

Signal Tower
INSTALLATION MANUAL



[Model : LME / LMS]

Thank you for specifying the PATLITE Signal Tower for your application. Please read these instructions carefully before you perform installation, maintenance and repair. Store this manual carefully for easy reference. If you have any questions about this product, please contact PATLITE Corporation.


NOTES TO BE OBSERVED FOR SAFE OPERATION


In order to prevent any damage to the user and other personnel or to assets, note the following:

■ The indications for warning are divided into the following classes according to the degree of danger or damage incurred when the warning is not taken into consideration and the product is not correctly used.

| | |
|---|---|
|  Warning | Indicates an imminently dangerous condition: failure to follow the instructions may lead to death or serious injury. |
|  Caution | Indicates a potentially dangerous condition: failure to follow the instructions may lead to slight injury or property damage. |

1. To operate this product safely, please observe the following

-  **Warning**
- Make sure the power is off before wiring, repairing, or replacing parts to avoid a short-circuit, electric shock, or burn.
 - Do not use this product with the lens damaged or removed, or without the head cover in order to avoid an electric shock.
 - If installing this product requires construction work, please ask a specialist in order to avoid electric shock, fire, or personal injury.
 - When this product is used for security purposes, it should be inspected daily. In case a malfunction should occur, it is recommended that you use this product together with other security products.
 - Do not use this product to support your weight while climbing onto a machine. Mount the product so that it is clear of any moving parts - such as a machine cover.

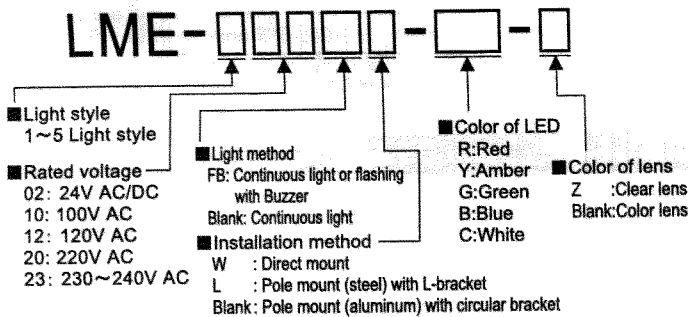
-  **Caution**
- Concerning replacement parts, such as LED unit, bulb or fuse, be sure to use those specified in this manual.
 - For safety, make sure to connect an external fuse to the power source as shown in the wiring example.
 - Do not substitute parts of units from other products as this may cause a breakdown.

2. Model No. Configuration

■ LME type

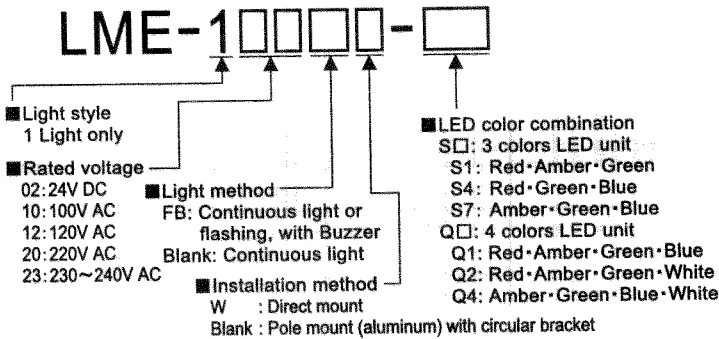
[Single color LED unit type]

- The single color LED unit has a set color for each light.
The combination can be adapted from 1 color(1 light) to 5 colors (5 lights).

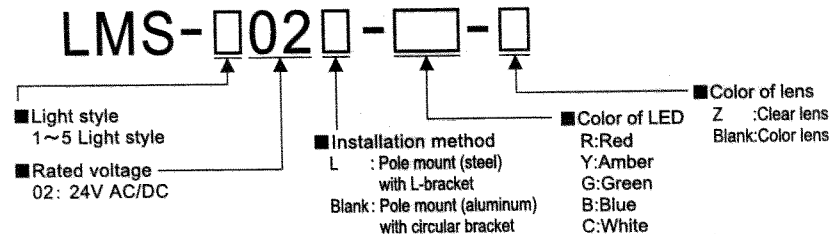


[Multi color LED unit type]

- The Multi LED unit can display 3 colors(or 4 colors) for one light, and a single color LED unit (separate cost) can be added to the Multi LED unit.

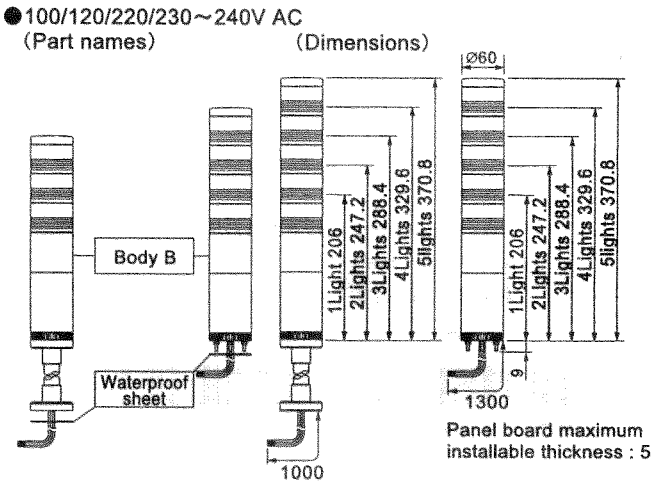
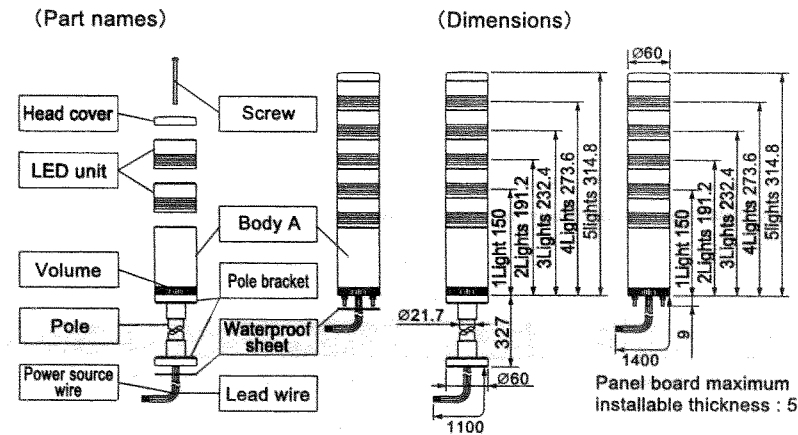


■ LMS type

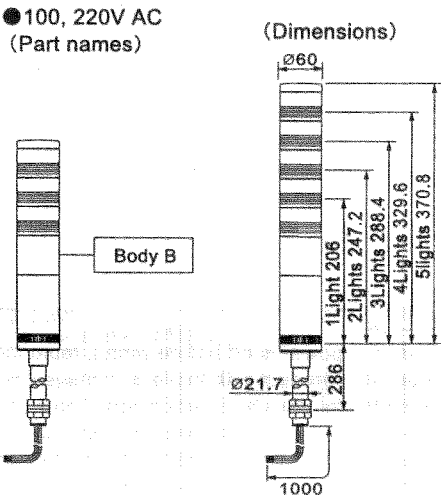
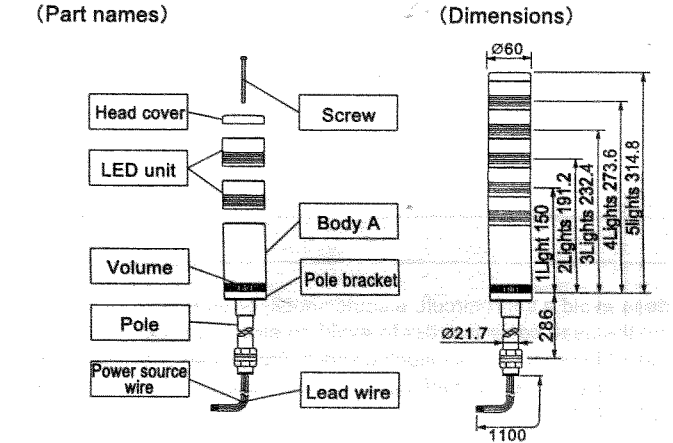


3. Part Names and Dimensions

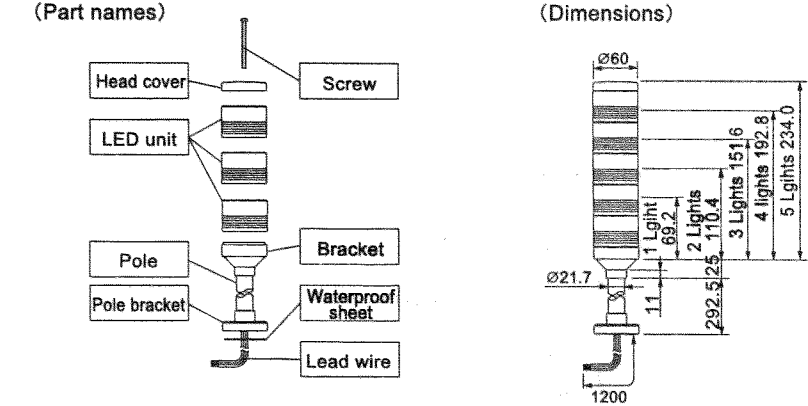
■ LME type
● 24V AC/DC



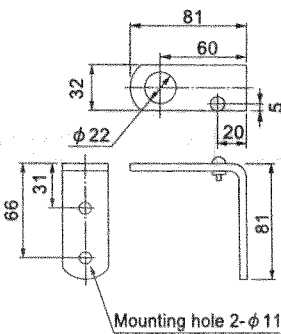
■ LME-L type
● 24V AC/DC
(Part names)



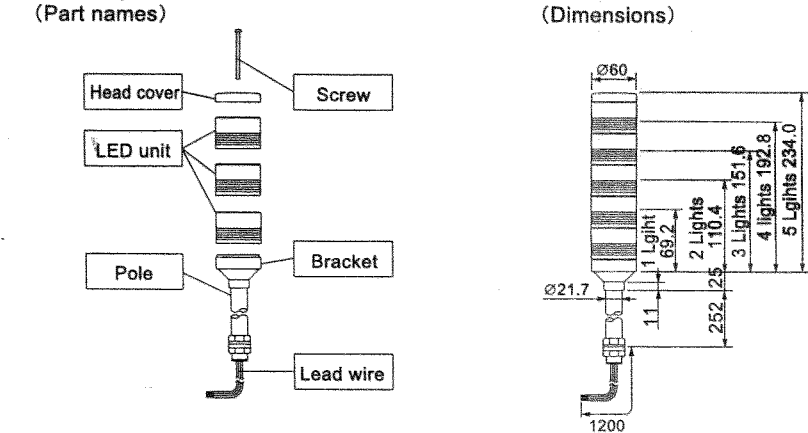
■ LMS type
(Part names)



[Accessory : L-bracket]
※ LME-L Type / LMS-L Type only



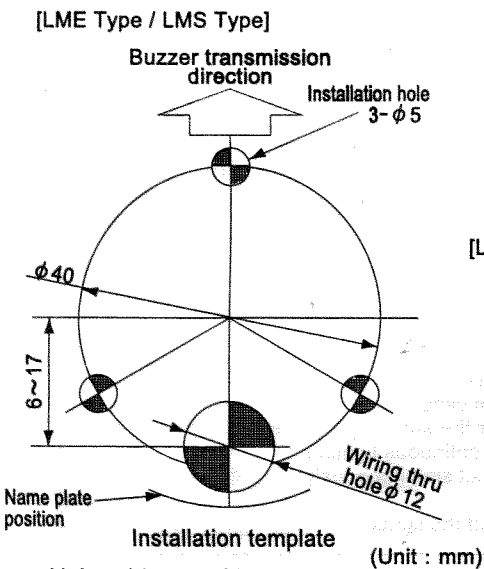
■ LMS-L type
(Part names)



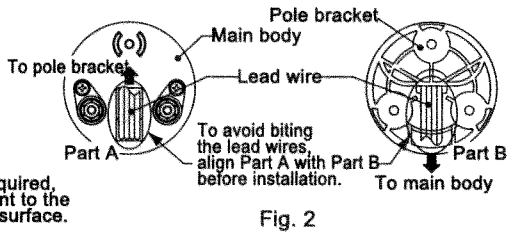
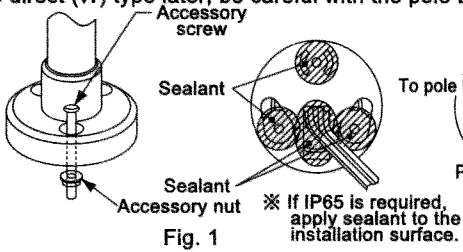
(Unit : mm)

4. Installation

- [Mounting]
- Drill mounting holes in the wall (L-bracket installation) or panel(circular bracket installation and direct mount).
 - Secure the side mount bracket with hex bolts and hex nuts (not supplied), or the flange mount bracket with the accessory screws and nuts (supplied).
 - Install the Signal Tower vertically at a location that has sufficient strength and minimal vibration.
 - With buzzer models, the alarm can be heard best from the front direction. Therefore, make sure the Signal Tower is facing the correction direction before installation.
 - If IP65 is required for the pole type, apply sealant to the screws and nuts (3 locations) and the lead wire exit (as shown in Fig.1) when you install the pole bracket to the installation surface.
 - If you install the pole bracket (option) to the direct (W) type later, be careful with the pole bracket direction to avoid biting the lead wire.

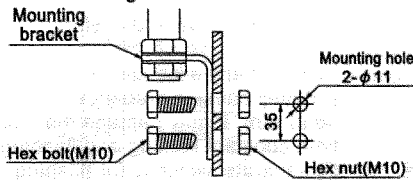


- Using this template
1. Confirm the hole position on the product.
 2. Secure the template to the installation surface using adhesive tape.
 3. Mark the installation holes using a nail punch, etc.
 4. Drill the holes in the installation surface.
- ※ Confirm the direction of the name plate and the wiring route before you drill the holes.

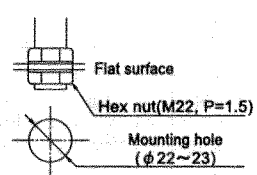


[LME-L Type / LMS-L Type]

■ Side Mounting Installation



■ Flat Surface Installation



Caution

- This product can be used only indoors. (Do not use it outdoors.)
- Do not install the Signal Tower sideways or inverted.
- Make sure of the specified operating voltage and current before use.
- Do not leave the product or use it without LED unit installed.
- Use the soft cloth with moisture when the LED unit or bodies must be cleaned up. (Do not use thinner, benzine, gasoline or oil.)
- When installing this product, do not excessive torque or the product may be damaged.
- During installation, do not remove the waterproof sheet. It may cause a malfunction.
- This product has 1mm thick waterproof packing at the bottom of the pole bracket. However, when complete waterproofing is not provided due to the unevenness of the installation surface, apply waterproof sealant between the unit and the

5. Wiring Procedure

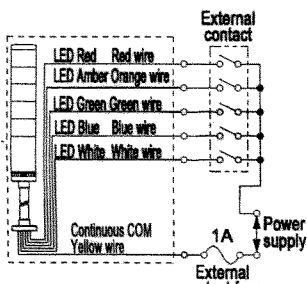
[Wiring procedure] (Concerning the mark ※, the conditions about the product corresponding to UL are mentioned.)

- Please make wiring connection according to wiring example.
- For wiring of 5 layers or less, please make wiring connection by increasing or decreasing external contacts in each layer according to wiring example.
- 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 light. (This is because LED units of the same color light up for one signal line.)
- ※ Fuse for protection of external contact should be installed within 305mm from the connected point of the power source wire.
- When wiring is completed, insulate the end of each unused lead wire by using insulation tape.
- ※ Use "Class II Circuit" for the power supply source and concerning fuse and fuse-holder, be sure to use the products authorized by UL Inc.
- ※ Use the fuse conforming to the rated current of the machine which you install product. (Example : Class J type fuse)
- ※ For the 120V AC and 230-240V AC models, connect the green / yellow lead wire to the ground.
- 100V and 220V type do not have green/yellow lead wire.
- If you have any questions about simultaneous use of multiple units or other special operations, contact PATLITE Customer Service before wiring.

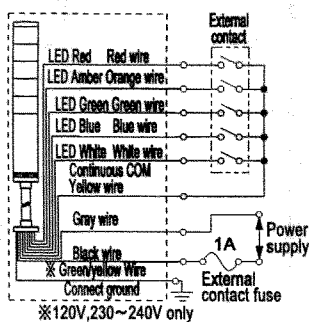
1. Wiring example Single LED unit Type

LME Type / LMS Type [Continuous light]

■ 24V AC/DC Type

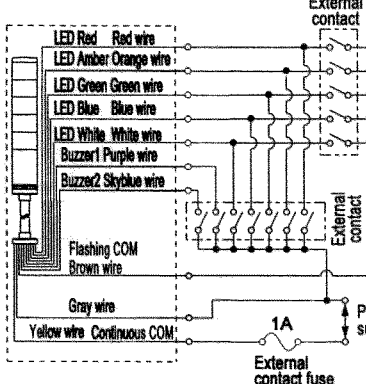


■ 100/120/220/230~240V AC Type

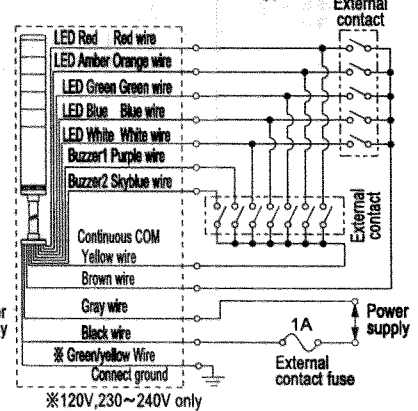


LME-FB Type [Continuous light or Flashing, with Buzzer]

■ 24V AC/DC Type



■ 100/120/220/230~240V AC Type



[Wire color table]

| LED unit color | Wire color |
|----------------|-------------|
| Red | Red wire |
| Amber | Orange wire |
| Green | Green wire |
| Blue | Blue wire |
| White | White wire |

| Buzzer | Wire color |
|------------------------------|--------------|
| Nothing | |
| Buzzer1 : Pi · Pi · Pi · . . | Purple wire |
| Buzzer2 : Pee · Pee · Pee | Skyblue wire |

[External contact fuse]

| Voltage | Ampere rating of fuse |
|-----------|-----------------------|
| All model | 250V 1A |

※Use the fuse conforming to the rated current of the machine which you install product.
(Example : Class J type fuse)

[Single color LED unit type External contact capacity]

| Voltage specs. | | 24V AC/DC | 100V AC | 120V AC | 220V AC | 230~240V AC |
|-----------------------|---------------------|---|----------------------------|----------------------------|---------|-------------|
| LED unit (1 Light) | Current consumption | Red · Amber : 52.5mA Green · Blue · White : 20mA | | | | |
| | Contact capacity | Is ≥ 100mA Vs ≥ 35V AC | | | | |
| Buzzer | Current consumption | 40mA | | | | |
| | Inrush current | 250mA | | | | |
| | Contact capacity | Is ≥ 300mA Vs ≥ 35V AC | | | | |
| Power supply | Current consumption | 360mA | 100mA | 50mA | | |
| | Contact capacity | Is ≥ 500mA Vs ≥ 35V AC | Is ≥ 150mA Vs ≥ 125V AC | Is ≥ 100mA Vs ≥ 250V AC | | |

※Is : Current capacity
Vs : Withstand voltage

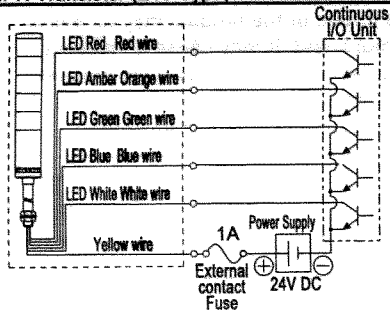
Caution

- Make sure the power is OFF before wiring. A short circuit may damage internal circuits or cause an electric shock.
- Do not apply voltage directly to signal wires and common wires. It may damage the circuit. (100V, 120V, 220V, 230~240V AC)
- Do not pull out the lead wire or push it into the pole or the body.
- Install the external contact fuse on the power supply side as shown in the wiring example in order to prevent burn in case of a wiring error.
- Enough attention shall be paid for wiring because if there is any mistakes in wiring a circuit may brake down.
- Do not apply voltage directly to the brown lead wire. It may cause a breakdown.(FB type)
- Do not connect the yellow lead wire and the brown lead wire. It may damage the internal circuit.
- Simultaneously turning on the external contact for both constant lighting and flashing for the same light (color), may cause another light (color) to light up. To avoid this, provide separate switches for flashing or continuous lighting.
- When turning on the same function, such as flashing or alarms, for more than one product simultaneously, be sure to use separate external contacts for each product and function.
- When using both alarm sounds on one product, use separate contacts for the alarms and the lights.

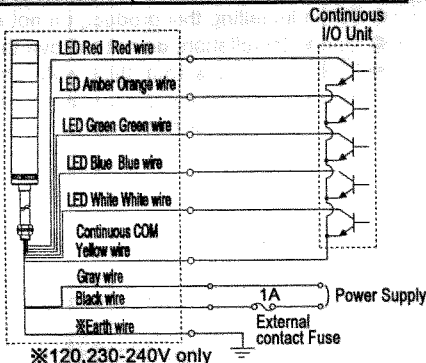
2. NPN(PNP)Transistor drive example

● Continuous light type

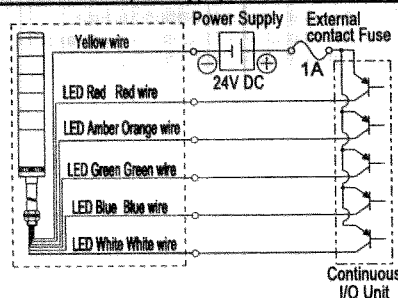
NPN Transistor (24V Type)



NPN Transistor (100/120/220/230~240V Type)



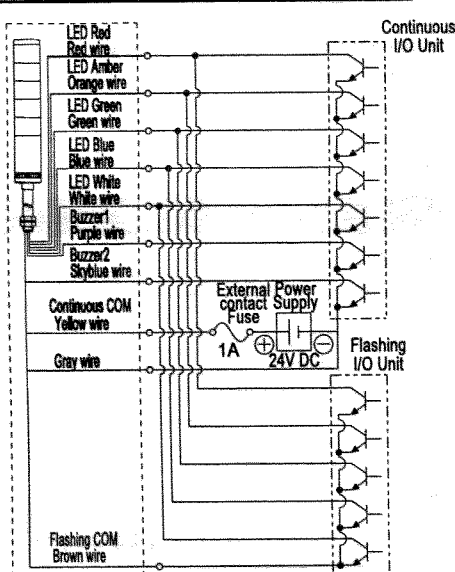
PNP Transistor (24V Type)



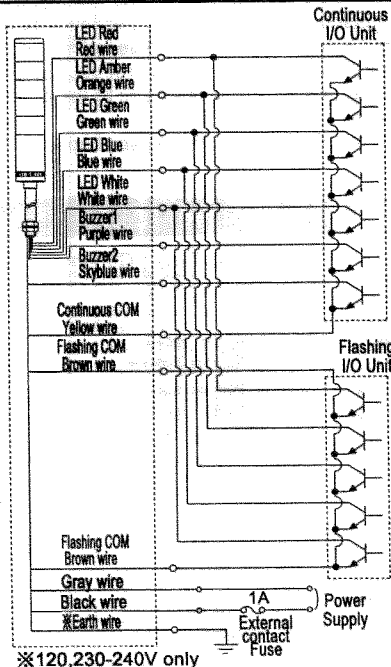
● Continuous light or Flashing, with Buzzer type

※When using the FB type, use a separate I/O unit for flashing

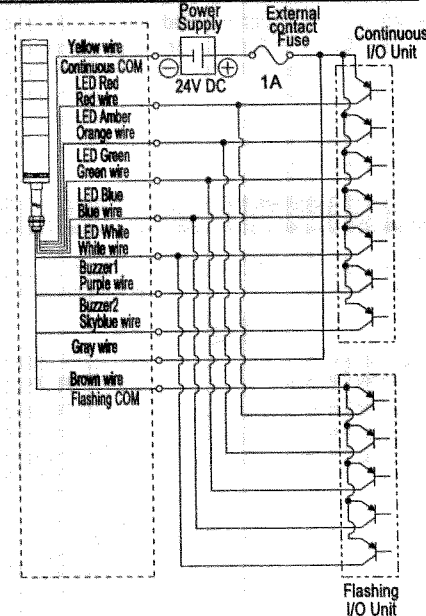
NPN Transistor (24V Type)



NPN Transistor (100/120/220/230~240V Type)



PNP Transistor (24V Type)



| Model | Transistor (NPN or PNP) |
|--------------------------------|--|
| Current capacity | Ic ≥ 100mA (LED unit) Ic ≥ 300mA (Buzzer) |
| Dielectric break down strength | Vc ≥ 35V |
| Leak current | IL ≤ 0.1mA |

3. Wiring example Multi LED unit Type [LME-1□□(FB)(W)-S□, Q□ Type]

- The 24 V type S, Q series uses DC current only, so be sure to connect the power wire(yellow) to the positive terminal.
- When using a single color LED unit with a multi colored LED unit, both units will light if activated by the single wire for which they have the same color.
- When any colors are activated at the same time, those colors will light up simultaneously. This is not a malfunction.
- For the S and Q series, use only transistor of the NPN type.

[Wire color table]

●S□ Type [3 colors LED unit]

| LED unit color | Wire color |
|---------------------|------------------------|
| S1 Red·Amber·Green | Red·Orange·Green wire |
| S4 Red·Green·Blue | Red·Green·Blue wire |
| S7 Amber·Green·Blue | Orange·Green·Blue wire |

●Q□ Type [4 colors LED unit]

| LED unit color | Wire color |
|---------------------------|------------------------------|
| Q1 Red·Amber·Green·Blue | Red·Orange·Green·Blue wire |
| Q2 Red·Amber·Green·White | Red·Orange·Green·White wire |
| Q4 Amber·Green·Blue·White | Orange·Green·Blue·White wire |

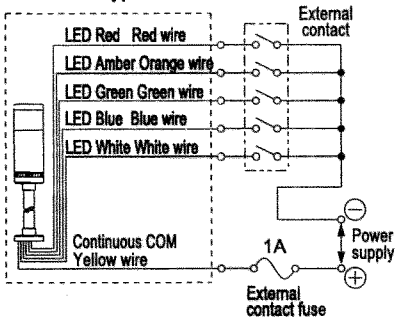
[External contact fuse]

| Voltage | Ampere rating of fuse |
|-----------|-----------------------|
| All model | 250V 1A |

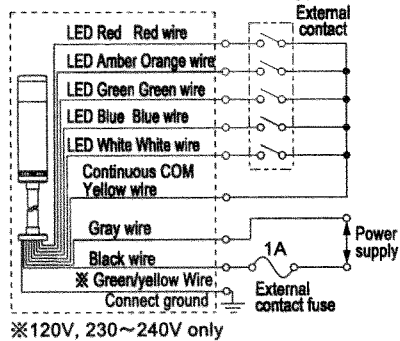
※Use the fuse conforming to the rated current of the machine which you install product.
(Example : Class J type fuse)

LME-1□□(W)-S□, Q□ Type [Multi LED color unit / Continuous light]

■24V DC Type

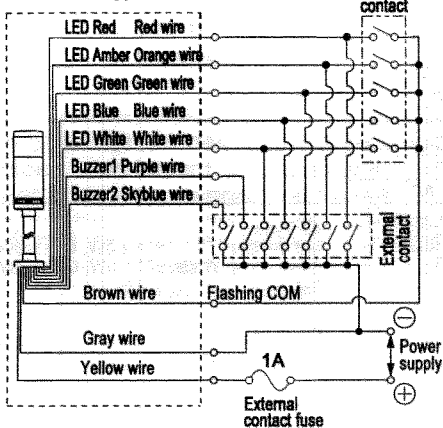


■100/120/220/230~240V AC Type

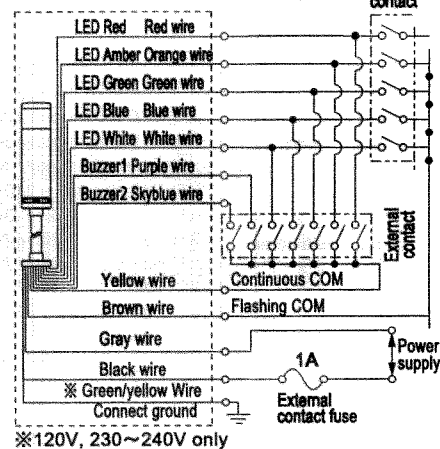


LME-1□□FB(W)-S□, Q□ Type [Multi color LED unit / Continuous light or Flashing, with Buzzer]

■24V DC Type



■100/120/220/230~240V AC Type



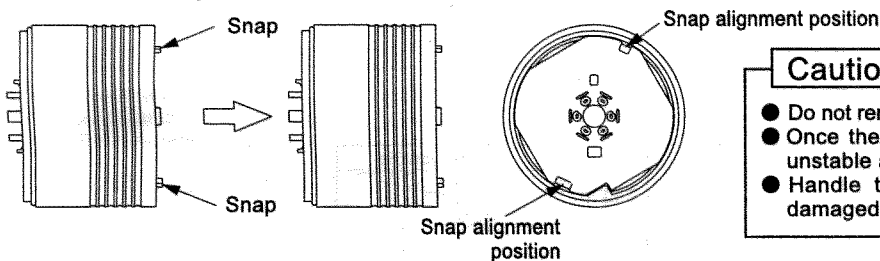
[Multi color LED unit External contact capacity]

| Voltage specs. | | 24V DC | 100V AC | 120V AC | 220V AC | 230~240V AC |
|-----------------------|---------------------|--|----------------------------|----------------------------|---------|-------------|
| LED unit (1 Light) | Current consumption | S □:Red·Amber 50mA, Green·Blue·White 40mA Q □:Red·Amber 30mA, Green·Blue·White 50mA | | | | |
| | Contact capacity | Is ≥ 100mA Vs ≥ 35V AC | | | | |
| Buzzer | Current consumption | 40mA | | | | |
| | Inrush current | 250mA | | | | |
| Power supply | Contact capacity | Is ≥ 300mA Vs ≥ 35V AC | | | | |
| | Current consumption | 360mA | 100mA | 50mA | | |
| Power supply | Contact capacity | Is ≥ 500mA Vs ≥ 35V AC | Is ≥ 150mA Vs ≥ 125V AC | Is ≥ 100mA Vs ≥ 250V AC | | |

※Is : Current capacity
Vs : Withstand voltage

6. Changing LED unit positions

- Turn the power off before performing this procedure.
- Unscrew the head cover and remove the lens.
- Each LED unit is secured by 2 small snaps of different sizes to ensure that the module is assembled correctly.
- When increasing or decreasing the number of modules, install a new center screw (See 3. Part Names and Dimensions).

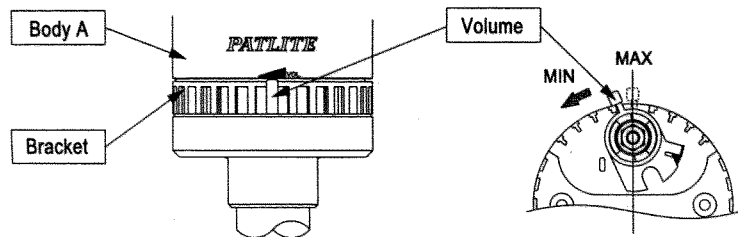


Caution

- Do not remove an LED unit forcibly as it may damage the unit.
- Once the center screw is loose or removed, the LED units are unstable and may separate. Handle carefully to avoid damage.
- Handle the LED units carefully so they are not warped or damaged while changing their positions on the tower.

7. Volume adjustment

- The volume can be adjusted by removing the lever near the bottom of the base to the left or right.
- The volume is at maximum when the lever is positioned front and center.



Caution

- Do not move the lever forcibly as it may damage the volume control.

8. To use this product in accordance with CE marking, please observe the followings

- Please use a fuse specified by IEC 127.
- When lead wires are exposed outside the body during pole installation, etc. always provide double insulation using insulation tape and vinyl tubing, etc.

9. Specifications

[LME Type]

| Light style | Model | Rated voltage | UL standard | Power Consumption | Mass | Flashing cycle and Peak sound level Wire type /Dia |
|---------------------------|----------------|---------------|-------------|--|--------------|---|
| 1 Light | -102(T)(FB)(W) | 24V AC/DC | ○ | 24V Type Red·Amber :1.3W Green·Blue·White:0.5W Buzzer :1.0W | 0.46(0.30)kg | Flashing cycle FB Type 60 Flashes per minute Sound level FB Type 70~90 dB / m Power source wire (24V Type) UL1007 / AWG22 (100, 220V Type) UL1007 / AWG20 (120, 230V Type) UL1015 / AWG18 Lead wire UL1007 / AWG22 Green / Yellow wire (Connect ground) UL1015 / AWG18 |
| | -110(FB)(W) | 100V AC | × | | 0.71(0.55)kg | |
| | -112(T)(FB)(W) | 120V AC | ○ | | | |
| | -120(FB)(W) | 220V AC | × | | | |
| | -123(T)(FB)(W) | 230~240V AC | ○ | | | |
| 2 Lights | -202(T)(FB)(W) | 24V AC/DC | ○ | 24V Type Red·Amber :1.3W Green·Blue·White:0.5W Buzzer :1.0W | 0.51(0.35)kg | |
| | -210(FB)(W) | 100V AC | × | | 0.76(0.60)kg | |
| | -212(T)(FB)(W) | 120V AC | ○ | | | |
| | -220(FB)(W) | 220V AC | × | | | |
| | -223(T)(FB)(W) | 230~240V AC | ○ | | | |
| 3 Lights | -302(T)(FB)(W) | 24V AC/DC | ○ | 100,120,220,230~240V Type Red·Amber :2.0W Green·Blue·White:0.8W Buzzer :1.4W Standing by power consumption:1.7W | 0.56(0.40)kg | |
| | -310(FB)(W) | 100V AC | × | | 0.81(0.65)kg | |
| | -312(T)(FB)(W) | 120V AC | ○ | | | |
| | -320(FB)(W) | 220V AC | × | | | |
| | -323(T)(FB)(W) | 230~240V AC | ○ | | | |
| 4 Lights | -402(T)(FB)(W) | 24V AC/DC | ○ | | 0.61(0.45)kg | |
| | -410(FB)(W) | 100V AC | × | | 0.86(0.70)kg | |
| | -412(T)(FB)(W) | 120V AC | ○ | | | |
| | -420(FB)(W) | 220V AC | × | | | |
| | -423(T)(FB)(W) | 230~240V AC | ○ | | | |
| 5 Lights | -502(T)(FB)(W) | 24V AC/DC | ○ | | 0.66(0.50)kg | |
| | -510(FB)(W) | 100V AC | × | | 0.91(0.75)kg | |
| | -512(T)(FB)(W) | 120V AC | ○ | | | |
| | -520(FB)(W) | 220V AC | × | | | |
| | -523(T)(FB)(W) | 230~240V AC | ○ | | | |
| Multi color LED unit (S□) | -102(T)(FB)(W) | 24V DC | ○ | 24V Type Red·Amber :S□ 1.3W, Q□ 0.8W Green·Blue·White:S□ 1.0W, Q□ 1.1W Buzzer :1.0W | 0.46(0.30)kg | |
| | -110(FB)(W) | 100V AC | × | | 0.71(0.55)kg | |
| | -112(T)(FB)(W) | 120V AC | ○ | | | |
| | -120(FB)(W) | 220V AC | × | | | |
| | -123(T)(FB)(W) | 230~240V AC | ○ | | | |
| Multi color LED unit (Q□) | -102(T)(FB)(W) | 24V DC | ○ | 100,120,220,230~240V Type Red·Amber :S□ 2.0W, Q□ 1.0W Green·Blue·White:S□ 1.5W, Q□ 1.5W Buzzer :1.4W Standing by power consumption:1.7W | 0.46(0.30)kg | |
| | -110(FB)(W) | 100V AC | × | | 0.71(0.55)kg | |
| | -112(T)(FB)(W) | 120V AC | ○ | | | |
| | -120(FB)(W) | 220V AC | × | | | |
| | -123(T)(FB)(W) | 230~240V AC | ○ | | | |

· () is mass of the direct mount type[W type]

[LME-L Type]

| Light style | Model | Rated voltage | UL standard | Power consumption | Mass | Flashing per minute and sound level | Wire type/Dia |
|-------------|--------------|---------------|-------------|--|--------|---|--|
| 1Light | -102(T)(FB)L | 24V AC/DC | ○ | 24V Type Red·Amber :1.3W Green·Blue·White :0.5W Buzzer :1.0W | 0.76kg | FB Type 60flashes per minute & 70~90dB(1m) (Range of volume adjustment) | Power source wire (24V Type) UL1007 / AWG22 (100, 220V Type) UL1007 / AWG20 Lead wire UL1007 / AWG22 |
| | -110(FB)L | 100V AC | × | | 1.01kg | | |
| | -120(FB)L | 220V AC | × | | 0.81kg | | |
| 2Lights | -202(T)(FB)L | 24V AC/DC | ○ | 100, 220V Type Red·Amber :2.0W Green·Blue·White :0.8W Buzzer :1.4W (Standing by power consumption :1.7W) | 1.06kg | | |
| | -210(FB)L | 100V AC | × | | 0.86kg | | |
| | -220(FB)L | 220V AC | × | | 1.11kg | | |
| 3Lights | -302(T)(FB)L | 24V AC/DC | ○ | | 0.91kg | | |
| | -310(FB)L | 100V AC | × | | 1.16kg | | |
| | -320(FB)L | 220V AC | × | | 0.96kg | | |
| 4Lights | -402(T)(FB)L | 24V AC/DC | ○ | | 1.21kg | | |
| | -410(FB)L | 100V AC | × | | | | |
| | -420(FB)L | 220V AC | × | | | | |
| 5Lights | -502(T)(FB)L | 24V AC/DC | ○ | | | | |
| | -510(FB)L | 100V AC | × | | | | |
| | -520(FB)L | 220V AC | × | | | | |

[LMS Type]

| Light style | Model | Rated voltage | UL standard | Power consumption | Mass | Wire type/Dia |
|-------------|---------|------------------------|-------------|---|--------------|-------------------------------|
| 1 Light | -102(L) | 24V AC/DC (50/60Hz) | ○ | Red·Amber :1.3W Green·Blue·White :0.5W | 0.29(0.62)kg | Lead wires UL1007 AWG22 |
| 2 Lights | -202(L) | | ○ | | 0.34(0.67)kg | |
| 3 Lights | -302(L) | | ○ | | 0.39(0.72)kg | |
| 4 Lights | -402(L) | | ○ | | 0.44(0.77)kg | |
| 5 Lights | -502(L) | | ○ | | 0.49(0.82)kg | |

※() is mass of LMS-L type

Caution

- PATLITE Corporation disclaims all liability for any malfunction or damage occurring as a result of handling contrary to the instructions, cautions and warnings mentioned in this manual.
- Specifications may change without notice due to continual product improvement.

LMEシリーズ 取扱説明書 正誤表

The errata on operating instruction [Model : LME]

Les errata sur le manuel [Modèle : LME]

LMEシリーズの取扱説明書にて記載内容に誤りがありました。訂正してお詫び申し上げます。
We apologize for the errors on the manual for LME series. The errors are fixed as below.
Nous nous excusons pour les erreurs sur le manuel. Les erreurs sont corrigées comme dessous.

| 正 Right Correct | 誤 Error Erreur |
|--|---|
| <div>[マルチカラーLEDユニット型]</div> <div>LME-1□□□□-□</div> <div>■定格電圧</div> <div>02: DC 24V</div> <div>10: AC 100V</div> <div>12: AC 120V</div> <div>20: AC 220V</div> <div>23: AC 230~240V</div> | <div>[マルチカラーユニットユニット型]</div> <div>LME-1□□□□-□</div> <div>■定格電圧</div> <div>02: AC/DC 24V</div> <div>10: AC 100V</div> <div>12: AC 120V</div> <div>20: AC 220V</div> <div>23: AC 230~240V</div> |
| <div>[Diode multi couleurs unique]</div> <div>LME-1□□□□-□</div> <div>■Tension nominale</div> <div>02: 24V DC</div> <div>10: 100V AC</div> <div>12: 120V AC</div> <div>20: 220V AC</div> <div>23: 230~240V AC</div> | <div>[Diode multi couleurs unique]</div> <div>LME-1□□□□-□</div> <div>■Tension nominale</div> <div>02: 24V AC/DC</div> <div>10: 100V AC</div> <div>12: 120V AC</div> <div>20: 220V AC</div> <div>23: 230~240V AC</div> |