



CONTROL SWITCH RELAYS

Electroswitch Control Switch Relays (CSR) combine the function of a control switch with a remote controlled solenoid allowing one device to do both the manual and supervisory control function in the control of power circuit breakers. They eliminate the need to redesign substations for redundant separate relays when manual substations convert to supervisory control. CSRs provide manual or electric control switch operation by supervisory control. The CSR looks, acts, and feels identical to a control switch.

Note: The Series 24 CSR utility products comply with the following Standards: ANSI/IEEE C37.90 and ANSI/IEEE C37.90.01

Series 24 Control Switch Relays

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|--------------|---|
| HIGH QUALITY | <ul style="list-style-type: none"> • Designed and manufactured to the highest standards in the industry • Qualified to UL, CSA |
| VERSATILITY | <ul style="list-style-type: none"> • Replaces a manual breaker switch, interposing relays, and associated wiring • Direct retrofit to existing manual breaker control switch • Electric or manual operation • Three circuits to satisfy different industry applications • Multiple voltages: 48VDC, 125VDC, standard, others available • All standard Series 24 circuit breaker control switch contacting (see page 17) available • Available with custom contacting (consult factory) |
| SAFETY | <ul style="list-style-type: none"> • Target flag agreement (regardless of manual or electric trip) • Available with SCADA disable for operator safety during service |
| AVAILABILITY | <ul style="list-style-type: none"> • Virtually all Universal Circuits in standard voltages of the Series 24 CSRs are available from stock for quick delivery. See pg.14 (Switch Section) for Series 24 Universal Circuits. |
| SERVICE | <ul style="list-style-type: none"> • The Electroswitch team of Customer Service and Applications Professionals stand behind every Electroswitch product. Let us put over 50 years of know-how to work for you! |

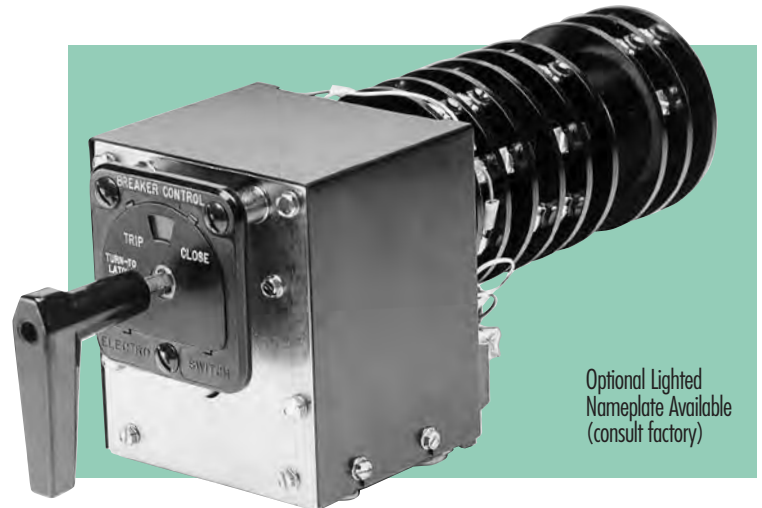
Basic Circuit Operation

The control of the CSR Control Switch Relay for electric operation requires no special wiring. It only requires two contacts (S1 and S2) to command the CSR to either the TRIP or CLOSE position. Low level contacts (rated 1 ampere) may be used since S1 and S2 do not control the rotary drive solenoid directly.

The standard station control bus voltage is used on all three circuits. The device, when shown in the following figures is in the vertical NORMAL position. The CSR coil form shown on the figures represents the rotary solenoid that drives the CSR. Its operation is further described later. LS1 is a linear solenoid within the device that changes the sense of direction of the CSR from left (TRIP) to right (CLOSE). The contacts shown as CSR are contacts within the device. Other components are shown by conventional designations.

Mechanical Target

When the CSR Switch handle is turned, a mechanical target contained in the nameplate is turned as well (GREEN for TRIP, RED for CLOSE). The target remains latched when the handle returns to normal position and always shows the last active position.



Optional Lighted Nameplate Available (consult factory)

Contact Deck Arrangement

The blade and terminal configuration enables the use of multiple contacts in the same deck, and simple stacking procedures enable the fabrication of many independent contacts in one relay. Specifically, two N/O contacts or two N/C contacts are provided in each deck, and ten decks can be stacked, resulting in a relay with up to twenty contacts.

NOTES:

- The numbers are the same for all decks
- "n" becomes the deck number, e.g., 11 and 12 are CLOSE contacts on deck 1; 51 and 52 are CLOSE contacts on deck 5
- TRIP plus normal after TRIP contacts have the same contact numbers as the normal position contacts
- CLOSE plus normal after CLOSE contacts have the same contact numbers as the CLOSE contacts
- Decks with slip contacts are placed at end of switch/relay

