

Silent Sentinel
Solar Powered Advanced Warning
Vehicle Mounted
Arrow Panels

**Installation,
Operation and
Maintenance Manual**



(P/N 550-125-100)



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INSTALLATION

Install unit on vehicle in desired location such that arrow panel is 100% visible to approaching traffic when in operating position. Common installations include: over-the-cab mounts, custom mounts (such as on a tail-gate for dump trucks), on main truck deck (stake-body type trucks) or in bed of truck (standard pick type trucks).

NOTE: Unit must be securely bolted to vehicle or secured with load binders or straps. Ensure unit is adequately secured to vehicle prior to transport!

For standard installations, route main control cable from cab of truck to connector on arrow panel frame. For wireless remote control installations, route 12 VDC power cable from power source to arrow panel. For either cable, insert connector into mating connector on arrow panel being careful to properly align keys on connector housings. Cable connector should slip easily into mating connector on arrow panel frame as the locking ring is rotated clockwise.

Secure the control cable to the unit frame, mount and/or vehicle as appropriate using the supplied cable ties and cable tie anchors. Be certain to allow enough cable slack to allow arrow panel to raise and lower without placing any undo stress on the cable or connector.

Power cables (red & black 2-conductor cable with connector) should be connected to 12-Volt DC fused circuits. A fuse rating of 10 to 20 Amperes is acceptable.

Install the desired connector or terminals on the control module power cable (red & black 2-conductor cable). A cigarette lighter plug may be used to allow the unit to be powered by the cigarette lighter circuit and to accommodate easy connect and disconnect. The red conductor must be connected to plus 12 Volts (center terminal of cigarette lighter plug) and the black conductor must be connected to Ground. Observe correct polarity!

Once all electrical connections have been made, place the control module in the desired location and install the power and control cables into the mating connectors on the rear of the control module. Check all arrow panel functions by selecting each arrow panel pattern on the main control module and observe correct pattern on arrow panel. Note: control module will take approximately 10-20 seconds to initialize the first time it is powered up; however, subsequently the arrow panel lamps will start flashing as soon as the desired arrow panel pattern is selected. The **LAMP INTENSITY** control will automatically be set to the **AUTO TRACK** position for normal day-night operation.

OPERATION

The arrow panel should be placed in the down position for high speed travel from one work area to another.

To raise the arrow panel into the operating position, pull and turn the latch pins located just below the pivot point for the arrow panel support frame to lock them in the retracted position. Raise the arrow panel to the full upright position using the winch located on the frame. Turn and release the locking pins to secure the arrow panel in the upright position.

If unit is equipped with a power lift, simply raise the arrow panel with power lift remote controls.

A fully charged vehicle battery, depending on the capacity and condition, should be capable of operating the arrow panel for at least twenty-four (24) hours with the engine off and still be able to start the vehicle's engine. The status of the battery system in the vehicle can be checked at any time by observing the **BATTERY LEVEL** indicators on the control module panel. If the battery status display indicates **RECHARGE**, the vehicle battery should be recharged before attempting to start the engine.

To return the arrow panel to the down or transport position, simply reverse the above procedure. On units equipped with a winch and cable mechanism, the arrow panel may require a slight push to help it maintain tension on the winch cable and safely return the arrow panel to the down position as the winch handle is turned counter-clockwise. If unit is equipped with a power lift, simply lower the arrow panel with power lift remote controls. Prior to transport, ensure that the arrow panel is in the transport position and the arrow panel pattern has been set to **OFF**.

WIRELESS REMOTE CONTROL SYSTEM ADDENDUM & NOTES

General:

The **Silent Sentinel Flashing Arrow Panel Wireless Remote Control System** consists of two main components: 1. The **Main Control Unit (P/N: AT-25-967)** which is the portion of the control system that is mounted on or near the arrow panel, is connected to the arrow panel, and controls the lamps on the arrow panel (and solar panel if equipped); and 2. The **Remote Control Unit (P/N: AT-25-957)** which is the unit that is typically mounted in the cab of the vehicle, contains the user interface (i.e. touch-panel), sends signals to the **Main Control Unit** to change the displayed pattern on the arrow panel, and receives signals from the **Main Control Unit** to indicate system status on the user interface. Prior to shipping from the **SolarTech** factory, each **Remote Control Unit** is "paired" to its **Main Control Unit** ensuring that each **Remote Control Unit** will only communicate with its specific **Main Control Unit**. If either the **Remote Control Unit** or **Main Control Unit** should become damaged and/or need to be replaced, the new system will need to be "paired" prior to operation (see "**Pairing a System:**" below).

Initial Power Up:

Main Control Unit: When power is initially applied to the **Main Control Unit**, it will display a special initialization pattern on the arrow panel (note: this pattern initially lights the four outer lamps on the center bar, then fills in to towards the center of the bar, lighting additional lamps at each step). This pattern will repeat itself until initialization is complete. After initialization has been performed and a connection has been established with its "paired" **Remote Control Unit**, the **Main Control Unit** will flash the standard 4-corner caution pattern three (3) times and then display the pattern currently requested by the **Remote Control Unit**. The system is now initialized and ready for use. Whenever the **Remote Control Unit** sends a pattern (including "OFF") to the **Main Control Unit**, it will display the selected pattern on the arrow panel.

Remote Control Unit: When power is initially applied to the **Remote Control Unit**, it will flash all battery status lights simultaneously until it establishes a connection with its "paired" **Main Control Unit**. Once a connection has been established, the **Remote Control Unit** will query the **Main Control Unit** for a complete system status (including the arrow pattern currently displaying on the arrow panel) and indicate the system's complete current status on the local user interface. If the **Main Control Unit's** current status is "OFF" (i.e. no arrow pattern displayed on the arrow panel), the user interface will not indicate any arrow pattern nor a battery status (i.e. all LED indicators will go blank except for those indicating the status of the Solar Charger if the system is equipped with a solar panel and it is actively charging the system's battery).

Note: When power is initially applied to both units simultaneously (i.e. initial system power-up at installation), the default system status will be set to "OFF". With respect to the arrow pattern displayed on the arrow panel: the **Main Control Unit's** status always takes priority if it was operating prior to powering up the **Remote Control Unit**, and the **Remote Control Unit's** status always takes priority if it was operating prior to powering up the **Main Control Unit** (see **Power Failure of Either Unit During Operation** below for additional information).

Power Failure of Either Unit During Operation:

Main Control Unit: If the **Main Control Unit** loses power, the **Remote Control Unit** will detect the condition within 3 seconds and start flashing all four battery status LEDs to indicate that it has lost communication with its "paired" **Main Control Unit**. Upon restoration of power to the **Main Control Unit**, a special initialization pattern will be displayed on the arrow panel (note: this pattern initially lights the four outer lamps on the center bar, then fills in to towards the center of the bar, lighting additional lamps at each step). This pattern will repeat itself until initialization is complete. After initialization has been performed and a connection has been established with its "paired" **Remote Control Unit**, the **Main Control Unit** will flash the standard 4-corner caution pattern three (3) times and then display the pattern currently requested by the **Remote Control Unit**. The system is now initialized and ready for use. Whenever the **Remote Control Unit** sends a pattern (including "OFF") to the **Main Control Unit**, it will display the selected pattern on the arrow panel.

Remote Control Unit: If the **Remote Control Unit** loses power, the **Main Control Unit** will continue to display the (currently selected) arrow pattern on the arrow panel. Upon restoration of power to the **Remote Control Unit**, all battery status lights will flash simultaneously until it establishes a connection with its paired **Main Control Unit**. Once a connection has been established, the **Remote Control Unit** will query the **Main Control Unit** for a complete system status (including the arrow pattern currently displaying on the arrow panel) and indicate the system's current status on the local user interface. If the **Main Control Unit's** current status is "OFF" (i.e. no arrow pattern displayed on the arrow panel), the user interface will not indicate any arrow pattern nor a battery status (i.e. all LED indicators will go blank except for those indicating the status of the Solar Charger if the system is equipped with a solar panel and it is actively charging the system's battery).

MAINTENANCE

The only maintenance required for truck mounted arrow boards is to periodically clean the arrow panel, the lamp lenses, lamp shrouds, and the photocell light sensor, located on the bottom of the arrow panel frame near the control cable connector, as needed. Tie downs, load binders, and mounting hardware should be inspected periodically to insure safety, particularly in applications where the vehicle is moving with the arrow panel in the raised position.

NOTE: **SOLAR TECHNOLOGY** has taken every precaution to ensure that the **SILENT SENTINEL** is a safe and effective piece of traffic safety equipment. **SOLAR TECHNOLOGY**, however, cannot be held responsible for any injuries, accidents, or other mishaps resulting from the use, misuse, or abuse of the **SILENT SENTINEL** or any other **SOLAR TECH** product. It is the user's sole responsibility to ensure that the manner in which the **SILENT SENTINEL** is used is consistent with safe practices and that the user understand that he/she is the only liable party.