

ADEMCO

INSTALLATION INSTRUCTIONS

No. 1852 PASSIVE INFRARED MOTION DETECTOR

GENERAL INFORMATION:

The No. 1852 provides 12 zones of coverage with a range of up to 25 feet (at a typical mounting height of 7'-0").

This model has the following important features:

- High precision, computer-designed parabolic optical system.
- Dual element pyro-electric sensor.
- Low current drain which allows for extended system power source battery life.
- Pre-set zones for fast and easy installation.
- Walk-test LED
- Optional wall/corner mounting plate.

The No. 1852 must be powered from a filtered 6V. DC or 12V. DC source that can provide at least 4 hrs. of standby power. The No. 495 Power Supply, which can be plugged directly into any 24 hour 120V. AC outlet, can be used as a convenient source of 6V. DC, having up to 12 hours standby.

The detector is designed to operate at all times. When motion is detected, the unit's LED will light and its relay contacts will transfer.

PRINCIPLES OF OPERATION:

The optical system divides the area into a series of protected zones. A special sensor measures the level of infrared energy in each zone. When an intruder crosses or enters any zone, the resulting change in infrared energy is detected and an alarm condition will be reported.

The sensor does **not** respond to visible light or slow changes in the background temperature of the area.

Because a passive infrared device employs no transmission of any kind, any number of units may be used in the same area.

Far infrared energy does not penetrate most building materials (even window glass) so the unit responds primarily to movement **within** the protected area.

COVERAGE CONSIDERATIONS AND TYPICAL LAYOUTS:

The pattern of protection provided by the No. 1852 includes six main zones which span an angle of approximately 60°, and six downward zones aligned in the same direction horizontally as the main zones. See Diagrams 1 and 2.

The optical system has been designed to give a coverage range of 25' based on a typical mounting height of 7'; however, the unit may be mounted at other heights with modified range coverage as shown in Diagram 3.

Selecting a Mounting Location:

Because the No. 1852 Passive Infrared Detector responds to changes in energy which occur when an intruder moves into or out of a zone, best coverage will be obtained if the mounting site is selected such that the likely direction of intruder motion is **ACROSS** the pattern, rather than toward or away from the unit.

Avoid direct viewing, by the unit, of heat sources such as radiators, heating ducts, direct sunlight, etc.

INSTALLATION AND WIRING:

Passive I.R. units are remarkably resistant to false alarm hazards but the following recommendations should be observed:

Avoid locating unit where central heating radiators, live fires or heating outlet ducts could be within the protective zones.

Avoid locating the unit in direct sunlight or directly above strong sources of heat.

Avoid locating unit on unstable surfaces.

Avoid running alarm wiring close to heavy duty electrical cables.

Mounting:

IMPORTANT: Be careful during installation or adjustment **NOT TO TOUCH THE REFLECTOR OR SENSOR SURFACES.**

The No. 1852 should be mounted to a firm and vertical surface. It may be mounted flat on a wall or in a corner, either directly to the mounting surface or via an optional mounting plate (No. 652MP). Alternatively, for recessed mounting, a flush mounting kit (No. 652MK) is available.

A. Mounting Directly to Surface:

1. Remove cover of unit by loosening the retaining screw.
2. Remove electrical assembly by a) spreading tips of plastic holding prongs outward (see Diagram 4), b) grasping metal shield and c) pulling assembly out of case. First, with finger or screwdriver, pull one prong toward edge of case and pull out side of shield at that edge. Repeat with other prong and other side of shield. Then pull out assembly. At this point it should slide easily out of case.

3. **Punch out 2 knockout holes** at each edge of rear of case as follows:

- a. If unit is to be mounted on flat surface, punch out inner (round) holes.
- b. If unit is to be mounted at corner of wall, punch out outer (angled, square) holes.

4. **Using knocked out holes** as guide, drill appropriate mounting holes on wall at the recommended height and fasten unit to wall.

5. **Replace electrical assembly** and proceed with **Wiring**.

B. Mounting with Optional No. 652MP Mounting Plate:

1. **Mount the plate to a firm and vertical surface** (flat on wall or in corner), as shown in Diagram 4, at the recommended height (see previous section). Orient the plate so that the rectangular cutout in the plate is at the bottom. If wiring is provided from a hole in the mounting surface, locate the mounting plate so that the wiring hole is centered horizontally within the rectangular cutout in the plate and the bottom edge of the plate is positioned in-line with the center of the wiring hole. See Diagram 4, Detail A. This will align the wiring hole with the wiring entry in the case when the unit is secured.

Wiring holes should be no larger than $\frac{5}{16}$ " in diameter.

2. **Remove the front cover from the detector** by loosening the retaining screw.

3. **Attach the unit to the plate** as follows: Engage all four hooks on the plate into the slots on the rear of the case (See Diagram 4) and secure the unit to the wall plate by pressing downward. Proceed with **Wiring**.

C. Recessed Mounting (Optional):

Use the No. 652MK Flush Mounting Kit. Full instructions accompany it.

Wiring Connections:

Using the wire entry plug and the wiring entry access at the lower rear of the case, carefully feed the wires through the entry and along the underside of the terminal block. For surface wiring, a knockout is provided at the wiring entry access.

Avoid unnecessary splices and loops within the unit. Check all connections carefully.

See Diagram 5 for connections, which should be made in this order:

1. **Alarm Relay Terminals:** To connect a closed circuit protective loop, see diagram.

2. **Input 6V/12V. DC (+) and (-) Terminals:** Connect these terminals to a 6V. DC or 12V. DC source that can provide 35mA continuously. **Note:** For 12V. DC operation, cut the unit's **ORANGE** jumper. **Observe polarity!** Continuous auxiliary capacity of applicable Ademco controls is as follows:

<u>6V.DC</u>	{	No. 1021, 4021 : 400mA	No. 1025 : 220mA
		No. 1022 : 150mA	No. 4080, 4080XL : 500mA
		No. 1023 : 600mA	No. 330R25, 340R25 : 250mA
		No. 1024 : 200mA	No. 332R50, 342R50 : 750mA
<u>12V.DC</u>	{	No. 1021-12, 4021-12 : 400mA	
		No. 1022-12 : 300mA	
		No. 1023-12 : 550mA	
		No. 1025-12, 1025EX12 : 220mA	
		No. 4080-12 : 500mA	

Alternatively, 6V. DC can be conveniently provided **directly** from any 24 hour 120V. AC outlet via a No. 495 Power Supply which plugs directly into the outlet.

TESTING:

IMPORTANT: Wait at least two minutes after connecting power before attempting to walk-test unit.

Testing of the detector should be conducted with the protected area cleared of all people. In some business establishments, it will be more convenient to do this after the business is closed. The protective system's control should be OFF during the procedure to prevent reporting unwanted alarms.

Walk Test:

Double-check all connections. Replace the front cover and secure holding screw. Walk-test unit with cover in place. Test operation by walking through the protective zones and observing walk-test LED.

The absolute range of all Passive I.R. units is subject to variation because of different types of clothing, backgrounds and ambient temperature changes. For this reason, ensure that the most likely intruder routes are well within the protective zones and that walk-testing is carried out along these routes.

Meter Test: (if required, for analyzing "problem" areas)

Remove the front cover. Using a DC voltmeter (or multimeter, 20k ohms per volt, or equivalent) connect positive test lead to the Test Point post located behind terminal 1 on the printed circuit board (See Diagram 5). The meter's negative lead should be connected to the (-) input (ground) terminal 5. The meter should be set to the 2.5V. DC range. Mask the detector's optics so that motion cannot be detected. The meter should indicate approximately 1.6V. DC (with a permissible normal fluctuation of approximately 0.1V). Remove mask covering the optics, remain motionless and allow time for the meter to settle. Motion into any of the detector's zones should cause the meter to deflect above or below the 1.6V nominal level. Meter variation of ± 0.5 Volts should trigger the unit, causing the LED to illuminate and the alarm relay to transfer.

MAINTAINING PROPER OPERATION AND COVERAGE:

In order to maintain the detector in proper working condition, it is important that the following be observed by the user.

1. **Power must be provided at all times.** The unit's DC source must have standby power available for at least 4 hrs. of operation during emergencies.
2. **Units should never be re-aimed or relocated** without the advice of the alarm company.
3. **The physical surroundings of the protected area should not be changed.** If furniture or stock is moved, or air conditioning or additional heating is installed, the system may have to be readjusted by the alarm service company.
4. **Walk-tests should be conducted at least monthly** to confirm continued proper coverage by each detector.

TROUBLESHOOTING:

Trouble 1: UNIT GOES INTO ALARM INTERMITTENTLY FOR NO APPARENT REASON AND WALK-TEST LIGHT GOES ON WHEN ALARM CONDITION EXISTS.

CAUSE

- A. **Rapid change in I.R. level in a zone.** Check for electric or gas heaters, open flames, electric arcs, or any object partially in a zone which can change temperature rapidly.
- B. **Drafts are creating motion** in drapes, display material or overhead lighting fixtures.

REMEDY

- Identify source of I.R. or temperature change.** Reposition unit so that source of problem is no longer in a zone.
- Locate source of motion.** Eliminate same and walk-test unit after motion source is eliminated.

Trouble 2: UNIT GOES INTO ALARM INTERMITTENTLY OR CONTINUOUSLY FOR NO APPARENT REASON AND WALK-TEST LIGHT DOES NOT COME ON WHEN ALARM CONDITION EXISTS.

CAUSE

DC voltage supply to detector from panel or power supply inadequate or absent. PROPER POLARITY MUST BE OBSERVED. (Note: If ORANGE jumper has been cut, 12V. DC must be supplied).

REMEDY

Check for proper DC voltage at terminals of detector. If absent, check for proper voltage at panel or power supply terminals with wiring disconnected. If present, wiring to detector is faulted. Check for open and shorted conditions in wiring. If proper DC voltage is absent, consult instructions for panel or power supply.

Trouble 3: RELAY OPERATES NORMALLY BUT WALK-TEST LIGHT DOES NOT OPERATE.

CAUSE

LED malfunction. Check for broken or shorted leads.

REMEDY

Return unit for service.

Trouble 4: AREA OF COVERAGE CHANGES.

CAUSE

- A. **Customer has repositioned furniture or equipment** in premises.
- B. **Mounting surface is unstable.** A few degrees vertical shift can change range substantially.

REMEDY

Caution customer that changes in layout can affect coverage. Reposition the unit according to installation instructions. Be certain that unit has not been tampered with.

Mount on secure surface.

Trouble 5: UNIT DOES NOT APPEAR TO BE OPERATING.

CAUSE

Unit is not receiving power.

REMEDY

Check for presence of 6V. DC or (with ORANGE jumper cut) 12V. DC at terminals of unit.

GENERAL SPECIFICATIONS:

Physical: Width: 3¼" (8.3 cm)
 Height: 4¼" (10.8 cm)
 Depth: 2" (5.1 cm)

Electrical: Voltage: 6V. DC or 12V. DC, Filtered
 Current: 35mA
 Standby: Power source used must be able to provide at least 4 hrs of standby power. The No. 495 Power Supply, which can be plugged directly into any 24 hour 120V. AC outlet, can power a No. 1852 with 6V. DC for over 12 hours in the event of AC failure.

TO THE INSTALLER

Regular maintenance and inspection (at least annually) by the installer and frequent testing by the user is vital to continuous satisfactory operation of any alarm system.

The installer should assume the responsibility of developing and offering a regular maintenance program to the user as well as acquainting the user with the proper operation and limitations of the alarm system and its component parts. Recommendations must be included for a specific program of frequent testing (at least annually) to insure the system's proper operation at all times.

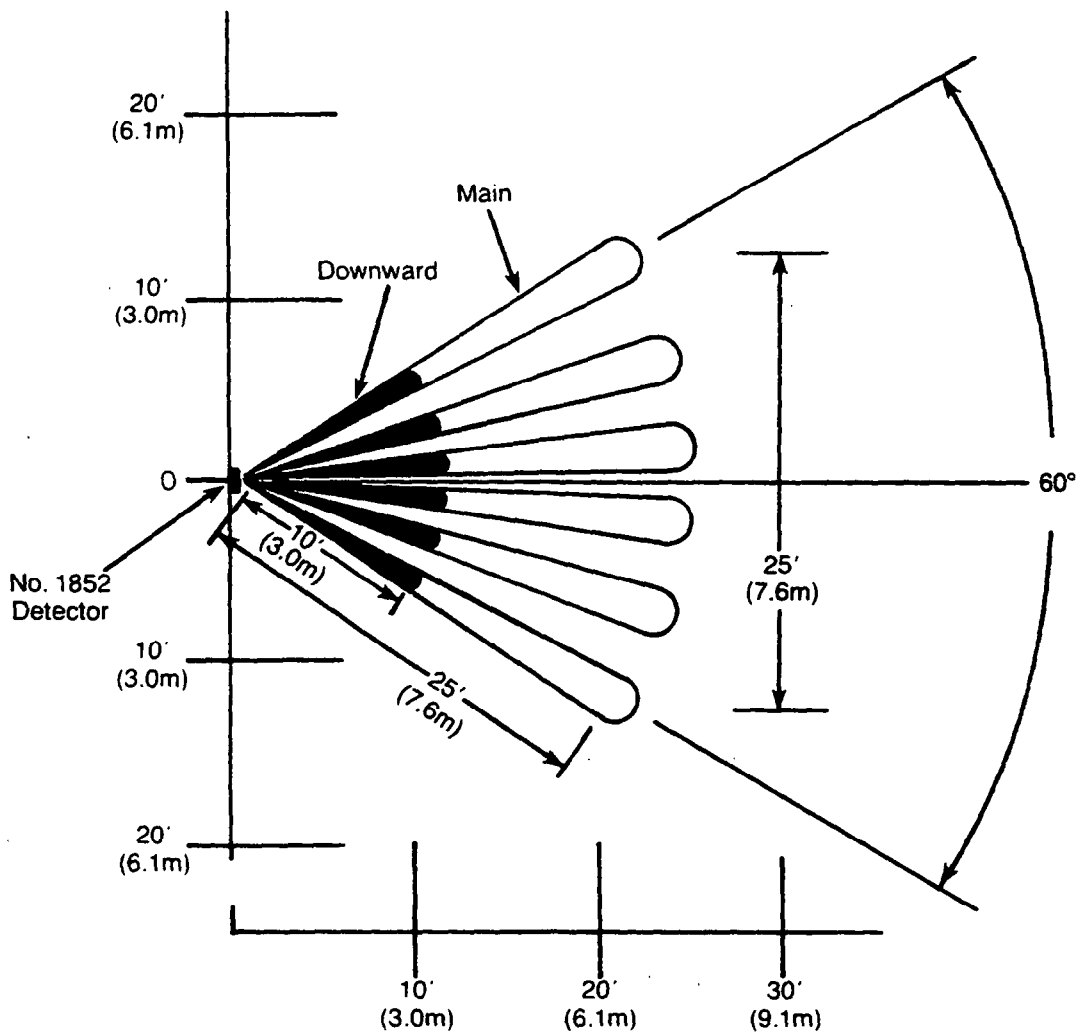


Diagram 1: PROTECTION ZONES (No. 1852)

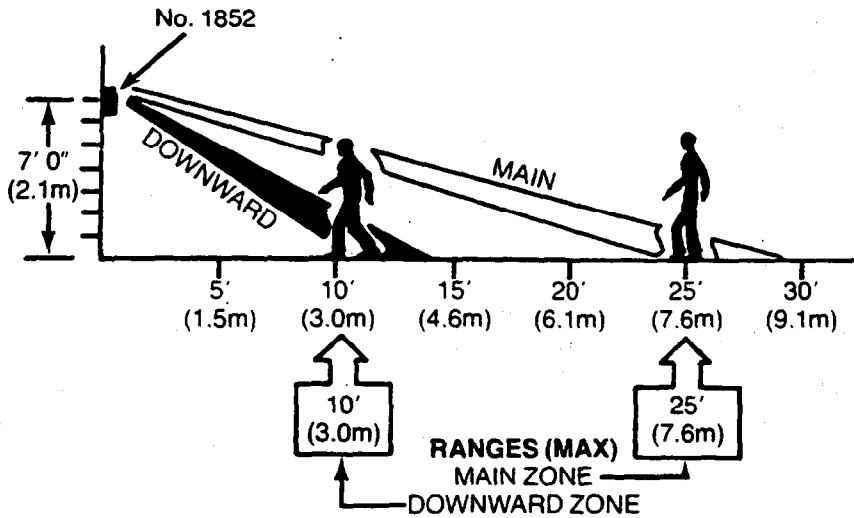
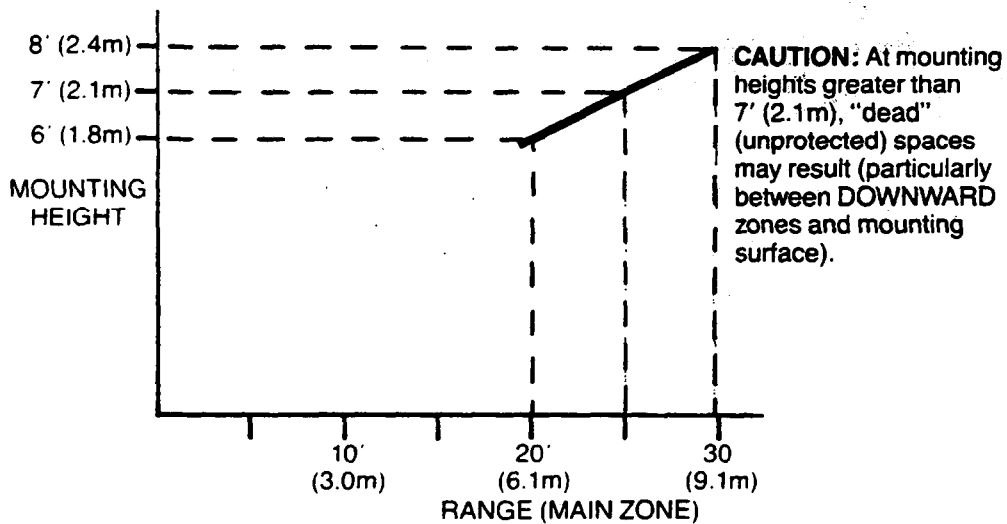


Diagram 2: RANGES AT 7' 0" (2.1m) MOUNTING HEIGHT (No. 1852)



EXAMPLE: MAXIMUM MAIN ZONE RANGE AT 7' 0" (2.1m) MOUNTING HEIGHT IS 25' (7.6m)

Diagram 3: MAXIMUM MAIN ZONE RANGES AT VARIOUS MOUNTING HEIGHTS (No. 1852)

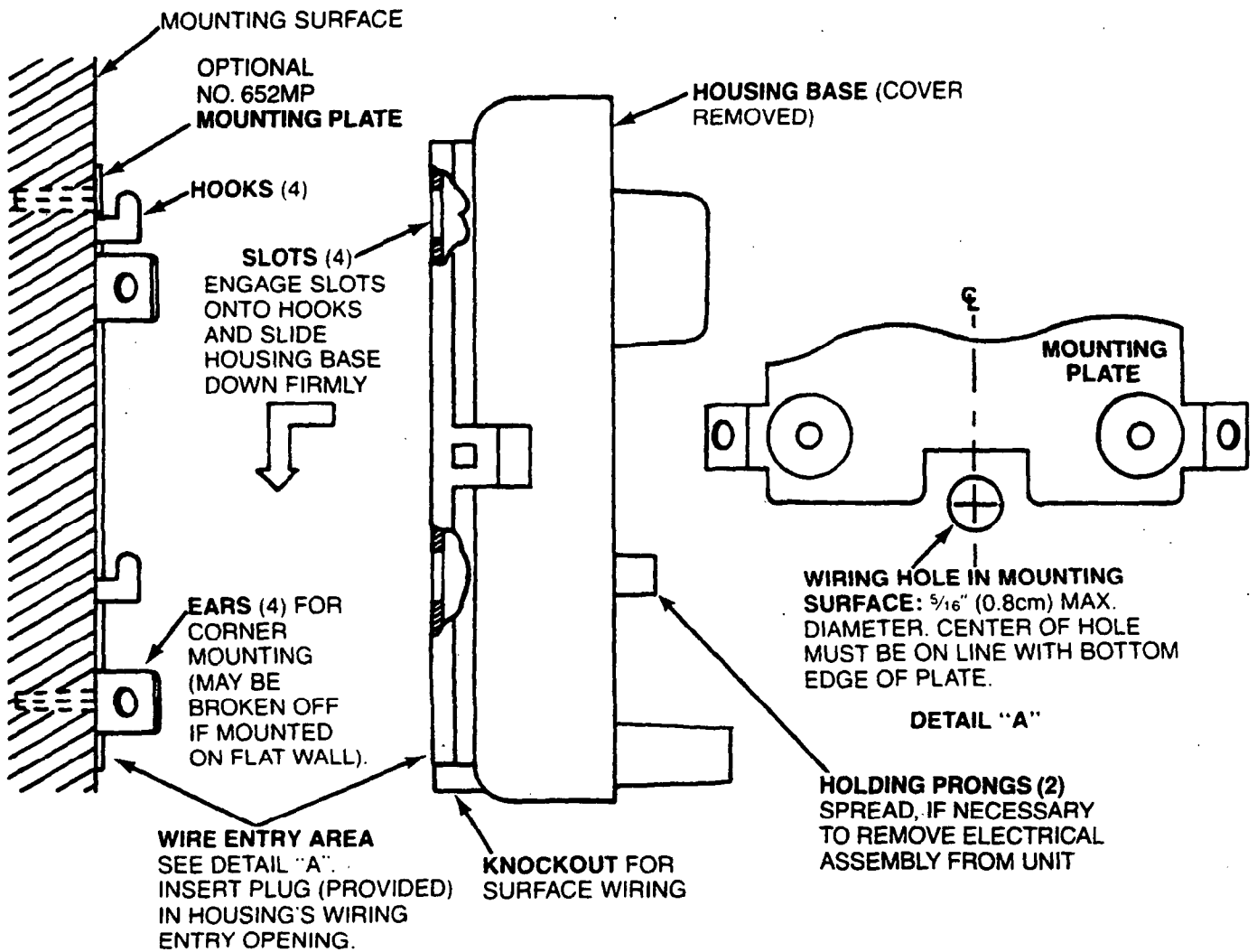


Diagram 4: MOUNTING DETAILS, USING OPTIONAL No. 652MP MOUNTING PLATE

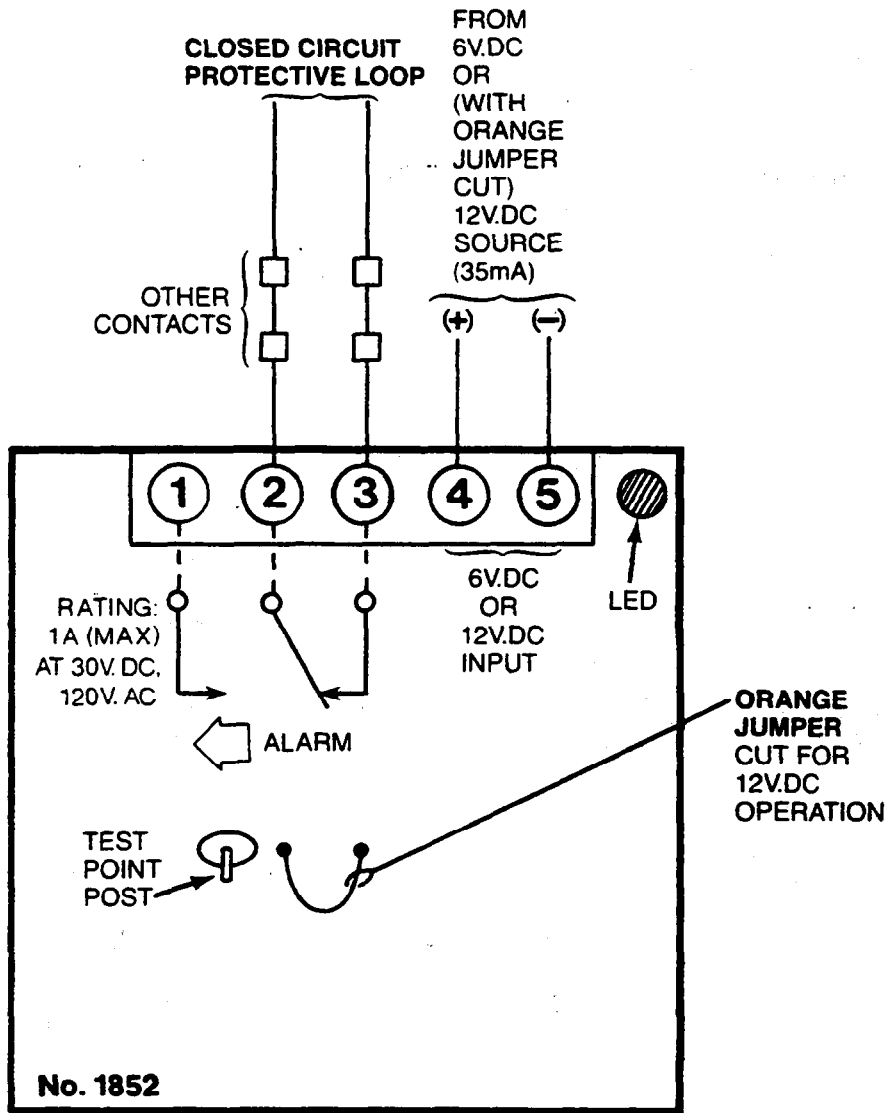


Diagram 5: CONNECTIONS, TERMINALS AND JUMPERS (No. 1852)