Instructions for A201, A211, A251, Size 4 Magnetic Contactor Nonreversing or Reversing

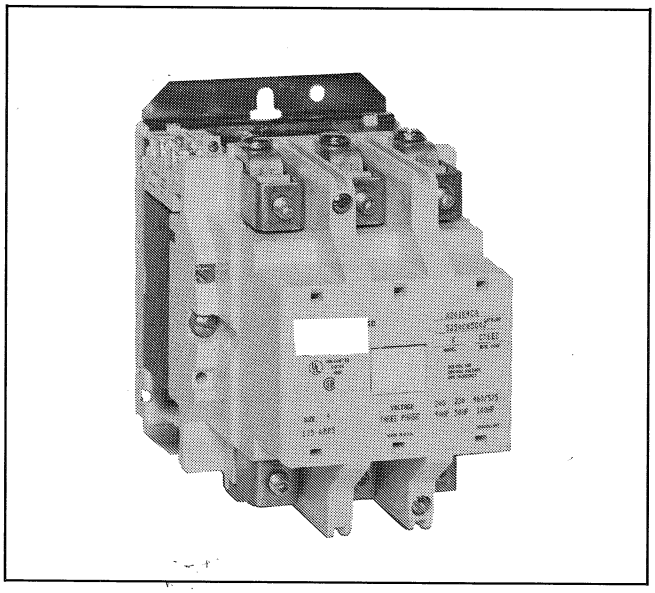

Fig. 1 Size 4 A201 Nonreversing Contactor

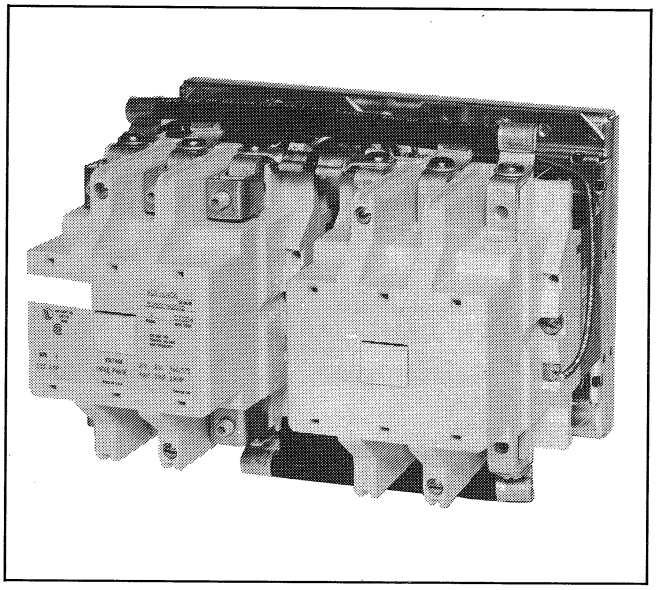

Fig. 2 Size 4 A211 Reversing Contactor

THE CONTACTOR

A201 contactors are designed for the control of inductive or non-inductive loads at voltages between 120 and 600, AC. The units are suitable for mounting on either steel or insulated panels. All parts are front removable. Contactors should be protected against short circuits by branch circuit protective devices selected in accordance with the National Electrical Code (NEC).

This industrial type control is designed to be installed, operated, and maintained by adequately trained workmen. These instructions do not cover all details, variations, or combinations of the equipment, its storage, delivery, installation, check out, safe operation, or maintenance. Care must be exercised to comply with local, state, and national regulations, as well as safety practices, for this class of equipment.

CONTROLLER RATINGS — 3 POLE CONTACTOR				
NEMA Size	3 PHASE HORSEPOWER AT			
	200V	230V	380V	460/757V
4	40	50	75	100

Contactor Size	Continuous Carrying Current, RMS (Resistive Load)		Maximum Inrush Current (Amps, Peak) including offset)
	Open	Enclosed	
4	150A	135A	1273A

Two-pole contactors have the same current ratings as 3 pole devices but are not suitable for controlling 3 phase motors.

AUXILIARY CONTACTS — TYPE J

A J20 with two normally-open poles is supplied mounted in the upper left hand corner recess of non-

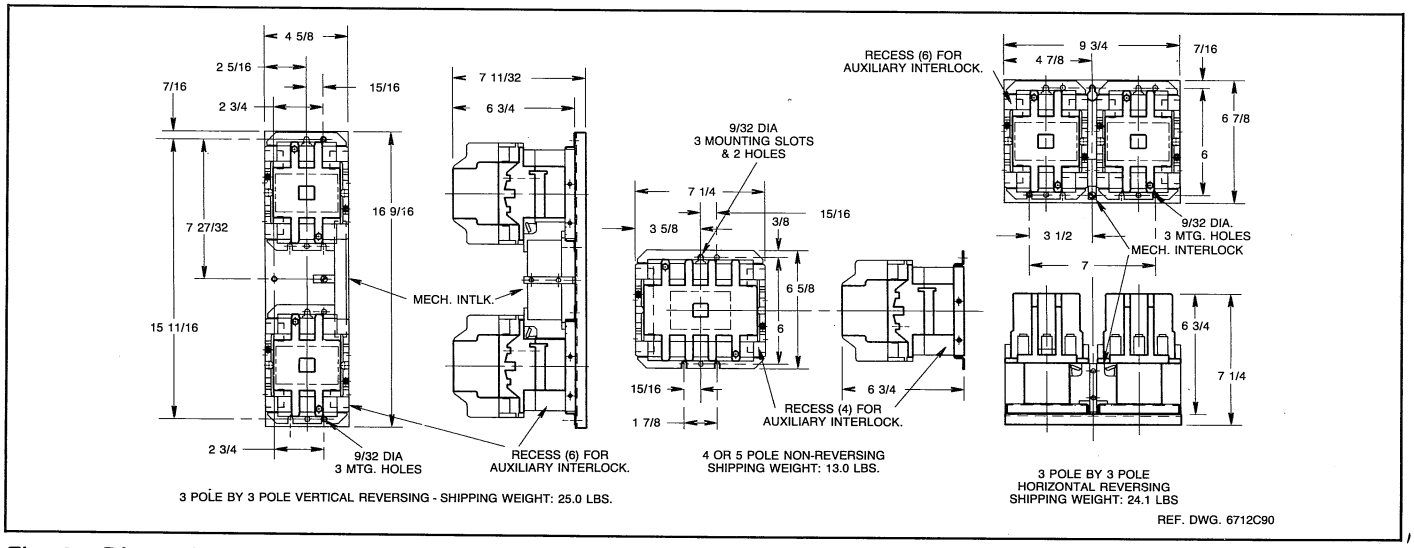

Fig. 3 Dimension Drawings (Dim. in inches)

AUXILIARY CONTACTS — TYPE J (cont.)

reversing contactors. One pole is used as the holding circuit auxiliary. Two J11 units are supplied mounted on reversing contactors. One pole is used as the holding circuit auxiliary. A maximum of four auxiliary units can be installed in each nonreversing contactor (three in each reversing contactor) with terminals either in line or in a right angle relationship to the power poles. Auxiliary contacts mount by means of a spring clip and retainer screw. To remove the unit rotate the retainer screw several times (counterclockwise) and then slide the auxiliary contact unit out of the recess.

TABLE J AUXILIARY CONTACTS

Contact Type	Catalog No.
2 Normally Closed	J02
2 Normally Open	J20
1 Normally Open and 1 Normally Closed	J11
1 Normally Open and 1 Normally Closed, Delayed Break	J1C

TYPE J CONTACT RATINGS (A600, R300)

Voltage	Continuous	Make	Break
120-600 VAC	10A	7200VA	720VA
72-120 VAC	10A	60A	720VA
28-72 VAC	10A	60A	10A
28-300 VDC	1.0A	28VA	28VA

COIL

A201 contactors are available with a single or dual voltage coil. When equipped with a single voltage coil, the contactor is wired as shown in Figure 6. A connection diagram for a dual voltage coil is shown in Figure 4. When supplied with a dual voltage coil, the contactor is normally wired for the higher voltage connection. The wiring may be changed to the lower voltage connection by removing and reconnecting the jumpers as illustrated below.

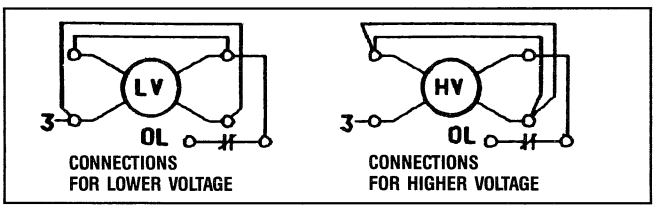

Fig. 4 Dual Voltage Coil Connections

AC COIL DATA, SIZE 4 (TYPICAL VALUES)

Poles	Inrush VA	Sealed VA	Sealed Watts
2—3	700	62	21

Pickup time: 20—23 ms **Dropout Time:** 12—16 ms

MECHANICAL INTERLOCK

The Type M-33 and M-34 mechanical interlocks are used when a pair of contactors must be mechanically protected against the closing of one when the other is already closed. The two contactors may be mounted side-by-side (A211, horizontal configuration) or one above the other (A251, vertical configuration). The two contactors may be any combination of pole arrangements. Type M-33 mechanical interlocks are provided with A211 reversing contactors and Type M-34 interlocks with A251 reversing contactors. These interlocks occupy one recess in each contactor.

REPLACEMENT COIL: ORDER BY PART NUMBER, VOLTAGE, AND FREQUENCY

MODEL K SIZE 4 AC OPERATING COILS

Voltage	Freq.	Part Number 2-3 pole	Part Number †4-5 pole
24	60	5250C79G34	Not Available
120/110	60/50	5250C79G01	5250C80G01
208	60	5250C79G02	5250C80G02
240	60	5250C79G12	5250C80G12
277	60	5250C79G14	5250C80G15
380	50	5250C79G07	5250C80G07
480/440	60/50	5250C79G13	5250C80G13
600	60	5250C79G05	5250C80G05
120/240*	60/60	5250C79G10	5250C80G10
240/480*	60/60	5250C79G03	5250C80G03

*Dual Voltage Coils. Use only on starters originally supplied with a dual voltage coil.
†4-5 pole styles for nonreversing contactors only.

POWER CIRCUIT TERMINALS

NEMA Size	Wire Size
4	#12 - 4/0 AWG

Wire with copper conductors only.

TABLE I — ACCESSORIES

Fuse Block Kits — Meet requirements of NEC concerning common control fusing.

Order Cat No.	Qty.	Description
F56	2	Contactor mounted Fuse Holder for 1 600 volt Bussman KTK Fuse
FKR	1	Panel mounted Fuse Holder for 2 Class CC (Bussman KTKR) Fuses*

*Use when available fault current exceeds 10,000 amperes

Order Fuses Separately By Ampere Rating.

Controller Size	Minimum Wire Size in Control Circuit	Suggested Fuse Size†
4	#16 AWG	10 AMP

†When using a control transformer, select fuse per the National Electrical Code.

TABLE II — RENEWAL PARTS

Contact Kit Pole Combination and Size	Model K Part Number
2 Pole Size 4	5250C81G16
3 Pole Size 4	5250C81G17
4 Pole Size 4	5250C81G18
5 Pole Size 4	5250C81G19
Mechanical Interlocks	
For Horizontal Reversing (A211)	M-33-3
For Vertical Reversing (A251)	M-34-3

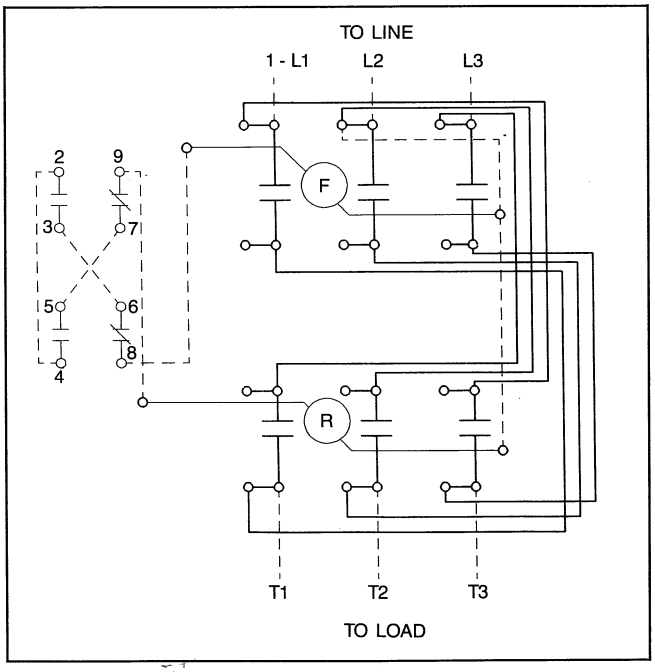

Fig. 5 Connection Diagram, A251

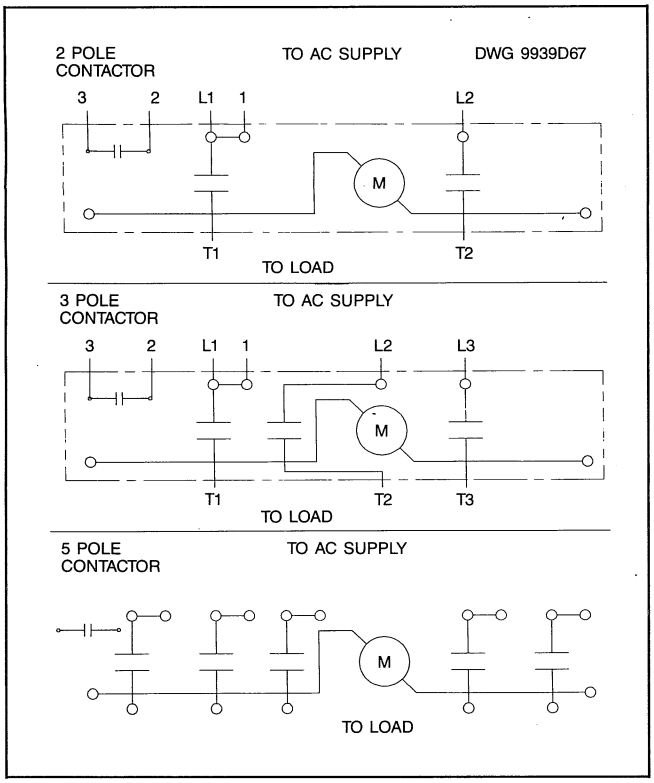

Fig. 6 Connection Diagram, A201

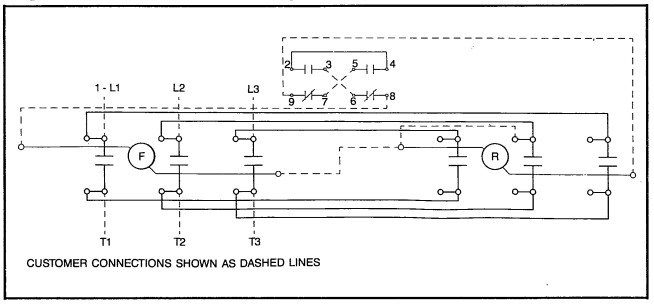

Fig. 7 Connection Diagram, A211

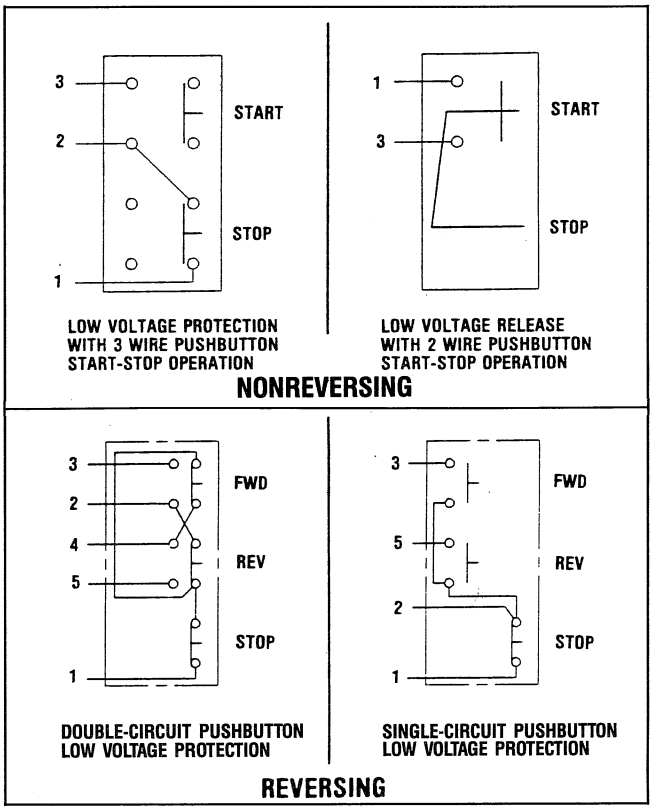

Fig. 8 Control Station Connection Diagrams

SHORT-CIRCUIT WITHSTAND RATINGS

This motor controller is suitable for use on a circuit capable of delivering not more than the current (rms symmetrical amperes) shown below in circuits rated not more than the voltage shown below.

Short-Circuit Protective Device (SCPD)	Max. Rating SCPD	Circuit Breaker Interrupting Rating	Short-Circuit Rating		Typical Disconnect Device Cat No.
			Current	Voltage	
Class H Fuse	400A	—	10,000A	600V	DS465
Class J Fuse	400A	—	100,000A	600V	HKB Interrupter
Class R Fuse	400A	—	100,000A	600V	HKB Interrupter
Class T Fuse	400A	—	100,000A	600V	HKB Interrupter
Magnetic Only[1] Type CB[2]	150A*	Marked HMCP	50,000A	600V	HMCP
			100,000A	480V	
Thermal/Mag. Type CB[3]	250A	25,000A	25,000A	600V	HJD
		65,000A	65,000A	480V	
		35,000A	35,000A	600V	JDC
		100,000A	100,000A	480V	
Mag. Only Type CB+CL[4]	150A*	HMCP+ Current Limiter	100,000A	600V	HMCP+EL
Thermal/Mag. Type CB+CL[5]	250A	200,000A	100,000A	600V	LA+TRI-PAC
Thermal/Mag. Type CLB[6]	250A	150,000A	100,000A	480	LCL

* To comply with the NEC, thermal overload relays must be included in the branch circuit.
1 Instantaneous Adjustable Trip
2 Circuit Breaker
3 Inverse Time Circuit Breaker
4 Instantaneous Adjustable Trip with Current Limiting Attachment
5 Inverse Time with Built-In Current Limiting Fuses
6 Inverse Time Current Limiting Breaker

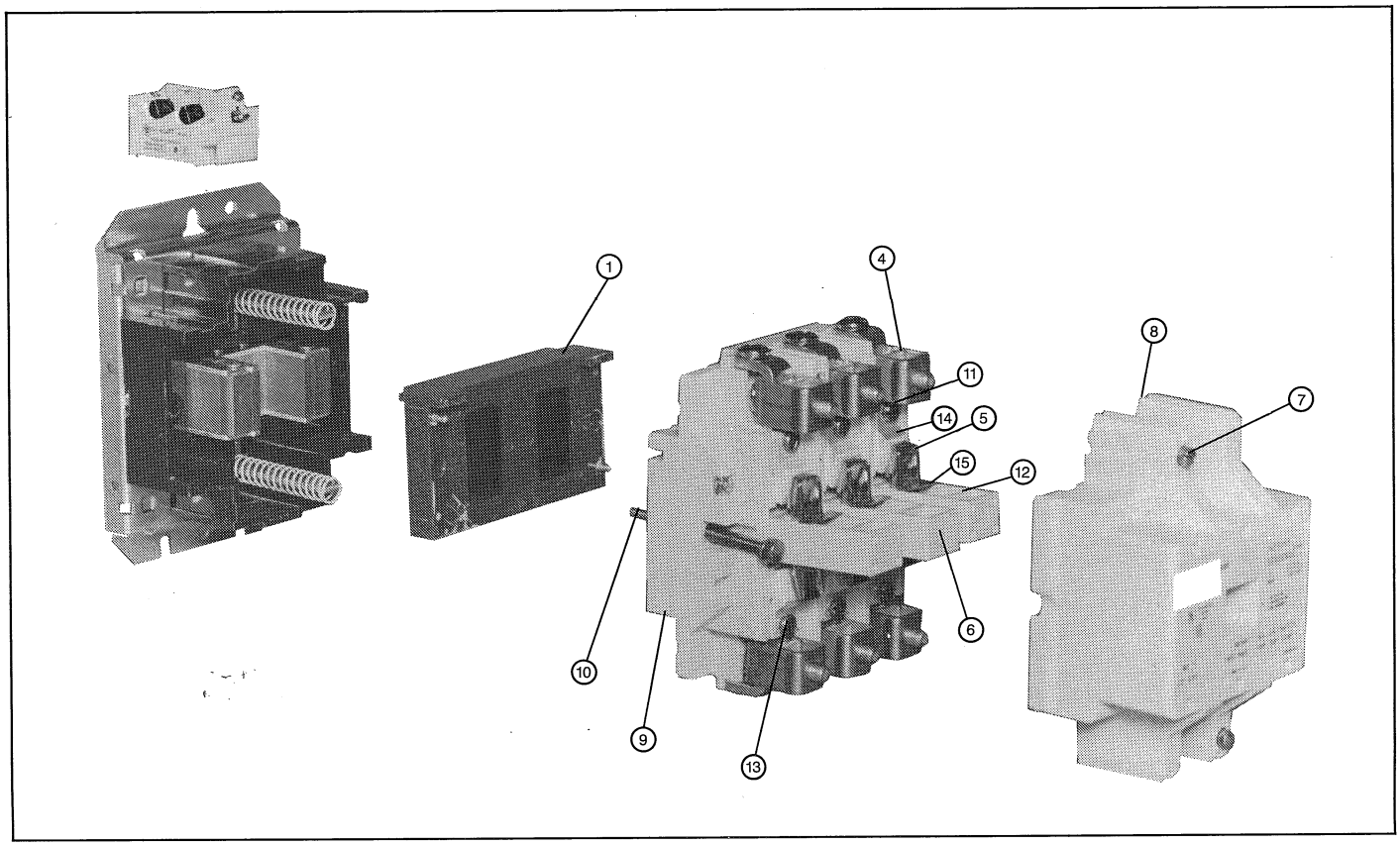

Fig. 9 Size 4 Contactor (Exploded View)

MAINTENANCE — First Turn Off Power

To Inspect Contacts

Refer to Figure 9. Loosen the two arc box assembly screws (7) located immediately above and below the nameplate and remove the arc box (8). Contacts (5) are visible. Retighten the screws per Table III.

To Replace Contacts

After removing the arc box, compress the overtravel spring (12) and remove the spring retainer clip (15) and the moving contact (5) from the crossbar (6). Remove the retaining screws (11) and lift out the stationary contact assembly (14).

To replace contacts, reverse the above procedure, making sure that stationary contacts are secure (see Table III), and that the extrusion on the spring retainer clip engages the hole in the moving contact. Make sure that the moving contacts are free to move, overtravel springs are seated, and the crossbar moves freely when the arc box is in position.

The silver cadmium oxide contact buttons need **NO** dressing or lubricant throughout their life.

Important — Replace all contacts and springs as a group to avoid misalignment.

To Replace The Coil

Refer to Figure 9. Loosen the assembly screws (10) located to the immediate top and bottom of the arc box. Pull the loosened upper base structure (9) forward. Pull the coil (1) from the upper base, plug in a new coil, replace the upper base structure and check the auxiliary contacts for secureness when repositioning the upper base. Tighten the assembly screws. Refer to Table III.

Magnet — Armature Assembly

Self alignment and permanent air gap features of the magnet armature make replacement unnecessary. Mating pole face surfaces should be kept clean.

Arc box must be in place when the contactor interrupts a circuit.

TABLE III — RECOMMENDED DRIVING TORQUE

Location (Qty.)	Driving Torque (lb.-in.)	Fig. 9 Item
Cover Screw (2)	18 — 20	7
Coil Wire Connector (2)	8 — 9	13
Stationary Contact Screw (2/pole)	18 — 20	11
Main Power Connector (2/pole)	90 — 100	4

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