

TYPE F MAGNETIC CONTACTORS, FRAMES 72-F2 AND 82-F2 INSTRUCTIONS

Description

The types 72-F2 and 82-F2 magnetic contactors are 2 pole alternating current contactors, which can be supplied either with or without magnetic blowout. The contactors are designed for mounting on slate or ebony asbestos panel up to and including panels two inches thick.

Rating—The ampere rating for the contactors is as follows:

TYPE		
72-F2 Amps.	82-F2 Amps.	
600	750	8 Hour Rating
850	1,000	1 Hour Rating
2,500	3,000	Peak Load
10,000	10,000	Arc Rupturing Capacity

Contactors are insulated for 600 volts maximum.

Operating Coil—The operating coil is designed for continuous service, and will successfully operate the contactor at from 85 to 110% of rated voltage.

Magnet Frame—The magnet frame is made from high grade castings. All parts subject to corrosion, except the magnet face, are treated to prevent oxidation.

Arc Shields—The arc shield is moulded from a very durable heat resisting compound and is securely fastened to the iron pole pieces of the blowout coil. The arc shield is hinged so that it may be easily raised by hand to make inspection and renewal of the contacts.

Contacts—The contacts are made from hard drawn copper strap of sufficient cross section to insure long contact life. They are designed to open with a rolling action so that the burn occurs only at the extreme tip of the contact, and does not affect the current carrying surfaces. The contactor has been designed so that a slight wiping action is given to the contacts on opening and closing. This action insures a clean low resistance contact area. A steel compression spring gives a positive and sufficient contact pressure up to the maximum life of the contact and produces a quick opening of the contacts.

Shunts—The current carrying shunt is made from a flexible braided copper cable which gives complete freedom to the moving armature, and has ample capacity to withstand the maximum current for which the contactor is rated.

Maintenance

Cleaning—The contactor should never be cleaned with an oily rag or waste. A film of oil will collect particles, which will decrease the creepage and may cause an arc between adjacent parts.

Bearings—The bearings of the armature shaft require no lubrication. Oil quickly collects dust which will, unless the parts are frequently cleaned, make the contactor sluggish in opening, thus causing the arc to hang on longer.

Arc Shields—The arc shields should always be down so that the arc is broken within the field of the blowout coil, otherwise it will not give satisfactory results. The shield should always be renewed before the moulded material is burned away sufficiently to expose the steel pole pieces.

Operating Coil—The operating coil may be removed by taking off the two bearings, which allows the armature to be lowered, and then disconnecting the terminal leads and removing the screws which hold it in place.

Contacts and Spring Pressure—Use no oil or other lubricant on the copper contacts. The contacts normally wear to give the best contact surfaces without any attention. The roughened appearance of the contacts is no indication that good contact is not being obtained. The contacts should be replaced when the maximum usefulness has been reached, in order that the contact pressure will not fall below the minimum value for which it is designed. The contact pressure for this unit, measured at the heel of the contact, should be between 57 and 62 pounds. To measure the spring pressure, when contacts are new, place a thin piece of paper between the contacts and close the contactor mechanically. Then measure the pounds pull necessary to separate the contacts by means of a hook spring balance attached to the moving contact. Read the pounds pull required at the instant the paper can be moved. In case the contact pressure is below the minimum value, after the contacts have been replaced, additional insulating washers should be added under the spring. Low spring pressure should be guarded against to avoid excessive heating of the contacts. Excessive heating increases the

resistance, which may cause arcing and welding the contacts together.

Contact Gap—The contact gap on these contactors should be approximately $1\frac{1}{2}$ inches, when the magnet is in the full open position, measured at the heel of the contacts when they are new. A greater gap may prevent the magnet from picking up on the minimum voltage for which the operating coil has been designed.

Magnet Noise—Humming on the a-c. contactor may develop. Should it become excessive, check to see if any of the following conditions exist.

1. The pole faces of the magnet may be corroded, which will not permit the magnet to seat properly.
2. The armature lever may be distorted through rough handling, which will not allow the armature to find a square seat. Check this by placing a sheet of paper between the two pole faces and close the magnet electrically, which will leave an impression at the high points. Full contact is not actually necessary, but should be over a large portion.
3. The voltage may be below the minimum rating of the operating coil.
4. The shading coil on the magnet may be broken.
5. The spring pressure may be too high.

Failure to Close—A magnet may fail to close for any of the following reasons.

1. The lead wire to the operating coil may be disconnected.
2. The operating coil may be open circuited.
3. There may be mechanical friction.
4. The voltage may be below normal.

Failure to Open—Failure may be caused by mechanical interference or friction. The contacts may be welded together, or residual magnetism may be holding the magnet due to low spring pressure

TABLE OF OPERATING COILS

Cycles	Volts	Style No.
25	220	461729
25	440	462094
25	550	461731
50	220	461730
50	440	461729
60	110	698112
60	220	461728
60	440	286052
60	550	461800