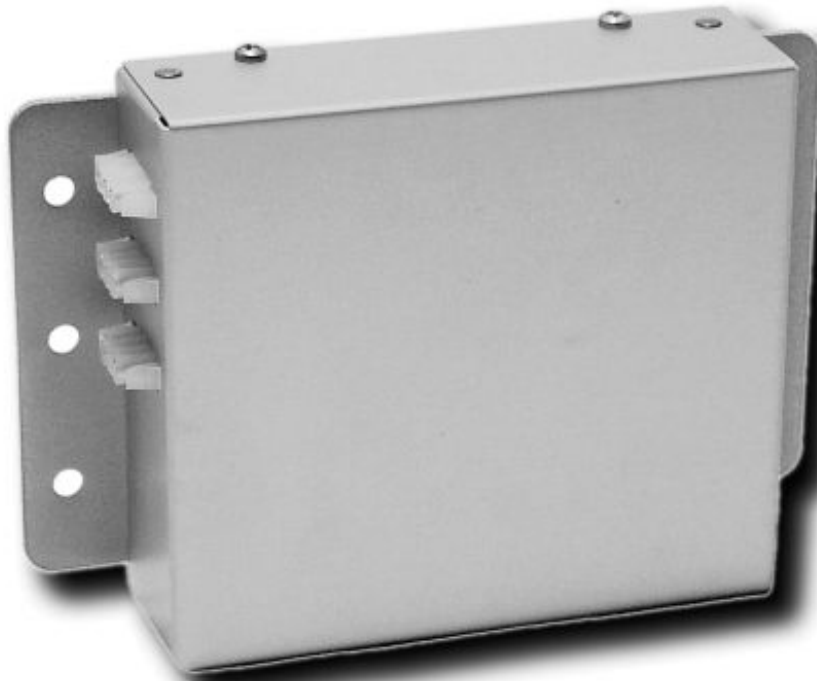

INSTALLATION AND INSTRUCTION MANUAL

REMOTE STROBE PACK Model RP310

Owner's Manual & Installation Instructions



Star Headlight & Lantern Co., Inc.

455 Rochester Street Avon, NY 14414

Phone: 585-226-9787 FAX: 888-478-2797



www.starheadlight.com

Table of Contents

| | |
|-----------------------------------|-----|
| SAFETY WARNINGS | 1 |
| MOUNTING | 2 |
| WIRING INSTRUCTIONS | 3 |
| CONNECTING THE REMOTE HEADS | 4 |
| TROUBLESHOOTING | 5-6 |
| SERVICE & WARRANTY | 7 |

| <u>Flash Pattern</u> | <u># of</u> | <u>Total</u> | <u>Joules</u> | |
|----------------------|--------------|--------------|-----------------|-------------|
| | <u>Heads</u> | <u>Watts</u> | <u>per Side</u> | <u>Amps</u> |
| Doubleflash | 2 | 24 | 11.25 | 2.5 |
| Quadflash | 2 | 24 | 17.1 | 2.5 |



This light utilizes high-intensity strobe lights. **DO NOT** stare directly into the light while it is on, as momentary blindness and/or permanent eye damage may occur.

WARNING!

Please Note: These instructions are provided as a general guideline only. ***Some vehicles may require special mounting, wiring, and/or weather-sealing. This is the sole responsibility of the installer.*** Star Headlight & Lantern Co., Inc. assumes no responsibility for the integrity of the installation for this or any of its products.

NOTICE

Due to continuous product improvements, we must reserve the right to change any specifications and information, contained in this manual at any time without notice. Star Headlight & Lantern Co., Inc. makes no warranty of any kind with regard to this manual, including, but not limited to, the implied warranties of merchantability and fitness for a particular purpose. Star Headlight & Lantern Co., Inc. shall not be liable for errors contained herein or for incidental or consequential damages in connection with the furnishing, performance, or use of this manual.

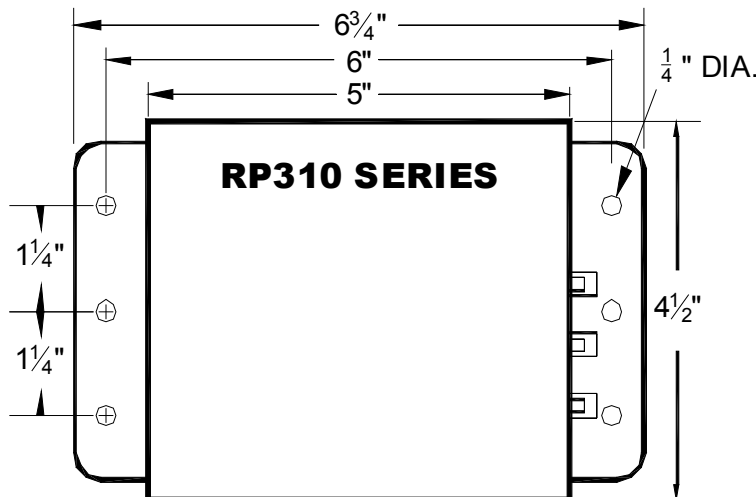
- **IMPORTANT:** Please read all of the following instructions before installing your new strobe system. This instruction sheet applies only to the models listed.
- **CAUTION:** All of our remote power supplies are polarity sensitive. They are polarity protected *only if the appropriate fuse* is used. All wires connected to the positive terminal of the battery should be fused at the battery for their rated load. **Testing the system before this fuse is properly installed will void the warranty on the light.**
- **Opening or tampering with your remote power supply will void the warranty.** The remote power supply must be mounted against a smooth metal surface in a dry location. **Water damage to the power supply will also void the warranty.** Typical mounting locations of your power supply include the interior firewall, beneath the seat of a truck, or inside a large toolbox.

Mounting

Mount the pack on a smooth metal surface to allow for adequate heat dissipation. Do not mount the pack near any external heat source, as this will retard its ability to dissipate heat sufficiently. Mount the Pack using four bolts (not included). When mounting, make sure a good electrical connection exists between the mounting plate and the vehicle chassis. This will help to eliminate any RF interference.



When mounting the power pack and accessories, please be sure to keep any radio frequency sensitive equipment at least 20" from the power pack, cables, and/or wires which make up your strobe system. The pack has been designed to limit RFI emissions, but certain very sensitive equipment may still be affected. Symptoms may include, but are not limited to, sporadic operation and degraded performance. Star Headlight & Lantern Co., Inc. cannot assume any responsibility for any radio frequency induced malfunction or damage to any radios, sirens, lightbars, or any other equipment mounted within 20" of this strobe system. Any antennae mounted in the proximity of the system may cause your radio to suffer the aforementioned results.

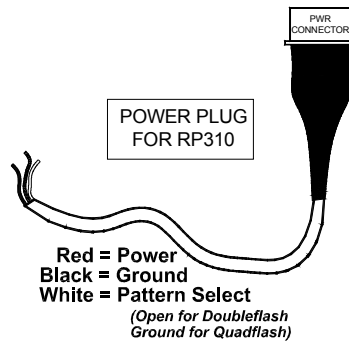


Wiring

Power Plug

The power plug should be included with your power pack and comes complete with an 8-12" wiring harness. This will be connected to the outlet on your pack labeled **PWR**. Connect these wires as follows:

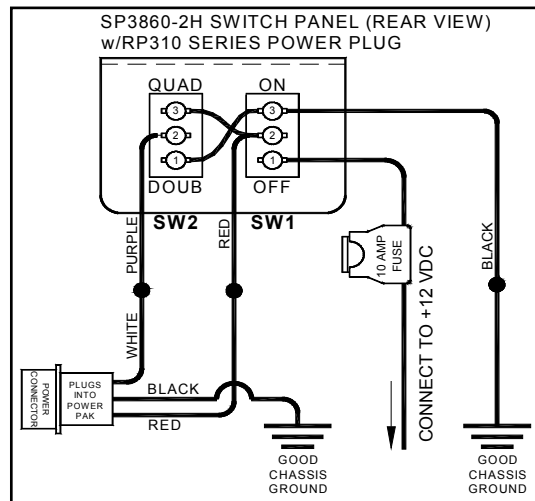
1. The **black** wire should be connected to a good chassis ground.
2. The **red** wire from your power plug should be connected to +12VDC through your on/off switch (*not included*).
3. If you are only operating your power pack with an On/Off switch, you can select the quadflash pattern by hooking the **white** wire to the **black** wire (good chassis ground). If you wish display the doubleflash pattern, cut the **white** wire short and tape the end.



-----If you intend to utilize a Pattern Select Switch follow the instructions below-----

PATTERN SELECT WIRING: Make your connections as illustrated below, using the optional #SP3860-2H switch available from your dealer.

1. The **black** wire from your power plug on the pack should be connected to a good chassis ground, as should the **black** wire from terminal 3 of SW1 on the switch panel.
2. The **red** wire from your power plug will connect to the **red** wire extending from terminal 2 of SW1.
3. The **white** wire from the power plug allows for pattern selection. It will be connected to the **purple** wire from terminal 2 of SW2 on the switch panel. When the **white** wire is connected to ground through SW2 the pack will display a quadflash pattern.



4. The **fused red lead** from terminal 1 of SW1 should be connected to your +12 VDC power supply.
5. When properly wired, SW1 will be on the left side (Front View) and switch the pack on and off. SW2 will be located on the right side of the switch panel and will be used to select between doubleflash or quadflash.

Connecting The Remote Heads

1. Cable is required to connect the power pack to your remote strobe heads. Cable can be purchased from Star:

| Length (ft) | Shielded Cable w/Amp Connector | SO Cable w/Weatherproof Connector | Length (ft) | Shielded Cable w/Amp Connector | SO Cable w/Weatherproof Connector |
|-------------|--------------------------------------|---|-------------|--------------------------------------|---|
| 15 | 4415 | 3814-180" | 40 | N/A | 3814-480" |
| 20 | 4420 | 3814-240" | 45 | N/A | 3814-540" |
| 25 | 4425 | 3814-300" | 50 | N/A | 3814-600" |
| 30 | 4430 | 3814-360" | 55 | N/A | 3814-660" |
| 35 | N/A | 3814-420" | 60 | N/A | 3814-720" |

2. If you intend to use your own cable for connecting the remote heads, it must meet the following specifications: It must be three-conductor with 600V insulation, it must be a minimum 18 AWG for 0-30 ft. or 16 AWG for 31-60 ft., and it should be UV stabilized. Star does not recommend the use of any cable length greater than 60 feet, as the resistance may cause a drop in voltage resulting in inconsistent or complete loss of firing in the heads. Please use the Table below for proper cable sizes.

Remote Power Pack Cabling Requirements

| | 0-20 ft. | 21-30 ft. | 31-60 ft |
|-------------------------------------|----------|-----------|----------|
| Input Power and Ground Wires | 18 AWG | 18 AWG | 16 AWG |
| Wires to Remote Heads | 18 AWG | 18 AWG | 16 AWG |

3. If you are using your own cable and need connectors to attach the cable to the power pack, order part **#CK473**. The #CK473 consists of one connector (30041-20) and three male terminals (30042-16). This is also the replacement connector for any remote heads with the white AMP connectors (NOT weatherproof).
4. The AMP connector, found on the cables, which mates to the CK473 is a kit **#CK472**. The #CK472 consists of one connector (448) and three female terminals (30042-15).
5. If you need a weatherproof connector kit *for your cable* to attach to our remote strobe heads, please order part **#CK702**. This kit contains one connector (30185-3), three female terminals (30042-30), and three rubber seals (30186-2).
6. If you need to order a weatherproof connector kit *for your strobe head* to mate with the connector on your cable (#CK702), please order part **#CK703**. This kit contains one connector (30185-4), three male pins (30042-29), and three rubber seals (30186-2).
7. For good, reliable connections between the cable system and the strobe heads in various weather and contamination conditions, it is strongly recommended that dielectric grease be used on the connectors. It should be applied to the rear of the connectors, where the wires enter, as well as into each terminal area where the connectors mate, before joining the two connectors together. We have found this procedure to be effective even under the most extreme of conditions. **Do Not Seal The Connectors Using Silicon Or RTV.**

Troubleshooting



CAUTION: High voltages exist in electronic strobe lights. Before attempting service on any strobe light, be sure to disconnect the power for at least five minutes to allow the capacitor to discharge. Failure to heed this warning may result in severe electrical shock and/or injury.

Please Note: Most strobe and rotating beacon failures can be traced to wiring and battery problems. Before attempting any service on the circuit itself, please be sure to check all connections and wiring to ensure the correct voltage and/or polarity is reaching your light or remote head.

One Side Not Flashing

1. If a problem exists in only one head, you need to determine where the problem lies:
 - The strobe tube may have burned out
 - There may be an open electrical connection in the wiring harness or strobe head
 - The circuit may have failed.
2. First determine whether the failure is in the strobe tube. Unplug the two strobe head cables and flip-flop them, plugging them into the opposite connector they were just plugged into. If the same head still doesn't flash, you can assume the pack is probably functioning properly and you should skip to Step 3. If the original failed head is now flashing, and the other head has stopped working, then you can assume the problem is in the circuit. It will have to be replaced or repaired at the factory.
3. If one of the heads will not flash when plugged into either of the outlets on the pack, you will need to determine whether the problem is in the cabling or the head itself. This can be done by disconnecting both heads from their respective cables and plugging them into the opposite cables. If the same head fails to flash on both cables, and the other head works on both cables, then you can assume the head is bad and will need to be replaced. If both heads flash on one cable and fail on the other cable, then you can assume the cable is faulty (as long as you followed step 2 to verify the problem was not in the pack itself) and you will need to replace the cable or connectors.

Both Sides Not Flashing

1. **Check all fuses**, including those at the battery, at the switch panel, or in the dash (if applicable). Replace any blown fuses with only fuses of identical values. Replacing the fuse with the wrong rating may damage your pack and/or vehicle, and will void your warranty.
2. **Check the power and ground wires to your pack.** With the vehicle turned off and while the pack is running, measure the voltage across the red wire (pin 1) and the black wire (pin 2) of the **PWR** connector on the power pack. Push the probes of the test meter down into the connector at the wire entry points to contact the terminals for the measurement. A nominal 12.5 volts should be present. Low voltage to the pack can cause erratic flashing or even complete failure of the heads. A minimum of 9.5 volts should be present for the pack to operate properly.
If your pack is receiving sufficient voltage then you can skip to Step 3.
If you do not have proper voltage present your power or ground is bad. Skip to the section on **Checking a Bad Power or Ground Connection.**
3. **Check each head.** If the leads in one of the heads have shorted out, the output voltage of the other heads may be held down as well. To test for this, unplug all of the heads and plug them in individually. If your problem is a result of a shorted head, then the other heads should function properly if the faulty head is no longer connected.
Note: A burned out strobe tube does not cause a short and will not affect the operation of the remaining heads. If the problem is not with a shorted head and if proper voltage is reaching the pack, the problem is most likely internal to the pack. Call Star to obtain an R.M.A. number to return the pack for service.

(Troubleshooting CONT'D)

Checking a Bad Power or Ground Connection

If sufficient voltage is not reaching the pack perform the following tests:

1. **Test Power at the Battery:** With the vehicle turned off and while the pack is running, measure the battery voltage at the battery. A nominal 12.5 volts should exist. If this voltage is below 9.5 volts the pack will not function properly and the problem is with the battery. This reading should not be more than 1.25 volts higher than the reading in the second step. If there is an excessive difference then continue on to the next step.
2. **Test the Power Wire Between the Battery and the Switch:** Move to the ON/OFF switch in the cab and gain access to the rear of the switch panel. With the vehicle not running and the pack on at the high power setting, measure the voltage drop in the red wire by taking a reading with one probe on the positive side of the battery and the other probe in pin 1 of your switch. If this reading exceeds 0.25 volts then there is a poor connection between the switch and the battery in the red wire and it should be checked. **NOTE:** *Excessive voltage drop may be occurring in the connections on the switch panel. If you have one of our switches you can increase the contact pressure by removing the FASTON terminal from the tab on the switch. Using long nose pliers, gently squeeze the FASTON terminal together in the area that slides on to the tab of the switch. This will increase the pressure applied between the tabs and the connector and reduce voltage drop.*
3. **Test the Power Wire Between the Strobe Pack and the Switch:** This same procedure can be used to check the wires between the switch panel and the pack. Place one probe on the terminal at the switch and the other probe into the terminal with the corresponding wire color in the **PWR** connector on the pack. Once again if any of the readings exceed 0.25 volts then you should check those wires and their connections.
4. **Test your Ground Wire:** If you still have not located the problem, troubleshoot the connections between the good chassis ground and pin 2 (black or blue wire) of the **PWR** connector on the power pack. With the vehicle not running and the pack on at the high power setting, measure the voltage drop in the Black (Ground) wire by taking a reading with one probe on the negative side of the battery and the other probe in pin 2 of your **PWR** connector. If this reading exceeds 0.25 volts then you have a bad Ground.

ONE YEAR LIMITED WARRANTY

The manufacturer warrants each new product against factory defects in material and workmanship for one year after the date of purchase. The owner will be responsible for returning to the Service Center any defective item(s) with the transportation costs prepaid. The manufacturer will, without charge, repair or replace *at its option*, products, or part(s), which its inspection determines to be defective. Repaired or replacement item(s) will be returned to the purchaser with transportation costs prepaid from the service point. A copy of the purchaser's receipt must be returned with the defective item(s) in order to qualify for the warranty coverage. Exclusions from this warranty include, but are not limited to, bulbs, strobe tubes, domes, and/or the finish. This warranty shall not apply to any light, which has been altered, such that in the manufacturer's judgment, the performance or reliability has been affected, or if any damage has resulted from abnormal use or service.

There are no warranties expressed or implied (including any warranty of merchantability or fitness), which extend this warranty period. **The loss of use of the product, loss of time, inconvenience, commercial loss or consequential damages, including costs of any labor, are not covered.** The manufacturer reserves the right to change the design of the product without assuming any obligation to modify any product previously manufactured.

This warranty gives you specific legal rights. You might also have additional rights that may vary from state to state. Some states do not allow limitations on how long an implied warranty lasts. Some states do not allow the exclusion or limitation of incidental or consequential damages. Therefore, the above limitation(s) or exclusion(s) may not apply to you.

If you have any questions concerning this or any other product, please contact our **Customer Service Department** at (585) 226-9787.

If a product must be returned for any reason, please contact our Customer Service Department to obtain a Returned Materials Authorization number (RMA #) before you ship the product back.
Please write the RMA # clearly on the package near the mailing label.



PROUDLY MADE IN THE USA
An ISO 9001:2008 Certified Company

Star Headlight & Lantern Co., Inc.

455 Rochester Street Avon, NY 14414

Phone: 585-226-9787 FAX: 888-478-2797



www.starheadlight.com