



GAI-TRONICS®
A HUBBELL COMPANY

Model 541-001 LED Strobe with Constant-On/Off Modes



Confidentiality Notice



This manual is provided solely as an installation, operation, and maintenance guide and contains sensitive business and technical information that is confidential and proprietary to GAI-Tronics. GAI-Tronics retains all intellectual property and other rights in or to the information contained herein, and such information may only be used in connection with the operation of your GAI-Tronics product or system. This manual may not be disclosed in any form, in whole or in part, directly or indirectly, to any third party.

General Information

The Model 541-001 LED Strobe features constant-on or off modes, with flashing operation, and a secondary contact closure output for auxiliary equipment control. In the constant-on mode, the glow of the LED tower remains constant for area location and flashes at a rate of 240 flashes per minute when activated by a GAI-Tronics emergency telephone. In the off mode, the LED tower remains off and flashes at a rate of 240 flashes per minute when activated by a GAI-Tronics emergency telephone.

The Model 541-001 is equipped with a ¾-inch NPT female pipe thread in its base, permitting mounting directly to GAI-Tronics' Model 234, 240, or 241 series stanchions. It can also be wall-mounted utilizing a Model 4115A Mounting Bracket.

 **WARNING**  —Research indicates that a small portion of the general population, (approximately 1 in 100,000) with Photosensitive Epilepsy (PSE) may experience epileptiform seizures upon exposure to certain visual stimuli including lights flashing in excess of 3Hz (180cpm). Individuals with positive photic response to visual stimuli who are prone to seizures, such as persons with epilepsy, should avoid prolonged exposure to environments in which flashing lights are activated.

 **ATTENTION**  —Les recherches indiquent qu'une petite partie de la population (environ 1 sur 100 000) souffrant d'épilepsie photosensible (ESP) peut faire l'objet de crises épileptiformes lorsqu'elle est exposée à certains stimuli visuels, notamment des lumières clignotant à plus de 3Hz (180cpm). Les personnes ayant une réponse photique positive aux stimuli visuels qui sont sujettes aux crises, telles que les personnes atteintes d'épilepsie, devraient éviter toute exposition prolongée aux environnements dans lesquels des lumières clignotantes sont activées.

Installation

⚠ CAUTION ⚠ —These installation instructions are for use by qualified service personnel only.

- All field wiring to the strobe must meet the requirements of the NEC (National Electric Code) and any other applicable local or state codes.
- Before beginning any installation or modification, be sure the main electrical disconnect switch is in the OFF position. TAG THE DISCONNECT SWITCH WITH A SUITABLE WARNING LABEL.
- Electrical ground is required on this appliance.
- Improper connection of the equipment can result in electrical shock.

⚠ mise en garde ⚠ —Ces instructions d'installation sont réservées à un personnel qualifié.

- Tout le câblage de terrain vers le stroboscope doit être conforme aux exigences du NEC (National Electric Code) et de tout autre code local ou régional applicable.
- Avant de commencer toute installation ou modification, assurez-vous que le sectionneur électrique principal est en position OFF. ÉTIQUETTE DU COMMUTATEUR DE DÉBRANCHEMENT AVEC UNE ÉTIQUETTE D'AVERTISSEMENT APPROPRIÉE.
- Cet appareil doit être mis à la terre.
- Une mauvaise connexion de l'équipement peut entraîner un choc électrique.

Mounting

Attach the Model 541-001 LED strobe utilizing the female $\frac{3}{4}$ inch NPT threads located on the bottom of the strobe base. Thread the strobe onto the conduit making sure the strobe is adequately tightened for sealing.

Wall Mounting: The No. 4115A mounting bracket is recommended for wall mounting. The strobe must be mounted with the lens directed upward to maintain the UL outdoor wet location environmental rating.

Model 234 Tower Mounting: A $\frac{3}{4}$ -inch by $\frac{3}{4}$ -inch M/F extension is provided for optional installation when mounting the Model 541-001 Strobe to a Model 234 Series tower. The extension increases the installation height of the LED Strobe for maximum visibility (see [Figure 1](#)).

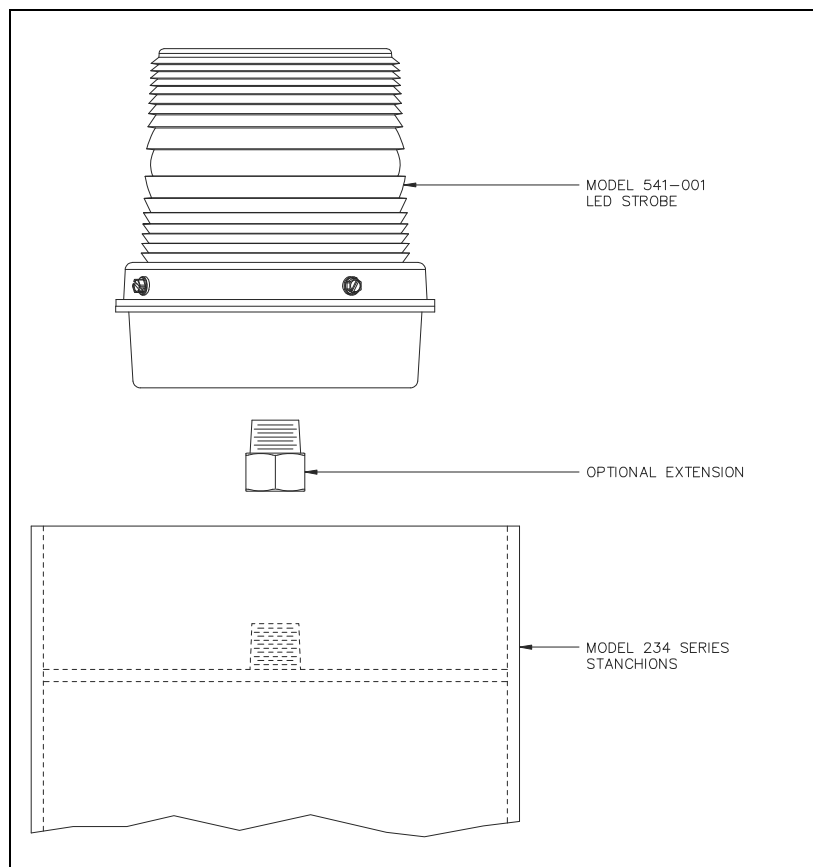


Figure 1. Installation of Optional Extension

Wiring

The Model 541-001 LED Strobe is equipped with eight 15-foot conductor leads (see [Figure 2](#)). The red (12 to 24 V dc +) and white (dc -) leads are connected to the dc power source. The green lead is the earth ground wire.

The violet (+) and orange (-) leads are connected to a RED ALERT® emergency telephone to signal the strobe to flash. The blue and black leads are provided to activate auxiliary equipment while the strobe is flashing.

The Model 541-001 LED strobe can be programmed for two different modes of operation; constant-on with flashing or off with flashing (no constant-on).

Mode Programming

The Model 541-001 LED Strobe is shipped from the factory with the constant-on mode activated (ON). The purpose of constant-on operation is to visually identify the location of a GAI-Tronics emergency telephone when the strobe is installed in a tower or near the telephone. The LED flashes at a rate of 240 flashes per minute when activated. The flashing operation provides a visual indication of an emergency need to first responders. The strobe returns to its programmed mode when the telephone call is terminated.

The constant-on mode can be deactivated so that the strobe is normally off and flashes when activated for applications where the LED does not need to be continuously illuminated. Programming can be accomplished either during installation or at a bench, for later installation.

Program the strobe's mode as follows:

1. Connect the red (12–24 V dc+) lead to the local power source positive terminal.
2. Connect the white (dc-) lead to the local power source negative terminal.
3. Connect the green lead to a ground connection.
4. Momentarily connect (short) the gray and violet wires.

This toggles the strobe's mode between constant-on activated (ON), and constant-on deactivated (OFF).

5. Insulate the gray wire using suitable means per local codes once the desired mode (Constant-On/Off) is active.
6. Disconnect all leads and repackage the strobe for future installation or complete all additional wiring per the telephone application instructions below.

NOTE: The strobe must be powered to toggle modes. The strobe maintains the current mode in memory after power is removed.

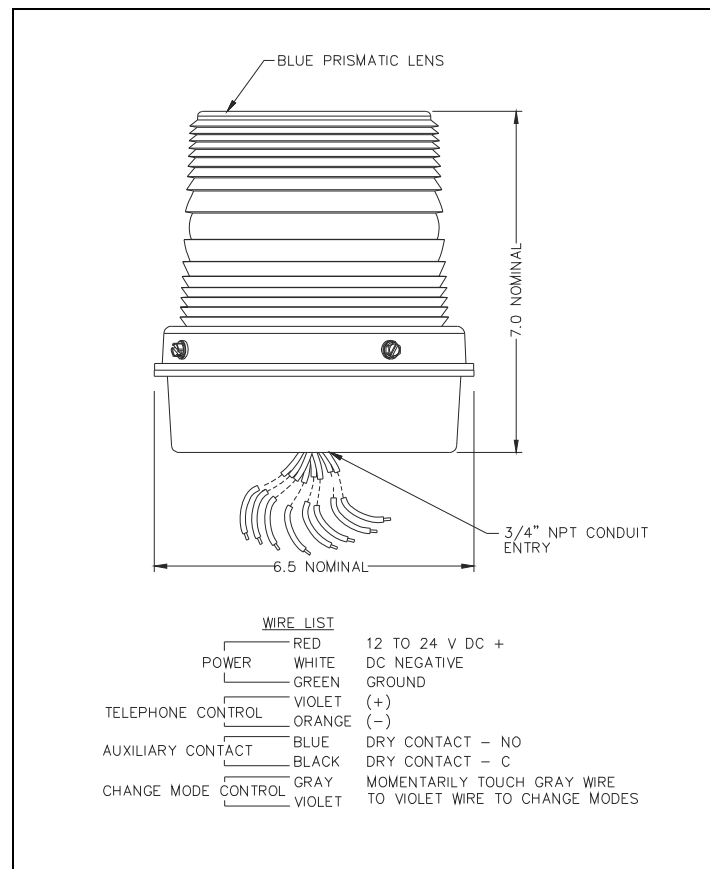


Figure 2. Model 541-001 LED Strobe Outline

Strobe Applications

Emergency Telephones

When used with GAI-Tronics emergency telephones, the Model 541-001 LED Strobe is expected to have the constant-on mode active or ON. Changing the mode from the default (ON) is not necessary for these applications.

Strobe connections for emergency telephone applications:

1. Connect the red (12–24 V dc +) lead to the local power source positive terminal.
2. Connect the white (dc –) lead to the local power source negative terminal.
3. Connect the green lead to a ground connection.
4. Open the front cover of the emergency telephone to expose the PCBA (printed circuit board assembly) and locate the terminal block labeled TB-2 (OUT1).
5. Route the violet (+) and orange (–) leads through the entry hole used for the telephone line.
6. Connect the violet (+) lead to terminal 1 and the orange (–) lead to terminal 2 on TB2.
7. To switch modes (constant-on/off):
 1. Toggle modes from constant-on to off, or off to constant-on, by momentarily shorting the gray and violet wires.
 2. Insulate the gray wire after the desired mode is active using suitable means per local codes.

NOTE: The strobe must be powered to toggle modes. The strobe maintains the current mode in memory after power is removed.

8. Replace the front cover on the emergency telephone and test the unit by pressing the EMERGENCY button. The strobe is only activated by pressing the EMERGENCY button, not the CALL button (if so equipped).

NOTE: The LED strobe provides blue and black wires to activate auxiliary equipment such as signaling devices or camera call-up controls. These wires provide a dry contact closure rated for 2 A @ 30 V dc, for the duration of the emergency telephone/strobe activation.

Standard Telephones

This application provides strobe illumination only when flashing. There are two options for activation; two-wire and four-wire.

Two-Wire Installation—switches the 12–24 V dc source on and off to initiate flashing, while maintaining a constant connection of the activation pair.

1. Splice the orange and violet wires together.
2. Connect the green lead to a ground connection.
3. Connect the red (12–24 V dc +) lead to the NO (normally open) activation contact connected to the local power source positive terminal.
4. Connect the white (dc –) lead to the local power source negative terminal.

NOTE: The strobe will flash when power is applied and will remain off when power is not applied regardless of mode.

Four Wire Installation—provides a constant 12–24 V dc power connection directly to the strobe and utilizes the activation pair to initiate the flashing. The strobe will flash any time the control contact is closed.

1. Connect the red (12–24 V dc +) lead to the local power source positive terminal.
2. Connect the white (dc –) lead to the local power source negative terminal.
3. Connect the green lead to a ground connection.
4. Connect the orange and violet wires to the NO (normally open) and C (common) activation contacts.

NOTE: The activation contact minimum rating is 150 mA.

5. Configure the strobe for *off* mode:
 1. Toggle modes from constant-on to off, or off to constant-on, by momentarily shorting the gray and violet wires.
 2. Insulate the gray wire after the desired mode is active using suitable means per local codes.

NOTE: The strobe must be powered to toggle modes.

Specifications

Operating voltage.....	12 to 24 V dc (–20% to +10%)
Operating current	1.1 A maximum @ 12 V dc 0.5 A maximum @ 24 V dc
Rated LED life	up to 100,000 hr
Flash rate.....	240 flashes per minute
Auxiliary contact maximum rating	2 A @ 30 V dc
Operating (environment) temperature range.....	–40 °C to +66 °C (–40 °F to +150 °F)
Environmental.....	UL—Outdoor Wet Locations
Terminations (dc, control, auxiliary contact).....	15 ft, No. 18 AWG wire
Construction:	
Base	die-cast aluminum (black powder coat finish)
Dome:	polycarbonate (blue)
Dimensions	7.00 H × 6.50 W in (177.8 × 165.1 mm)
Shipping weight	6.5 lb (2.9 kg)
Mounting.....	¾ inch NPT female

Approvals

Approvals..... UL 1638A/ CSA C22.2 No. 205-17

Accessories

Part No.	Description
4115A	Mounting Assembly Kit

WARRANTY NOTE: LED replacement is not covered under warranty.

Warranty

Equipment. GAI-Tronics warrants for a period of one (1) year from the date of shipment, that any GAI-Tronics equipment supplied hereunder shall be free of defects in material and workmanship, shall comply with the then-current product specifications and product literature, and if applicable, shall be fit for the purpose specified in the agreed-upon quotation or proposal document. If (a) Seller's goods prove to be defective in workmanship and/or material under normal and proper usage, or unfit for the purpose specified and agreed upon, and (b) Buyer's claim is made within the warranty period set forth above, Buyer may return such goods to GAI-Tronics' nearest depot repair facility, freight prepaid, at which time they will be repaired or replaced, at Seller's option, without charge to Buyer. Repair or replacement shall be Buyer's sole and exclusive remedy. The warranty period on any repaired or replacement equipment shall be the greater of the ninety (90) day repair warranty or one (1) year from the date the original equipment was shipped. In no event shall GAI-Tronics warranty obligations with respect to equipment exceed 100% of the total cost of the equipment supplied hereunder. Buyer may also be entitled to the manufacturer's warranty on any third-party goods supplied by GAI-Tronics hereunder. The applicability of any such third-party warranty will be determined by GAI-Tronics.

Services. Any services GAI-Tronics provides hereunder, whether directly or through subcontractors, shall be performed in accordance with the standard of care with which such services are normally provided in the industry. If the services fail to meet the applicable industry standard, GAI-Tronics will re-perform such services at no cost to buyer to correct said deficiency to Company's satisfaction provided any and all issues are identified prior to the demobilization of the Contractor's personnel from the work site. Re-performance of services shall be Buyer's sole and exclusive remedy, and in no event shall GAI-Tronics warranty obligations with respect to services exceed 100% of the total cost of the services provided hereunder.

Warranty Periods. Every claim by Buyer alleging a defect in the goods and/or services provided hereunder shall be deemed waived unless such claim is made in writing within the applicable warranty periods as set forth above. Provided, however, that if the defect complained of is latent and not discoverable within the above warranty periods, every claim arising on account of such latent defect shall be deemed waived unless it is made in writing within a reasonable time after such latent defect is or should have been discovered by Buyer.

Limitations / Exclusions. The warranties herein shall not apply to, and GAI-Tronics shall not be responsible for, any damage to the goods or failure of the services supplied hereunder, to the extent caused by Buyer's neglect, failure to follow operational and maintenance procedures provided with the equipment, or the use of technicians not specifically authorized by GAI-Tronics to maintain or service the equipment. **THE WARRANTIES AND REMEDIES CONTAINED HEREIN ARE IN LIEU OF AND EXCLUDE ALL OTHER WARRANTIES AND REMEDIES, WHETHER EXPRESS OR IMPLIED BY OPERATION OF LAW OR OTHERWISE, INCLUDING ANY WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE.**

Return Policy

If the equipment requires service, contact your Regional Service Center for a return authorization number (RA#). Equipment should be shipped prepaid to GAI-Tronics with a return authorization number and a purchase order number. If the equipment is under warranty, repairs or a replacement will be made in accordance with the warranty policy set forth above. Please include a written explanation of all defects to assist our technicians in their troubleshooting efforts.

Call 800-492-1212 (inside the USA) or 610-777-1374 (outside the USA) for help identifying the Regional Service Center closest to you.