3–2.8 Nm) 25–30 lb-in (2.8–3.4 Nm)	25–30 lb-in (2.8–3.4 Nm)
Input, auxiliary contact and remote reset terminals		
Terminal capacity	2 x (18–12) AWG	
Tightening torque	5.3 lb-in (0.8–1.2 Nm)	
Voltages		
Insulation voltage U _i (three-phase)	690 Vac	
Insulation voltage U _i (control)	500 Vac	
Rated impulse withstand voltage	6000 Vac	
Overvoltage category/pollution degree	III/3	

Electronic Overload Relays up to 1500 A, continued

Description	Specification	
	Frame D Overload (45 mm)	Frame F Overload (55 mm)
Auxiliary and Control Circuit Ratings		
Conventional thermal continuous current		5 A
Rated operational current—IEC AC-15		
Make contact (1800 VA)		
120 V		15 A
240 V		15 A
415 V		0.5 A
500 V		0.5 A
Break contact (180 VA)		
120 V		1.5 A
240 V		1.5 A
415 V		0.9 A
500 V		0.8 A
IEC DC-13 (L/R F 15 ms1)		
0–250 V		1.0 A
Rated operational current—UL B600		
Make contact (3600 VA)		
120 V		30 A
240 V		15 A
480 V		7.5 A
600 V		6 A
Break contact (360 VA)		
120 V		3 A
240 V		1.5 A
480 V		0.75 A
600 V		0.6 A
R300—Vdc ratings (28 VA)		
0–120 V		0.22 A
250 V		0.11 A
Short-Circuit Rating without Welding		
Maximum fuse		6A gG/gL
Environmental Ratings		
Ambient temperature (operating)	–13 °F to 149 °F (–25 °C to 65 °C)	
Ambient temperature (storage)	–40 °F to 185 °F (–40 °C to 85 °C)	
Operating humidity UL 991 (H3)	5% to 95% noncondensing	
Altitude (no derating) NEMA ICS1	2000 m	
Shock (IEC 600068-2-27)	15 g any direction	
Vibration (IEC 60068-2-6)	3 g any direction	
Pollution degree per IEC 60947-4-1	3 for product (2 for pcb)	
Ingress protection	IP20	
Protection against direct contact when actuated from front (IEC 536)	Finger- and back-of-hand proof	
Mounting position	Any	
Climatic proofing	Damp heat, constant to IEC 60068-2-30	

Electronic Overload Relays up to 1500 A, continued

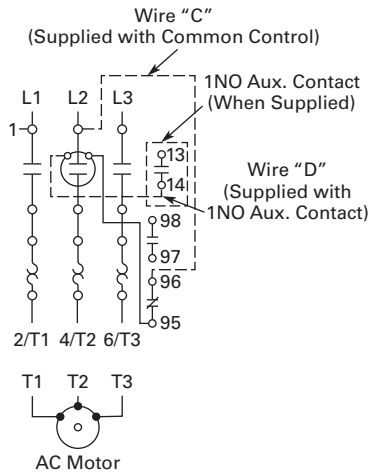
Description	Specification	
	Frame D Overload (45 mm)	Frame F Overload (55 mm)
Electrical/EMC		
Radiated emissions IEC 60947-4-1-Table 15 EN 55011 (CISPR 11) Group 1, Class A, ISM		30 MHz to 1000 MHz
Conducted emissions IEC 60947-4-1-Table 14 EN 55011 (CISPR 11) Group 1; Class ISM		0.15 MHz to 30 MHz
ESD immunity IEC 60947-4-1 (Table 13)		±8 kV air, ±6 kV contact
Radiated immunity IEC 60947-4-1 IEC 61000-4-3		10V/m 80 MHz–1000 MHz 3V/m from 1.4 to 2.7 GHz 80% amplitude modulated 1 kHz sine wave
Conducted immunity IEC 60947-4-1, IEC 61000-4-6		140 dB (10 V rms) 150 kHz–100 MHz
Fast transient immunity IEC 60947-4-1 (Table 13) IEC 61000-4-4		±4 kV using direct method with accessory installed in expansion bay ±2 kV using direct method
Surge immunity IEC 60947-4-1 (Table 13) IEC 61000-4-5 a Class 4		Three-phase power inputs: ±4 kV line-to-line (DM) ±4 kV line-to-ground (CM) With accessory installed in expansion bay: ±2 kV line-to-line (DM) →1.2/50 us; 2 kV line-to-earth, 1 kV line-to-line ±4 kV line-to-ground (CM)
Power freq. magnetic field immunity IEC 60947-4-1, IEC 61000-4-8		30A/m, 50 Hz
Electromagnetic field IEC 60947-4-1 Table 13, IEC 61000-4-3		10 V/m
Distortion IEEE 519		5% THD max., 5th harmonic 3% max.
Electrostatic discharge (ESD) IEC 61000-4-2, EN 61131-2		4 kV contact 8 kV air discharge
Electrical fast transient (EFT) IEC 61000-4-4, EN 61131-2		±2 kV using direct method
Surge immunity IEC 61000-4-5, EN 61131-2		±2 kV line-to-ground (CM)

A30 Starters

A30 Starter FLA Rating	C440 Overload FLA Range (Amps)	Standard Fault Ratings				High Fault Ratings			
		Short Circuit Rating at 600 Vac	Maximum Class RK5 Non-time Delay Fuse	Maximum Class RK5 Time Delay Fuse	Maximum Listed Circuit Breaker	Short Circuit Rating	Maximum Class J Non-time Delay Fuse	Maximum Class J Time Delay Fuse	Maximum Listed Circuit Breaker
25	1–5	5 kA	20 A	10 A	20 A	100 kA at 600 Vac	20 A	10 A	—
						65 kA at 480 Vac	—	—	20 A
	4–20	5 kA	80 A	45 A	80 A	100 kA at 600 Vac	80 A	45 A	—
30	4–20	5 kA	80 A	45 A	80 A	100 kA at 600 Vac	80 A	45 A	—
						65 kA at 480 Vac	—	—	60 A
	9–45	5 kA	110 A	50 A	110 A	100 kA at 600 Vac	100 A	50 A	—
40	9–45	5 kA	125 A	70 A	150 A	100 kA at 600 Vac	100 A	—	—
						65 kA at 480 Vac	—	—	80 A
	9–45	5 kA	175 A	100 A	175 A	100 kA at 600 Vac	100 A	—	—
45	9–45	5 kA	175 A	100 A	175 A	100 kA at 600 Vac	100 A	—	—
						65 kA at 480 Vac	—	—	100 A
	20–100	10 kA	225 A	125 A	225 A	100 kA at 600 Vac	200 A	100 A	—
75	20–100	10 kA	250 A	125 A	300 A	100 kA at 600 Vac	200 A	—	—

Wiring Diagrams

Three-Phase Connections



4.4

Definite Purpose Contactors and Starters

NEMA Type 1 Enclosed Control

15–60 A Contactors—C25



4

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15–60 A Contactors—C25	
Catalog Number Selection	V5-T4-49
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Dimensions	V5-T4-50
25–60 A Starters—A25, B25	V5-T4-51
15–45 A Starters—A27, B27	V5-T4-54
Options	V5-T4-58
Technical Data and Specifications	V5-T4-59

15–60 A Contactors—C25

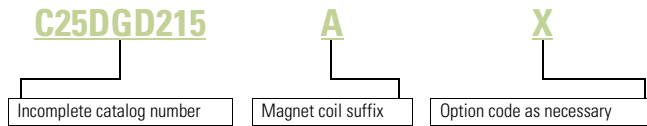
Product Description

Eaton offers the Definite Purpose Contactors and Starters in NEMA 1 enclosures. The C25 contactors are available as enclosed. The A25 and B25 Definite Purpose Starters

combine the features and flexibility of the C25 Definite Purpose Contactors and Freedom Series Bimetallic Ambient Compensated Overload Relays mounted on a common mounting plate.

Catalog Number Selection

15–60 A Contactors—C25



When Ordering Specify

- Catalog number plus magnet coil suffix, see **Page V5-T4-50**
- Modify catalog number for any options required, see Options, **Page V5-T4-58**

Product Selection

C25 Enclosed



Two-, Three- and Four-Pole NEMA Type 1 Enclosed Contactors

Ampere Rating		Line Voltage	Locked Rotor	Maximum Motor (hp)		Maximum Motor (kW)		Number of Poles	NEMA Type 1 Catalog Number ①
Inductive Full Load	Resistive per Pole			Single-Phase	Three-Phase	Single-Phase	Three-Phase		
15	20	115	90	3/4	—	0.40	—	2	C25DGD215_
		230	90	2	3	1.5	2.2	3	C25DGD315_
		460	75	—	5	—	3.7	—	—
		575	60	—	5	—	3.7	—	—
25	35	115	150	2	—	1.5	—	2	C25DGD225_
		230	150	3	7-1/2	2.2	5.5	3	C25DGD325_
		460	125	—	10	—	7.5	4	C25EGD425_
		575	100	—	10	—	7.5	—	—
30	40	115	180	2	—	1.5	—	2	C25DGD230_
		230	180	5	10	3.7	7.5	3	C25DGD330_
		460	150	—	15	—	11	4	C25EGD430_
		575	120	—	15	—	11	—	—
40	50	115	240	3	—	2.2	—	2	C25DGF240_
		230	240	7-1/2	10	5.5	7.5	3	C25DGF340_
		460	200	—	20	—	15	4	C25EGF440_
		575	160	—	20	—	15	—	—
50	65	115	300	3	—	2.2	—	2	C25DGJ250_
		230	300	10	15	7.5	11	3	C25DGJ350_
		460	250	—	30	—	22	—	—
		575	200	—	30	—	22	—	—
60	75	115	360	5	—	3.7	—	2	C25FGF260_
		230	360	10	20	7.5	15	3	C25FGF360_
		460	300	—	40	—	30	—	—
		575	240	—	40	—	30	—	—

Note

① Incomplete catalog number. Replace underscore (_) in catalog number with magnet coil suffix from table on **Page V5-T4-50**.

4.4

Definite Purpose Contactors and Starters

NEMA Type 1 Enclosed Control

4

Magnet Coil Suffix

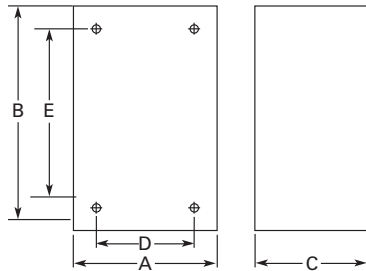
Voltage 60 Hertz			Coil Suffix		Voltage 60 Hertz		Coil Suffix	
AC ①					DC ④			
12	12	R	12	1R				
24	24	T	24	1T				
110–120 ②	110–120 ②	A	48	1W				
208–240	208–240	E	120	1A				
240 ③	220	B						
277	—	J						
—	380–415	H						
440–480	440–480	L						
550–600	550–600	C						
12	12	D						

Dimensions

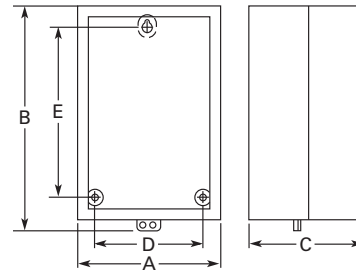
Approximate Dimensions in Inches (mm)

C25 Contactors, NEMA 1 Enclosed

15–50 Ampere, Two- and Three-Pole (C799B18)



25–40 Ampere, Four-Pole (C899B001) and 60 Ampere, Two- and Three-Pole (C899B2001)



Dimensions and Shipping Weights

Ampere Size	Number of Poles	Wide A	High B	Deep C	Mounting D	E	Shipping Weight Lb (kg)
NEMA 1 Enclosed							
15–50	2 and 3	4.10 (104.0)	6.75 (171.0)	3.50 (89.0)	2.75 (70.0)	4.88 (124.0)	3.4 (1.5)
25–40	4	6.00 (152.4)	10.73 (272.5)	7.16 (181.8)	9.00 (228.6)	4.50 (114.3)	4.8 (2.2)
60	2 and 3	7.62 (193.5)	3.31 (338.2)	7.16 (181.8)	10.39 (263.9)	6.00 (152.4)	10.6 (4.8)

Notes

- ① Class H AC coils available as option. Add **2** before AC coil suffix letter.
- ② 104–120 A 50/60 Hz for 60 A contactor.
- ③ Available through 50 A.
- ④ Contactors with DC coils include an early break NC auxiliary contact, C320KGD1. See **Page V5-T4-63** for more detail.

25–60 A Starters—A25, B25



25–60 A Starters—A25, B25

Product Description

Eaton A25 and B25 Definite Purpose Starters combine the features and flexibility of the C25 Definite Purpose Contactors and Freedom Series Bi-metallic Ambient Compensated Overload Relays mounted on a common mounting plate.

Standards and Certifications

- UL Recognized Components UL File #E-1491, Guide NLDX2
- Compliance to UL 60947-4-1 and CSA C22.2 No. 60947-4-1-14, Low-Voltage Switchgear and Controlgear—Part 4-1: Contactors and motor-starters—Electromechanical contactors and motor-starters



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4.4

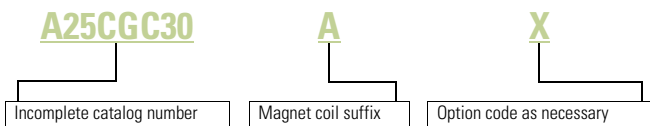
Definite Purpose Contactors and Starters

NEMA Type 1 Enclosed Control

Catalog Number Selection

25–60 A Starters—A25, B25

4



When Ordering Specify

- Catalog number plus magnet coil suffix, see **Page V5-T4-53**
- Modify catalog number for any options required, see Options, **Page V5-T4-58**
- Heater packs for specific FLA of motor, see **Page V5-T4-57**

Product Selection

A25, B25 Enclosed

Single- and Three-Phase NEMA Type 1 Enclosed Starters



Ampere Rating	Inductive Full Load	Line Voltage	Locked Rotor	Maximum Motor (hp)		Maximum Motor (kW)		Single-Phase ^{①②}		Three-Phase ^②	
				Single-Phase	Three-Phase	Single-Phase	Three-Phase	Common Control Catalog Number ^③	Separate Control Catalog Number ^③	Common Control Catalog Number ^③	Separate Control Catalog Number ^③
25	115	150	2	—	1.5	—	B25CGC25_	B25SGC25_	A25CGC25_	A25SGC25_	
	230	150	3	7-1/2	2.2	5.5					
	460	125	—	10	—	7.5					
	575	100	—	10	—	7.5					
30	115	180	2	—	1.5	—	B25CGC30_	B25SGC30_	A25CGC30_	A25SGC30_	
	230	180	5	10	3.7	7.5					
	460	150	—	15	—	11					
	575	120	—	15	—	11					
40	115	240	3	—	2.2	—	B25CGE40_	B25SGE40_	A25CGE40_	A25SGE40_	
	230	240	7-1/2	10	5.5	7.5					
	460	200	—	20	—	15					
	575	160	—	20	—	15					
50	115	300	—	—	—	—	—	—	A25CGE50_	A25SGE50_	
	230	300	—	15	—	11					
	460	250	—	30	—	22					
	575	200	—	30	—	22					
60	115	360	—	—	—	—	—	—	A25CGE60_	A25SGE60_	
	230	360	—	20	—	15					
	460	300	—	40	—	30					
	575	240	—	40	—	30					

Notes

- ① Starters do not include heater packs. Select heater pack from tables, see **Page V5-T4-57**.
- ② Set of three heater packs required for single-phase applications.
- ③ Incomplete catalog number. Replace underscore (_) in catalog number with magnet coil suffix from table on **Page V5-T4-53**.

Magnet Coil Suffix

Voltage 60 Hertz			Voltage 50 Hertz			Coil Suffix		
AC ①								
12	12	R	12	12	R	12	12	1R
24	24	T	24	24	T	24	24	1T
110–120 ②	110–120 ②	A	110–120 ②	110–120 ②	A	48	48	1W
208–240	208–240	B	208–240	208–240	B	120	120	1A
240 ③	220	J						
277	—	H						
—	380–415	L						
440–480	440–480	C						
550–600	550–600	D						

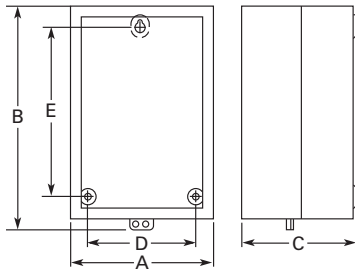
Voltage 60 Hertz		Coil Suffix	
DC ④			
12	12	1R	
24	24	1T	
48	48	1W	
120	120	1A	

Dimensions

Approximate Dimensions in Inches (mm)

A25 and B25 Starters

25, 30, 40, 50 and 60 Ampere



Dimensions and Shipping Weights

Ampere Size	Wide A	High B	Deep C	Mounting E	Mounting D	Shipping Weight Lb (kg)
15–30	6.00 (152.4)	10.73 (272.5)	7.16 (181.8)	9.00 (228.6)	4.50 (114.3)	4.8 (2.2)
40–50	7.62 (193.5)	13.31 (338.2)	7.16 (181.8)	10.39 (263.9)	6.00 (152.4)	10.6 (4.8)

Notes

- ① Class H AC coils available as option. Add **2** before AC coil suffix letter.
- ② 104–120 A 50/60 Hz for 60 A starter.
- ③ Available through 50 A.
- ④ Starters with DC coils include an early breaking auxiliary contact, C320KGD1. See **Page V5-T4-63** for more detail.

15–45 A Starters—A27, B27



Contents

<i>Description</i>	<i>Page</i>
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15–45 A Starters—A27, B27

Product Description

Eaton A27 and B27 Definite Purpose Starters combine the features and flexibility of the C25 Definite Purpose Contactors and **XT** Series Bi-metallic Ambient Compensated Overload Relays.

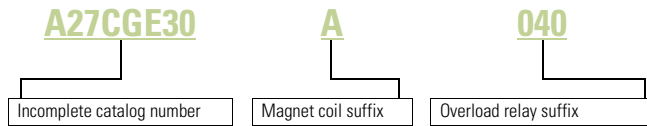
Standards and Certifications

- UL Recognized Components UL File #E-1491, Guide NLDX2
- Compliance to UL 60947-4-1 and CSA C22.2 No. 60947-4-1-14, Low-Voltage Switchgear and Controlgear—Part 4-1: Contactors and motor-starters—Electromechanical contactors and motor-starters



Catalog Number Selection

15–45 A Starters—A27, B27



When Ordering Specify

- Catalog number plus magnet coil suffix plus overload relay suffix, see **Page V5-T4-56**

Product Selection

A27, B27 Enclosed

Single- and Three-Phase NEMA Type 1 Enclosed Starters



Ampere Rating	Inductive Full Load	Line Voltage	Locked Rotor	Maximum Motor (hp)		Maximum Motor (kW)		Single-Phase		Three-Phase	
				Single-Phase	Three-Phase	Single-Phase	Three-Phase	Common Control Catalog Number ①	Separate Control Catalog Number ①	Common Control Catalog Number ①	Separate Control Catalog Number ①
15	115	90	3/4	—	0.4	—	B27CGC15_	B27SGC15_	A27CGC15_	A27SGC15_	
	230	90	2	3	1.5	2.2					
	460	75	—	5	—	3.7					
	575	60	—	5	—	3.7					
25	115	150	2	—	1.5	—	B27CGC25_	B27SGC25_	A27CGC25_	A27SGC25_	
	230	150	3	7-1/2	2.2	5.5					
	460	125	—	10	—	7.5					
	575	100	—	10	—	7.5					
30	115	180	2	—	1.5	—	B27CGE30_	B27SGE30_	A27CGE30_	A27SGE30_	
	230	180	5	10	3.7	7.5					
	460	150	—	15	—	11					
	575	120	—	15	—	11					
40	115	240	3	—	2.2	—	B27CGE40_	B27SGE40_	A27CGE40_	A27SGE40_	
	230	240	7-1/2	10	5.5	7.5					
	460	200	—	20	—	15					
	575	160	—	20	—	15					
45	115	270	3	—	2.2	—	B27CGE45_	B27SGE45_	A27CGE45_	A27SGE45_	
	230	270	7-1/2	15	7.5	11					
	460	225	—	30	—	22					
	575	180	—	30	—	22					

Note

① Incomplete catalog number. Replace underscore (_) in catalog number with magnet coil suffix plus overload relay suffix from tables on **Page V5-T4-56**.

4.4

Definite Purpose Contactors and Starters

NEMA Type 1 Enclosed Control

4

Magnet Coil Suffix

Voltage 60 Hertz	50 Hertz	Coil Suffix	Voltage 60 Hertz	Coil Suffix
AC ①				
12	12	R	12	1R
24	24	T	24	1T
110–120	110–120	A	48	1W
208–240	208–240	B	120	1A
240 ②	220	J		
277	—	H		
—	380–415	L		
440–480	440–480	C		
550–600	550–600	D		

Overload Relay Suffix

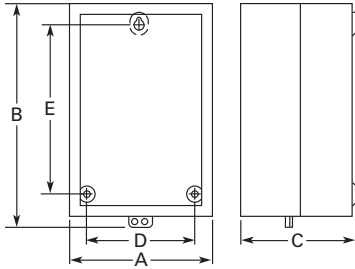
Motor Full Load Amperes	Suffix Code	For use with Contactor Ampere Range
Frame C		
0.1–0.16	P16	15–25
0.16–0.24	P24	15–25
0.24–0.4	P40	15–25
0.4–0.6	P60	15–25
0.6–1	001	15–25
1–1.6	1P6	15–25
1.6–2.4	2P4	15–25
2.4–4	004	15–25
4–6	006	15–25
6–10	010	15–25
10–16	016	15–25
16–24	024	15–25
24–32	032	15–25
Frame D		
6–10	010	30–45
10–16	016	30–45
16–24	024	30–45
24–40	040	30–45
40–57	057	30–45

Dimensions

Approximate Dimensions in Inches (mm)

A27 and B27 Starters

15, 25, 30, 40 and 50 Ampere



Dimensions and Shipping Weights

Ampere Size	Wide A	High B	Deep C	Mounting E	Mounting D	Shipping Weight Lb (kg)
15–30	6.00 (152.4)	10.73 (272.5)	7.16 (181.8)	9.00 (228.6)	4.50 (114.3)	4.8 (2.2)
40–50	7.62 (193.5)	13.31 (338.2)	7.16 (181.8)	10.39 (263.9)	6.00 (152.4)	10.6 (4.8)

Notes

- ① Class H AC coils available as option. Add **2** before AC coil suffix letter.
- ② Available through 45 A.
- ③ Starters with DC coils include an early breaking auxiliary contact, C320KGD1. See **Page V5-T4-63** for more detail.

Heater Packs

Fast Trip—Class 10 Heater Packs

Manual or Automatic Reset

Heater packs are shipped three to a carton.

Catalog numbers listed below are for three heater packs.

Fast Trip Ratings

Motor Full Load Ampere Rating ^①				Catalog Number ^② (Includes Three Heater Packs)
Dial Position				
A	B	C	D	
0.26	0.313	0.367	0.42	H2101B-3
0.384	0.464	0.543	0.623	H2102B-3
0.57	0.688	0.806	0.924	H2103B-3
0.846	1.02	1.2	1.37	H2104B-3
1.28	1.55	1.83	2.1	H2105B-3
1.92	2.33	2.74	3.15	H2106B-3
2.3	2.79	3.28	3.77	H2107B-3
3.38	4.1	4.82	5.54	H2108B-3
4.96	6.03	7.09	8.16	H2109B-3
7.07	8.58	10.1	11.6	H2110B-3
9.6	11.2	12.8	14.4	H2111B-3
14.4	17.5	20.7	23.8	H2112B-3
18.7	21.8	25	28.1	H2113B-3
23.5	27.3	31	34.8	H2114B-3
28.3	32.6	37	41.3	H2115B-3
36.6	42.3	48.1	53.8	H2116B-3
53.8	60.8	67.9	74.9	H2117B-3

Trip Curves, see Page V5-T4-59.

Notes

- ① For motor full load amperes between listed values, adjust dial clockwise for higher or counter-clockwise for lower motor currents. The currents listed are for 1.5 service factor motors. A position adjustment is provided for 1.0 service factor motors.
- ② Set of three heater packs are required for both single- and three-phase applications.

Standard Trip—Class 20 Heater Packs

Manual or Automatic Reset

Heater packs are shipped three to a carton.

Catalog numbers listed below are for three heater packs.

Standard Trip Ratings

Motor Full Load Ampere Rating ^①				Catalog Number ^② (Includes Three Heater Packs)
Dial Position				
A	B	C	D	
0.254	0.306	0.359	0.411	H2001B-3
0.375	0.452	0.53	0.607	H2002B-3
0.56	0.676	0.791	0.907	H2003B-3
0.814	0.983	1.15	1.32	H2004B-3
1.2	1.45	1.71	1.96	H2005B-3
1.79	2.16	2.53	2.9	H2006B-3
2.15	2.6	3.04	3.49	H2007B-3
3.23	3.9	4.56	5.23	H2008B-3
4.55	5.5	6.45	7.4	H2009B-3
6.75	8.17	9.58	11	H2010B-3
9.14	10.8	12.4	14	H2011B-3
14	16.9	19.9	22.8	H2012B-3
18.7	22.7	26.7	30.7	H2013B-3
23.5	28.5	33.5	38.5	H2014B-3
29	34	39.1	44.1	H2015B-3
39.6	45.5	51.5	57.4	H2016B-3
53.9	60.9	67.9	74.9	H2017B-3

Trip Curves, see Page V5-T4-59.

Options

To order C25, C65, A25 and B25 contactors and starters with the factory installed options listed below, change the basic catalog number listed in the product selection table as noted.

Factory Installed Options

Description	Code Letter	Number of Poles
Terminals— 15 A through 50 A		
Binding head screws		
Without quick connect terminals	A	2-, 3-, 4-pole
With quick connect terminals (side-by-side)	B	2-, 3-, 4-pole
With quick connect terminals (vertical in-line)	G	2-, 3-pole
Screw/pressure plate ^①		
Without quick connect terminals	C	2-, 3-, 4-pole
With quick connect terminals (side-by-side)	D	2-, 3-, 4-pole
With quick connect terminals (vertical in-line)	H	2-, 3-pole
Box lugs (#2 posidrive/slotted screw)		
Without quick connect terminals	E	2-, 3-, 4-pole ^②
With quick connect terminals (side-by-side)	F	2-, 3-, 4-pole ^②
With quick connect terminals (vertical in-line)	J	2-, 3-pole
Box lugs (hex socket allen head screw)		
Without quick connect terminals	K	2-, 3-pole
With quick connect terminals (side-by-side)	L	2-, 3-pole
With quick connect terminals (vertical in-line)	M	2-, 3-pole
Terminals— 60 A through 75 A ^③		
Box lugs (slotted screw)		
Without quick connect terminals	E	2-, 3-pole
With quick connect terminals	F	2-, 3-pole

Notes

- ^① Screw/pressure plate terminals are not available on 50 A contactors.
^② Four-pole contactors have box lugs with slotted screws.
^③ Replace letter in the **6th** position of catalog number with code letter listed. Example: Change C25F**N**F250 to C25F**N**E250.

Technical Data and Specifications

20–40 A, Compact Single- and Two-Pole—C25

Description	Specification
Insulation voltage	690 V
Current rated and hp/kw rated contacts	Double break
Magnet coil	Class F, 155 °C
Contact arc covers	Standard on all contactors
Standard power terminals	5/16 in hex washer head screws Quad (4) quick connect terminals on all line and load terminals Box lugs available as option
Line and load terminal designations	Marked on contactors
Operating temperature range	–13° to 158 °F (–25° to 70 °C)
Terminal wire range	
Hex washer head screws	6–10 AWG, 30 lb-in torque rating
Box lugs	6–10 AWG, 35 lb-in torque rating 8 AWG, 40 lb-in torque rating 6–4 AWG, 45 lb-in torque rating
Mounting position	Vertical, horizontal or tabletop

Coil Characteristics

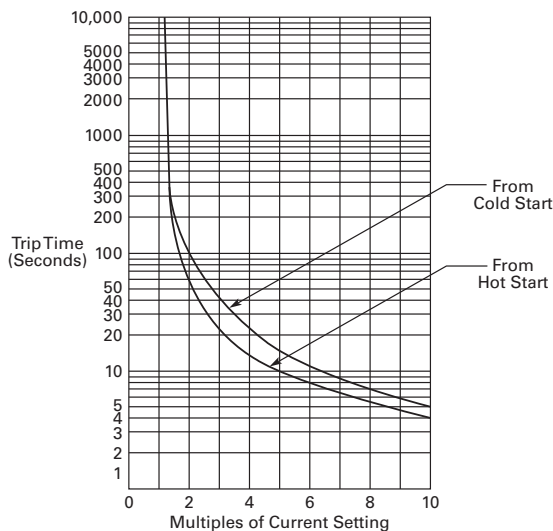
AC Coil Voltage 50/60 Hz	Maximum Inrush VA	Maximum Sealed	
		VA	Watts
Single-Pole			
24	33	6	2
120	33	6	2
208/240	33	6	2
277	33	6	2

AC Coil Voltage 50/60 Hz	Maximum Inrush VA	Maximum Sealed	
		VA	Watts
Two-Pole			
24	41	6.5	3
120	41	6.5	3
208/240	41	6.5	3
277	41	6.5	3

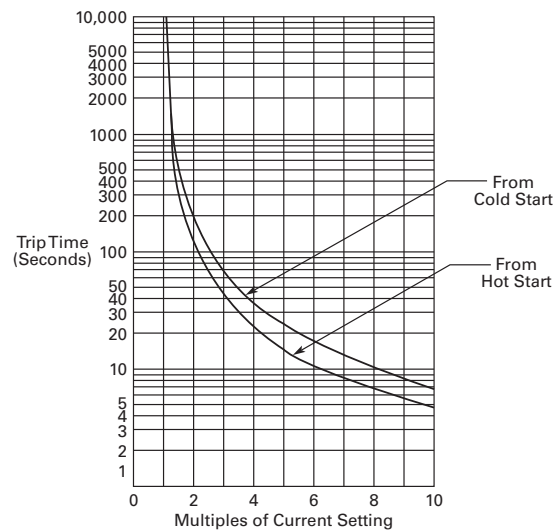
Trip Curves

Bimetallic Ambient Compensated Overload Relay—25 °C Open Rating

Class 10 Overload Relay (25 °C Open Rating)



Class 20 Overload Relay (25 °C Open Rating)



Renewal Parts

Renewal Contact Kits for C25 Definite Purpose Contactors

- Replace complete contactor for:
 - C25A_
 - C25B_
 - C25C_
 - C25D_

Renewal Contact Kits for C25 Definite Purpose Contactors

Catalog Number	Single-Pole Kit Part Number	Two-Pole Kit Part Number	Three-Pole Kit Part Number
C25FNF250	—	6-65-5	—
C25FNF350	—	—	6-65-6
C25FNF260	—	6-65-7	—
C25FNF360	—	—	6-65-8
C25FNF275	—	6-65-20	—
C25FNF375	—	—	6-65-19
C25GNF290	—	—	—
C25GNF390	—	—	—
C25HNE3120	—	—	6-43-6
C25KNE3200	—	—	6-288
C25KNE3300	—	—	6-286
C25LNE3360	—	—	6-45-2

Product Selection

AC Coils

AC Coil Voltage	Frequency	Inrush (Maximum)		Sealed (Maximum)		Coil Suffix	Class	Part Number
		VA	Watts	VA	Watts			
15, 25, 30 and 40 A – Two- and Three-Pole (Series D1 and E1)								
12	60	74.85	46.1	5.53	1.68	R	Class F, 155 °C	9-3185-5
24		81.35	49.7	5.83	1.74	T		9-3185-6
110/120		74.69	51.6	5.79	1.81	A		9-3185-1
208/240		82.64	59.1	6.96	2.38	B		9-3185-2
220/240	60	74.03	51.8	5.85	1.99	J	Class F, 155 °C	9-3185-10
440/480		73.39	52.1	6.09	2.58	C		9-3185-3
550/600		79.47	51.7	6.56	3.05	D		9-3185-4
277		72.88	52.4	6.09	2.58	H		9-3185-7
380/415	50	64.5	50.6	6.08	2.43	L	Class F, 155 °C	9-3185-8
15, 25, 30 and 40 A – Two- and Three-Pole (Series C1)								
12	60	65	30	11	2.5	R	Class F, 155 °C	9-3125-5
24		65	30	11	2.5	T		9-3125-6
104/120		65	30	11	2.5	A		9-3125-1
208/240	50	75	35	17	3.5	B	Class F, 155 °C	9-3125-2
440/480		75	35	17	3.5	C		9-3125-3
550/600		75	35	17	3.5	D		9-3125-4
277	60	65	30	11	2.5	H	Class F, 155 °C	9-3125-7
380/415	50	75	35	17	3.5	L	Class F, 155 °C	9-3125-8

AC Coils, continued

AC Coil Voltage	Frequency	Inrush (Maximum)		Sealed (Maximum)		Coil Suffix	Class	Part Number
		VA	Watts	VA	Watts			
15, 25, 30 and 40 A – Two- and Three-Pole (Series D1 and E1)								
12	60	74.85	46.1	5.53	1.68	R	Class H, 180 °C	9-3252-5
24		81.35	49.7	5.83	1.74	T		9-3252-6
110/120		74.69	51.6	5.79	1.81	A		9-3252-1
208/240		82.64	59.1	6.96	2.38	B		9-3252-2
220/240	60	74.03	51.8	5.85	1.99	J	Class H, 180 °C	9-3252-10
440/480		73.39	52.1	6.09	2.58	C		9-3252-3
550/600		79.47	51.7	6.56	3.05	D		9-3252-4
277		72.88	52.4	6.09	2.58	H		9-3252-7
380/415	50	64.5	50.6	6.08	2.43	L	Class H, 180 °C	9-3252-8
50 A – Two- and Three-Pole (Series D1 and E1)								
12	60	115.8	73.6	7.71	2.8	R	Class F, 155 °C	9-3186-5
24		118.1	70.7	7.58	2.79	T		9-3186-6
110/120		110.7	73.3	7.67	2.89	A		9-3186-1
208/240		124.9	90.3	10.04	3.74	B		9-3186-2
220/240	60	112.9	76.2	7.6	3.02	J	Class F, 155 °C	9-3186-10
440/480		114.7	75.6	8.01	3.68	C		9-3186-3
550/600		109	78.6	8.21	4.11	D		9-3186-4
277		115.4	73.1	7.73	3.12	H		9-3186-7
380/415	50	110.3	77	8.66	3.31	L	Class F, 155 °C	9-3186-8
50 A – Two- and Three-Pole (Series D1 and E1)								
12	60	115.8	73.6	7.71	2.8	R	Class H, 180 °C	9-3253-5
24		118.1	70.7	7.58	2.79	T		9-3253-6
110/120		110.7	73.3	7.67	2.89	A		9-3253-1
208/240		124.9	90.3	10.04	3.74	B		9-3253-2
220/240	60	112.9	76.2	7.6	3.02	J	Class H, 180 °C	9-3253-10
440/480		114.7	75.6	8.01	3.68	C		9-3253-3
550/600		109	78.6	8.21	4.11	D		9-3253-4
277		115.4	73.1	7.73	3.12	H		9-3253-7
380/415	50	110.3	77	8.66	3.31	L	Class H, 180 °C	9-3253-8
60 and 75 A – Two- and Three-Pole; 25, 30 and 40 A – Four-Pole								
12	60	204	84	36.5	8	R	Class B, 130 °C	9-3256-5
24						T		9-3256-6
104/120						A		9-3256-1
208/240	50	240	100.8	50.4	10.8	B	Class B, 130 °C	9-3256-2
440/480						C		9-3256-3
550/600						D		9-3256-4
277	60	204	84	36.5	8	H	Class B, 130 °C	9-3256-7
380/415	50	199	88.8	37.8	8.8	L	Class B, 130 °C	9-3256-8

AC Coils, continued

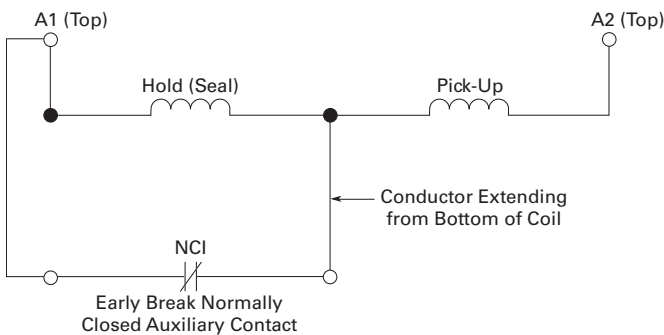
AC Coil Voltage	Frequency	Inrush (Maximum)		Sealed (Maximum)		Coil Suffix	Class	Part Number
		VA	Watts	VA	Watts			
90 A – Two- and Three-Pole (Series F1)								
24	50/60	325/300	—	48/35	12	T	Class B, 130 °C	9-3080-1
110/120						A		9-3080-2
208-220						B		9-3080-3
277	60	325/300	—	48/35	12	H	Class B, 130 °C	9-3080-06
120 A – Three-Pole								
24	50/60	390	112	49.8	13	T	Class B, 130 °C	9-2756-6
110/120						A		9-2756-1
220/240						B		9-2756-2
440/480						C		9-2756-3
550/600						D		9-2756-4
208	60	390	112	49.8	13	E	Class B, 130 °C	9-2756-5
277						H		9-2756-9
200, 300 and 360 A – Three-Pole								
110/120	50/60	1040	216	116	17	A	Class F, 155 °C	9-1891-1
220/240						B		9-1891-2
440/480						C		9-1891-3
550/600						D		9-1891-4
208	60	1040	216	116	17	E	Class F, 155 °C	9-1891-13
277						H		9-1891-26

DC Operation

These DC coils have separate pick-up and seal windings. The pick-up winding must be connected to an early break normally closed auxiliary contact block and provide the magnetic force required to close the magnet. As the magnet approaches the closed position, the early break normally closed contact is opened and the holding coil is inserted in series with the pick-up winding.

The early break contact block (C320KGD1) has to be attached to the side of the contactor, taking up one of the positions available for add-on auxiliary contact blocks.

DC Coil Elementary Diagram—Contactors and Starters



DC Coils ①

DC Coil Voltage	Inrush (Maximum)		Sealed (Maximum)		Coil Suffix	Class	Part Number
	Amperes	Watts	Amperes	Watts			
15, 25, 30 and 40 A—Two- and Three-Pole (Series D1 and E1)							
12	5.8	69	0.272	3.27	1R	Class F, 155 °C	9-3254-2
24	2.9	69	0.13	3.12	1T		9-3254-3
48	1.5	72	0.07	3.37	1W		9-3254-4
120	0.61	73	0.03	3.68	1A		9-3254-5
50 A—Two- and Three-Pole (Series D1 and E1)							
12	5.8	69	0.272	3.27	1R	Class F, 155 °C	9-3255-2
24	2.9	69	0.13	3.12	1T		9-3255-3
48	1.5	72	0.07	3.37	1W		9-3255-4
120	0.61	73	0.03	3.68	1A		9-3255-5
15, 25, 30 and 40 A—Two- and Three-Pole (Series C1)							
24	2.7	64	110 mA	2.4	1T	Class F, 155 °C	9-3126-2
60 and 75 A—Two- and Three-Pole; 25, 30 and 40 A—Four-Pole (Series C1)							
12	15.4	126	0.434	5.26	1R	Class F, 155 °C	9-3257-1
24	6.2	88.4	0.211	5.12	1T		9-3257-2
48	2.9	76.2	0.102	4.92	1W		9-3257-3
120	1.1	67.3	0.044	5.32	1A		9-3257-4

Note

① DC coils require an early break NC auxiliary contact C320KGD1 (1NCI) or C320KGD2 (1NO-1NCI). Order separately, not included with replacement coil.

Heavy-Duty Special Purpose Contactors



4

Contents

Description	Page
Heavy-Duty Special Purpose Contactors	
Product Selection	V5-T4-65
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Renewal Parts	V5-T4-66
Technical Data and Specifications	V5-T4-66
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Product Description

The DPCK Contactors are designed to provide peak performance and reliability on special switching applications. These heavy-duty special purpose contactors are rated for applications up to 1500 Vac.

Application Description

- Typical applications include mining equipment, welding equipment, heating and air conditioning applications and other loads that require a compact heavy-duty contactor rated up to 1500 Vac
- The DPCK Contactors are supplied with bolts and washers on each terminal for use with customer supplied lugs

Features

- A double wound epoxy coil allows for lower temperature rise and longer life
- The U-shaped magnet provides fast, reliable action, long life and lower power requirements
- Stainless steel kick-out springs
- Rugged single-piece mounting plate
- Allows up to four double circuit auxiliary contacts per contactor

Benefits

- All contacts are silver alloy, providing long life and resistance to welding
- Straight-through wiring and up front terminals allow for fast, easy installation
- Loosening two captive screws allows for easy visual inspection of contacts

Product Selection

When Ordering Specify

- Catalog number with any required accessories from below

35 A 600/1000 V Contactor



DPCK Air Break Contactors—Two- and Three-Pole ^①

Open Ampere Rating			Coil Voltage 60 Hz ^②	Open Type—	Three-Pole
600 V	1000 V	1500 V		Two-Pole Catalog Number	Catalog Number
35	35	20	240	DPCK2035WW	DPCK3035WW
			480	DPCK2035XW	DPCK3035XW
			600	DPCK2035EW	DPCK3035EW
100	100	75	240	DPCK2100WW	DPCK3100WW
			480	DPCK2100XW	DPCK3100XW
			600	DPCK2100EW	DPCK3100EW

250 A 600 V Contactor



DPCK Air Break Contactors—Four- and Five-Pole ^①

Open Ampere Rating			Coil Voltage 60 Hz ^②	Open Type—	Five-Pole
600 V	1000 V	1500 V		Four-Pole Catalog Number	Catalog Number
35	35	20	240	DPCK4035WW	DPCK5035WW
			480	DPCK4035XW	DPCK5035XW
			600	DPCK4035EW	DPCK5035EW

Accessories

Accessory Kits

Description	Catalog Number
Auxiliary contacts, 1NO-1NC	J11
Horizontal Mechanical Interlock	
35 A	180C113G09
Surge suppressor	177C043G10

Notes

- ^① Holding circuit auxiliary contact not included. If required, order from Accessories above.
- ^② For other coil voltages, refer to replacement coils on **Page V5-T4-66** and insert proper letter in place of **9th** character of listed catalog number. Example: DPCK3035WW with 380/50 coil DPCK3035HW.

Renewal Parts

DPCK Contactor Renewal Parts

Description	Hz	Coil Suffix Code	35 A	Four-, Five-Pole	100 A
			Two-, Three-Pole Part Number	Part Number	Two-, Three-Pole Part Number
Contact Kit					
Two-pole	—	—	180C180G01	①	180C180G05
Three-pole	—	—	180C180G02	②	180C180G06
ARC box	—	—	673B439G01	673B439G02	673B440G01
Upper base	—	—	673B439G03	673B439G04	673B440G02
Lower base	—	—	673B439G05	673B439G06	673B440G03
Crossbar	—	—	673B439G07	673B439G08	673B440G04
Magnet Coil					
120/110	60/50	A	1266C28G01	1266C29G01	1254C70G01
110	60	V	1266C28G08	1266C29G06	1254C70G08
208/220	60	B	1266C28G02	1266C29G02	1254C70G02
220/240	60	—	N/A	N/A	N/A
240/220	60/50	W	1266C28G09	1266C29G07	1254C70G03
480/440	60/50	X	1266C28G10	1266C29G08	1254C70G05
440/480	60	—	N/A	N/A	N/A
600/550	60/50	E	1266C28G05	1266C29G04	1254C70G07
550	60	—	N/A	N/A	N/A
380	50	H	1266C28G06	1266C29G09	N/A
380/110	60	—	N/A	N/A	1254C70G12

Technical Data and Specifications

Magnet Coil VA—60 Hz

Catalog Number	Open VA	Closed VA	Closed Watts
DPCK3035	625	50	18
DPCK3100	1200	130	40

Notes

- ① For a four-pole device, use (2) of the 180C180G01 contact kits.
 ② For a five-pole device, use (1) of the 180C180G01 and (1) of the 180C180G02 contact kits.

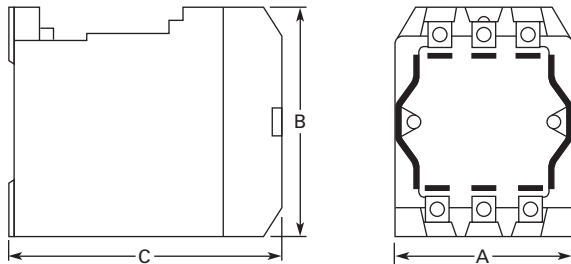
Contact Ratings

Volts	Full Load Current (Amperes)	Locked Rotor Current (Amperes)	Resistive Load (Amperes)	Lighting Load (Amperes)
Catalog Number DPCK3035				
120	35	240	35	35
240	35	240	35	35
480	35	200	35	35
600	35	200	35	35
1000	35	200	—	—
1500	20	160	—	—
Catalog Number DPCK3100				
120	100	600	100	100
240	100	600	100	100
480	100	600	100	100
600	100	600	100	100
1000	100	450	—	—
1500	75	300	—	—

Dimensions

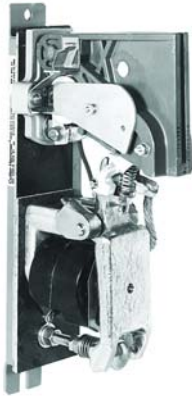
Approximate Dimensions in Inches (mm)

DPCK Air Break Contactors—35 and 100 Ampere

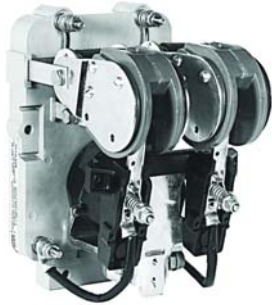


Poles	Wide A	High B	Deep C	Shipping Weight Lb (kg)
35 A Contactors				
2 and 3	4.06 (103.1)	5.44 (138.2)	5.63 (143.0)	16.0 (7.3)
4 and 5	6.06 (153.9)	5.44 (138.2)	5.63 (143.0)	19.0 (8.6)
100 A Contactors				
2 and 3	5.38 (136.7)	7.81 (198.4)	6.75 (171.5)	28.0 (12.7)

DC Contactors—Type C80



Cat. No. C80FJ421N00
Size 4 — NC Contactor



Cat. No. C80DG221N00
Size 2 — Two-Pole Contactor

DC Contactors—Type C80

Product Description

These DC mill type contactors are designed for heavy industry service and are suitable for use on moving machinery. The contactors listed in this section are for surface mounting on steel panels and front-of-panel wiring. The power stud assembly is mounted on the side of the contactor, rather than as part of a separate mounting kit.

These contactors utilize DC coils. If control power is 120 Vac, the rectifier module listed on **Page V5-T4-72** should be used in conjunction with a 100 V coil contactor.

Auxiliary contacts and mechanical interlocks for use with these contactors are listed on the following pages.

The contactors feature forged steel armature levers and magnet frames for superior physical strength. Self-lubricating bearings eliminate the need for lubricating the contactor. Hot-molded arc chute assemblies contain no asbestos and have better arc extinction characteristics for longer contact life. The short stroke armature results in a mechanical life of more than 20 million operations.

The arc chutes and magnetic blowout structures are designed to quickly absorb and dissipate the heat caused by arcing. In addition to increasing contact life, the molded arc chute offers advantages of improved mechanical life and cooling characteristics plus superior arc-tracking resistance. The arc chutes are hinged to provide front accessibility, easy inspection or replacement of contacts without removing any other contactor parts.

Construction of the pivot pin assembly provides positive pin locking so that the bearing pin remains stationary with respect to the operating movement of the forged armature.

A leaf spring attached to the unit base and the arc chute holds the chute in the "down" or functioning position. The addition of this assembly resists the violent vibrations encountered on open hearth charging machines and on a wide variety of crane applications.

Contents

Description

Description	Page
DC Contactors—Type C80	
Catalog Number Selection	V5-T4-69
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ME 600 V Contactors	V5-T4-75
DPM 750 V Contactor	V5-T4-79
AVD—Contactor	V5-T4-82
D—Contactor	V5-T4-85
Reversing/Assignment Contactor	V5-T4-88

Standards and Certifications

- CMAA 5.6.6-2
- NEMA ICS3-441, 442, 443
- NEMA ICS2-331.23
- NEMA ICS2-110.05.02
- NEMA ICS2-125.21.02

Pre-drilled mounting holes are provided on the unit base to accommodate interlock mounting brackets. An interlock is merely attached to a bracket and the assembly is then bolted in the desired operating position on the contactor.

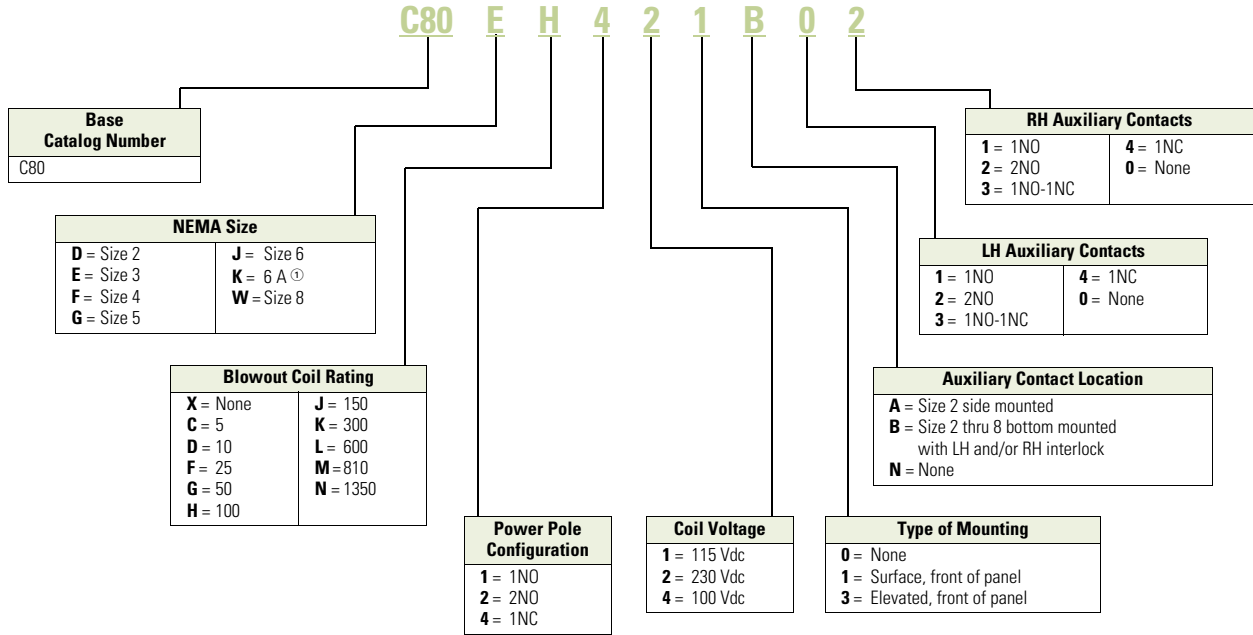
DC Drive Service Contactors

Eaton's industrial type contactors modified for DC drive service are provided with silver faced contact tips, to provide optimum contact structure and minimum maintenance under continuous duty service. These contactors are designed for steel panel surface mounting.

Power studs are a part of the contact or assembly.

Catalog Number Selection

DC Contactor Catalog Numbering System



Product Selection

When Ordering

Select complete Catalog Number from the tables below and on **Page V5-T4-71**. If contactor is to include factory assembled auxiliary contacts, change **N00** suffix to correct suffix letter and digits from Accessories—Auxiliary Contacts tables on **Page V5-T4-72**.

Example: Catalog Number for elevated Size 3 NO contactor, 230 Vdc coil with 2NO auxiliary contact bottom mounted on RH side of contactor is **C80EH123B02**.

4

Surface Mounted



Surface Mounted DC Contactors without Auxiliary Contacts

NEMA Size	Number of Poles	Blowout Coil Ampere	Catalog Number		
			100 Vdc Coil	115 Vdc Coil	230 Vdc Coil
2	1NO	None	C80DX141N00	C80DX111N00	C80DX121N00
		5	C80DC141N00	C80DC111N00	C80DC121N00
		10	C80DD141N00	C80DD111N00	C80DD121N00
		25	C80DF141N00	C80DF111N00	C80DF121N00
		50	C80DG141N00	C80DG111N00	C80DG121N00
	2NO	None	C80DX241N00	C80DX211N00	C80DX221N00
		5	C80DC241N00	C80DC211N00	C80DC221N00
		10	C80DD241N00	C80DD211N00	C80DD221N00
		25	C80DF241N00	C80DF211N00	C80DF221N00
		50	C80DG241N00	C80DG211N00	C80DG221N00
3	1NO	100	C80EH141N00	C80EH111N00	C80EH121N00
	1NC	100	C80EH441N00	C80EH411N00	C80EH421N00
4	1NO	150	C80FJ141N00	C80FJ111N00	C80FJ121N00
	1NC	150	C80FJ441N00	C80FJ411N00	C80FJ421N00
5	1NO	300	C80GK141N00	G80GK111N00	C80GK121N00
	1NC	300	C80GK441N00	C80GK411N00	C80GK421N00
6	1NO	600	C80JL141N00	C80JL111N00	C80JL121N00
	1NC	600	C80JL441N00	C80JL411N00	C80JL421N00
6A ①	1NO	810	C80KM141N00	C80KM111N00	C80KM121N00
8	1NO	1350	C80WN141N00	C80WN111N00	C80WN121N00

Elevated Mounted



Elevated Mounted DC Contactors without Auxiliary Contacts

NEMA Size	Number of Poles	Blowout Coil Ampere	Catalog Number		
			100 Vdc Coil	115 Vdc Coil	230 Vdc Coil
3	1NO	100	C80EH143N00	C80EH113N00	C80EH123N00
	1NC	100	C80EH443N00	C80EH413N00	C80EH423N00
4	1NO	150	C80FJ143N00	C80FJ113N00	C80FJ123N00
	1NC	150	C80FJ443N00	C80FJ413N00	C80FJ423N00
5	1NO	300	C80GK143N00	G80GK113N00	C80GK123N00
	1NC	300	C80GK443N00	C80GK413N00	C80GK423N00
6	1NO	600	C80JL143N00	C80JL113N00	C80JL123N00
	1NC	600	C80JL443N00	C80JL413N00	C80JL423N00
6A ①	1NO	810	C80KM143N00	C80KM113N00	C80KM123N00
8	1NO	1350	C80WN143N00	C80WN113N00	C80WN123N00

Note

① Not a NEMA size.

Surface Mounted DP Drive Service Contactors without Auxiliary Contacts

Number of Poles	Ampere Rating	Catalog Number 100 Vdc Coil
1NO	260	C80RK141N00
1NC	260	C80RK441N00
1NO	480	C80SL141N00
1NC	480	C80SL441N00
1NO	960	C80TM141N00

Options

Other Options Available

- Silver faced contact tips:
 - Can be supplied in place of standard contact tips
- Special voltage coils:
 - Coils with DC voltage ratings other than those listed are available
- 1800 A contactors:
 - Size 8 A (not a NEMA size) contactors are also available
- Consult factory for pricing

Note: Use silver tips for non-arcing or long (8 hour) extended continuous current applications.

Accessories

Auxiliary Contacts

Mounting Kits for Auxiliary Contacts

Separate for Field Installation

Factory Installed

For Size and Type of Contactor		Location of Auxiliary Contacts on Contactor and Number of Units Kit Will Mount			Maximum Number of Units Acceptable per Contactor	Mounting Kit Catalog Number	Suffix Code Letter for Factory Installation
NEMA Size	Contactor Power Pole Configuration	Location	Number of Units				
2	1NO	Bottom—right and left	2	2	10923H11	B	
		Side—right or left	1	1	10923H12	A	
	2NO	Bottom—right and left	1	2	10923H14	B	
		Side—left	1	2	10923H15	A	
		Side—right	1	2	10923H16	A	
	2NO-1NC	Side—left	1	2	10923H15	A	
Side—right		1	2	10923H16	A		
3, 4 and 5	1NO	Bottom—right and left	2	2	10923H19	B	
		Bottom—left only	1	1	10923H38	B	
	1NO Ltl or 1NC	Bottom—right	1	1	10923H20	B	
6, 6A, 8 and 8A	1NO	Bottom—right and left	2	2	10923H19	B	
		Bottom—left only	1	1	10923H38	B	
	1NO Ltl	Bottom—right	1	1	10923H20	B	
	1NC	Bottom—right	1	1	①	—	

Note

① 10923H19 supplied with contactor as standard. No charge.

Auxiliary Contacts—without Mounting Kit All Sizes Bottom Mounted

Separate for Field Installation		Factory Installed	
Contact Configuration	Catalog Number	Suffix Code LH Position	Suffix Code RH Position
None	—	0	0
1NO	10923H1	1	1
2NO	10923H2	2	2
1NO-1NC	10923H3	3	3
1NC	10923H4	4	4
2NC	10923H5	5	5

Auxiliary Contacts—without Mounting Kit Size 2 Side Mount Only

Separate for Field Installation		Factory Installed	
Contact Configuration	Catalog Number	Suffix Code LH Position	Suffix Code RH Position
None	—	0	0
1NO	10923H6	1	1
2NO	10923H7	2	2
1NO-1NC	10923H8	3	3
1NC	10923H9	4	4

Rectifiers

Rectifier Module

Description	Contactor Size	Catalog Number
120 Vac input	All	C81EB
100 Vdc output 3.5 A		

Mounting Kits and Mechanical Interlocks

Contactor Mounting Kits ^① and Mechanical Interlocks

NEMA Size	Number of Poles	Type of Mounting	For Metal Panels Catalog Number
Mounting Kits			
3, 4	1	Surface, front-of-panel wiring	C81AEA11
		Elevated, front-of-panel wiring	C81AEA13
5	1	Surface, front-of-panel wiring	C81AGA11
		Elevated, front-of-panel wiring	C81AGA13
6, 6A	1	Surface, front-of-panel wiring	C81AJA11
		Elevated, front-of-panel wiring	C81AJA13
8, 8A	1	Surface, front-of-panel wiring	C81ALA11
		Elevated, front-of-panel wiring	C81ALA13
Mechanical Interlocks			
2	1	Surface	C81DDA11
			C81DDA12
			C81DDA13
3, 4	1	Surface	C81DEA11
		Elevated	C81DEA21
5	1	Surface	C81DGA11
		Elevated	C81DGA21
6, 6A	1	Surface	C81DJA11
		Elevated	C81DJA21
8, 8A	1	Surface	C81DLA11
		Elevated	C81DLA21

Note

^① Mounting kits include power studs and stud mounting, as well as contactor mounting hardware, but do not include lugs.

Renewal Parts

Renewal Parts ①

Description	Size 2 Single-, Two-, Three-Pole and Ltl 25 and 50 Ampere Part Number	Size 3 Single-Pole NO, NC and Ltl 100 Ampere Part Number	Size 4 Single-Pole NO, NC and Ltl 150 Ampere Part Number	Size 5 Single-Pole NO, NC and Ltl 300 Ampere Part Number	Size 6 Single-Pole NO, NC and Ltl 600 Ampere Part Number	Size 6A Single-Pole NO, NC and Ltl 810 Ampere Part Number	Size 8 Single-Pole NO 1350 Ampere Part Number	
Set of Contacts								
Single-pole copper	6-599	6-189	6-189	6-189-3	6-189-4	6-189-4	6-215	
Single-pole silver	—	6-189-5	6-189-5	6-189-7	6-189-8	6-189-8	6-215-2	
Two-pole copper	6-169-4	—	—	—	—	—	—	
Three-pole copper	6-169-5	—	—	—	—	—	—	
Arc Shield								
Right-hand	73-2676-2	62-791	62-791	62-793	62-840	62-840	62-804	
Left-hand	73-2676	62-791-2	62-791-2	62-793-2	62-840-2	62-840-2	62-804	
Coils								
Single-pole NO	100 V	9-1549-18	9-1583-15	9-1583-15	9-1589-10	9-1688-8	9-1688-8	9-547-7 ③
	115 V	9-1549-2	9-1583-2	9-1583-2	9-1589-2	9-1688-2	9-1688-2	9-547-7 ③
	230 V	9-1549-1	9-1583-1	9-1583-1	9-1589-1	9-1688-1	9-1688-1	9-547-4 ③
Single-pole NC	110 V	—	9-1585-18	9-1585-18	9-967-13	9-1717-4	—	—
	115 V	—	9-1585-2	9-1585-2	9-967-8	9-1717-1	—	—
	230 V	—	9-1585-1	9-1585-1	9-967-7	9-1717-2	—	—
Single-pole Ltl ②	100 V	9-1549-18	9-1583-15	9-1583-15	9-1589-10	9-1688-8	—	—
	115 V	9-1549-2	9-1583-2	9-1583-2	9-1589-2	9-1688-2	—	—
	230 V	9-1549-1	9-1583-1	9-1583-1	9-1589-1	9-1688-1	—	—
Two-pole	100 V	9-1585-18	—	—	—	—	—	—
	115 V	9-1585-2	—	—	—	—	—	—
	230 V	9-1585-1	—	—	—	—	—	—
Three-pole	110 V	9-1585-18	—	—	—	—	—	—
	115 V	9-1585-2	—	—	—	—	—	—
	230 V	9-1585-1	—	—	—	—	—	—

Technical Data and Specifications

- Current range: 5 to 1800 A
- Voltage: 600 Vdc
- Operation: magnetic
- Mounting: steel panel
- Mechanical life: 20 million operations
- Electrical life: 500,000 operations
- Interlock ratings:
 - 10 A continuous
 - 2.2 A inductive breaking at 115 V
 - 1.1 A inductive breaking at 230 V
- Continuous duty (for intermittent ratings consult factory)

Coil Ampere Data

NEMA Size	Number of Poles	100 Vdc Coil	115 Vdc Coil	230 Vdc Coil	NEMA Size	Number of Poles	100 Vdc Coil	115 Vdc Coil	230 Vdc Coil
2	1NO	0.288	0.263	0.125	5	1NO	0.433	0.391	0.187
	2NO	0.339	0.274	0.140		1NC	0.424	0.329	0.164
3	1NO	0.268	0.235	0.112	6	1NO	0.450	0.365	0.200
	1NC	0.339	0.274	0.140		1NC	1.832/0.597 ④	1.337/0.485 ④	0.714/0.267 ④
4	1NO	0.268	0.235	0.112	6A	1NO	0.450	0.365	0.200
	1NC	0.339	0.274	0.140	8	1NO	0.787 ⑤	0.757 ⑤	0.438 ⑤

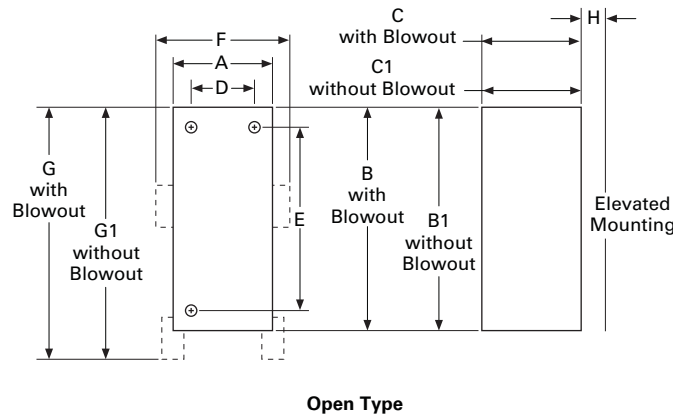
Notes

- ① For prices refer to Eaton's parts distributor or call factory.
- ② Magnet closing coil only. If holdout coil is required, give number stamped on coil or advise bulletin or serial number of controller.
- ③ Series resistor used with coil for voltage shown.
- ④ Inrush/sealed current.
- ⑤ Coil used with series resistor.

Dimensions

Approximate Dimensions in Inches (mm)

Type C80 Contactors

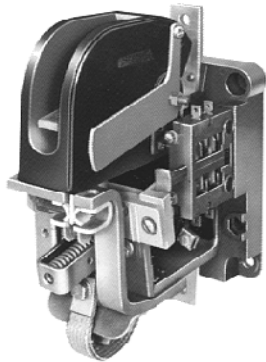


Size	Poles	Wide A	High B	B1	Deep C	C1	Mounting D	E	With Auxiliary Contacts			H	Minimum Arc Clearance		Ship. Wt. Lb (kg)	Stud Size
									F	G	G1		250 V	600 V		
Open Type DC Contactors																
2	1NO	3.00 (76.2)	8.38 (212.9)	6.50 (165.1)	6.00 (152.4)	5.38 (136.7)	2.25 (57.2)	4.50 (114.3)	7.38 (187.5)	10.88 (276.4)	9.13 (231.9)	—	0.59 (15.1)	0.91 (23.0)	6 (2.7)	1/4-20
	2NO	5.75 (146.1)	8.88 (225.6)	8.88 (225.6)	6.88 (174.8)	6.50 (165.1)	5.00 (127.0)	4.63 (117.6)	10.13 (257.3)	11.38 (289.1)	11.38 (289.1)	—	1.19 (30.2)	2.19 (55.6)	10 (4.5)	
	2NO-1NC	5.75 (146.1)	12.63 (320.8)	12.63 (320.8)	6.88 (174.8)	6.50 (165.1)	5.00 (127.0)	8.38 (212.9)	10.13 (257.3)	—	—	—	1.19 (30.2)	2.19 (55.6)	13 (5.9)	
3, 4	1NO	4.25 (108.0)	12.13 (308.1)	12.13 (308.1)	7.25 (184.2)	6.38 (162.1)	—	11.25 (285.8)	4.50 (114.3)	12.13 (308.1)	12.13 (308.1)	1.63 (41.4)	2.75 ^① (69.9)	3.75 ^② (95.3)	11 (5)	3/8-16
	1NC	4.25 (108.0)	13.63 (346.2)	13.63 (346.2)	7.25 (184.2)	5.63 (143.0)	—	12.75 (323.9)	5.00 (127.0)	13.63 (346.2)	13.63 (346.2)	1.63 (41.4)	4.25 ^① (108.0)	5.25 ^② (133.4)	13 (5.9)	
5	1NO	5.13 (130.3)	16.88 (428.8)	16.88 (428.8)	10.00 (254.0)	8.00 (203.2)	1.25 (31.8)	16.00 (406.4)	5.13 (130.3)	16.88 (428.8)	16.88 (428.8)	1.88 (47.8)	3.50 (88.9)	4.50 (114.3)	26 (12)	1/2-13
	1NC	5.25 (133.4)	18.88 (479.6)	18.88 (479.6)	10.00 (254.0)	7.50 (190.5)	1.25 (31.8)	18.00 (457.2)	6.13 (155.7)	18.88 (479.6)	18.88 (479.6)	1.88 (47.8)	3.00 (76.2)	4.00 (101.6)	34 (15)	
6	1NO	7.13 (181.1)	18.75 (476.3)	18.88 (479.6)	12.25 (311.2)	9.50 (241.3)	1.25 (31.8)	17.50 (444.5)	7.13 (181.1)	18.75 (476.3)	18.75 (476.3)	1.88 (47.8)	5.50 (139.7)	5.50 (139.7)	43 (20)	3/4-12
	1NC	7.25 (184.2)	22.88 (581.2)	18.88 (479.6)	12.25 (311.2)	9.88 (251.0)	1.25 (31.8)	22.00 (558.8)	7.25 (184.2)	22.88 (581.2)	22.88 (581.2)	1.88 (47.8)	5.50 (139.7)	5.50 (139.7)	66 (30)	
6A	1NO	7.63 (193.8)	18.75 (476.3)	18.75 (476.3)	12.25 (311.2)	9.50 (241.3)	1.25 (31.8)	17.50 (444.5)	7.63 (193.8)	18.75 (476.3)	18.75 (476.3)	1.88 (47.8)	5.50 (139.7)	5.50 (139.7)	45 (20)	3/4-12
8, 8A	1NO	9.50 (241.3)	24.00 (609.6)	22.5 (571.5)	17.00 (431.8)	14.88 (378.0)	7.00 (177.8)	10.00 (254.0)	9.50 (241.3)	24.00 (609.6)	24.00 (609.6)	2.00 (50.8)	8.00 (203.2)	10.0 (254.0)	130 (59)	1/2 hole
Definite Purpose Contactors																
260A	1NO	4.25 (108.0)	12.13 (308.1)	12.13 (308.1)	7.25 (184.2)	6.38 (162.1)	—	11.25 (285.8)	4.50 (114.3)	12.13 (308.1)	12.13 (308.1)	1.63 (41.4)	2.50 (63.5)	3.50 (88.9)	11 (5)	3/8-16
	1NC	4.25 (108.0)	13.63 (346.2)	13.63 (346.2)	7.25 (184.2)	5.63 (143.0)	—	12.75 (323.9)	5.00 (127.0)	13.63 (346.2)	13.63 (346.2)	1.63 (41.4)	2.50 (63.5)	3.50 (88.9)	13 (5.9)	
480A	1NO	5.13 (130.3)	16.88 (428.8)	16.88 (428.8)	10.00 (254.0)	8.00 (203.2)	1.25 (31.8)	16.00 (406.4)	5.13 (130.3)	16.88 (428.8)	16.88 (428.8)	1.88 (47.8)	3.00 (76.2)	4.00 (101.6)	26 (12)	1/2-13
	1NC	5.25 (133.4)	18.88 (479.6)	18.88 (428.8)	10.00 (254.0)	7.50 (190.5)	1.25 (31.8)	18.00 (457.2)	6.13 (155.7)	18.88 (479.6)	18.88 (479.6)	1.88 (47.8)	3.00 (76.2)	4.00 (101.6)	34 (15)	
960A	1NO	7.63 (193.8)	18.75 (476.3)	18.75 (476.3)	12.25 (311.2)	9.50 (241.3)	1.25 (31.8)	17.50 (444.5)	7.63 (193.8)	18.75 (476.3)	18.75 (476.3)	1.88 (47.8)	5.50 (139.7)	5.50 (139.7)	45 (20)	3/4-12

Notes

- ① May be reduced to 2.5 (63.5) for Size 3.
- ② May be reduced to 3.5 (88.9) for Size 3.

ME 600 V Contactors



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ME 600 V Contactors

Product Description

These DC Contactors are designed to handle rugged DC applications. They provide durable service and easy installation and maintenance.

Application Description

- Applications including mining, milling, cranes and transportation
- These contactors utilize DC coils

Note: Be sure to utilize a rectifier module if the only control voltage source available is 120 Vac.

Features

- Sturdy glass polyester base
- Knife edge bearings that guarantee precise operation and minimal wear
- High contact pressure
- Vacuum impregnated magnetic coil

Benefits

- Able to mount on steel or panels of any material for maximum flexibility
- Front or rear mounting available for convenient installation and maintenance
- Rapid arc quenching to ensure long life
- Easily accessible contact tips to remove and replace

Product Selection

When Ordering Specify

- Catalog number with appropriate coil suffix
- Any required accessories

4

ME 600 V Contactor

ME 600 V Contactors



Size	Open 8 Hour Ampere Rating	Contact Arrangement	Provisions for Interlocks		Magnet Coil Voltage	Catalog Number
			Mechanical	Electrical		
Front Connected						
0	10	1NO	Yes	4	125 Vdc ^①	ME010C
		2NO		2		ME020C
		1NO, 1NC		4		ME011C
		1NC		2		ME001C
1	25	1NO	Yes	4	125 Vdc ^①	ME110C
		2NO		2		ME120C
		1NO, 1NC		4		ME111C
		1NC		2		ME101C
2	50	1NO	Yes	4	125 Vdc ^①	ME210C
		2NO		2		ME220C
		1NO, 1NC		4		ME211C
		1NC		2		ME201C
3	100	1NO	Yes	4	125 Vdc ^①	ME310C
		2NO		2		ME320C
		1NO, 1NC		4		ME311C
		1NC		2		ME301C
4	150	1NO	Yes	4	125 Vdc ^①	ME410C
		2NO		2		ME420C
		1NO, 1NC		4		ME411C
		1NC		2		ME401C
Rear Connected						
0-4	10-150	—	—	—	—	ME ^②

Notes

- ^① Other coil voltages available, see **Page V5-T4-78**. Substitute suffix code of desired voltage for last digit in listed catalog number. Example: ME010B.
- ^② For 10–150 A rear connected contactors, order front connected ME contactor above and rear connection kit, catalog number 2184A10G08, (field installed only). See **Page V5-T4-78**.

Accessories

Auxiliary Contacts (Electrical Interlocks)—For Field Installation Only ^①

Auxiliary Contact Type	Application	Contact Arrangement ^②	Number of Auxiliary Contacts	Auxiliary Contacts Factory Installed ^① Catalog Number	Auxiliary Contacts Unmounted Replacement Only Catalog Number	Mounting and Operating Hardware for New Applications Catalog Number
L46	ME01 only	NO-FC	1	11A8713G10	11A8713G10	None required
		NC-FC		11A8713G09	11A8713G09	None required
	ME10 only	NC-FC-OB	1	487B878G01	487B878G01	None required
		NO-FC		11A8713G09	11A8713G09	None required
	ME10, ME11, ME20, ME30, ME31, ME40 and ME41	NC-FC	1	11A8713G10	11A8713G10	None required

Standard Magnet Coil Suffix

Voltage	Suffix Code
65 Vdc (ME Size 0-4 only)	A
115 Vdc	B
125 Vdc	C
230 Vdc	D
250 Vdc	E
550 Vdc	F
Other	G

Rear Connector Kit for ME Contactors ^③

Catalog Number

2184A10G08

Accessory Option

Description

Rectifier for AC Operation

Order by description

Mechanical Interlocks, Unmounted

Type	Contactor		Contacts	Catalog Number
	Type	Size		
M-25	ME	All	1NO, 1NO + 1NC	878D400G01
M-25	ME	All	2NO, 2NO + 1NC	878D401G01

Notes

- ① For factory installed electrical interlocks, consult factory.
- ② NO = Normally Open, NC = Normally Closed, DB = Delayed Break, FC = Front Connected, L = Left Hand, R = Right Hand, OB = Outboard (for single-pole, Size 2 frame).
- ③ Field installation only.

Renewal Parts

ME Series

Kits

Description	One NO Pole		Two NO Poles		One NC Pole		One NO/NC Pole	
	Qty.	Part Number	Qty.	Part Number	Qty.	Part Number	Qty.	Part Number
Contact kit	1	2184A10G14	2	2184A10G14	1	2184A10G14	2	2184A10G14
Arc box 10/25/50 A	1	2184A10G09	2	2184A10G09	1	2184A10G09	2	2184A10G09
Arc box 100/150 A	1	2184A10G10	2	2184A10G10	1	2184A10G10	2	2184A10G10
Shunt kit	1	2184A10G21	1	2184A20G16	1	2084A01G07	1	2184A11G07
Armature kit	1	2184A10G19	1	2184A20G15	1	2084A01G06	1	2184A11G06
Blowout Assembly								
10 A	1	2184A10G15	1	2184A20G11	1	2184A10G15	2	2184A10G15
25 A	1	2184A10G16	1	2184A20G12	1	2184A10G16	2	2184A10G16
50 A	1	2184A10G17	1	2184A20G13	1	2184A10G17	2	2184A10G17
110/150 A	1	2184A10G18	1	2184A20G14	1	2184A10G18	2	2184A10G18
Rear conn. kit	1	2184A10G08	1	2184A10G08	1	2184A10G08	1	2184A10G08

Coils

Voltage	Operating Coils		Holding Coils (Lower)—1NO-1NC Contactors Only ^①	
	10/25/50/100/150 Ampere Sizes		10/25/50 Ampere Sizes	100/150 Ampere Sizes
	Part Number	Part Number	Part Number	
65	30B4376G06	44A6366G10	30B4376G27	
90/92	30B4376G25	44A6366G12	427C048G16	
115	30B4376G07	44A6366G13	30B4376G01	
125	30B4376G08	44A6366G19	30B4376G26	
230/240	30B4376G09	44A6366G15	30B4376G02	
250	30B4376G10	44A6366G23	30B4376G17	
500	30B4376G14	N/A	N/A	
550	30B4376G11	44A6366G18	30B4376G03	

Dimensions

Approximate Dimensions in Inches (mm)

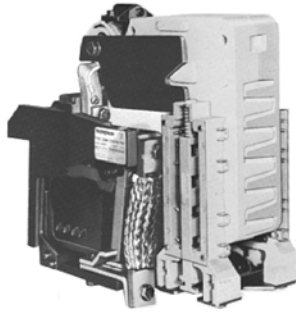
ME 600 V Contactors

Contactor Size	Contact Arrangement	Width	Height	Depth	Shipping Weight Lb (kg)
Front Connected					
0-2	1NO	3.18 (80.8)	7.56 (192.0)	6.81 (173.0)	8.0 (3.6)
	2NO	5.53 (140.5)	6.75 (171.5)	6.81 (173.0)	10.0 (4.5)
	1NO, 1NC	3.67 (93.2)	12.44 (316.0)	6.81 (173.0)	12.0 (5.4)
	1NC	3.67 (93.2)	9.57 (243.1)	6.81 (173.0)	10.0 (4.5)
3-4	1NO	3.18 (80.8)	7.78 (197.6)	6.81 (173.0)	8.0 (3.6)
	2NO	5.53 (140.5)	7.44 (189.0)	6.81 (173.0)	10.0 (4.5)
	1NO, 1NC	3.67 (93.2)	12.88 (327.2)	6.81 (173.0)	12.0 (5.4)
	1NC	3.67 (93.2)	9.69 (246.1)	6.81 (173.0)	10.0 (4.5)

Note

^① If lower coils are required, order separately.

DPM 750 V Contactor



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DPM 750 V Contactor

Product Description

The DPM 750 Vdc Definite Purpose Contactor has been designed to meet severe environmental and vibration conditions found in your worst applications. The contactor is of unit construction, assembled on a molded insulated base, providing maximum performance in minimum space.

Application Description

This rugged device was designed for applications such as railway equipment, offshore drilling, mining, off-road vehicles, marine, and so on.

Features

- Power circuit insulating barriers are molded from glass-polyester materials having high arc and track resisting qualities
- The DPM is designed to mount directly on a channel or angle frame, but may be adapted for mounting on a flat metal or insulated panel
- Available with or without an overcurrent latching mechanism to prevent opening under heavy overload currents. When the line current returns to normal, the overcurrent latch disengages

Benefits

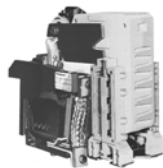
- Saves panel space by locating the arc chute vents on the front of the unit. This eliminates the need for arcing clearance above the contactor
- All vital parts are removable from the front without having to disconnect line or load connections, allowing for easy maintenance
- Safety is a must. The mechanical interlock prevents the contactor from closing when the arc box has been removed or when it is not installed properly

Product Selection

When Ordering Specify

- Catalog number of contactor and any required accessories

750 Vdc Contactor



750 Vdc Contactors

Coil Operating Voltage ^①	Overcurrent Latch	Catalog Number
28 Vdc	Without	2120A07G01 ^②
	With	2120A07G02 ^②
36 Vdc	Without	2120A07G03 ^②
	With	2120A07G04 ^②
55 Vdc	Without	2120A07G05 ^②
	With	2120A07G06 ^②

Coil Operating Voltage ^①	Overcurrent Latch	Catalog Number
74 Vdc	Without	2120A07G09 ^②
	With	2120A07G10 ^②
110 Vdc	Without	2120A07G13 ^②
	With	2120A07G14 ^②
125 Vdc	Without	2120A07G17 ^②
	With	2120A07G18 ^②

Accessories

Extra L-67 Auxiliary Contacts—Order Separately

Contact Combination Provided by One Auxiliary Contact Assembly		Field Installed Kit
Normally Open	Normally Closed	Catalog Number
0	4	2087A40G11
1	3	2087A40G12
2	2	2087A40G13
3	1	2087A40G14
4	0	2087A40G15

Mechanical Interlock Kit

Description	Catalog Number
Mechanical Horizontal Interlock Kit Includes mounting instructions and mounting hardware ^③	1954D13G01

Renewal Parts

DPM Contactor

Description	Catalog Number
Contact Kit	2131A94G10
Arc Box	2131A94G03
Shunt	3534C86G01
Coils	
28 Vdc	2114A92G04
36 Vdc	2114A92G05
55 Vdc	2114A92G06
74 Vdc	2114A92G09
110/115 Vdc	2114A92G14
125 Vdc	2114A92G15
275 Vdc	2114A92G16
600 Vdc	2114A92G20

Notes

- ① For other coil operating voltages, contact Eaton Technical Resource Center.
- ② Includes factory installed 2NO/2NC auxiliary contacts.
- ③ When interlock kit is installed, only one L-67 auxiliary contact can be mounted on each DPM contactor.

Technical Data and Specifications

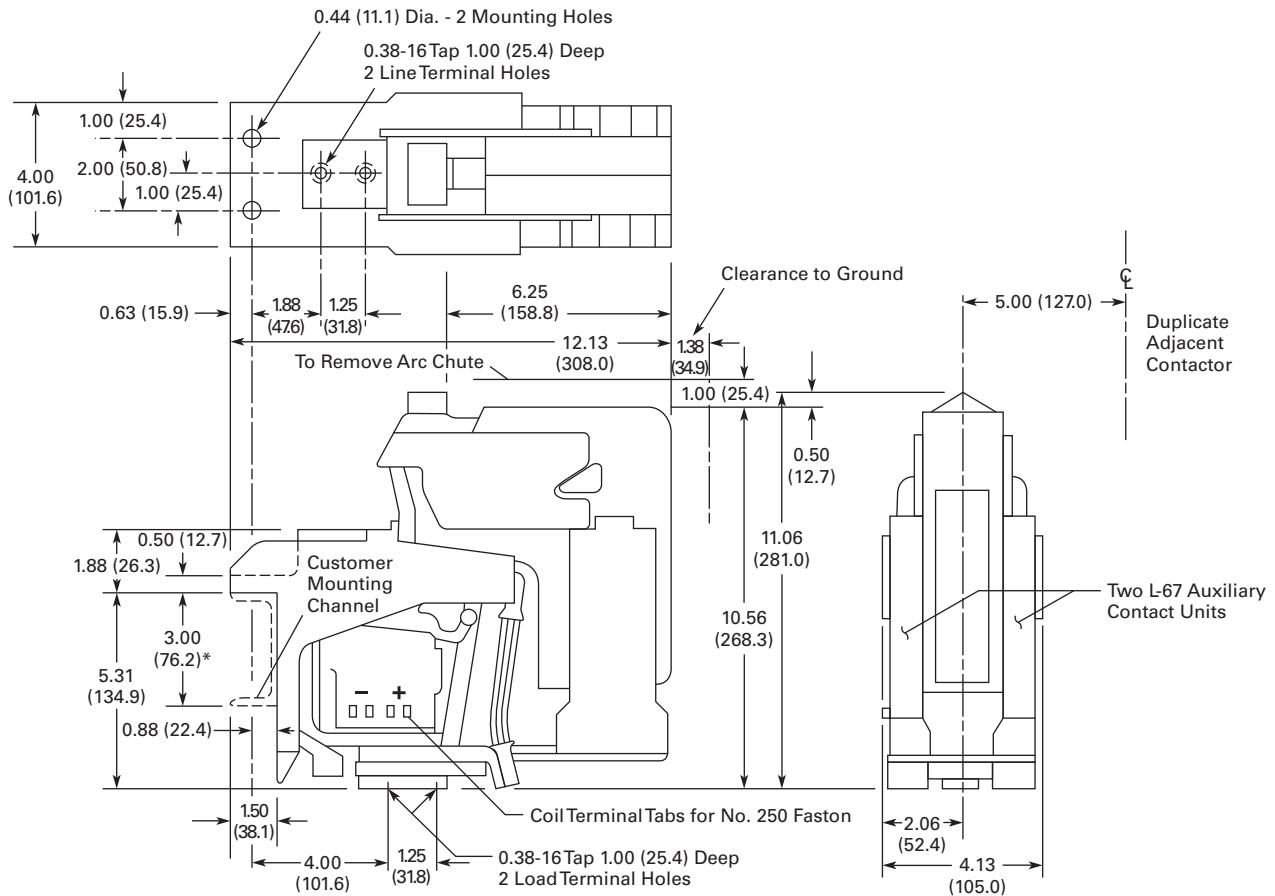
DPM Contactor

Description	Specification
Line voltage	750 Vdc
Continuous current rating	
Carrying and interrupting capacity	1250 A
Operating coil	
Duty rating	Continuous
Operation	Will operate at 80–110% of rated voltage
Insulation between power circuit and operating coil	Rated 750 Vdc
Arcing and creepage distances	Meet or exceed NEMA standards for 750 V equipment
Blowout coil	Rated for continuous duty

Dimensions

Approximate Dimensions in Inches (mm)

DPM Contactor



*This dimension must not be exceeded or flashover may occur.

Width	Height	Depth	Shipping Weight Lb (kg)
4.13 (105)	11.06 (280.9)	12.12 (307.8)	30.5 (13.8)

AVD–Contactor



AVD–Contactor

Product Description

The AVD–Contactor is a single-pole normally open, load break, bi-directional definite purpose DC contactor. The device is rated at 1400 amps continuous and is capable of switching up to 2000 Vdc loads.

Application Description

The AVD–Contactor was designed for the demanding environmental requirements of locomotive, rapid transit and off highway vehicle applications. This device is also applied in high horsepower DC drive applications including process lines and off shore oil drilling rigs.

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Reversing/Assignment Contactor	V5-T4-88

Features

- Bi-directional interrupting capability
- 2000 Vdc switching in a compact design due to arc chute
- Any combination of up to four isolated NO or NC auxiliary contacts
- Panel mount design
- Continuous duty operating coil
- Continuous duty blow out coil

Product Selection

When Ordering—Contact Technical Resource Center

- Product specification: The AVD–contactor is a definite purpose DC contactor
- Please consult our Technical Resource Center for catalog numbers of other device configurations and application assistance

1400 A Contactor



AVD–Contactor

Device Type	Auxiliary Contact Configuration	Coil Voltage	Catalog Number
1400 A contactor	3NO/1NC	28	6702ED667-4
		37	6702ED667-5
		74	6702ED667-6
		100	6702ED667-3
		230	6702ED667-7

Accessories

Auxiliary Contacts

Contact Configuration	Terminal Configuration	Catalog Number
1NO/1NC	Fast-on	10-3519-5
2NO	Fast-on	10-3519-6
2NC	Fast-on	10-3519-7
1NO/1NC	Screw type	10-6817
2NO	Screw type	10-6817-2
2NC	Screw type	10-6817-3

Renewal Parts

Contacts

Description	Quantity Required per Contactor	Catalog Number
Stationary contact	1	23-7253
Movable contact	2	23-7255

Technical Data and Specifications

AVD-Contactor

Description	Specification
Current carrying capability at 55 °C	1400 A continuous
Electrical creepage and clearance distances	Up to 2000 Vdc applications
Mechanical life	2 million operations
Operating coil voltages (DC)	28, 37, 74, 100, 230 (others available)

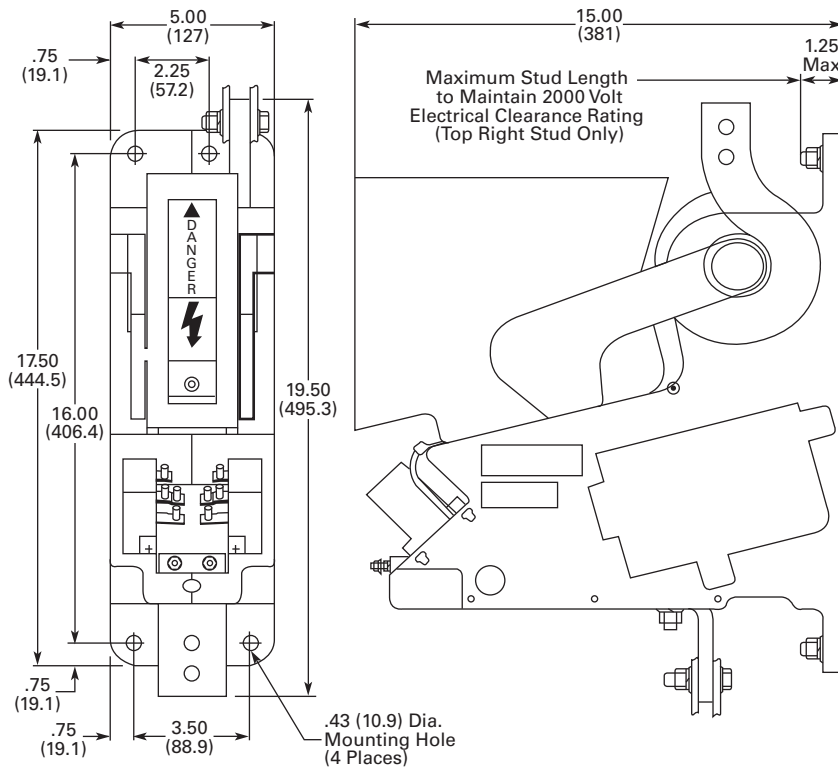
Operating Coil Characteristics

Coil Voltage	Current Draw at Nominal Voltage (±5% at 20 °C)	Catalog Number
28	1.87	9-3004-2
37	1.58	9-3004-3
74	0.79	9-3004-1
100	0.62	9-3004-5
230	0.25	9-3004-4

Dimensions

Approximate Dimensions in Inches (mm)

AVD-Contactor



Width	Height	Depth	Shipping Weight Lb (kg)
15.0 (381.0)	19.5 (495.3)	5.0 (127.0)	70 (31.8)

Arc Clearances

Front	Top	Sides
2 (51)	2 (51)	1 (25)

D-Contactor



D-Contactor

Product Description

The D-Contactor is a single-pole normally open, load break, bi-directional definite purpose DC contactor. Two devices are available rated at 1800 A and 3000 A at 750 Vdc.

Application Description

The D-Contactor was designed for the demanding environmental requirements of locomotive, rapid transit and off highway vehicle applications. This device is also widely applied in high horsepower DC drive applications including process lines and off shore oil drilling rigs.

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Features

- Bi-directional interrupting capability
- Compact design due to intermittent duty blowout coil and arc interruption circuit (not suitable for extremely high duty cycle or jogging applications)
- Any combination of up to eight isolated NO or NC auxiliary contacts
- Channel/angle frame mounting standard, optional panel mount kit available
- Continuous duty operating coil
- Screw type or fast-on control terminals

Product Selection**When Ordering—Contact Technical Resource Center**

- Product specification: The D–contactor is a definite purpose DC contactor
- Please consult our Technical Resource Center for catalog numbers of other device configurations and application assistance

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1800 A Contactor**D–Contactor**

Device Type	Auxiliary Contact Configuration	Coil Voltage	Catalog Number
1800 A contactor	3NO/1NC	74 Vdc	6702ED584
	3NO/1NC	100 Vdc	6702ED663
	2NO/2NC	115 Vdc	6702ED584-2
3000 A contactor	3NO/1NC	74 Vdc	6702ED587-2
	2NO/2NC	100 Vdc	6702ED668
	3NO/1NC	115 Vdc	6702ED587-4

Accessories**Auxiliary Contacts**

Contact Configuration	Terminal Configuration	Catalog Number
1NO/1NC	Fast-on	10-3519-5
2NO	Fast-on	10-3519-6
2NC	Fast-on	10-3519-7
1NO/1NC	Screw type	10-6817
2NO	Screw type	10-6817-2
2NC	Screw type	10-6817-3

Panel Mounting Kit

Description	Catalog Number
Panel mounting kit	99-3842

Renewal Parts**Contact Kits**

Device Rating	Main Contact Configuration	Contacts	Catalog Number
1800 A	2-Main	Main contacts	6-497
1800 A	2-Main	Arcing contacts	23-5449
3000 A	4-Main	Main contacts	6-496
3000 A	4-Main	Arcing contacts	23-5448

Technical Data and Specifications

D-Contactor

Description	Specification
Current carrying capability at 55 °C	1800 A and 3000 A continuous
Resistive interrupt rating	5000 A 750 Vdc
Electrical creepage and clearance distances	Up to 1500 Vdc applications
Mechanical life	2 million operations
Operating coil voltages (DC)	12, 24, 32, 48, 74, 100, 115, 230 (others available)

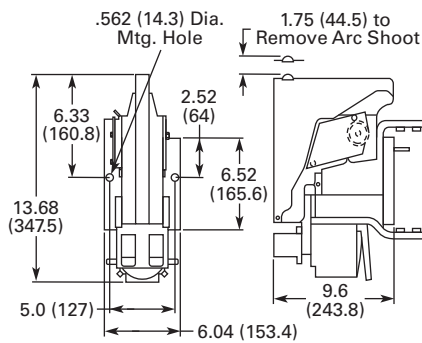
Operating Coil Characteristics

Coil Voltage	Current Draw at Nominal Voltage (±7.5% at 20 °C)	Catalog Number
12	3.96	9-1688-15
24	2.00	9-1688-7
32	1.44	9-1688-9
48	1.00	9-1688-12
74	0.97	9-2064-3
100	0.45	9-1688-8
115	0.37	9-1688-2
230	0.20	9-1688-1

Dimensions

Approximate Dimensions in Inches (mm)

D-Contactor

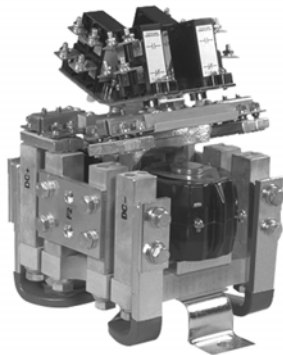


Width	Height	Depth	Shipping Weight Lb (kg)
9.6 (243.8)	13.68 (347.5)	6.04 (153.4)	43 (19.5)

Arc Clearances

Type of Load	750 V		
	Front	Top	Sides
Resistive	4 (102)	2 (51)	3 (76)
Inductive	7 (178)	4 (102)	3 (76)

Reversing/Assignment Contactor



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Reversing/Assignment Contactor

Product Description

The Reversing/Assignment Contactor is a two-pole, double-throw non-load break definite purpose DC contactor. A three-position center-off and a two-position magnetically-latched configuration is available. The device is rated for 1100 A, 1000 Vdc. The Reversing Contactor includes cross over bus bars for DC motor reversing applications; the Assignment Contactor omits the cross over bus bars for motor assignment applications. (See **Page V5-T4-90**.)

Application Description

The Reversing/Assignment Contactor was designed for the demanding environmental requirements of off highway vehicle applications. This device is also widely utilized with high horsepower DC drives for DC motor reversing and drive assignment applications.

Features

- Bi-directional current carrying capability (non-load break)
- Can replace four single-pole contactors in DC motor reversing applications
- Can replace two or four single-pole contactors in DC motor assignment applications
- Any combination of up to eight isolated NO or NC auxiliary contacts
- Panel mount design
- Continuous duty operating coil
- Screw type or fast-on control terminals

Product Selection

When Ordering—Contact Technical Resource Center

- Product specification: The Reversing/assignment contactor is a definite purpose DC contactor
- Please consult our Technical Resource Center for catalog numbers of other device configurations and application assistance

1000 V Contactor



Reversing/Assignment Contactor (Three-Position, Center OFF)

Device Type	Auxiliary Contact Configuration	Coil Voltage	Catalog Number
Reverser	8NO	74	6702ED615
	4NO/4NC	125	6702ED621-2
		250	6702ED622
Assignment	4NO/4NC	74	6702ED664-2
		125	6702ED621
		250	6702ED664-6

Accessories

Auxiliary Contacts

Contact Configuration	Terminal Configuration	Catalog Number
1NO/1NC	Fast-on	10-3519-5
2NO	Fast-on	10-3519-6
2NC	Fast-on	10-3519-7
1NO/1NC	Screw type	10-6817
2NO	Screw type	10-6817-2
2NC	Screw type	10-6817-3

Renewal Parts

Contact Kits

Device	Configuration	Catalog Number
Reversing/assignment	Three-position	6-602
Reversing/assignment upgrade kit ^①	Three-position	6-602-3
Magnetic latched reversing/assignment	Two-position	6-602-5

Note

- ^① The 6-602-3 contact kit will upgrade the three-position, reversing/assignment device from the original design that incorporated a leaf spring contact structure to the present design that incorporates a coil spring contact structure. The 6-602 contact kit can then be used after the device has been upgraded for subsequent contact replacement.

Technical Data and Specifications

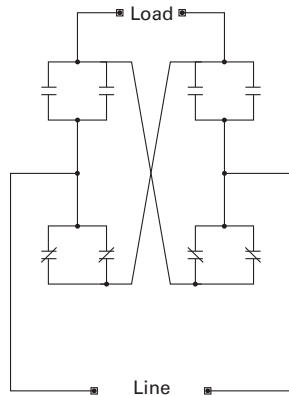
Reversing/Assignment Contactor

Description	Specification
Current carrying capability at 55 °C	1100 A continuous
Electrical creepage and clearance distances	For 1000 Vdc applications
Mechanical life	1 million operations
Operating coil voltages (DC)	24, 28, 36, 74, 110, 125, 250 (others available)

Operating Coil Characteristics

Coil Voltage	Current Draw at Nominal Voltage (±7.5% at 20 °C)	Catalog Number
24	1.60	9-1903-9
28	1.30	9-1903-1
36	1.06	9-1903-3
74	0.49	9-1903-7
110	0.33	9-1903-6
125	0.33	9-1903-4
250	0.17	9-1903-8

Reversing Contactor Schematic Diagram

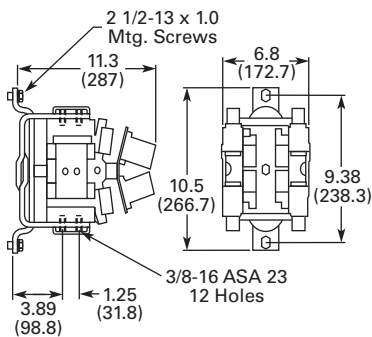


The reversing contactor includes the cross over bus bars for DC motor reversing applications. The assignment contactor omits the cross over bus bars for motor assignment applications.

Dimensions

Approximate Dimensions in Inches (mm)

Reversing Contactor



Width	Height	Depth	Shipping Weight Lb (kg)
11.3 (287)	10.5 (266.7)	6.8 (172.7)	45 (20.4)

Ampere Rating of AC Motors

Ampere ratings of motors vary somewhat, depending upon the type of motor. The values given below are for drip-proof, Class B insulated (T Frame) where available, 1.15 service factor, NEMA Design B motors. These values represent an average

full load motor current which was calculated from the motor performance data published by several motor manufacturers. In the case of high torque squirrel cage motors, the ampere ratings will be at least 10% greater than the values given below.

Caution—These average ratings could be high or low for a specific motor and therefore heater coil selection on this basis always involves risk. For fully reliable motor protection, select heater coils on the basis of full load current rating as shown on the motor nameplate.

Ampere Ratings of Three-Phase, 60 Hz, AC Induction Motor

hp ①	Syn. Speed RPM	Current in Amperes					
		200 V	230 V	380 V ②	460 V	575 V	2200 V
1/4	1800	1.09	0.95	0.55	0.48	0.38	—
	1200	1.61	1.4	0.81	0.7	0.56	—
	900	1.84	1.6	0.93	0.8	0.64	—
1/3	1800	1.37	1.19	0.69	0.6	0.48	—
	1200	1.83	1.59	0.92	0.8	0.64	—
	900	2.07	1.8	1.04	0.9	0.72	—
1/2	1800	1.98	1.72	0.99	0.86	0.69	—
	1200	2.47	2.15	1.24	1.08	0.86	—
	900	2.74	2.38	1.38	1.19	0.95	—
3/4	1800	2.83	2.46	1.42	1.23	0.98	—
	1200	3.36	2.92	1.69	1.46	1.17	—
	900	3.75	3.26	1.88	1.63	1.3	—
1	3600	3.22	2.8	1.7	1.4	1.12	—
	1800	4.09	3.56	2.06	1.78	1.42	—
	1200	4.32	3.76	2.28	1.88	1.5	—
	900	4.95	4.3	2.6	2.15	1.72	—
1-1/2	3600	5.01	4.36	2.64	2.18	1.74	—
	1800	5.59	4.86	2.94	2.43	1.94	—
	1200	6.07	5.28	3.2	2.64	2.11	—
	900	6.44	5.6	3.39	2.8	2.24	—
2	3600	6.44	5.6	3.39	2.8	2.24	—
	1800	7.36	6.4	3.87	3.2	2.56	—
	1200	7.87	6.84	4.14	3.42	2.74	—
	900	9.09	7.9	4.77	3.95	3.16	—
3	3600	9.59	8.34	5.02	4.17	3.34	—
	1800	10.8	9.4	5.7	4.7	3.76	—
	1200	11.7	10.2	6.2	5.12	4.1	—
	900	13.1	11.4	6.9	5.7	4.55	—
5	3600	15.5	13.5	8.2	6.76	5.41	—
	1800	16.6	14.4	8.74	7.21	5.78	—
	1200	18.2	15.8	9.59	7.91	6.32	—
	900	18.3	15.9	9.6	7.92	6.33	—

Notes

- ① To convert horsepower to kW, multiply horsepower by 0.7457.
- ② 380 V 50 Hz.

Ampere Ratings of Three-Phase, 60 Hz, AC Induction Motor, continued

hp ①	Syn. Speed RPM	Current in Amperes					
		200 V	230 V	380 V ②	460 V	575 V	2200 V
7-1/2	3600	22.4	19.5	11.8	9.79	7.81	—
	1800	24.7	21.5	13	10.7	8.55	—
	1200	25.1	21.8	13.2	10.9	8.7	—
	900	26.5	23	13.9	11.5	9.19	—
10	3600	29.2	25.4	15.4	12.7	10.1	—
	1800	30.8	26.8	16.3	13.4	10.7	—
	1200	32.2	28	16.9	14	11.2	—
	900	35.1	30.5	18.5	15.2	12.2	—
15	3600	41.9	36.4	22	18.2	14.5	—
	1800	45.1	39.2	23.7	19.6	15.7	—
	1200	47.6	41.4	25	20.7	16.5	—
	900	51.2	44.5	26.9	22.2	17.8	—
20	3600	58	50.4	30.5	25.2	20.1	—
	1800	58.9	51.2	31	25.6	20.5	—
	1200	60.7	52.8	31.9	26.4	21.1	—
	900	63.1	54.9	33.2	27.4	21.9	—
25	3600	69.9	60.8	36.8	30.4	24.3	—
	1800	74.5	64.8	39.2	32.4	25.9	—
	1200	75.4	65.6	39.6	32.8	26.2	—
	900	77.4	67.3	40.7	33.7	27	—
30	3600	84.8	73.7	44.4	36.8	29.4	—
	1800	86.9	75.6	45.7	37.8	30.2	—
	1200	90.6	78.8	47.6	39.4	31.5	—
	900	94.1	81.8	49.5	40.9	32.7	—
40	3600	111	96.4	58.2	48.2	38.5	—
	1800	116	101	61	50.4	40.3	—
	1200	117	102	61.2	50.6	40.4	—
	900	121	105	63.2	52.2	41.7	—
50	3600	138	120	72.9	60.1	48.2	—
	1800	143	124	75.2	62.2	49.7	—
	1200	145	126	76.2	63	50.4	—
	900	150	130	78.5	65	52	—
60	3600	164	143	86.8	71.7	57.3	—
	1800	171	140	90	74.5	59.4	—
	1200	173	150	91	75	60	—
	900	177	154	93.1	77	61.5	—
75	3600	206	179	108	89.6	71.7	—
	1800	210	183	111	91.6	73.2	—
	1200	212	184	112	92	73.5	—
	900	222	193	117	96.5	77.5	—

Notes

- ① To convert horsepower to kW, multiply horsepower by 0.7457.
- ② 380 V 50 Hz.

Ampere Ratings of Three-Phase, 60 Hz, AC Induction Motor, continued

hp ^①	Syn. Speed RPM	Current in Amperes					
		200 V	230 V	380 V ^②	460 V	575 V	2200 V
100	3600	266	231	140	115	92.2	—
	1800	271	236	144	118	94.8	23.6
	1200	275	239	145	120	95.6	24.2
	900	290	252	153	126	101	24.8
125	3600	—	292	176	146	116	—
	1800	—	293	177	147	117	29.2
	1200	—	298	180	149	119	29.9
	900	—	305	186	153	122	30.9
150	3600	—	343	208	171	137	—
	1800	—	348	210	174	139	34.8
	1200	—	350	210	174	139	35.5
	900	—	365	211	183	146	37
200	3600	—	452	257	226	181	—
	1800	—	458	265	229	184	46.7
	1200	—	460	266	230	184	47
	900	—	482	279	241	193	49.4
250	3600	—	559	338	279	223	—
	1800	—	568	343	284	227	57.5
	1200	—	573	345	287	229	58.5
	900	—	600	347	300	240	60.5
300	1800	—	678	392	339	271	69
	1200	—	684	395	342	274	70
400	1800	—	896	518	448	358	91.8
500	1800	—	1110	642	555	444	116

Notes

① To convert horsepower to kW, multiply horsepower by 0.7457.

② 380 V 50 Hz.