

## LED-Lit Push-Button Switches and Indicators

# PS5 Series

Slight clicking sensation. Crystal finish button design. LED-lit, compact, low-cost push-button switches and indicators.



- Excellent button design
- Wide range of models
- Replaceable high-intensity LED lamp
- Built-in LED current-limiting resistor
- Compact, space-saving
- Diverse wiring methods
- Flexible panel layout Simple mounting
- UL/CSA certification  
(excluding square 2-section LED-lit, 2-color single-section LED-lit, rectangular 2-color single-section LED-lit, square large dimpled button types).


















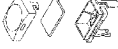




▲  
CLICK

# LIST OF MODELS

## ● Single-section LED-lighting


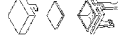



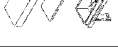


(unit: mm)

Shape	Set Model No. <small>Note 1</small>		Individual Model No. <small>Note 2</small>			Panel output dimensions	External dimensions
	Push-button/LED lamp/switch	Push-button unit	LED lamp unit	Switch unit			
<b>Square</b> 	 Catalog listing Reference page for description	 <b>PS5D-□S□Z24</b> See page G-022	 <b>PS5A-D□□Z</b> See page G-023	 <b>PS5L-D□Z□□</b> See page G-023	 <b>PS5D-□□</b> See page G-033	See (A) on page G-033	See (1) on page G-030
		- Catalog listing Reference page for description	-	 <b>PS5A-D1□Z</b> See page G-023	 <b>PS5L-D□Z□□</b> See page G-023	 <b>PS5D-□□</b> See page G-033	See (A) on page G-033
<b>Rectangular</b> 	 Catalog listing Reference page for description	 <b>PS5E-□S□Z24</b> See page G-022	 <b>PS5A-E□□Z</b> See page G-023	 <b>PS5L-E□Z□□</b> See page G-023	 <b>PS5E-□□</b> See page G-033	See (B) on page G-033	See (2) on page G-030
		- Catalog listing Reference page for description	-	 <b>PS5A-E1□Z</b> See page G-023	 <b>PS5L-E□Z□□</b> See page G-023	 <b>PS5E-□□</b> See page G-033	See (B) on page G-033

Note 1: Models sold as set model Nos. are delivered in a single package with the button, LED lamp, switch or indicator as a single set.

Note 2: Models sold as individual model Nos. are delivered in a bulk state with button, LED lamp, switch or indicator packaged individually.

## ● 2-color Single-section LED-lighting













Shape	Set Model No. <small>Note 1</small>		Individual Model No. <small>Note 2</small>			Panel output dimensions	External dimensions
	Push-button/LED lamp/switch	Push-button unit	LED lamp unit	Switch unit			
<b>Square</b> 	- Catalog listing Reference page for description	-	 <b>PS5A-DWZ</b> See page G-024	 <b>PS5L-K□□□□</b> See page G-024	 <b>PS5J-□□</b> See page G-033	See (A) on page G-033	See (4) on page G-030
<b>Rectangular</b> 	- Catalog listing Reference page for description	-	 <b>PS5A-EWZ-004</b> See page G-025	 <b>PS5L-E□□□WK</b> See page G-025	 <b>PS5F-□□/PS5G-□□</b> See page G-025	See (B) on page G-033	See (2) on page G-030

Note 1: Models sold as set model Nos. are delivered in a single package with the button, LED lamp, switch or indicator as a single set.

Note 2: Models sold as individual model Nos. are delivered in a bulk state with button, LED lamp, switch or indicator packaged individually.

● 2-section LED-lighting

(unit: mm)

Shape	Set Model No. <small>Note 1</small>	Individual Model No. <small>Note 2</small>			Panel-mount dimensions	External dimensions	
		Push-button/LED lamp/switch	Push-button unit	LED lamp unit			Switch unit
<b>Square</b> 	Square flat push-button switch and indicator Catalog listing Reference page for description	—	 +  + 	PS5A-J□□ PS5L-J□□□□ PS5J-□□	See (A) on page G-033	See (4) on page G-030	
	—	—	See page G-026			—	—
<b>Rectangular</b> Lateral split  Longitudinal split 	Rectangular flat push-button switch and indicator Catalog listing Reference page for description	—	 +  + 	PS5A-F□□ PS5L-F□□□□HB PS5F-□□	See (B) on page G-033	See (2) on page G-030	
	—	—	See page G-027			—	—
	Rectangular flat push-button switch and indicator Catalog listing Reference page for description	—	 +  + 	PS5A-G□□ PS5L-G□□□□ PS5G-□□	See (B) on page G-033	See (2) on page G-030	
	—	—	See page G-027			—	—

Note 1: Models sold as set model Nos. are delivered in a single package with the button, LED lamp, switch or indicator as a single set.

Note 2: Models sold as individual model Nos. are delivered in a bulk state with button, LED lamp, switch or indicator packaged individually.

**PERFORMANCE**

Allowable operating frequency	Mechanical	Momentary operation max. 120 operations/minute
	Electrical	Alternate operation max. 60 operations/minute
Insulation resistance		Max. 20 operations/minute
Dielectric strength		Min. 100MΩ (by 500Vdc megger)
Vibration resistance	Malfunction	Between same pole terminals: 600Vac for 1 minute Between different pole terminals: 2,000Vac for 1 minute Between conducting metal part and non-conducting metal part: 2,000Vac for 1 minute
Impact resistance	Malfunction	Amplitude 1.5mm, 10 to 55Hz
Life	Mechanical	200m/s <sup>2</sup>
		Momentary operation type: Min. 1 million operations
	Electrical	Alternate operation: Min. 100,000 cycles
Initial contact resistance		Silver contact: Min. 100,000 operations (125Vac-2A resistive load) Min. 50,000 operations (125Vac-3A resistive load)
		Gold cross contact: Min. 100,000 operations (30Vdc-0.1A resistive load)
Operating temperature range		Silver contact: Max. 30mΩ (6 to 8Vdc-1A voltage drop method) Gold cross contact: Max. 50mΩ (6 to 8Vdc-0.1A voltage drop method)
Operating humidity range		- 20 to 40°C
		Max. 85%RH

**CHARACTERISTICS, ETC.**

Item	Momentary operation	Alternate operation
Operation force	Max. 2.94N	Max. 3.92N
Button stroke	Approx. 3mm	
Mounting panel plate thickness	1 to 3.5mm	
Materials	Button	Polycarbonate resin (achromatic transparent)
	Color plate	Acrylic resin (red, yellow, green, orange, blue, milky white)
	Plunger	Polyester resin (white)
	Switch, indicator and housing	Polyester resin (black, gray)
	Barrier	Polyester resin (black, gray)

# RATING

## 1. Contact rating

Normal load (silver contact)

Rated energizing current (A)		3			
Rated voltage (V)		125Vac, 125Vdc			
Operating voltage (V)		12	24	48	125
AC	Resistive load (A)	3	3	3	3
	Inductive load* (A)	2	2	1.5	1
	Inductive load** (A)	2	1.5	1	0.7
DC	Resistive load (A)	2	1	0.5	0.4
	Inductive load# (A)	1	0.5	0.3	0.2
	Inductive load## (A)	0.5	0.3	0.1	0.1

Note 1: Steady current values are indicated for above values.

Note 2: \*: Inductive load value at power-factor of 0.6, \*\*: Inductive load value at power-factor of 0.4

Note 3: #: Inductive load value at time constant of 7ms, ##: Inductive load value at time constant of 40ms,

EN standard units

• Rated operating voltage

Silver contact: 125Vac or 30Vdc

Gold contact: 125Vac or 30Vdc

• Application category

Silver contact	Gold contact
AC-15 0.75A-125Vac DC-12 0.4A-30Vdc	AC-12 0.1A-125Vac DC-12 0.1A-30Vdc

Low current load (gold cross contact)

Rated energizing current (A)		0.1				
Rated voltage (V)		125Vac, 30Vdc				
Operating voltage (V)		5	12	24	30	125
AC resistive load (A)		0.1	0.1	0.1	0.1	0.1
DC resistive load (A)		0.1	0.1	0.1	0.1	—

Note 1: Steady current values are indicated for above values.

Note 2: The lower limit of use is 5V-5mA

## 2. LED lamp rating





















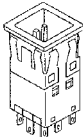
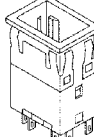
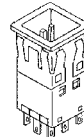
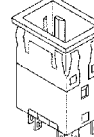
Item	Symbol	Rating								Unit	
		Standard value	Measurement conditions	Standard value	Measurement conditions	Standard value	Measurement conditions	Standard value	Measurement conditions		
Max. absolute rating	Forward DC voltage	5V type	5.25	—	5.25	—	5.25	—	5.25	—	V
		12V type	12.6	—	12.6	—	12.6	—	12.6	—	
		24V type	25.2	—	25.2	—	—	—	—	—	
	Reverse DC voltage	5V type	8	—	8	—	8	—	8	—	V
		12V type	16	—	16	—	8	—	8	—	
		24V type	28	—	28	—	—	—	—	—	
	Allowable loss	$P_D$	250				250				mW
Operating temperature	$T_{opr}$	-20 to +80				-20 to +40				°C	
Storage temperature	$T_{stg}$	-30 to +100				-30 to +85				°C	
Operating humidity	—	85				85				%RH max.	
Electrical/optical characteristics	Current consumption	5V type	30/60/30	$V_{DD} =$ Rated voltage	30	$V_{DD} =$ Rated voltage	15	$V_{DD} =$ Rated voltage	15	$V_{DD} =$ Rated voltage	mA (standard)
		12V type	15/30/15		13		15		15		
		24V type	15/15/15		14		—		—		
	Reverse DC current	5V type	100	$V_R = 8V$	100	$V_R = 8V$	100	$V_R = 8V$	100	$V_R = 8V$	$\mu A$ max.
		12V type	100	$V_R = 16V$	100	$V_R = 16V$	100	$V_R = 8V$	100	$V_R = 8V$	
		24V type	100	$V_R = 28V$	100	$V_R = 28V$	—	—	—	—	
	Luminosity	Red	12	$V_{DD} =$ Rated voltage	20	$V_{DD} =$ Rated voltage	11	$V_{DD} =$ Rated voltage	10	$V_{DD} =$ Rated voltage	mcd (standard)
		Green	30		50		13		20		
		Amber	18		30		13		10		
	Peak light-emitting wavelength	Red	630	$V_{DD} =$ Rated voltage	630	$V_{DD} =$ Rated voltage	635	$V_{DD} =$ Rated voltage	630	$V_{DD} =$ Rated voltage	nm
Green		565	565		565		565				
Amber		585	585		585		585				
Power voltage	5V type	$5 \pm 5\%$				$5 \pm 5\%$				dc V	
	12V type	$12 \pm 5\%$				$12 \pm 5\%$					
	24V type	$24 \pm 5\%$				—					

Note 1: The rated current of section types is the current per single lighting (1/2 that of a single-section lighting area). The rated current is doubled when two lamps are light simultaneously.

Note 2: In the current consumption indication, □□/□□/□□ corresponds to the current of square single-section LED-lit/rectangular single-section LED-lit/rectangular single-section lateral split 2-section LED-lit lamps.



















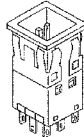
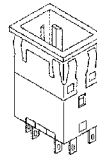
# SPECIFICATIONS

## • Flat push-button

Push-button unit	LED-lighting method	Single-section LED-lighting		2-color single-section LED-lighting		
		Square, standard	Rectangular, standard	Square, standard	Rectangular, standard	
Shape of LED-lit surface (button dimensions) (unit: mm)						
	Individual Cat. Listing:	<b>PS5A-D□□Z</b>	<b>PS5A-E□Z</b>	<b>PS5A-DWZ</b>	<b>PS5A-EWZ-004</b>	
	Component parts	Flat button				
		Color plate			 Milky white	 Milky white
		Plunger				
		Button color	Achromatic transparent/milky white	Achromatic transparent	Achromatic transparent	Achromatic transparent
		Color plate color	Red, Yellow, Green, Milky White, Orange, Blue			
Material	Button: polycarbonate resin, Color plate: acrylic resin, Plunger: polyester resin					
LED lamp unit (current limiting resistor built-in)	LED-lighting method	Single-section LED-lighting		2-color single-section LED-lighting		
	Shape of LED-lit surface	Square, standard	Rectangular, standard	Square, standard	Rectangular, standard	
	Individual Cat. Listing:	<b>PS5L-D□□□□</b>	<b>PS5L-E□□Z□</b>	<b>PS5L-K□□□□□</b>	<b>PS5L-E□□□□WK</b>	
	Shape					
	LED color	Red(R), Amber(A), Green(G)				
	Number of LED lamps	1 lamp (4 chips)	2 lamps (4 chips × 2)	1 lamp (2 chips × 2)	2 lamps (4 chips × 2)	
	Rated voltage (Vdc)	5 12 24	5 12 24	5 12	5 12	
	Rated current (mA)	1 lamp: 30 15 15 2 lamps: — — —	— — — 60 30 15	— — — 15 15	— — — 30 30	
	Allowable voltage range	Rated voltage ±5%				
	Switch unit indicator	LED-lighting method	Single-section LED-lighting		2-color single-section LED-lighting	
Shape of LED-lit surface		Square, standard	Rectangular, standard	Square, standard	Rectangular, standard	
Individual Cat. Listing:		<b>PS5D-□□</b>	<b>PS5E-□□</b>	<b>PS5J-□□</b>	<b>PS5F-□□</b>	
Shape						
Switch operation		Switch unit		Indicator		
		Momentary operation (ON by pressing button, OFF by releasing button)		—		
Alternate operation (ON by pressing button, Locked by releasing button, OFF by pressing again)		—				
Number of contact electrodes		1 × SPDT or 2 × SPDT		—		
Contact material		Silver contact (standard load) or gold cross contact (low current load)		—		
Housing material		Polyester resin				
Housing/bezel color	Black or gray					
Contact terminal	Solder and #110 tab terminal combined or PCB terminal					
Mounting	Snap-in from front side of panel (applicable panel plate thickness t = 1 to 3.5mm)					







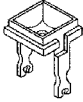
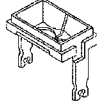


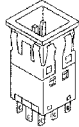
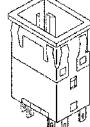
Note: Contact your agent separately for details on square/rectangular type 2-color single-section LED-lit 24Vdc types.

● Flat push-button (continued)

Push-button unit	LED-lighting method	2-section LED-lighting									
		Square, standard		Rectangular, lateral split			Rectangular, longitudinal split				
	Shape of LED-lit surface (button dimensions) (unit: mm)										
	Individual Cat. Listing	<b>PS5A-J</b> □□		<b>PS5A-F</b> □□			<b>PS5A-G</b> □□				
Component parts	Flat button										
	Color plate										
	Partition plate										
	Plunger										
	Button color	Achromatic transparent									
	Color plate color	Gloss finish									
	Material	Red, Yellow, Green, Milky white, Orange, Blue Button: polycarbonate resin, Color plate: acrylic resin, Plunger: polyester resin									
LED lamp unit (current limiting resistor built-in)	LED-lighting method	2-section LED-lighting									
		Square, standard		Rectangular, lateral split			Rectangular, longitudinal split				
	Shape of LED-lit surface	Square, standard		Rectangular, lateral split			Rectangular, longitudinal split				
	Individual Cat. Listing	<b>PS5L-J</b> □□□□		<b>PS5L-F</b> □□□□			<b>PS5L-G</b> □□□□				
	Shape										
	LED color	Red(R), Amber(A), Green(G)									
	Number of LED lamps	4 lamps (2 chips × 2)		2 lamps (4 chips × 2)			2 lamps (4 chips × 2)				
	Rated voltage (Vdc)	5	12	5	12	24	5	12	24		
	Rated current (mA)	1 lamp 2 lamps		—	—	30	15	15	30	15	15
	Allowable voltage range	Rated voltage ± 5%									
Switch unit indicator	LED-lighting method	2-section LED-lighting									
		Square, standard		Rectangular, lateral split 2 sections			Rectangular, longitudinal split, 2 sections				
	Shape of LED-lit surface	Square, standard		Rectangular, lateral split 2 sections			Rectangular, longitudinal split, 2 sections				
	Individual Cat. Listing	<b>PS5J</b> -□□		<b>PS5F</b> -□□			<b>PS5G</b> -□□				
	Shape										
	Switch operation	Switch unit						Indicator			
		Momentary operation (ON by pressing button, OFF by releasing button)						—			
		Alternate operation (ON by pressing button, Locked by releasing button, OFF by pressing again)						—			
	Number of contact electrodes	1 × SPDT or 2 × SPDT									
	Contact material	Silver contact (standard load) or gold cross contact (low current load)									
	Housing material	Polyester resin									
	Housing/bezel color	Black or gray									
	Contact terminal	Solder and #110 tab terminal combined or PCB terminal									
	Mounting	Snap-in from front side of panel (applicable panel plate thickness t = 1 to 3.5mm)									

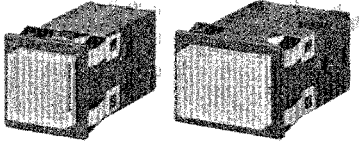
Note: Contact your agent separately for details on square type 2-section LED-lit 24Vdc types.

● Dimple push-button

Push-button unit	LED-lighting method	Single-section LED-lighting					
		Square (dimple)			Square (large dimple)		
	Shape of LED-lit surface (button dimensions) (unit: mm)						
	Individual Cat. Listing	<b>PS5A-D1□Z</b>			<b>PASA-E1□Z</b>		
Component parts	Dimple button						
	Color plate						
	Plunger						
	Button color	Achromatic transparent					
	Color plate color	Gloss finish					
	Color plate color	Red, Yellow, Green, Milky white, Orange					
	Material	Button: polycarbonate resin, Color plate: acrylic resin, Plunger: polyester resin					
LED lamp unit	LED-lighting method	Single-section LED-lighting					
	Shape of LED-lit surface	Square (dimple)			Rectangular (dimple)		
	Individual Cat. Listing	<b>PS5L-D□Z□□</b>			<b>PS5L-E□Z□□</b>		
	Shape						
	LED color	Red(R), Amber(A), Green(G)					
	Number of LED lamps	1 lamp (4 chips)			2 lamps (4 chips × 2)		
	Rated voltage (Vdc)	5	12	24	5	12	24
	Rated current (mA)	1 lamp		2 lamps			
		30	15	15	—	—	—
		—	—	—	60	30	15
	Allowable voltage range	Rated voltage ±5%					
Switch unit	LED-lighting method	Single-section LED-lighting					
	Shape of LED-lit surface	Square (dimple)			Rectangular (dimple)		
	Individual Cat. Listing	<b>PS5D-□□</b>			<b>PS5E-□□</b>		
	Shape						
	Switch operation	Momentary operation (ON by pressing button, OFF by releasing button) Alternate operation (ON by pressing button, Locked by releasing button, OFF by pressing again)					
	Number of contact electrodes	1 × SPDT or 2 × SPDT					
	Contact material	Silver contact (standard load) or gold cross contact (low current load)					
	Housing material	Polyester resin					
	Housing/bezel color	Black or gray					
	Contact terminal	Solder and #110 tab terminal combined or PCB terminal					
	Mounting	Snap-in from front side of panel (applicable panel plate thickness t=1 to 3.5mm)					

## ORDER GUIDE

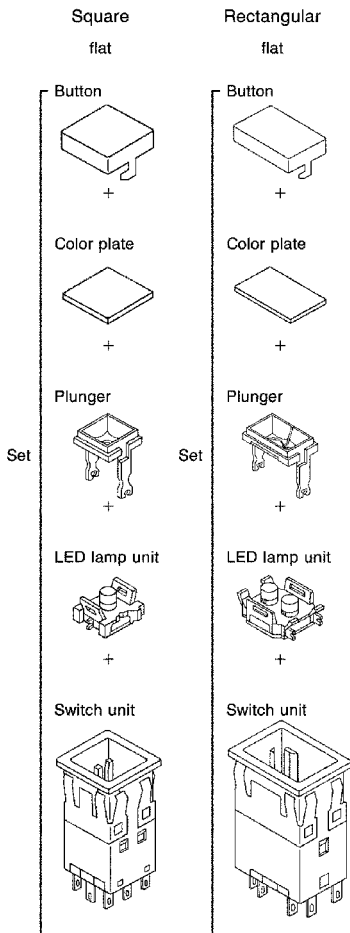
### Single-section LED-lit (square flat, rectangular flat) Type



- Single-section LED-lit, flat push-buttons are available under the following set model Nos. and individual model Nos. Order push-button using these model Nos.
- Only individual model Nos. are available for single-section LED-lit, dimple push-buttons.
- Set model No.: These push-buttons are shipped with each of standard specification push-button, LED lamp and switch unit packaged as an individual set.
- Individual model No.: These push-buttons are shipped with each individual specification push-button, LED lamp and switch unit packaged individually.

External dimensions ▶ See (1) (square)/(2) (rectangular) on page G-030.  
 Panel cutout dimensions ▶ See (A) (square)/(B) (rectangular) on page G-033.

#### • Set Model No. (flat only)



#### Set Model No. Model selection guide I II III IV V Example: **PS5D-DSWZ24**

I	II	III	IV	V	Description		
Basic model No.	Switch function	Terminal shape, Bezel color	Display color	LED lamp terminal voltage			
PS5D-					Square, flat push-button type, achromatic transparent with gloss finish		
PS5E-					Rectangular, flat push-button type, achromatic transparent with gloss finish		
					Operation	Output circuit	Contact material
	<b>A</b>				Momentary	1 × SPDT	Silver
	<b>B</b>				Alternate	1 × SPDT	Silver
	<b>C</b>				Momentary	2 × SPDT	Silver
	<b>D</b>				Alternate	2 × SPDT	Silver
	<b>E</b>				Momentary	1 × SPDT	Gold cross
	<b>F</b>				Alternate	1 × SPDT	Gold cross
	<b>G</b>				Momentary	2 × SPDT	Gold cross
	<b>H</b>				Alternate	2 × SPDT	Gold cross
	<b>X</b>				Indicator	—	—
						Terminal shape	Bezel color
	<b>S</b>				Solder and #110 tab terminal combined		Black
	<b>P</b>				PCB terminal		Black
	<b>L</b>				Solder and #110 tab terminal combined		Gray
	<b>M</b>				PCB terminal		Gray
					Color plate	LED lamp	When lit
	<b>RZ</b>				Red	Red	Red
	<b>PZ</b>				Milky white	Red	Pink
	<b>WZ</b>				Milky white	Amber	Light amber
	<b>DZ</b>				Orange	Amber	Orange
	<b>YZ</b>				Yellow	Green	Yellowish green
	<b>GZ</b>				Green	Green	Green
	<b>NZ</b>				Milky white	Green	Lemon yellow
					<b>24</b>	24Vdc ± 5%	

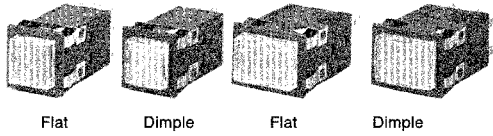
Note: Contact your agent separately for details on set model No. 5Vdc and 12Vdc specifications.



# Single-section LED-lit (square flat, square dimple, rectangular flat, rectangular dimple) Type

## • Individual model No. (for both flat/dimple)

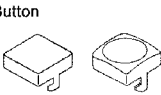
Individual model No.: Nos. are available by individual units (1), (2) and (3) below.



Flat Dimple Flat Dimple

### Square

Flat Dimple



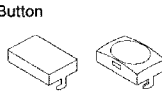
Color plate

Plunger

(1) Push-button unit

### Rectangular

Flat Dimple



Color plate

Plunger

(1) Push-button unit

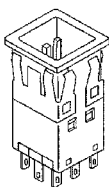
(2) LED unit



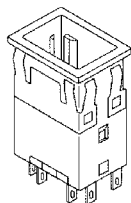
(2) LED unit



(3) Switch unit



(3) Switch unit



## (1) Push-button unit

Model selection guide I II Example: **PS5A-DRZ**

I Basic model No.	II Color plate	Description	
<b>PS5A-D</b>	Square	Flat push-button type, achromatic transparent with gloss finish	
<b>PS5A-D1</b>		Dimple push-button type, achromatic transparent with gloss finish	
<b>PS5A-D2</b>		Flat push-button type, milky white with gloss finish	
<b>PS5A-E</b>	Rectangular	Flat push-button type, achromatic transparent with gloss finish	
<b>PS5A-E1</b>		Dimple push-button type, achromatic transparent with gloss finish	
		<b>RZ</b>	Red
		<b>YZ</b>	Yellow
		<b>GZ</b>	Green
		<b>WZ</b>	Milky white
		<b>DZ</b>	Orange
		<b>BZ</b>	Blue
		Only <b>PS5A-D</b> and <b>PS5A-E</b> at I above can be selected.	

See Table 1.

## (2) LED lamp unit

Model selection guide I II III Example: **PS5L-DRZ12**

I Basic model No.	II LED lamp color	III LED lamp terminal voltage	Description
<b>PS5L-D</b>			LED lamp unit for square type
<b>PS5L-E</b>			LED lamp unit for rectangular type
		<b>RZ</b>	Red
		<b>AZ</b>	Amber
		<b>GZ</b>	Green
		<b>BZ</b>	Blue
		<b>05</b>	5Vdc ± 5%
		<b>12</b>	12Vdc ± 5%
		<b>24</b>	24Vdc ± 5%

See Table 1.

## (3) Switch unit

Model selection guide I II III IV Example: **PS5D-AS**

I Basic model No.	II Switch function	III Terminal shape, Bezel color	IV External standard	Description			
<b>PS5D-</b>				Square switch unit, indicator			
<b>PS5E-</b>				Rectangular switch unit, indicator			
				<b>Operation</b>	<b>Output circuit</b>	<b>Contact material</b>	
				<b>A</b>	Momentary	1 × PSDT	Silver
				<b>B</b>	Alternate	1 × PSDT	Silver
				<b>C</b>	Momentary	2 × PSDT	Silver
				<b>D</b>	Alternate	2 × PSDT	Silver
				<b>E</b>	Momentary	1 × PSDT	Gold cross
				<b>F</b>	Alternate	1 × PSDT	Gold cross
				<b>G</b>	Momentary	2 × PSDT	Gold cross
				<b>H</b>	Alternate	2 × PSDT	Gold cross
				<b>X</b>	Indicator	—	—
				<b>Terminal shape</b>		<b>Note</b>	<b>Bezel color</b>
				<b>S</b>	Solder and #110 terminal combined		Black
				<b>P</b>	PCB terminal		Black
				<b>L</b>	Solder and #110 terminal combined		Gray
				<b>M</b>	PCB terminal		Gray
				<b>-E</b>	EN (IEC) standard compatible products		

Table 1. Color plate/LED lamp display color combinations

Color when lit	Dark pink	Light green	Light orange	Light amber	Light pink	Light lemon yellow
Color when out	Milky white					
Color plate color	Red	Green	Orange	Milky white		
LED lamp color	Red	Green	Amber	Amber	Red	Green
Button color	Milky white					

Color when lit	Red	Yellowish green	Green	Orange	Blue	Amber	Pink	Lemon yellow	Light blue
Color when out	Red	Yellow	Green	Orange	Blue	Milky white			
Color plate color	Red	Yellow	Green	Orange	Blue	Milky white			
LED lamp color	Red	Green	Green	Amber	Blue	Amber	Red	Green	Blue
Button color	Achromatic transparent								

Note: The display color is referenced to a peripheral LED-lit intensity of 1,000lx. When the LED-lit intensity changes, the hue when lit also changes.

Note: When connecting to connector **PS5H-□□□**, select the Solder and #110 terminal combined

## 2-color Single-section LED-lit (square flat) Type



Flat

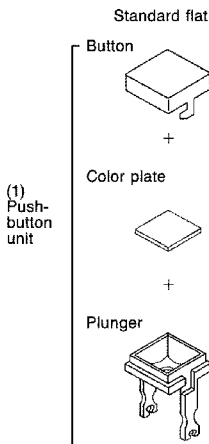
- Only individual model Nos. are available for 2-color single-section LED-lit types.

Individual model No.: Nos. are available by individual units (1), (2) and (3) below. Parts are shipped packaged individually in units.

External dimensions ▶ See (4) (standard flat) on page G-030.  
Panel cutout dimensions ▶ See (A) on page G-033.

### • Individual model No.

#### Square 2-color single-section



#### (2) LED lamp unit



#### (3) Switch unit

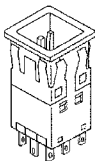


Table 3. Color plate/LED lamp display color combinations

Component	LED-lit			
	Color when lit	Amber	Pink	Lemon yellow
Color when out	Milky white			
Color plate color	Milky white			
LED lamp color	Amber	Red	Green	
Button color	Achromatic transparent			

**Note:** The display color is referenced to a peripheral LED-lit intensity of 1,000lx. When the LED-lit intensity changes, the hue when lit also changes.

#### (1) Push-button unit

Model selection guide **I** **II** Example: **PS5A-DWZ**

I	II	Description
Basic model No.	Color plate	
<b>PS5A-D</b>		Square 2-color single-section standard flat push-button type, achromatic transparent with gloss finish
See Table 3. [	<b>WZ</b>	Milky white

**Note:** Contact your agent for the following buttons:  
Square milky white flat button  
Square compact dimple button, gloss finish  
Square large dimple button, gloss finish  
Square large dimple button, no gloss finish

#### (2) LED lamp unit

Model selection guide **I** **II** **III** Example: **PS5L-KRG05**

I	II	III	Description
Basic model No.	LED lamp color	LED lamp terminal voltage	
<b>PS5L-K</b>			Square standard button 2-color single-section LED lamp
See Table 3. [	<b>RA</b>		When driven across L+/L1- Red Amber
	<b>RG</b>		Red Green
	<b>AG</b>		Amber Green
		<b>05</b>	5Vdc ± 5%
	<b>12</b>	12Vdc ± 5%	

**Note:** When the LED lamp drive voltage is 24Vdc, an external resistor is connected for use.  
(For details, see page G-037)

«External resistor values»

Voltage of LED lamp in use	External resistor values	Remarks
5Vdc	1,500Ω ½W	Connected to L+

#### (3) Switch unit

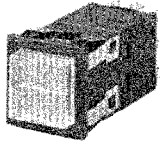
Model selection guide **I** **II** **III** Example: **PS5J-ES**

I	II	III	Description
Basic model No.	Switch function	Terminal shape, Bezel color	
<b>PS5J-</b>			Square standard button 2-color single-section switch unit
	<b>A</b>		Operation Momentary Output circuit 1 × SPDT Contact material Silver
	<b>B</b>		Alternate 1 × SPDT Silver
	<b>C</b>		Momentary 2 × SPDT Silver
	<b>D</b>		Alternate 2 × SPDT Silver
	<b>E</b>		Momentary 1 × SPDT Gold cross
	<b>F</b>		Alternate 1 × SPDT Gold cross
	<b>G</b>		Momentary 2 × SPDT Gold cross
	<b>H</b>		Alternate 2 × SPDT Gold cross
	<b>X</b>		Indicator - -
			Terminal shape <sup>Note</sup> Bezel color
	<b>S</b>	Solder and #110 tab terminal combined	Black
	<b>P</b>	PCB terminal	Black
	<b>L</b>	Solder and #110 tab terminal combined	Gray
	<b>M</b>	PCB terminal	Gray

**Note:** Connector **PS5H-S** cannot be used.



## 2-section LED-lit (square flat) Type



Flat

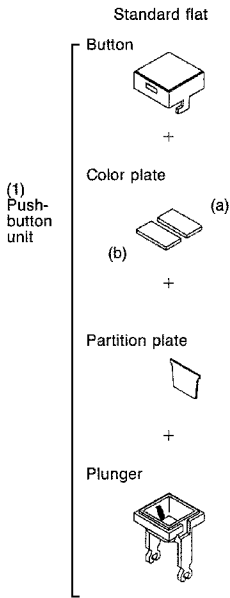
- Only individual model Nos. are available for 2-color single-section LED-lit types.

Individual model No.: Nos. are available by individual units (1), (2) and (3) below.  
Parts are shipped packaged individually in units.

External dimensions ▶ See (4) (standard flat) on page G-030.  
Panel cutout dimensions ▶ See (A) on page G-033.

### • Individual model

#### Square 2-section



#### (2) LED lamp unit



#### (3) Switch unit

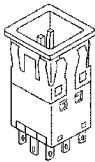


Table 2. Color plate/LED lamp display color combinations

Color when lit	Red	Yellowish green	Green	Orange	Amber	Pink	Lemon yellow
Color when out	Red	Yellow	Green	Orange	Milky white		
Color plate color	Red	Yellow	Green	Orange	Milky white		
LED lamp color	Red	Green	Green	Amber	Amber	Red	Green
Button color	Achromatic transparent						

Note: The display color is referenced to a peripheral LED-lit intensity of 1,000lx. When the LED-lit intensity changes, the hue when lit also changes.

#### (1) Push-button unit

Model selection guide I II Example: **PS5A-JRG**

I	II	Description					
Basic model No.	Color plate 2 colors, single section						
PS5A-J	Square 2-section standard flat push-button, achromatic transparent with gloss finish						
	(b) \ (a)	Red	Yellow	Green	Milky white	Orange	
	Red	RR	RY	RG	RW	RO	
	Yellow	RY	YY	YG	YW	YO	
	Green	RG	YG	GG	GW	GO	
	Milky white	RW	YW	GW	WW	WO	
Orange	RO	YO	GO	WO	OO		

Note: Contact your agent for the following buttons:  
Square compact dimple button, gloss finish  
Square large dimple button, gloss finish  
Square large dimple button, no gloss finish

#### (2) LED lamp unit

Model selection guide I II III Example: **PS5L-JRG05**

I	II	III	Description	
Basic model No.	LED lamp color	LED lamp terminal voltage		
PS5L-J	Square standard button 2-section LED lamp			
			LED lamp (a)	LED lamp (b)
	RR		Red	Red
	RA		Red	Amber
	RG		Red	Green
	AG		Amber	Green
AA		Amber	Amber	
GG		Green	Green	
		05	5Vdc ±5%	
		12	12Vdc ±5%	

Note 1: Use LED lamp reversed color type (example: reversed type for  $\begin{matrix} R \\ G \end{matrix}$  becomes  $\begin{matrix} G \\ R \end{matrix}$ ) with the switch unit body rotated by 180°.

Note 2: When the LED lamp drive voltage is 24Vdc, an external resistor is connected for use. (For details, see page G-037)

#### «External resistor values»

Voltage of LED lamp in use	External resistor values	Remarks
5Vdc	1,500Ω ½W	Connected to each of L1- and L2-

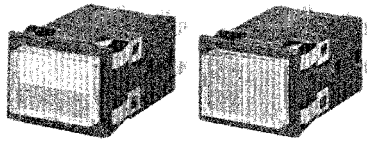
#### (3) Switch unit

Model selection guide I II III Example: **PS5J-ES**

I	II	III	Description		
Basic model No.	Switch function	Terminal shape, Bezel color			
PS5J-	Square standard button 2-section Switch unit				
			Operation	Output circuit	Contact material
	A	Momentary	1 × SPDT	Silver	
	B	Alternate	1 × SPDT	Silver	
	C	Momentary	2 × SPDT	Silver	
	D	Alternate	2 × SPDT	Silver	
	E	Momentary	1 × SPDT	Gold cross	
	F	Alternate	1 × SPDT	Gold cross	
	G	Momentary	2 × SPDT	Gold cross	
	H	Alternate	2 × SPDT	Gold cross	
	X	Indicator	—	—	
		Terminal shape	Note	Bezel color	
S	Solder and #110 tab terminal combined			Black	
P	PCB terminal			Black	
L	Solder and #110 tab terminal combined			Gray	
M	PCB terminal			Gray	

Note: Connector **PS5H-S** cannot be used.

## 2-section LED-lit (lateral/longitudinal split, rectangular flat) Type



Lateral split

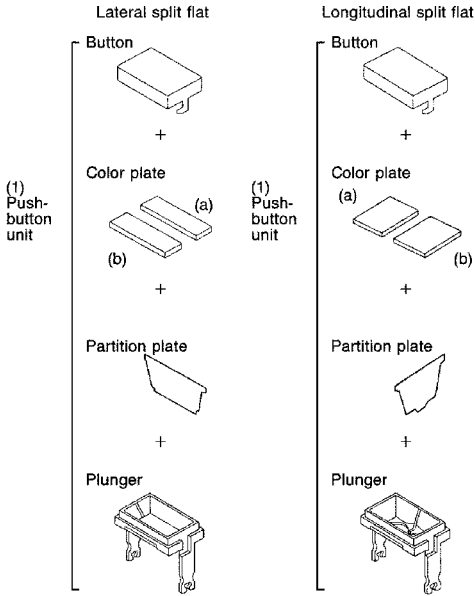
Longitudinal split

● Only individual model Nos. are available for 2-section LED-lit types.  
Individual model No.: Nos. are available by individual units (1), (2) and (3) below.  
Parts are shipped packaged individually in units.

External dimensions ▶ See (2) on page G-030.  
Panel cutout dimensions ▶ See (B) on page G-033.

### ● Individual model No.

#### Rectangular



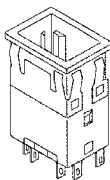
(2) LED lamp unit



(2) LED lamp unit



(3) Switch unit



(3) Switch unit

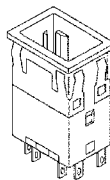


Table 2. Color plate/LED lamp display color combinations

Component	Color when lit	Color when out	Color plate color	LED lamp color	Button color
	Red	Yellowish green	Red	Green	Green
	Yellow	Green	Yellow	Orange	Green
	Green	Orange	Green	Milky white	Green
	Orange	Milky white	Orange	Red	Green
	Amber	Red	Amber	Amber	Green
	Pink	Green	Pink	Red	Green
	Lemon yellow	Green	Lemon yellow	Green	Green
					Achromatic transparent

Note: The display color is referenced to a peripheral LED-lit intensity of 1,000lx. When the LED-lit intensity changes, the hue when lit also changes.

### (1) Push-button unit

Model selection guide I II Example: PS5A-FRW

I	II	Description				
Basic model No.	Color plate 2 colors					
PS5A-F		Lateral split flat push-button,  achromatic transparent with gloss finish				
PS5A-G		Longitudinal split, flat push-button,  achromatic transparent with gloss finish				
	(a) \ (b)	Red	Yellow	Green	Milky white	Orange
	Red	RR	RY	RG	RW	RD
	Yellow	RY	YY	YG	YW	YD
	Green	RG	YG	GG	GW	GD
	Milky white	RW	YW	GW	WW	WD
	Orange	RD	YD	GD	WD	DD

See Table 2.

### (2) LED lamp unit

Model selection guide I II III IV Example: PS5L-FAA24

I	II	III	IV	Description
Basic model No.	LED lamp color	LED lamp terminal voltage	LED lamp brilliance	
PS5L-F				Lateral split LED lamp/2-lamp system
PS5L-G				Longitudinal split LED lamp/2-lamp system
				LED lamp (a)      LED lamp (b)
	RR			Red      Red
	RA			Red      Amber
	RG			Red      Green
	AG			Amber      Green
	AA			Amber      Amber
	GG			Green      Green
		05		5Vdc ± 5%
		12		12Vdc ± 5%
		24		24Vdc ± 5%
				PS5L-G (longitudinal split) is left blank or need not be filled in.

See Table 2.

### (3) Switch unit

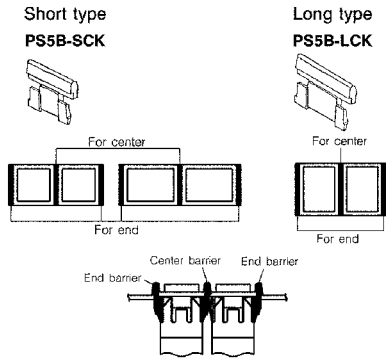
Model selection guide I II III Example: PS5F-HP

I	II	III	Description
Basic model No.	Switch function	Terminal shape, Bezel color	
PS5F-			Lateral split switch unit
PS5G-			Longitudinal split switch unit
			Operation      Output circuit      Contact material
	A		Momentary      1 × SPDT      Silver
	B		Alternate      1 × SPDT      Silver
	C		Momentary      2 × SPDT      Silver
	D		Alternate      2 × SPDT      Silver
	E		Momentary      1 × SPDT      Gold cross
	F		Alternate      1 × SPDT      Gold cross
	G		Momentary      2 × SPDT      Gold cross
	H		Alternate      2 × SPDT      Gold cross
	X		Indicator      —      —
			Terminal shape      Note      Bezel color
	S		Solder and #110 tab terminal combined      Black
	P		PCB terminal      Black
	L		Solder and #110 tab terminal combined      Gray
	M		PCB terminal      Gray

Note: When connecting to connector PS5H-R, select the Solder and #110 tab terminal combined

## ACCESSORIES (sold separately)

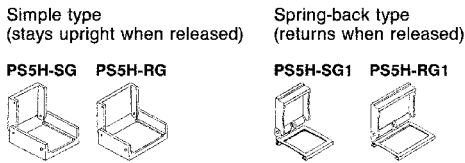
### 1. Barrier



- Barriers are used as partitions for preventing erroneous operation on adjacent push-button switches and for grouping switches and indicators.
- Two types of barriers are available, short and long, and barriers for ends and center are available for each.

Type	Color	Catalog listing	Caution
Short barrier, center	Black	<b>PS5B-SCK</b>	- Joint use with the matrix mounting fixture is not possible. - Cannot be used on large (flat or dimple) button type switches.
	Gray	<b>PS5B-SCL</b>	
Short barrier, end	Black	<b>PS5B-SEK</b>	
	Gray	<b>PS5B-SEL</b>	
Long barrier, center	Black	<b>PS5B-LCK</b>	
	Gray	<b>PS5B-LCL</b>	
Long barrier, end	Black	<b>PS5B-LEK</b>	
	Gray	<b>PS5B-LEL</b>	

### 2. Switch guard

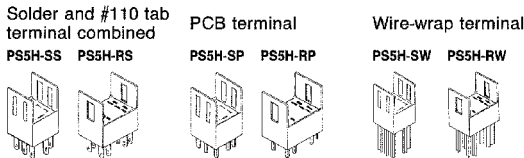


- Switch guards are used for protecting push-buttons and for preventing erroneous operation. Two types are available, simple and spring-back.

**Note:** Both types cannot be used on large (flat or dimple) button type switches.

Type	Catalog listing	Caution
Square simple type	<b>PS5H-SG</b>	- Joint use with the barrier or matrix mounting fixture is not possible.
Rectangular simple type	<b>PS5H-RG</b>	
Square spring-back type	<b>PS5H-SG1</b>	- Joint use with the barrier is possible. - Joint use with the matrix mounting fixture is not possible.
Rectangular spring-back type	<b>PS5H-RG1</b>	

### 3. Connector (For main body with #110 solder terminals.)

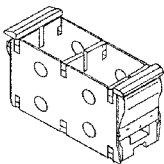


- Connectors are used plugged into the base of switch units. Three terminal shapes are available, soldered terminal, PCB terminal and wire-wrap terminal.

Square connector		Rectangular connector	
Terminal shape	Catalog listing	Terminal shape	Catalog listing
Solder and #110 tab terminal combined	<b>PS5H-SS</b>	Solder and #110 tab terminal combined	<b>PS5H-RS</b>
PCB terminal	<b>PS5H-SP</b>	PCB terminal	<b>PS5H-RP</b>
Wire-wrap terminal	<b>PS5H-SW</b>	Wire-wrap terminal	<b>PS5H-RW</b>

**Note:** Joint use with the matrix mounting fixture is not possible.

### 4. Matrix mounting fixture



- The matrix mounting fixture is used for high-density (vertical and horizontal) gang mounting of push-button switches. All you need is to snap-in push-button switches into the matrix.

**Note:** Joint use with the barrier, connector or switch guard is not possible.

Model selection guide I II III IV Example: **PS5M-S08A**

I	II	III	IV	Description	
Basic model No.	Number of mounted units	Plate color	Panel plate thickness		
<b>PS5M-S</b>				For square switch unit	
<b>PS5M-R</b>				For rectangular switch unit (horizontal)	
	<b>01</b>		1	Rectangular    Square ↑                    ↑ ↓                    ↓	
	<b>02</b>		2		
	<b>03</b>		3		
	<b>04</b>		4		
	<b>05</b>		5		
	-			Black (blank or need not be filled in)	
	<b>L</b>			Gray	
		<b>A</b>	1 to 3.5mm		

**Note:** For 13 to 26 gang-mounted square types and 10 to 20 gang-mounted rectangular types, provide one or two support fixtures near the center.

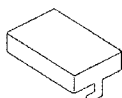
# REPAIR PARTS

## 1. Button

Square flat



Rectangular flat



### Type and catalog listing

Shape of LED-lit surface	Button shape, color	Catalog listing
Square, single section	Flat, achromatic transparent, gloss finish	<b>PS5V-1C</b>
Rectangular, single section	Flat, achromatic transparent, gloss finish	<b>PS5V-2C</b>

## 2. Color plate

Square



Rectangular



Rectangular, lateral split



Rectangular, longitudinal split



### Type and catalog listing I II Example: **PS5V-4R**

I		II		Description
Basic model No.	Color			
<b>PS5V-3</b>				Square, single-section LED-lit
<b>PS5V-4</b>				Rectangular, single-section LED-lit
<b>PS5V-5</b>				Rectangular, lateral split LED-lit
<b>PS5V-6</b>				Rectangular, longitudinal split LED-lit
	<b>W</b>	Milky white		In the case of 2-section LED-lit, one model No. for each color
	<b>R</b>	Red		
	<b>G</b>	Green		
	<b>Y</b>	Yellow		
	<b>D</b>	Orange		

## 3. Partition plate

Lateral split



Longitudinal



### Type and catalog listing

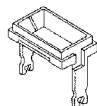
Type	Catalog listing	Remarks
Lateral split LED-lit	<b>PS5V-7Z</b>	Color interference between 2 LED lamp colors is prevented
Longitudinal split LED-lit	<b>PS5V-8Z</b>	

## 4. Plunger

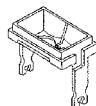
Square



Rectangular lateral split



Rectangular single section /longitudinal split



### Type and catalog listing

Type	Catalog listing	Remarks
Square single section	<b>PS5P-SZ</b>	LED lamp reflection plate couples the button stroke to the switch unit.
Rectangular single section, longitudinal split	<b>PS5P-R1</b>	
Rectangular lateral split	<b>PS5P-R2</b>	

## 5. Tools

LED lamp tool



Button tool

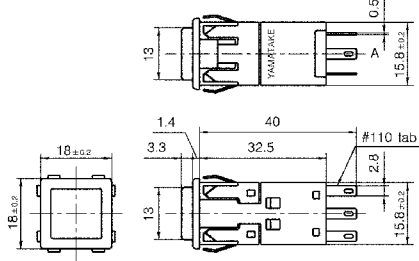


### Type and catalog listing

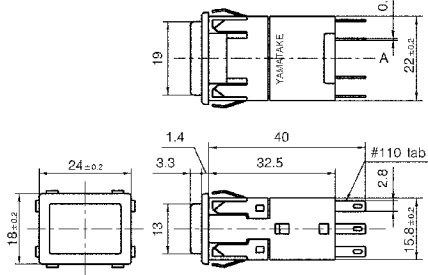
Type	Catalog listing	Remarks
LED lamp tool	<b>PS5T-AX</b>	Used for removing LED lamp
Button tool	<b>PS5T-AX1</b>	Used for removing buttons

## EXTERNAL DIMENSIONS

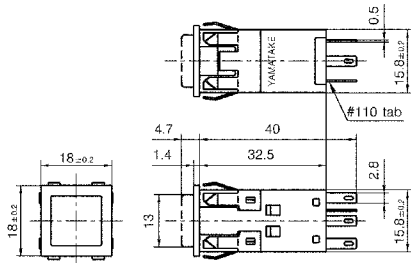
- Push-button switch and indicator body
- #110 tab terminal square type (flat, dimple)



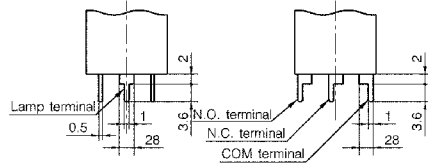
- #110 tab terminal rectangular type (flat, dimple)



- #110 tab terminal square type-2-section/2-color single-section (flat)



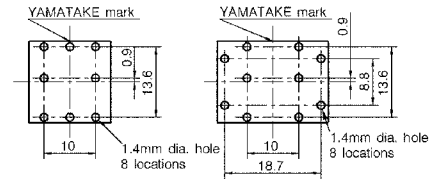
- PCB terminal and PCB terminal dimensions (unit: mm)
- 1 Terminal shape



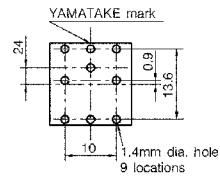
- 2 PCB drilling dimensions

(view from rear with YAMATAKE mark facing up)

- Square·single-section LED-lighting
- Rectangular·single-section LED-lighting
- 2-section LED-lighting
- 2-color single-section LED-lighting



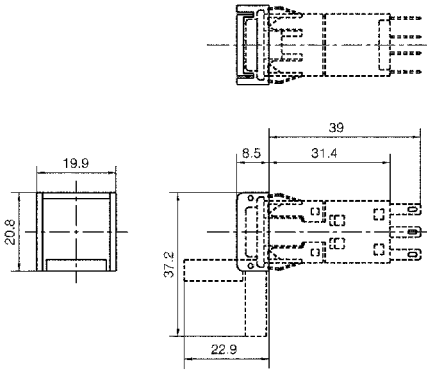
- Square·2-section LED-lighting
- 2-color Single-section LED-lighting



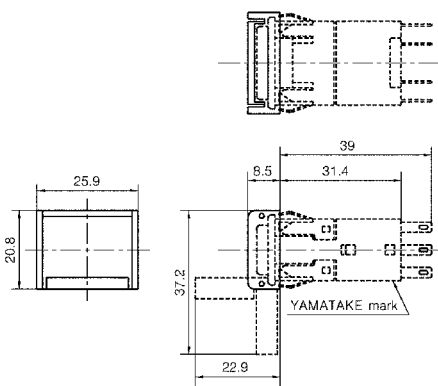


● When switch guard is assembled

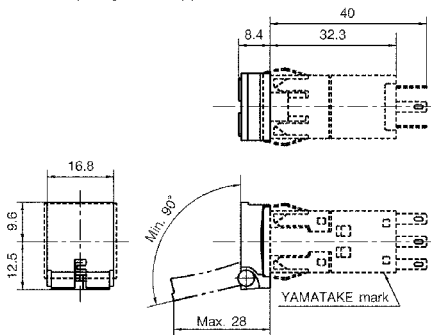
Square, simple type



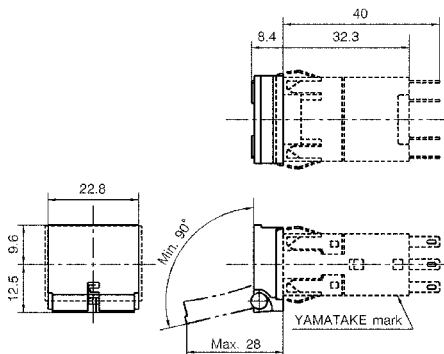
Rectangular, simple type



Square, spring-back type

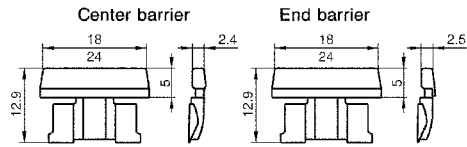


Rectangular, spring-back type



● Barrier

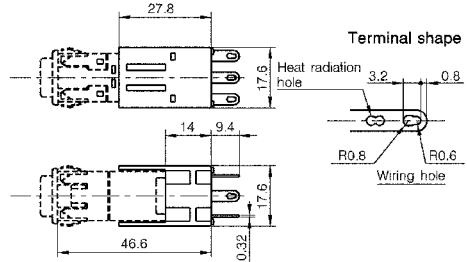
(unit: mm)



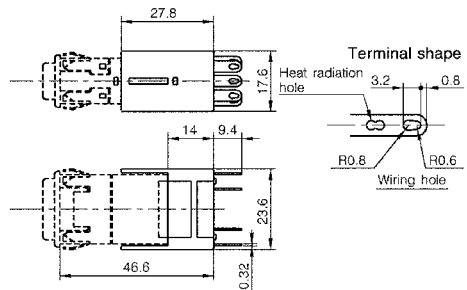
Upper numerals are for short barrier, and lower numerals are for long barrier.

● When assembling connector

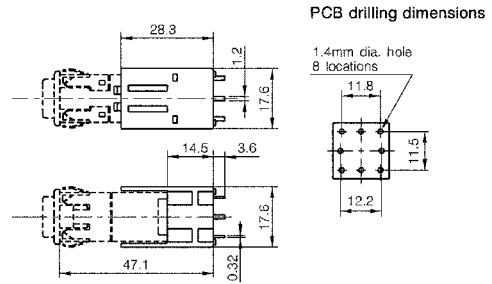
#110 tab square



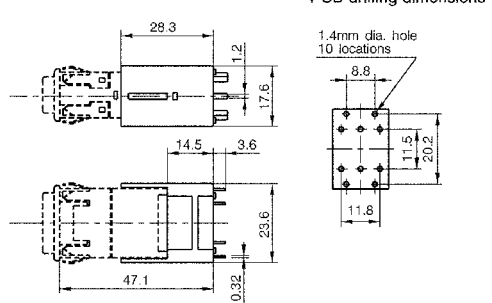
#110 tab rectangular



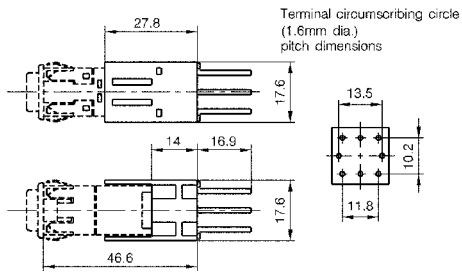
PCB terminal square



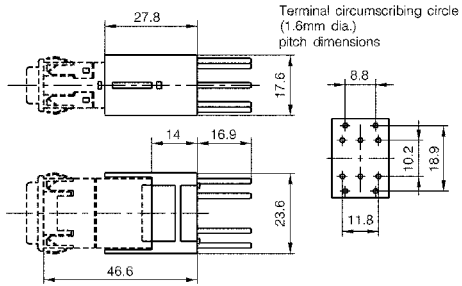
PCB terminal rectangular



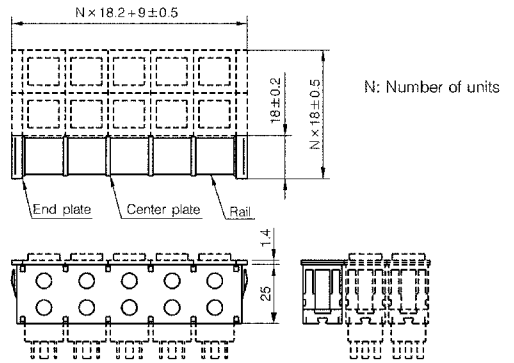
● When assembling connector  
Wire-wrap terminal square



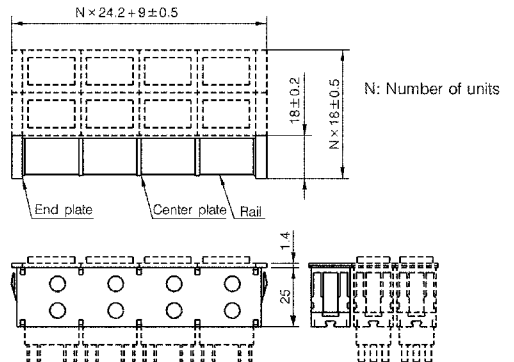
Wire-wrap terminal rectangular



● When matrix mounting fixture is assembled  
Square



Rectangular



# PANEL CUTOUT DIMENSIONS

(unit: mm)

(A) Square Common to flat and dimple	Accessories used	None	Spring-back type (Catalog listing) <b>PS5H-SG1</b>	None	Spring-back type (Catalog listing) <b>PS5H-SG1</b>	Simple type (Catalog listing) <b>PS5H-SG</b>	Matrix mounting fixture (Catalog listing) <b>PS5M-S□□A□</b>	
	Barrier used	None	None	W/ barrier (Catalog listing) <b>PS5B-S□□</b>	Unusable	Unusable		
Single mounting							Square : $N \times 18.2 + 5.5 \pm 0.2$ note 2. $n \times 18 - 1 \pm 0.2$ note 1.	
	Gang mounting							Note 1: n stands for the number of rows, and the maximum number of rows shall be 5. Note, that when n=1, the dimension shall be 17.2 ± 0.15. Note 2: N stands for the number of units on the horizontal row. Note 3: The following accessories cannot be mounted: Barrier Switch guard Connector
(B) Rectangular Common to flat and dimple types	Accessories used	None	Spring-back type (Catalog listing) <b>PS5H-RG1</b>	None	Spring-back type (Catalog listing) <b>PS5H-RG1</b>	Simple type (Catalog listing) <b>PS5H-RG</b>	Matrix mounting fixture (Catalog listing) <b>PS5M-R□□A□</b>	
	Barrier used	None	None	W/ barrier (Catalog listing) <b>PS5B-S□□ or PS5B-R□□</b>	Unusable	Unusable		
	Horizontal single mounting							Rectangular : $N \times 24.2 + 5.5 \pm 0.2$ note 2. $n \times 18 - 1 \pm 0.2$ note 1.
		Gang mounting						
Vertical single mounting					-	-	Note 1: n stands for the number of rows, and the maximum number of rows shall be 5. Note, that when n=1, the dimension shall be 17.2 ± 0.15. Note 2: N stands for the number of units on the horizontal row. Note 3: The following accessories cannot be mounted: Barrier Switch guard Connector	
	Gang mounting				-	-		Note 1: n stands for the number of rows, and the maximum number of rows shall be 5. Note, that when n=1, the dimension shall be 17.2 ± 0.15. Note 2: N stands for the number of units on the horizontal row. Note 3: The following accessories cannot be mounted: Barrier Switch guard Connector
Applicable panel plate thickness (t)	1 to 3.5	1 to 3 Note 1	1 to 3.5	1 to 3 Note 1	1 to 2.8	1 to 3.5		
Common to square and rectangular type	Single mounting pitch	•With End barrier 		•Without End barrier 				

Note 4: Applicable panel plate thickness (t) when the spring-back type switch guard is used is 1 to 3mm.

Note 5: Calculate the panel front and panel cutout dimensions according to the formula on the right when mounting square switches, rectangular switches, simple switches guards, and other switches together on the panel front.  
 Note, however that adjacent positioning of simple switch guards and barriers should be prevented.

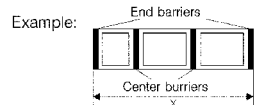
Note 6: Cannot be used together with switch guard

(1) Panel cutout front panel dimensions (unit: mm)  
 Switch (longitudinal split) n1 a=17.9 × n<sub>1</sub>  
 (lateral split) n2 b=23.9 × n<sub>2</sub>  
 W/ simple type switch guard (square) n3 c=19.9 × n<sub>3</sub>  
 (rectangular) n4 d=25.9 × n<sub>4</sub>  
 Center barrier n5 e=1.3 × n<sub>5</sub>  
 End barrier n6 f=1.9 × n<sub>6</sub>

Panel cutout front panel dimensions  
 $X = a + b + c + d + e + f$

(2) Panel cutout dimensions = X - (right edge X<sub>1</sub> + left edge X<sub>2</sub>)

Right edge X<sub>1</sub> or left edge X<sub>2</sub> are as follows in the following instances:  
 Switch w/out barrier: 0.6  
 End barrier: 0.6  
 Simple type switch guard: 1.55



$$X = (17.9 \times 1) + (23.9 \times 2) + (1.3 \times 2) + (1.9 \times 2) = 72.1 \text{ mm}$$

$$\text{Panel cutout} = X - (0.6 + 0.6) = 70.9 \text{ mm}$$

# PANEL CUTOUT FRONT PANEL DIMENSIONS

(unit: mm)

(A) Square Common to flat dimple	Accessories used	None	Spring-back type (Catalog listing) <b>PS5H-SG1</b>	None	Spring-back type (Catalog listing) <b>PS5H-SG1</b>	Simple type (Catalog listing <b>PS5H-SG</b> )	Matrix mounting fixture (Catalog listing <b>PS5M-S□□A□</b> )
	Barrier used	None	None	W/ barrier (Catalog listing <b>PS5B-S□□</b> )	Unusable	Unusable	Unusable
Single mounting							
	Gang mounting				<p>Note 1: n stands for the number of rows, and the maximum number of rows shall be 5. Note, that, when n=1, the dimension shall be 18±0.2.</p> <p>Note 2: N stands for the number of units on the horizontal row.</p> <p>Note 3: The following accessories cannot be mounted: Barrier Switch guard Connector</p>		
(B) Rectangular Common to flat and dimple types	Accessories used	None	Spring-back type (Catalog listing) <b>PS5H-RG1</b>	None	Spring-back type (Catalog listing) <b>PS5H-RG1</b>	Simple type (Catalog listing <b>PS5H-RG</b> )	Matrix mounting fixture (Catalog listing <b>PS5M-R□□A□</b> )
	Barrier used	None	None	W/ barrier (Catalog listing <b>PS5B-S□□ or PS5B-R□□</b> )	Unusable	Unusable	Unusable
	Horizontal single mounting						
		Horizontal gang mounting					
	Vertical single mounting			-	<p>Note 1: n stands for the number of rows, and the maximum number of rows shall be 5. Note, that, when n=1, the dimension shall be 18±0.2.</p> <p>Note 2: N stands for the number of units on the horizontal row.</p> <p>Note 3: The following accessories cannot be mounted: Barrier Switch guard Connector</p>		
Vertical gang mounting				-			

# TERMINAL CONNECTION DIAGRAMS

(connection diagram facing terminal with YAMATAKE mark surface facing up)

(unit: mm)

Shape	LED-lighting method	1 × SPDT (1-pole)	2 × SPDT (2-pole)	Indicator
Square single-section LED-lighting	Terminal layout			
	Connection diagram			
Square 2-section LED-lighting	Terminal layout			
	Connection diagram			
Square 2-color single-section LED-lighting	Terminal layout			
	Connection diagram			

**Note 1:** The switch or indicator body must be rotated 180° for use depending on the color scheme of the required lamp. Be sure to check the orientation of the body in the lamps individual specifications for details on the design of the PCB circuit and panel mounting of the switches.

**Note 2:** The orientation and connection of LED lamps and current limiting resistors may vary from the actual states in the rough drawings.

(connection diagram facing terminal with YAMATAKE mark surface facing up)

(unit: mm)

Shape	LED-lighting method	1 × SPDT (1-pole)	2 × SPDT (2-pole)	Indicator	
Rectangular	Terminal layout				
	Single section				
	The figures here indicate LED lamp voltage of 24Vdc. For 5V and 12V LED lamps, the connection is a series connection.				
	Lateral split				
	Longitudinal split				
2 colors, single section					

- LED color is changed by switching the LB- and LD- terminals.
- Contact your agent separately for details on 24Vdc types.

Note: The orientation and connection of LED lamps and current limiting resistors may vary from the actual states in the rough drawings.

## CURRENT LIMITING RESISTORS AND INTERNAL CIRCUITS

(connection diagram viewed from the rear side facing terminal with YAMATAKE mark surface facing up)

Catalog listing	Shape of LED-lit surface	24Vdc	12Vdc	5Vdc	Remarks					
					Resistance	Red	Amber green			
PS5L-D Z	MICRO Square, single-section LED-lighting				R <sub>1</sub> R <sub>2</sub> R <sub>3</sub> R <sub>4</sub> R <sub>5</sub> R <sub>6</sub> R <sub>7</sub> (Ω)	560	560			
PS5L-E Z	MICRO Rectangular, single-section LED-lighting									
PS5L-J	MICRO Square, 2-section LED-lighting	—						R <sub>4</sub> R <sub>5</sub>	75 (Red amber)	56 (Green)
PS5L-F HB	MICRO Rectangular, longitudinal split LED-lighting							R <sub>6</sub> R <sub>7</sub>	560 75	560 56
PS5L-G	MICRO Rectangular, lateral split LED-lighting									
PS5L-K	MICRO Rectangular, 2-color single-section LED-lighting	—								
PS5L-E WK	MICRO Square, 2-color single-section LED-lighting	—								
			Note 1	Note 1	Terminal B	Terminal D				
					Red	Green				
					Red	Amber				
					Amber	Green				

Note 1: The two lamps cannot be lit simultaneously on square or rectangular 2-color single-section LED-lit types.

Note 2: Connect an external resistor for use on square 2-section LED-lit type, or square or rectangular 2-color single-section LED-lit 24Vdc types.

### External resistor values

Shape of LED-lit surface	Voltage of LED lamp in use	External resistor values (Ω)	Remarks
Square 2-section LED-lighting	For 5Vdc	1,500 1W	Connected respectively to L1-, L2-
Square 2-color single-section LED-lighting	For 5Vdc	1,500 1W	Connected to L+
Rectangular, 2-color single-section LED-lighting	For 5Vdc	680 2W	Connected to + terminal (A or C)
	For 12Vdc	430 1W	

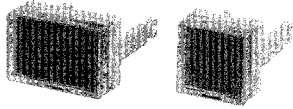
## PRECAUTIONS UPON USE

### ● Attaching and Removing PS5 Switches

#### 1. LED-lighting indicator and operator

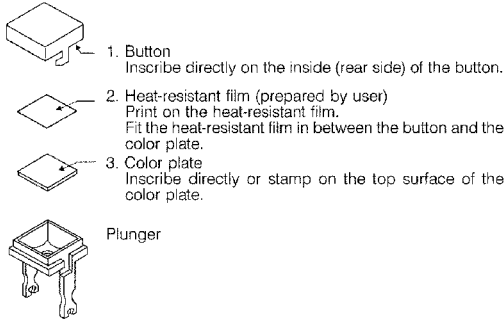
The button, color plate and plunger are packaged as a single set for square and rectangular single-section and 2-color single-section LED-lit switches

For square and rectangular 2-section LED-lit switches, the button, color plate, partition plate and plunger are packaged as single set.

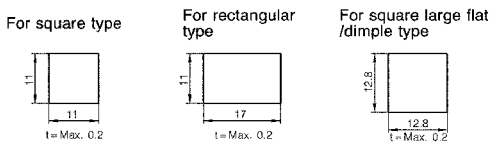


#### • How to print or inscribe

There are three ways to print or inscribe.



**Note:** Heat-resistant film dimensions



#### • Number of characters and lines that can be printed or inscribed on push-buttons

The table on the right shows the number of characters that can be printed or inscribed on buttons, color plates and heat-resistant films (not for sale).

Character width is expressed as follows as a ratio with respect to the standard character width of 1.0.

Standard character width

1.0: A, B, C, D, E, F, G, I, J, K, L, P, R, S, T, V, X, Y, Z  
0, 1, 2, 3, 4, 5, 6, 7, 8, 9

1.33: D, H, N, O, Q, U

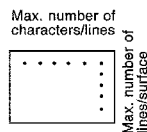
1.5: M, W

The total character width is obtained by adding the character width of each of the above characters. Fractions are rounded up.

Example: RUN → R (1.0) + U (1.33) + N (1.33) = 3.66 → 4

Type and orientation of button	Max. number of characters and lines	Character height (mm)				
		1.9	2.8	3.5	5.0	8.0
Square large flat-large dimple	Number of characters	5	4	3	2	1
	Number of lines	3	3	2	1	1
Square flat-dimple	Number of characters	5	4	3	2	1
	Number of lines	3	3	2	1	1
Rectangular flat-dimple	Number of characters	8	6	5	3	1
	Number of lines	3	3	2	1	1
Rectangular flat-dimple	Number of characters	5	4	3	2	1
	Number of lines	5	5	3	2	1
Square 2-section	Number of characters	5	4	3	0	0
	Number of lines	1	1	1	0	0
Rectangular lateral split	Number of characters	8	6	5	0	0
	Number of lines	1	1	1	0	0
Rectangular longitudinal split	Number of characters	4	3	2	1	1
	Number of lines	3	3	2	1	1
Rectangular longitudinal split	Number of characters	5	4	3	2	0
	Number of lines	2	2	1	1	0

Max. number of characters and number of lines



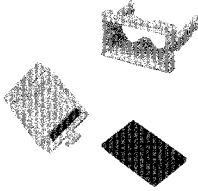
**Note:** As dimple buttons are sculptured to have an indentation, the effect of the lens makes printed or inscribed characters appear warped on the button periphery.



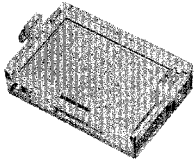
## 2. LED-lighting Indicator and Operator Assembling and Removal Procedure

### • Assembling

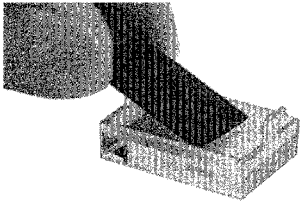
- (1) Check the quantity of the button, color plate, (partition plate), plunger, etc. and inscription or characters on them.



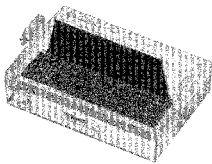
- (2) Turn over and place the button down.



- (3) Insert the color plate in the button. When using heat-resistant film together with the color plate, insert the film first and then insert the color plate with the non-glossy surface facing the button side.

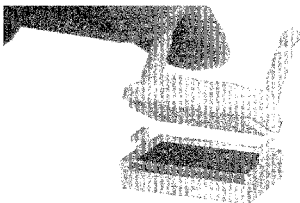


- (4) In the case of a 2-section LED-lit lamp, insert the partition plate between the two color plates so that it is upright.

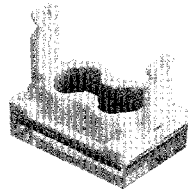


- (5) Assemble the plunger.

In the case of a 2-section LED-lit lamp, make sure that the partition plate is correctly inserted in the guide groove inside the plunger and is upright.

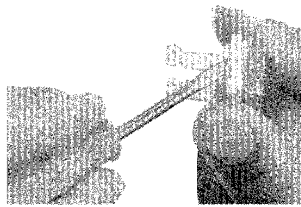


- (6) When snapping in the plunger into the button, the button's hook must be firmly inserted into the groove on the plunger.



### • Removal

- (1) Insert the tip of a fine-tipped regular screwdriver in between the groove on the side of the plunger and the button hook, and gently prize to remove the hook. When doing this, do not exert excessive force that might damage the hook.



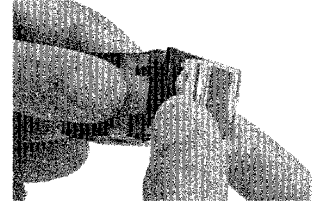
- (2) Gently release the button and plunger.



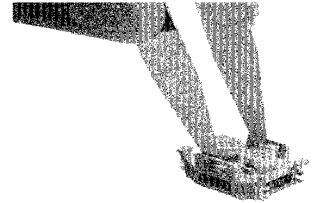
## 3. Assembling and Removing the LED Lamp

### • Assembling

- (1) When the switch/housing/operator section has an lighting indicator/operator, place your fingernail over the indentations at the top and bottom of the button to draw out the button towards you. We recommend using the button removal tool (model No. **PS5T-AX1**).



- (2) Hook the claws of the LED lamp tool (model No. **PS5T-AX**) into the handle hole on the LED lamp unit, insert into the switch and remove the tool.

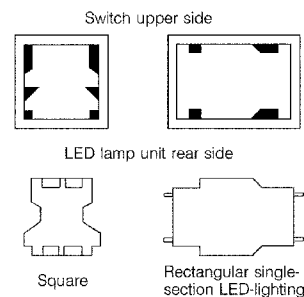


- (3) Press the LED lamp unit with your fingertips and insert into the switch terminal.



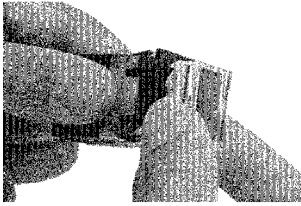
- (4) The assembling position of switches for square and rectangular single-section LED-lit and square 2-section LED-lit/2-color single-section LED-lit LED units is restricted.

Switches for rectangular 2-section LED-lit LED units can be assembled in any direction. When assembling, assemble so that the switch matches the indication color.

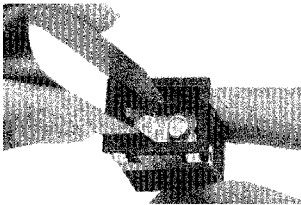


• **Removal**

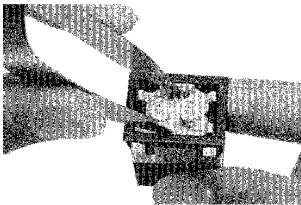
- (1) When the switch/housing section has an LED-lighting indicator/operator, place your fingernail over the indentations at the top and bottom of the button to draw out the button towards you. We recommend using the button removal tool (model No. **PS5T-AX1**).



- (2) Hook the claws of the LED lamp tool (model No. **PS5T-AX**) into the handle hole on the LED lamp unit.



- (3) Gently pull towards you with the LED lamp tool in a hooked state.

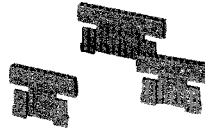


**4. Assembling Auxiliary Parts**

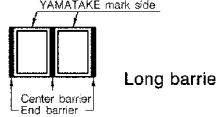
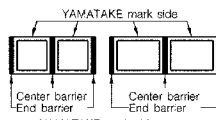
**4.1 Barrier**

Barriers are protruding partitions for preventing erroneous operation of adjacent switch buttons caused by your finger slipping. The following types are available:

- Short center barrier inscription ..... CNTR
- Short end barrier inscription ..... END
- Long center barrier inscription ..... CNTR
- Long end barrier inscription ..... END



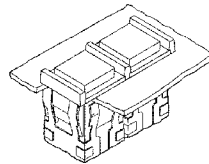
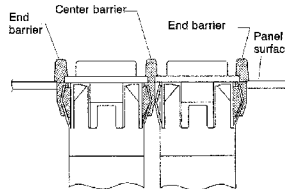
Short barrier



Long barrier

• **Assembling**

Assemble the end barriers and center barrier so that both fitted in between the leaf springs for panel mounting of the switch.



• **Caution**

- Avoid assembling onto the YAMATAKE mark surface side on the barrier due to the relationship between strength and faulty tightening.
- The barrier cannot be used together with the simple type switch guard.

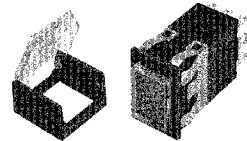
**4.2 Switch guard**

The switch guard is for preventing erroneous operation of switch buttons and for protecting switch button. Buttons cannot be operated as long as the switch guard door is closed.

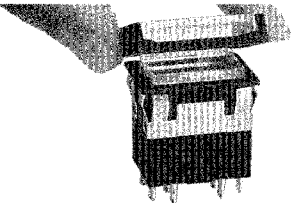


• **Assembling the simple type switch guard**

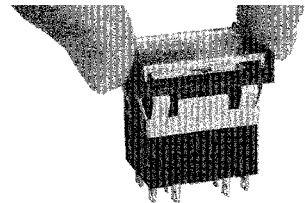
- (1) Assemble the switch guard and switch before fitting the switch into the panel.



- (2) Assemble the switch guard over the bezel surface.



- (3) Align the switch guard with the bezel surface, and press down on the left and right sides to snap in.



• **Removal**

Pull up the switch guard towards you while alternately rocking to the left and right.

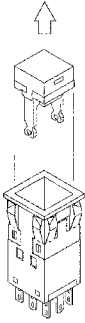
• **Caution**

- The simple switch guard cannot be used together with the barrier.

• **Assembling and removing the spring-back type switch guard**

**Step 1:**

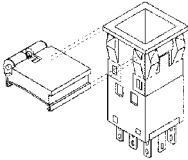
Remove the operator from the switch body.



**Step 2:**

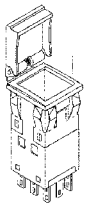
Assemble the switch guard bracket (J shaped section underneath) on the bezel on the body.

To assemble, slide in from the side.



**Step 3:**

After assembling in the switch guard, assemble the operator.



**4.3 Connector**

Two types of connectors, for square types and rectangular types, are provided, and three terminal shapes are provided for each.

Solder and #110 tab terminal combined

PCB terminal

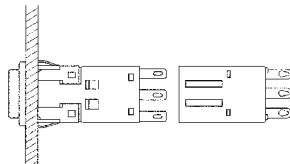
Wire-wrap terminal



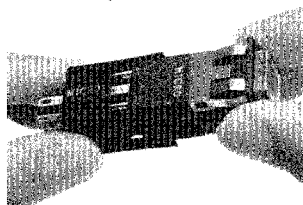
• **Assembling**

After fitting the switch onto the panel, assemble the connector.

(1) Align the YAMATAKE mark surface on the connector with the YAMATAKE mark surface on the panel mounting switch.



(2) Plug in the connector while holding down the switch surface to prevent the switch from slipping out from the panel surface, and hook the connector claws into the lock holes on the switch body to lock.

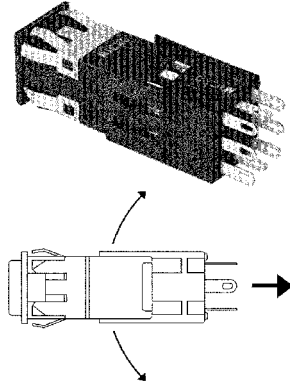


• **Caution**

- The connector cannot be used on square 2-section LED-lit and 2-color single-section LED-lit types.

• **Removal**

Spread the two claws on the left and right of the connector outwards to draw out.



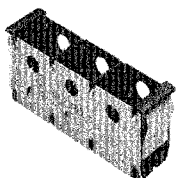
#### 4.4 Matrix mounting fixture

The matrix mounting fixture comprises the following parts:

End plate section: 1 location each at both ends

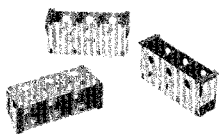
Center plate section: n-1 location

Rail section: 2 locations

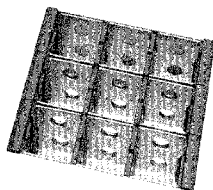


##### • Panel mounting

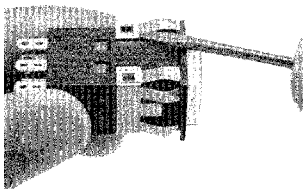
- (1) Prepare the necessary amount of mounting fixtures according to the number of switch mounting units.



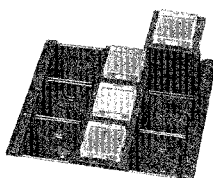
- (2) Snap in each of the mounting fixtures into the specified mounting holes with the YAMATAKE mark surface facing the same way.



- (3) Prize the root of the leaf springs for the switch panel clamp to remove the leaf springs.



- (4) Insert the switches with the YAMATAKE mark surface facing the same way.



##### • Removal

- (1) Draw out the switches at both the left and right ends.
- (2) When drawing out switches, either press the switch terminals to bring them out to the panel surface, or insert a fine-tipped regular screwdriver into the bezel and prize to draw out the switches.
- (3) Draw out the entire mounting fixture from the panel. Draw out each of the switches from the mounting fixture.

##### • Wiring precautions

- (1) Use 0.75mm<sup>2</sup> or less electrical lead for wiring.
- (2) Be sure to use the wiring holes for wiring. Never use the small holes for heat radiation on the terminal root side.



- (3) Solder terminals within five seconds using a 300°C soldering iron. Excessive heat damages the switch. Also, do not apply pulling force until the terminals have sufficiently cooled down.
- (4) The material of the switch contacts can be distinguished by the color of the terminals.  
Normal load silver contact: Black  
Low current load gold cross contact: Light brown

##### • Operating environment restrictions

Observe the following conditions during mounting:

Allowable ambient temperature:

−20 to 40°C

Allowable ambient humidity:

Max. 85%RH

Vibration resistance:

Amplitude 1.5mm, 10 to 55Hz

Atmosphere:

The **PS5** series is a release type switch.

- Avoid use in locations subject to dirt and dust, metal powder and oil particles. If use in such locations is unavoidable, adopt countermeasures to prevent dirt and dust, metal powder and oil particles from entering inside.
- Do not use in locations where there is the risk of corrosion or explosion.

- When the button or switch becomes dirty, moisten gauze with a neutral detergent or alcohol, and wipe clean. Do not use organic solvents.
- Do not drop or damage the switch.

#### 5. Handling square 2-section LED-lighting units

With square 2-section LED-lighting units, the assembling direction of the switch/indicator body and LED lamp is restricted. For this reason, rotate the body unit before use depending on the combination of colors (reverse type to color code of LED lamp model No.). Pay attention to this when mounting the unit on a panel or wiring.

