

# AMERICAN ELECTRIC EQUIPMENT, INC.

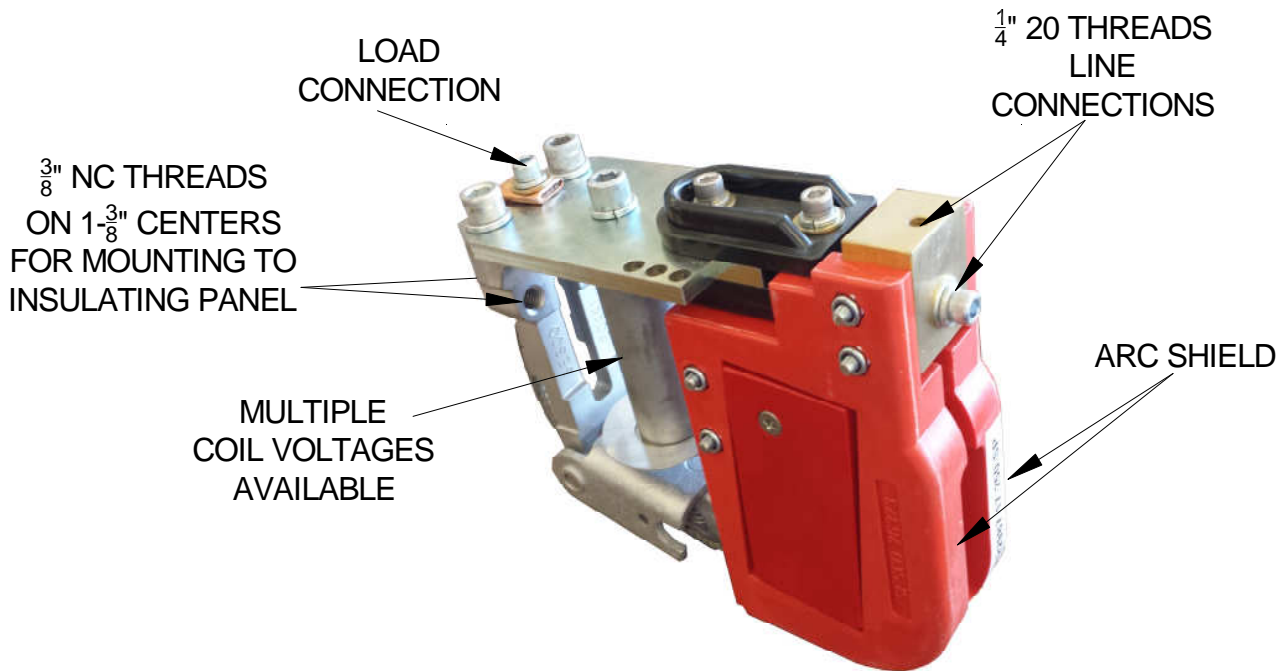
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A22987 50-250 AMP D.C Contactors  
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## Features

- Voltage rating of 600 VDC
- Contactor ratings of 50, 100, 150, 200, and 250 amps
- Coil ratings of 24, 48, 60, 96, 120, 125, 180, 200, 250, 275, 350, 500, and 600 VDC
- Coils are sufficient size to insure pick-up and sealing at 65 to 70% voltage on the 250 volt coils and 75 to 80% on the 500 volt coils.
- Coils are interchangeable on all contactors rated 50 to 250 amps.
- All operating parts can be removed from the front of the panel for replacement or adjustment without disturbing the panel mounting.
- 2 and 4 pole contactors are also available
- A mining industry standard for decades.
- Self cleaning wiping action of the moving contact cleans the stationary tip as the armature seals against the pole piece providing a good electrical connection.
- Movable tips are symmetrical in design and can be reversed when worn on one side.

## Description

The A22987 is a single pole normally open contactor. All of the functions on the contactor are the result of the magnetic flux produced by the contactor operating coil or the blowout coil. When the contactor operating coil is energized, magnetic flux flows through the pole piece, the contactor frame, the armature, and the air gap between the armature and the pole piece completing the magnetic circuit. If a magnetic auxiliary is used, a parallel magnetic circuit from the armature extension through the auxiliary assembly to the top plate operates the auxiliary. The flux pulls the armature upward to the pole piece closing the contacts and operates the auxiliary.

When the contact tips open an electrical arc burns and pits the surface of the tips and splatters them with molten copper. In a properly adjusted contactor, the tips will be self cleaning. As the armature seals against the pole piece, the moving contact wipes the stationary contact tip to provide good electrical contact. This self cleaning action is known as "wipe". The movable contact tip is spring loaded to assure the proper wiping action. The tips should be checked and adjusted periodically in order to provide the proper spring tension necessary for the mechanical wiping action. This is the most important single item in the maintenance of the contactor.

## Blowout coil

The blowout coil is connected to the front terminal and the stationary contact tip. It is located between the two arc shields of the arc chute assembly. The purpose of the blowout coil is to minimize the burning of the contact tips. As the contact opens, an electrical arc is produced in a column of heated gas between the contact tips. By producing a magnetic field perpendicular to the arc, the arc can be lengthened by deflection causing the arc to rupture. The blowout coil is connected in series with the circuit to be opened. Thus the strength of the magnetic field is proportional to the current and arc to be extinguished. The arc chutes provide protection to adjacent parts and confine the arc to a restricted area.

## Contact tips

The moving contact is of heavy construction to aid in dissipating heat and withstanding wear. It is held in place by two socket head cap screws accessible from the front. The standard tips are symmetrical in design so that it can be reversed when worn on one side. The heavy duty tips are flat on the side opposite the insert making it easy to determine the proper contact surface. The movable contact tip is connected to the terminal at the rear of the top plate through a flexible shunt.

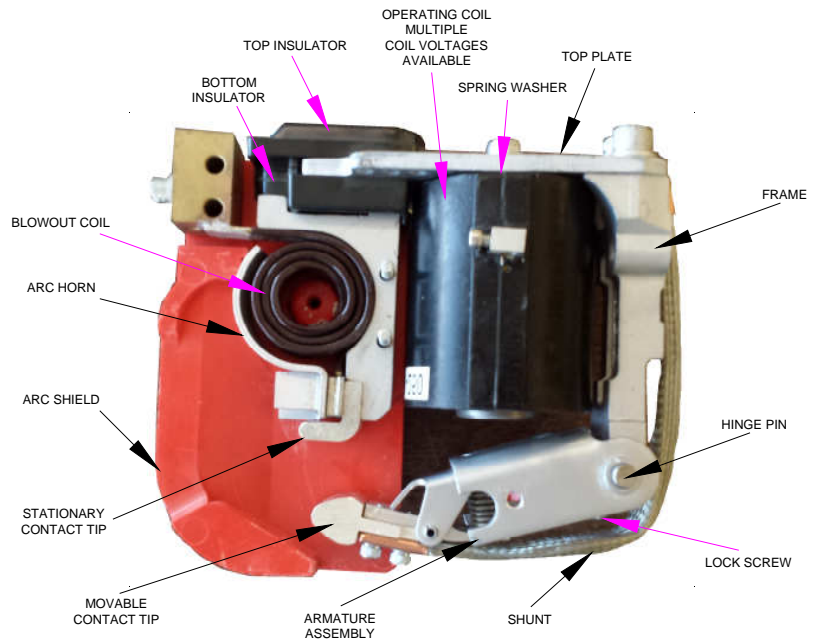
## Shunt

The flat braided type flexible shunt assures long life and ample current carrying capacity. It is removable from the front by releasing it at the tip and then at the terminal at the rear of the top plate.

## Armature

The armature is hinged through replaceable bushings on a stainless steel shaft. This shaft is held in place and kept from turning by a socket head screw in the bottom of the frame casting. The stainless steel hinge pin provides a large bearing area for the moving contact assembly.

View with one arc shield removed exposing internal parts.



CONTACTOR PART NUMBERS		
AEEI PART NUMBER	CURRENT RATING	DESCRIPTION
A 22987-2	50 AMP	SINGLE POLE
A 22987-5	50 AMP	TWO POLE
A 22987-14	50 AMP	FOUR POLE TANDEM
A 22987-3	100 AMP	SINGLE POLE
A 22987-6	100 AMP	TWO POLE
A 22987-15	100 AMP	FOUR POLE TANDEM
A 22987-16	150 AMP	SINGLE POLE
A 22987-16DP	150 AMP	TWO POLE
A 22987-17	200 AMP	SINGLE POLE
A 22987-17DP	200 AMP	TWO POLE
A 22987-17-250	250 AMP	SINGLE POLE

**Ordering information:** To order a complete contactor, specify the contactor part number and the coil part number. Other contactor configurations are available upon request.

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REPLACEMENT CONTACT TIPS		
STANDARD TIP AEEI PART NUMBER	CURRENT RATING	DESCRIPTION
A 13265	50 AMP	STATIONARY TIP
A 19564	50 AMP	MOVABLE TIP
A 13265	100 AMP	STATIONARY TIP
A 19564	100 AMP	MOVABLE TIP
A 26314	150 AMP	STATIONARY TIP
A 26309	150 AMP	MOVABLE TIP
A 26314	200 AMP	STATIONARY TIP
A 26309	200 AMP	MOVABLE TIP
A 26314-250	250 AMP	STATIONARY TIP
A 26309-250	250 AMP	MOVABLE TIP

COILS AVAILABLE	
AEEI PART NUMBER	D.C. VOLTAGE RATING
A-40541-24	24
A-40532-48	48
A-40542-60	60
A-40535-96	96
A-40540-120	120
A-40540-125	125
A-40540-180	180
A-40537-200	200
A-40537-250	250
A-40537-275	275
A-40537-350	350
A-40538-500	500
A-40538-600	600