



Installation and Operation Instructions


ED9040 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. 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.
6. 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.
7. 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:	1.3"W x 1.3"H x 1.4"D
Weight:	
ED9040X	0.084 lbs
ED9040XX	0.094 lbs
Input Voltage:	12-24 VDC
Input Current:	
ED9040X	1.2 A max. @ 12 VDC (Nominal)
ED9040XX	0.6 A max. @ 12 VDC (Nominal)
Flash Rate:	See flash pattern chart
Output Power:	
ED9040X	15.4 W max. @ 12 VDC (Nominal)
ED9040XX	8.2 W max @ 12 VDC (Nominal)
Temp. Range:	-30°C to 50°C -40°F to 149°F

Installation and Mounting:

Carefully remove the unit from its packaging. Examine the unit for transit damage. If damage is found, return the product to your local dealer for warranty replacement. Do not use damaged or broken parts. Determine a mounting location with the least amount of curvature as possible. Also, ensure there is a clear line of sight for oncoming traffic.



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.

Surface Mounting:

Choose a mounting surface that has a thickness between 0.80 mm and 2.00 mm (0.032" and 0.079"). Drill a 1" or 25.4 mm hole. Fit the gasket into the drilled hole and slide the light head in as shown in FIGURE 1. Seat the light head into the grommet.

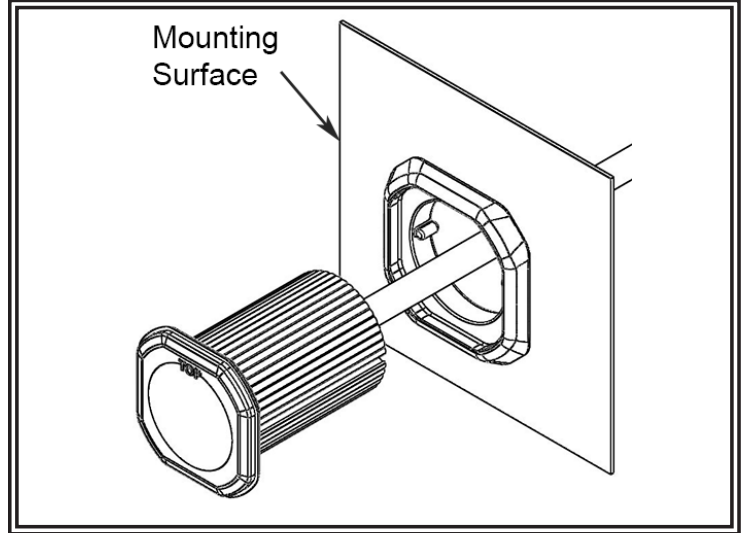


Figure 1

Wiring Instructions:

The ED9040 of directional LED light heads are self flashing. All wiring should be stranded and a minimum of 20 AWG. The positive line must have an in-line 3 Amp slow-blow fuse for each directional as shown in FIGURE 2. Isolate the yellow and blue wires when not in use.

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.

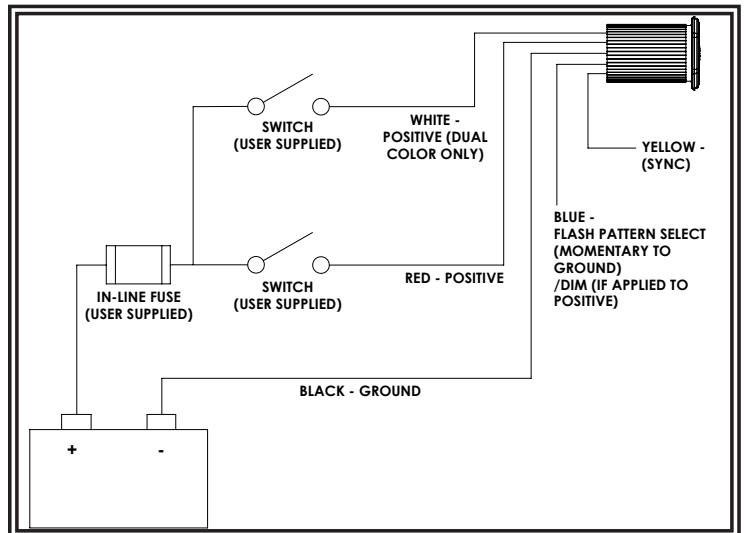


Figure 2

Flash Pattern Selection:

The ED9040 directionals can be configured to flash the following patterns by momentarily applying ground to the blue wire. Holding the blue wire to the ground wire for 2-3 seconds will toggle the unit to the previous pattern. The unit must be powered through the power and ground wires to allow pattern selection. The blue wire may be wired to momentarily switch.

Synchronization:

The ED9040 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 style of flash pattern be used on all units to produce the most effective warning pattern. NOTE: Phases A and B for each style of flash pattern in the table denote the relative timing between units connected in a synchronizing installation. 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.

ED9040X Single Color Flash Pattern Chart						
No.	Description	FPM	Phase	SAE J595*	CA T13**	ECER65**
1	Single Flash	75	A	Class 1	Class B	
2	Single Flash	75	B	Class 1	Class B	
3	Single Flash - Alternating	75	A			
4	Single Flash	120	A	Class 1		Class 2
5	Single Flash	120	B	Class 1		Class 2
6	Single Flash - Alternating	120	A			
7	Double Flash	75	A	Class 1	Class B	
8	Double Flash	75	B	Class 1	Class B	
9	Double Flash - Alternating	75	A			
10	Double Flash	120	A	Class 2		Class 2
11	Double Flash	120	B	Class 2		Class 2
12	Double Flash - Alternating	120	A			
13	Quad Flash (Default)	75	A	Class 1	Class B	
14	Quad Flash	75	B	Class 1	Class B	
15	Quad Flash - Alternating	75	A			
16	Quad Flash	150	A	Class 2		Class 2
17	Quad Flash	150	B	Class 2		Class 2
18	Quad Flash - Alternating	150	A			
19	Triple Flash	75	A	Class 1		
20	Triple Flash	75	B	Class 1		
21	Triple Flash - Alternating	75	A			
22	Quint Flash	150	A	Class 2		
23	Quint Flash	150	B	Class 2		
24	Quint Flash - Alternating	150	A			
25	Steady Single Flash - Split					
26	Steady Burn					
27	Single Flash Modulation					
28	Single Flash Double Flash - Alternating					
29	Single Flash - Fast Slow - Alternating					

*Applies to Amber and White

**Applies to Amber

ED9040XX Dual Color Flash Pattern Chart

Red Wire	White Wire	Red & White Wires	Description	FPM	Phase	SAE J595*	CA T13**	ECE R65**
1-Default		1-Default	Single Flash - Color 1	75	A	Class 1	Class B	
2		2	Single Flash - Color 1	75	B	Class 1	Class B	
		3	Single Flash - Alternating Colors 1 & 2	150	A			
		4	Single Flash - Alternating Colors 1 & 2	150	B			
	1-Default	5	Single Flash - Color 2	75	A	Class 1	Class B	
	2	6	Single Flash - Color 2	75	B	Class 1	Class B	
3	3	7	Single Flash - Alternating Colors 1 & 2	75	A			
4	4	8	Single Flash - Alternating Colors 1 & 2	75	B			
5	5	9	Single Flash - Alternating Colors 1 & 2	150	A			
6		10	Single Flash - Color 1	375	A			
7		11	Single Flash - Color 1	375	B			
		12	Single Flash - Alternating Colors 1 & 2	750	A			
		13	Single Flash - Alternating Colors 1 & 2	750	B			
	6	14	Single Flash - Color 2	375	A			
	7	15	Single Flash - Color 2	375	B			
8	8	16	Single Flash - Alternating Colors 1 & 2	375	A			
9	9	17	Single Flash - Alternating Colors 1 & 2	375	B			
10	10	18	Single Flash - Alternating Colors 1 & 2	750	A			
11		19	Double Flash - Color 1	75	A	Class 1	Class B	
12		20	Double Flash - Color 1	75	B	Class 1	Class B	
		21	Double Flash - Alternating Colors 1 & 2	150	A			
		22	Double Flash - Alternating Colors 1 & 2	150	B			
	11	23	Double Flash - Color 2	75	A	Class 1	Class B	
	12	24	Double Flash - Color 2	75	B	Class 1	Class B	
13	13	25	Double Flash - Alternating Colors 1 & 2	75	A			
14	14	26	Double Flash - Alternating Colors 1 & 2	75	B			
15	15	27	Double Flash - Alternating Colors 1 & 2	150	A			
16		28	Double Flash - Color 1	120	A	Class 2		Class 1
17		29	Double Flash - Color 1	120	B	Class 2		Class 1
		30	Double Flash - Alternating Colors 1 & 2	240	A			
		31	Double Flash - Alternating Colors 1 & 2	240	B			
	16	32	Double Flash - Color 2	120	A	Class 2		Class 1
	17	33	Double Flash - Color 2	120	B	Class 2		Class 1
18	18	34	Double Flash - Alternating Colors 1 & 2	120	A			
19	19	35	Double Flash - Alternating Colors 1 & 2	120	B			
20	20	36	Double Flash - Alternating Colors 1 & 2	240	A			
21		37	Triple Flash - Color 1	75	A	Class 1		
22		38	Triple Flash - Color 1	75	B	Class 1		
		39	Triple Flash - Alternating Colors 1 & 2	150	A			
		40	Triple Flash - Alternating Colors 1 & 2	150	B			
	21	41	Triple Flash - Color 2	75	A	Class 1		
	22	42	Triple Flash - Color 2	75	B	Class 1		
23	23	43	Triple Flash - Alternating Colors 1 & 2	75	A			
24	24	44	Triple Flash - Alternating Colors 1 & 2	75	B			
25	25	45	Triple Flash - Alternating Colors 1 & 2	150	A			
26		46	Quad Flash - Color 1	75	A	Class 1	Class B	
27		47	Quad Flash - Color 1	75	B	Class 1	Class B	
		48	Quad Flash - Alternating Colors 1 & 2	150	A			
		49	Quad Flash - Alternating Colors 1 & 2	150	B			

ED9040XX Dual Color Flash Pattern Chart

Red Wire	White Wire	Red & White Wires	Description	FPM	Phase	SAE J595*	CA T13**	ECE R65**
	26	50	Quad Flash - Color 2	75	A	Class 1	Class B	
	27	51	Quad Flash - Color 2	75	B	Class 1	Class B	
28	28	52	Quad Flash - Alternating Colors 1 & 2	75	A			
29	29	53	Quad Flash - Alternating Colors 1 & 2	75	B			
30	30	54	Quad Flash - Alternating Colors 1 & 2	150	A			
31		55	Quad Flash - Color 1	120	A	Class 2		Class 1
32		56	Quad Flash - Color 1	120	B	Class 2		Class 1
		57	Quad Flash - Alternating Colors 1 & 2	240	A			
		58	Quad Flash - Alternating Colors 1 & 2	240	B			
	31	59	Quad Flash - Color 2	120	A	Class 2		Class 1
	32	60	Quad Flash - Color 2	120	B	Class 2		Class 1
33	33	61	Quad Flash - Alternating Colors 1 & 2	120	A			
34	34	62	Quad Flash - Alternating Colors 1 & 2	120	B			
35	35	63	Quad Flash - Alternating Colors 1 & 2	240	A			
		64	Modulation - Alternating Colors 1 & 2					
		65	Double, Quad Flash - Alternating Colors 1 & 2					
		66	Single, Triple Flash - Alternating Colors 1 & 2					
		67	Double, Triple, Quad Flash - Alternating Colors 1 & 2					
36		68	Steady Burn - Color 1					
	36	69	Steady Burn - Color 2					

*Applies to Amber and White

**Applies to Amber

Warranty:

Electronics Controls Company "ECCO" (Manufacturer)

ECCO warrants that on the date of purchase, this product will conform to ECCO's specifications for this product (which are available from ECCO upon request). This Limited Warranty extends for five (5) years 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 ECCO'S INSTALLATION AND OPERATING INSTRUCTIONS VOIDS THIS LIMITED WARRANTY.

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ECCO MAKES NO OTHER WARRANTIES, EXPRESSED OR IMPLIED. THE IMPLIED WARRANTIES FOR MERCHANTABILITY, QUALITY OR FITNESS FOR A PARTICULAR PURPOSE, OR ARISING FROM A COURSE OF DEALING, USAGE OR TRADE PRACTICE ARE HEREBY EXCLUDED AND SHALL NOT APPLY TO THE PRODUCT AND ARE HEREBY DISCLAIMED, EXCEPT TO THE EXTENT PROHIBITED BY APPLICABLE LAW. ORAL STATEMENTS OR REPRESENTATIONS ABOUT THE PRODUCT DO NOT CONSTITUTE WARRANTIES.

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ECCO'S SOLE LIABILITY AND BUYER'S EXCLUSIVE REMEDY IN CONTRACT, TORT (INCLUDING NEGLIGENCE), OR UNDER ANY OTHER THEORY AGAINST ECCO REGARDING THE PRODUCT AND ITS USE SHALL BE, AT ECCO'S DISCRETION, THE REPLACEMENT OR REPAIR OF THE PRODUCT, OR THE REFUND OF THE PURCHASE PRICE PAID BY BUYER FOR NON-CONFORMING PRODUCT. IN NO EVENT SHALL ECCO'S LIABILITY ARISING OUT OF THIS LIMITED WARRANTY OR ANY OTHER CLAIM RELATED TO THE ECCO'S PRODUCTS EXCEED THE AMOUNT PAID FOR THE PRODUCT BY BUYER AT THE TIME OF THE ORIGINAL PURCHASE. IN NO EVENT SHALL ECCO BE LIABLE FOR LOST PROFITS, THE COST OF SUBSTITUTE EQUIPMENT OR LABOR, PROPERTY DAMAGE, OR OTHER SPECIAL, CONSEQUENTIAL, OR INCIDENTAL DAMAGES BASED UPON ANY CLAIM FOR BREACH OF CONTRACT, IMPROPER INSTALLATION, NEGLIGENCE, OR OTHER CLAIM, EVEN IF ECCO OR A REPRESENTATIVE OF ECCO HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES. ECCO SHALL HAVE NO FURTHER OBLIGATION OR LIABILITY WITH RESPECT TO THE PRODUCT OR ITS SALE, OPERATION AND USE, AND ECCO NEITHER ASSUMES NOR AUTHORIZES THE ASSUMPTION OF ANY OTHER OBLIGATION OR LIABILITY IN CONNECTION WITH SUCH PRODUCT.

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.



833 West Diamond St
Boise, Idaho 83705

Customer Service

USA 800-635-5900

UK +44 (0)113 237 5340

AUS +61 (0)3 63322444

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www.eccosafetygroup.com