

ø22 YW Series Emergency Stop Switches

Emergency Stop Switches Specifications

Standards

Applicable Standards	Mark	File No. or Organization
UL508 CSA C22.2 No.14		UL/c-UL Listed File No.E68961
EN60947-5-5		TÜV SÜD
		EU Low Voltage Directive
GB14048.5		CCC No. 2006010305196875

Specifications

Operating temperature	-20 to +55°C (no freezing)
Operating humidity	45 to 85% RH (no condensation)
Storage temperature	-45 to +80°C (no freezing)
Storage humidity	95% RH maximum
Degree of Protection	From panel front: IP65 (IEC 60529) Terminal: IP20 (IEC 60529)
Insulation Resistance	100 MΩ
Dielectric Strength	Contact block: 2,500V, 1 minute Pilot light: 2,000V, 1 minute
Vibration Resistance	Operating extremes / Damage limits: 10 to 500 Hz, amplitude 0.35 mm, acceleration 50 m/s ²
Shock Resistance	Operating extremes: 150 m/s ² (15G) Damage limits: 1,000 m/s ² (100G)
Mechanical Life (minimum operations)	250,000 (single contact block)
Electrical Life (minimum operations)	100,000 (single contact block)

Contact Ratings (Contact Block)

Rated Insulation Voltage		600V			
Rated Thermal Current		10A			
Operating Voltage		24V	120V	240V	380V
AC 50/60 Hz	Resistive Load (AC-12)	10A	10A	6A	2A
	Inductive Load (AC-15)	10A	6A	3A	1.9A
DC	Resistive Load (DC-12)	8A	2.2A	1.1A	—
	Inductive Load (DC-13)	4A	1.1A	0.55A	—

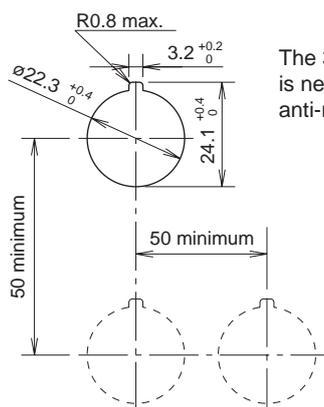
LED Lamp Ratings

Part No.	Rated Voltage	Rated Current
LSED-6R	6V AC/DC	10 mA
LSED-1R	12V AC/DC	14 mA
LSED-2R	24V AC/DC	14 mA
LSED-HR	110/120V AC/DC	5.5 mA
LSED-M3R	230/240V AC/DC	2.7 mA

Incandescent Lamp Ratings

Part No.	Rated Voltage	Ratings
LS-T6	6V AC/DC	6.3V 1W
LS-T8	12V AC/DC	18V 1W
LS-T3	24V AC/DC	30V 1W

Mounting Hole Layout



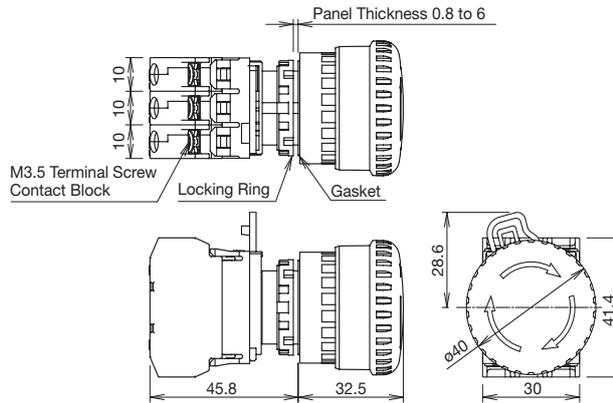
The 3.2-mm-wide key recess is necessary when the anti-rotation ring is used.

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Pushlock Pull/Turn Reset

Style	Contact	Part No.	Button Color Code
ø40mm Mushroom  	1NC	YW1B-V4E01R	Red only
	2NC	YW1B-V4E02R	
	3NC	YW1B-V4E03R	
	1NO-1NC	YW1B-V4E11R	
	1NO-2NC	YW1B-V4E12R	
	2NO-1NC	YW1B-V4E21R	

Dimensions



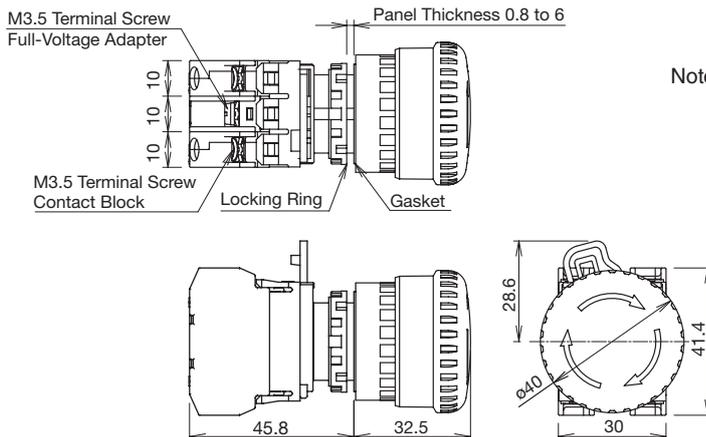
Note: When pressed, the button is locked in the depressed position, and is reset when either pulled or turned clockwise.

LED/Incandescent Illuminated Pushlock Pull/Turn Reset

Style	Lamp	Contacts	Part No.	③ Operating Voltage Code	Lens Color Code
ø40mm Mushroom  	Without Lamp	1NC	YW1L-V4E01Q0R	0 (without lamp) 250V AC/DC max.	Red only
		2NC	YW1L-V4E02Q0R		
		1NO-1NC	YW1L-V4E11Q0R		
	LED	1NC	YW1L-V4E01Q③R	2 (6V AC/DC) 3 (12V AC/DC) 4 (24V AC/DC) H (110/120V AC/DC) M3 (230/240V AC/DC)	
		2NC	YW1L-V4E02Q③R		
		1NO-1NC	YW1L-V4E11Q③R		
	Incandescent	1NC	YW1L-V4E01Q③R	5 (6V AC/DC) 6 (12V AC/DC) 7 (24V AC/DC)	
		2NC	YW1L-V4E02Q③R		
		1NO-1NC	YW1L-V4E11Q③R		

Note: Specify an operating voltage code in place of ③ in the Part No.

Dimensions

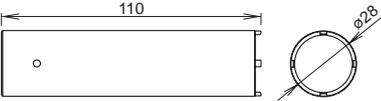
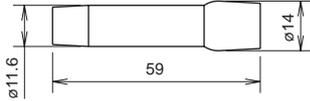
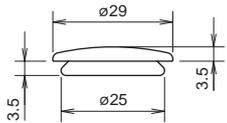
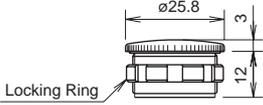
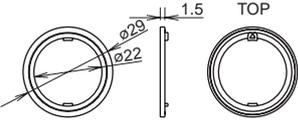
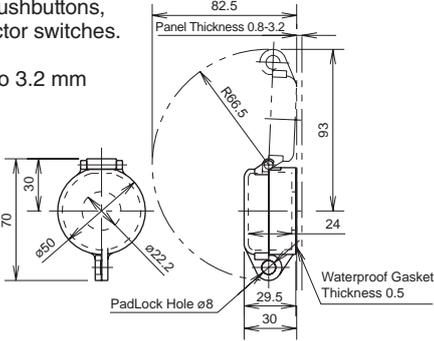


Note: When pressed, the button is locked in the depressed position, and is reset when either pulled or turned clockwise.

All dimensions in mm.

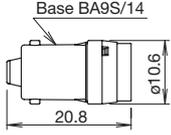
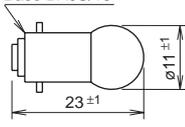
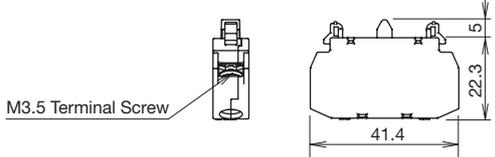
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Accessories

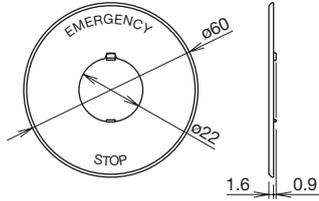
Name & Shape	Part No.	Description & Dimensions (mm)	Package Quantity
	MW9Z-T1	Metallic tool used to tighten the plastic locking ring when installing the YW series control unit on a panel. 	1
	OR-55	Made of rubber. Used for replacing lamps. 	1
	OB-31	Used for plugging unused mounting holes in the panel. Color: Black 	5
	LW9Z-BM	Used for plugging unused mounting holes in the panel. Weight: Approx. 18g 	1
	HW9Z- RL	Prevents rotation of switches in panel. Mainly used with selector switches when no nameplate is used. With waterproof gasket (IP65). Made of plastic (black). Applicable panel thickness: 1.2 to 4.5 mm 	10
	HW9Z-KL1	Plastic hinged cover to protect pushbuttons, illuminated pushbuttons, or selector switches. Degree of protection: IP65. Applicable panel thickness: 0.8 to 3.2 mm 	1

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Maintenance Parts

Name & Shape	Part No.	Description & Dimensions (mm)		Package Quantity	
	LSED-6R	6V AC/DC		1	
	LSED-1R	12V AC/DC			
	LSED-2R	24V AC/DC			
	LSED-HR	110/120V AC/DC			
	LSED-M3R	230/240V AC/DC			
	LS-T6P	6.3V, 1W	One pack contains 100 incandescent lamps.		100
	LS-T8P	18V, 1W			
	LS-T3P	30V, 1W			
	YW-E10	Color: blue Contact: 1NO		10	
	YW-E01	Color: reddish purple Contact: 1NC			

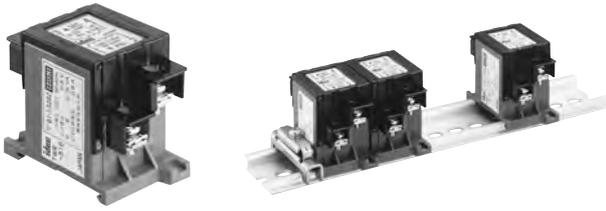
Nameplate (for ø22 Emergency Stop Switches)

Description	Legend	Material	Part No.	Package Quantity	Dimensions (mm)
HWAV	Blank	Plastic (yellow) 1.5 mm thick	HWAV-0-Y	1	
	EMERGENCY STOP		HWAV-27-Y	1	

• Legend "Emergency Stop" is indicated outside a ø44mm circle.

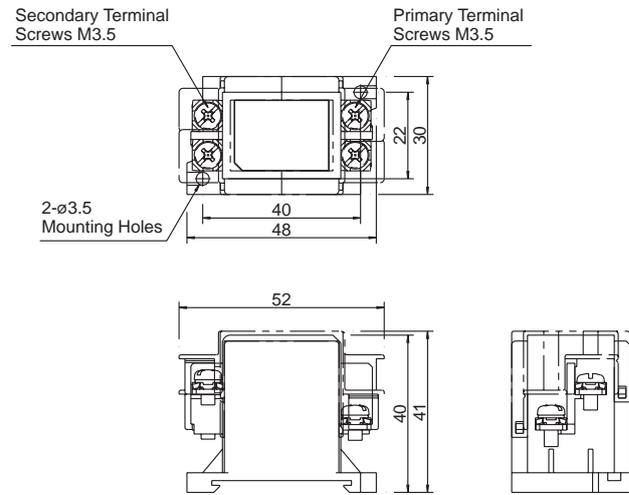
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Din Rail Mount Transformer



Primary Voltage (50/60 Hz)	Part No.	Applicable Lamp Rating
110V AC	TWR516	One full voltage illuminated unit containing LED lamp LSED-6 (6V AC/DC) or incandescent lamp LS-T6 (6.3V)
115V AC	TWR5116	
120V AC	TWR5126	
220V AC	TWR526	
230V AC	TWR5236	
240V AC	TWR5246	
380V AC	TWR5386	
440V AC	TWR546	
480V AC	TWR5486	

Dimensions (mm)



Note: Finger-safe terminal cover is supplied with the transformer.

Safety Precautions

- Turn off the power to the YW series control units before starting installation, removal, wiring, maintenance, and inspection of the products. Failure to turn power off may cause electrical shocks or fire hazard.
- To avoid burning your hand, use the lamp holder tool when replacing lamps.
- For wiring, use wires of a proper size to meet the voltage and current requirements. Tighten the M3.5 terminal screws to a tightening torque of 1.0 to 1.3 N·m. Failure to tighten the terminal screws may cause overheating and fire.

Instructions

Panel Mounting

- Remove the contact block from the operator. Remove the locking ring from the operator. Insert the operator into the panel cut-out from the front, tighten the locking ring from the back, then install the contact block to the operator.

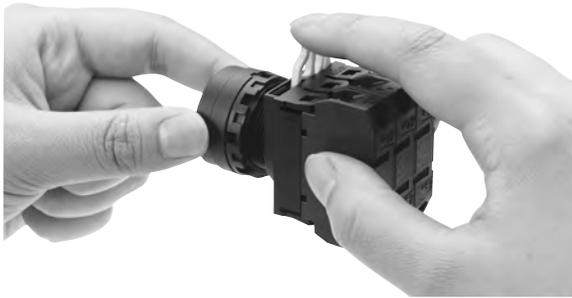


① Pull up the locking lever.
② Turn the lever to the left.

③ Pull out the contact block.

Removing and Installing the Contact Block

- To remove the operator from the contact block, pull up the locking lever and turn it to the left. Then the operator can be pulled out.
- To reinstall, place the TOP marking on the operator and the idec marking on the contact block mounting adapter in the same direction, and insert the operator into the contact block mounting adapter. Then turn the locking lever to the right.

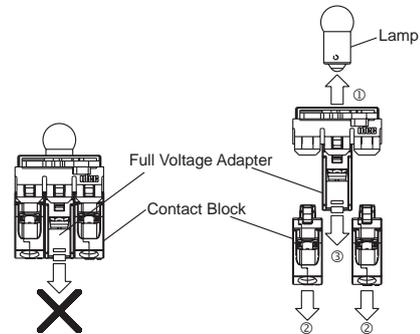


Removing Contact Blocks and Full Voltage Adapter

Insert a flat screwdriver between the latch and contact block mounting adapter, and disengage the latch.



Make sure to remove the lamp and contact blocks before removing the full voltage adapter.



Notes for Panel Mounting

Use the optional locking ring wrench (MW9Z-T1) to mount the operator onto a panel. Tightening torque must not exceed 2.0 N·m. Do not use pliers. Excessive tightening will damage the locking ring.

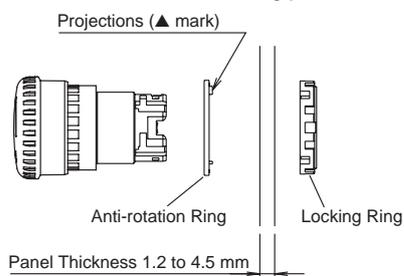
Instructions

Tightening Torque for Terminal Screws

Tighten terminal screws to a torque between 1.0 and 1.3 N·m.

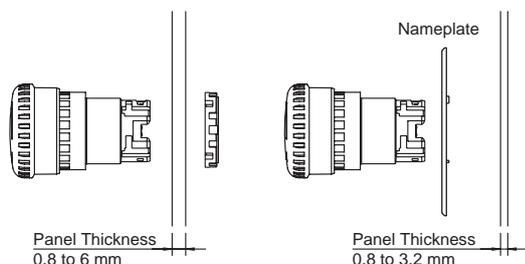
Anti-rotation Ring and Mounting Panel

Turn the TOP marking on the operator and the ▲ mark on the anti-rotation ring to the recess on the mounting panel.



Mounting Panel Thickness

The mounting panel must be 0.8 to 6.0 mm in thickness. When optional accessories are added, the applicable panel thickness changes as shown below.



Contact Bounce

When the button is reset by pulling or turning, the NC main contacts will bounce. When pressing the button, the NO monitor contacts will bounce.

When designing a control circuit, take the contact bounce time into consideration (reference value: 20 ms).

Nameplate

When anti-rotation is not required, remove the projection from the nameplate using pliers.

Handling

Do not expose the switch to excessive shock and vibration, otherwise the switch may be deformed or damaged, causing malfunction or operation failure.

LED Illumination

LED lamps consist of semiconductors. If the applied voltage exceeds the rated voltage, LED elements deteriorate due to overheating, resulting in significant decrease in luminance, hue change, or failure of lighting. Also, if extraneous noise, transient voltage, or transient current is applied to the circuit, similar effects will be caused. When using LED lamps, observe the following instructions.

Rated Voltage

The LED illuminated units are rated at 6V, 12V, 24V, 110V, or 230/240V AC/DC, and can be used within $\pm 10\%$ the rated voltage of either AC or DC, except the 230/240V AC/DC can be used on 250V AC/DC maximum.

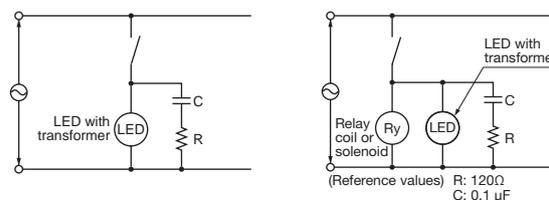
DC Power

- Switching power supply**
Regulated voltage from switching power supply is best suited. Make sure to use within the rated voltage of the LED lamp.
- Rechargeable battery**
Note that the battery voltage may exceed the rated voltage of the LED lamp while the battery is being charged and immediately after the charging is complete. Be sure to use the LED lamp on a voltage of $\pm 10\%$ the rated voltage, except the 230/240V AC/DC on 250V AC/DC maximum.
- Full-wave rectification**
Since the LED lamp is AC/DC compatible, a diode bridge for rectification is not necessary. If the LED lamp is used on a full-wave rectification current through a diode bridge, the rectifier diodes will reduce the voltage, resulting in lower luminance.
- Single-phase half-wave rectification**
This is not suitable for the power source of LED lamps. Use constant-voltage DC power.

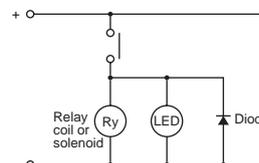
Noise

LED elements deteriorate due to extraneous noise, resulting in significant decrease in luminance, hue change, or failure of lighting. When such effects are anticipated, take a protection measure shown below, such as RC elements or a surge absorber.

[Protection Example 1] For AC circuit



[Protection Example 2] For DC circuit

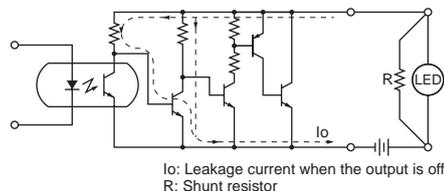


Countermeasures against Dim Lighting

- Leakage currents through the transistors or a contact protection circuit may cause the LED lamp to illuminate dimly even when the output is off.
- When the LED lamp is illuminated by a transistor output, take the following measure.

[Circuit Example]

Connect shunt resistor R in parallel with the LED lamp.



I_0 : Leakage current when the output is off
R: Shunt resistor

Ordering Information

- When ordering, specify the Part No. and quantity.
- Replacement contact blocks are supplied in a package containing 10 pieces.