

Test Cabinet for Eaton Type VCP-W & VCPW-HD Circuit Breakers

#8346A28G21-G24, G27 (5,15,27 kV VCP-W)

#8346A28G31-G34 (5kV ND VCP-W)

#8346A28G50-G54 (38kV VCP-W)

#8346A28G71-G75,G77 (38kV VCPW-HD)



WARNING

- This test cabinet is to be used only with Eaton VCP-W and VCPW-HD breakers.
- Be certain the test cabinet is installed and tested by qualified personnel before using.
- Be certain the circuit breaker is totally disconnected from all power sources by removing the breaker from the Switchgear before attempting to use the test cabinet.
 - See Eaton IB131006EN ((Sections 1 thru 7) as applicable for 5/15/27kV & 5kV-ND.
 - See Eaton IB 3A7492 (Sections 1 thru 7) As applicable for 38kV VCP-W 170 BIL
 - See Eaton IB131020 (Sections thru 7) as applicable for 38kV-HD
 - See Eaton IB131020EN, (Sections 1 thru 7) for 38kV-HD
- Qualified Personnel using this test cabinet should be familiar with the operation of the circuit breaker.
 - See Eaton IB131006EN ((Sections 1 thru 7) as applicable for 5/15/27kV & 5kV-ND.
 - See Eaton IB 3A7492 (Sections 1 thru 7) As applicable for 38kV VCP-W
 - See Eaton IB131020EN, (Sections 1 thru 7) for 38kV-HD

Section 1: INSTRUCTIONS FOR USE 5kV-ND, 5kV, 15kV, 27kV & 38kV VCP-W and 38kV-HD

A. Initial Installation of Test Cabinet

1. Mount Test Cabinet (1) on wall and in suitable location using mounting holes provided. Refer to applicable Figures based on Table below. - Test Box Outline for mounting and overall dimensions.
2. Route and wire appropriate power supplies to Test Cabinet. See Table 1 for proper wiring diagram and schematic for your application.

Optional Shunt Trip #2 Volts	None	None	Any Separate DC V	240AC	None
Group No.	G21/31/51/71	G22/32/52/72	G23/33/53/73	G27,G77	G24/34/54/74
Wiring Diagram & Schematic	Figure 2	Figure 3	Figure 4	Figure 6	Figure 5
Close Control Volts	Any DC	Any AC/DC	120 AC	Any DC	Any DC
Shunt Trip #1 Volts	Any DC COM	Any DC SEP	CAP Trip	Any DC COM	Any DC COM
Motor Volts	Same as Close Volts				Any Sep AC/DC
Optional under Voltage Volts	Same as Shunt Trip No. 1 Volts and on same circuit				

TABLE 1

B. Connecting the Test Cabinet to the Circuit Breaker:**NOTICE**

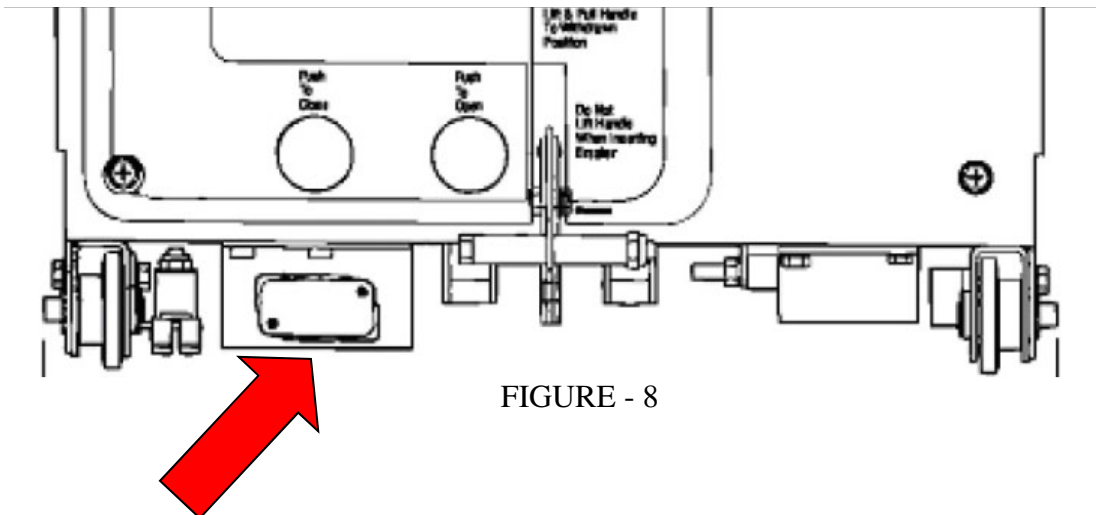
- *If the closing springs of the circuit breaker are discharged, the spring charging motor will charge the springs as soon as the Test Cabinet is electrically connected to the breaker-BE PREPARED!*
- *Customers may add an “ON – Off” switch and or power on light, to any of the test boxes listed in this document at their own discretion. This switch would restrict power to the spring charging motor when connecting the “test cabinet breaker connector” to the “breaker’s secondary connector”, delaying the charging operation until service personal is ready for testing.*

1. Connect the test cabinet cable Housing Connector (4) to the test cabinet housing (1) Cable Connection Port (5).
2. Position the circuit breaker within the range of the test cabinet’s cable (8-10 feet/2.5-3 m max.). Check to ensure the circuit breaker is resting securely on a solid base. (E.g., dolly, floor, etc., external from the switchgear.)

3. BREAKER CONNECTOR CONNECTION: 5kV-ND, 5kV, 15kV, 27kV & 38kV VCP-W

- 3.1. Feed the test cabinet breaker connector (3 or 9) underneath the breaker from the rear of the breaker until it reaches the breaker secondary disconnect. As shown with red arrow in (Figure 8)
- 3.2. Grasp the test cabinet breaker connector (3 or 9) and push it flat up against the bottom of the circuit breaker, just behind the breaker secondary disconnects.
- 3.3. While holding the test cabinet breaker connector (3 or 9) flat against the breaker, slide the test cabinet breaker connector forward until it latches to the breaker secondary disconnects and the disconnects are fully engaged. (If the closing springs are discharged prior to this connection, the spring charging motor will immediately charge the springs at this point – see notice above page 3.)

NOTE: if the customer has installed an “ON – OFF” switch and the switch is in the “OFF” position the motor will not charge until the switch is moved to the “ON” position.



4. BREAKER CONNECTOR CONNECTION: 38kV-HD

- 4.1. Locate the 38kV-HD secondary connector on the top of the breaker. Position the test cabinet breaker connector (10) and cable on top of the breaker behind the breaker's secondary disconnect. As shown with red arrow in (Figure 7)
- 4.2. Grasp the test cabinet breaker connector (10) and guide it into the breaker secondary connector from the rear until it latches to the breaker secondary disconnects. When the test connector is fully engaged, rotate latch pins on right and left sides of connector assembly to lock in place. (If the closing springs are discharged prior to this connection, the spring charging motor will immediately charge the springs at this point – see notice above.)

NOTE: if the customer has installed an “ON – OFF” switch and the switch is in the “OFF” position the motor will not charge until the switch is moved to the “ON” position.

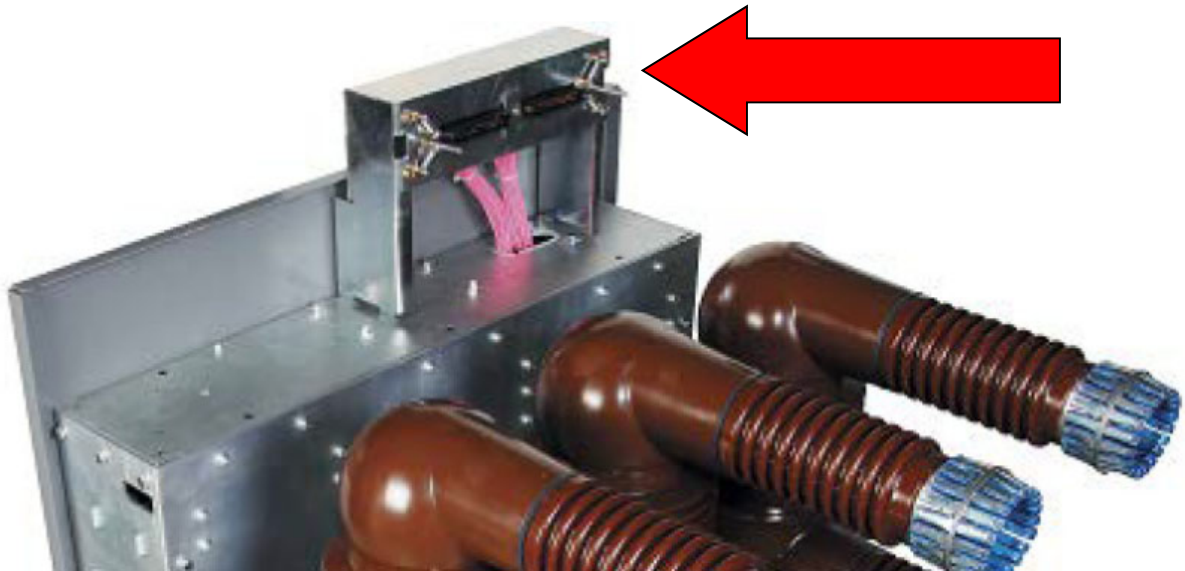


FIGURE 7

C. Operating the Circuit Breaker with the Test Cabinet:

- NOTE: If the customer has installed an “ON OFF” power switch, check to see if it is in the “ON” position, so the motor will charge.
- 1) Press the “CLOSE” button (7) on the test cabinet housing to close the breaker. The breaker should close.
 - 2) Press the “TRIP” button (6) on the test cabinet housing to open the breaker. Breaker should trip.
 - 3) Continue opening and closing the breaker as required.
 - 4) Close and trip the circuit breaker several times to verify closing and tripping operations. Conclude by closing the circuit breaker. The circuit breaker is now closed in the TEST position with springs charged.
 - 5) If the test box configuration has a “Capacitor Trip #2 “circuit.
 - Repeat Step 1 above.
 - Press the “Trip #2” button on the test cabinet to open the Breaker. Breaker should trip.
 - Close and trip the circuit breaker several times to verify closing and tripping operations. Conclude by closing the circuit breaker. The circuit breaker is now closed in the TEST position with springs charged.

Note: If breaker charging springs fail to charge or breaker fails to close or open, check to make sure the supply source is connected to the Test Cabinet and /or the fuses located inside of the Test Cabinet have not blown.

Disconnecting the Test Cabinet:

- 1) Grasp the test cabinet breaker connector (3 or 9 or 10) and slide it toward the rear of the breaker to disconnect it from the breaker.
- 2) Wind the cable around the cable bracket (8) of the test cabinet for storage.

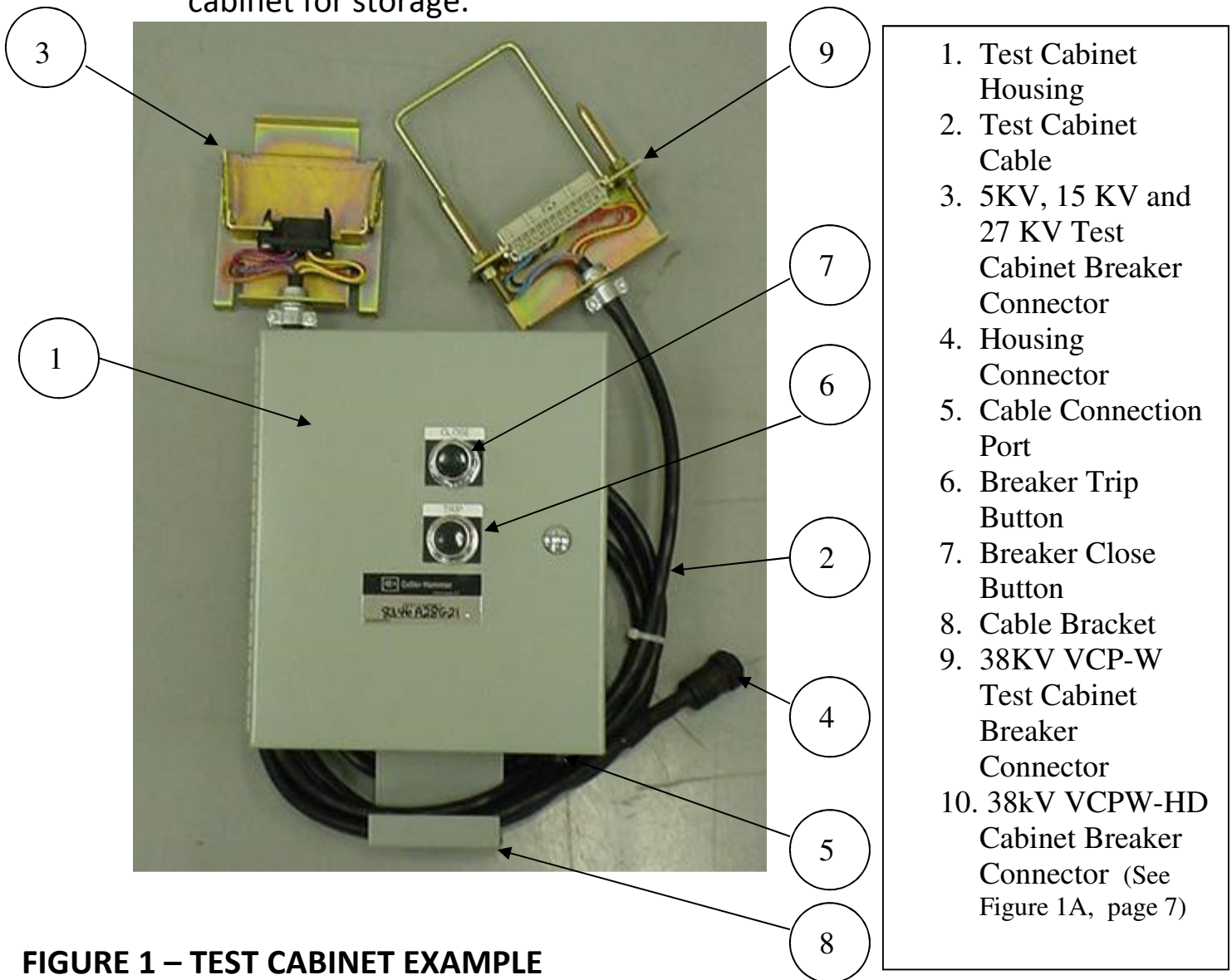
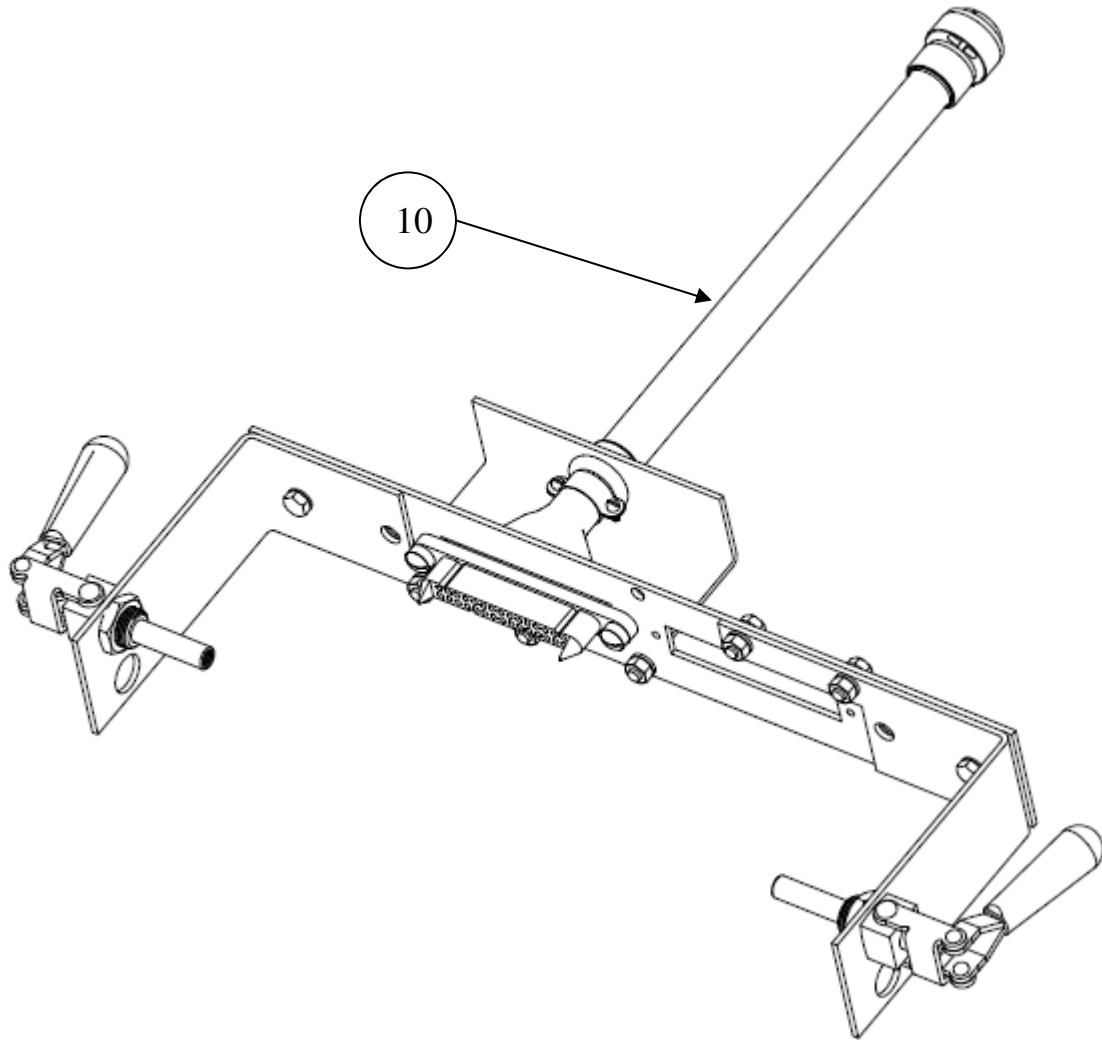


FIGURE 1 – TEST CABINET EXAMPLE

SEE **FIGURE 10** FOR ADDITIONAL TEST BOX FRONT COVER CONFIGURATIONS.

Figure 1A – 38kV-HD Wiring Harness



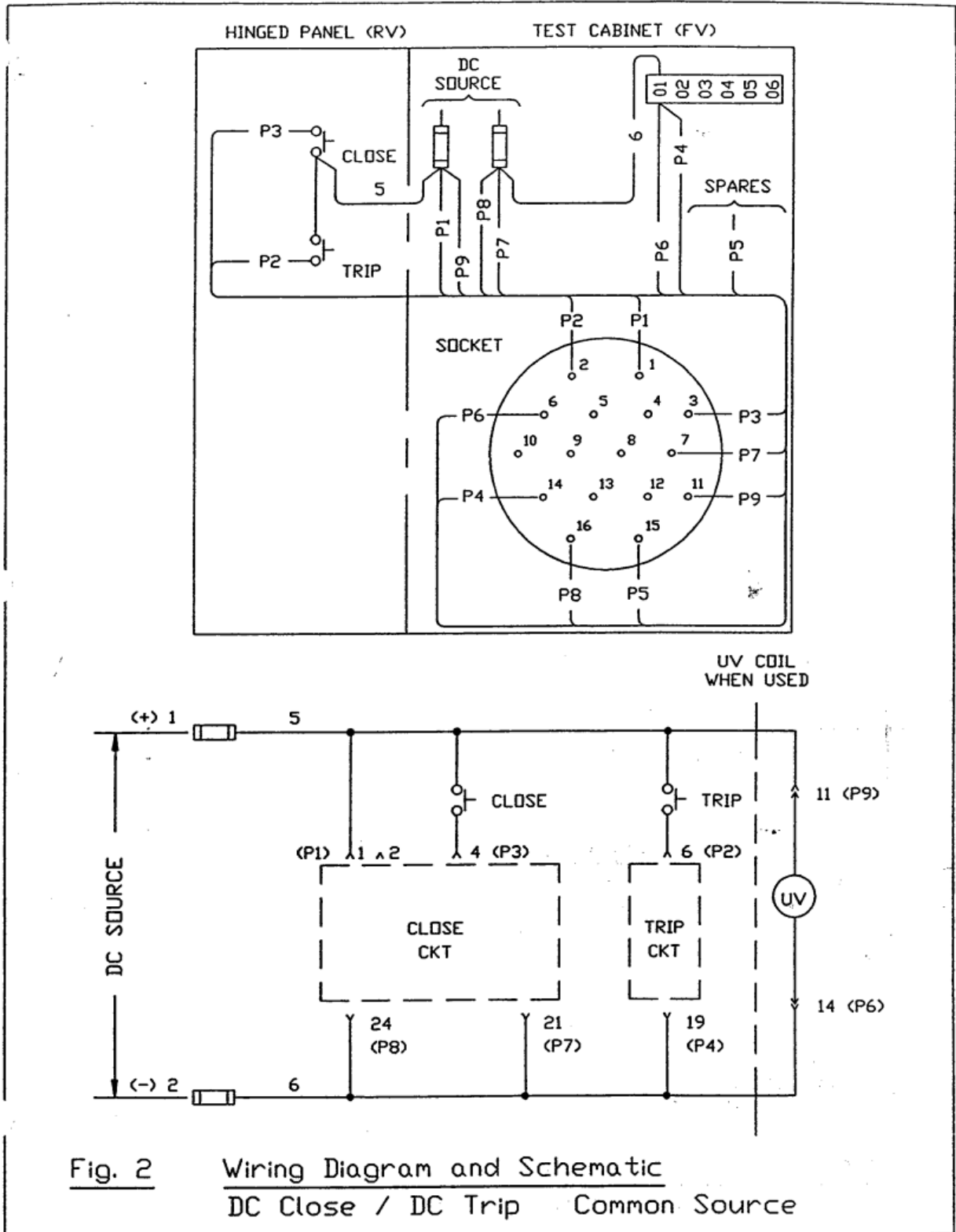
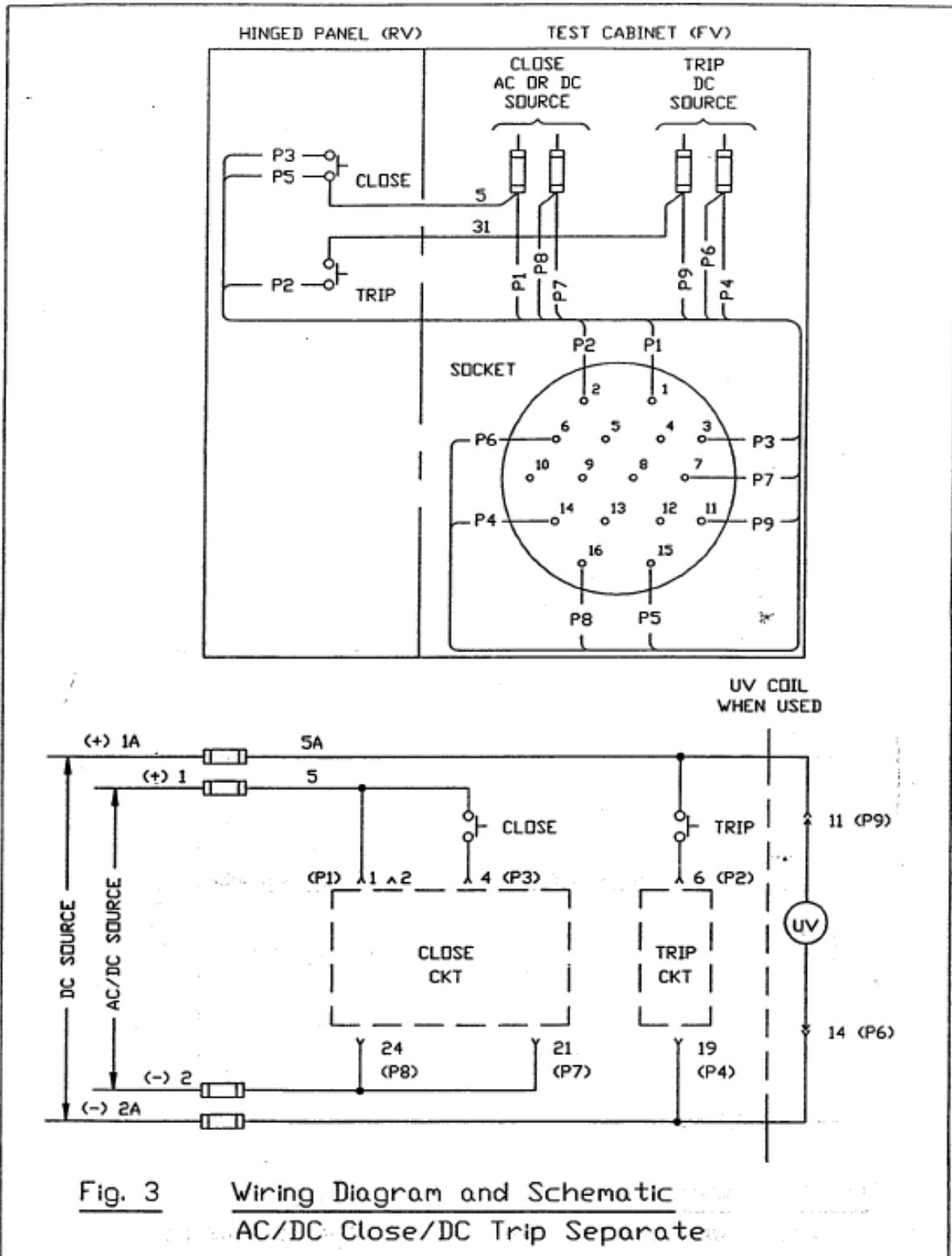
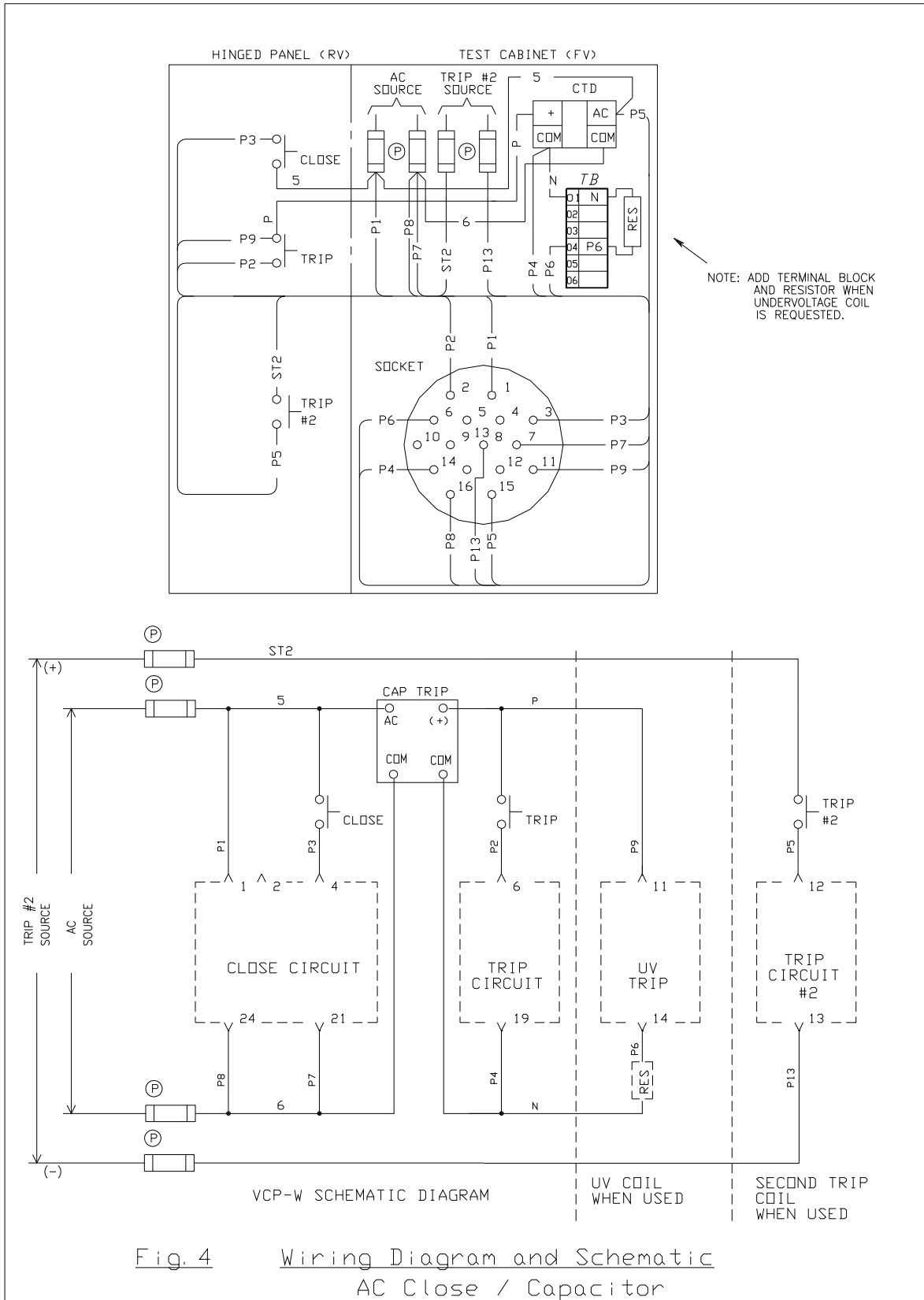


Fig. 2 Wiring Diagram and Schematic
DC Close / DC Trip Common Source





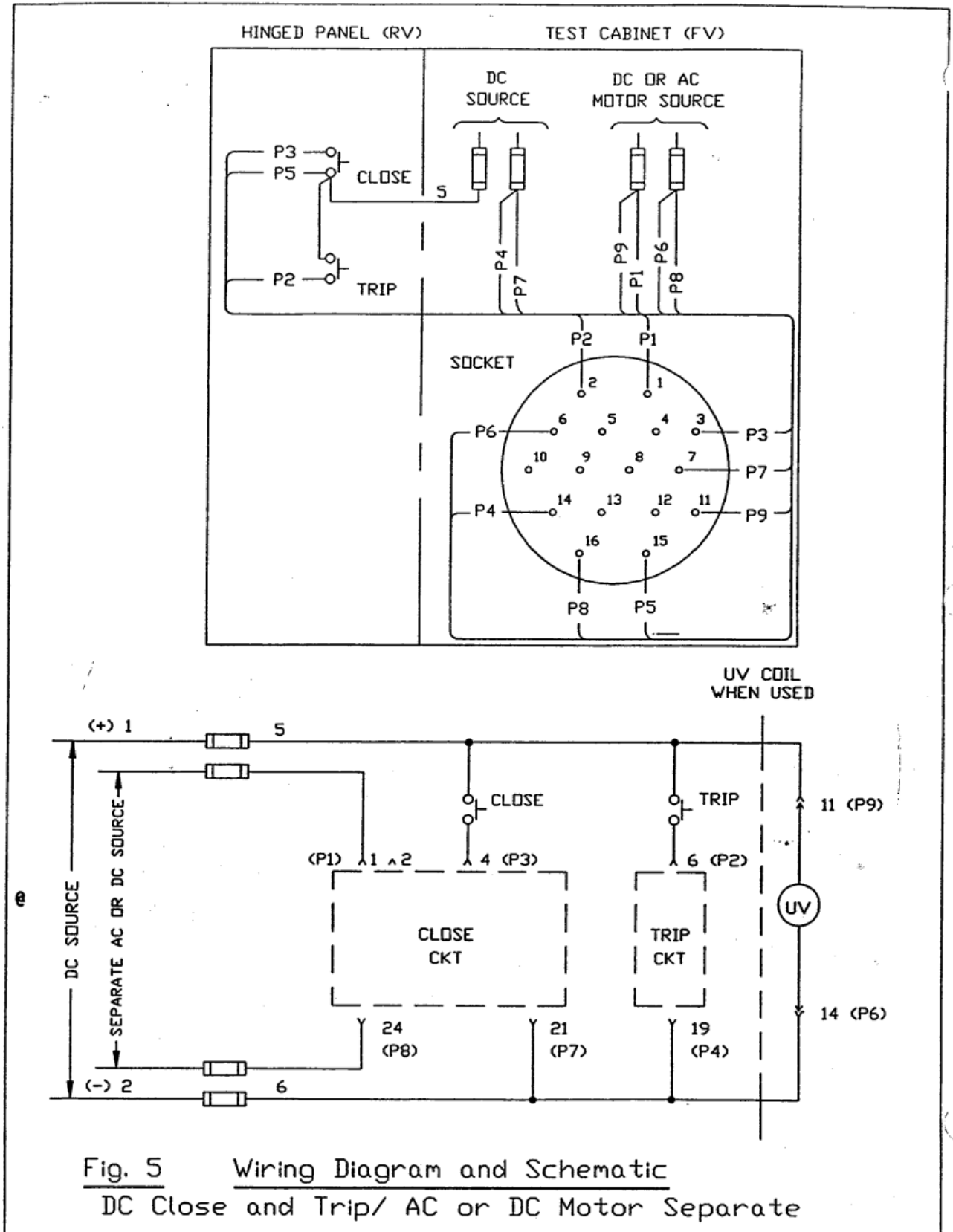


Fig. 5 Wiring Diagram and Schematic
 DC Close and Trip/ AC or DC Motor Separate

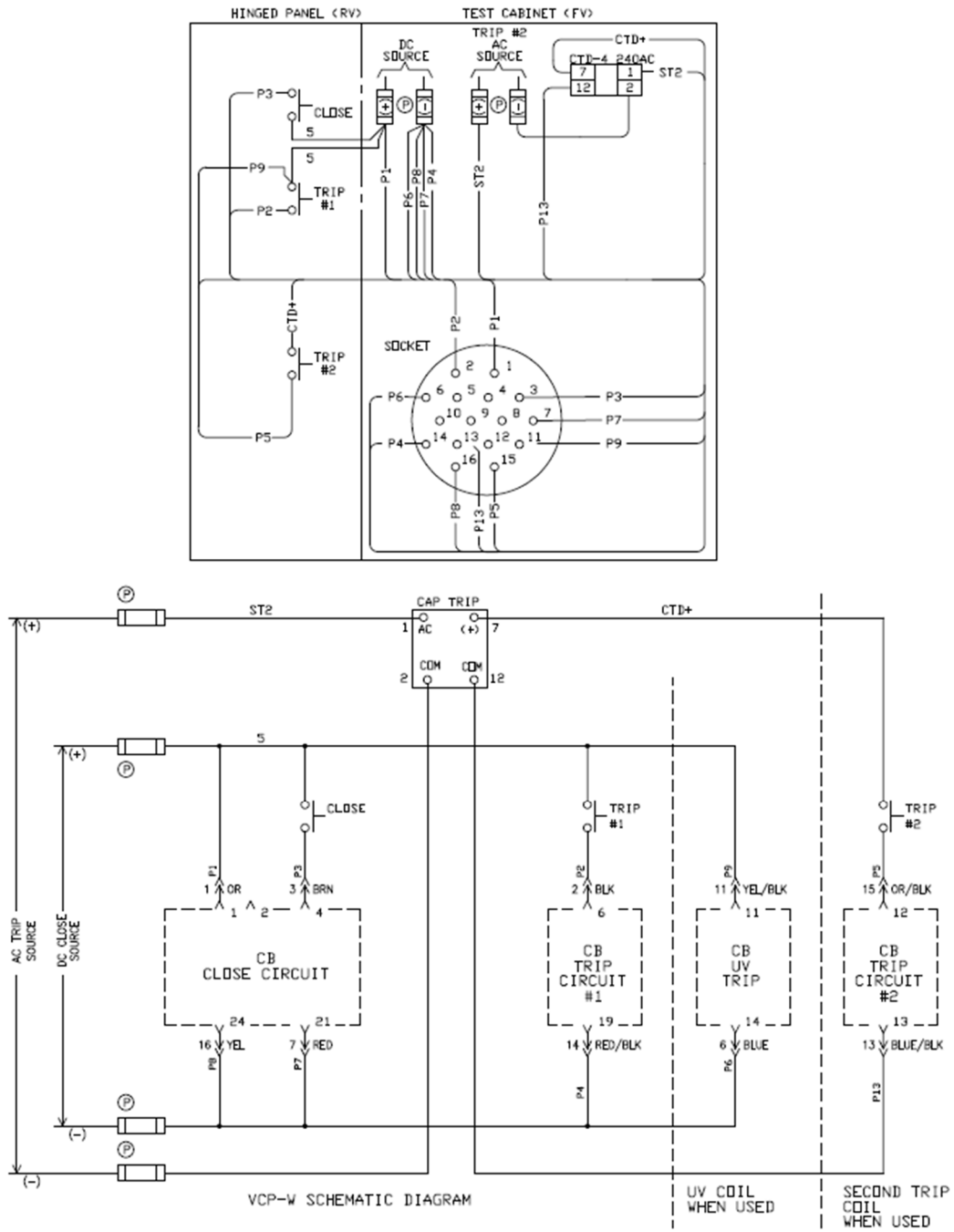


FIGURE 6: WIRING DIAGRAM AND SCHEMATIC
DC-MOTOR/TRIP #1/CLOSE & AC-TRIP #2/CAPACITOR TRIP (CTD)

FIGURE 9 - Test Box Outline and Mounting dimensions

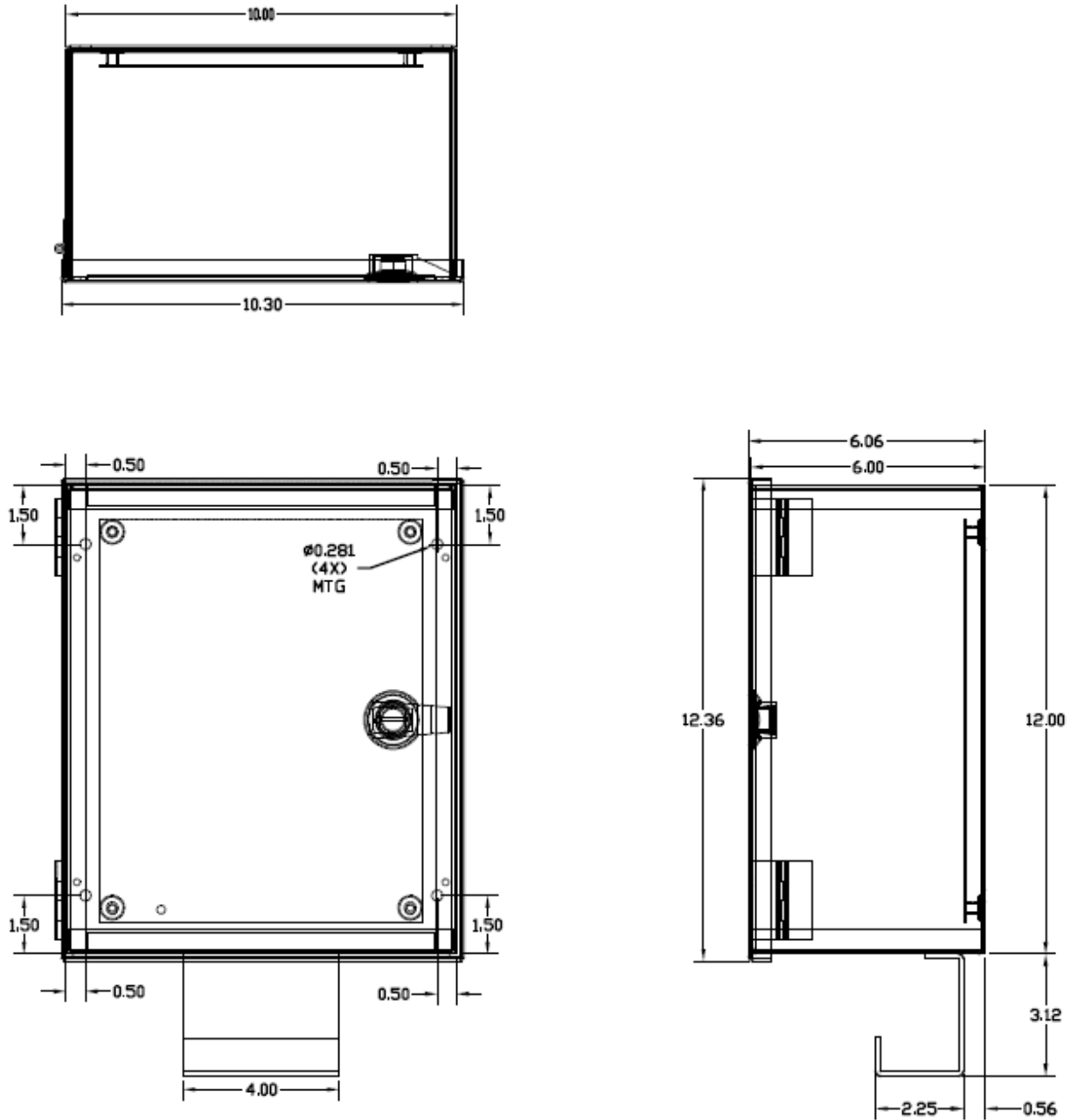


Figure 10 – TEST BOX FRONT PANEL CONFIG.

