



Installation and Operation Instructions

XTP SERIES LIGHT HEADS Single and Split Colors

IMPORTANT! Read all instructions before installing and using. Installer: This manual must be delivered to the end user.



WARNING!

Failure to install or use this product according to manufacturer's recommendations may result in property damage, serious injury, and/or death to those you are seeking to protect!

 **Do not install and/or operate this safety product unless you have read and understood the safety information contained in this manual.**

1. Proper installation combined with operator training in the use, care, and maintenance of emergency warning devices are essential to ensure the safety of emergency personnel and the public.
2. Emergency warning devices often require high electrical voltages and/or currents. Exercise caution when working with live electrical connections.
3. This product must be properly grounded. Inadequate grounding and/or shorting of electrical connections can cause high current arcing, which can cause personal injury and/or severe vehicle damage, including fire.
4. Proper placement and installation is vital to the performance of this warning device. Install this product so that output performance of the system is maximized and the controls are placed within convenient reach of the operator so that they can operate the system without losing eye contact with the roadway.
5. Do not install this product or route any wires in the deployment area of an air bag. Equipment mounted or located in an air bag deployment area may reduce the effectiveness of the air bag or become a projectile that could cause serious personal injury or death. Refer to the vehicle owner's manual for the air bag deployment area. It is the responsibility of the user/operator to determine a suitable mounting location ensuring the safety of all passengers inside the vehicle particularly avoiding areas of potential head impact.
6. It is the responsibility of the vehicle operator to ensure daily that all features of this product work correctly. In use, the vehicle operator should ensure the projection of the warning signal is not blocked by vehicle components (i.e., open trunks or compartment doors), people, vehicles or other obstructions.
7. The use of this or any other warning device does not ensure all drivers can or will observe or react to an emergency warning signal. Never take the right-of-way for granted. It is the vehicle operator's responsibility to be sure they can proceed safely before entering an intersection, drive against traffic, respond at a high rate of speed, or walk on or around traffic lanes.
8. This equipment is intended for use by authorized personnel only. The user is responsible for understanding and obeying all laws regarding emergency warning devices. Therefore, the user should check all applicable city, state, and federal laws and regulations. The manufacturer assumes no liability for any loss resulting from the use of this warning device.

Specifications:

Size:	XTP3	0.62" H x 1.39" W x 3.65" L
	XTP4	0.62" H x 1.39" W x 4.72" L
	XTP6	0.62" H x 1.39" W x 6.21" L
Weight:	XTP3	0.10 lb (0.04 Kg)
	XTP4	0.13 lb (0.06 Kg)
	XTP6	0.18 lb (0.08 Kg)
Input Voltage:		12-24VDC
Input Current:	XTP3	0.4A Max @ 12 VDC Nominal
	XTP4 and XTP6	0.9A Max @ 12 VDC Nominal
Temp. Range:		-40°C to 65°C
		-40°F to 149°F

Installation and Mounting:

To mount the light head, use the bezel as a template to mark the mounting holes. The supplied self-tapping #6 x 0.75" screws typically use 0.125" diameter holes but this may vary depending on the type of material and the thickness being tapped. Provide a minimum 0.50" diameter hole for the wires. Grommet the hole if possible and seal with RTV sealant.

Select a flat mounting surface with optimal visibility to oncoming traffic. Using the product as a template, drill two holes matching the holes in the unit. Secure unit in place as shown.

Note: The light head has a small round hole covered with vent membrane that must face downward when mounting the light head.

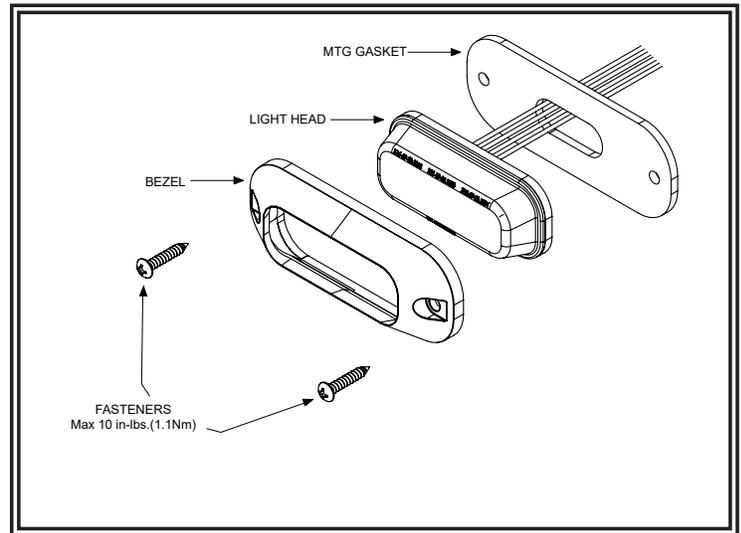


Figure 1



CAUTION!

When drilling into any vehicle surface, make sure that the area is free from any electrical wires, fuel lines, vehicle upholstery, etc. that could be damaged.

Wiring Instructions:

RED: Positive, (5A fuse required)

WHITE: Positive, (5A fuse required)

BLACK: Negative

BLUE: Pattern select to negative -- Dim control to positive

YELLOW: Synchronized Function (Up to 32 units can be Synchronized)

IMPORTANT! This unit is a safety device and it must be connected to its own separate, fused power point to assure its continued operation should any other electrical accessory fail.

Notes:

1. Larger wires and tight connections will provide longer service life for components. For high current wires it is highly recommended that terminal blocks or soldered connections be used with shrink tubing to protect the connections. Do not use insulation displacement connectors (e.g., 3M Scotchlock type connectors).
2. Route wiring using grommets and sealant when passing through compartment walls. Minimize the number of splices to reduce voltage drop. All wiring should conform to the minimum wire size and other recommendations of the manufacturer and be protected from moving parts and hot surfaces. Looms, grommets, cable ties, and similar installation hardware should be used to anchor and protect all wiring.
3. Fuses or circuit breakers should be located as close to the power takeoff points as possible and properly sized to protect the wiring and devices.
4. Particular attention should be paid to the location and method of making electrical connections and splices to protect these points from corrosion and loss of conductivity.
5. Ground termination should only be made to substantial chassis components, preferably directly to the vehicle battery.
6. Circuit breakers are very sensitive to high temperatures and will "false trip" when mounted in hot environments or operated close to their capacity.

Notes on Dim Control:

The light head intensity may be reduced if necessary. The Blue wire when connected to positive will reduce the intensity to 25% for SAE patterns. Light intensity for ECE patterns will reduce to 55%.

NOTE: The blue wire must be disconnected from any voltage when not activating DIM nor changing flash patterns.

Notes on Synchronizing and Phase (Sync Ph):

(Up to 32 light heads can be Synchronized by connecting their yellow wires).

When the yellow wires of the light heads are connected together, the group with Ph1 flash patterns will flash simultaneously. If the light heads in the second group are set to Ph2 flash patterns, they will flash alternately with the first group. To simplify the set-up of a synchronized installation, the following process is recommended:

1. Before connecting the yellow wires together, choose the desired flash pattern for each light head. **The patterns chosen must have the same flash rate for all light heads intended to be synchronized. (By definition a 75fpm light head will not sync with a 120fpm light head)** To avoid confusion set each light head individually to the chosen flash pattern using the blue pattern select wire. Ph1 light heads will alternate with Ph2 light heads and simultaneously with all other light heads set to Ph1. Ph2 light heads flash simultaneously with all other light heads set to Ph2. It is also strongly recommended that the same style of flash pattern be used on all heads to produce the most effective warning pattern.
2. Connect the yellow synchronization wires together and check that the light heads are flashing in a synchronized manner as expected. If a pattern for one light head appears to be wrong, keep the yellow wire connected and use the blue pattern select wire to cycle forward or backward for that individual light head until the correct pattern is selected. Once that is completed verify the light head is synchronized correctly.

Flash Patterns:

A variety of flash patterns may be chosen for the light head. The Multi Color light heads are split vertically as separate lighted areas that may be chosen to operate alternately. The areas are denoted by: Primary color 1&3 (color1 on the left side and color3 on the right, typically the same color) and Secondary color 2&4 (color2 on the left side and color4 on the right, typically the same color). This allows for patterns that flash right-left using various multiple color combinations.

A separate flash pattern may be assigned for the power wires red, white, or both connected together and the pattern operated depending which wire or wires are energized. Power the red or the white wires (or both together) then use the pattern select blue wire (touch to ground) to select the chosen flash pattern from the list below. See the legend at the top of the pattern list for compliance with various standards.

Pattern Select Operation:

The light head flash pattern may be changed by touching the Blue wire to ground for the following intervals (while the light head is flashing):

NOTE: The blue wire must be disconnected from any voltage when not activating DIM nor changing flash patterns.

- When the light head signal becomes steady, disconnect the Blue wire and the flash pattern will increment by one pattern.
- When the light head signal becomes steady, then goes off, disconnect the Blue wire and the flash pattern will decrement by one pattern.
- When the light head signal becomes steady, then goes off, then becomes steady again, disconnect the Blue wire and the flash pattern will reset to the factory default pattern.
- When the light head signal becomes steady, then goes off, then becomes steady again, then goes off again, disconnect the Blue wire and the flash pattern will become set to the steady burn mode.

Flash Patterns XTP3:

For patterns that meet SAE J595 Class1 requirements for Red, Blue, Amber, and White, see **S** in chart!

For patterns that meet California Title 13 Class B requirements for Red, Blue, and Amber, see **C** in chart!

For patterns that meet ECE65 Class1 Cat X (night only) requirements for Red, Blue, Amber, see **E1** in chart!

For patterns that meet ECE65 Class2 Cat X (day & night) requirements for Red, Blue, Amber, see **E2** in chart!

PATTERN GROUP	RED WIRE	FLASH PATTERN	SYNC	Complies with
0	1-Default	Cycle Flash	no	
1	2	Single Flash 75FPM sim. Phase1	yes	SC
	3	Single Flash 75FPM sim. Phase2	yes	SC
2	4	Single Flash 120FPM sim. Phase1	yes	S
	5	Single Flash 120FPM sim. Phase2	yes	S
3	6	Double Flash 75FPM sim. Phase1	yes	SC
	7	Double Flash 75FPM sim. Phase2	yes	SC
4	8	Double Flash 120FPM sim. Phase1	yes	Blue, Amb SE1 - Red SE2
	9	Double Flash 120FPM sim. Phase2	yes	Blue, Amb SE1 - Red SE2
5	10	Quad Flash 75FPM sim. Phase1	yes	SC
	11	Quad Flash 75FPM sim. Phase2	yes	SC
6	12	Quad Flash 150FPM sim. Phase1	yes	S
	13	Quad Flash 150FPM sim. Phase2	yes	S
7	14	Triple 75FPM sim. Phase1	yes	SC
	15	Triple 75FPM sim. Phase2	yes	SC
8	16	Quint Flash 150FPM sim. Phase1	yes	S
	17	Quint Flash 150FPM sim. Phase2	yes	S
9	18	Modulation	No	
10	19	2 Double Flash, 2 Triple Flash	No	
11	20	4 Single Flash, 2 Quad Flash	No	
12	21	Steady Burn	No	

Flash Patterns XTP4 and XTP6 - Split Color-Single Color versions:

For patterns that meet SAE J595 Class1 requirements for Red, Blue, Amber, and White, see **S** in chart!

For patterns that meet California Title 13 Class B requirements for Red, Blue, and Amber, see **C** in chart!

For patterns that meet ECE65 Class1 Cat X (night only)requirements for Red, Blue, Amber, see **E1** in chart!

For patterns that meet ECE65 Class2 Cat X (day & night) requirements for Red, Blue, Amber, see **E2** in chart!

PATTERN GROUP	RED WIRE	WHITE WIRE	RED & WHITE WIRE	FLASH PATTERN	SYNC	Complies with
0	1-Default	1-Default	1-Default	Cycle Flash	no	
1	2	2	2	Single Flash 75FPM sim. Phase1	yes	SC
	3	3	3	Single Flash 75FPM sim. Phase2	yes	SC
	4	4	4	Single Flash 75FPM Alt.	yes	S
2	5	5	5	Single Flash 120FPM sim. Phase1	yes	S
	6	6	6	Single Flash 120FPM sim. Phase2	yes	S
	7	7	7	Single Flash 120FPM Alt.	yes	S
3	8	8	8	Double Flash 75FPM sim. Phase1	yes	SC
	9	9	9	Double Flash 75FPM sim. Phase2	yes	SC
	10	10	10	Double Flash 75FPM Alt.	yes	S
4	11	11	11	Double Flash 120FPM sim. Phase1	yes	SE2
	12	12	12	Double Flash 120FPM sim. Phase2	yes	SE2
	13	13	13	Double Flash 120FPM Alt.	yes	S
5	14	14	14	Quad Flash 75FPM sim. Phase1	yes	SC
	15	15	15	Quad Flash 75FPM sim. Phase2	yes	SC
	16	16	16	Quad Flash 75FPM Alt.	yes	S
6	17	17	17	Quad Flash 150FPM sim. Phase1	yes	S
	18	18	18	Quad Flash 150FPM sim. Phase2	yes	S
	19	19	19	Quad Flash 150FPM Alt.	yes	S
7	20	20	20	Triple 75FPM sim. Phase1	yes	SC
	21	21	21	Triple 75FPM sim. Phase2	yes	SC
	22	22	22	Triple 75FPM Alt.	yes	S
8	23	23	23	Quint Flash 150FPM sim. Phase1	yes	S
	24	24	24	Quint Flash 150FPM sim. Phase2	yes	S
	25	25	25	Quint Flash 150FPM Alt.	yes	S
9	26	26	26	Steady - Single	No	
10	27	27	27	Modulation	No	
11	28	28	28	2 Double Flash, 2 Triple Flash	No	
12	29	29	29	4 Single Flash, 2 Quad Flash	No	
13	30	30	30	Steady Burn	No	

Flash Patterns XTP4 and XTP6 - Split Color-Dual Color versions:

For patterns that meet SAE J595 Class1 requirements for Red, Blue, Amber, and White, see **S** in chart!

For patterns that meet California Title 13 Class B requirements for Red, Blue, and Amber, see **C** in chart!

For patterns that meet ECE65 Class1 Cat X (night only)requirements for Red, Blue, Amber, see **E1** in chart!

For patterns that meet ECE65 Class2 Cat X (day & night) requirements for Red, Blue, Amber, see **E2** in chart!

PATTERN GROUP	RED WIRE	WHITE WIRE	RED & WHITE WIRE	FLASH PATTERN	SYNC	Complies with
0	1-Default	1-Default	1-Default	Cycle Flash	no	
1	2	2	2	Single Flash 75FPM Alt. Phase1	yes	S
	3	3	3	Single Flash 75FPM Alt. Phase2	yes	S
2	4	4	4	Single Flash 120FPM Alt. Phase1	yes	S
	5	5	5	Single Flash 120FPM Alt. Phase2	yes	S
3	6	6	6	Double Flash 75FPM Alt. Phase1	yes	S
	7	7	7	Double Flash 75FPM Alt. Phase2	yes	S
4	8	8	8	Double Flash 120FPM Alt. Phase1	yes	S
	9	9	9	Double Flash 120FPM Alt. Phase2	yes	S
5	10	10	10	Quad Flash 75FPM Alt. Phase1	yes	S
	11	11	11	Quad Flash 75FPM Alt. Phase2	yes	S
6	12	12	12	Quad Flash 150FPM Alt. Phase1	yes	S
	13	13	13	Quad Flash 150FPM Alt. Phase2	yes	S
7	14	14	14	Triple 75FPM Alt. Phase1	yes	S
	15	15	15	Triple 75FPM Alt. Phase2	yes	S
8	16	16	16	Quint Flash 150FPM Alt. Phase1	yes	S
	17	17	17	Quint Flash 150FPM Alt. Phase2	yes	S
9	18	18	18	Steady - Single	No	
10	19	19	19	Modulation	No	
11	20	20	20	2 Double Flash, 2 Triple Flash Alt.	No	
12	21	21	21	4 Single Flash, 2 Quad Flash Alt.	No	
13	22	22	22	Steady Burn	No	

Troubleshooting:

The XTP series light head has been thoroughly factory tested. If any of the the device functions fail, please check the following:

1. Be sure the power source is activated, then check all connections both positive and ground at the light head (to assure no open or shorted circuits).
2. Permanently connecting the Blue programming wire to ground will disable the light head, no matter what the programmed flash pattern.
3. If the Dim function does not operate, verify the Blue wire is connect to positive.
4. If the sync function is not being used and the light head is functioning erratically, verify the Yellow wire is not connected to positive.

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Manufacturer Limited Warranty Policy:

Manufacturer warrants that on the date of purchase this product will conform to Manufacturer's specifications for this product (which are available from the Manufacturer upon request). This Limited Warranty extends for Sixty (60) months from the date of purchase.

DAMAGE TO PARTS OR PRODUCTS RESULTING FROM TAMPERING, ACCIDENT, ABUSE, MISUSE, NEGLIGENCE, UNAPPROVED MODIFICATIONS, FIRE OR OTHER HAZARD; IMPROPER INSTALLATION OR OPERATION; OR NOT BEING MAINTAINED IN ACCORDANCE WITH THE MAINTENANCE PROCEDURES SET FORTH IN MANUFACTURER'S INSTALLATION AND OPERATING INSTRUCTIONS VOIDS THIS LIMITED WARRANTY.

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This Limited Warranty defines specific legal rights. You may have other legal rights which vary from jurisdiction to jurisdiction. Some jurisdictions do not allow the exclusion or limitation of incidental or consequential damages.

Product Returns:

If a product must be returned for repair or replacement*, please contact our factory to obtain a Return Goods Authorization Number (RGA number) before you ship the product to Code 3®, Inc. Write the RGA number clearly on the package near the mailing label. Be sure you use sufficient packing materials to avoid damage to the product being returned while in transit.

*Code 3®, Inc. reserves the right to repair or replace at its discretion. Code 3®, Inc. assumes no responsibility or liability for expenses incurred for the removal and /or reinstallation of products requiring service and/or repair.; nor for the packaging, handling, and shipping; nor for the handling of products returned to sender after the service has been rendered.



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