

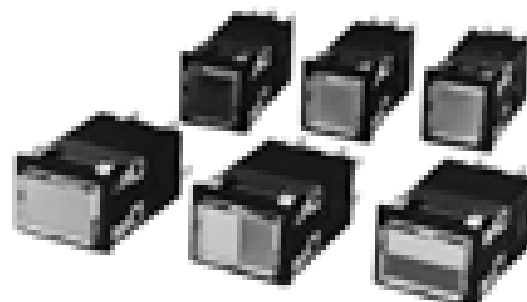
PS5 Series

Crystallite LED-lit Push-button Switches and Indicators

FEATURES

Light Clicking Sensation. Crystal Finish Button Design.
LED-lit, Compact, Low-cost Type 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.
- Overseas standards (UL/CSA) acquired. (excluding square 2-section LED-lit, 2-color single-section LED-lit, rectangular 2-color single-section LED-lit, square large dimple button types)



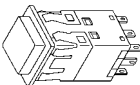


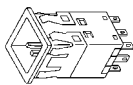



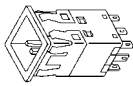

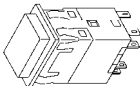


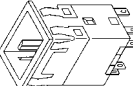



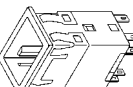

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LIST OF MODELS

• Single-section LED-lighting




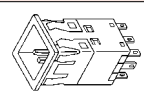




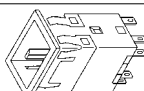

(unit: mm)

Shape		Set Model No.	Individual Model No.			Panel cutout dimensions	External dimensions
		Push-button/LED lamp/switch	Push-button unit	LED lamp unit	Switch unit		
Square	Square flat push-button switch/ and indicator		 +  + 	See (A) on page 19	See (1) on page 16		
		Catalog listing Reference page for description	PS5D- <input type="checkbox"/> S <input type="checkbox"/> Z24 See page 8	PS5A-D <input type="checkbox"/> <input type="checkbox"/> Z PS5L-D <input type="checkbox"/> Z <input type="checkbox"/> <input type="checkbox"/> PS5D- <input type="checkbox"/> <input type="checkbox"/>	See page 9		
	Square dimple push-button switch and indicator	-	 +  + 	See (A) on page 19	See (1) on page 16		
		Catalog listing Reference page for description	- -	PS5A-D1 <input type="checkbox"/> Z See page 9	PS5L-D <input type="checkbox"/> Z <input type="checkbox"/> <input type="checkbox"/> PS5D- <input type="checkbox"/> <input type="checkbox"/>		
Rectangular	Rectangular flat push-button switch and indicator		 +  + 	See (B) on page 19	See (2) on page 16		
		Catalog listing Reference page for description	PS5E- <input type="checkbox"/> S <input type="checkbox"/> Z24 See page 8	PS5A-E <input type="checkbox"/> <input type="checkbox"/> Z PS5L-E <input type="checkbox"/> Z <input type="checkbox"/> <input type="checkbox"/> PS5E- <input type="checkbox"/> <input type="checkbox"/>	See page 9		
	Rectangular dimple push-button switch and indicator	-	 +  + 	See (B) on page 19	See (2) on page 16		
		Catalog listing Reference page for description	- -	PS5A-E1 <input type="checkbox"/> Z See page 9	PS5L-E <input type="checkbox"/> Z <input type="checkbox"/> <input type="checkbox"/> PS5E- <input type="checkbox"/> <input type="checkbox"/>		

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




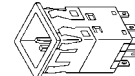
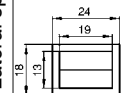



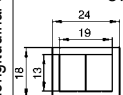


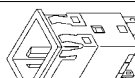
Shape		Set Model No.	Individual Model No.			Panel cutout dimensions	External dimensions	
		Note 1	Note 2					
		Push-button/LED lamp/switch	Push-button unit	LED lamp unit	Switch unit			
Square	Square flat push-button switch and indicator	—	  +  + 			See (A) on page 19	See (4) on page 16	
		Catalog listing	—	PS5A-DWZ	PS5L-K <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	PS5J- <input type="checkbox"/> <input type="checkbox"/>		
		Reference page for description	—	See page 10				
Rectangular	Rectangular flat push-button switch and indicator	—	  +  + 			See (B) on page 19	See (2) on page 16	
		Catalog listing	—	PS5A-EWZ-004	PS5L-E <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> WK	PS5F- <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> /PS5G- <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>		
		Reference page for description	—	See page 11				

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.	Note 1	Individual Model No.			Note 2	Panel cutout dimensions	External dimensions
		Push-button/LED lamp/switch		Push-button unit	LED lamp unit	Switch unit			
Square		Square flat push-button switch and indicator	—	 +  + 			See (A) on page 19	See (4) on page 16	
		Catalog listing	—	PS5A-J□□	PS5L-J□□□□	PS5J-□□			
Rectangular		Rectangular flat push-button switch and indicator	—	 +  + 			See (B) on page 19	See (2) on page 16	
		Catalog listing	—	PS5A-F□□	PS5L-F□□□□HB	PS5F-□□			
		Rectangular flat push-button switch and indicator	—	 +  + 			See (B) on page 19	See (2) on page 16	
		Catalog listing	—	PS5A-G□□	PS5L-G□□□□	PS5G-□□			
		Reference page for description	—	See page 13					

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
		Alternate operation max. 60 operations/minute
	Electrical	Max. 20 operations/minute
Insulation resistance		Min. 100MΩ (by 500Vdc megger)
Dielectric strength		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
Vibration resistance	Malfunction	Amplitude 1.5mm, 10 to 55Hz
Impact resistance	Malfunction	200m/s ²
Life	Mechanical	Momentary operation type: Min. 1 million operations
		Alternate operation: Min. 100,000 cycles
	Electrical	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)
Initial contact resistance		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 temperature range		– 20 to 40°C
Operating humidity range		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

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.

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

2. LED lamp rating


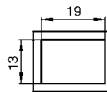

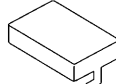


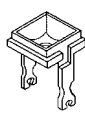
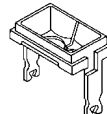




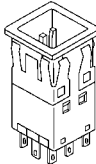
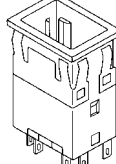
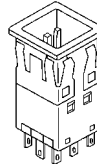
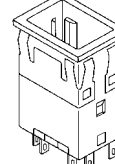
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			Symbol	Standard value	Measurement conditions	Standard value	Measurement conditions	Standard value	Measurement conditions	Standard value	Measurement conditions	
Max. absolute rating	Forward DC voltage	5V type	V _{DD}	5.25	—	5.25	—	5.25	—	5.25	—	V
		12V type		12.6		12.6		12.6				
		24V type		25.2		25.2		—		—		
	Reverse DC voltage	5V type	V _R	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	I _L	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	I _R	100	V _R = 8V	100	V _R = 8V	100	V _R = 8V	100	V _R = 8V	μ 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	I _v	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	λ _p	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	V _s	5±5%				5±5%				dc V
		12V type		12±5%				12±5%				
		24V type		24±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.


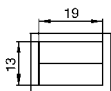
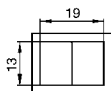

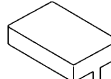
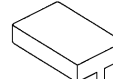






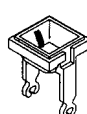
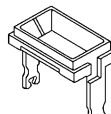
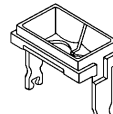



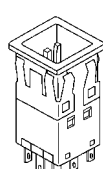
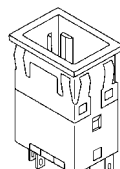
SPECIFICATIONS

● Flat push-button

Push-button unit	LED-lighting method		Single-section LED-lighting			2-color single-section LED-lighting					
	Shape of LED-lit surface (button dimensions) (unit: mm)		Square, standard			Rectangular, standard					
											
	Individual Cat. Listing		PS5A-D□□Z			PS5A-E□□Z					
			PS5A-DWZ			PS5A-EWZ-004					
	Component parts	Flat button									
		Color plate									
				Milky white			Milky white				
		Plunger									
		Button color		Achromatic trans- parent/milky white			Achromatic transparent				
Gloss finish				Gloss finish							
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					
	Individual Cat. Listing		PS5L-D□□Z□□			PS5L-E□□Z□□					
	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)		
	Rated voltage (Vdc)		5 12 24			5 12 24			5 12		
	Rated current (mA)		1 lamp			— — —			15 15 — —		
			2 lamps			60 30 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					
	Individual Cat. Listing		PS5D-□□			PS5E-□□					
	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)									


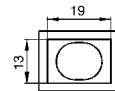

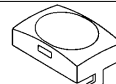


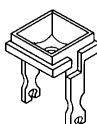
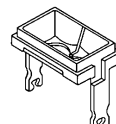


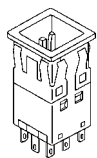
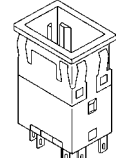
Note: Contact your agent separately for details on square/rectangular type 2-color single-section LED-lit 24Vdc types.

● Flat push-button (continued)

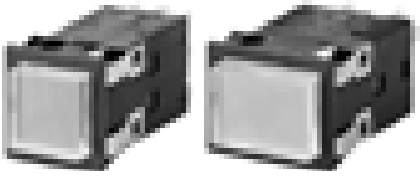
Push-button unit	LED-lighting method		2-section LED-lighting							
	Shape of LED-lit surface (button dimensions) (unit: mm)		Square, standard		Rectangular, lateral split			Rectangular, longitudinal split		
										
	Individual Cat. Listing		PS5A-J□□		PS5A-F□□			PS5A-G□□		
	Component parts	Flat button								
		Color plate								
		Partition plate								
		Plunger								
		Button color	Achromatic transparent							
			Gloss finish							
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		2-section LED-lighting							
	Shape of LED-lit surface		Square, standard		Rectangular, lateral split			Rectangular, longitudinal split		
	Individual Cat. Listing		PS5L-J□□□		PS5L-F□□□			PS5L-G□□□		
	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	—	—	30	15	15	30	15	15
		2 lamps	15	15	60	30	30	60	30	30
	Allowable voltage range		Rated voltage ±5%							
Switch unit indicator	LED-lighting method		2-section LED-lighting							
	Shape of LED-lit surface		Square, standard		Rectangular, lateral split 2 sections			Rectangular, longitudinal split, 2 sections		
	Individual Cat. Listing		PS5J-□□		PS5F-□□			PS5G-□□		
	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						
	Shape of LED-lit surface (button dimensions) (unit: mm)		Square (dimple)			Square (large dimple)			
									
	Individual Cat. Listing		PS5A-D1□Z			PASA-E1□Z			
	Component parts	Dimple button							
		Color plate							
		Plunger							
		Button color	Achromatic transparent						
			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		PS5L-D□Z□□			PS5L-E□Z□□			
	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	30	15	15	—	—	—
			2 lamps	—	—	—	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		PS5D-□□			PS5E-□□			
	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)						

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

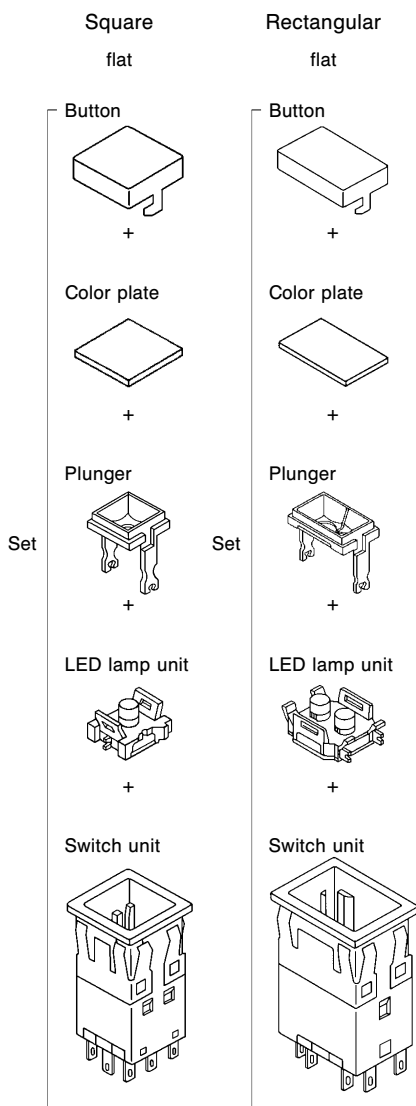


- Single-section LED-lit, flat push-buttons are available under the following set model Nos. and individual model Nos. Order push-button using these model Nos.
- Only individual model Nos. are available for single-section LED-lit, dimple push-buttons.
 - Set model No.: These push-buttons are shipped 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 16.

Panel cutout dimensions ■See (A) (square)/(B) (rectangular) on page 19.

• Set Model No. (flat only)



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

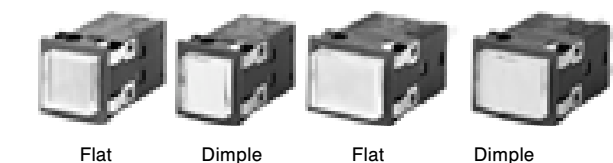
I Basic model No.	II Switch function	III Terminal shape, Bezel color	IV Display color	V LED lamp terminal voltage	Description		
PS5D-					Square, flat push-button type, achromatic transparent with gloss finish		
PS5E-					Rectangular, flat push-button type, achromatic transparent with gloss finish		
					Operation	Output circuit	Contact material
	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		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
					Color plate	LED lamp	When lit
					RZ	Red	Red
					PZ	Milky white	Red
					WZ	Milky white	Amber
					DZ	Orange	Amber
					YZ	Yellow	Green
					GZ	Green	Green
					NZ	Milky white	Green
							Lemon yellow
					24	24Vdc ±5%	

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

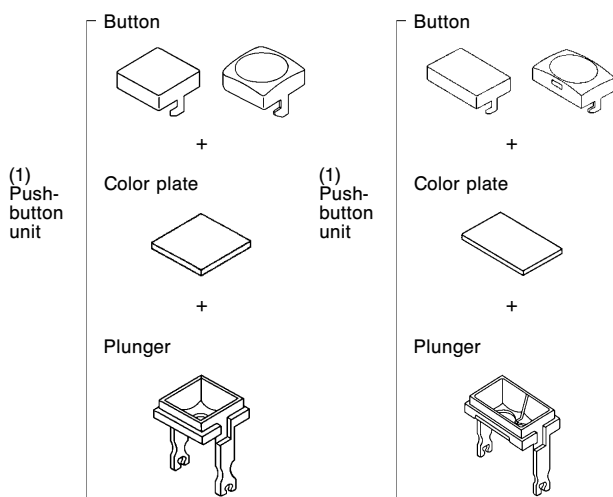
Single-section LED-lit (square flat, square dimple, rectangular flat, rectangular dimple) Type

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

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



Square Flat Dimple **Rectangular** Flat Dimple



(2) LED unit

(2) LED unit

(3) Switch unit

(3) Switch unit

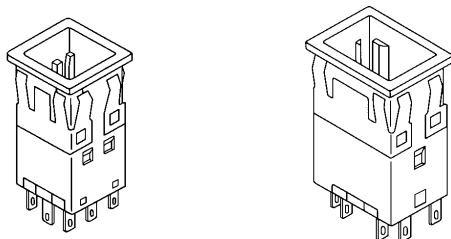


Table 1. Color plate/LED lamp display color combinations

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

Lit/out	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			
Combinations	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.

(1) Push-button unit

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

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

See Table 1.

(2) LED lamp unit

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

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

See Table 1.

(3) Switch unit

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

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

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.

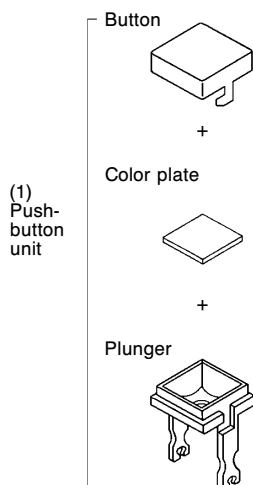
External dimensions ■ See (4) (standard flat) on page 16

Panel cutout dimensions ■ See (A) on page 19.

Individual model No.

Square 2-color single-section

Standard flat



(2) LED lamp unit



(3) Switch unit

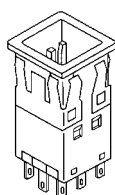


Table 3. Color plate/LED lamp display color combinations

Lit/out	Color when lit	Amber	Pink	Lemon yellow
	Color when out	Milky white	Milky white	Milky white
Combinations	Color plate color	Amber	Red	Green
	LED lamp 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 Basic model No.	II Color plate	Description
PS5A-D		Square 2-color single-section standard flat push-button type, achromatic transparent with gloss finish
See Table 3. [WZ	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 Basic model No.	II LED lamp color	III LED lamp terminal voltage	Description	
PS5L-K			Square standard button 2-color single-section LED lamp	
See Table 3. [When driven across L+/L1-	When driven across L+/L2-
	RA		Red	Amber
	RG		Red	Green
	AG		Amber	Green
		05	5Vdc ± 5%	
		12	12Vdc ± 5%	

Note: When the LED lamp drive voltage is 24Vdc, an external resistor is connected for use.
(For details, see page 23.)

«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 Basic model No.	II Switch function	III Terminal shape, Bezel color	Description		
PS5J-			Square standard button 2-color single-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-color Single-section LED-lit (rectangular flat) Type



Flat

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

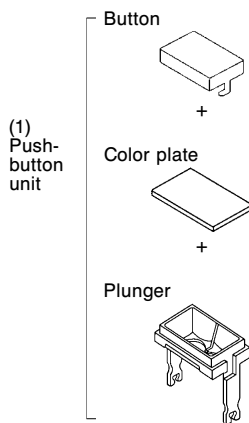
Individual model No.: Nos. are available by individual units (1), (2) and (3) below.
Parts are shipped packaged individually in units.

External dimensions ■See (2) on page 16.

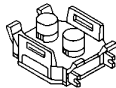
Panel cutout dimensions ■See (B) on page 19.

Individual model No.

Rectangular flat



(2) LED lamp unit



(3) Switch unit

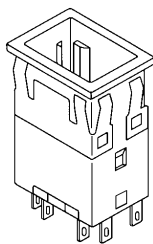


Table 3. Color plate/LED lamp display color combinations

Lit/out	Color when lit	Amber	Pink	Lemon yellow
	Color when out			
Combinations	Color plate color			
	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 III Example: **PS5A-EWZ-004**

I Basic model No.	II Color plate	III LED-lighting method	Description	
PS5A-E See Table 3. [Rectangular	Flat push-button, achromatic transparent with gloss finish
	WZ			Milky white
		-004		Rectangular 2-color single-section LED-lit

(2) LED lamp unit

Model selection guide I II III IV Example: **PS5L-ERG05-WK**

I Basic model No.	II LED lamp color	III LED lamp terminal voltage	IV LED-lighting method	Description
PS5L-E See Table 3. [Rectangular LED lamp/2-lamp system
				2-lamp system (color changed by switching terminal)
	RG			Red, green
	RA			Amber, red
	AG			Amber, green
		00		Without built-in current limiting resistor ($V_F \approx 4V$)
		05		5Vdc $\pm 5\%$
		12		12Vdc $\pm 5\%$
			WK	2-color single-section LED-lit type lamp unit

(3) Switch unit

Model selection guide I II III Example: **PS5F-AS**

I	II	III	Description		
Basic model No.	Switch function	Terminal shape, Bezel color			
PS5F-			Rectangular switch unit (rectangular longitudinal split joint use)		Both usable
PS5G-			Rectangular switch unit (rectangular lateral split joint use)		
			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 <small>Note</small>		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

2-section LED-lit (square flat) Type



Flat

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

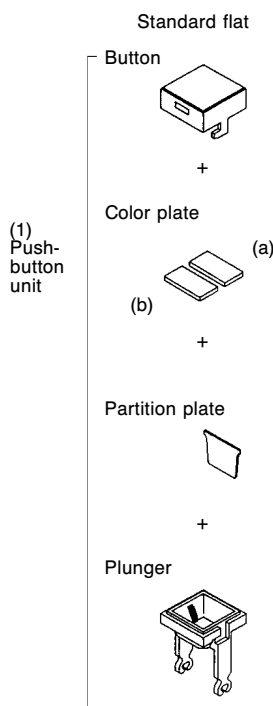
Individual model No.: Nos. are available by individual units (1), (2) and (3) below.
Parts are shipped packaged individually in units.

External dimensions ■See (4) (standard flat) on page 16.

Panel cutout dimensions ■See (A) on page 19.

Individual model

Square 2-section



(2) LED lamp unit



(3) Switch unit

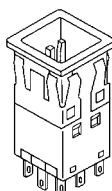


Table 2. Color plate/LED lamp display color combinations

Lit/out	Color when lit	Red	Yellowish green	Green	Orange	Amber	Pink	Lemon yellow
	Color when out	Red	Yellow	Green	Orange	Amber	Milky white	
Combinations	Color plate color	Red	Yellow	Green	Orange	Amber	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					
See Table 2.	(b) \ (a)	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	

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	
See Table 2.			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 $\begin{smallmatrix} R \\ G \end{smallmatrix}$ becomes $\begin{smallmatrix} G \\ R \end{smallmatrix}$) 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 23.)

«External resistor values»

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

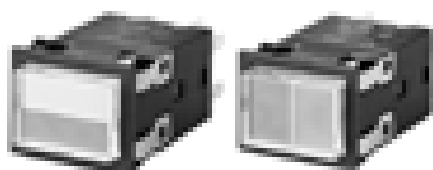
(3) Switch unit

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.

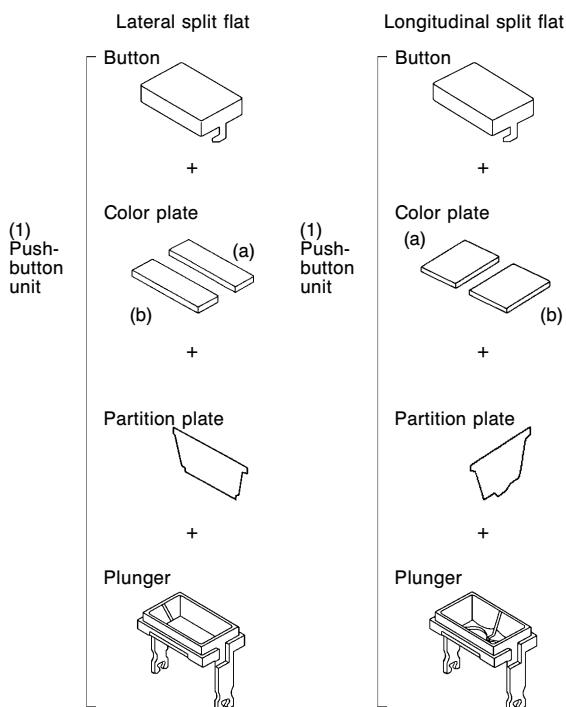
Parts are shipped packaged individually in units.

External dimensions ■ See (2) on page 16.

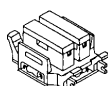
Panel cutout dimensions ■ See (B) on page 19.

● Individual model No.

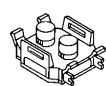
Rectangular



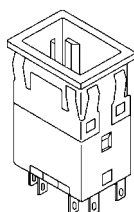
(2) LED lamp unit



(2) LED lamp unit



(3) Switch unit



(3) Switch unit

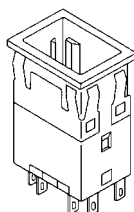




Table 2. Color plate/LED lamp display color combinations

Lit/out	Color when lit	Red	Yellowish green	Green	Orange	Amber	Pink	Lemon yellow
Color when out	Red	Yellow	Green	Orange	Amber	Pink	Lemon yellow	
Color plate color	Red	Yellow	Green	Orange	Amber	Pink	Lemon yellow	
LED lamp color	Red	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-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				
See Table 2.	(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

(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)
See Table 2.	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.	

(3) Switch unit

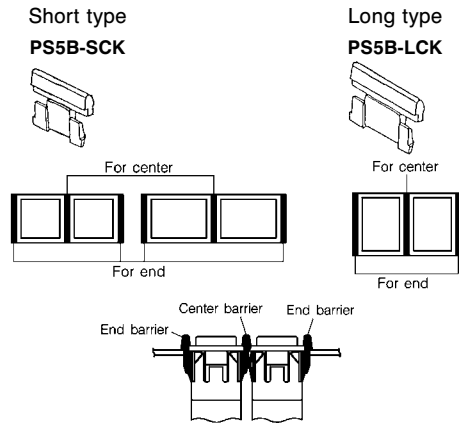
Model selection guide I II III Example: **PS5F-HP**

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



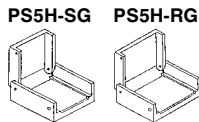
- Barriers are used as partitions for preventing erroneous operation on adjacent push-button switches and for grouping switches and indicators.

Two types of barriers are available, short and long, and barriers for ends and center are available for each.

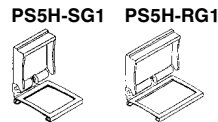
Type	Color	Catalog listing	Caution
Short barrier, center	Black	PS5B-SCK	<ul style="list-style-type: none"> - Joint use with the matrix mounting fixture is not possible. - Cannot be used on large (flat or dimple) button type switches.
	Gray	PS5B-SCL	
Short barrier, end	Black	PS5B-SEK	
	Gray	PS5B-SEL	
Long barrier, center	Black	PS5B-LCK	
	Gray	PS5B-LCL	
Long barrier, end	Black	PS5B-LEK	
	Gray	PS5B-LEL	

2. Switch guard

Simple type
(stays upright when released)



Spring-back type
(returns when released)



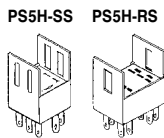
- Switch guards are used for protecting push-buttons and for preventing erroneous operation. Two types are available, simple and spring-back.

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

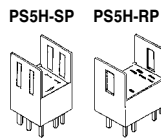
Type	Catalog listing	Caution
Square simple type	PS5H-SG	<ul style="list-style-type: none"> - Joint use with the barrier or matrix mounting fixture is not possible.
Rectangular simple type	PS5H-RG	
Square spring-back type	PS5H-SG1	<ul style="list-style-type: none"> - Joint use with the barrier is possible. - Joint use with the matrix mounting fixture is not possible.
Rectangular spring-back type	PS5H-RG1	

3. Connector

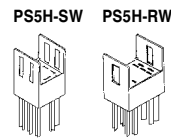
Solder and #110 tab
terminal combined



PCB terminal



Wire-wrap terminal

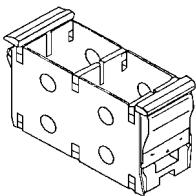


Connectors are used plugged into the base of switch units. Three terminal shapes are available, soldered terminal, PCB terminal and wire-wrap terminal.

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

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 to is 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		
PS5M-S				For square switch unit	
PS5M-R				For rectangular switch unit (horizontal)	
	01			<div style="display: flex; justify-content: space-around; align-items: center;"> <div style="text-align: center;"> Rectangular ↑ ↓ </div> <div style="text-align: center;"> Square ↑ ↓ </div> </div>	1
	02				2
	03				3
	04				4
	05				5
		—		Black (blank or need not be filled in)	
		L		Gray	
			A	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

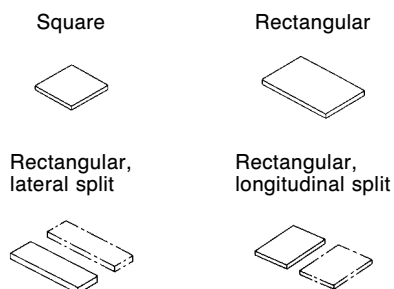
1. Button



Type and catalog listing

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

2. Color plate



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

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

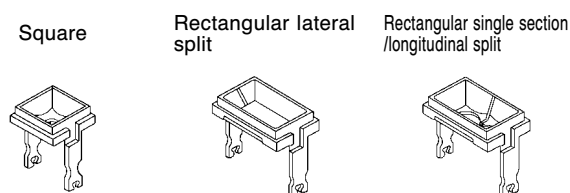
3. Partition plate



Type and catalog listing

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

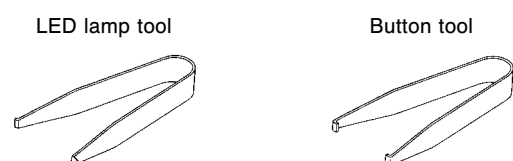
4. Plunger



Type and catalog listing

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

5. Tools

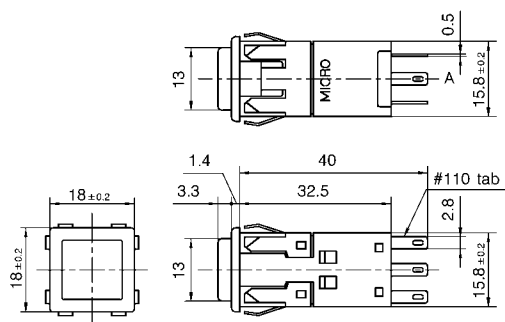


Type and catalog listing

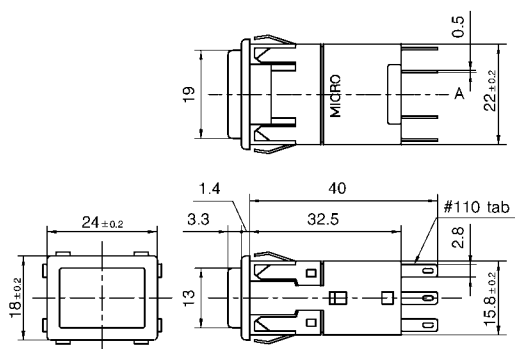
Type	Catalog listing	Remarks
LED lamp tool	PS5T-AX	Used for removing LED lamp
Button tool	PS5T-AX1	Used for removing buttons

EXTERNAL DIMENSIONS

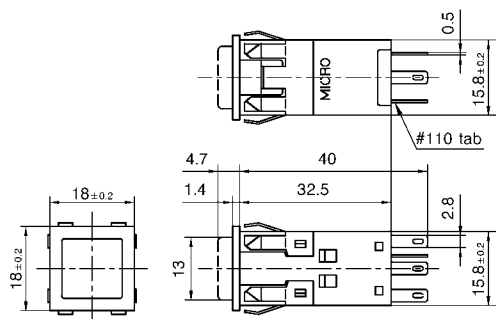
- Push-button switch and indicator body
- #110 tab terminal square type (flat, dimple)



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

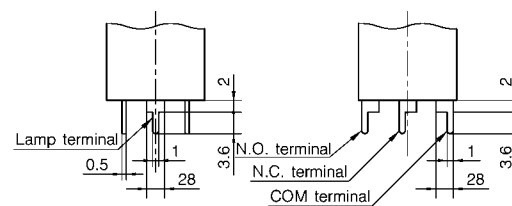


- #110 tab terminal square type•2-section/2-color single-section (flat)



- PCB terminal and PCB terminal dimensions (unit: mm)

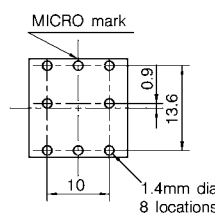
1 Terminal shape



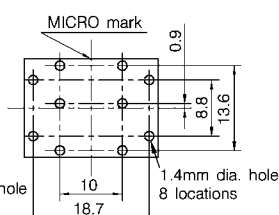
2 PCB drilling dimensions

(view from rear with MICRO mark facing up)

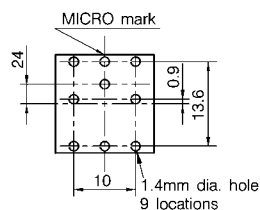
Square•single-section
LED-lighting



Rectangular•single-section
LED-lighting
2-section LED-lighting
2-color single-section LED-lighting

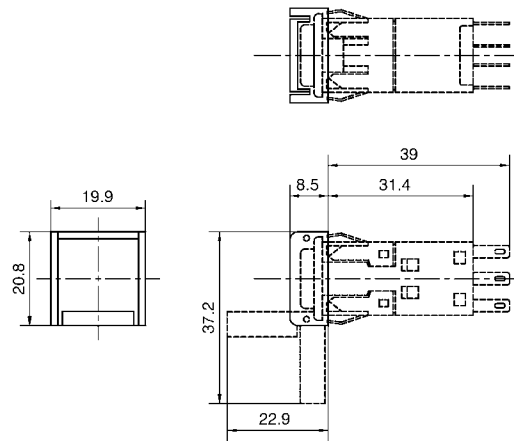


Square•2-section LED-lighting
2-color Single-section LED-lighting

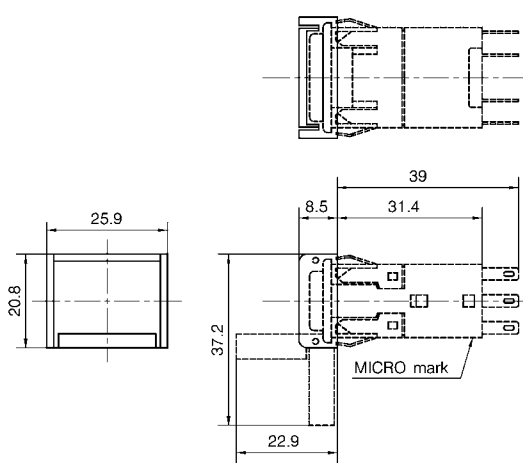


● When switch guard is assembled

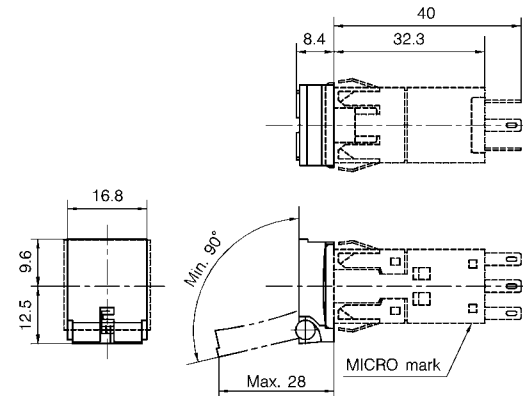
Square, simple type



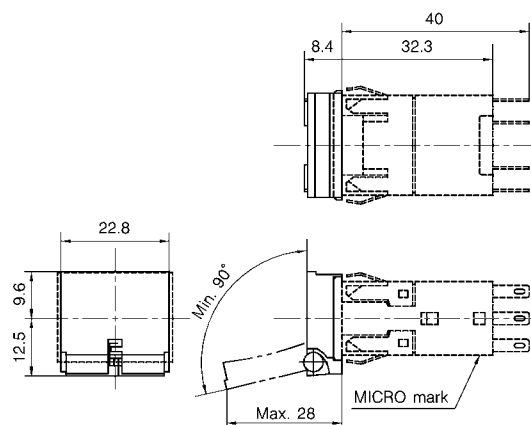
Rectangular, simple type



Square, spring-back type

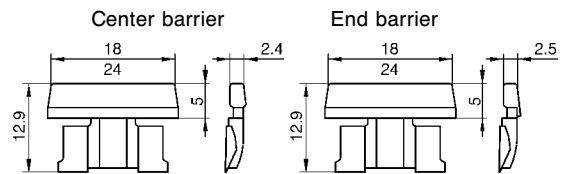


Rectangular, spring-back type



● Barrier

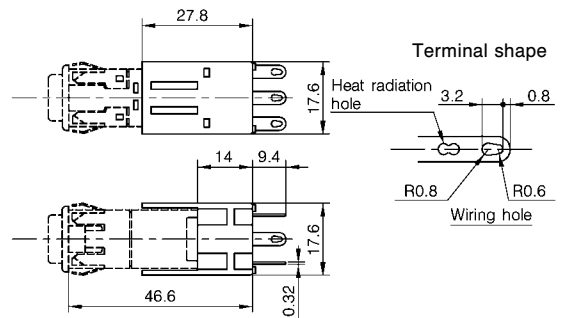
(unit: mm)



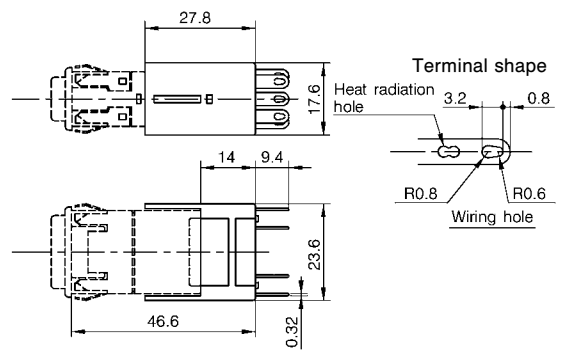
Upper numerals are for short barrier, and lower numerals are for long barrier.

● When assembling connector

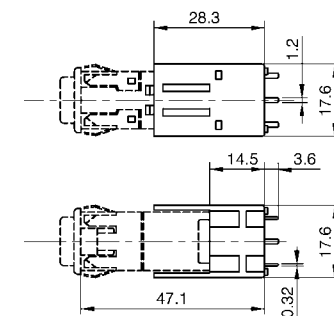
#110 tab square



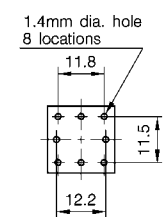
#110 tab rectangular



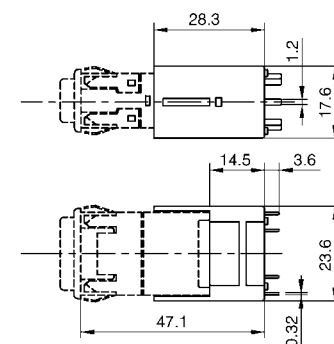
PCB terminal square



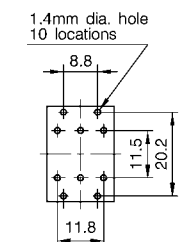
PCB drilling dimensions



PCB terminal rectangular



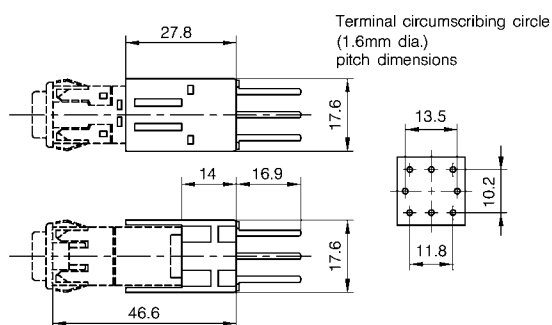
PCB drilling dimensions



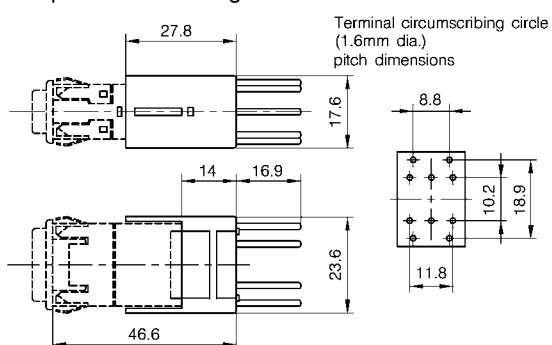
● When assembling connector

Wire-wrap terminal square

(unit: mm)

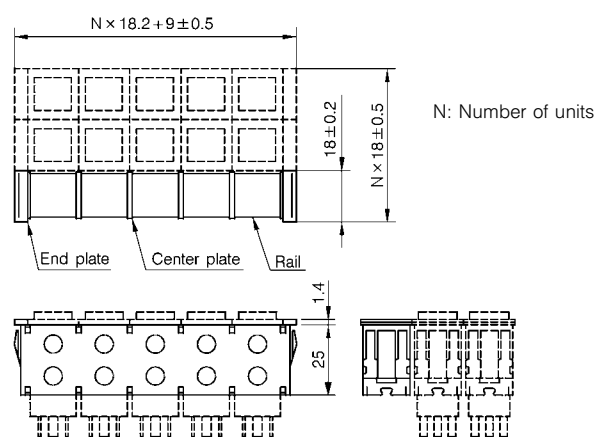


Wire-wrap terminal rectangular

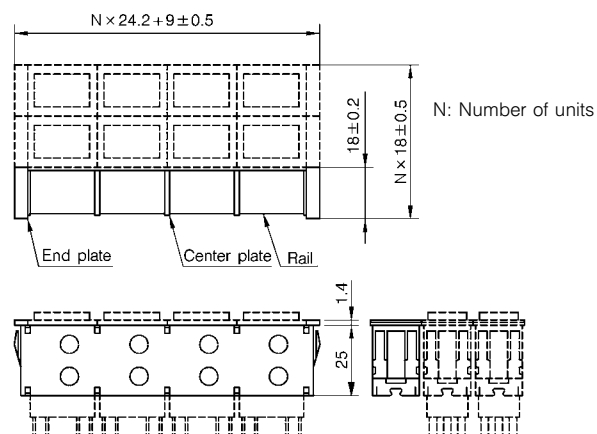


● When matrix mounting fixture is assembled

Square



Rectangular



PANEL CUTOUT DIMENSIONS

(unit: mm)

(A)	Square [Common to flat and dimple]	Accessories used	None	Spring-back type (Catalog listing PS5H-SG1)	None	Spring-back type (Catalog listing PS5H-SG1)	Simple type (Catalog listing PS5H-SG)	Matrix mounting fixture (Catalog listing PS5M-S□□A□)
		Barrier used	None	None	W/ barrier (Catalog listing PS5B-S□□)		Unusable	Unusable
		Single mounting						Square : $N \times 18.2 + 5.5 \pm 0.2$ note 2.
		Gang mounting						
(B)	Rectangular [Common to flat and dimple types]	Accessories used	None	Spring-back type (Catalog listing PS5H-RG1)	None	Spring-back type (Catalog listing PS5H-RG1)	Simple type (Catalog listing PS5H-RG)	Matrix mounting fixture (Catalog listing PS5M-R□□A□)
		Barrier used	None	None	W/ barrier Catalog listing (PS5B-S□□ or PS5B-R□□)		Unusable	Unusable
		Horizontal single mounting						Rectangular : $N \times 24.2 + 5.5 \pm 0.2$ note 2.
		Horizontal gang mounting						
		Vertical single mounting					-	
		Vertical gang mounting					-	
		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
		Single mounting pitch					-	-

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 switch guards, and other switches together on the panel front.
Note, however that adjacent positioning of simple switch guards and barriers shall be prevented.

Note 6: Cannot be used together with switch guard

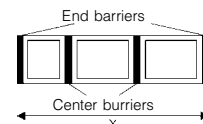
(1) Panel cutout front panel dimensions (unit: mm)
 Switch (longitudinal split) n1 $a = 17.9 \times n_1$
 (lateral split) n2 $b = 23.9 \times n_2$
 W/ simple type switch guard (square) n3 $c = 19.9 \times n_3$
 (rectangular) n4 $d = 25.9 \times n_4$
 Center barrier n5 $e = 1.3 \times n_5$
 End barrier n6 $+ f = 1.9 \times n_6$

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

(2) Panel cutout dimensions = $X - (\text{right edge } X_1 + \text{left edge } X_2)$

Right edge X_1 or left edge X_2 are as follows in the following instances:
 Switch w/out barrier: 0.6
 End barrier: 0.6
 Simple type switch guard: 1.55

Example:

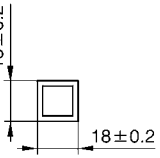
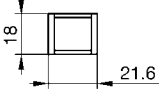
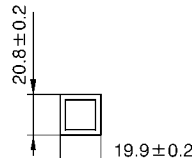
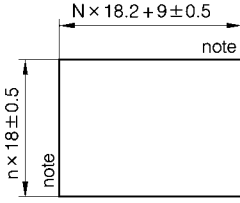
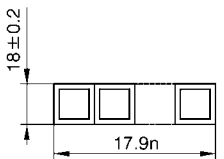
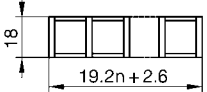
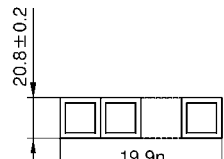
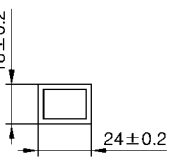
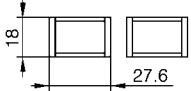
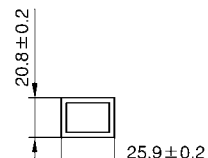
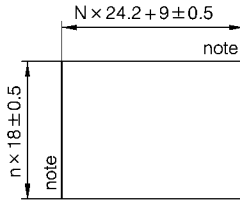
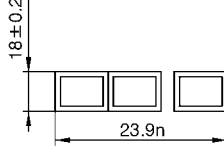
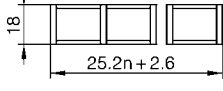
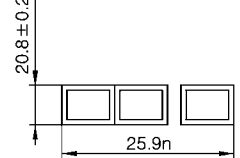
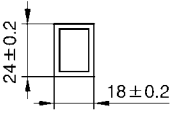
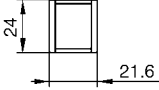
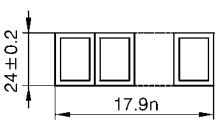
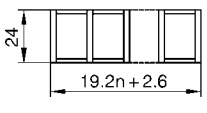
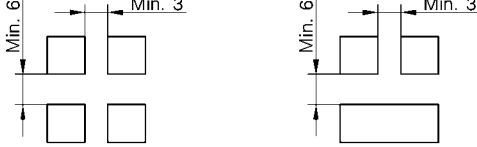


$$X = (17.9 \times 1) + (23.9 \times 2) + (1.3 \times 2) + (1.9 \times 2) = 72.1\text{mm}$$

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 PS5H-SG1)	None	Spring-back type (Catalog listing PS5H-SG1)	Simple type (Catalog listing PS5H-SG)	Matrix mounting fixture (Catalog listing PS5M-S□□A□)
		Barrier used	None	None	W/ barrier (Catalog listing PS5B-S□□)		Unusable	Unusable
		Single mounting						
		Gang mounting						
(B)	Rectangular Common to flat and dimple types	Accessories used	None	Spring-back type (Catalog listing PS5H-RG1)	None	Spring-back type (Catalog listing PS5H-RG1)	Simple type (Catalog listing PS5H-RG)	Matrix mounting fixture (Catalog listing PS5M-R□□A□)
		Barrier used	None	None	W/ barrier Catalog listing (PS5B-S□□ or PS5B-R□□)		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					—	
Common to square and rectangular type	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
	Single mounting pitch							—

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

TERMINAL CONNECTION DIAGRAMS

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

(unit: mm)

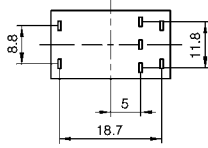
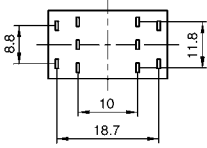
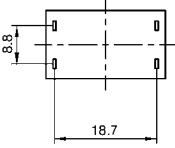
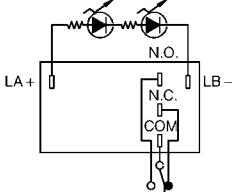
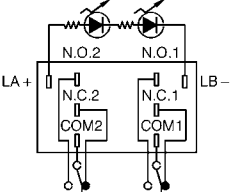
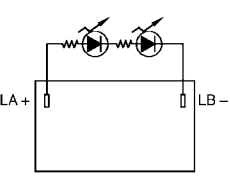
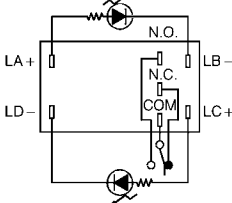
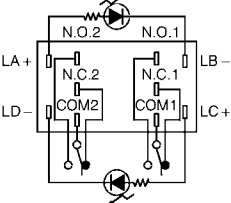
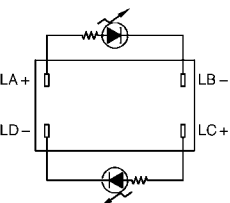
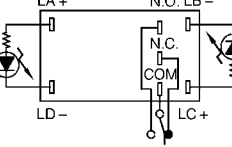
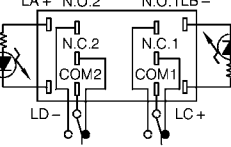
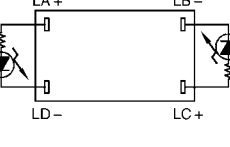
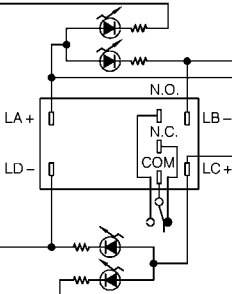
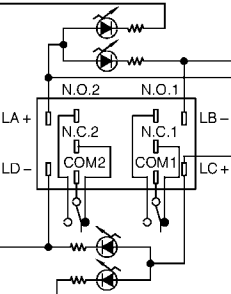
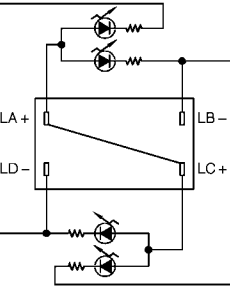
Shape	LED-lighting method	1 × SPDT (1-pole)	2 × SPDT (2-pole)	Indicator
Square single-section LED-lighting	Terminal layout			
	Connection diagram			
Square 2-section LED-lighting	Terminal layout			
	Connection diagram			
Square 2-color single-section LED-lighting	Terminal layout			
	Connection diagram			

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 MICRO 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			
		<ul style="list-style-type: none"> - 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 MICRO mark surface facing up)

Catalog listing	Shape of LED-lit surface	24Vdc	12Vdc	5Vdc	Remarks		
PS5L-D	Square, single-section LED-lighting				Resistance	Red	Amber green
PS5L-E	Rectangular, single-section LED-lighting				R ₁	560	560
					R ₂	300	270
					R ₃	36	30
PS5L-J	Square, 2-section LED-lighting	—			R ₄	75 (Red amber)	56 (Green)
					R ₅	62	62
PS5L-F	Rectangular, longitudinal split LED-lighting				R ₆	560	560
					R ₇	75	56
PS5L-G	Rectangular, lateral split LED-lighting				(Ω)		
PS5L-K	Rectangular, 2-color single-section LED-lighting	—					
PS5L-E	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 ½W	Connected respectively to L1-, L2-
Square 2-color single-section LED-lighting	For 5Vdc	1,500 ½W	Connected to L +
Rectangular, 2-color single-section LED-lighting	For 5Vdc	680Ω ½W	Connected to + terminal (A or C)
	For 12Vdc	430Ω ¼W	

PRECAUTIONS UPON USE

• Attaching and Removing PS5 Switches

1. LED-lighting indicator and operator

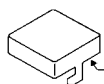
The button, color plate and plunger are packaged as a single set for square and rectangular single-section and 2-color single-section LED-lit switches

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.



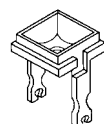
1. Button
Inscribe directly on the inside (rear side) of the button.



2. Heat-resistant film (prepared by user)
Print on the heat-resistant film.
Fit the heat-resistant film in between the button and the color plate.



3. Color plate
Inscribe directly or stamp on the top surface of the color plate.

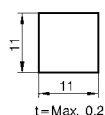


Plunger

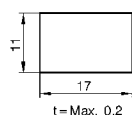
Note: Heat-resistant film dimensions

(unit: mm)

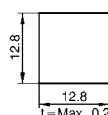
For square type



For rectangular type



For square large flat /dimple type



• 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



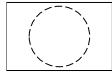


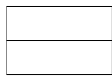


1.0: A, B, C, D, E, F, G, I, J, K, L, P, R, S, T, V, X, Y, Z
0, 1, 2, 3, 4, 5, 6, 7, 8, 9

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

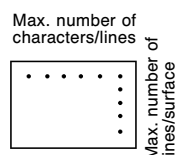
1.5: M, W

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

Example: RUN \Rightarrow R (1.0) + U (1.33) + N (1.33) = 3.66 \Rightarrow 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

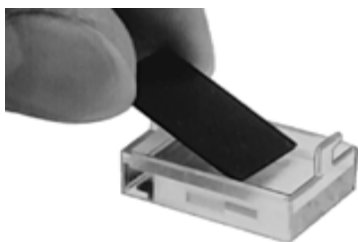
- (1) Check the quantity of the button, color plate, (partition plate), plunger, etc. and inscription or characters on them.



- (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 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.



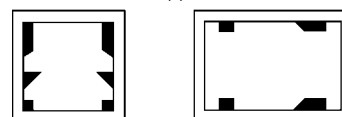
- (3) Press the LED lamp unit with your fingertips and insert into the switch terminal.



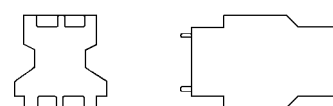
- (4) The assembling position of switches for square and rectangular single-section LED-lit and square 2-section LED-lit/2-color single-section LED-lit LED units is restricted.

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.

Switch upper side



LED lamp unit rear side



Square

Rectangular single-section LED-lighting

• 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

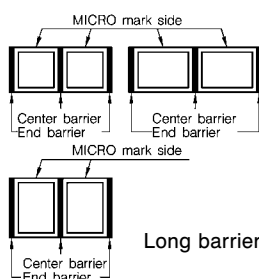
4.1 Barrier

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

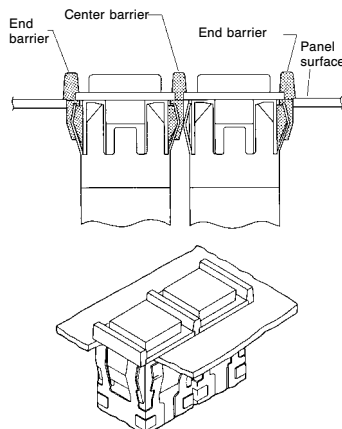


Short barrier



• 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 MICRO 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.

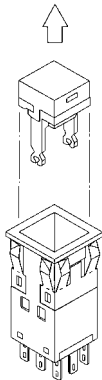
• Caution

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

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

Step 1:

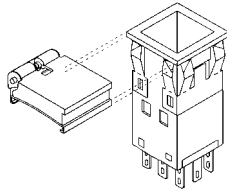
Remove the operator from the switch body.



Step 2:

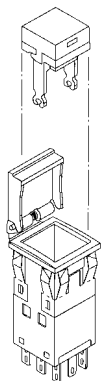
Assemble the switch guard bracket (J shaped section underneath) on the bezel on the body.

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

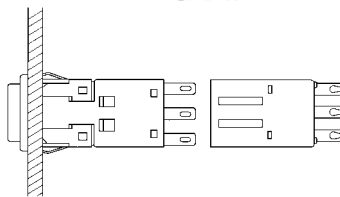
Wire-wrap terminal



• **Assembling**

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

(1) Align the MICRO mark surface on the connector with the MICRO 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.

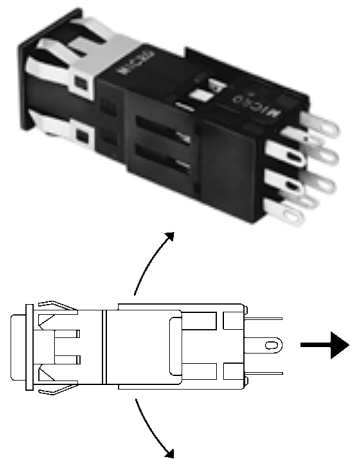


• **Caution**

- 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.



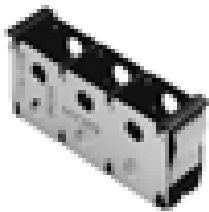
4.4 Matrix mounting fixture

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

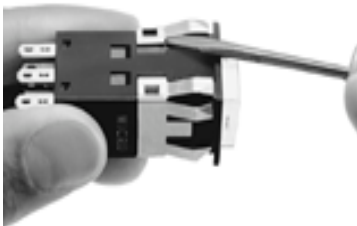
- (1) Prepare the necessary amount of mounting fixtures according to the number of switch mounting units.



- (2) Snap in each of the mounting fixtures into the specified mounting holes with the MICRO 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 MICRO 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 0.75mm² 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

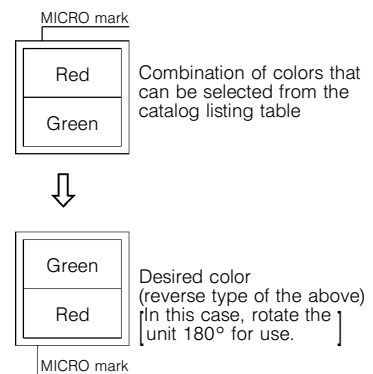
Atmosphere:
The **PS5** series is a release type switch.

- 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.





RESTRICIONS ON USE

This product has been designed, developed and manufactured for general-purpose application in machinery and equipment. Accordingly, when used in applications outlined below, special care should be taken to implement a fail-safe and/or redundant design concept as well as a periodic maintenance program.

- Safety devices for plant worker protection
- Start/stop control devices for transportation and material handling machines
- Aeronautical/aerospace machines
- Control devices for nuclear reactors

Never use this product in applications where human safety may be put at risk.

YAMATAKE

Specifications are subject to change without notice.

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