B95100500_01

Signal Tower TYPE LR4 / LR5 / LR6 / LR7 INSTRUCTION MANUAL

Installation Operation Maintenance

Notice to Customer

Thank you very much for purchasing our PATLITE product.

Prior to installation, read this manual thoroughly before using this product to ensure correct use.

Visit our homepage (http://www.patlite.com/) and download the "Complete Operation Manual:LR" to find more about the operating method and features.

If there are any questions concerning this product, refer to the contact information at the end of this document and contact your nearest PATLITE Sales Representative. Notice to Contractor Read this manual carefully prior to installation. Be sure to return this manual to the customer.

Read this First (Safety Precautions)

A Warning Failure to observe the following may result in death or serious injury.

To prevent from short-circuits, electric shock or damage, observe the following:

-Be sure the power is disconnected before replacement or repair, including the replacement of the fuse.

-Use this product in a properly maintained condition. (Replace or repair if the body, LED unit, etc. are damaged.)

- Request the installation and wiring be performed by a professional contractor if construction work is involved. Failure to comply may result in fire, electric shock or falling from high places may occur.

Caution Failure to comply with the following points may result in injury, physical loss or damage.

● Avoid long exposure to the Buzzer sound from a close distance. Failure to observe this may lead from irritation to permanent damage to the ears. (B With Flashing/Buzzer)

(ID) WILL Flashing/Buzzer)

In order to maintain protection of this product against dust and waterproofing performance, be sure to use the head cover, LED unit and buzzer unit in the condition that it was originally attached.

Do not operate this product without the O-ring or the waterproof packing material. Failure to comply will result in lower waterproofing performance. Possible sure of Failure was originally attached.

Possible cause of failure may occur.

Do not apply voltage to the Flashing Common line (01,02). Apply voltage to the power source line (M2) only. Product failure will occur.

When removing covers or packing from the equipment, which is attached to this product, be careful not to snag the product. Failure to comply may result in damage to the product.

Notice

To ensure proper safety while using the signal tower, observe the following:
-Perform periodic pre-maintenance. -As a precaution against problems occurring, use this product together with other equipment.

Be sure to discharge any static electricity from the body before handling static sensitive parts of this product.
(To prevent damage from static electricity, touch hands or other body parts to metals or an earth ground to discharge the body from static charge.)

Use a soft cloth moistened with water when the LED Unit or body must be cleaned up. (Do not use thinner, benzine, gasoline or oil.)

To ensure safety when this product is installed onto equipment, observe the following:
-Do not remove parts beyond those designed to be removed from this product.
-Do not modify or disassemble this product.
-Use only the specified replacement parts listed in the "Complete Operation Manual:LR".

2 Model Number Configuration

	Model	Tie	rs Rated Voltage	Mounting/Wiring	Flashing/Buzzer	Body Color		LED Unit Color	Globe Color
Assembly Model	LR ↓	- ↓	↓	\downarrow	1	↓	-	RYGBC	\downarrow
Unit Model (Body Unit) 4	LR 1 - 5 1 01 12v I 02 24v I M2 100 - [R5-7] - WT-K 5 - [02] **11 [R7	iers DC **1 DC 240V AC	Pole / Cab /	t Mount / Cable Mount with / L-k ble ** 3 Aount with / Circu le ** 4 Mount with / Foldi le ** 5 t Mount minal (Body Uni ting Bracket with	oracket lar Bracket ing Bracket t) **6	G	D Col (Gree rom t	(None) C Z Cle lor: R (Red) / (Blue) cop to bottor W zer*7 K	/C (White) n) Off-white (Material:PC) Silver **8 (Material:PC) Black **9 (Material:PC)
88 LR4•6 - 02 , LR5•7 - N	WT•KT ※12 Uni	LR5•7		ting Bracket with minal (Body Uni	t) ^{**12}			Α	Off-white ^{※11} (Material: ABS & AS)

Part Names

■ ⊕40 ●LED 5 Tiers ●24 V DC
■ With Flashing/Buzzer ● Silver ● (From top) Red • Amber • Green • Blue • White

The name of each part is indicated as an example for the specific model. Accessory ■ LR6-5M2WJBW ■ LJ ■ PJ ■ LR5-02WTN□ LR5 - WT LR7 - WT 3pcs. langed nut (M3) Body € 6pcs LED Unit 8 8 – Pole Pole **1** pc. LED Unit Circular Bracket ■ LR5-02KTN□ LR4·5·6 - PJ | LR4·6 - QJ | Bind Screw (M5 x 25) L-bracket Head Cover - Body 3pc Body Body langed nut (M4) Flanged nut (M5) 8 8

5

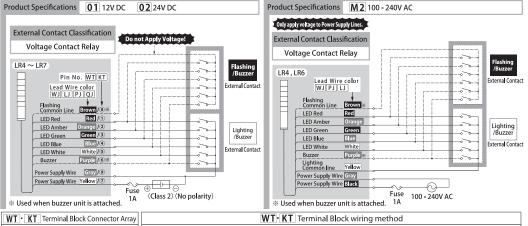
Wiring Examp**l**e

The following is a basic wiring example. If there are any special applications that require asking questions concerning this product, feel free to contact your PATLITE Sales Representative. Accidental wiring will result in product failure. <Note> When lighting and flashing are used together, it is necessary to prepare an external contact for each lighting or flashing.

■ Wire Type & Wire Gauge

M2 Power Supply Wire(Gray, Black) ··· UL2464 / AWG18

Excluding M2 Power Supply Wire(Gray , Black) ···UL2464 / AWG24



WT · KT Terminal Block Connector Array							
							П
	9	Þ	9	Black	Power Wire (Signa l-l ine Side)		Į
	8	D	8	Gray	Flashing Common		וַ
	7	Þ	7	Ye ll ow	Power Wire (Common)		
	6	D	6	Gray	Buzzer		1
	5	Þ	5	White	LED-C		
	4	Þ	4	Blue	LED-B		
	3	Þ	3	Green	LED-G		
	2	Þ	2	Orange	LED-Y		
	1	Þ	1	Red	LED-R		

			W I K I TETTINIA						
	■Recommended lead wire specifications								
Wire Type		Wire Gauge (Solid Wire)	Wire Gauge (Frayed Wire)						
UL1007 / UL1430 0.14~1.5mm ²			AWG30~14						
	Temperature rating should be above 75°C, and the conductor material should be of copper wire.								
	Point								
	The minus driver blade should be at about 2mm by 0.4mm in size.								
	 Do not forcibly push the lever more than necessary with the driver. Failure to comply may damage the unit. Strip 9~10mm of wire insulation from the wire 								

When removing the lead wire, do not pull to remove, be sure to operate the lever to release the lock.

to insert it in the Terminal Block.

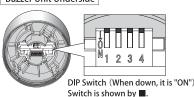
A minus driver etc. is used to pry the lever slot of the Terminal Block open, by pushing straight onto the lever slot. 1 Lever

6 Buzzer Pattern Set-up

The B Flashing/Buzzer type includes a set up for four different patterns and sound reduction

 Do not use excessive force to set up the switches. Possible damage or malfunction may occur.
 Do not adjust switches with a sharp object. Possible damage to switches may cause it to be impossible to operate or cause partial movement of the contacts

Buzzer Unit Underside



 lacts.					
Setu	p Table				_
Buzzer	r DIP Switch		Sound Pattern		Ī
Sound	1	2	30ulla Patterii		
No.1	OFF 1	OFF 2	Rapid Intermittent Beep		
No.2	ON I	OFF 2	Continuous Beep Sound		
No.3	OFF N	ON 2	Rapid Hi-Lo		(1
No.4	ON \prod	∏ ON	Sweep Sound		

DIP Switch	Volume
3	volume
OFF 0 3	Normal
ON TO 3	Sound Reduction

Note Do not use DIP Switch 4.
It is set to "OFF" at all times after factory shipments.

How to use the Folding Bracket

The QJ folding bracket is a retractable type, which can be pushed down while a product is still attached when transporting equipment. (Adjustable Angle: 90 degrees to the right and 45 degrees to the right and left from an upright direction)

< When moving 90 degrees to the right from an upright position.> Depressing a locking lever on the left side of the Pole releases

- the bracket to be lowered. (Depressing the lock allows the Pole to swivel freely)
- The Pole can then be pulled forward and pushed down in a clockwise direction. (From a level plane up to about a 15 degree angle)

The Pole is pushed down to the right (clockwise). (The Pole is turned until it is latched in place by the locking lever)



4 Installation

Notice

■ The following requirements are necessary for proper installation: -Install the signal tower where excessive vibration is not present.

■ Only install the signal tower in an upright position.

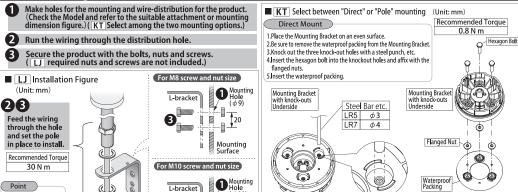
■ When the installation location is unavoidably irregular and waterproof performance is required, use a sealant between the product and the installation surface.

■ If the pole type requires an IP65 rating, apply sealant to the screws, nuts and wire distribution hole when installing the compatible bracket onto the installation surface.

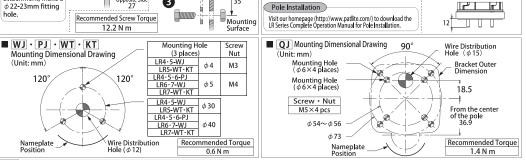
■ Although the LR4- WJ mounting bolt moves prior to assembly, it is not a quality issue. Be sure to mount the product in the manner indicated below.

Basic Mounting Instructions

8



35



5 Wiring

sure **the power is disconnected** before wiring and changing fuses. Possible cause of short-circuiting may occur sure **the proper working voltage** is used and that **direct current or alternating current** is properly applied. ssible cause of combustion may occur. 🗥 Warning |

Do not apply voltage to the Flashing Common line ([01], 02]). Apply voltage to the power source line (M2) only. Product failure will occur.

■ It is not necessary to connect to an external lead for tiers not used. When an extra lead is not connected, it should be **individually insulated** with electrical tape or something similar. Failure to comply will result in damage due to short circuiting.

■ Do not pull the lead wire or **push** it inside the body. Product failure may occur.

Notice

When using multiple LED units of the same color, make the contact capacity equal to the number of same color LED units multiplied by the contact capacity for 1 tier. (This is because LED units of the same color light up for one signal line.)

To protect the power supply and other internal circuitry, be sure to install an external fuse.

If wiring is extended beyond its factory length, a relevance in the length of the wire and wire gauge will cause a voltage drop.

External Contact Capacity Is: Current Capacity Vs: Withstand Voltage IL: Leakage Current Ta: Ambient Temperature **01** 12V DC 02 24V DC M2 100 - 240V A LED Unit Signal Wire Current (Max.) / Voltage | 10 mA / Power Supply Voltage | 45 mA / Power Supply Voltage | 12V DC | 250 mA / 24V Do lecommended Contact Capacity Is ≥ 300 mA Vs ≥ 20 V DC (%1) Current Consumption (Max.)
Recommended Contact Capacity 150mA (%2) Inrush current or more contacts

Signal Wire None 0.7A , 15ms or less 25A (Ta=25°C), 50A (Ta=50/45°C) (%5), 2ms or les Power Supply Wire None (%4) IL ≦0.1 mA

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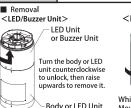
8 Unit Detachment Method

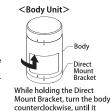
⚠ Warning ■ Be sure the power is **disconnected** before working on it.

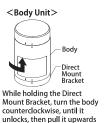
Do not apply excessive strength with each unit or body. Failure to comply may damage the unit.
 Do not touch the connector area or the inside of the body and LED unit. Failure to comply may damage the unit.

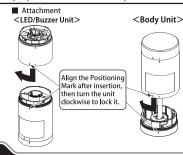
 Be sure to lock each unit securely when attaching. Failure to comply may damage the unit.
 Detach the unit in the following manner. Any other method may result in damaging the product Attachment: Attach one unit at a time to the body : Firmly hold the bottom section while removing the upper section.

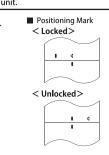
• The maximum number of attachment units per product are five LED units, plus one buzzer unit. Notice Remova Attachment











Knock-Out Mount Bracket Side

9 Specifications

Model	UL Registered Model	Unit Model Combination			Rated Voltage	Rated Power	
Model	or negistered Model	Body Unit	LED Unit (Max. 5 Units)	Buzzer Unit	nated voltage	Consumption	
LR4-□02WJ□□	LR402WJB , LR402WJN , LR402WJBA , LR402WJNA	LR4-02WJN,LR4-02WJNA					
LR4-□02LJ□□	LR402LJB , LR402LJN , LR402LJBA , LR402LJNA	LR4-02LJN,LR4-02LJNA	LR4-E-R, LR4-E-R-A, LR4-E-RZ, LR4-E-RZ-A		241/ DC	M C CW	
LR4-□02PJ□□	LR402PJB , LR402PJN , LR402PJBA , LR402PJNA	LR4-02PJN,LR4-02PJNA	LR4-E-Y , LR4-E-Y-A , LR4-E-YZ , LR4-E-YZ-A	LR4-B	24V DC	Max. 6.6W	
LR4-□02QJ□□	LR402QJB , LR402QJN	LR4-02QJN	LR4-E-G , LR4-E-G-A , LR4-E-GZ , LR4-E-GZ-A	LR4-BA			
LR4-□M2WJ□□	LR4M2WJBW, LR4M2WJNW, LR4M2WJBA, LR4M2WJNA	LR4-M2WJNW,LR4-M2WJNA	LR4-E-B , LR4-E-B-A , LR4-E-BZ , LR4-E-BZ-A	LIT DI	100-240V AC (50/60Hz)		
LR4-□M2PJ□□	LR4M2PJBW , LR4M2PJNW , LR4M2PJBA , LR4M2PJNA	LR4-M2PJNW,LR4-M2PJNA	LR4-E-C , LR4-E-C-A			Max. 7.0W	
LR4- M2LJ ==	LR4M2LJBW , LR4M2LJNW	LR4-M2LJNW			(50/00112)		
LR5- 01WJ	LR501WJB, LR501WJN	LR5-01WJN					
LR5- 01LJ	LR501LJB , LR501LJN	LR5-01LJN	105 5 0 105 5 07		12V DC	Max. 5.0W	
LR5-□01PJ□□	LR501PJB , LR501PJN	LR5-01PJN	LR5-E-R, LR5-E-RZ LR5-E-Y, LR5-E-YZ LR5-E-G, LR5-E-GZ LR5-E-B, LR5-E-BZ LR5-E-C	LR5-B			
LR5-□02WJ□□	LR502WJB, LR502WJN	LR5-02WJN			24V DC	Max.6.6W	
LR5-□02LJ□□	LR502LJB , LR502LJN	LR5-02LJN					
LR5-□02PJ□□	LR502PJB , LR502PJN	LR5-02PJN					
LR5- 02WT	LR502WTB , LR502WTN	LR5-02WTN					
		LR5-02KTN					
LR6-□02WJ□□	LR602WJB , LR602WJN , LR602WJBA , LR602WJNA	LR6-02WJN,LR6-02WJNA	100 5 0 100 5 0 4 100 5 0 7 100 5 0 7 4				
LR6-□02LJ□□	LR602LJB , LR602LJN , LR602LJBA , LR602LJNA	LR6-02LJN,LR6-02LJNA	LR6-E-R , LR6-E-R-A , LR6-E-RZ , LR6-E-RZ-A				
LR6-□02PJ□□	LR602PJB , LR602PJN , LR602PJBA , LR602PJNA	LR6-02PJN,LR6-02PJNA	LR6-E-Y , LR6-E-Y-A , LR6-E-YZ , LR6-E-YZ-A LR6-E-G , LR6-E-G-A , LR6-E-GZ , LR6-E-GZ-A	LR6-B			
LR6-□02QJ□□	LR602QJB , LR602QJN	LR6-02QJN	IR6-F-R IR6-F-R-A IR6-F-R7 IR6-F-R7-A	LR6-BA			
LR6-□M2WJ□□	LR6M2WJBW , LR6M2WJNW , LR6M2WJBA , LR6M2WJNA		LR6-E-C, LR6-E-C-A		100-240V AC		
LR6-□M2PJ□□	LR6M2PJBW , LR6M2PJNW , LR6M2PJBA , LR6M2PJNA	LR6-M2PJNW,LR6-M2PJNA	LR6-E-MZ		(50/60Hz)	Max. 7.0W	
LR6-□M2LJ□□	LR6M2LJBW , LR6M2LJNW	LR6-M2LJNW			(0 0, 0 0 1 1 1 2)		
LR7-□02WJ□□	LR702WJB , LR702WJN	LR7-02WJN	LR7-E-R, LR7-E-Y, LR7-E-G,				
		LR7-02WTN	LR7-E-B, LR7-E-C	LR7-B	24V DC	Max. 6.6W	
		LR7-02KTN	EU E DI EU				

**Wisit our homepage (http://www.patlite.com/) to download the LR Series "Complete Operation Manual:LR" for LED and Buzzer Unit Model Number Configuration

 UL 508, CSA-C22.2 No. 14 ● EMC Directive (EN 61000-6-4, EN 61000-6-2)

 RoHS Directive (EN 50581) FCC Part 15 Subpart B Class A

• Maximum surrounding air temperature rating of 50 °C (\overline{LR} - \overline{A} 45 °C)

Use a **fuse holder** with UL standard certification. (MZ)
This product is designed for use on a flat surface for a **Type 1 Enclosure**

Use a "class 2" power supply specified in the guidelines under UL1310. $(\boxed{01}$, $\boxed{02})$

For use in Pollution Degree 2 Environment.

Conformity requirements for the CE Marking: (Except M2 - U) This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules.

(Note) • Dimensions and specifications may change without notice due to

Dimensions and specifications may change with our continual product improvement.
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 $\langle Conformity\ Standards \rangle$ ● KC (KN 61000-6-4, KN 61000-6-2) (Except M2 - LJ , KT , Assembly Model - WT)

These restrictions are limited to cases where this equipment is operated in a business district, and it is designed to take the relevant protective measures against electromagnetic noise hindrance. This product must not be used in residential areas.

● Low Voltage Directive (IEC/EN60947-5-1,EN62471) (M2 - WJ・PJ)

When a regulated power supply is not being used, select a fuse that meets class CC or more. (M2)
 Conformity requirements for the UL Standard:

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