

JULY, 1948

WESTINGHOUSE INDUSTRIAL CONTROL APPARATUS

TYPE F MAGNETIC CONTACTOR, FRAME No. 65-F5 INSTRUCTIONS

Description

The type 65-F5 is a 3 pole, alternating current contactor, and can be supplied either with or without magnetic blowout. The contactor is designed for mounting on slate or ebony asbestos panels up to and including panels 2 inches thick.

Rating:

Amperes	
300	8 Hour Rating
400	1 Hour Rating
1000	Peak Load

Insulation is for 600 volts maximum.

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

Armature Lever is made of high grade cast metal. The floating armature is supported on the armature lever by means of a hinge pin. This arrangement permits the floating armature to be self aligning when the operating coil is energized and the contactor is closed. All parts subject to corrosion, except the magnet face, are treated to prevent oxidation.

Arc Shields are moulded from a very durable heat resisting compound and are 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 contact tips.

Contacts are made from hard drawn copper and have alloy silver inlaid faces. When all the silver has been burned away the contact tips should be replaced.

A steel compression spring gives contact pressure. With new contacts the closed pressure should be 10 to 12 lbs. measured at the contact holding bolt level.

Shunts are made from flexible braided copper cable. The moving end is brazed directly to the moving contact. This assures good conductivity at a point which otherwise is subject to loosening and overheating. In case of replacement both the shunt and moving contact must be replaced at the same time.

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

Arc Shields should always be down so that the arc is broken within the

field of the blowout coil otherwise the shield will not give satisfactory results.

Operating Coil may be removed by taking out the main shaft, which allows the armature to be lowered, then disconnecting the terminal leads and removing the screws of the coil, which hold it in place.

TABLE OF OPERATING COILS

Volts	25 CYCLE	50 CYCLE	60 CYCLE
	Style No.	Style No.	Style No.
110	822158	822157	822153
220	822159	822158	822154
440	822161	822159	822155
550	822162	822160	822156

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 11 and 12 pounds. To measure the final spring pressure, close the contactor mechanically, place a thin piece of paper between the contacts, then measure the pounds pull necessary to separate the contacts by means of a hook spring balance attached to the head of the screw which holds the moving contacts in place. 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 excess heating of the contacts. Excess heating increases the

resistance which may cause arcing and welding the contacts together.

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 face of the magnet may be corroded, which will not permit the magnet to seat properly.
2. The armature lever may be distorted through rough use, which will not allow the floating 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 on 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.

Contact Gap for this contactor should be approximately $\frac{3}{4}$ inch 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.

Failure to Operate

Failure to close may be due to:—

- 1—Operating coil may be open circuited.
- 2—Lead wires to operating coil may be disconnected.
- 3—Excessive mechanical friction.
- 4—Power off or below normal.

Failure to open may be due to:—

- 1—Mechanical interference or friction.
- 2—Welded contacts.
- 3—Broken contact spring.

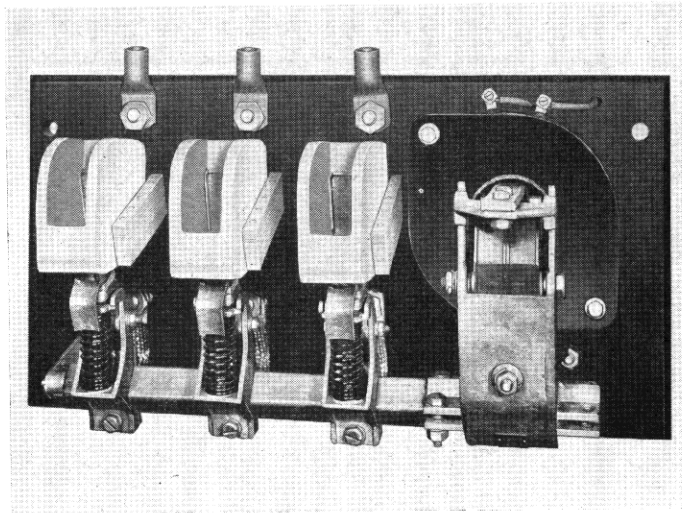


FIG. 1—TYPE F MAGNETIC CONTACTOR, FRAME No. 65-F5

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