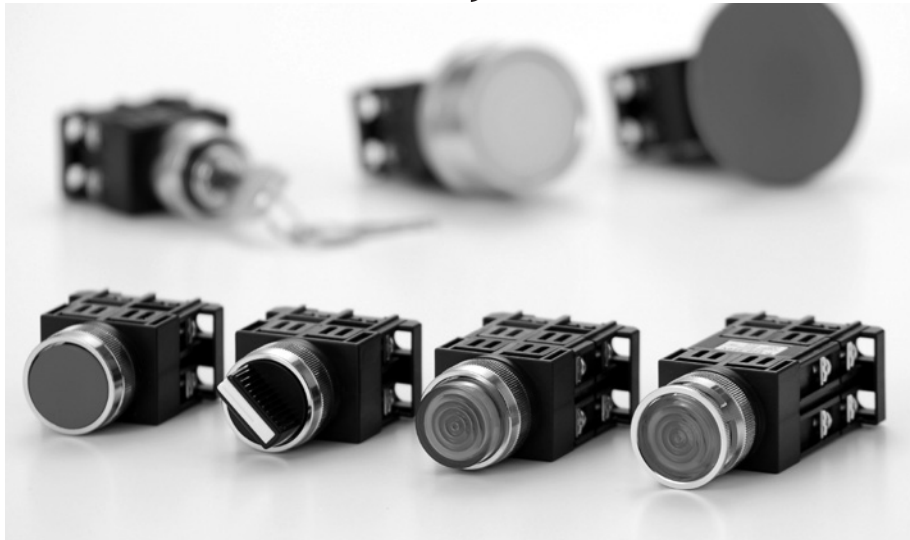




PUSHBUTTON SWITCH / SELECTOR SWITCH / ILLUMINATED PUSHBUTTON SWITCH

HSA TYPE, LHSA TYPE



FEATURES

1

Protective construction of the HSA type is IP65 and the oil-proof, which applies to wide variety of applications.

* PSA-V type is IP40

3

The button is sturdy and provides a color chip that maintains beautiful color.

2

Terminal covers (covers for live parts) are provided as standard accessory.

4

Two types of mounting rings (chromium-plating type and black type) are standardized.

SPECIFICATIONS (RATINGS, PERFORMANCE)

Type	HSA	LHSA
Rated insulation voltage (Ui)	AC - DC600V	AC - DC600V (Illumination part 250V)
Rated operating voltage	See *1	See *1 and *2
Rated current-carrying capacity (Ith)	10A (Contact)	
Withstand voltage	2,200V AC / 1 min.	Contact: 2,200V AC / 1 min. Illuminating part: 2,500V AC (Full-voltage type: 2,000V AC) / 1 min.
Operating temperature	-20°C to 55°C (Indoor) -25°C to 40°C (Outdoor)	
Storing temperature	-25°C to 55°C (70°C within 24 hours)	
Panel thickness	1 to 6mm	
Shock resistance	Malfunction: 100m/s ² , Durability: 500m/s ²	
Terminal connection	Terminal screw M3.5	
Electrical life	1,000,000 operations	
Mechanical life	Pushbutton switch: 5,000,000 operations	5,000,000 operations
	Selector switch: 1,000,000 operations (3a2b or more contacts: 250,000 operations)	—
Temperature rise	40K max.	
Switching frequency	1,800 operations / hour	
Heat resistance	70°C±2°C for 16 hours	

*1 Rated operating voltage and Rated operating current of contacts.

Voltage	AC	DC	
	AC-15 class (Inductive load)	DC-13 class (Inductive load)	DC-12 class (Resistance load)
24V	10	6	6
48V	10	2	3
110V	6	0.7	2
220V	4	0.3	1
440V	1.5	-	-

*2 Rated operating voltage of illuminating part

Code	Primary voltage	Secondary voltage
024	24V AC-DC	24V AC / DC
T110	100 / 110V AC	24V AC
T220	200 / 220V AC	24V AC
F110	100 / 110V AC-DC	24V AC / DC
F220	200 / 220V AC-DC	24V AC / DC

Spacer for mounting
Recommended pieces of spacer
(including name plate thickness)

Panel thickness (mm)	Pieces of spacer	
	Spacer thickness 1.5mm	Spacer thickness 3mm
1.0 - 2.3	2	1
2.3 - 4.0	1	1
4.0 - 5.5	0	1
5.5 - 6.0	1	0

HOW TO ORDER

■ Pushbutton switch Non-illuminated, momentary operation type

HSA - P Y 11 C

No.	Item	Code	Detail	Note
①	Basic type	HSA		—
②	Button shape	P	Flat pushbutton	
		C	Convex pushbutton	
		M	Mushroom pushbutton	
		E	Large mushroom pushbutton	
		J	Button with guard ring	—
		N	Mushroom pushbutton with guard ring	
		F	Large mushroom pushbutton with guard ring	
		U	Pull button	
③	Button color	Z	Push-lock turn-reset type	
		□ (Blank)	Black / Red / Green	*1
		B	Black	* For "U", only R, B and BG button colors are supplied. For "Z", only R and Y button colors are supplied.
		R	Red	
		G	Green	
		Y	Yellow	
		W	Milky white	
		O	Orange	
④	Contact arrangement	BG	Blue green	
		11	1a1b	
		22	2a2b	
		33	3a3b	
⑤	Surface ring color	44	4a4b	
		C	Chromium	* For "J" "N" "F" button shape, only C surface ring color can use.
		B	Black	

*1 For "P", B, R, G button colors are supplied as a set.
□: only P button shape

■ Selector switch Non-illuminated type

HSA - H B 11 C

No.	Item	Code	Detail	Note
①	Basic type	HSA		—
②	Knob shape	H	2-notch manual return	
		HL	2-notch automatic return The knob automatically returns from left to right.	
		T	3-notch manual return	
		TS	3-notch automatic return The knob automatically returns from the right or left to the center position.	—
		KH	Key-operated, 2-notch Manual return	
		KT	Key-operated, 3-notch Manual return	
		KTS	Key-operated, 3-notch The knob automatically returns from the right or left to the center position. (Center removal)	
③	Knob color	B	Black	
		R	Red	—
		G	Green	
④	Contact configuration	11	1a1b	* For details (overlapping contact, etc.), see the contact configuration diagram (on page A116).
		22	2a2b	
		33	3a3b	
		44	4a4b	
⑤	Surface ring	C	Chromium	
		B	Black	
⑥	Key removal position (For key-operated switch)	-A	A position	* Not applicable to KTS type (center-removal). 2 notches (KH)
		-B	B position	
		-T	T position	3 notches (KT)
		-BA	BA position	
		-BT	BT position	
		-AT	AT position	
		-BAT	BAT position	

■ Illuminated pushbutton switch (Full-voltage type, Transformer type, Resistor type) LED lamp, momentary operation type

LHSA - D R W 11 110 C

No.	Item	Code	Detail	Note
①	Basic type	LHSA		—
②	Colored transparent convex button (lens)	D		—
③	Button color	R	Red	
		G	Green	
		O	Orange	
		W	Milky white	—
		Y	Yellow	
		C	Clear	
④	BA9S lamp	W		—
		11	1a1b	
⑤	Contact arrangement	22	2a2b	
		33	3a3b	
		44	4a4b	
⑥	Form	No code	Full-voltage	
		T	Transformer type	—
		F	Resistor type	
⑦	Voltage		Primary voltage	Secondary voltage
		024	Full-voltage	
		T1 10	AC100/110V	* Not applicable to KTS type (center-removal).
		T220	AC200/220V	
		F1 10	AC-DC100/110V	
		F220	AC-DC200/220V	
⑧	Surface ring	C	Chromium	
		B	Black	—
		G	Punched guard	



PUSHBUTTON SWITCH / SELECTOR SWITCH / ILLUMINATED PUSHBUTTON SWITCH

HSA TYPE, LHSA TYPE

STANDARD PRODUCTS

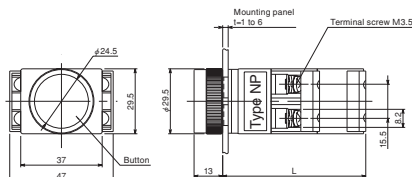
Pushbutton switch Non-illuminated, momentary operation type

P to F, Z

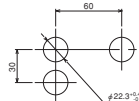
NO contact (a-contact): Black
NC contact (b-contact): Red

Flat pushbutton

HSA-P



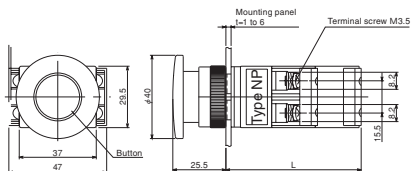
● Mounting hole size (Minimum mounting pitch)



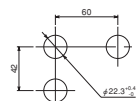
No. of units	1	2	3	4
L(mm)	44	65	86	107

Mushroom pushbutton

HSA-M



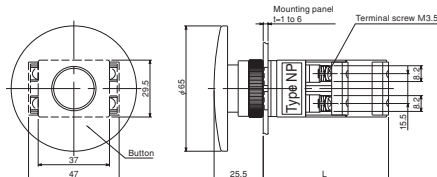
● Mounting hole size (Minimum mounting pitch)



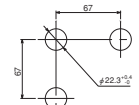
No. of units	1	2	3	4
L(mm)	44	65	86	107

Large mushroom pushbutton

HSA-E



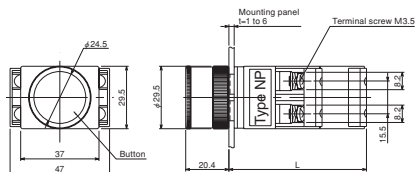
● Mounting hole size (Minimum mounting pitch)



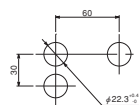
No. of units	1	2	3	4
L(mm)	44	65	86	107

Button with guard ring

HSA-J



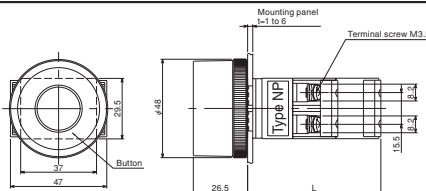
● Mounting hole size (Minimum mounting pitch)



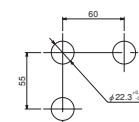
No. of units	1	2	3	4
L(mm)	44	65	86	107

Mushroom pushbutton with guard ring

HSA-N



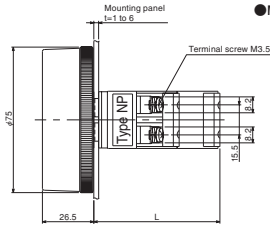
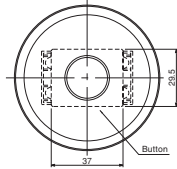
● Mounting hole size



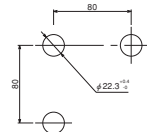
No. of units	1	2	3	4
L(mm)	44	65	86	107

Large mushroom pushbutton with guard ring

HSA-F



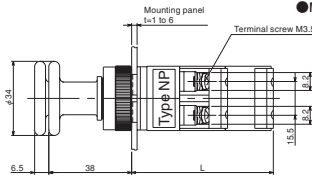
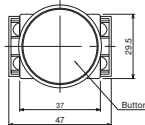
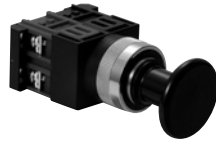
● Mounting hole size (Minimum mounting pitch)



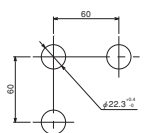
No. of units	1	2	3	4
L(mm)	44	65	86	107

Pull button

HSA-U



● Mounting hole size (Minimum mounting pitch)

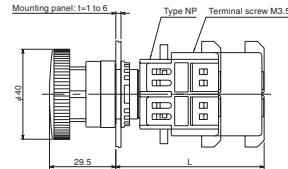
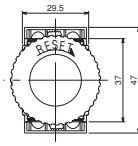


No. of units	1	2	3	4
L(mm)	44	65	86	107

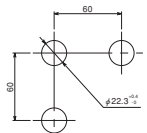
NC contact (b-contact): Black
NO contact (a-contact): Red

Push-lock turn-reset type

HSA-Z



● Mounting hole size (Minimum mounting pitch)

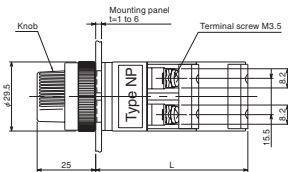
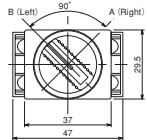


No. of units	1	2	3	4
L(mm)	47	68	89	110

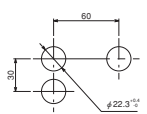
→ Terminal wiring: Upper and lower terminals only

Selector switch

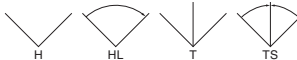
HSA-H,HL,T,TS



● Mounting hole size (Minimum mounting pitch)

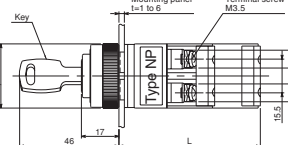
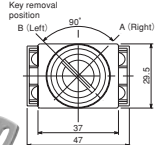
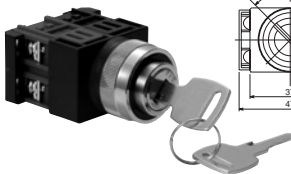


No. of units	1	2	3	4
L(mm)	44	65	86	107

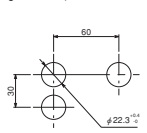


Key-operated selector switch

HSA-KH,KT,KTS



● Mounting hole size (Minimum mounting pitch)



No. of units	1	2	3	4
L(mm)	44	65	86	107

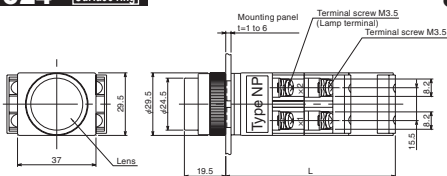


HSA TYPE, LHSA TYPE

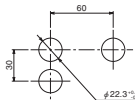
STANDARD PRODUCTS

Full-voltage type (LED)

LHSA-P **Color** **W** **Contact** **-024-** **Surface ring**



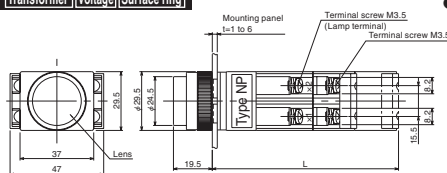
● Mounting hole size (Minimum mounting pitch)



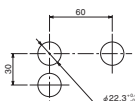
No. of units	1	2	3	4
L(mm)	59	80	101	122

Transformer type (LED)

LHSA-D ☐ Color ☒ **W** ☐ Contact ☐ - ☐ Transformer ☐ Voltage ☐ Surface ring



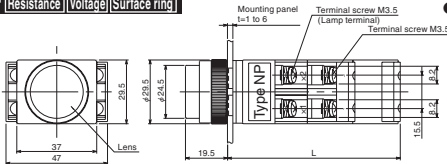
● Mounting hole size (Minimum mounting pitch)



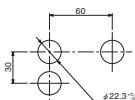
No. of units	1	2	3	4
L(mm)	72.5	93.5	114.5	135.5

Resistor type (LED)

LHSA-P	Color	W	Contact	—	Resistance	Voltage	Surface ring
--------	-------	---	---------	---	------------	---------	--------------



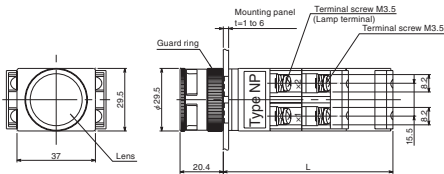
● Mounting hole size (Minimum mounting pitch)



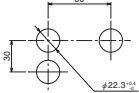
No. of units	Type	Power supply voltage	1	2	3	4
L(mm)	F110	100 / 110V	59	80	101	122
	F220	200 / 220V	72.5	93.5	114.5	135.5

Full-voltage type with punched guard ring (LED)

LHSA-D Color **W** Contact - **024-G**



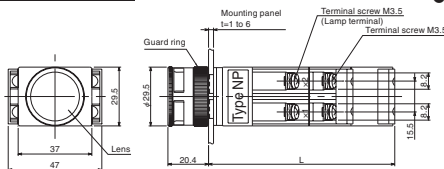
● Mounting hole size (Minimum mounting pitch)



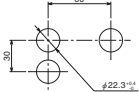
No. of units	1	2	3	4
L(mm)	59	80	101	122

Transformer type with punched guard ring (LED)

LHSA-D Color **W** Contact - Transformer Voltage **G**



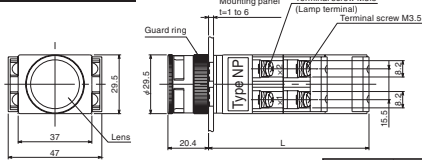
● Mounting hole size (Minimum mounting pitch)



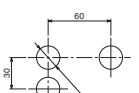
No. of units	1	2	3	4
L(mm)	72.5	93.5	114.5	135.5

Resistor type with punched guard ring (LED)

LHSA-D Color **W** Contact - Resistance Voltage **G**



● Mounting hole size (Minimum mounting pitch)



No. of units	Type	Power supply voltage	1	2	3	4
L(mm)	F110	100 / 110V	59	80	101	122
	F220	200 / 220V	72.5	93.5	114.5	135.5



PUSHBUTTON SWITCH / SELECTOR SWITCH / ILLUMINATED PUSHBUTTON SWITCH

HSA TYPE, LHSA TYPE

ACCESSORIES

Button

(Order unit: 5)

●PSA-P-BT-B (Flat pushbutton)



Code	Color
B	Black
R	Red
G	Green
O	Orange
Y	Yellow
W	White

●PSA-C-BT-B (Convex pushbutton)



Code	Color
B	Black
R	Red
G	Green
O	Orange
Y	Yellow
W	White

●PSA-M-BT-B (Mushroom pushbutton)



Code	Color
B	Black
R	Red
G	Green
O	Orange
Y	Yellow
W	White

●PSA-E-BT-B (Large mushroom pushbutton)



Code	Color
B	Black
R	Red
G	Green
O	Orange
Y	Yellow
W	White

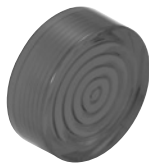
●PSA-U-BT-B (Pull button)



Code	Color
B	Black
BG	Blue-green
R	Red

Lens (Button) for illuminated type (Order unit: 10)

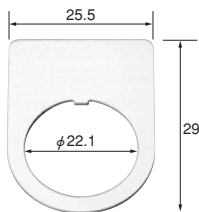
●PSA-LENS-Color



Code	Color
RD	Red
GD	Green
OD	Orange
Y	Yellow
W	Milky white
C	Clear

Plain nameplate (selling separately) (Order unit: 10)

●HSA-NP



Protective guard (selling separately)

(Order unit: 5)

●HSA-OP-2



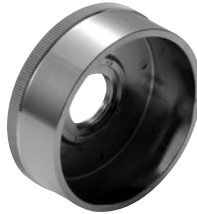
Guard ring

(Order unit: 5)

●HSA-RG-J-C

●HSA-RG-F-C (For large mushroom pushbutton)

●HSA-RG-N-C (For mushroom pushbutton)



Ring

(Order unit: 5)

●HSA-RG-P-C

●HSA-RG-P-B

●HSA-RG-P-G





PUSHBUTTON SWITCH / SELECTOR SWITCH / ILLUMINATED PUSHBUTTON SWITCH

HSA TYPE, LHSA TYPE

ACCESSORIES

LED lamp (Rating: 24V) (Order unit: 10)

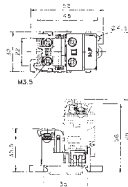
●LPSA-LED024-WW



Code	Lens (button) color
WW	Red, Green, Orange, Yellow, Milky white, Clear

- * All colors shared.
- * The marking on the lamp is LBA9-24.
- * The socket is BA9S.

Separate transformer (Made by Fuji Electric) (selling separately)



① Transformer

② Transformer base

The transformer ① and transformer base ② should be separately ordered.

① Transformer

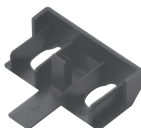
② Transformer base

Type	Rated primary voltage	Rated secondary voltage	Type
AR9T559-H	100 / 110V	24V	AR9T003
AR9T559-M	200 / 220V		
AR9T559-T	400 / 440V		

Terminal cover

(Order unit: 10)

●PSA-CV



- * The terminal cover is provided as a standard accessory.

Ring tightening tool (selling separately)

●PSA-JQ



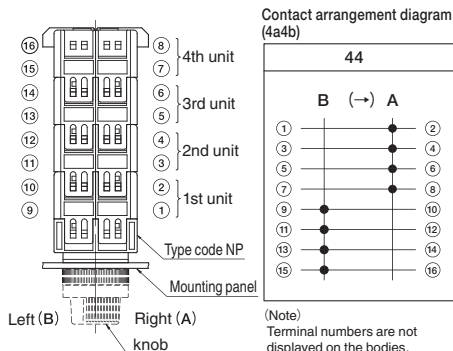
Lamp replacement tool (selling separately)

●PSA-LN

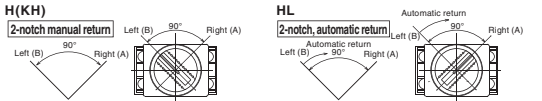


HOW TO SEE CONTACT ARRANGEMENT DIAGRAM

Relation for contact arrangement (page A116) and terminal arrangement is shown as the following diagram.



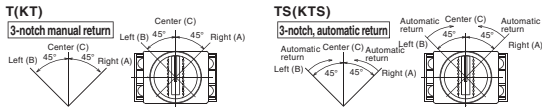
■ Selector switch contact arrangement diagram



H(KH)
The contact that makes at B position is b contact: red
The contact that makes at A position is a contact: black
HL
The contact that makes at B position is a contact: black
The contact that makes at A position is b contact: red

● 2-notch

Code	11	22	33	44	0011	0022	0033	0044
11	B (→) A	B (→) A	B (→) A	B (→) A	B (→) A	B (→) A	B (→) A	B (→) A
22	B (→) A	B (→) A	B (→) A	B (→) A	B (→) A	B (→) A	B (→) A	B (→) A
33	B (→) A	B (→) A	B (→) A	B (→) A	B (→) A	B (→) A	B (→) A	B (→) A
44	B (→) A	B (→) A	B (→) A	B (→) A	B (→) A	B (→) A	B (→) A	B (→) A
0011	B (→) A	B (→) A	B (→) A	B (→) A	B (→) A	B (→) A	B (→) A	B (→) A
0022	B (→) A	B (→) A	B (→) A	B (→) A	B (→) A	B (→) A	B (→) A	B (→) A
0033	B (→) A	B (→) A	B (→) A	B (→) A	B (→) A	B (→) A	B (→) A	B (→) A
0044	B (→) A	B (→) A	B (→) A	B (→) A	B (→) A	B (→) A	B (→) A	B (→) A



T(KT)
The contact that makes at B position is a contact: ①
The contact that makes at A position is a contact: ②
TS(KTS)
The contact that makes at B position is a contact: ①
The contact that makes at A position is a contact: ②

● 3-notch

Code	11	22	33	44
11	B (→) C (→) A	B (→) C (→) A	B (→) C (→) A	B (→) C (→) A
22	B (→) C (→) A	B (→) C (→) A	B (→) C (→) A	B (→) C (→) A
33	B (→) C (→) A	B (→) C (→) A	B (→) C (→) A	B (→) C (→) A
44	B (→) C (→) A	B (→) C (→) A	B (→) C (→) A	B (→) C (→) A
0011	B (→) C (→) A	B (→) C (→) A	B (→) C (→) A	B (→) C (→) A
0022	B (→) C (→) A	B (→) C (→) A	B (→) C (→) A	B (→) C (→) A
0033	B (→) C (→) A	B (→) C (→) A	B (→) C (→) A	B (→) C (→) A
0044	B (→) C (→) A	B (→) C (→) A	B (→) C (→) A	B (→) C (→) A

■ LHSA type circuit diagram (LED)

