



# Installation and Operation Instructions

## ED3703, ED3704 and ED3705 Series

### LED Directionals

**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:

ED3703	3.63"L x 1.38"W x 0.75"H
ED3704	4.69"L x 1.38"W x 0.75"H
ED3705	6.19"L x 1.38"W x 0.75"H

Power Consumption at 12.8 VDC:

ED3703	5.6 W. Max
ED3704	7.7 W. Max
ED3705	11.0 W. Max

Weight:

ED3703	0.10 lbs.
ED3704	0.13 lbs.
ED3705	0.18 lbs.

Temperature Range:

-40° to 149°F
-40° to 65°C

Voltage Range: 12-24 VDC

Flash Rate:

See Flash Pattern Charts

Current draw at 12.8 VDC:

ED3703	0.44 A. Max.
ED3704	0.60 A. Max.
ED3705	0.86 A. Max.

**Prior to Installation:**

Carefully remove the unit from its packaging. If damage is found, contact the transit company or ECCO. Do not use broken or damaged parts. Prior to mounting, consideration should be given to cable location.

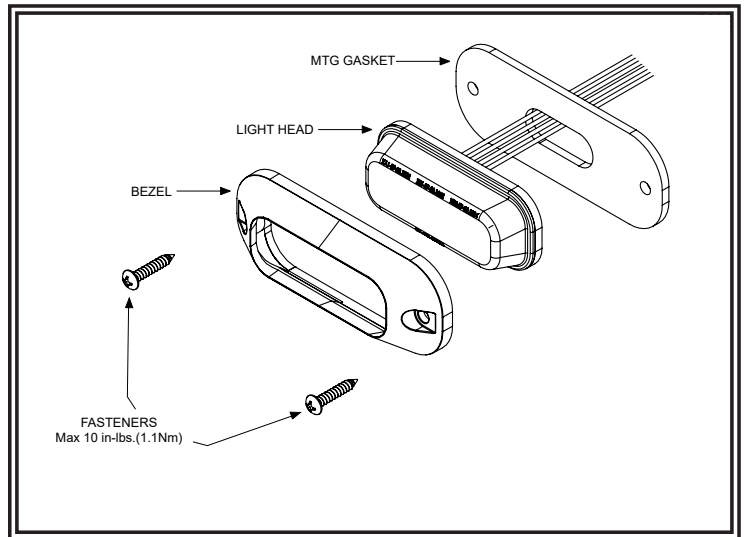
## Mounting Instructions:

**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.

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

It is important to note:

The lighthouse has a small round hole covered with vent membrane that must face downward when mounting the lighthouse.

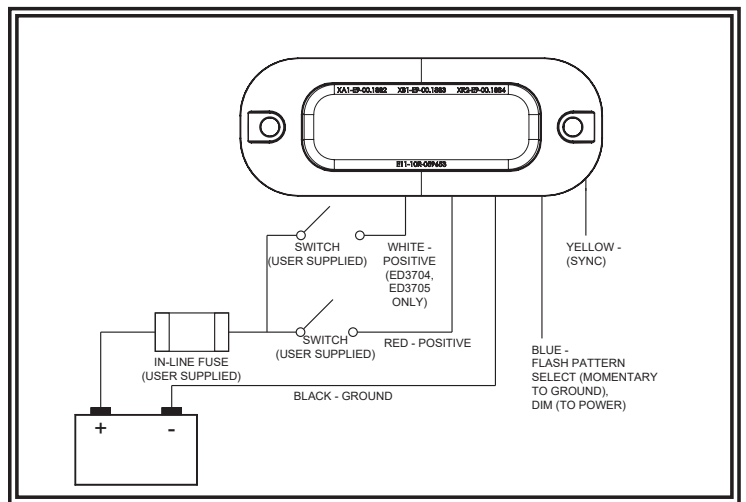


**Figure 1**

## Wiring Instructions:

**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.

Wire as shown in FIGURE 2. All wiring should be a minimum of 18 AWG. The positive line must have a slow blow 5 amp fuse. Routing the ground wire directly back to negative battery terminal is recommended. Pack dielectric grease, such as Dow Corning 4, around each electric connection exposed to moisture or the ambient environment. Isolate any unused wires.



**Figure 2**

## Flash Pattern Selection:

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):

- A quick tap will increment by one pattern.
- Hold until the unit lights, then turns off to go to the previous pattern.
- Hold until the unit lights, then turns off, then lights again to reset to the factory default pattern.
- Hold until the unit lights, turns off, lights, then turns off again, then goes off again to set to steady burn.

## Synchronization:

The directional is capable of syncing with other compatible ECCO products by following the steps below:

1. Set the desired flash pattern on each unit individually. It is also strongly recommended that the same rate and style of flash pattern be used on all synced units to produce the most effective warning pattern.  
NOTE: To operate simultaneously, each unit must be set to the same phase (A + A or B + B); to operate alternately, units must be set to have the opposite phase (A+ B or B + A).
2. Connect the yellow sync wires together and check that the units are flashing in a synchronized manner as expected. If a pattern on one unit appears incorrect, the blue pattern select wire can be used to cycle forward or backward on that individual unit until the correct pattern is selected.  
NOTE: This will only change the pattern in the one unit and will not affect the other units connected to the yellow sync wire.

ED3703X Flash Pattern Chart								
Pattern	Description	FPM	Sync	Phase	SAE J595	CA Title 13	ECE 65	
					A, B, R, W	A, B, R	A, B	R
1	Cycle Flash (Default)	-	N	-	-	-	-	-
2	Single Flash	75	Y	A	Class I	Class B	-	-
3	Single Flash	75	Y	B	Class I	Class B	-	-
4	Single Flash	120	Y	A	Class I	-	-	-
5	Single Flash	120	Y	B	Class I	-	-	-
6	Double Flash	75	Y	A	Class I	Class B	-	-
7	Double Flash	75	Y	B	Class I	Class B	-	-
8	Double Flash	120	Y	A	Class I	-	Class I	Class II
9	Double Flash	120	Y	B	Class I	-	Class I	Class II
10	Quad Flash	75	Y	A	Class I	Class B	-	-
11	Quad Flash	75	Y	B	Class I	Class B	-	-
12	Quad Flash	150	Y	A	Class I	-	-	-
13	Quad Flash	150	Y	B	Class I	-	-	-
14	Triple Flash	75	Y	A	Class I	Class B	-	-
15	Triple Flash	75	Y	B	Class I	Class B	-	-
16	Quint Flash	150	Y	A	Class I	-	-	-
17	Quint Flash	150	Y	B	Class I	-	-	-
18	Modulation	-	N	-	-	-	-	-
19	Double, Triple Flash	-	N	-	-	-	-	-
20	Single, Quad Flash	-	N	-	-	-	-	-
21	Steady Burn	-	N	-	-	-	-	-

Split, Single Color ED3704X, ED3705X Flash Pattern Chart										
Red Wire	White Wire	Red & White Wires	Description	FPM	Sync	Phase	SAE J595	CA Title 13	ECE 65	
							A, B, R, W	A, B, R	A, B, R	A, B, R
1	1	1	Cycle Flash (Default)	-	N	-	-	-	-	-
2	2	2	Single Flash	75	Y	A	Class I	Class B	-	-
3	3	3	Single Flash	75	Y	B	Class I	Class B	-	-
4	4	4	Single Flash - Wig Wag	75	Y	-	Class I	-	-	-
5	5	5	Single Flash	120	Y	A	Class I	-	-	-
6	6	6	Single Flash	120	Y	B	Class I	-	-	-
7	7	7	Single Flash - Wig Wag	120	Y	-	Class I	-	-	-
8	8	8	Double Flash	75	Y	A	Class I	Class B	-	-
9	9	9	Double Flash	75	Y	B	Class I	Class B	-	-
10	10	10	Double Flash - Wig Wag	75	Y	-	Class I	-	-	-
11	11	11	Double Flash	120	Y	A	Class I	-	-	Class II
12	12	12	Double Flash	120	Y	B	Class I	-	-	Class II
13	13	13	Double Flash - Wig Wag	120	Y	-	Class I	-	-	-
14	14	14	Quad Flash	75	Y	A	Class I	Class B	-	-
15	15	15	Quad Flash	75	Y	B	Class I	Class B	-	-
16	16	16	Quad Flash - Wig Wag	75	Y	-	Class I	-	-	-
17	17	17	Quad Flash	150	Y	A	Class I	-	-	-
18	18	18	Quad Flash	150	Y	B	Class I	-	-	-
19	19	19	Quad Flash - Wig Wag	150	Y	-	Class I	-	-	-
20	20	20	Triple Flash	75	Y	A	Class I	Class B	-	-
21	21	21	Triple Flash	75	Y	B	Class I	Class B	-	-
22	22	22	Triple Flash - Wig Wag	75	Y	-	Class I	-	-	-
23	23	23	Quint Flash	150	Y	A	Class I	-	-	-
24	24	24	Quint Flash	150	Y	B	Class I	-	-	-
25	25	25	Quint Flash - Wig Wag	150	Y	-	Class I	-	-	-
26	26	26	Stead, Single Flash - Split	-	N	-	-	-	-	-
27	27	27	Modulation - Wig Wag	-	N	-	-	-	-	-
28	28	28	Double, Triple Flash - Wig Wag	-	N	-	-	-	-	-
29	29	29	Single, Quad Flash - Wig Wag	-	N	-	-	-	-	-
30	30	30	Steady Burn	-	N	-	-	-	-	-

Split, Dual Color ED3704XX, ED3705 XX Flash Pattern Chart							
Red Wire	White Wire	Red & White Wires	Description	FPM	Sync	Phase	SAE J595
							A, B, R, W
1	1	1	Cycle Flash (Default)	-	N	-	-
2	2	2	Single Flash - Wig Wag	75	Y	A	Class I
3	3	3	Single Flash - Wig Wag	75	Y	B	Class I
4	4	4	Single Flash - Wig Wag	120	Y	A	Class I
5	5	5	Single Flash - Wig Wag	120	Y	B	Class I
6	6	6	Double Flash - Wig Wag	75	Y	A	Class I
7	7	7	Double Flash - Wig Wag	75	Y	B	Class I
8	8	8	Double Flash - Wig Wag	120	Y	A	Class I
9	9	9	Double Flash - Wig Wag	120	Y	B	Class I
10	10	10	Quad Flash - Wig Wag	75	Y	A	Class I
11	11	11	Quad Flash - Wig Wag	75	Y	B	Class I
12	12	12	Quad Flash - Wig Wag	150	Y	A	Class I
13	13	13	Quad Flash - Wig Wag	150	Y	B	Class I
14	14	14	Triple Flash - Wig Wag	75	Y	A	Class I
15	15	15	Triple Flash - Wig Wag	75	Y	B	Class I
16	16	16	Quint Flash - Wig Wag	150	Y	A	Class I
17	17	17	Quint Flash - Wig Wag	150	Y	B	Class I
18	18	18	Steady, Single Flash - Split Color 1 & 2	-	N	-	-
19	19	19	Modulation - Wig Wag	-	N	-	-
20	20	20	Double, Triple Flash - Wig Wag	-	N	-	-
21	21	21	Single, Quad Flash - Wig Wag	-	N	-	-
22	22	22	Steady Burn - Color 1 & 2	-	N	-	--