

Installation Instructions for Triliptical™ Stackable Beacon Lighting System

Description

The Edwards Triliptical Stackable Beacon Lighting System is a unique audible-visual signaling device that can contain up to 5 light modules and either a single or multiple tone module in a single "stack."

All components of the Triliptical Stackable Beacon Lighting System are UL and cUL listed subassemblies. The units, when assembled, are UL and cUL listed for indoor and outdoor applications. The enclosures are NEMA 3R, 4X, and IP65 rated. CE Marked Visual Signal.

The optically designed lenses are available in five colors. See Table 1. Each lens module contains a removable cover to allow for easy relamping. The lens module cover features a molded-in gasket for weather tight reliability.

The unit's bases are available in three models. Two models feature shorter bases that are used when a lower profile is desired: one for surface mounting and one for pendant mounting. The other model features a larger base with a terminal block for use with an optional horn assembly. The larger base also functions as a junction box.


A pipe mount kit, Cat. No. 102PMF (sold separately) and one of three extension pipes (sold separately) allows the status indicator to be raised above the mounting surface for increased visibility. It can be used with either the Cat. No. 102TBS or Cat. No. 102PMBS mounting bases.

PLC Compatibility

The electrical input characteristics for PLC compatible signals are listed in Table 2. Signals with these characteristics may be directly connected to PLC output cards that do not exceed these input characteristics.

Installation

Installation must be in accordance with the latest edition of the National Electrical Code and other governing standards and codes for standard installation.

 **WARNINGS**

To prevent electrical shock, do not connect power until instructed to do so.

To prevent abrasion of wiring insulation, ensure that wire passage holes are adequately protected.

1. If using the 102PMF mounting kit, perform the following:

NOTE: All references below are to Figure 4.

- a. Using the supplied gasket (D) as a guide, mark the four mounting holes and the center clearance hole on an appropriate surface.
- b. Punch the four mounting holes. Punch the wiring clearance hole in the mounting surface to be sufficiently larger than that in the gasket to ensure the wiring

insulation is protected from abrasion by the gasket (without interfering with the mounting screw holes), or provide other appropriate wire insulation abrasion protection as needed.

- c. Screw the pipe extension (purchased separately) into the mounting flange.
- d. Ground the flange by pulling the ground wire through the mounting surface clearance hole and center hole of the gasket. Connect earth ground to the bottom of the base mount flange using the ground screw (G) and wire retention terminal cup washer (H).
- e. Pull the remaining field wiring through center clearance hole of mounting surface, center hole of the gasket, pipe mount flange and extension pipe.
- f. Align the mounting gasket (D) and flange (A) on the panel. Secure using (4) #10-24 x 1" (25 mm) pan head screws (B), (4) external tooth #10 star washers (E) and (4) #10-24 hex nuts (F).
- g. Mount the base as instructed below.

2. Mount the base using one of the following methods:

NOTE: For indoor applications, the base may be panel mounted or conduit mounted. For NEMA3R, 4X, and outdoor applications, it is recommended that the unit be conduit mounted vertically facing up using either the Cat. No. 102TBS or Cat. No. 102PMBS base.

- a. **Cat. No. 102TBS** Install base on 3/4" (19 mm) conduit (not supplied). Pull field wiring through conduit entrance hole.
- b. **Cat. No. 102PMBS** Install base on 3/4" (19 mm) conduit (not supplied). Pull field wiring through conduit entrance hole.
- c. **Cat. No. 102DMBS** Using the supplied mounting gasket as a template, punch the four mounting holes. Punch the wiring clearance hole in the mounting surface to be sufficiently larger than that in the gasket to ensure the wiring insulation is protected from abrasion by the gasket (without interfering with the mounting screw holes), or provide other appropriate wire insulation abrasion protection as needed. Mount the base to the surface using the (2) screws (supplied).

3. Connect field wiring.

- a. **Cat. No. 102TBS** Connect field wiring to the terminal block as shown in Figure 1.
- b. **Cat. No. 102PMBS or Cat. No. 102DMBS** Using wire nuts, connect 18" (457 mm) wire leads to field wiring. The six wire leads are marked as follows: Neutral, 1 Bottom, 2, 3, 4 & 5. 1 Bottom denotes the lead for the bottom-most signal in the stack.
- c. If using the optional **Cat. No. 102SIGST** single tone module or **Cat. No. 102SIGMT** multi-tone module, connect additional field wiring to the terminal block mounted on the signal assembly as shown in Figure 2.

NOTE: The tone module may be wired to sound independently or in conjunction with a light signal.

- (1) To sound tone module independently, connect to separate hot lead.
- (2) To sound tone module with a particular light, connect horn hot terminal to selected light terminal on Cat. 102TBS terminal block.

4. Assemble the stackable beacon lighting system (Figure 3).
 - a. Pull the captive key in the lens module into the "out" position.
 - b. Place the first lens module on top of the base.
 - c. Push in the captive key to secure the lens module.

⚠ WARNING

To prevent leakage, ensure the magnifier ring on the lens cover and the magnifier ring on the lens module are aligned (Figure 3).

- d. Insert the appropriate light source into board grooves at

bottom of lens module, ensuring that the four prongs on the PC board are aligned with the plug located in the back of the lens assembly.

NOTE: When using LED light sources, ensure that the color of the LED light source and the lens assembly match.

- e. Place the lens assembly cover on the front of the lens module and secure using two captive screws.
- f. Repeat steps a through e for any remaining modules (up to 5).
- g. Once the last module has been assembled, place the cap on top and secure the cap with the captive screw.

⚠ WARNING

To prevent electrical shock, disconnect power to all modules. Wait 5 minutes for stored energy in strobe modules to dissipate before working on unit.

5. Apply power to the unit and verify proper operation.

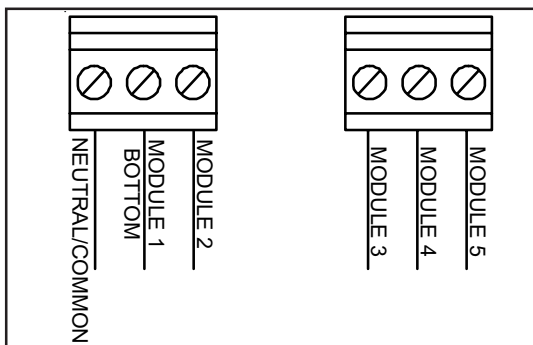


Figure 1. Wiring Cat. No. 102TBS

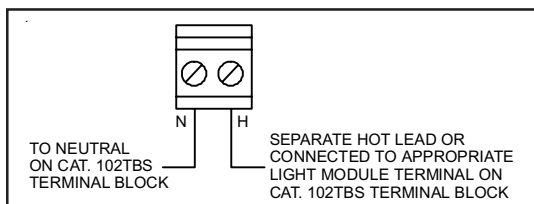


Figure 2. Wiring Cat. No. 102SIG*T

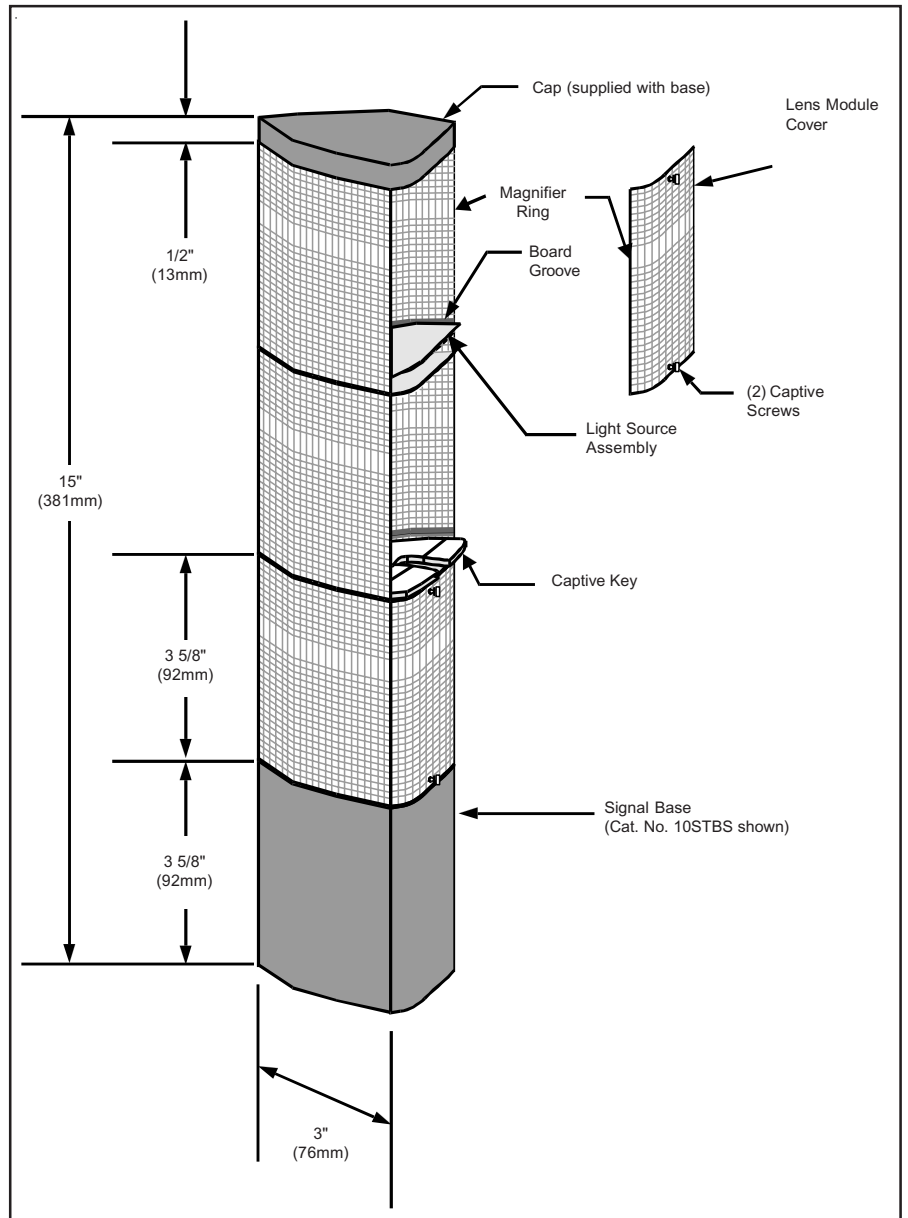


Figure 3. Assembling the Stackable Status Indicator (Cat. No. 102TBS shown for illustration purposes only)

Maintenance

Light Source Replacement

1. Loosen captive screws and remove cover of affected lens module.
2. Remove the light source assembly from the lens module.
3. Install new light source assembly ensuring that the four prongs on the PC board are aligned with the plug located in the back of the lens module.



WARNING

To prevent leakage, ensure the magnifier ring on the lens cover and the magnifier ring on the lens module are aligned (Figure 3).

4. Replace lens cover and secure using two captive screws.

Cleaning

The lens surfaces should be periodically dusted and cleaned with a dry soft clean cloth to maintain optimum light visibility. If necessary, the outside of the lens may be cleaned with water and a mild detergent on a well rung-out, soft, clean cloth.

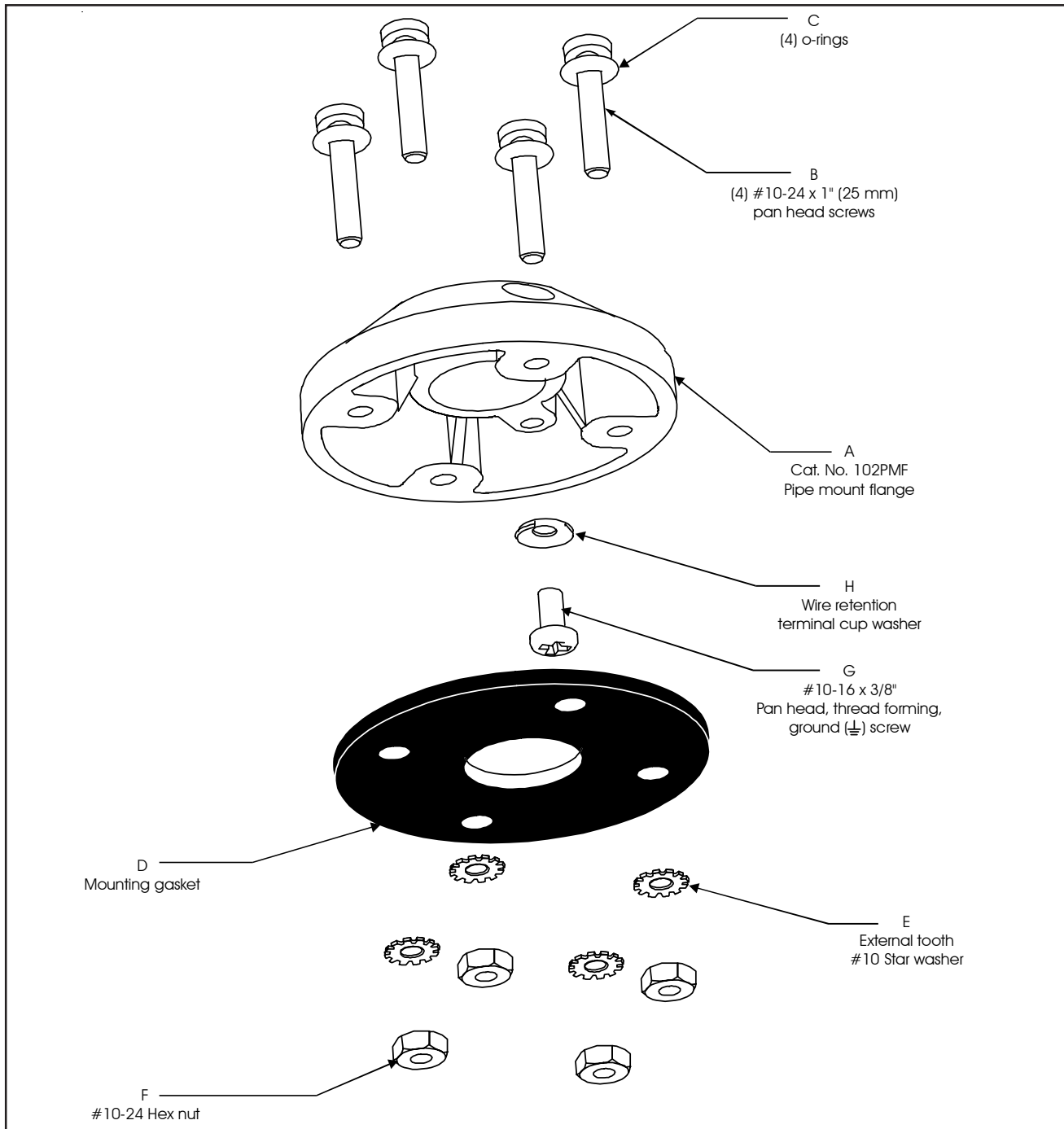


Figure 4. Optional 102PMF Mounting Kit Assembly

Table 1. Specifications

Catalog No.	Electrical Ratings	Manufacturers Lamp Ratings	Replacement Lamp	Lamp Life (hours)	
				Calculated#	Projected##
Base Units					
102TBS-G1	24V DC, 1.75A*	N/A	N/A	N/A	N/A
102TBS-N5	120V AC, 0.60A*				
102DMBS-G1	24V DC, 1.75A*	N/A	N/A	N/A	N/A
102DMBS-N5	120V AC, 0.60A*				
102PMBS-G1	24V DC, 1.75A*	N/A	N/A	N/A	N/A
102PMBS-N5	120V AC, 0.60A*				
Optional Pipe Mount Flange					
102PMF	N/A	N/A	N/A	N/A	N/A
Optional Extension Pipes					
102MP-4	N/A	N/A	N/A	N/A	N/A
102MP-10	N/A	N/A	N/A	N/A	N/A
102MP-15	N/A	N/A	N/A	N/A	N/A
Optional Horn Assembly					
102SIGST-G1	24V DC, 0.05A	N/A	N/A	N/A	N/A
		102SIGST-N5	120V AC, 0.07A		
102SIGMT-G1	24V DC, 0.05A	N/A	N/A	N/A	N/A
102SIGMT-N5	120V AC, 0.07A				
Lens Modules					
102LM-*	N/A	N/A	N/A	N/A	N/A
Light Sources					
102LS-SINH-G1	24V DC, 0.32A	9 Watts	50LMP-9WH or Ind. Trade 303***	12,000	--
102LS-SINH-N5	120V AC, 0.11A	12 Watts	50LMP-12WH	20,000	--
102LS-SIN-G1	24V DC, 0.32A	10 Watts	Ind. Trade 303	10,000	--
102LS-SIN-N5	120V AC, 0.08A	10 Watts	50LMP-10W	2,500	--
102LS-FINH-G1	24V DC, 0.32A	9 Watts	50LMP-9WH or Ind. Trade 303***	12,000	15,000
102LS-FINH-N5	120V AC, 0.11A	12 Watts	50LMP-12WH	20,000	25,000
102LS-FIN-G1	24V DC, 0.32A	10 Watts	Ind. Trade 303	10,000	12,500
102LS-FIN-N5	120V AC, 0.08A	10 Watts	50LMP-10W	2,500	3,000
102LS-ST-G1	24V DC, 0.30A	3 Joule Strobe	--	3,000###	--
102LS-ST-N5	120V AC, 0.12A	3 Joule Strobe	--	3,000###	--
102LS-SLEDA-G1**	24V DC, 0.062A	--	N/A	100,000	--
102LS-SLEDB-G1**					
102LS-SLEDG-G1**					
102LS-SLEDR-G1**					
102LS-SLEDA-N5**	120V AC, 0.022A	--	N/A	100,000	--
102LS-SLEDB-N5**					
102LS-SLEDG-N5**					
102LS-SLEDR-N5**					
102LS-FLEDA-G1**	24V DC, 0.062A	--	N/A	100,000	--
102LS-FLEDB-G1**					
102LS-FLEDG-G1**					
102LS-FLEDR-G1**					
102LS-FLEDA-N5**	120V AC, 0.022A	--	N/A	100,000	--
102LS-FLEDB-N5**					
102LS-FLEDG-N5**					
102LS-FLEDR-N5**					

*Currents shown are for a stackable indicator with 5 light modules.

*Signifies lens module color (A - amber/orange, B - blue, C - clear, G - green, R - red, Y - yellow)

Signifies lens and LED module color (A - amber/orange, B - blue, G - green, R - red) **NOTE: LED light sources must be used with the corresponding color lens module (e.g., a blue LED light source, 102LS-SLEDB-G1, must be used with a blue lens, 102LM-B).

***A non-halogen lamp, as listed, may be used in place of the halogen lamp.

#At nominal operating voltage.

##Projected lamp life based on manufacturer's calculated lamp life @ 65 fpm and 50% duty cycle.

###Strobe tube life @ operating power to 75% efficiency.

Table 2. PLC Compatibility

Cat. No.	Operating voltage*	Maximum off state leakage current (mA)	Continuous on current (mA)	Surge (inrush/duration) (A/ms**)
102SIGST-G1	24V DC	5	50	0.24/0.2
102SIGST-N5	120V AC	5	70	0.35/0.5
102SIGMT-G1	24V DC	5	50	0.24/0.2
102SIGMT-N5	120V AC	5	70	0.35/0.5
102LS-SIN-G1	24V DC	25	32	0.36/1
102LS-SIN-N5	120V AC	25	80	0.15/8
102LS-SINH-G1	24V DC	25	320	0.36/1
102LS-SINH-N5	120V AC	25	110	0.5/8
102LS-FIN-G1	24V DC	25	32	1.4/100
102LS-FIN-N5	120V AC	25	80	0.3/8
102LS-FINH-G1	24V DC	25	320	1.2/100
102LS-FINH-N5	120V AC	25	110	1.15/8
102LS-ST-G1	24V DC	1.5	300	0.33/1
102LS-ST-N5	120V AC	5	120	50/1
102LS-SLED()-G1	24V DC	5	65	0.07/1
102LS-SLED()-N5	120V AC	5	25	0.09/8
102LS-FLED()-G1	24V DC	5	65	0.07/1
102LS-FLED()-N5	120V AC	5	25	0.09/8

*All AC volts at 60 Hz

**Amps/milliseconds