



TYPE MME MAGNETIC CONTACTOR

600 VOLTS DC

150 AMPS. DC MAX.

SINGLE POLE, NORMALLY OPEN/NORMALLY CLOSED

APPLICATION

The type MME contactor is an industrial contactor for 600 volts max. DC duty. It is available in several configurations. These instructions are for the single pole normally open/normally closed versions, as shown in the outline Fig. 2. All dimensions are inches.

This industrial type control is designed to be installed, operated, and maintained by adequately trained people. 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.

The structure has basically a 150A. D.C. continuous rating, but to match the contactor to the load for maximum contact life, the contactor is supplied with either a 10, 25, 50, 100, or 150A. blowout coil from the factory. In addition the 10, 25, and 50 A versions have different main contact springs and operating coils than the 100 and 150 A. units. See Fig. 1 for identification information.

The operating coils are for continuous duty at full voltage and do not require the insertion of series resistors after pick-up. The coil design is such that the contactors will pick-up and seal at 80% rated voltage when hot, i.e., at operating temperature. The coils will also stand 110% of rated voltage without burnout. Please note that normal operating temperature of an industrial contactor coil is higher than boiling water, so do not be alarmed by this temperature.

The MME contactor is also intended as a replacement for earlier rear connected contactors Type M and MM. This requires the use of a rear connection kit 2184A10G08 for each MME contactor. Instructions for the conversion are included in the kit.

The electrical interlocks are Type L46, and L66 for delayed break.

INSTALLATION

The MME contactor is intended to be mounted on a vertical flat metal panel. The two mounting holes are .375 dia., which are for .312 dia. steel mounting bolts with a flat washer against the plastic base and a lock washer under the head. When the contactor is mounted in position, there must not be any grounded, nor any energized, nor any combustible part inside of the minimum arcing clearance dotted-line shown on Fig. 2., which is the exhaust pattern of the arcbox.

Like most DC contactors the frame of the Type MME is at line potential when the contactor is energized. Also, gasses and flashes of light from the arcboxes can be hazardous. Make the installation accessible only to authorized and trained personnel.

Before mounting the contactor on the panel, make sure all circuits on the panel are deenergized. Also check from Fig. 1 that the voltage and current rating of the contactor agrees with the application. Next, check the label on the operating coil to see that its rated voltage agrees with the coil supply voltage to the panel. Finally, check that the electrical interlocks have the correct electrical function (normally open or normally closed) and the correct physical arrangement to agree with the wiring diagram you are using.

After the contactor is mounted to the panel, temporarily withdraw the arcboxes by disengaging the latch L on the side of each arcbox, and pulling the arcbox forward away from the panel, toward you. The arcboxes will be restrained by their polarizing shunt and need not be completely removed. They can be allowed to dangle for the time being.

With the arcboxes clear, connect the line cables to the line terminals, using standard lugs for the cable and standard steel hardware in the clearance hole in the terminals. Refer to Fig. 2 for the location of the .343 dia. or .281 dia. holes at the top and bottom of the contactor. Do not use hardware any longer than necessary. Make certain

there is .500 (1/2 inch) clearance between the hardware and the mounting panel.

Next connect the load cable to the load terminal at the left center of the contactor, using similar hardware and maintaining .500 clearance.

With the panel still de-energized, close the top contacts by pushing on the top of the moving armature toward the panel with a screwdriver. The moving system should move freely on its bearing with no mechanical interference or rubbing.

REINSTALL ARCBOWES BY SLIDING THEM BETWEEN THE BLOWOUT IRONS UNTIL EACH ENGAGES THE LATCH L AND IS LOCKED. Check the moving armature again by pushing with a screwdriver to make certain the moving system can move freely, both in closing and opening movements.

Make the connections to the terminals of both coils and the electrical interlock terminals as shown on the diagram you are using.

The contactor is now ready for service. Precautions during the first power operation should be in accordance with safety practices appropriate to the application, and should be under the control of authorized and qualified personnel.

MAINTENANCE & REPAIR

This industrial type control is designed to be installed, operated, and maintained by adequately trained people. 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.

Make certain that the contactor and panel are completely de-energized before attempting any maintenance or repair.

It is recommended that the contactor be examined at regular intervals so that preventive maintenance can be done. The frequency of examination will depend on how many interruptions per hour or per day the contactor must withstand. Ten or twenty operations per hour would suggest weekly examinations; ten or twenty operations per day would indicate examination every three or four months. In the beginning examination should be relatively frequent until some history has been developed.

ARCBOX

Withdraw each arcbox by unlatching at L and turn it over so that the inside can be observed. Some erosion, producing a whitish color is normal, as well as some streaks of smoke. However, if the erosion produces cavities that might become holes through the arcbox wall, or if the inside is glazed with metal globules or glass-like melted areas, the arcbox should be replaced.

To completely remove an arcbox, it is also necessary to remove the screw securing the end of the polarizing shunt to the frame.

CAUTION: NEVER OPERATE THE CONTACTOR WITHOUT TWO ARCBOWES LATCHED IN PLACE AND WITH BOTH POLARIZING SHUNTS FASTENED TO THE MAIN FRAME.

CONTACTS

It is normal for contacts to show some burning and mechanical abrading. Every time the contactor operates, some material is lost from the contacts. When the contactor has operated so many times (and lost so much material) that the moving and stationary contact faces barely touch each other, then the contacts must be replaced.

The allowance for contact face wear is called "overtravel". When the Type MME is new the overtravel is at full value. When the overtravel has decreased to the minimum acceptable shown in Fig. 3, the contacts must be replaced.

After a particularly difficult interruption a contact may develop beads of metal. Such beads can be removed with a file and if the overtravel is still within limits, the contactor returned to service. There is no need to try file out every blackened pit mark in a contact.

However, if either contact face is reduced to zero, so that the silver alloy is gone and only copper remains, that contact must be replaced even if the overtravel is within limits.

CONTACT SPRINGS

Contact springs generally do not need attention unless they get burned by a bad interruption, or unless they simply wear out mechanically. Do not try to adjust a spring. If it needs attention, replace it. Make certain the replacement is the correct part. See Fig. 1.

MECHANICAL SYSTEM

The mechanical system uses a knife edge bearing which should outlast the rest of the contactor. It is intended to operate without lubrication so that it does not collect abrasive dust. The only maintenance is to make certain that the moving armature does in fact move freely without interference or binding.

The Type MME II has one normally open and one normally closed main contact and two operating coils. The normally closed contact at the bottom will not completely seal until the lower coil is energized. The control circuit must be designed to continuously energize either the top coil or the bottom coil. Both coils must not be de-energized at once because the lower main contact does not have adequate contact pressure unless the lower coil is energized.

OPERATING COIL REPLACEMENT

If the coil voltage is to be changed or a coil is damaged, first de-energize the panel and disconnect the coil terminals. Then unlatch the arcboxes at L and withdraw. Next loosen the two bolts B.

This releases the arcboxes and the complete moving system, which will then hang from the contactor suspended by the main current shunt. It is then obvious that the pole face screws and pole faces can be removed to remove the coils. Keep track of the parts removed and replace them in the same sequence with the replacement coil. Only one caution: The moving system locates on two dowels adjacent to bolts B. Make certain that the system is secure on these dowels before tightening bolts B. Also make certain when the replacement is complete, that the moving system moves freely and the arcboxes are fully installed.

TO REORDER

Order the part number from the nameplate, which is coded as shown in Fig. 1. Also specify the coil operating voltage. The contactor part number does not include electrical interlocks, which must be specified separately, by contact arrangement.

Example:

One-Type MME 11-100 with 250 volt coil and one norm. open interlock and one norm. closed interlock.

Fig. 1

TYPE MME DC CONTACTORS		
Open 8-Hr. Amp. Rating	Contact Arrangement	Type Contactor Identification (Less Coil)
FRONT CONNECTED		
10	1 NO	MME10-10
	2 NO	MME20-10
	1 NO/1 NC	MME11-10
25	1 NO	MME10-25
	2 NO	MME20-25
	1 NO/1 NC	MME11-25
50	1 NO	MME10-50
	2 NO	MME20-50
	1 NO/1 NC	MME11-50
100	1 NO	MME10-100
	2 NO	MME20-100
	1 NO/1 NC	MME11-100
150	1 NO	MME10-150
	2 NO	MME20-150
	1 NO/1 NC	MME11-150

Fig. 1: Single Pole NO/NC Underlined
 NO = Normally Open
 NC = Normally Closed

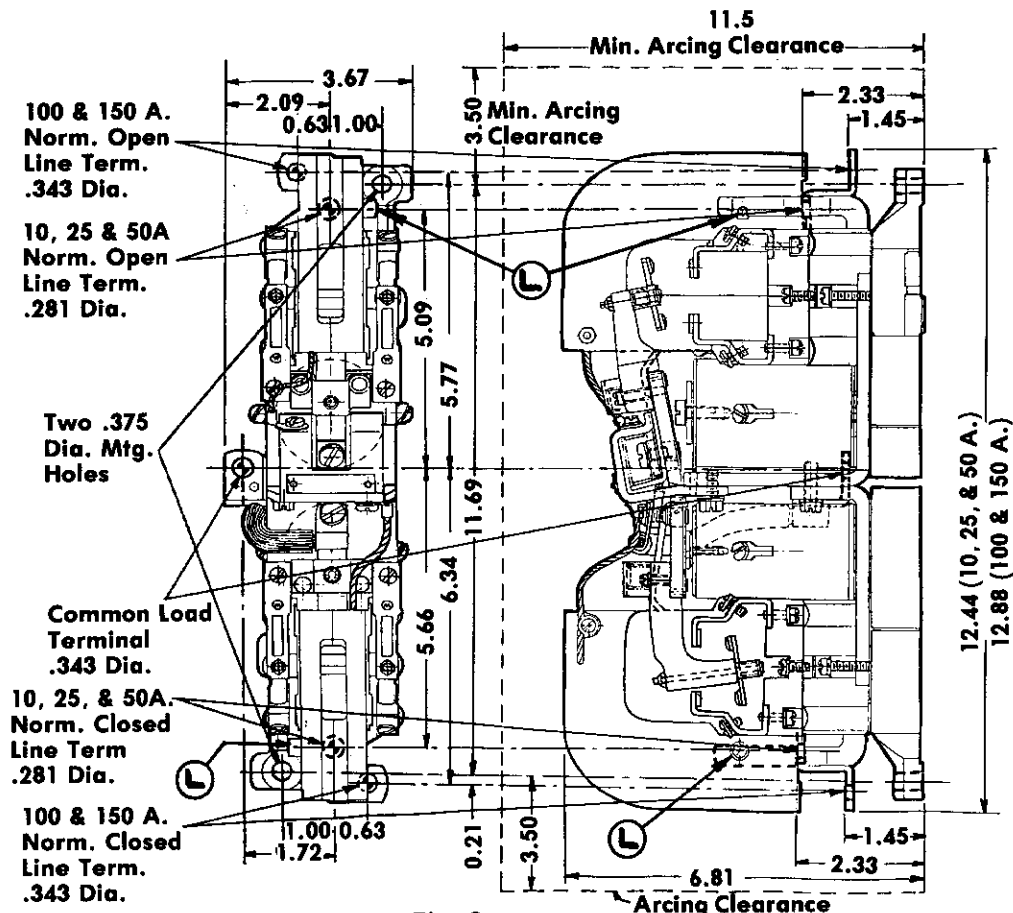


Fig. 2

Type MME
Single Pole
Norm. Open/Norm. Closed

Approx. .125 new
 Replace at .020 min.

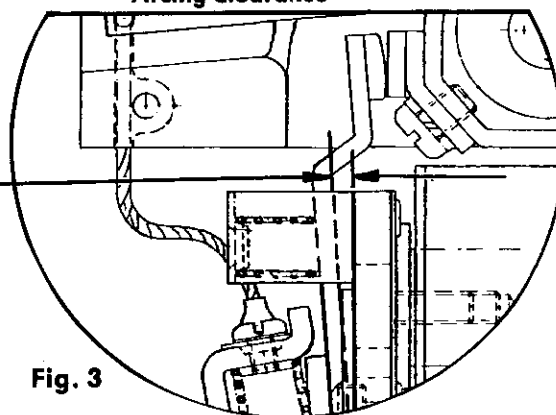


Fig. 3