Low voltage electrical distribution

Compact NSX
100-630 A
Circuit breakers and switch-disconnectors

User manual
04/2012
Where to Find the Controls and Locking Mechanisms on Your Circuit Breaker

Presentation of the Front Face

The main controls, operation indicators, settings and locking mechanisms can be accessed directly on the front of your electrically operated circuit breaker (with motor mechanism).

1. Rating plate
2. Stored energy control in manual mode
3. Main contacts position indicator
4. Control position indicator
5. Padlocking in O (OFF) position
6. Manual/automatic operating mode selector
7. Keylocking in O (OFF) position (Compact NSX 400/630 only)
8. Lead sealing accessory
9. Closing (I) and opening (O) controls
10. Trip unit

Front Indications

Two operation indicators on the front of the trip unit show the position and state of the motor mechanism.

Main contacts position indicator:
- I (ON) position
- O (OFF) or tripped position

NOTE: The tripped position is distinguished from the O (OFF) position by means of the SD (or SDE) indication contact.

Control charge indicator:
- Stored energy control charged
- Stored energy control discharged

Stored energy control is used only to provide the necessary energy for the circuit breaker closing switch. The energy for tripping is supplied directly by the mechanism incorporated in the circuit breaker.

- In automatic operating mode, only electrical commands are executed.
- In manual operating mode, all electrical commands are disabled.
How to Open, Close and Reset Your Circuit Breaker (With Motor Mechanism)

At a Glance

The motor mechanism can be used to open and close a circuit breaker remotely by means of electrical commands. There are many applications:
- Automation of electrical distribution in order to optimize operating costs
- Normal/standby source changeover: changes over to a replacement source in order to improve continuity of service
- Load shedding/reconnection in order to optimize tariff-based contracts

The motor mechanism must be wired in strict accordance with the connection diagram shown in Motor Mechanism, page 144.

**CAUTION**

**HAZARD OF EQUIPMENT DAMAGE**

 wire the motor mechanism in the circuit in strict accordance with the connection diagram. Improper wiring of the motor mechanism can result in repeated closing of the circuit breaker on an electrical fault. Failure to follow these instructions can result in injury or equipment damage.

In automatic operating mode, wiring the SDE contact prevents the circuit breaker from resetting automatically on an electrical fault. For more details on the SDE contact, see Indication Contacts, page 47.

Manual Operation: Opening, Closing and Resetting Locally

Move the selector to the Manu position. Cycle of operation:

1. **Close the circuit breaker**
   - Press the closing switch I (ON).
     - The circuit breaker is closed:
       - The contact position indicator changes to I (ON)
       - The charge indicator changes to discharged

2. **Open the circuit breaker**
   - Press the opening switch O.
     - The circuit breaker is open:
       - The contact position indicator changes to O (OFF)
       - The charge indicator stays on discharged

3. **Reset the circuit breaker**
   - Reset the stored energy control by operating the handle (8 times).
     - The circuit breaker is ready to be closed:
       - The contact position indicator stays on O (OFF)
       - The charge indicator changes to discharged

Check that the stored energy control is actually charged: charge indicator on charged (C). Otherwise reset the circuit breaker (3).

Automatic Operation: Opening, Closing and Resetting Remotely

Move the selector to the Auto position. Cycle of operation:

1. **Close/Open the circuit breaker**
   - Send a close command (ON).
     - The circuit breaker is closed:
       - The contact position indicator changes to I (ON)
       - The charge indicator changes to discharged

2. **Open the circuit breaker**
   - Send an open command (OFF).
     - The circuit breaker opens:
       - The contact position indicator changes to O (OFF)
       - The charge indicator stays on discharged

3. **Reset the circuit breaker**
   - Reset the stored energy control.
     - 3 reset modes are offered depending on the connection diagram (see Motor Mechanism, page 144):
       - Automatic reset
       - Remote reset via pushbutton
       - Manual reset by operating the handle

C The circuit breaker opens in the O (OFF) position:
- The contact position indicator stays on O (OFF)
- The charge indicator changes to charged
Motor Mechanism

The diagram is shown with circuits de-energised, all devices open, connected and charged and relays in normal position.

After tripping initiated by the "Push to trip" button or by the undervoltage (MN) release or the shunt (MX) release, device reset can be automatic, remote or manual.

Following tripping due to an electrical fault (with an SDE contact), reset must be carried out manually.

Symbols

Q: circuit breaker
A4: opening order
A2: closing order
B4, A1: motor mechanism power supply
L1: manual position (manu)
B2: SDE interlocking (mandatory for correct operation)
BPO: opening pushbutton
BPF: closing pushbutton
SDE: fault-trip indication contact (short-circuit, overload, ground fault, earth leakage)