

BlinkerSign[®] LED Sign

Solar-Powered, 24/7 Operation

User Guide





Follow the instructions inside the back cover to Register your Warranty.

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Warning, Caution and Note statements

Warning, Caution and Note statements are used throughout this manual to emphasize important and critical information. You must read these statements prior to assembly to help ensure safety and to prevent product damage. The statements are defined below.

WARNING

Indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury.

CAUTION

Indicates a potentially hazardous situation which, if not avoided, could result in minor or moderate injury. It may also be used to alert against unsafe practices.

NOTE: Used to notify you of information regarding installation, operation, programming or maintenance that is important but not hazard-related.

For technical support

- Phone 866-753-6255
- E-mail blinkersupport@tapconet.com

BlinkerSign® LED Sign Patents #6,943,698; #6,693,556



Thank you for your purchase of TAPCO-made products!

The solar-powered BlinkerSign® from TAPCO represents the latest technology in the field of LED-enhanced traffic signage, and is designed to provide you with years of trouble-free service.

NOTE: Please examine all parts before beginning assembly and installation. If anything is missing or damaged, contact TAPCO or your Authorized Distributor immediately.

Parts List (see Packing List for actual components)

13-watt Solar Panel

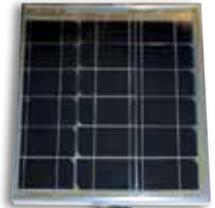
BlinkerSign® LED Sign with Support Tube

Controller Assembly (shipped in Support Tube):

AutoBright™ Control Module, NiMH Battery

110VAC Battery Charger

T100 Allen Wrench, Pin Type



TAPCO highly recommends that you use tamper-resistant hardware to mount BlinkerSign® LED signs. Use your own hardware, or order from TAPCO or your distributor.

Recommended Mounting Hardware

Mounting Hardware is sold separately because a BlinkerSign® can be mounted to a number of different types of posts, poles and brackets. Due to the depth of the sign, channels and spacers, you'll need bolts that are a minimum of 1" longer than the thickness of the mounting post, pole or bracket. Posts, poles and sign mounting hardware are available from TAPCO or Distributor.

Recommended Tools

Multi-meter (Volt & Ohm)

Drill motor (if drilling into support pole)

Wrenches, Socket Set and Ratchet/Driver

CAUTION

ALWAYS use Safety Glasses, Cut-proof Protective Gloves and OSHA-Approved Devices when handling, assembling and installing BlinkerSign® LED Signs!



NOTE: Battery MUST be charged for 8 hours PRIOR to installation. If the battery is not fully charged prior to installation, your BlinkerSign® LED sign may not function properly.

Step 1

Remove the control module from the tube.

An easy-to-use charger is enclosed in a box, bagged and taped to the back of the solar panel. Grasp the black plastic paddle and gently slide it out of the solar panel mounting tube. The battery and control module are attached to the paddle.



Step 2

Connect and charge the battery.

Plug the battery's connector (red, white and black wires) into charger connector. You'll hear a distinct click when the connectors are fully seated. Plug the charger into a live 110-volt socket and charge for at least 8 hours. A full initial charge is essential for proper functioning. Proceed with assembly.



Step 3 is used for troubleshooting purposes.

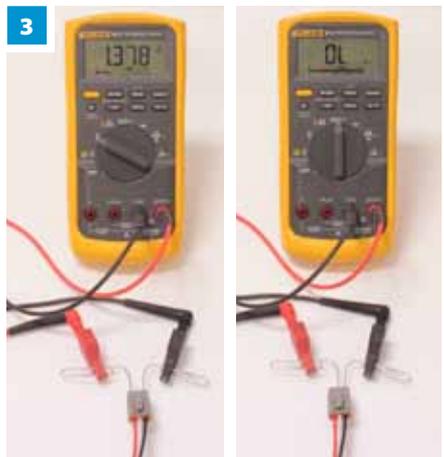
Step 3: Disconnect battery connector.

Test the battery for VOLTAGE (VDC).

Push 2 paper clips' ends into MALE battery connector's BLACK & RED leads, either into the pin holes or into the back side of the plug. Meter should read at least 4.8VDC. If less, see below.

Test the battery for Continuity (OHMS Ω).

Push 2 paper clips' ends into MALE battery connector's WHITE & BLACK leads, either into the pin holes or into the back side of the plug. Use meter on highest Ohm Ω scale to test across clips: if it displays 'OL', replace with new battery.



If less than 4.8VDC, proceed to ohms Ω test.

WARNING

NiMH batteries must be disposed of according to local code: DO NOT INCINERATE!



NOTE: These instructions are guidelines only, and are not to be construed as engineering-approved documents. You should consult the MUTCD and a licensed, professional engineer for approval of your site and erection plans.

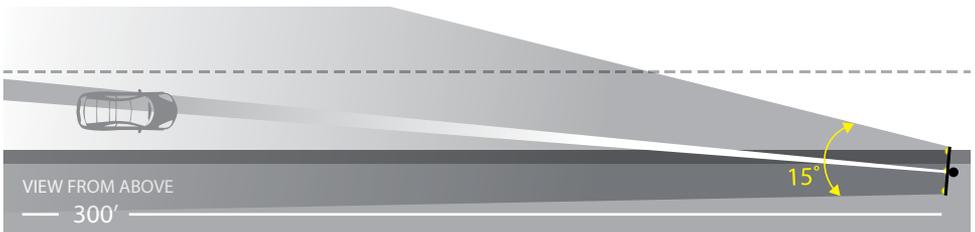
BlinkerSign® LED Sign Site Selection

Shade from trees, buildings, poles, etc. will reduce the solar panel's effectiveness, so select a site where the solar panel can receive the maximum amount of sunlight throughout the day. Trim or remove trees where practicable. The solar collector typically needs to face south to receive maximum sunlight, but may be rotated slightly if doing so increases solar collection. Site selection should be based on MUTCD standards and engineering practices.

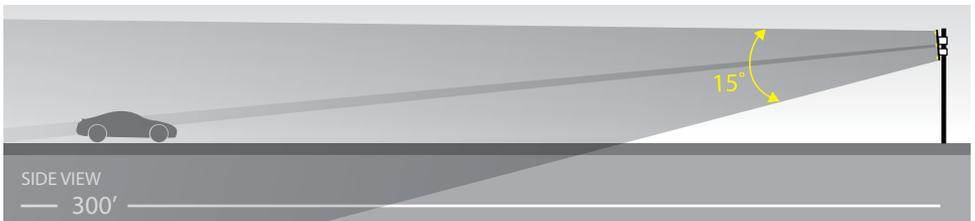
Visit the FHWA's MUTCD web site for further guidance on sign location and orientation:

<http://mutcd.fhwa.dot.gov/pdfs/2009/part2a.pdf>

2A.20 ...signs should be vertically mounted at right angles to the direction of, and facing, the traffic that they are intended to serve. Where mirror reflection from the sign face is encountered to such a degree as to reduce legibility, the sign should be turned slightly away from the road. Signs that are placed 30 feet or more from the pavement edge should be turned toward the road. On curved alignments, the angle of placement should be determined by the direction of traffic rather than by the roadway edge at the point where the sign is located...On grades, sign faces may be tilted forward or back from the vertical position to improve the viewing angle.



On straight segments, orient the sign face's angle to maximize the visibility to oncoming traffic. On curved road segments (both horizontal and vertical), larger adjustments may be necessary to provide optimal visibility of the LEDs and retroreflectivity of the sign face.





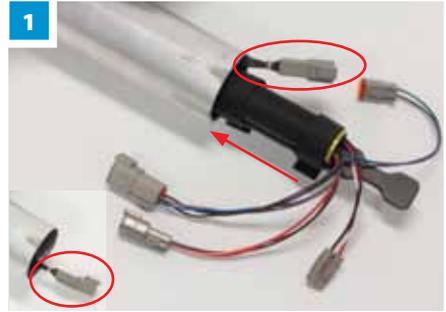
CONNECTING THE CONTROL MODULE

NOTE: To simplify the assembly process, each set of connectors is unique so that only matched connectors can be used to mate with each other. You will hear a distinct click when the connectors are properly seated: pull gently to ensure they are locked together.

Step 1

Insert the components into the mounting tube.

After fully charging the battery, begin the assembly process. On a suitable work surface, hold the SHIELDED LED lead to the side of the support tube (see inset with connector circled in red). Gently insert the paddle, battery and controller HALF WAY into the mounting tube, leaving the connectors exposed so you may attach them.



Step 2

Connecting the control module to the LEDs.

To simplify the assembly process for you, each set of connectors is unique so that only matched connectors can be used with each other. Use the two-wire connector (purple & green), connect the control module to the shielded cable's LED connector from the tube.



Step 3

Connecting the control module to the battery.

Attach the black/orange/red wire's connector on the control module to the black/white/red wire's connector on the battery. Then slide the paddle, battery and module fully into the solar mounting tube, leaving only the solar panel connector exposed for connection.



NOTE: Although you may connect and attach the solar panel at this time (steps 5 and 6), you may find it easier to wait until after the sign has been mounted onto the post or pole.



WARNING

Do NOT band to the spacer channels! Doing so could result in death or serious injury, as the spacer channels will not support the weight of the sign. Instead, run bolts through the sign and spacers **so that the bolts support the weight of the sign**. Assemblies that bolt through the sign are shown below at right.

Step 4

Attaching the assembly to the mounting pole using anti-vandal hardware (not included). Anti-vandal sign-mounting hardware is highly recommended, and is available separately from TAPCO or Authorized Distributor. Attach the assembly to a post or signal pole by piercing the sign sheeting through the punched holes in the sign blank, and then securing it with bolts through the post and sign. To protect the sheeting, place a plastic washer between the sign sheeting and bolt head or nut. Optionally, attach the bolts to a z-bracket or banding bracket such as a flared leg bracket, as shown below at right.

Attach the sign or bracket directly to the bolts: Do NOT band to the spacer channels as they will not support the sign. Read and heed WARNING panel above.



WARNING

Do NOT handle signs and hardware without the use of cut-proof gloves! Sharp edges can cut skin and tissue, resulting in death or serious injury.

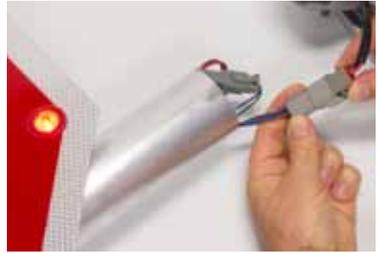


Step 5

Connecting the control module to solar panel.

The one remaining unattached connector will connect the control module to the solar panel. Connect the six-wire control module connector to the solar panel assembly connector, checking for proper contact by gently pulling at the connectors.

At this time the LEDs should be flashing. If they are, proceed to the next step of attaching the solar panel to its support tube. If they do not flash, fully charge the battery; proceed to the next page to troubleshoot the cause and take corrective action. Email or call TAPCO's Technical Support if you have further issues. When operational, proceed to the next step.



Step 6

Attaching the solar panel.

The solar panel collector requires unobstructed sunlight. Ideally the solar panel will be facing the mid-day sun (south) at least three hours a day. If partially obscured, aim the collector panel so it will receive the maximum amount of solar energy. If severely obscured, consider trimming trees or relocating the solar panel into full sunlight.

Loosen the solar panel's set screws sufficiently to slide the solar panel assembly over the top of the sign's solar panel support tube, and be sure to position the solar panel so it will face south when installed. Once aligned, tighten the set screws with the provided T100 Allen wrench. This completes the installation process.



WARNING

Batteries must be disposed of according to your local code: DO NOT INCINERATE!



SYMPTOM	POSSIBLE CAUSES	CORRECTIVE ACTION
<p>ALL LEDs Don't Flash</p>	<p>Battery is not fully charged, or will no longer hold a charge at or above 4.8VDC: see Battery Testing illustrations on P.4</p>	<p>Charge battery for 8 hours, then retest with Voltmeter ($\geq 4.8\text{VDC}$) or reconnect.</p>
	<p>Loose wires or connectors</p>	<p>Disconnect battery. Push paper clip ends into MALE battery connector's white & black leads. Use Ohmmeter on highest scale to test across clips: if it reads 'OL', replace with new battery.</p>
	<p>Broken wires or connectors</p>	<p>Pull gently on each connector to ensure they are tight: if loose, press them together until you hear/feel them click.</p>
	<p>Insufficient Solar Charging</p>	<p>Reconnect, or contact TAPCO or its distributor for replacement part(s).</p>
		<p>With collector in full sunlight, test solar leads with voltmeter to ensure a charging voltage of at least 5VDC.</p>
		<p>Align solar collector so it faces south, or relocate panel/assembly to full sun</p>
<p>If obstructed by trees, trim or remove them to allow more sunlight to reach the solar collector.</p>		
<p>If obstructed by fixed object (such as building, mountain or hillside), rotate so collector receives the maximum amount of sunlight.</p>		
<p>Individual LED(s) Don't Flash</p>	<p>Loose wiring</p>	<p>Contact TAPCO or TAPCO distributor for replacement part(s) or a repair authorization (RMA required).</p>
	<p>Inoperative LED(s)</p>	



Follow the instructions on the next page to Register your Warranty.

Amended April 10, 2013

Traffic & Parking Control Company, Inc., (TAPCO), warrants to each purchaser of a BlinkerSign® 24/7 Solar LED Sign (Product) for other than personal, family or household use, that the Product will be free from defects in material and workmanship for a period of two (2) years after the date of original purchase.

TAPCO warrants accessories, service parts and components purchased separately to be free from defects in material and workmanship for a period of one (1) year after the date of original purchase. If within such warranty periods any part thereof is proved to TAPCO's satisfaction to be defective, such part shall be repaired by TAPCO or its authorized distributor or, at TAPCO's option, replaced f.o.b. TAPCO's factory without charge, including labor costs at its standard rate incurred while repairing said Product.

TAPCO's obligation hereunder shall be limited to such repair or replacement and shall be further considered upon TAPCO's receiving written notice of any alleged defect and proof of original purchase within ten (10) days after its discovery and, at TAPCO's option, the return of the allegedly defective part to TAPCO f.o.b. its factory or to its authorized distributor.

This warranty shall not apply to any parts not furnished by TAPCO as well as any damage caused by such parts, or to parts which shall have been repaired or altered by others than TAPCO so as, in TAPCO's judgment, to adversely affect the same; or which shall have been subject to other than normal use or service, negligence, accident or improper installation, care or storage. TAPCO will not be responsible for any expense related to parts or labor which is unrelated to defects in material or workmanship of TAPCO Product, including but not limited to acts of God (Force majeure).

The foregoing warranties are exclusive and in lieu of all other express and implied warranties.

TAPCO's liability is limited expressly to the repair and replacement of defective parts as provided herein. TAPCO shall not be liable for any consequential, incidental, or contingent damages whatsoever, whether for breach of contract, breach of warranty, negligence or other tort, or on any strict liability theory.

John Kugel

President

Traffic & Parking Control Company, Inc.

PRODUCT RECORD



Thank you for your purchase of TAPCO-made products

The BlinkerSign® LED Sign Solar 24/7 Assembly from TAPCO represents the latest technology in the field of LED-enhanced traffic control, and is designed to provide you with years of trouble-free service. Please take a few moments to record the serial number(s) below, and keep this document in a safe place for future reference. This will be helpful if Warranty or Troubleshooting issues arise.



MODEL NAME: BlinkerSign® LED Sign, Solar 24/7 Assembly

SERIAL NUMBER(s): _____

DATE OF PURCHASE: _____

OPTIONS PURCHASED: _____

INSTALLATION LOCATION: _____

OTHER NOTES: _____

WARRANTY REGISTRATION



Your BlinkerSign® System Warranty can be registered on-line at:

www.tapconet.com/warranty

Record the serial number(s) from the sign label(s) above, then log on.

Registration is simple and will take just a few moments of your time.

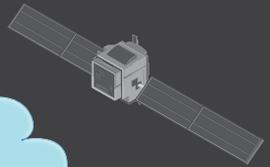
Thank you!





INTERNET-ENABLED DEVICES

- Dashboard View of Vital Stats: Cell Status; Battery Voltage & Temperature; Solar Voltage & Current
- Historic Data by day, week, month or year
- Zoom-in Geo Overview Map with pop-up views
- Device Status Reports
- Programmable Text Alerts
- Programmable Email Alerts



GPS SATELLITES

I.T.S. TRAFFIC DEVICES: MODEM-LINKED



TAPCO's BlinkLink™ is a web-based application that allows you to monitor and control your ITS products from any web-enabled device. Provides for text and/or email alerts to you and your staff. Contact TAPCO for details.

BlinkerBeacon™
LED Beacons

BlinkerSign® LED Signs:
Standard and Custom Legends

RRFB & Driver
RRFB-XL™ Feedback

For technical support

- Phone 866-753-6255
- E-mail blinkersupport@tapconet.com
- Website www.tapconet.com

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US Patent Nos 6,943,698; 6,693,556; Other Patents Pending.

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REFERENCE # 13041029

