



INSTRUCTIONS

MECHANICALLY LATCHED CONTROL RELAY, TYPE NL CLASS 15-820NL

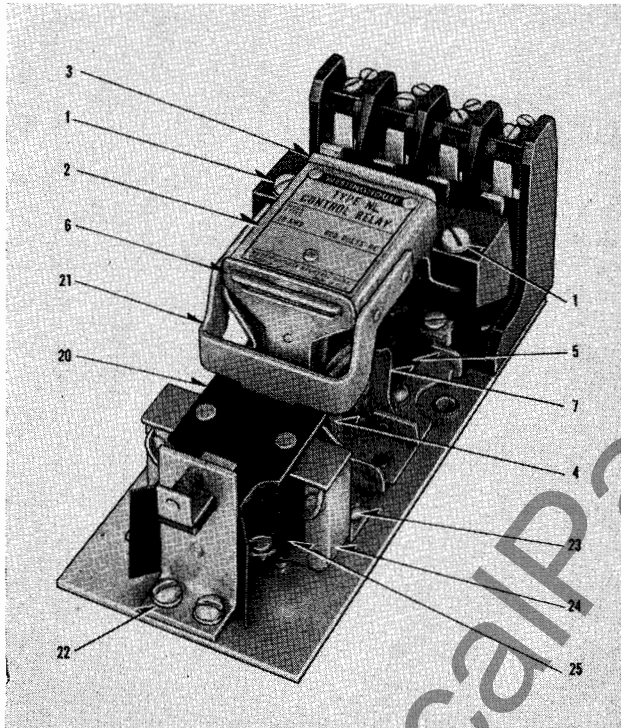


FIG. 1. Type NL Mechanically Latched Control Relay

THE TYPE NL MECHANICALLY LATCHED CONTROL RELAY is basically an A-C multipole Type N Control Relay including a latching mechanism. Proper clearance between the Micarta® latch (20) and the steel stop bracket (21), with the relay energized, is provided at factory assembly, after which the latch bracket screws (22) are sealed with cement. Removal of these screws is not necessary since inspection or change of contacts and coil changes may be accomplished without removing the latch assembly.

These contactors are available in 2 to 6 pole forms and can be made with any complement of normally open and normally closed contacts required.

Contacts may be easily changed from N.O. (normally open) to N.C. (normally closed) and vice-versa so that stock relays may be readily converted by the user for special applications.

Pressure-type connectors on all terminals permit the use of either solid or stranded wire without soldered joints.

RATINGS

| | |
|--------------------------------|-------------------|
| Maximum Amps..... | 10 Amperes |
| Maximum Volts..... | 600 Volts |
| A-C Interrupting Capacity..... | 7500 Volt-Amperes |
| D-C Interrupting Capacity..... | 50 Volt-Amperes |
| (Inductive Load 1 Amp Max.) | |

MAINTENANCE

The sealing surfaces of magnet and armature should be kept clean. No lubrication is required and the solid silver contacts do not require filing; discoloration and slight pitting of contacts is a normal condition.

Changing Coils (Refer to Fig. 1)

RELAY CLOSING COIL (5)—After disconnecting leads to both coils, first remove trip magnet assembly screws (23) and trip magnet assembly (24). Then remove cross bar mounting screws (1) and remove cross bar assembly complete with moving contacts. Next, disengage armature bracket (2) from upper bearing (3) by applying pressure to upper part of nameplate until the tongue on the bearing arm is freed from the hole in the armature bracket. The armature bracket (2) can then be swung outward and downward until the center leg of the armature (4) clears the relay closing coil (5).

The armature bracket (2) and the lower bearing arm (6) may now be disengaged by applying pressure to lower part of the nameplate until the tongue on the bearing arm (6) is freed from the hole in the armature bracket as before. The coil retaining springs (7) may now be swung outward allowing the relay closing coil to be removed. Reassembly follows the same procedure except in reverse order.

TRIP COIL (25)—After disconnecting leads to coil terminals, remove trip magnet assembly screws (23) and trip magnet assembly (24) including the trip coil (25). Then remove the screw and nut holding the coil retaining springs to the magnet, after which the coil may easily be removed. Removal of the latch assembly is not necessary.

Changing Contacts From N.O. To N.C. (Refer to Figs. 2 and 3) — To change N.O. contact, Fig. 2, to N.C. position per Fig. 3, first remove crossbar mounting screws (1) and withdraw crossbar (8). Second, remove front stationary contact mounting screw (9) and front stationary contact (10). Third, remove contact saddle mounting screw (11); invert the complete

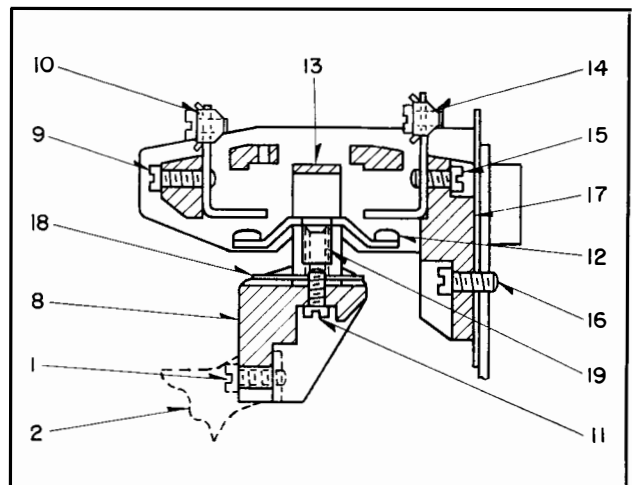


FIG. 2. Typical Normally Open Contact in De-Energized Position

CONTROL RELAY, TYPE NL

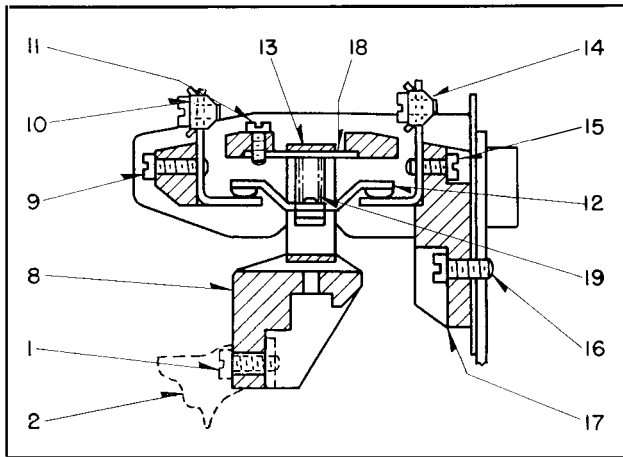


FIG. 3. Typical Normally Closed Contact in De-Energized Position

moving contact assembly and secure it in place in the molded contact base per Fig. 3 using the same screw (11) as before. Replace the front stationary contact (10) and operate the contact manually a few times to make sure it is free. Replace the crossbar assembly (8) and screws (1).

This completes the changeover from N.O. to N.C. position. The change back to N.O. position is accomplished by following the same procedure in reverse order with this special precaution:

Important. Be sure to tighten the moving contact saddle mounting screw (11) securely to avoid loosening in service.

INSPECTION

Normally Open Contacts. (See Fig. 2) Inspection of N.O. contacts is accomplished by removing the two crossbar mounting screws (1), whereupon the crossbar (8), complete with the moving contacts, may be removed and all contacts are accessible.

The moving contacts (12) are removed from the moving contact saddle (13) by twisting and sliding the contact endwise. The stationary contacts (10) and (14) are secured by screws (9) and (15) and before the rear stationary contacts can be removed, it is necessary to remove contact base mounting screws (16) and contact base (17).

Normally Closed Contacts. (See Fig. 3), Inspection of N.C. contacts is accomplished by first removing the crossbar mounting screws (1) and the molded crossbar (8) complete with any moving contacts that may be attached thereto. Next, the front stationary contact (10) and its mounting screw (9) are removed and screw (11) is removed, allowing the complete moving contact assembly to be taken out for inspection.

Removal of the rear stationary contact (14) is accomplished by first removing the base mounting screws (16) and the molded contact base (17) whereupon the contact mounting screws (15) become accessible for removal.

PRINCIPAL RENEWAL PARTS

| | |
|--|---------------|
| Renewal Contact Kit (1 Pole)..... | S# 1739 593 |
| Stationary Contact—Front (10)..... | S# 19C1154P3 |
| Stationary Contact—Rear (14)..... | S# 19C1154P3 |
| Moving Contact Assembly complete..... | S# 1739 594 |
| Moving Contact (12)..... | S# 133A107G01 |
| Contact Saddle (13)..... | S# 206B225G02 |
| Saddle Guide (18)..... | S# 206B225H04 |
| Contact Spring (19)..... | S# 1632 179 |
| Latch Spring..... | S# 13D3251P15 |
| For other parts, refer to Renewal Parts Catalog. | |

RELAY IDENTIFICATION

The relay complete with coils is identified by style number (which appears on carton label and in price form) and consists of the mechanical parts (identified by style number which appears on relay nameplate) plus the appropriate coils for the voltage and frequency of operation.

The coil styles appear on the coil labels along with the voltage and frequency rating of the coils.

Complete styles and coil styles listed in the following table may be used in ordering either the complete relay with coils or the coils only.

Caution: When ordering relay, specify contact arrangement.

STYLE IDENTIFICATION

| COIL STYLES | | | | |
|-----------------------|--------|--------------------------------------|---------------------------------|-----------------------------------|
| VOLTS | CYCLES | 1 TO 4 POLE CLOSING COIL STYLE | 6 POLE CLOSING COIL STYLE | 1 TO 6 POLE TRIP COIL STYLE |
| 110 | 60 | 1720 611 | 1739 601 | L-557645 |
| 220 | 60 | 1720 612 | 1739 602 | L-557646 |
| COMPLETE RELAY STYLES | | | | |
| VOLTS | CYCLES | TYPE | COMPLETE RELAY | |
| 110 | 60 | NL 20 | 31D5417G1 | |
| 110 | 60 | NL 30 | 31D5418G1 | |
| 110 | 60 | NL 40 | 31D5419G1 | |
| 110 | 60 | NL 60 | 31D5420G1 | |
| 220 | 60 | NL 20 | 31D5417G2 | |
| 220 | 60 | NL 30 | 31D5418G2 | |
| 220 | 60 | NL 40 | 31D5419G2 | |
| 220 | 60 | NL 60 | 31D5420G2 | |



WESTINGHOUSE ELECTRIC CORPORATION
BEAVER PLANT • STANDARD CONTROL DIVISION • BEAVER, PA.

(Reprint 8-56) Printed in U.S.A.