

<h1>SPECIFICATIONS</h1>

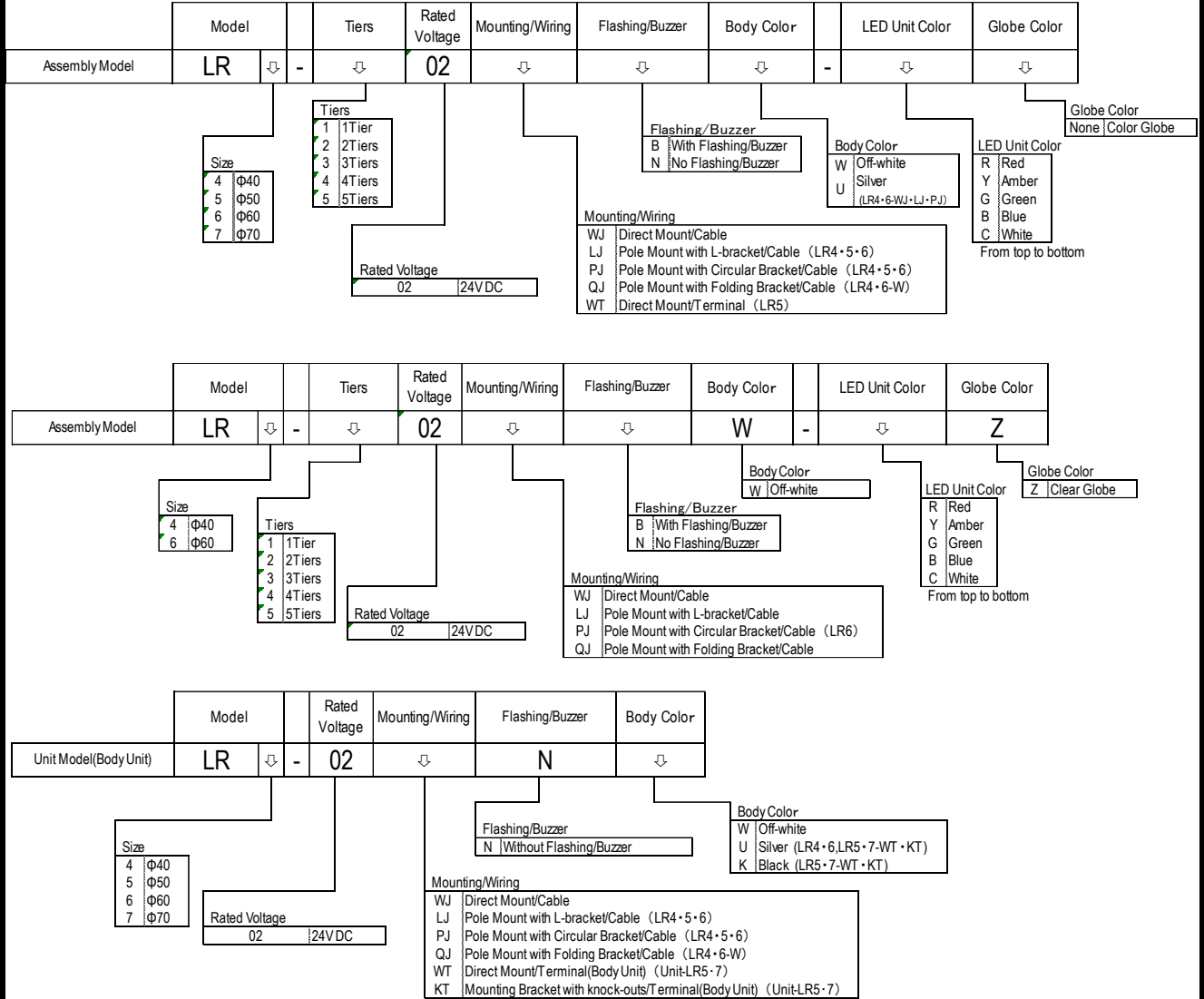
1. General Specifications

Product Name		Signal Tower	
Model		LR□-□02□□□□	
Rated Voltage		24V DC	
Operating Voltage Range		Rated Voltage ±10%	
Signal Wire Current (Per Unit)	Typ.	LED Unit : 40mA	
		Buzzer Unit : 40mA (※1)	
	Max.	LED Unit : 45mA	
		Buzzer Unit : 250mA (※1)	
Inrush Current	Power Supply Wire	none (Signal Wire Current Maximum not exceeding the sum total)	
	Signal Wire	LED Unit : none Buzzer Unit : none (Not exceeding Maximum Signal Wire Current Ratings)	
Rated Power Consumption (Per Unit)	Typ.	LED Unit : 1W	
		Buzzer Unit : 1W (※1)	
	Max.	LED Unit : 1.3W	
		Buzzer Unit : 1.3W (※1)	
Standby Power Consumption		LED Unit : none Buzzer Unit : 0.1W Body Unit : none	
Operating Ambient Temperature		-20°C ~ +50°C	
Operating Ambient Humidity		Less than 90% (No condensation)	
Storage Ambient Temperature		-30°C ~ +60°C	
Storage Ambient Humidity		Less than 90% (No condensation)	
Mounting Location		Indoor Only	
Mounting Direction		Upright	
Protection Rating			IP65(IEC 60529) / NEMA TYPE 4X,13
		LJ	IP54(IEC 60529) / NEMA TYPE 4X,13
		KT	IP65(IEC 60529) / NEMA TYPE 4X,13 When using POLE22-□□□□AT : IP54(IEC 60529) / NEMA TYPE 4X,13
Environmental Condition		Upright	
Insulation Resistance		More than 1MΩ at 500VDC between live part and non-current carrying metallic part	
Withstand Voltage		500VAC applied for 1min between live part and non-current carrying metallic part without breaking insulation	
Flashing Rate		60±2 Flashes Per Minute	
Outer Dimensions		Refer to 3.Outer Dimensions	
Conformity Standards		UL 508, CSA-C22.2 No. 14 EMC Directive (EN 61000-6-4, EN 61000-6-2) RoHS Directive (EN IEC 63000) FCC Part 15 Subpart B Class A KC (KN 61000-6-4, KN 61000-6-2)(※2)	
Remarks		(※1)Environmental Condition : Buzzer sound No.2 Continuous beep sound	
		(※2)Except KT, Assembly Model WT	
		Due to the characteristics of the LED elements, a variation in difference of the color tone and brightness of every product may occur	
		UL Recognized Component (File No.E215660)	

Mass (Tolerance ±10%)	LR4	WJ	Body Color	(LED Unit) + [Buzzer Unit]		
			Off-white	0.17kg + (0.035kg)×Tiers + [0.035kg]		
		Silver	0.32kg + (0.035kg)×Tires + [0.035kg]			
		LJ	Off-white	0.46kg + (0.035kg)×Tiers + [0.035kg]		
			Silver	0.61kg + (0.035kg)×Tires + [0.035kg]		
		PJ	Off-white	0.36kg + (0.035kg)×Tiers + [0.035kg]		
	Silver		0.51kg + (0.035kg)×Tires + [0.035kg]			
	LR5	QJ	Off-white	0.42kg + (0.035kg)×Tiers + [0.035kg]		
			WJ	Off-white	0.2kg + (0.04kg)×Tiers + [0.05kg]	
				LJ	Off-white	0.49kg + (0.04kg)×Tiers + [0.05kg]
				PJ	Off-white	0.38kg + (0.04kg)×Tiers + [0.05kg]
		WT	Off-white	0.10kg + (0.04kg)×Tiers + [0.05kg]		
			Silver	0.10kg		
			Black			
		KT	Off-white	0.10kg		
			Silver			
			Black			
	LR6	WJ	Off-white	0.22kg + (0.06kg)×Tiers + [0.06kg]		
			Silver	0.35kg + (0.06kg)×Tires + [0.06kg]		
		LJ	Off-white	0.5kg + (0.06kg)×Tiers + [0.06kg]		
			Silver	0.64kg + (0.06kg)×Tires + [0.06kg]		
		PJ	Off-white	0.4kg + (0.06kg)×Tiers + [0.06kg]		
			Silver	0.53kg + (0.06kg)×Tires + [0.06kg]		
	LR7	QJ	Off-white	0.46kg + (0.06kg)×Tiers + [0.06kg]		
			WJ	Off-white	0.24kg + (0.065kg)×Tiers + [0.07kg]	
				Off-white	0.15kg	
				Silver		
		Black				
KT		Off-white	0.15kg			
	Silver					
	Black					
Buzzer Sound /Typical Frequency		No.1	Rapid intermittent beep / 3378Hz			
		No.2	Continuous beep sound / 3378Hz			
		No.3	Rapid Hi-Lo / 2016Hz&3012Hz			
		No.4	Sweep sound / 1000Hz-4032Hz			
Setting		Depending on DIP Switch Settings Refer to the 6.Buzzer Pattern Set-up				
Sound Pressure Level		LR4	Typ.85dB	Sound Reduction Approx. -10dB Depending on DIP Switch Settings Refer to the 6.Buzzer Pattern Set-up		
		LR5	Typ.85dB			
		LR6	Typ.88dB			
		LR7	Typ.90dB			
Environmental Condition		Buzzer sound No.4 was measured from the total circumference of the Buzzer Unit at 1m				
Compatible Unit (Optional)		LED Unit Model		Buzzer Unit Model		
		LR4	LR4-E-R,Y,G,B,C,RZ,YZ,GZ,BZ	LR4-BW,BU		
		LR5	LR5-E-R,Y,G,B,C,RZ,YZ,GZ,BZ	LR5-BW,BU,BK		
		LR6	LR6-E-R,Y,G,B,C,RZ,YZ,GZ,BZ,MZ	LR6-BW,BU		
LR7	LR7-E-R,Y,G,B,C	LR7-BW,BU,BK				

2.Model

2.1.1 Model Number Configuration



2.1.2 Model Number Example

Assembly Model	LR4-302PJBW-RYGZ ●φ40 ●LED Unit 3Tiers ●24V DC ●Pole Mount with Circular Bracket/Cable ●With Flashing/Buzzer ●Off-white ●(From top to bottom) Red·Amber·Green ●Clear Globe
	LR4-102LJNU-R ●φ40 ●LED Unit 1Tier ●24V DC ●Pole Mount with L-bracket/Cable ●No Flashing/Buzzer ●Silver ●(From top to bottom) Red ●Color Globe
	LR5-302QJNW-RYG ●φ50 ●LED Unit 3Tiers ●24V DC ●Pole Mount with Folding Bracket/Cable ●No Flashing/Buzzer ●Off-white ●(From top to bottom) Red·Amber·Green ●Color Globe
Unit Model (Body Unit)	LR6-02WJNW ●φ60 ●24V DC ●Direct Mount/Cable ●No Flashing/Buzzer ●Off-white
	LR7-02WTNK ●φ70 ●24V DC ●Direct Mount/Terminal ●No Flashing/Buzzer ●Black

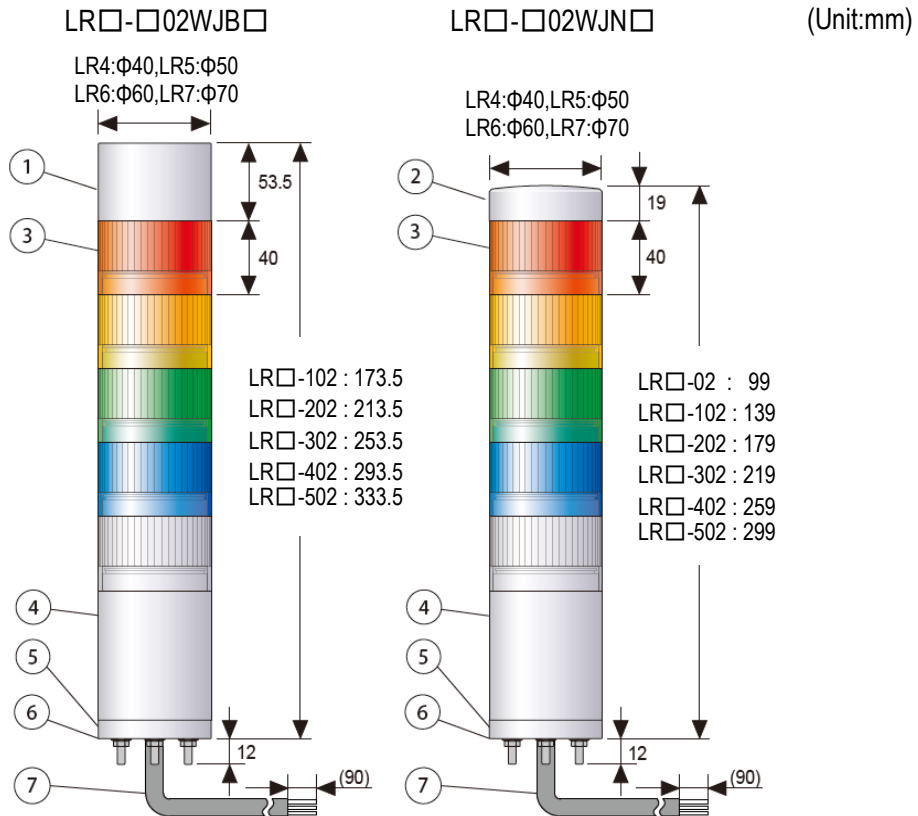
2.2. UL Registered Model

LR4	LR4-02WJB, LR4-02WJN, LR4-02WJN, LR4-02LJB, LR4-02LJN, LR4-02LJN, LR4-02PJB, LR4-02PJB, LR4-02PJB, LR4-02PJB, LR4-02QJB, LR4-02QJN, LR4-02QJN
LR5	LR5-02WJB, LR5-02WJN, LR5-02WJN, LR5-02LJB, LR5-02LJN, LR5-02LJN, LR5-02PJB, LR5-02PJB, LR5-02PJB, LR5-02PJB, LR5-02WTB, LR5-02WTN, LR5-02KTN
LR6	LR6-02WJB, LR6-02WJN, LR6-02WJN, LR6-02LJB, LR6-02LJN, LR6-02LJN, LR6-02PJB, LR6-02PJB, LR6-02PJB, LR6-02QJB, LR6-02QJN, LR6-02QJN
LR7	LR7-02WJB, LR7-02WJN, LR7-02WJN, LR7-02WTN, LR7-02KTN

3.Outer Dimensions

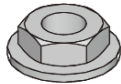

3.1 LR□-□02WJ□□

■ WJ Direct Mount with Cable



- Maximum Board Thickness : 7
- Cable : UL2464 (φ7.5)
 Signal Wire & Power Supply Wire : AWG24
 Cable Length : Off-white(1300)
 Silver(3300)

Number	Name	Material	UL Flammability
1	Buzzer Case	PC	V-2
2	Head Cover	PC	V-2
3	Globe	PC	V-2
4	Body	PC	V-2
5	Direct Mount Bracket	PC	V-2
6	Waterproof Packing	Silicone Rubber	-
7	Cable	PVC	VW-1

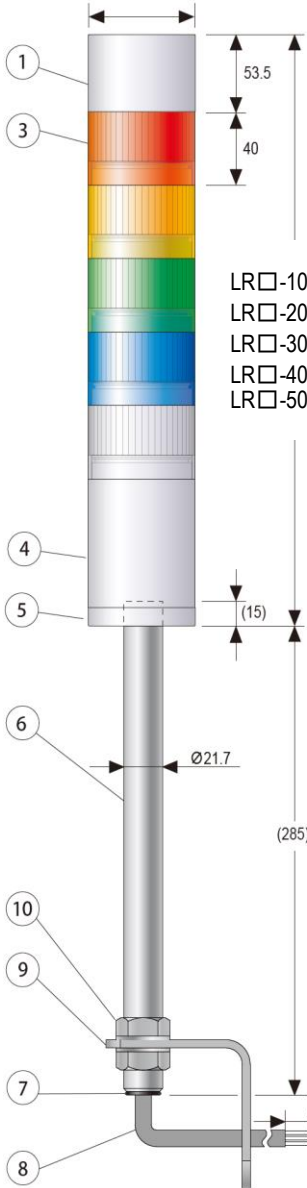
Accessory	
LR4.5 - WJ Hexagon Nut with Flange (M3)  3pcs.	LR6.7 - WJ Hexagon Nut with Flange (M4)  3pcs.

3.2 LR□-□02LJ□□

■ LJ L-bracket and Pole Mount with Cable

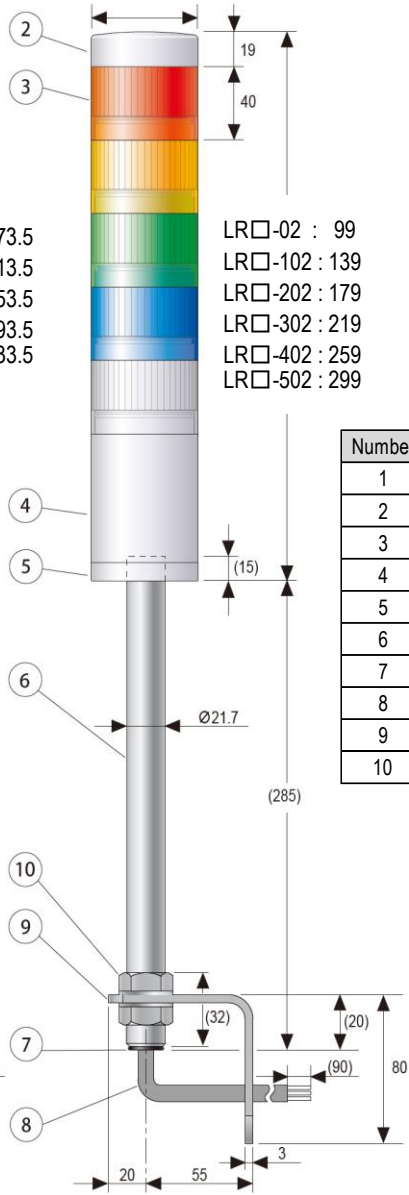
LR□-□02LJB□

LR4:Φ40,LR5:Φ50
LR6:Φ60,LR7:Φ70



LR□-□02LJN□

LR4:Φ40,LR5:Φ50
LR6:Φ60,LR7:Φ70



(Unit:mm)

LR□-102 : 173.5
LR□-202 : 213.5
LR□-302 : 253.5
LR□-402 : 293.5
LR□-502 : 333.5

LR□-02 : 99
LR□-102 : 139
LR□-202 : 179
LR□-302 : 219
LR□-402 : 259
LR□-502 : 299

Number	Name	Material	UL Flammability
1	Buzzer Case	PC	V-2
2	Head Cover	PC	V-2
3	Globe	PC	V-2
4	Body	PC	V-2
5	Pole Bracket	PC	V-1
6	Pole	AL	-
7	Rubber Bushing	EPR	-
8	Cable	PVC	WW-1
9	L-bracket	Steel	-
10	Hexagon Nut M22	SUM	-

- Cable : UL2464 (Φ7.5)
- Signal Wire & Power Supply Wire : AWG24
- Cable Length : Off-white(1000)
- Silver(3000)

3.3 LR□-□02PJ□□

■ **PJ** Circular Bracket and Pole Mount with Cable

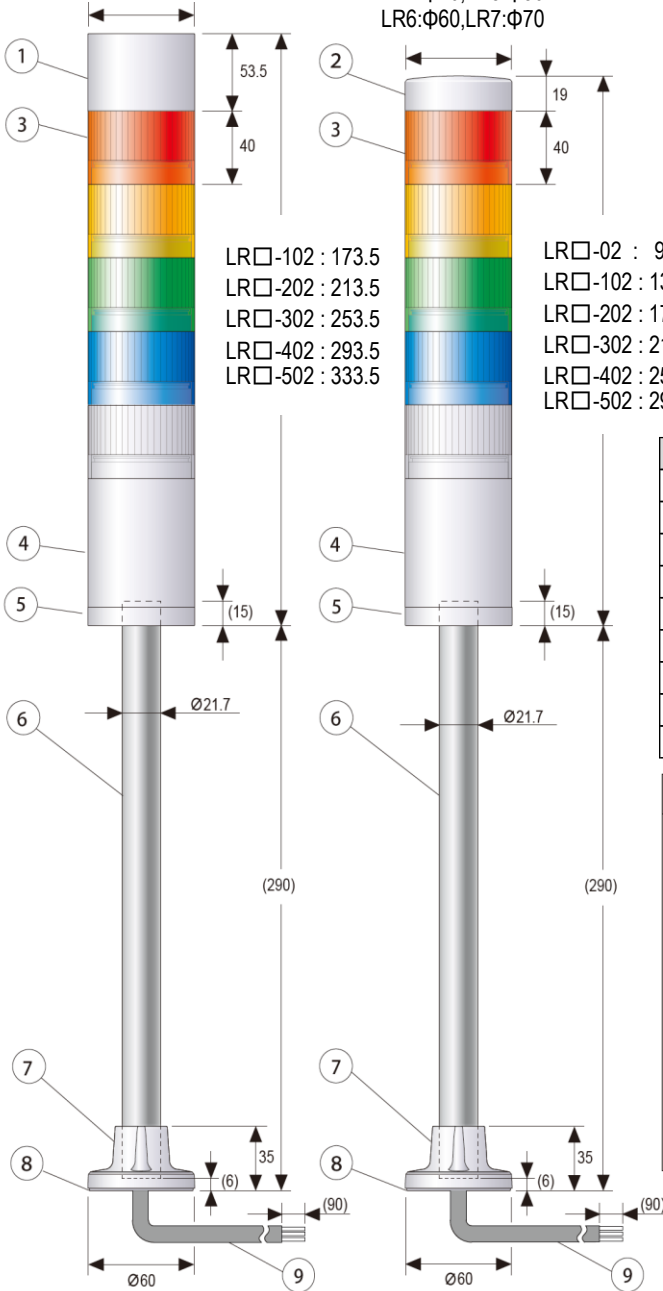
LR□-□02PJB□

LR4:φ40,LR5:φ50
LR6:φ60,LR7:φ70

LR□-□02PJN□

LR4:φ40,LR5:φ50
LR6:φ60,LR7:φ70

(Unit:mm)



LR□-102 : 173.5
LR□-202 : 213.5
LR□-302 : 253.5
LR□-402 : 293.5
LR□-502 : 333.5

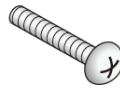
LR□-02 : 99
LR□-102 : 139
LR□-202 : 179
LR□-302 : 219
LR□-402 : 259
LR□-502 : 299

Number	Name	Material	UL Flammability
1	Buzzer Case	PC	V-2
2	Head Cover	PC	V-2
3	Globe	PC	V-2
4	Body	PC	V-2
5	Pole Bracket	PC	V-1
6	Pole	AL	-
7	Circular Bracket	PC	5VA
8	Waterproof Packing	Silicone Rubber	-
9	Cable	PVC	VW-1

Accessory


LR4.5.6 - PJ

Cross Recessed
Pan Head Screw (M4x20)



3pcs.

Hexagon Nut with Flange (M4)



3pcs.

- Cable : UL2464 (φ7.5)
- Signal Wire & Power Supply Wire : AWG24
- Cable Length : Off-white(1000)
- Silver(3000)

3.4 LR□-□02QJ□□

■ **QJ** Folding Bracket and Pole Mount with Cable

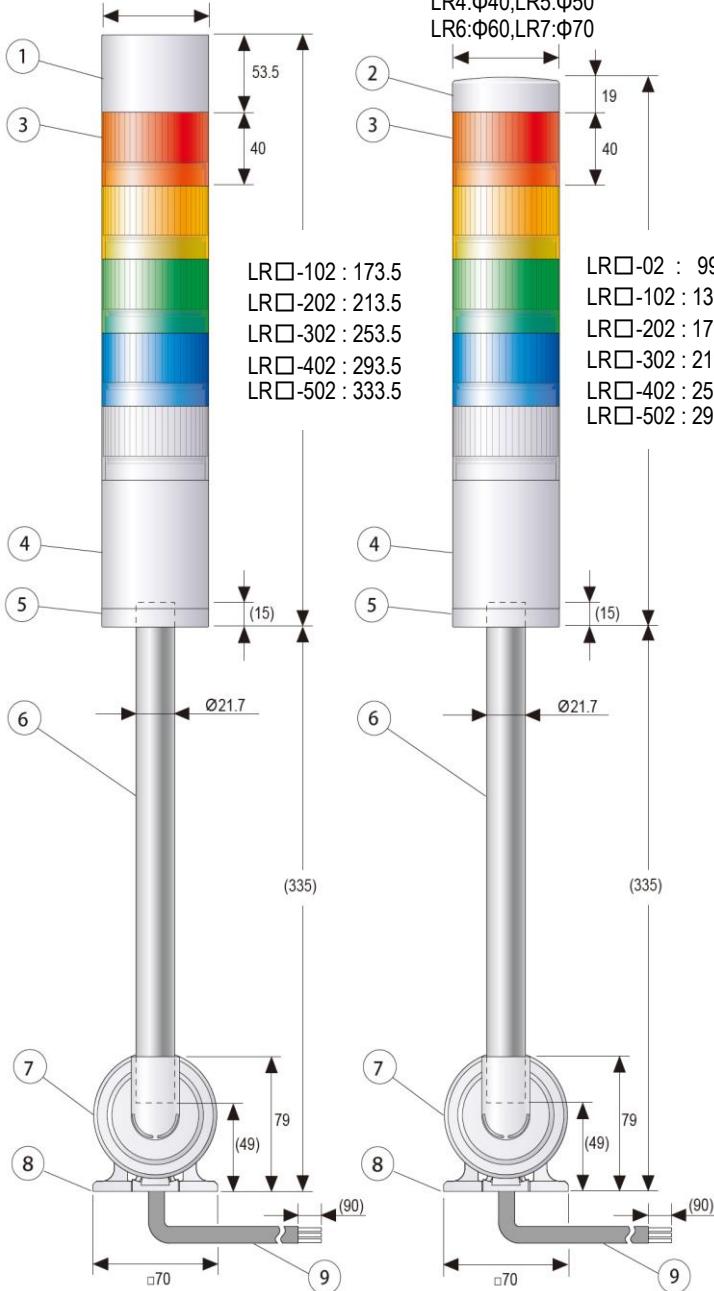
LR□-□02QJB□

LR4:φ40,LR5:φ50
LR6:φ60,LR7:φ70

LR□-□02QJN□

LR4:φ40,LR5:φ50
LR6:φ60,LR7:φ70

(Unit:mm)



Number	Name	Material	UL Flammability
1	Buzzer Case	PC	V-2
2	Head Cover	PC	V-2
3	Globe	PC	V-2
4	Body	PC	V-2
5	Pole Bracket	PC	V-1
6	Pole	AL	-
7	Folding Bracket	PC	V-2
8	Waterproof Packing	CR	-
9	Cable	PVC	VW-1

Accessory

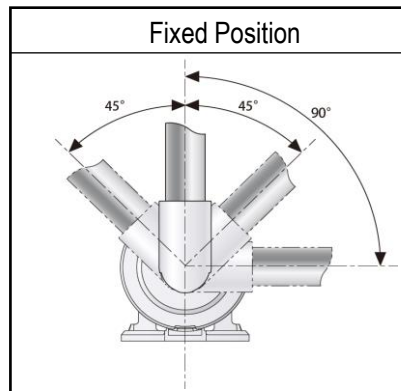
LR4-6 - QJ

Cross Recessed Binding Head Screw (M5x25)

4pcs.

Hexagon Nut with Flange (M5)

4pcs.



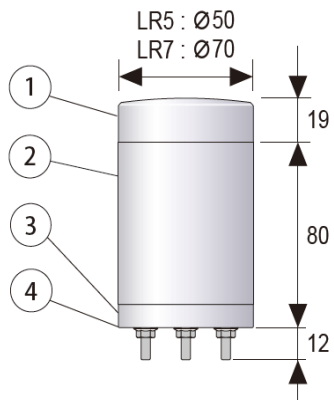
- Cable : UL2464 (φ7.5)
- Signal Wire & Power Supply Wire : AWG24
- Cable Length : Off-white(1000)

3.5 LR□-02WTN□

■ Unit Model(Body Unit)



WT Direct Mount with Terminal Block

(Unit:mm)



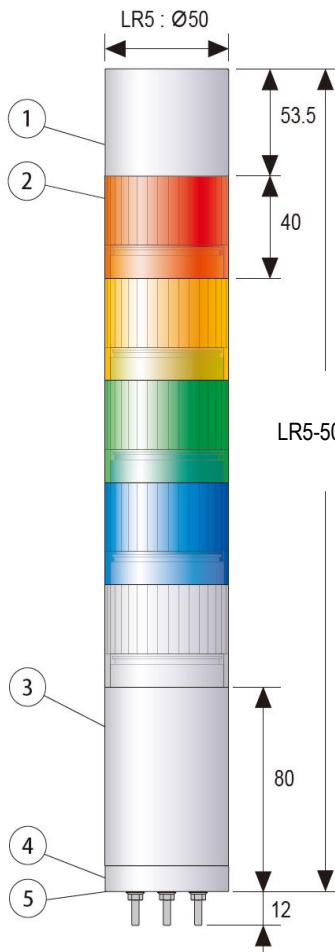
• Maximum Board Thickness : 7

Number	Name	Material	UL Flammability
1	Head Cover	PC	V-2
2	Body	PC	V-2
3	Direct Mount Bracket	PC	V-2
4	Waterproof Packing	Silicone Rubber	-

Accessory	
LR5 - WT Hexagon Nut with Flange (M3)  3pcs.	LR7 - WT Hexagon Nut with Flange (M4)  3pcs.


3.6 LR5-502WTBW

■ Assembly Model



• Maximum Board Thickness : 7

Number	Name	Material	UL Flammability
1	Buzzer Case	PC	V-2
2	Globe	PC	V-2
3	Body	PC	V-2
4	Direct Mount Bracket	PC	V-2
5	Waterproof Packing	Silicone Rubber	-

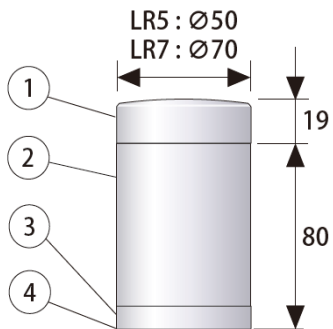
Accessory	
LR5 - WT Hexagon Nut with Flange (M3)  3pcs.	

3.7 LR□-02KTN□

■ Unit Model(Body Unit)

KT Mounting Bracket with knock-outs and Terminal Block

(Unit:mm)

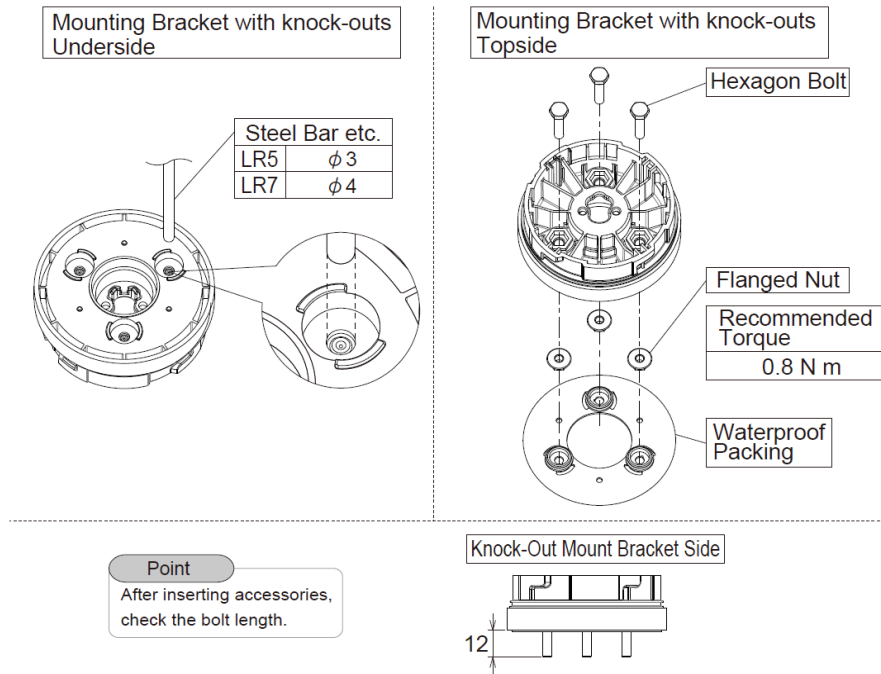


Number	Name	Material	UL Flammability
1	Head Cover	PC	V-2
2	Body	PC	V-2
3	Mounting Bracket with Knock-outs	PC	V-2
4	Waterproof Packing	Silicone Rubber	-

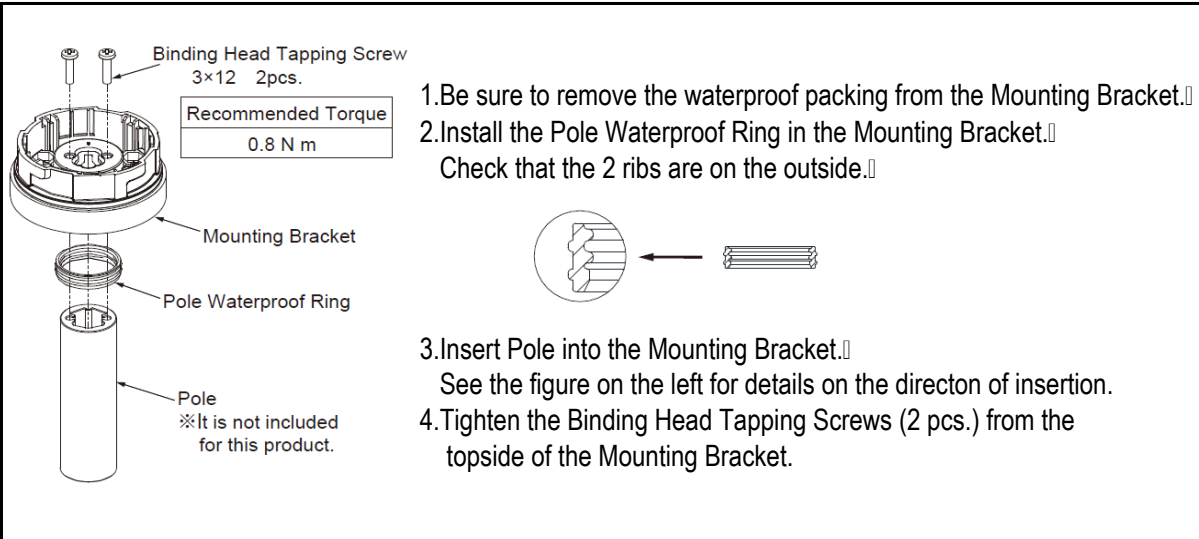
Accessory	
<p>LR5 - KT</p> <p>Hexagon Bolt (M3 x 20)</p> <p>3 pcs.</p> <p>Hexagon Nut with Flange (M3)</p> <p>6 pcs.</p> <p>Pole Waterproof Ring</p> <p>1 pc.</p>	<p>LR7 - KT</p> <p>Hexagon Bolt (M4 x 20)</p> <p>3 pcs.</p> <p>Hexagon Nut with Flange (M4)</p> <p>6 pcs.</p> <p>Pole Waterproof Ring</p> <p>1 pc.</p>

KT Direct Mount

1. Place the Mounting Bracket on the even surface. (Unit:mm)
2. Be sure to remove the waterproof packing from the Mounting Bracket.
3. Knock out the three knock-out holes with a steel punch, etc.
4. Insert the hexagon bolt into the knockout holes and affix with the flanged nuts.
5. Insert the waterproof packing.

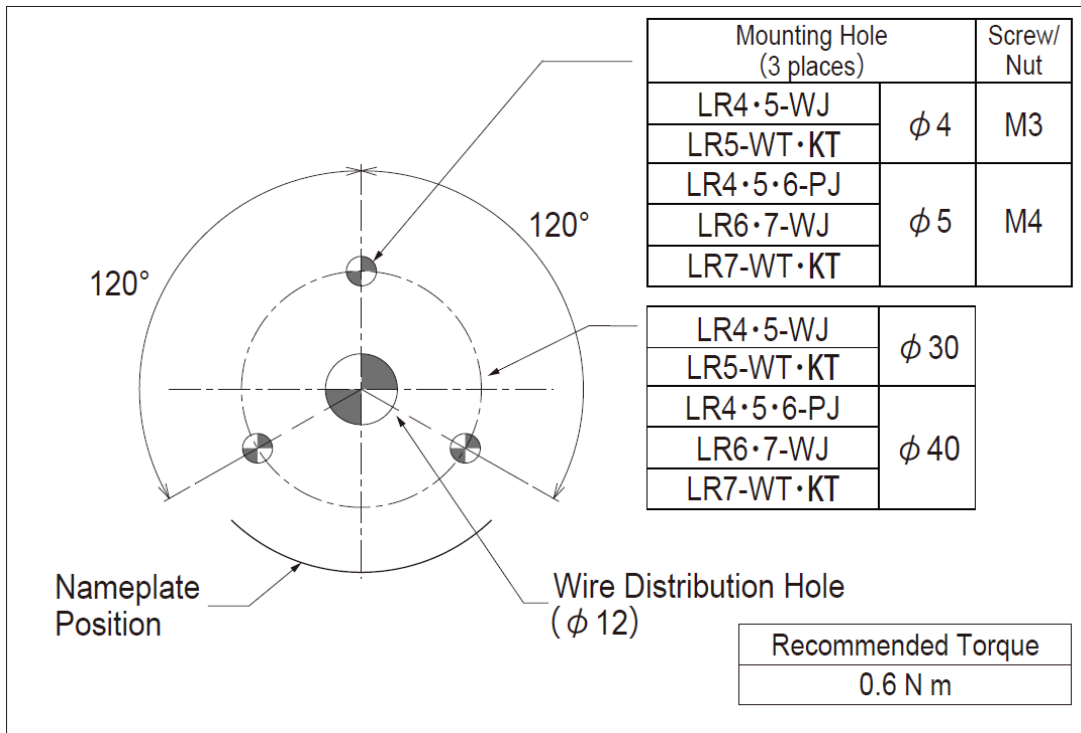


KT Pole Installation

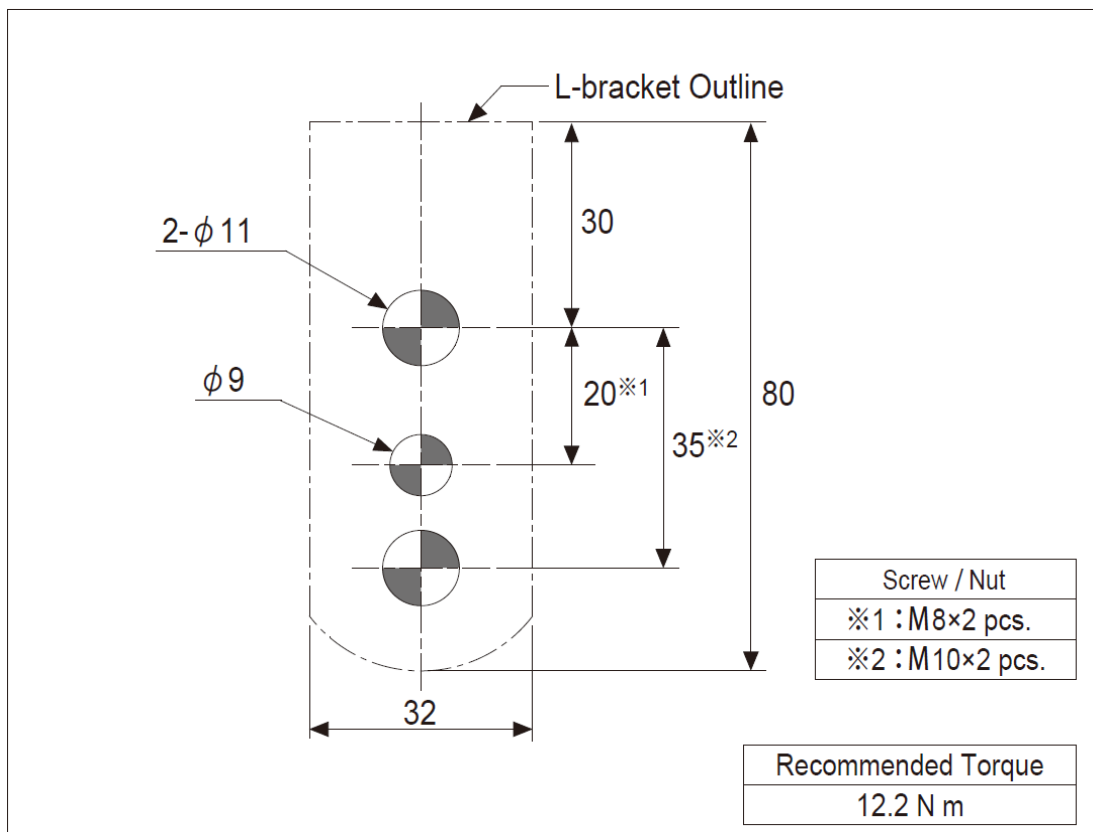


4. Mounting Dimensional Drawing

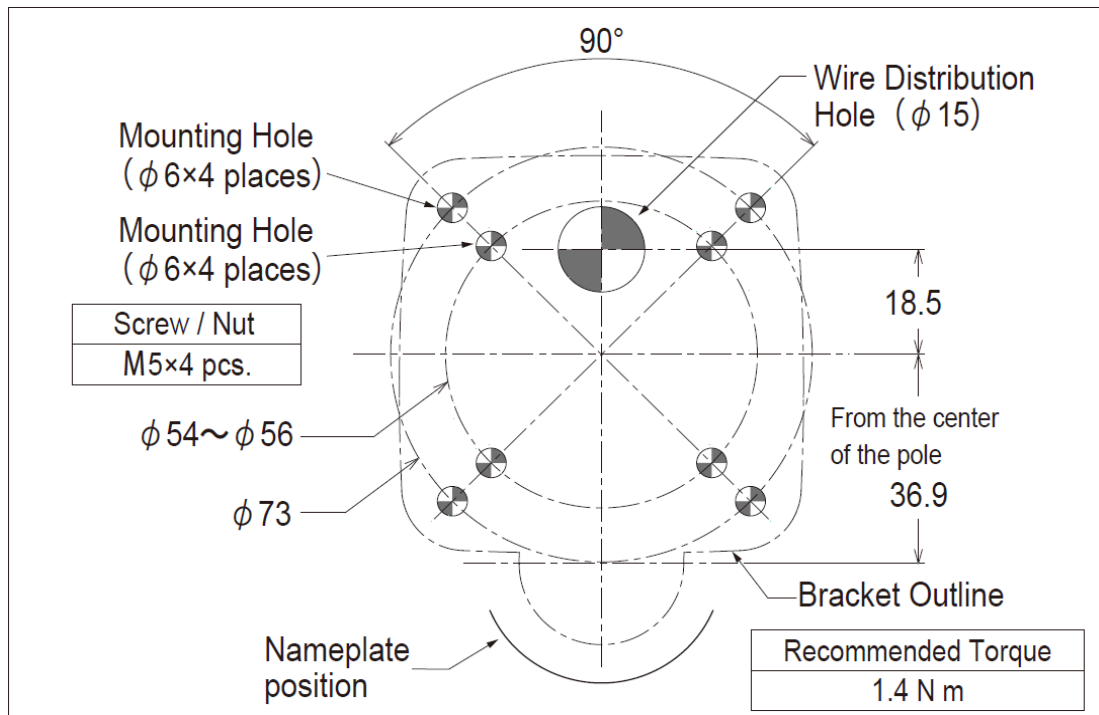
4.1 [WJ] · [PJ] · [WT] · [KT] Mounting Dimensional Drawing (Unit: mm)



4.2 [LJ] Mounting Dimensional Drawing (Unit: mm)

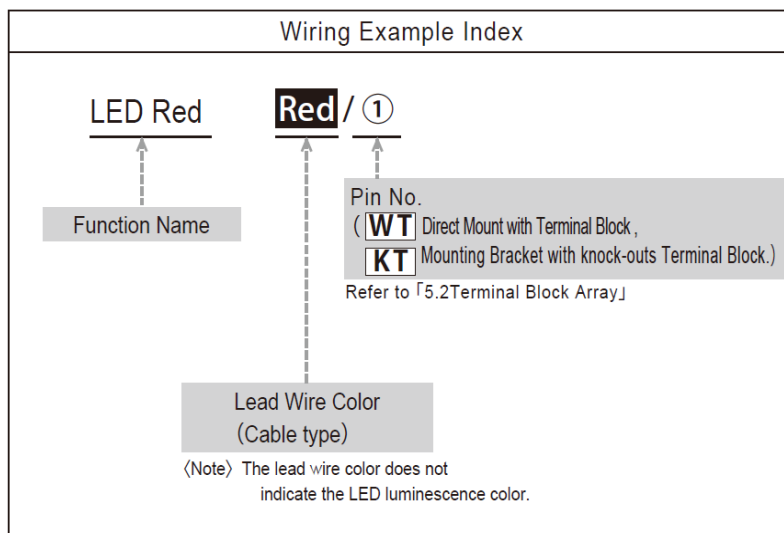


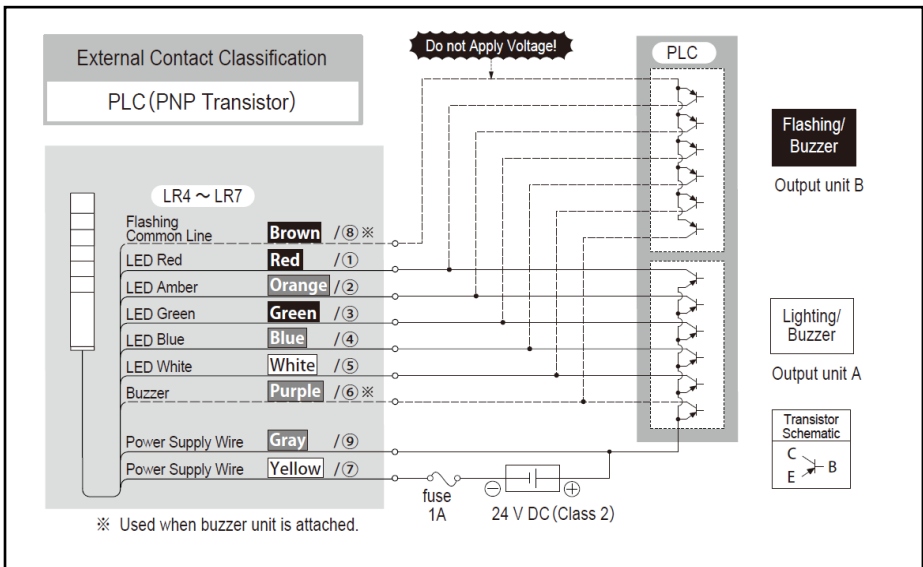
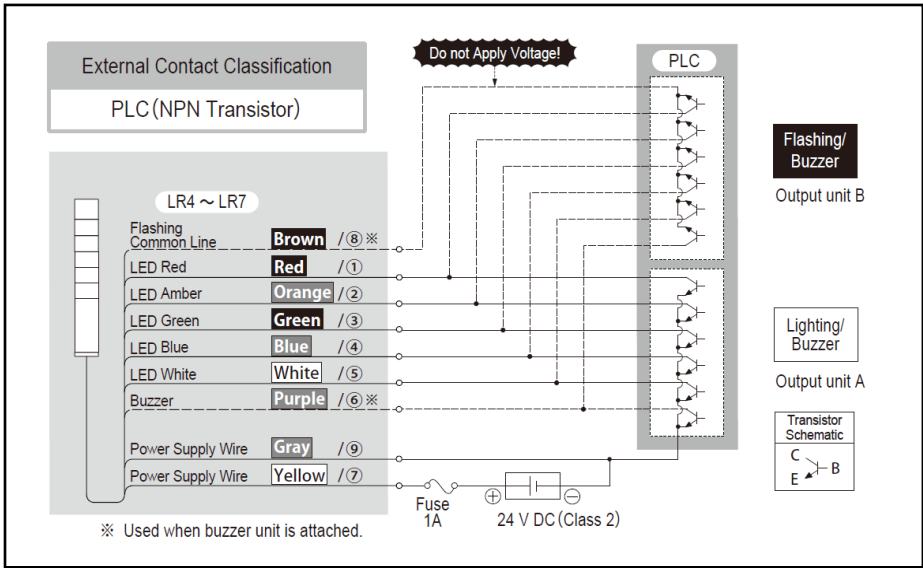
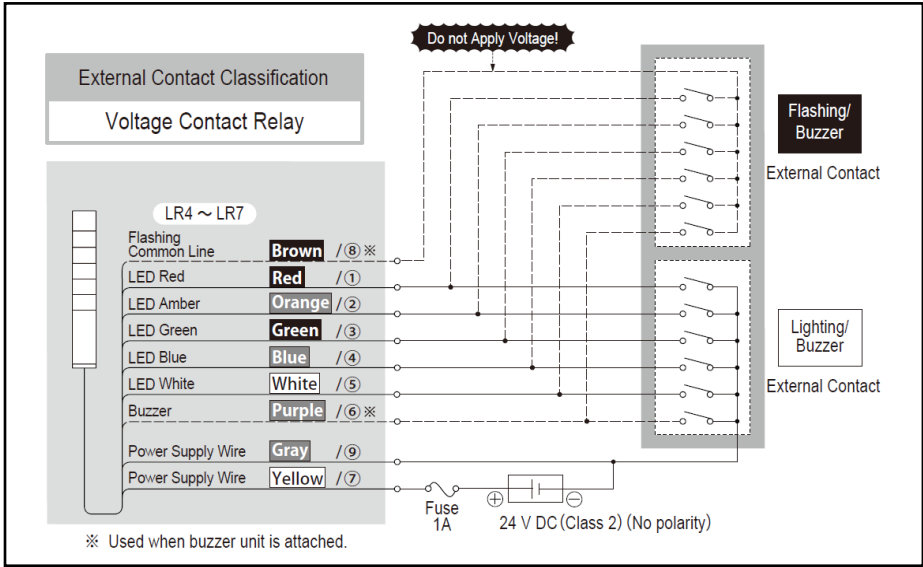
4.3 [QJ] Mounting Dimensional Drawing (Unit: mm)



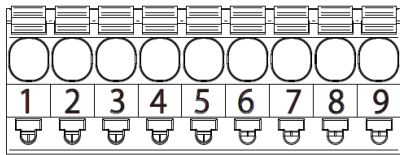
5. Wiring Diagram

5.1 Wiring Example





5.2 Terminal Block Array



1	Red	LED-R
2	Orange	LED-Y
3	Green	LED-G
4	Blue	LED-B
5	White	LED-C
6	Gray	Buzzer
7	Yellow	Power Supply Wire (Common)
8	Gray	Flashing Common
9	Black	Power Supply Wire (Signal-line Side)

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.

5.3 External Contact Capacity

Is : Current Capacity Vs : Withstand Voltage IL : Leakage Current

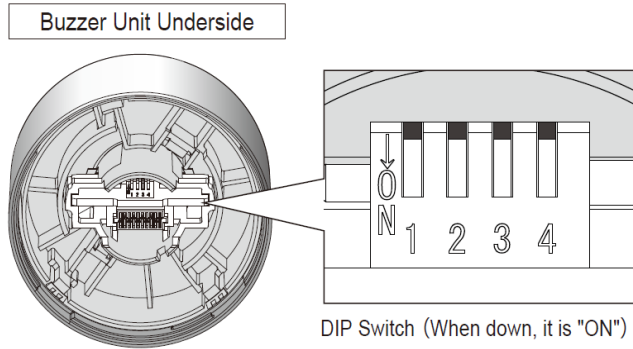
	Recommended contact capacity
LED Unit (1 Tier)	Is ≥ 100mA Vs ≥ 35V DC
Buzzer	Is ≥ 300mA Vs ≥ 35V DC
Power Supply	Is ≥ 500mA Vs ≥ 35V DC
Leakage Current	IL ≤ 0.1mA

■ Recommended Fuse

Fuse Rated Current	250 V / 1 A (5x20mm Fast-Acting Glass Body Cartridge Fuse)
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6. Buzzer Pattern Set-up

The **B** Flashing/Buzzer type includes a set up for four different patterns and sound reduction. Set up the preferred pattern, using the DIP Switch after removing the buzzer unit.



DIP Switch (When down, it is "ON")
Switch is shown by ■.

■ Setup Table

Buzzer Sound	DIP Switch		Sound Pattern
	1	2	
No.1	OFF 	OFF 	Rapid Intermittent Beep
No.2	ON 	OFF 	Continuous Beep Sound
No.3	OFF 	ON 	Rapid Hi-Lo
No.4	ON 	ON 	Sweep Sound

DIP Switch	Volume
3 OFF 	Normal
3 ON 	Sound Reduction

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