No.1350 WALL OUTLET PHOTOELECTRIC SYSTEM

The Ademco Wall Outlet Photoelectric system looks like two electrical wall outlets when installed. Model No. 1350 will span up to 50 feet and cannot be used below 5 feet.

The three main components are:

1. A combination Transmitter and Receiver built into one compact wall outlet unit.
2. A control Pack
3. A special Bounce-Back Reflector

The Combination Transmitter-Receiver is installed in a hollow wall and looks like an electrical wall outlet. It projects a beam of light that is aimed at a Bounce-Back Reflector, which also looks like a wall outlet. This reflector, without adjustment of any kind, bounces the light from the Transmitter right back to the Receiver. The light beam is made invisible by a filter, located in the wall outlet front plate of the Combination Transmitter-Receiver.

The Control Pack contains a regulated power supply, a rechargeable standby battery pack, a pilot light, and a solid state amplifier and relay. The relay is activated and the pilot light remains ON when the "bounced back" beam is unbroken and on target. The Pilot Light goes OFF when the beam is broken or is weak. The Control Pack is compact and can be installed in any out-of-the-way place such as a closet, basement, etc. By means of low voltage cable, the Control Pack is connected to both the Combination Transmitter-Receiver and to a 115 VAC outlet with a low voltage Transformer. The pilot light also monitors the AC and will go OFF if the AC fails indicating that the built-in batteries are powering the system.

The control Pack and Combination Transmitter-Receiver are tested and matched at the factory. Labels with code numbers from 1 to 6 are attached to each set. Matched sets must be used on any single installation. If control packs or transmitter-receivers are ever replaced for any reason, make sure that the code numbers still match!

HOW TO SELECT THE LOCATION FOR THE COMBINATION TRANSMITTER RECEIVER & BOUNCE-BACK REFLECTOR:

1. Do Not install the Transmitter-Receiver pointing towards outside windows, incandescent or fluorescent lights.
2. The Bounce-Back Reflector should be placed in a fairly dark area not pointing toward windows or incandescent or fluorescent lights.
3. The Transmitter-Receiver should be located about 24" to 30" from the floor in a hollow wall whose inside depth is at least 3-5/8". The unit will fit in a standard wall framed with 2x4's.
4. Make sure that all table and floor lamps are at least 4 feet away from the beam between the Combination Transmitter-Receiver and the Bounce-Back Reflector, so there is no possibility that outside light can "hang-up" the unit.

MOUNTING THE CONTROL PACK

1. Mount the Control Pack in any out-of-the-way location within 50 cable feet of the Combination Transmitter-Receiver.
2. Remove the cover.
3. Insert the rechargeable battery pack into the rear of the unit. DO NOT ALLOW THE LEADS TO TOUCH EACH OTHER AS BATTERY DAMAGE MAY OCCUR. Connect the red lead to terminal 4 and the black lead to terminal 10.
4. Install 4-wire cable (Ademco No. 295) from the Transmitter-Receiver location to the Control Pack. Bring this cable through the large hole at the bottom of the control pack and connect the green conductor to terminal 3, the black to terminal 8, and the red to terminal 9. The unused white lead should be cut or taped.
5. Install No. 22 gauge twisted pair wire (Ademco No. 289) from a nearby 115 VAC outlet, where the plug-in transformer will be, to the Control Pack. Connect one end to the 12v Transformer. Connect the other end of this wire to terminals 5 and 6 in the Control Pack. Plug transformer in.
6. Make sure that the 115 VAC outlet has uninterrupted electricity 24 hours a day. Make sure that current to this outlet is not interrupted by a switch or by a circuit breaker when offices or factories are closed for the day. The pilot light on the control pack should be OFF since the system is not yet aligned.

TO INSTALL THE COMBINATION TRANSMITTER-RECEIVER:

1. Using the backup plate as a template, mark, with a pencil, the four hole locations on the wall. Make sure that you are between the studs and that the wall section behind the opening is clear of insulation or other material. Using a saber saw or other tool, cut out a 4" x 2 3/8" rectangle using the four hole marks at each corner as a guide.

   Bring the cable from the control pack from inside the wall out through the opening just made. Allow a few feet of cable to hang out of the opening.

   2. Place the backup plate over the transmitter-receiver head, lining it up behind the outside mounting plate.
Insert two of the four mounting screws through the outside mounting plate into the two tapped holes of the backup plate at the receiver lens end (or lower end when mounted in wall.) Thread the screws just a few turns into the plate.

3. Connect the cable from the control pack to the terminals at the back of the transmitter-receiver. The color connections of the wires are indicated on the side label next to the terminals.

4. Slip the transmitter-receiver and backup plate into the wall opening with the two mounting screws on the bottom and the transmitter lens on top.

With the outside mounting plate flush against the wall, use the protruding mounting screws to align the backup plate so that the remaining two top mounting screws can be inserted and screwed into the backup plate.

5. Tighten all four screws firmly and evenly so that the outside mounting plate and backup plate sandwich the wall and hold the transmitter-receiver securely. Do not damage the wall by tightening too much.

AIMING AND ALIGNMENT PROCEDURES:

Aiming the beam properly is easy if the PILOT LIGHT on the Control Pack can be seen when the installer stands at the Bounce-Back Reflector. This pilot light goes ON when the beam is aligned properly and goes OFF when the beam is broken or not aligned properly. If this pilot light cannot be seen by the installer standing near the intended location of the reflector, a temporary remote pilot light must be connected as follows:

1. String out enough No. 22 gauge twisted pair wire to go from the Control Pack to the Transmitter-Receiver. This wire is only temporary and is removed after aiming.

2. Connect one end of the wire to terminals 7 and 10 on the Control Pack and the other end to a 6 volt lamp. (No. 220W 6 volt lamp assembly). Also, connect a temporary jumper between terminals 1 and 4 on the Control Pack.

ALIGN THE COMBINATION TRANSMITTER-RECEIVER AND THE REFLECTOR AS FOLLOWS:

A. With the premises to be protected as dark as possible, locate the beam on the wall opposite the head. Mount the reflector temporarily with double-faced tape (Ademco No. 440). Unplug the transformer at the Control Pack. This will make the beam brighter and easier to see. Turn the adjustment screws until the beam strikes the reflector and the Pilot Light goes ON. Do not mount the reflector yet. Skip the next section (Section B) and proceed to the FINE TUNING instructions.
B. If the room is not dark and you cannot see the beam, proceed as follows:

1. Unplug the transformer at the Control Pack. This will make the beam brighter and easier to see.

2. Measure the height from the floor to the center of the transmitter lens (upper lens).

3. Take a large white cardboard (3' x 3') and mark an X near the center of the card the same distance up from the floor as you just measured the transmitter to be.

4. Stand this card up against the back of a chair located about 10' to 15' away from the Transmitter-Receiver. Move the chair as far away as possible so you can still see the beam spot. Place the card so that the X falls where you want the beam to be directed. The card should not be tilted, keep it straight up and down.

5. Now, adjust the beam till it falls on the "X". First, use the upper and lower screws to make the proper height adjustment. Then, use the center screw for the proper side adjustment.

6. Remove the chair and white card. The beam should be close to its desired location but will need further adjustment.

7. To locate exactly where the beam is falling, go to the opposite wall and face the Transmitter-Receiver. Hold the bounce-back reflector up to your eye. Look at the transmitter lamp through the small hole in the center of the reflector until you see the bright, intense light. Move the reflector slightly until the Test Light Goes ON. You are now ON BEAM. If the reflector is not yet in the desired location, go back to the transmitter-receiver and carefully realign the beam until it falls on the proper spot and the TEST Light stays ON.

8. You are now ready for FINE TUNING. Do not mount the reflector permanently yet.

FINE TUNING

Plug the low-voltage transformer in. Cover the lower half of the reflector. If the TEST LIGHT goes out, move the reflector down slightly until it comes ON. Now, cover the upper half of the reflector. If the test light does not remain ON, move the reflector up slightly. Now, cover the left hand side of the reflector. If the TEST light goes OFF, move the reflector slightly to the left. Finally, cover the right hand side of the reflector. If the TEST light goes OFF, move the reflector slightly to the right. The reflector should now be in the center of the beam and with any two of the four openings covered, the test light should remain ON. Mount the reflector permanently to the wall. The thin, red filter inside the front plate is to disguise the reflecting surface.

Complete the installation by installing a front outlet plate on the combination Transmitter-Receiver. To make the beam invisible, the filters are directly behind this plate. The installation is now complete.

Walk back to the reflector. Using an opaque card, slowly cover up the reflector. If alignment is correct, at least 50% of the reflector should be covered before the test light goes out.
For a closed circuit (supervised) system, the protective circuit should be connected to terminals 1 and 7. For an open circuit system, terminals 1 and 2 should be used.

CAUTION

1. Remove the test lamp and jumper from the controller. Be sure to remove both or you will run the battery down.

2. Replace the control unit cover. The system is now fully operable. Check by making sure that the controller lamp is on and that it goes off when the beam is broken.
TROUBLESHOOTING No. 1350

TROUBLE: 1. THE PILOT LAMP ON THE CONTROL PACK IS NOT LIT.

PROBABLE CAUSE
A. The system is not aligned to properly bounce back light beam from reflector.
B. The standby battery is the only source of power operating the system.

REMEDY
A. Realign carefully following the Installation Instructions.
B. Make certain that 12 volts A.C from the transformer is properly applied to terminals 5 and 6 of the control pack. Make certain, also, that the outlet into which the transformer is plugged is live at all times.

TROUBLE: 2. PHOTOELECTRIC SYSTEM WILL NOT SET UP.

A. The range limitations have not been met between receiver/transmitter and reflector unit.
B. Transmitter light source not operating.
C. Burned out transmitter light source.

REMEDY
A. Relocate either the reflector and/or the receiver/transmitter unit so that they are separated by a minimum distance of 5 feet and a maximum of 50 feet.
B. Recheck wiring from control pack to transmitter/receiver unit.
C. Return entire unit (control pack and wall unit) to factory for servicing.

TROUBLE: 3. PROTECTIVE CIRCUIT WILL NOT SET UP WHEN ATTACHED TO THE PHOTOELECTRIC SYSTEM.

PROBABLE CAUSE
A. Incorrect wiring of protective loop into the terminals on the control pack.
B. Relay in unit not activating properly.

REMEDY
A. Use terminals 1 and 7 for closed circuit (supervised) systems; use terminals 1 and 2 for open circuit systems.
B. Return to factory for repair.

TROUBLE: 4. SYSTEM OPERATES INTERMITTENTLY CAUSING FALSE ALARMS.

PROBABLE CAUSE
A. Beam not being reflected at maximum strength.

REMEDY
A. Relocate photoelectric unit and/or reflector so that at least 50% of the reflector is covered before the test light goes out. See the FINE TUNING section in the Installation Instructions.
B. Too much ambient light in the area of the transmitter/receiver.

TROUBLE: 5. SYSTEM OPERATES INTERMITTENTLY DURING STANDBY OPERATION.

PROBABLE CAUSE
Faulty standby operation (if battery voltage measures less than 6 volts in standby operation after being fully charged, suspect faulty battery).

REMEDY
Replace with No. 1345 Nicad battery.