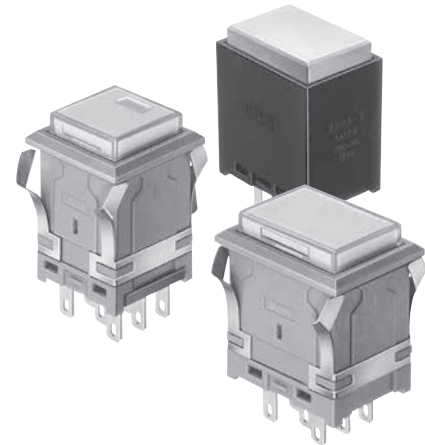


EH / EH-N Illuminated Pushbutton Switch

EH

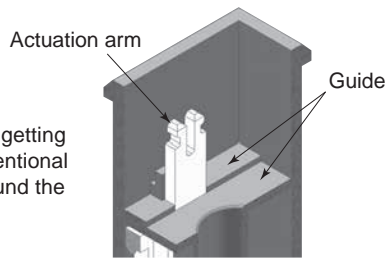
Only 22.5 mm depth behind panel with built-in resistor.

- Depth behind panel : Only 22.5 mm
- LED Full-Face, Dual-Color, 2-Split-Face, Spot, Standby illumination available.
- Terminal : #110 Tab • Soldering
- Accessories : Guard covers, Sockets, Matrix fitting frame



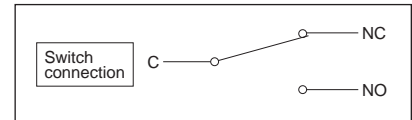
EH-N type Dust proof structure

EH-N type prevents dust from getting inside due to removed a conventional opening, installed a guide around the switch actuation arm.

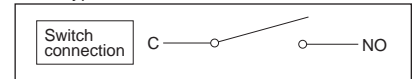


Light cartridge and Housing of EH-N and EH type are not interchangeable since they have different internal structures.
Other specifications and replacement parts are the same.

Silver contact (Gold-plated) / Cross-bar contact



Silent type Cross-bar contact



CHARACTERISTICS

Button Size	Square : □14.2 mm Rectangle : 14.2×20.4 mm				
Contact Material	Silver contact (Gold-plated)	Cross-bar contact	Connector type Silver contact (Gold-plated)	Connector type Cross-bar contact	Silent type Cross-bar contact
Rating (Resistive Load)	AC 125 V 3 A AC 250 V 3 A	AC 125 V 0.1 A DC 30 V 0.1 A	(SPDT) AC 100V 1 A, DC 30V 1A (DPDT) AC 50V 1 A, DC 30 V 1 A	(SPDT) AC 100 V 0.1A, DC 30 V 0.1 A (DPDT) AC 50V 0.1A, DC 30 V 0.1 A	AC 125 V 0.1 A DC 30 V 0.1 A
Insulation Resistance	More than 100 MΩ at DC 500 V				
Dielectric Strength	AC 1000 V RMS between NC and NO terminal AC 2000 V RMS between terminals and ground 50/60 Hz for 60 sec. at normal ambient temperature and humidity	AC 600 V RMS between NC and NO terminal AC 1500 V RMS between terminals and ground 50/60 Hz for 60 sec. at normal ambient temperature and humidity	Connector AC 800 V RMS (DPDT AC 500 V) 50/60 Hz for 60 sec. at normal ambient temperature and humidity	Connector AC 600 V RMS (DPDT AC 500 V) 50/60 Hz for 60 sec. at normal ambient temperature and humidity	AC 600 V RMS between NC and NO terminal AC 1500 V RMS between terminals and ground 50/60 Hz for 60 sec. at normal ambient temperature and humidity
Contact Resistance	Less than 30 mΩ (Initial value) at DC 6 V 1 A	Less than 50 mΩ (Initial value) at DC 6 V 0.1 A	Less than 40 mΩ Switch contact Less than 30 mΩ at DC 6 V 1 A	Less than 60 mΩ Switch contact Less than 50 mΩ at DC 6 V 0.1 A	Less than 50 mΩ (Initial value) at DC 6 V 0.1 A
Vibration Resistance	10 to 55 Hz, Amplitude 1.5 mm				
Mechanical Life	Momentary	More than 2,000,000 operations			More than 1,000,000 operations
	Alternate	More than 200,000 operations			—
Electrical Life (Resistive Load)	More than 100,000 operations at max. rated load				More than 100,000 operations
Operating Force	4.41 N max.				0.98 N max.
Total Travel	3 mm max.				
Weight	Square : 8 g Rectangle : 10 g				
Ambient Operating Temperature	-15°C to 50°C (No Freeze, No Condensation)				
Ambient Operating Humidity	80%RH max. (No Condensation)				
Ambient Storage Temperature	-25°C to 65°C (No Freeze, No Condensation)				
Ambient Storage Humidity	80%RH max. (No Condensation)				

https://www.sunmulon.co.jp/english/products/switch_e/eh.html



- ◇Dimensions : page EH-4~6
- ◇Accessories : page EH-7~8
- ◇Ordering code : page EH-9~26
- ◇Internal connection arrangements : page EH-29~31
- ◇LED specifications : page EH-32~34
- ◇Terminals / PCB hole cutout : page EH-35~36
- ◇Mounting design / Panel cutout : page EH-37~38
- ◇Accessories' dimensions / Panel cutout : EH-39~45

SPECIFICATIONS

		EH	EH-N
Button	Square	A	A
	Rectangle	A	A
Illumination type	Full-Face	A	A
	Dual-Color	A	A
	2-Split-Face	A	A
	2-Split-Face	A	A
	Standby	A	N/A
	Spot	A	N/A
	Non-illumination	A	N/A
	Non-illumination	A	N/A
Contact	SPDT	A	A
	DPDT	A	A
	Silent type SPST (1a)	A	A
Terminal	#110 Tab Soldering	A	A
	PCB	A	A
	Connector	A	A
Standard	UL	A ※	N/A
	CSA	A ※	N/A
	RoHS (10 Substances)	Conform to standards	

A : Applicable N/A : Not applicable

※ Indicator type, Connector type, Silent type are not applicable.

CONTACT RATINGS

● Silver contact (Gold-plated)

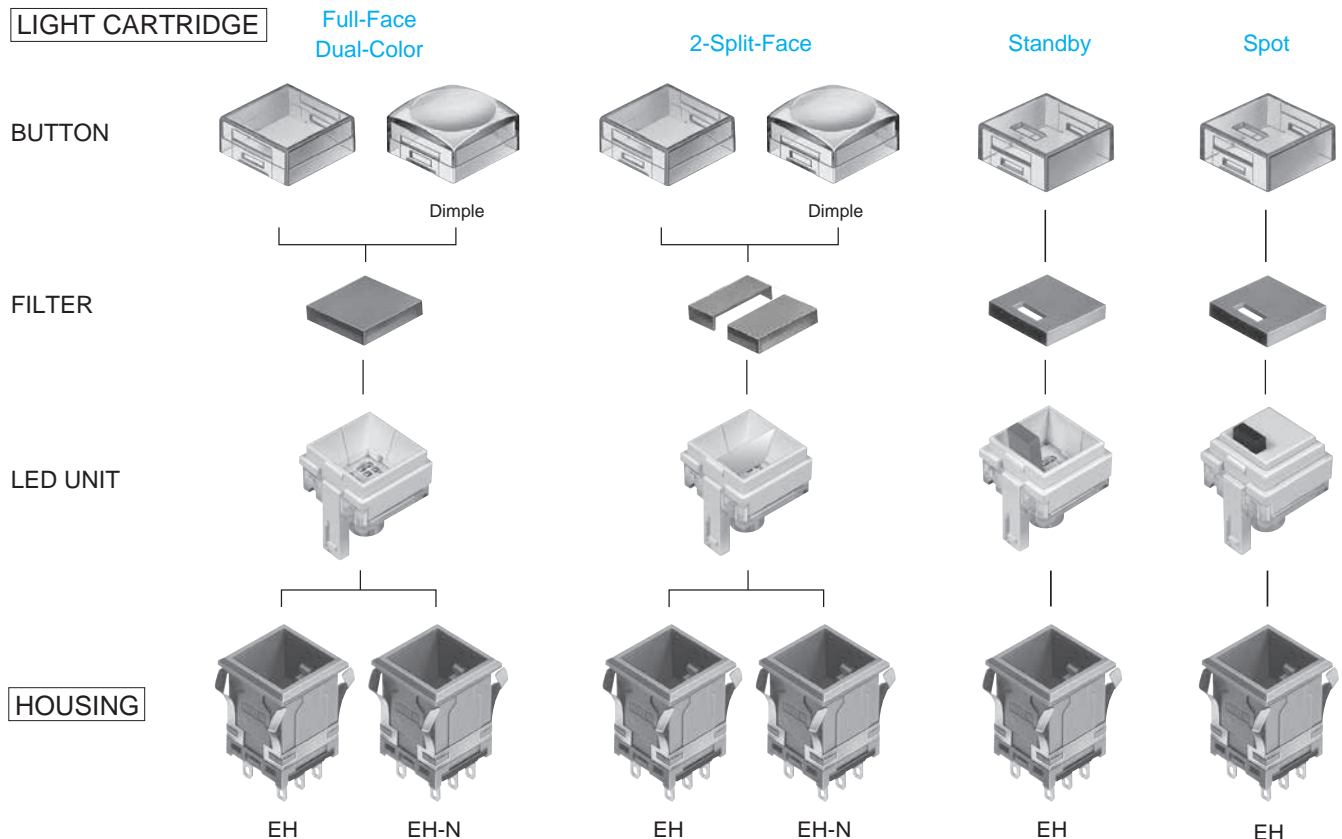
Voltage	Current (A) (Resistive load)
AC 125 V	3
250 V	3
DC 8 V	3
14 V	3
30 V	2
125 V	0.4

● Cross-bar contact



Rating	AC 125 V 0.1 A (Resistive load)
	DC 30 V 0.1 A (Resistive load)
Minimum applicable load	DC 5 V 1 mA (Resistive load)

STRUCTURE

LIGHT CARTRIDGE

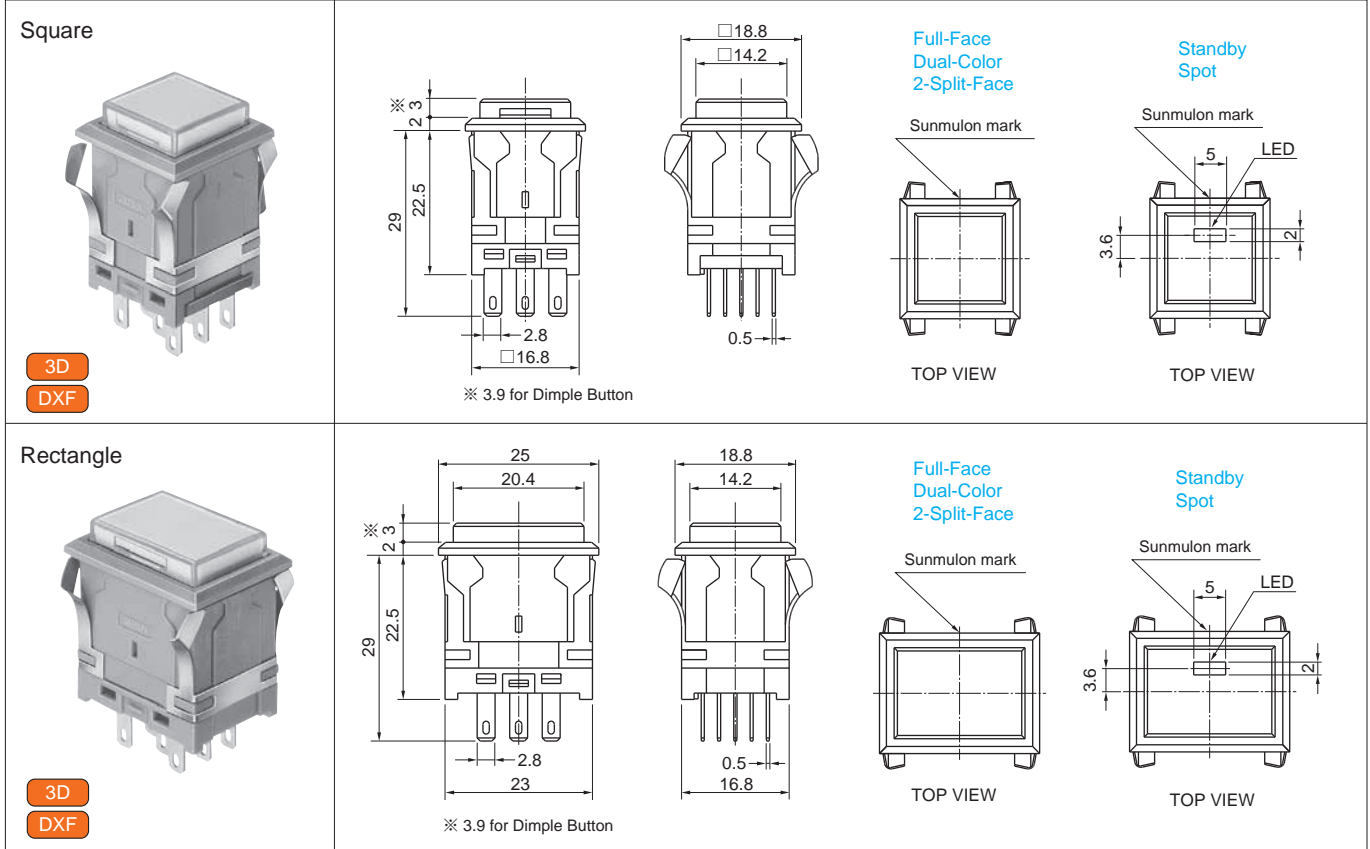


ILLUMINATION TYPES

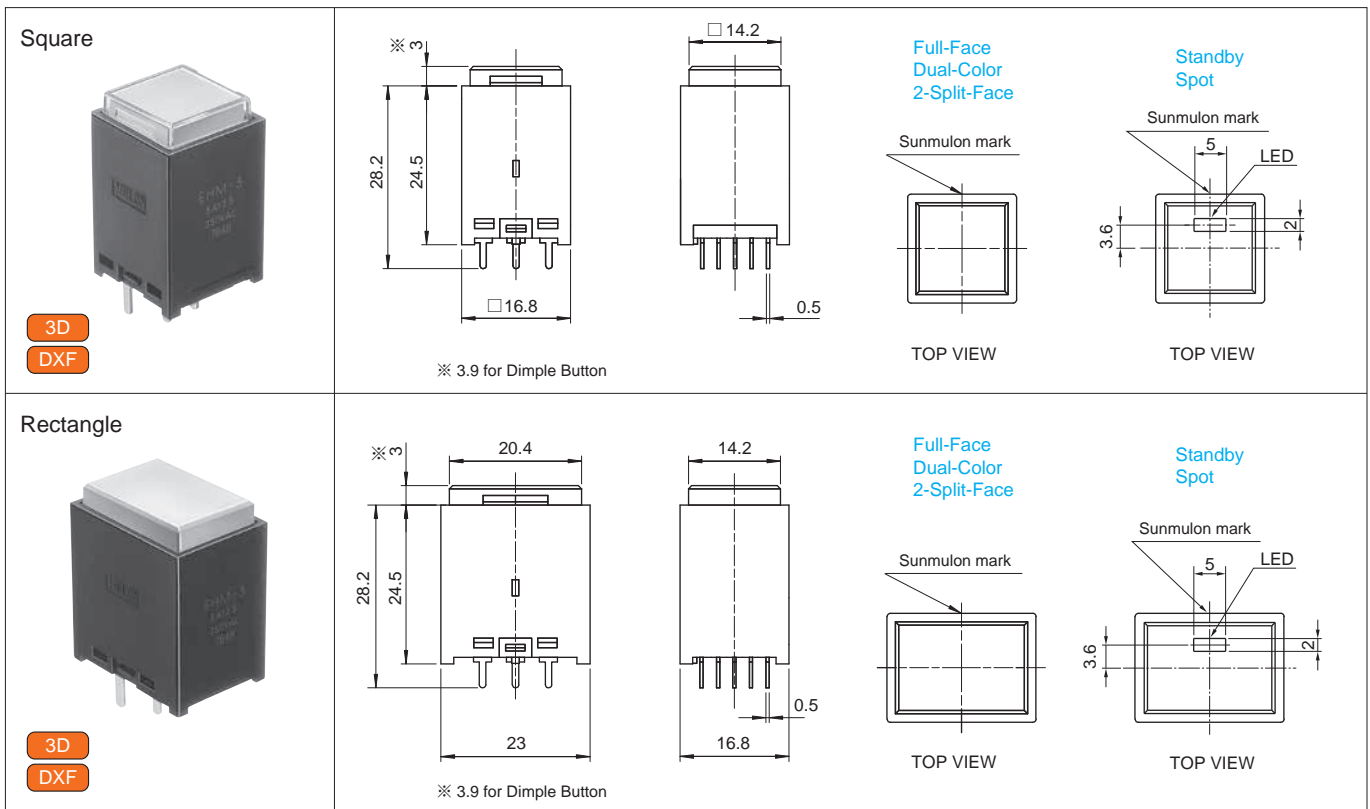
Common for each button size.																															
LED color symbol	<table style="display: inline-table; border: none;"> <tr> <td style="border: 1px solid black; padding: 2px 5px;">70</td> <td style="border: none; padding: 0 5px;">Red</td> <td style="border: 1px solid black; padding: 2px 5px;">80</td> <td style="border: none; padding: 0 5px;">Green</td> <td style="border: 1px solid black; padding: 2px 5px;">90</td> <td style="border: none; padding: 0 5px;">Yellow</td> <td style="border: 1px solid black; padding: 2px 5px;">14</td> <td style="border: none; padding: 0 5px;">Super Blue</td> <td style="border: 1px solid black; padding: 2px 5px;">16</td> <td style="border: none; padding: 0 5px;">Super White</td> <td style="border: 1px solid black; padding: 2px 5px;">18</td> <td style="border: none; padding: 0 5px;">Super Green</td> </tr> </table> <p style="text-align: center; font-size: small;">※ Yellow (90) is actually "ORANGE Yellow" not Lemon Yellow.</p>	70	Red	80	Green	90	Yellow	14	Super Blue	16	Super White	18	Super Green																		
70	Red	80	Green	90	Yellow	14	Super Blue	16	Super White	18	Super Green																				
Full-Face	<table style="display: inline-table; border: none;"> <tr> <td style="border: 1px solid black; padding: 5px 10px;">70</td> <td style="border: 1px solid black; padding: 5px 10px;">80</td> <td style="border: 1px solid black; padding: 5px 10px;">90</td> <td style="border: 1px solid black; padding: 5px 10px;">14</td> <td style="border: 1px solid black; padding: 5px 10px;">16</td> <td style="border: 1px solid black; padding: 5px 10px;">18</td> </tr> </table>	70	80	90	14	16	18																								
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Dual-Color	<table style="display: inline-table; border: none;"> <tr> <td style="border: 1px solid black; padding: 5px 10px;">70•80</td> <td style="border: 1px solid black; padding: 5px 10px;">70•14</td> <td style="border: 1px solid black; padding: 5px 10px;">70•16</td> <td style="border: 1px solid black; padding: 5px 10px;">70•18</td> <td style="border: 1px solid black; padding: 5px 10px;">80•90</td> <td style="border: 1px solid black; padding: 5px 10px;">90•70</td> </tr> <tr> <td style="border: 1px solid black; padding: 5px 10px;">90•14</td> <td style="border: 1px solid black; padding: 5px 10px;">14•16</td> <td style="border: 1px solid black; padding: 5px 10px;">16•18</td> <td style="border: 1px solid black; padding: 5px 10px;">18•14</td> <td></td> <td></td> </tr> </table>	70•80	70•14	70•16	70•18	80•90	90•70	90•14	14•16	16•18	18•14																				
70•80	70•14	70•16	70•18	80•90	90•70																										
90•14	14•16	16•18	18•14																												
2-Split-Face (Vertical)	<table style="display: inline-table; border: none;"> <tr> <td style="border: 1px solid black; padding: 5px 10px;">70 70</td> <td style="border: 1px solid black; padding: 5px 10px;">70 80</td> <td style="border: 1px solid black; padding: 5px 10px;">70 90</td> <td style="border: 1px solid black; padding: 5px 10px;">70 14</td> <td style="border: 1px solid black; padding: 5px 10px;">70 16</td> <td style="border: 1px solid black; padding: 5px 10px;">70 18</td> </tr> <tr> <td style="border: 1px solid black; padding: 5px 10px;">80 70</td> <td style="border: 1px solid black; padding: 5px 10px;">80 80</td> <td style="border: 1px solid black; padding: 5px 10px;">80 90</td> <td style="border: 1px solid black; padding: 5px 10px;">90 70</td> <td style="border: 1px solid black; padding: 5px 10px;">90 80</td> <td style="border: 1px solid black; padding: 5px 10px;">90 90</td> </tr> <tr> <td style="border: 1px solid black; padding: 5px 10px;">90 14</td> <td style="border: 1px solid black; padding: 5px 10px;">14 14</td> <td style="border: 1px solid black; padding: 5px 10px;">14 16</td> <td style="border: 1px solid black; padding: 5px 10px;">14 18</td> <td style="border: 1px solid black; padding: 5px 10px;">14 70</td> <td style="border: 1px solid black; padding: 5px 10px;">14 90</td> </tr> <tr> <td style="border: 1px solid black; padding: 5px 10px;">16 14</td> <td style="border: 1px solid black; padding: 5px 10px;">16 16</td> <td style="border: 1px solid black; padding: 5px 10px;">16 18</td> <td style="border: 1px solid black; padding: 5px 10px;">16 70</td> <td style="border: 1px solid black; padding: 5px 10px;">18 14</td> <td style="border: 1px solid black; padding: 5px 10px;">18 16</td> </tr> <tr> <td style="border: 1px solid black; padding: 5px 10px;">18 18</td> <td style="border: 1px solid black; padding: 5px 10px;">18 70</td> <td></td> <td></td> <td></td> <td></td> </tr> </table>	70 70	70 80	70 90	70 14	70 16	70 18	80 70	80 80	80 90	90 70	90 80	90 90	90 14	14 14	14 16	14 18	14 70	14 90	16 14	16 16	16 18	16 70	18 14	18 16	18 18	18 70				
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2-Split-Face (Horizontal)	<table style="display: inline-table; border: none;"> <tr> <td style="border: 1px solid black; padding: 5px 10px;">70 70</td> <td style="border: 1px solid black; padding: 5px 10px;">70 80</td> <td style="border: 1px solid black; padding: 5px 10px;">70 90</td> <td style="border: 1px solid black; padding: 5px 10px;">70 14</td> <td style="border: 1px solid black; padding: 5px 10px;">70 16</td> <td style="border: 1px solid black; padding: 5px 10px;">70 18</td> </tr> <tr> <td style="border: 1px solid black; padding: 5px 10px;">80 70</td> <td style="border: 1px solid black; padding: 5px 10px;">80 80</td> <td style="border: 1px solid black; padding: 5px 10px;">80 90</td> <td style="border: 1px solid black; padding: 5px 10px;">90 70</td> <td style="border: 1px solid black; padding: 5px 10px;">90 80</td> <td style="border: 1px solid black; padding: 5px 10px;">90 90</td> </tr> <tr> <td style="border: 1px solid black; padding: 5px 10px;">90 14</td> <td style="border: 1px solid black; padding: 5px 10px;">14 14</td> <td style="border: 1px solid black; padding: 5px 10px;">14 16</td> <td style="border: 1px solid black; padding: 5px 10px;">14 18</td> <td style="border: 1px solid black; padding: 5px 10px;">14 70</td> <td style="border: 1px solid black; padding: 5px 10px;">14 90</td> </tr> <tr> <td style="border: 1px solid black; padding: 5px 10px;">16 14</td> <td style="border: 1px solid black; padding: 5px 10px;">16 16</td> <td style="border: 1px solid black; padding: 5px 10px;">16 18</td> <td style="border: 1px solid black; padding: 5px 10px;">16 70</td> <td style="border: 1px solid black; padding: 5px 10px;">18 14</td> <td style="border: 1px solid black; padding: 5px 10px;">18 16</td> </tr> <tr> <td style="border: 1px solid black; padding: 5px 10px;">18 18</td> <td style="border: 1px solid black; padding: 5px 10px;">18 70</td> <td></td> <td></td> <td></td> <td></td> </tr> </table>	70 70	70 80	70 90	70 14	70 16	70 18	80 70	80 80	80 90	90 70	90 80	90 90	90 14	14 14	14 16	14 18	14 70	14 90	16 14	16 16	16 18	16 70	18 14	18 16	18 18	18 70				
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Standby	 <div style="display: inline-block; vertical-align: middle; margin-left: 10px;"> <p>Spot LED Color <table style="display: inline-table; border: none;"><tr><td style="border: 1px solid black; padding: 2px 5px;">4</td><td style="border: none; padding: 0 5px;">Red</td></tr></table> <table style="display: inline-table; border: none;"><tr><td style="border: 1px solid black; padding: 2px 5px;">5</td><td style="border: none; padding: 0 5px;">Green</td></tr></table> <table style="display: inline-table; border: none;"><tr><td style="border: 1px solid black; padding: 2px 5px;">6</td><td style="border: none; padding: 0 5px;">Yellow</td></tr></table></p> <p>Full-Face LED Color <table style="display: inline-table; border: none;"><tr><td style="border: 1px solid black; padding: 2px 5px;">70</td><td style="border: none; padding: 0 5px;">Red</td></tr></table> <table style="display: inline-table; border: none;"><tr><td style="border: 1px solid black; padding: 2px 5px;">80</td><td style="border: none; padding: 0 5px;">Green</td></tr></table> <table style="display: inline-table; border: none;"><tr><td style="border: 1px solid black; padding: 2px 5px;">90</td><td style="border: none; padding: 0 5px;">Yellow</td></tr></table></p> </div>	4	Red	5	Green	6	Yellow	70	Red	80	Green	90	Yellow																		
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4	Red																														
5	Green																														
6	Yellow																														

DIMENSIONS

● With Flange



● Without Flange

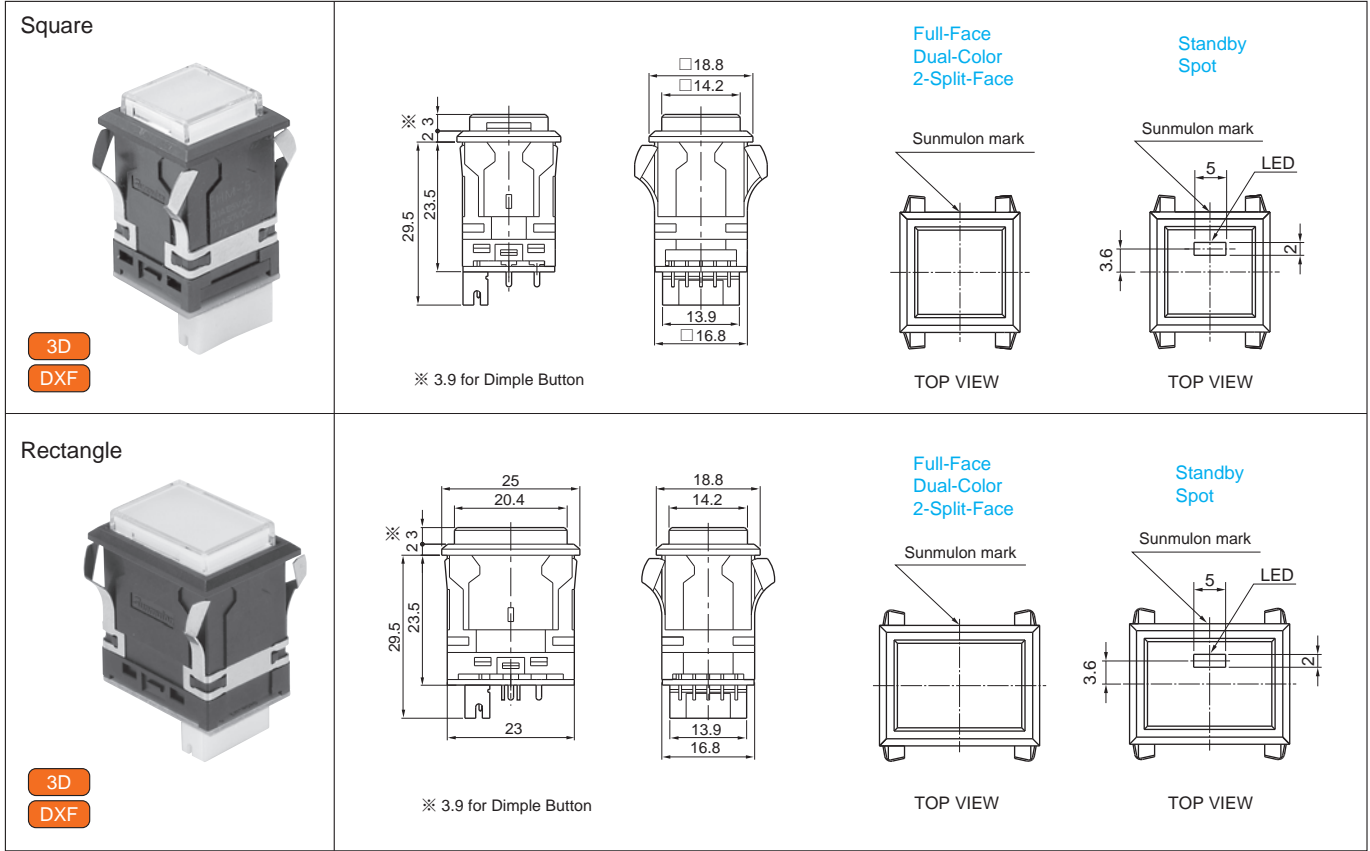


3D・DXF data download site : <https://www.sunmulon.co.jp/download/>

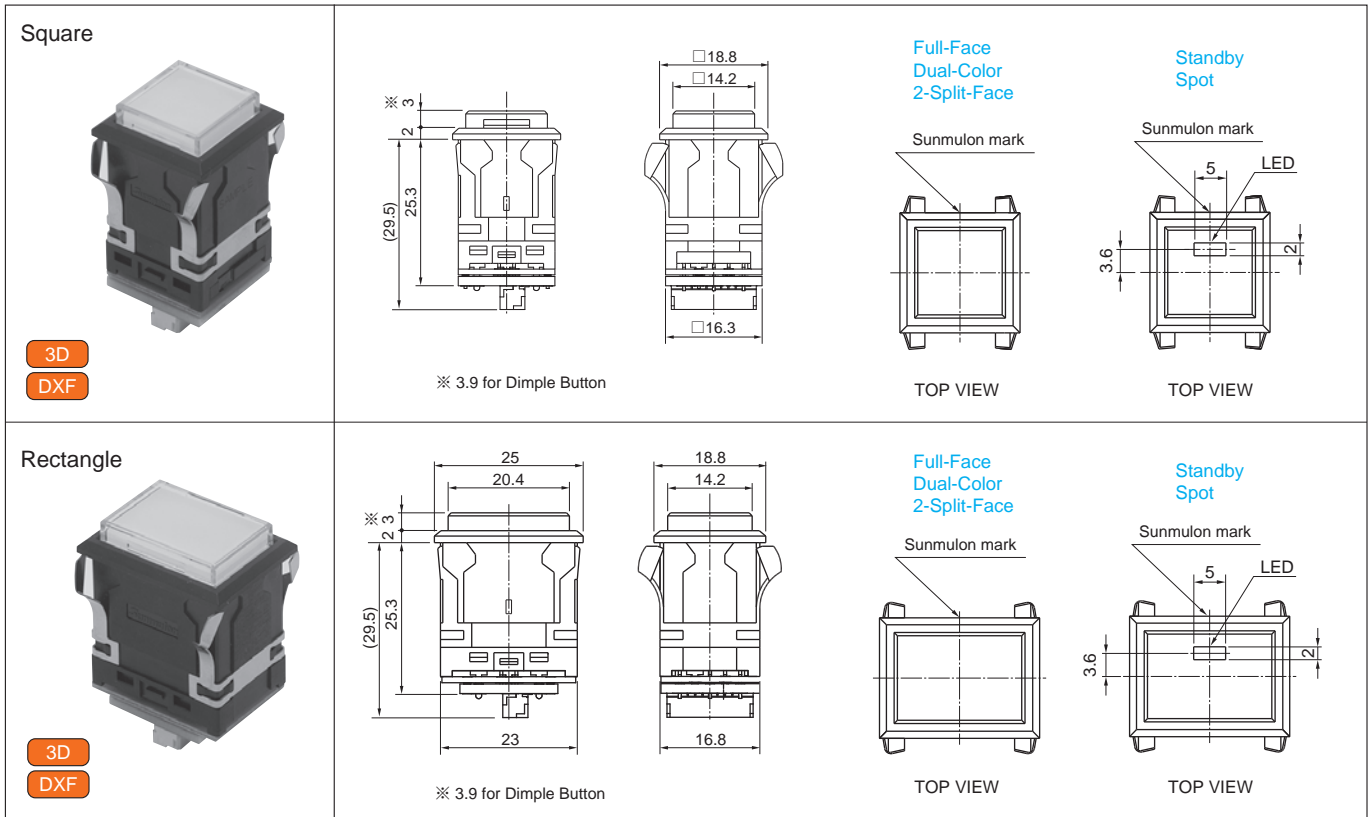
Tolerance : ± 0.4 mm

DIMENSIONS

● Connector for SPDT, Indicator



● Connector for DPDT

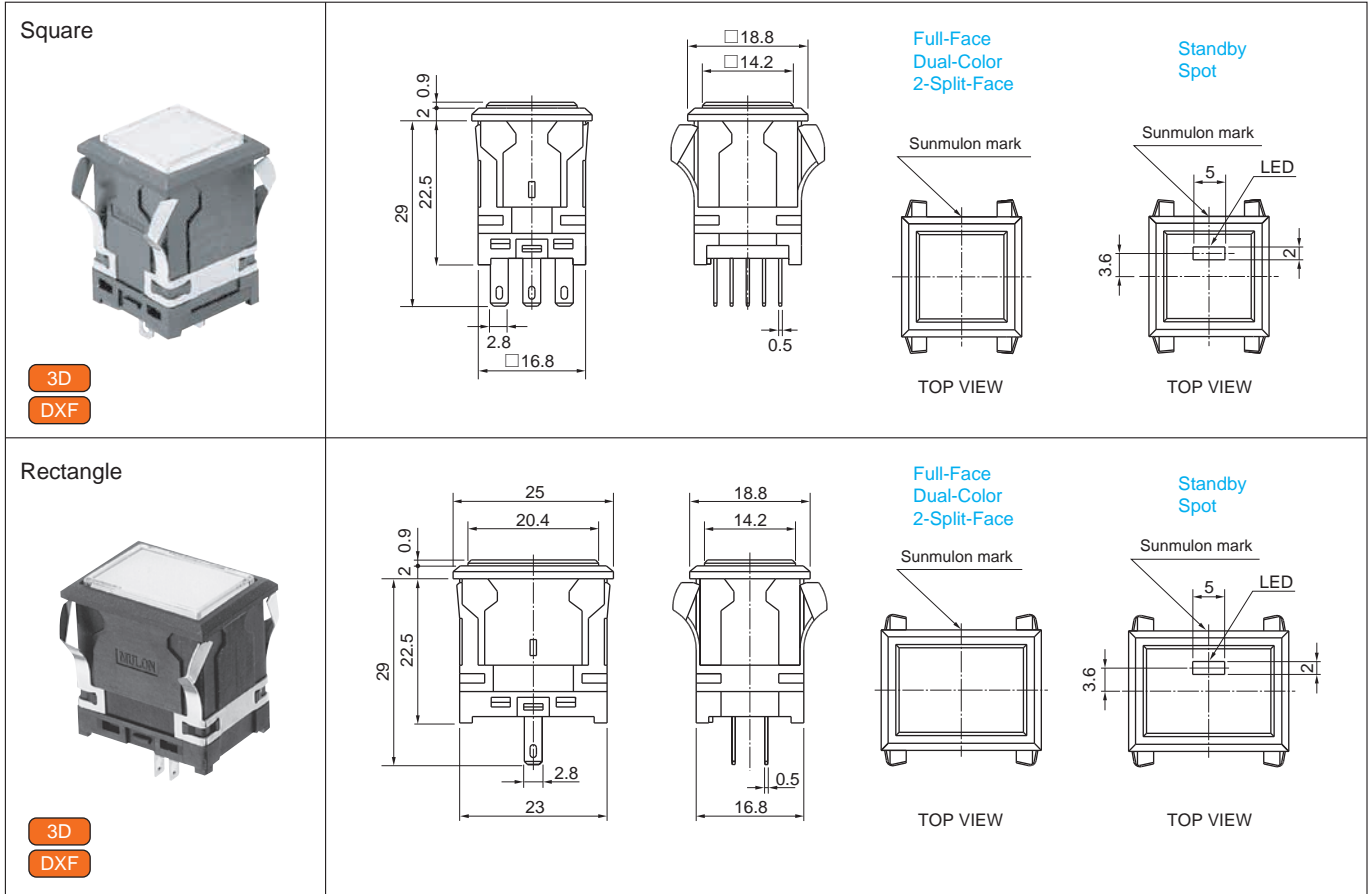


3D・DXF data download site : <https://www.sunmulon.co.jp/download/>

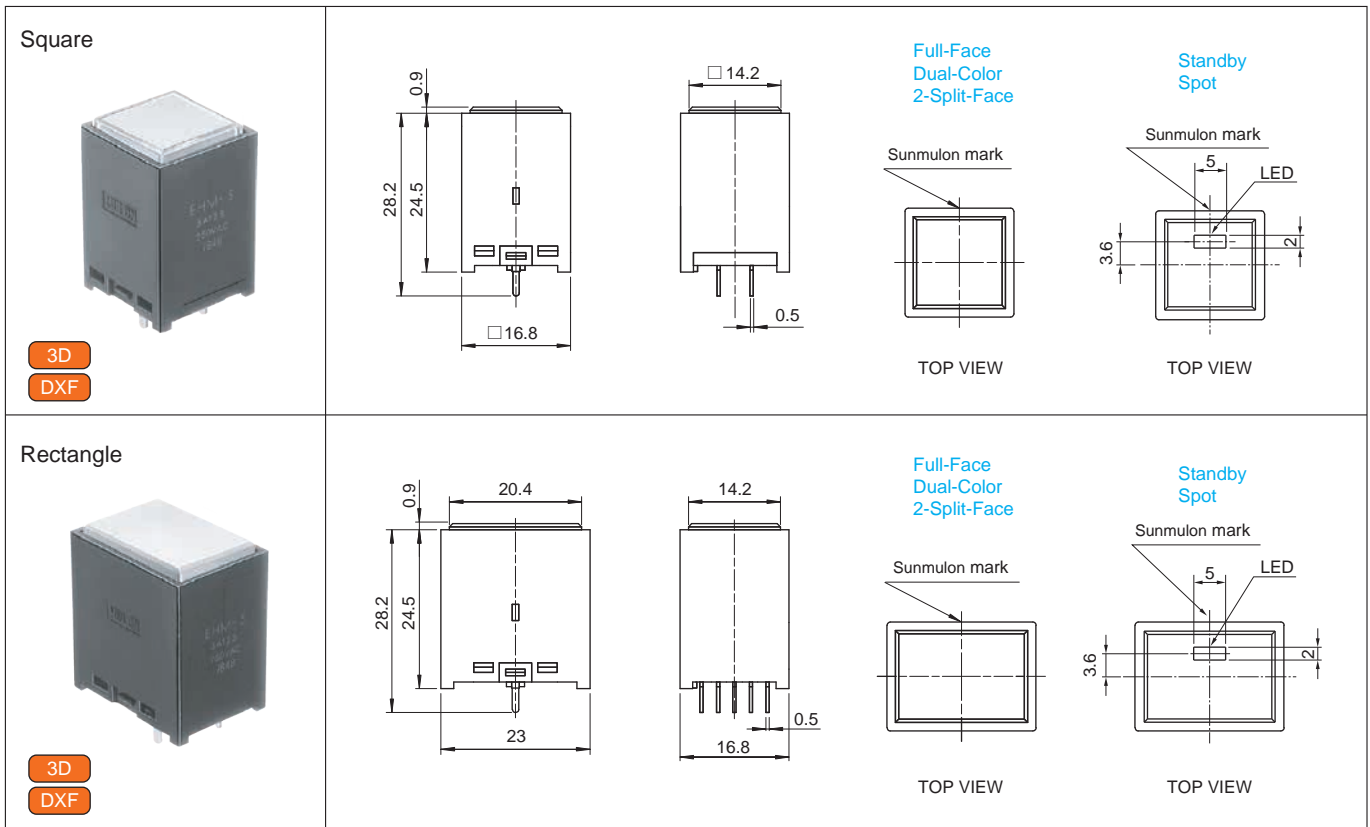
Tolerance : ± 0.4 mm

DIMENSIONS

● Flat Indicator with Flange













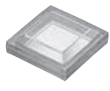




● Flat Indicator without Flange



3D • DXF data download site : <https://www.sunmulon.co.jp/download/>

Tolerance : ± 0.4 mm

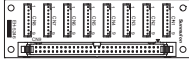
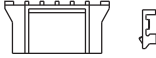

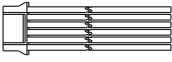
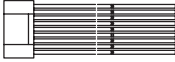


ACCESSORIES

Name	Appearance	Classification	Part no.		Precautions for use
Barrier		Short center barrier	Black	EH-1084-K	- Cannot be used with guard cover. - Cannot be used with matrix fitting frame.
			Gray	EH-1084-H	
		Short side barrier	Black	EH-1085-K	
			Gray	EH-1085-H	
		Long center barrier	Black	EH-1086-K	
			Gray	EH-1086-H	
		Long side barrier	Black	EH-1087-K	
Gray			EH-1087-H		
	Center barrier for Guard cover	Black	EH-1091-K	- Use with guard cover as a set. - Cannot be used with matrix fitting frame.	
		Gray	EH-1091-H		
	Side barrier for Guard cover	Black	EH-1092-K		
		Gray	EH-1092-H		
Guard cover		For use with barriers for square button	EH-1080		- Use with barriers for guard cover as a set. - The cover to be opened 180° and returned by spring force. - Cannot be used with matrix fitting frame. - Cannot be used with Dimple button.
				For use with barriers for rectangle button	
Guard cover for without Flange		For square button			Black
			Gray	EH-1545-H	
		For rectangle button	Black	EH-3409-K	
			Gray	EH-3409-H	
Dust proof cover		For square button	DH-361		- Cannot be used with matrix fitting frame. - Cannot be used with Dimple button.
				For rectangle button	
Matrix fitting frame		For square button			Black
			Gray	EH-1610-H□	
		For rectangle button	Black	EH-1815-K□	- Only sockets can be used together. - Cannot be used in combination with barriers, guard cover, dustproof cover.
			Gray	EH-1815-H□	
Socket		#110 Tab • Soldering terminal	Black	EH-1088-□ EH-3210-2□	- For combination with housing, refer to page EH-41. - Use #110 Tab • soldering terminal type for the switch housing.
		PCB terminal	Black	EH-1196-□	

3D • DXF data download site : <https://www.sunmulon.co.jp/download/>

◇Accessories' dimensions / Panel cutout : EH-39~45

ACCESSORIES

Name	Appearance	Classification	Part no.		Precautions for use
Relay board		For connector type	EH-5246		- Common wiring is possible by simply connecting. Up to eight switch wires can be integrated onto a single board. ※ Connection harnesses are not available from us.
Connector		For SPDT · Indicator	EH-3251		- Housing and contact set for connector type. ※ Please specify whether or not to attach it by ordering code.
		For DPDT	EH-5180		
Wire harness		For SPDT · Indicator	100cm	EH-3250-1	- Harness for connector type.
			200cm	EH-3250-2	
		For DPDT	100cm	EH-5177-1	
			200cm	EH-5177-2	
Removing tool		For removal light cartridge	SJ-0001		- Be used to remove light cartridge from housing.
		For removal flat indicator	SJ-0009		- Be used to remove light cartridge of flat indicator from housing.

◇Accessories' dimensions / Panel cutout : EH-39~45

ORDERING CODE 【Full-Face】 EH-N type

Assembled Part (Light cartridge and Housing)

EH - N

● OPERATION

L	Indicator
F	Flat Indicator
S	Momentary Silent type ※1)
M	Momentary
A	Alternate

● CONTACT

0	Indicator
1	SPST · Crossbar (Silent type only) ※1)
3	SPDT · Silver (Gold-Plated)
4	DPDT · Silver (Gold-Plated)
5	SPDT · Crossbar
6	DPDT · Crossbar

● BUTTON SHAPE

S0	Square
K0	Square Dimple ※2)
W0	Rectangle
N0	Rectangle Dimple ※2)

● LED COLOR

70	Red
80	Green
90	Yellow ※3)
14	Super-Blue
16	Super-White
18	Super-Green
X	Without LED

● BUTTON COLOR

R	Red
G	Green
Y	Yellow ※3)
M	Milk-white
B	Blue
C	Clear ※2)

For without button type, specify part numbers of light cartridge and housing separately.

● HOUSING COLOR

K	Black ※6) 7)
H	Gray ※6) 7)
KN	Black without Flange
HN	Gray without Flange

● OPTION

0759	Low brightness ※5)
001	Cathode common
002	Vertical mounting ※7)
Blank	No option

For other options except for the above, please contact us.

● Supply Voltage to LED

1	DC 5V Built-in resistor ※5)
2	DC12V Built-in resistor ※5)
3	DC24V Built-in resistor ※5)
4	DC 5V Non-resistor
5	DC12V Non-resistor
6	DC24V Non-resistor
X	Without LED

For Non-resistor type, use external protective resistor.

● TERMINAL

P	# 110 Tab · Soldering ※1)
C	PCB
K	Connector with Accessories ※4) 6)
N	Connector without Accessories ※6)

● FILTER COLOR

1	Red
2	Green
3	Yellow ※3)
4	Milk-white
6	Blue
X	Without filter

Generally, in case of using color button, filter is not necessary.

● NOTES

- ※1) For Silent type, specify SPST · Crossbar (1) and #110 Tab · Soldering (P).
- ※2) Dimple button type is only clear color. Therefore, button color should be C (Clear).
The guard cover and dust proof cover cannot be used for Dimple button.
- ※3) The color of "Yellow" for LED (90) and filter (3) is actually "Orange Yellow" not Lemon Yellow.
- ※4) For the connector, refer to Accessories page.
- ※5) For optional low brightness type (0759), specify supply voltage to LED 1, 2, or 3 (Built-in resistor type).
- ※6) For the connector, Housing without flange type cannot be selected.
- ※7) For vertical mounting (002), Housing without flange type cannot be selected.

◇Dimensions : page EH-4~6 ◇Accessories : page EH-7~8
 ◇Internal connection arrangements : page EH-29 ◇LED specifications : page EH-32 ◇Terminals / PCB hole cutout : page EH-35~36
 ◇Mounting design / Panel cutout : page EH-37~38 ◇Accessories' dimensions / Panel cutout : EH-39~45

ORDERING CODE 【Full-Face】 EH-N type

EH-N and EH type are not interchangeable since they have different internal structures.
Use the same type of Light cartridge and Housing in combination.

LIGHT CARTRIDGE

EH - N □ □ □ □ □ □

● BUTTON SHAPE

S0	Square	
K0	Square Dimple	※1)
W0	Rectangle	
N0	Rectangle Dimple	※1)

● LED COLOR

70	Red	
80	Green	
90	Yellow	※2)
14	Super-Blue	
16	Super-White	
18	Super-Green	
X	Without LED	

● BUTTON COLOR

R	Red	
G	Green	
Y	Yellow	※2)
M	Milk-white	
B	Blue	
C	Clear	※1)
X	Without Button	

● FILTER COLOR

1	Red	
2	Green	
3	Yellow	※2)
4	Milk-white	
6	Blue	
X	Without filter	

Generally, in case of using color button, filter is not necessary.

● OPTION

0759	Low brightness	※3)
001	Cathode common	
Blank	No option	

For other options except for the above, please contact us.

● Supply Voltage to LED

1	DC 5V Built-in resistor	※3)
2	DC12V Built-in resistor	※3)
3	DC24V Built-in resistor	※3)
4	DC 5V Non-resistor	
5	DC12V Non-resistor	
6	DC24V Non-resistor	
X	Without LED	

For Non-resistor type, use external protective resistor.

● NOTES

- ※1) Dimple button type is only clear color. Therefore, button color should be C (Clear).
The guard cover and dust proof cover cannot be used for Dimple button.
- ※2) The color of "Yellow" for LED (90), button (Y) and filter (3) is actually "Orange Yellow" not Lemon Yellow.
- ※3) For optional low brightness type (0759), specify supply voltage to LED 1, 2, or 3 (Built-in resistor type).

HOUSING

EH □ - N □ □ □ □ □ □

● OPERATION

L	Indicator	
F	Flat Indicator	
S	Momentary Silent type	※1)
M	Momentary	
A	Alternate	

● CONTACT

0	Indicator	
1	SPST · Crossbar (Silent type only)	※1)
3	SPDT · Silver (Gold-Plated)	
4	DPDT · Silver (Gold-Plated)	
5	SPDT · Crossbar	
6	DPDT · Crossbar	

● BUTTON SHAPE

S0	Square	
W0	Rectangle	

● OPTION

002	Vertical Mounting	※4)
Blank	No option	

● TERMINAL

P	# 110 Tab · Soldering	※1)
C	PCB	
K	Connector with Accessories	※2) 3)
N	Connector without Accessories	※3)

● HOUSING COLOR

K	Black	※3) 4)
H	Gray	※3) 4)
KN	Black without Flange	
HN	Gray without Flange	

● NOTES

- ※1) For Silent type, specify SPST · Crossbar (1) and #110 Tab · Soldering (P).
- ※2) For the connector, refer to Accessories page.
- ※3) For the connector, Housing without flange type cannot be selected.
- ※4) For vertical mounting (002), Housing without flange type cannot be selected.

ORDERING CODE [Dual-Color] EH-N type

Assembled Part (Light cartridge and Housing)

EH - N 1 2

● OPERATION

L	Indicator
F	Flat Indicator
S	Momentary Silent type ※1)
M	Momentary
A	Alternate

● CONTACT

0	Indicator
1	SPST · Crossbar (Silent type only) ※1)
3	SPDT · Silver (Gold-Plated)
4	DPDT · Silver (Gold-Plated)
5	SPDT · Crossbar
6	DPDT · Crossbar

● BUTTON SHAPE

S3	Square
K3	Square Dimple ※2)
W3	Rectangle
N3	Rectangle Dimple ※2)

● LED COLOR

70	Red	Put the color numbers into frame 1, 2. (Dual-Color combination)
80	Green	
90	Yellow	
14	Super-Blue	
16	Super-White	7080 · 7014 · 7016 7018 · 8090 · 9070 · 9014 1416 · 1618 · 1814
18	Super-Green	

Yellow (90) is actually "ORANGE Yellow" not Lemon Yellow.

● BUTTON COLOR ※3)

C	Clear ※2)
M	Milk-White

● OPTION

0759	Low brightness ※5)
001	Cathode common
002	Vertical mounting ※7)
Blank	No option

For other options except for the above, please contact us.

● Supply Voltage to LED

1	DC 5V Built-in resistor ※5)
2	DC12V Built-in resistor ※5)
3	DC24V Built-in resistor ※5)
4	DC 5V Non-resistor
5	DC12V Non-resistor
6	DC24V Non-resistor
X	Without LED

For Non-resistor type, use external protective resistor.

● TERMINAL

P	# 110 Tab · Soldering ※1)
C	PCB
K	Connector with Accessories ※4) 6)
N	Connector without Accessories ※6)

● FILTER COLOR ※3)

4	Milk-White
X	Without filter

● HOUSING COLOR

K	Black ※6) 7)
H	Gray ※6) 7)
KN	Black without Flange
HN	Gray without Flange

● NOTES

- ※1) For Silent type, specify SPST · Crossbar (1) and #110 Tab · Soldering (P).
- ※2) Dimple button type is only clear color. Therefore, button color should be C (Clear). The guard cover and dust proof cover cannot be used for Dimple button.
- ※3) Button should be C (Clear) with Milk-white filter or M (Milk-white) without filter.
- ※4) For the connector, refer to Accessories page.
- ※5) For optional low brightness type (0759), specify supply voltage to LED 1, 2, or 3 (Built-in resistor type).
- ※6) For the connector, Housing without flange type cannot be selected.
- ※7) For vertical mounting (002), Housing without flange type cannot be selected.

For simultaneous lighting in Dual-Color

Simultaneous lighting is not possible for Built-in resistor type, cause heat. Please select Non-resistor type and apply required external resistor or socket for simultaneous lighting.

Supply Voltage to LED	Simultaneous lighting	Lighting condition
1 DC5V Built-in resistor	N/A	2 to 3 minutes possible.
2 DC12V Built-in resistor	N/A	2 to 3 minutes possible.
3 DC24V Built-in resistor	N/A	2 to 3 minutes possible.
4 DC 5V Non-resistor	A	Use external resistor 36Ω/1/4W or use socket EH-3210-2C
5 DC12V Non-resistor	A	Use external resistor 270Ω/1/4W or use socket EH-3210-2D
6 DC24V Non-resistor	A	Use external resistor 1.1KΩ/1/2W or use socket EH-3210-2E

In case of Built-in resistor type with optional low brightness (0759) is possible for simultaneous lighting.

◇Dimensions : page EH-4~6 ◇Accessories : page EH-7~8
 ◇Internal connection arrangements : page EH-29 ◇LED specifications : page EH-32 ◇Terminals / PCB hole cutout : page EH-35~36
 ◇Mounting design / Panel cutout : page EH-37~38 ◇Accessories' dimensions / Panel cutout : EH-39~45

ORDERING CODE [Dual-Color] EH-N type

EH-N and EH type are not interchangeable since they have different internal structures.
Use the same type of Light cartridge and Housing in combination.

LIGHT CARTRIDGE

EH - N

● BUTTON SHAPE

S3	Square
K3	Square Dimple ※1)
W3	Rectangle
N3	Rectangle Dimple ※1)

● LED COLOR

70	Red	Put the color numbers into frame 1, 2. (Dual-Color combination) 7080 · 7014 · 7016 7018 · 8090 · 9070 · 9014 1416 · 1618 · 1814
80	Green	
90	Yellow	
14	Super-Blue	
16	Super-White	
18	Super-Green	

Yellow (90) is actually "ORANGE Yellow" not Lemon Yellow.

● BUTTON COLOR ※2)

C	Clear ※1)
M	Milk-white
X	Without button

● OPTION

0759	Low brightness ※3)
001	Cathode common
Blank	No option

For other options except for the above, please contact us.

● Supply Voltage to LED ※4)

1	DC 5V Built-in resistor ※3)
2	DC12V Built-in resistor ※3)
3	DC24V Built-in resistor ※3)
4	DC 5V Non-resistor
5	DC12V Non-resistor
6	DC24V Non-resistor

For Non-resistor type, use external protective resistor.

● FILTER COLOR ※2)

4	Milk-white
X	Without filter

● NOTES

- ※1) Dimple button type is only clear color. Therefore, button color should be C (Clear).
The guard cover and dust proof cover cannot be used for Dimple button.
- ※2) Button should be C (Clear) with Milk-white filter or M (Milk-white) without filter.
- ※3) For optional low brightness type (0759), specify supply voltage to LED 1, 2, or 3 (Built-in resistor type).
- ※4) For use with Simultaneous lighting, refer to page EH-11.

HOUSING

EH - N

● OPERATION

L	Indicator
F	Flat Indicator
S	Momentary Silent type ※1)
M	Momentary
A	Alternate

● CONTACT

0	Indicator
1	SPST · Crossbar (Silent type only) ※1)
3	SPDT · Silver (Gold-Plated)
4	DPDT · Silver (Gold-Plated)
5	SPDT · Crossbar
6	DPDT · Crossbar

● BUTTON SHAPE

S1	Square
W1	Rectangle

● OPTION

002	Vertical Mounting ※4)
Blank	No option

● TERMINAL

P	#110 Tab · Soldering ※1)
C	PCB
K	Connector with Accessories ※2) 3)
N	Connector without Accessories ※3)

● HOUSING COLOR

K	Black ※3) 4)
H	Gray ※3) 4)
KN	Black without Flange
HN	Gray without Flange

● NOTES

- ※1) For Silent type, specify SPST · Crossbar (1) and #110 Tab · Soldering (P).
- ※2) For the connector, refer to Accessories page.
- ※3) For the connector, Housing without flange type cannot be selected.
- ※4) For vertical mounting (002), Housing without flange type cannot be selected.

ORDERING CODE [2-Split-Face] EH-N type

Assembled Part (Light cartridge and Housing)

EH - N 1 2 C 1 2

● OPERATION

L	Indicator
F	Flat Indicator
S	Momentary Silent type ※2)
M	Momentary
A	Alternate

● CONTACT

0	Indicator
1	SPST · Crossbar (Silent type only) ※2)
3	SPDT · Silver (Gold-Plated)
4	DPDT · Silver (Gold-Plated)
5	SPDT · Crossbar
6	DPDT · Crossbar

● BUTTON SHAPE · ILLUMINATION TYPE

S1	Square Vertical ※1)
S2	Square Horizontal
K1	Square Dimple Vertical ※1) 3)
K2	Square Dimple Horizontal ※3)
W1	Rect. Vertical ※1)
W2	Rect. Horizontal
N1	Rect. Dimple Vertical ※1) 3)
N2	Rect. Dimple Horizontal ※3)

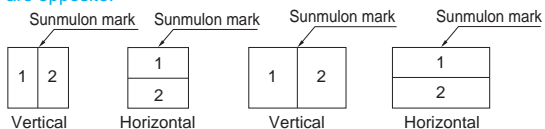
● LED COLOR ※1)

70	Red	Put the color numbers into frame 1, 2. (2-Split-Face combination) 7070 · 7080 · 7090 · 7014 · 7016 · 7018 1414 · 1416 · 1418 · 1470 · 1490 · 1614 · 1616 1618 · 1670 · 1814 · 1816 · 1818 · 1870
80	Green	
90	Yellow	
14	Super-Blue	
16	Super-White	
18	Super-Green	For Non-illuminated : XX
X	Without LED	

The combination of With LED and Without LED cannot be specified.

● NOTES

- ※1) How to specify the color of LED and filter
Select the color symbols listed in the ordering code, and put them into the frame 1 and 2 referring to the figure below.
The numbers in the figure match the location specified in the ordering code.
The color of "Yellow" for LED (90) and filter (3) is actually "Orange Yellow" not Lemon Yellow.
Vertical Split type terminal (L1, L2) and LED color 1 and 2 are opposite.
- ※2) For Silent type, specify SPST · Crossbar (1) and #110 Tab · Soldering (P).
- ※3) The guard cover and dust proof cover cannot be used for Dimple button.
- ※4) For the connector, refer to Accessories page.
- ※5) DC24V Built-in resistor (3) can only be specified for option Low brightness (0759) .
- ※6) For the connector, Housing without flange type cannot be selected.
- ※7) For vertical mounting (002), Housing without flange type cannot be selected.



● OPTION

0759	Low brightness ※5)
001	Cathode common
002	Vertical mounting ※7)
Blank	No option

For other options except for the above, please contact us.

● Supply Voltage to LED

1	DC 5V Built-in resistor
2	DC12V Built-in resistor
3	DC24V Built-in resistor ※5)
4	Non-resistor
X	Without LED

For Non-resistor type, use external protective resistor.

● TERMINAL

P	# 110 Tab · Soldering ※2)
C	PCB
K	Connector with Accessories ※4) 6)
N	Connector without Accessories ※6)

● FILTER COLOR ※1)

1	Red	Put the color numbers into frame 1, 2. For without filter : XX
2	Green	
3	Yellow	
4	Milk-white	
6	Blue	
X	Without filter	

The combination of With filter and Without filter cannot be specified.

● HOUSING COLOR

K	Black ※6) 7)
H	Gray ※6) 7)
KN	Black without Flange
HN	Gray without Flange

● BUTTON COLOR

C	Clear
---	-------

For simultaneous lighting in 2-Split-Face

Simultaneous lighting is not possible for DC12V Built-in resistor type, cause heat. Please select Non-resistor type and apply required external resistor or socket for simultaneous lighting.

Supply Voltage to LED	Simultaneous lighting	Lighting condition
1 DC5V Built-in resistor	A	
2 DC12V Built-in resistor	N/A	2 to 3 minutes possible.
3 DC24V Built-in resistor	N/A	Not specified
	A	Only 0759 can be specified.

Supply Voltage to LED	Simultaneous lighting	Lighting condition
4 Non-resistor	DC 5V	A Use external protective resistor.
	DC12V	A Use external resistor 510Ω/1/4W or use socket EH-3210-2A
	DC24V	A Use external resistor 1.3kΩ/1/2W or use socket EH-3210-2B

In case of Built-in resistor type with optional Low brightness (0759) is possible for simultaneous lighting.

- ◇Dimensions : page EH-4~6
- ◇Accessories : page EH-7~8
- ◇Internal connection arrangements : page EH-30
- ◇LED specifications : page EH-33
- ◇Terminals / PCB hole cutout : page EH-35~36
- ◇Mounting design / Panel cutout : page EH-37~38
- ◇Accessories' dimensions / Panel cutout : EH-39~45

ORDERING CODE [2-Split-Face] EH-N type

EH-N and EH type are not interchangeable since they have different internal structures.
Use the same type of Light cartridge and Housing in combination.

LIGHT CARTRIDGE

EH - N 1 2 1 2

● BUTTON SHAPE · ILLUMINATION TYPE

S1	Square Vertical	※1)
S2	Square Horizontal	
K1	Square Dimple Vertical	※1, 2)
K2	Square Dimple Horizontal	※2)
W1	Rect. Vertical	※1)
W2	Rect. Horizontal	
N1	Rect. Dimple Vertical	※1,2)
N2	Rect. Dimple Horizontal	※2)

● LED COLOR ※1)

70	Red	Put the color numbers into frame 1, 2. (2-Split-Face combination) 7070 · 7080 · 7090 · 7014 · 7016 · 7018 8070 · 8080 · 8090 · 9070 · 9080 · 9090 · 9014 1414 · 1416 · 1418 · 1470 · 1490 · 1614 · 1616 1618 · 1670 · 1814 · 1816 · 1818 · 1870
80	Green	
90	Yellow	
14	Super-Blue	
16	Super-White	
18	Super-Green	
X	Without LED	For Non-illuminated : XX

The combination of With LED and Without LED cannot be specified.

● NOTES

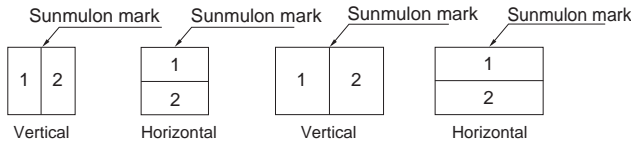
※1) How to specify the color of LED and filter

Select the color symbols listed in the ordering code, and put them into the frame 1 and 2 referring to the figure below.

The numbers in the figure match the location specified in the ordering code.

The color of "Yellow" for LED (90) and filter (3) is actually "Orange Yellow" not Lemon Yellow.

Vertical Split type terminal (L1, L2) and LED color 1 and 2 are opposite.



※2) The guard cover and dust proof cover cannot be used for Dimple button.

※3) DC24V Built-in resistor (3) can only be specified for option Low brightness (0759) .

※4) For use with Simultaneous lighting, refer to page EH-13.

● OPTION

0759	Low brightness	※3)
001	Cathode common	
Blank	No option	

For other options except for the above, please contact us.

● Supply Voltage to LED ※4)

1	DC 5V Built-in resistor	
2	DC12V Built-in resistor	
3	DC24V Built-in resistor	※3)
4	Non-resistor	
X	Without LED	

For Non-resistor type, use external protective resistor.

● FILTER COLOR ※1)

1	Red	Put the color numbers into frame 1, 2.
2	Green	
3	Yellow	
4	Milk-white	
6	Blue	
X	Without filter	

The combination of With filter and Without filter cannot be specified.

● BUTTON COLOR

C	Clear
X	Without button

HOUSING

EH - **N**

● OPERATION

L	Indicator	
F	Flat Indicator	
S	Momentary Silent type	※1)
M	Momentary	
A	Alternate	

● CONTACT

0	Indicator	
1	SPST · Crossbar (Silent type only)	※1)
3	SPDT · Silver (Gold-Plated)	
4	DPDT · Silver (Gold-Plated)	
5	SPDT · Crossbar	
6	DPDT · Crossbar	

● BUTTON SHAPE

S1	Square
W1	Rectangle

● OPTION

002	Vertical Mounting	※4)
Blank	No option	

● TERMINAL

P	#110 Tab · Soldering	※1)
C	PCB	
K	Connector with Accessories	※2) 3)
N	Connector without Accessories	※3)

● HOUSING COLOR

K	Black	※3) 4)
H	Gray	※3) 4)
KN	Black without Flange	
HN	Gray without Flange	

● NOTES

※1) For Silent type, specify SPST · Crossbar (1) and #110 Tab · Soldering (P).

※2) For the connector, refer to Accessories page.

※3) For the connector, Housing without flange type cannot be selected.

※4) For vertical mounting (002), Housing without flange type cannot be selected.

ORDERING CODE 【Full-Face】 EH type

Assembled Part (Light cartridge and Housing)

EH

● OPERATION

L	Indicator
F	Flat Indicator
S	Momentary Silent type ※1)
M	Momentary
A	Alternate

● CONTACT

0	Indicator
1	SPST · Crossbar (Silent type only) ※1)
3	SPDT · Silver (Gold-Plated)
4	DPDT · Silver (Gold-Plated)
5	SPDT · Crossbar
6	DPDT · Crossbar

● BUTTON SHAPE

S0	Square
K0	Square Dimple ※2)
W0	Rectangle
N0	Rectangle Dimple ※2)

● LED COLOR

70	Red
80	Green
90	Yellow ※3)
14	Super-Blue
16	Super-White
18	Super-Green

● BUTTON COLOR

R	Red
G	Green
Y	Yellow ※3)
M	Milk-white
B	Blue
C	Clear ※2)

For without button type, specify part numbers of light cartridge and housing separately.

● HOUSING COLOR

K	Black ※6) 7)
H	Gray ※6) 7)
KN	Black without Flange
HN	Gray without Flange

● OPTION

0759	Low brightness ※5)
001	Cathode common
002	Vertical mounting ※7)
Blank	No option

For other options except for the above, please contact us.

● Supply Voltage to LED

1	DC 5V Built-in resistor ※5)
2	DC12V Built-in resistor ※5)
3	DC24V Built-in resistor ※5)
4	DC 5V Non-resistor
5	DC12V Non-resistor
6	DC24V Non-resistor

For Non-resistor type, use external protective resistor.

● TERMINAL

P	# 110 Tab · Soldering ※1)
C	PCB
K	Connector with Accessories ※4) 6)
N	Connector without Accessories ※6)

● FILTER COLOR

1	Red
2	Green
3	Yellow ※3)
4	Milk-white
6	Blue
X	Without filter

Generally, in case of using color button, filter is not necessary.

● NOTES

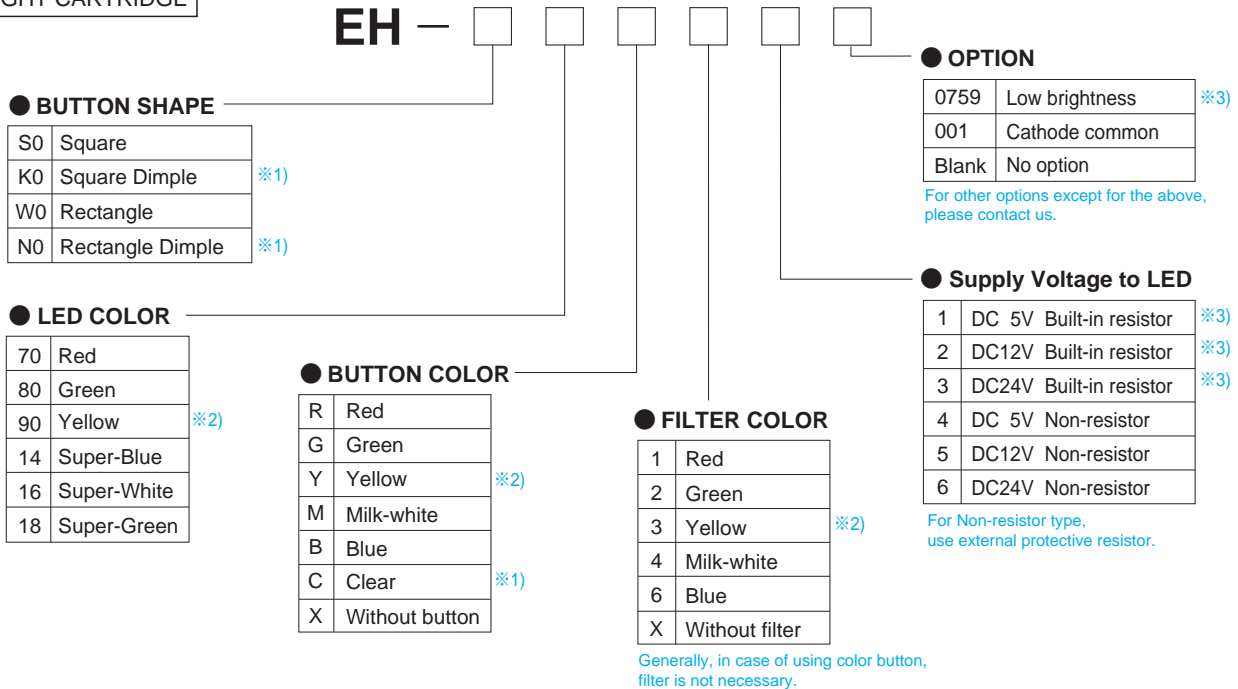
- ※1) For Silent type, specify SPST · Crossbar (1) and #110 Tab · Soldering (P).
- ※2) Dimple button type is only clear color. Therefore, button color should be C (Clear).
The guard cover and dust proof cover cannot be used for Dimple button.
- ※3) The color of "Yellow" for LED (90) and filter (3) is actually "Orange Yellow" not Lemon Yellow.
- ※4) For the connector, refer to Accessories page.
- ※5) For optional low brightness type (0759), specify supply voltage to LED 1, 2, or 3 (Built-in resistor type).
- ※6) For the connector, Housing without flange type cannot be selected.
- ※7) For vertical mounting (002), Housing without flange type cannot be selected.

◇Dimensions : page EH-4~6	◇Accessories : page EH-7~8	◇Terminals / PCB hole cutout : page EH-35~36
◇Internal connection arrangements : page EH-29	◇LED specifications : page EH-32	◇Accessories' dimensions / Panel cutout : EH-39~45
◇Mounting design / Panel cutout : page EH-37~38		

ORDERING CODE 【Full-Face】 EH type

EH-N and EH type are not interchangeable since they have different internal structures.
Use the same type of Light cartridge and Housing in combination.

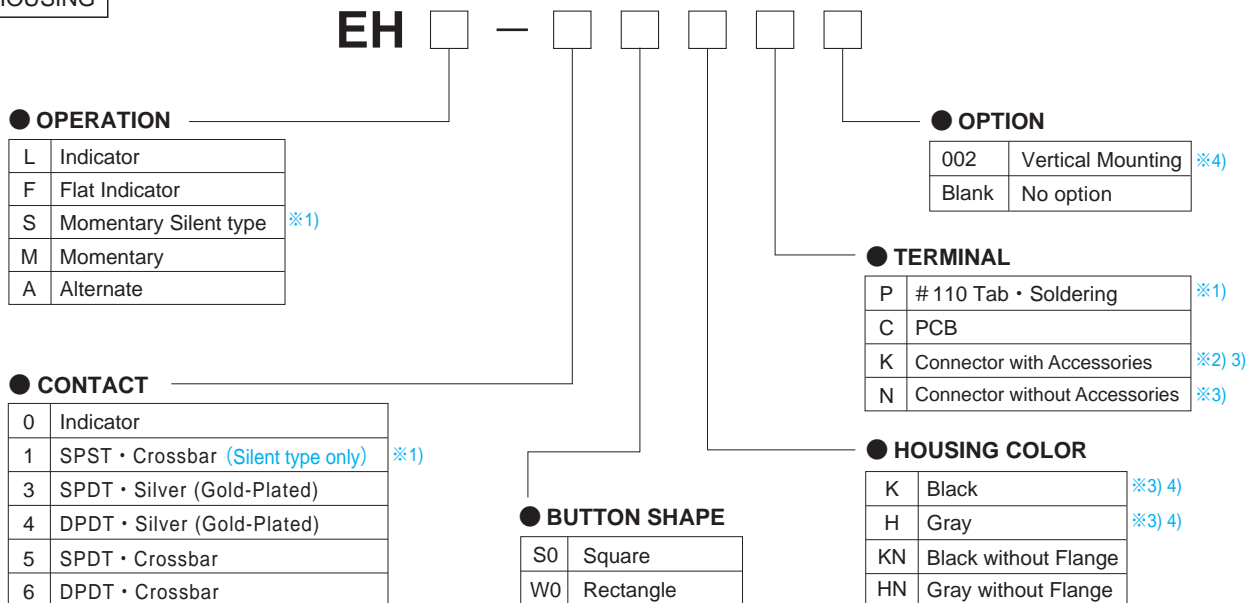
LIGHT CARTRIDGE



● **NOTES**

- ※1) Dimple button type is only clear color. Therefore, button color should be C (Clear).
The guard cover and dust proof cover cannot be used for Dimple button.
- ※2) The color of "Yellow" for LED (90) and filter (3) is actually "Orange Yellow" not Lemon Yellow.
- ※3) For optional low brightness type (0759), specify supply voltage to LED 1, 2, or 3 (Built-in resistor type).

HOUSING



● **NOTES**

- ※1) For Silent type, specify SPST · Crossbar (1) and #110 Tab · Soldering (P).
- ※2) For the connector, refer to Accessories page.
- ※3) For the connector, Housing without flange type cannot be selected.
- ※4) For vertical mounting (002), Housing without flange type cannot be selected.

ORDERING CODE [Dual-Color] EH type

Assembled Part (Light cartridge and Housing)

EH — 1 2

● OPERATION

L	Indicator
F	Flat Indicator
S	Momentary Silent type ※1)
M	Momentary
A	Alternate

● CONTACT

0	Indicator
1	SPST · Crossbar (Silent type only) ※1)
3	SPDT · Silver (Gold-Plated)
4	DPDT · Silver (Gold-Plated)
5	SPDT · Crossbar
6	DPDT · Crossbar

● BUTTON SHAPE

S3	Square
K3	Square Dimple ※2)
W3	Rectangle
N3	Rectangle Dimple ※2)

● LED COLOR

70	Red	Put the color numbers into frame 1, 2. (Dual-Color combination) 7080 · 7014 · 7016 7018 · 8090 · 9070 · 9014 1416 · 1618 · 1814
80	Green	
90	Yellow	
14	Super-Blue	
16	Super-White	
18	Super-Green	

Yellow (90) is actually "ORANGE Yellow" not Lemon Yellow.

● BUTTON COLOR ※3)

C	Clear ※2)
M	Milk-White

● OPTION

0759	Low brightness ※5)
001	Cathode common
002	Vertical mounting ※7)
Blank	No option

For other options except for the above, please contact us.

● Supply Voltage to LED

1	DC 5V Built-in resistor ※5)
2	DC12V Built-in resistor ※5)
3	DC24V Built-in resistor ※5)
4	DC 5V Non-resistor
5	DC12V Non-resistor
6	DC24V Non-resistor
X	Without LED

For Non-resistor type, use external protective resistor.

● TERMINAL

P	# 110 Tab · Soldering ※1)
C	PCB
K	Connector with Accessories ※4) 6)
N	Connector without Accessories ※6)

● FILTER COLOR ※3)

4	Milk-White
X	Without filter

● HOUSING COLOR

K	Black ※6) 7)
H	Gray ※6) 7)
KN	Black without Flange
HN	Gray without Flange

● NOTES

- ※1) For Silent type, specify SPST · Crossbar (1) and #110 Tab · Soldering (P).
- ※2) Dimple button type is only clear color. Therefore, button color should be C (Clear). The guard cover and dust proof cover cannot be used for Dimple button.
- ※3) Button should be C (Clear) with Milk-white filter or M (Milk-white) without filter.
- ※4) For the connector, refer to Accessories page.
- ※5) For optional low brightness type (0759), specify supply voltage to LED 1, 2, or 3 (Built-in resistor type).
- ※6) For the connector, Housing without flange type cannot be selected.
- ※7) For vertical mounting (002), Housing without flange type cannot be selected.

For simultaneous lighting in Dual-Color

Simultaneous lighting is not possible for Built-in resistor type, cause heat. Please select Non-resistor type and apply required external resistor or socket for simultaneous lighting.

Supply Voltage to LED	Simultaneous lighting	Lighting condition
1 DC5V Built-in resistor	N/A	2 to 3 minutes possible.
2 DC12V Built-in resistor	N/A	2 to 3 minutes possible.
3 DC24V Built-in resistor	N/A	2 to 3 minutes possible.
4 DC 5V Non-resistor	A	Use external resistor 36Ω/1/4W or use socket EH-3210-2C
5 DC12V Non-resistor	A	Use external resistor 270Ω/1/4W or use socket EH-3210-2D
6 DC24V Non-resistor	A	Use external resistor 1.1KΩ/1/2W or use socket EH-3210-2E

In case of Built-in resistor type with optional low brightness (0759) is possible for simultaneous lighting.

- ◇Dimensions : page EH-4~6
- ◇Accessories : page EH-7~8
- ◇Internal connection arrangements : page EH-29
- ◇LED specifications : page EH-32
- ◇Mounting design / Panel cutout : page EH-37~38
- ◇Accessories' dimensions / Panel cutout : EH-39~45
- ◇Terminals / PCB hole cutout : page EH-35~36

ORDERING CODE [Dual-Color] EH type

EH-N and EH type are not interchangeable since they have different internal structures.
Use the same type of Light cartridge and Housing in combination.

LIGHT CARTRIDGE

EH — 1 2

● BUTTON SHAPE

S3	Square
K3	Square Dimple ※1)
W3	Rectangle
N3	Rectangle Dimple ※1)

● LED COLOR

70	Red	Put the color numbers into frame 1, 2. (Dual-Color combination) 7080 · 7014 · 7016 7018 · 8090 · 9070 · 9014 1416 · 1618 · 1814
80	Green	
90	Yellow	
14	Super-Blue	
16	Super-White	
18	Super-Green	

Yellow (90) is actually "ORANGE Yellow" not Lemon Yellow.

● BUTTON COLOR ※2)

C	Clear ※1)
M	Milk-white
X	Without button

● OPTION

0759	Low brightness ※3)
001	Cathode common
Blank	No option

For other options except for the above, please contact us.

● Supply Voltage to LED ※4)

1	DC 5V Built-in resistor ※3)
2	DC12V Built-in resistor ※3)
3	DC24V Built-in resistor ※3)
4	DC 5V Non-resistor
5	DC12V Non-resistor
6	DC24V Non-resistor

For Non-resistor type, use external protective resistor.

● FILTER COLOR ※2)

4	Milk-white
X	Without filter

● NOTES

- ※1) Dimple button type is only clear color. Therefore, button color should be C (Clear).
The guard cover and dust proof cover cannot be used for Dimple button.
- ※2) Button should be C (Clear) with Milk-white filter or M (Milk-white) without filter.
- ※3) For optional low brightness type (0759), specify supply voltage to LED 1, 2, or 3 (Built-in resistor type).
- ※4) For use with Simultaneous lighting, refer to page EH-11.

HOUSING

EH —

● OPERATION

L	Indicator
F	Flat Indicator
S	Momentary Silent type ※1)
M	Momentary
A	Alternate

● CONTACT

0	Indicator
1	SPST · Crossbar (Silent type only) ※1)
3	SPDT · Silver (Gold-Plated)
4	DPDT · Silver (Gold-Plated)
5	SPDT · Crossbar
6	DPDT · Crossbar

● BUTTON SHAPE

S1	Square
W1	Rectangle

● OPTION

002	Vertical Mounting ※4)
Blank	No option

● TERMINAL

P	# 110 Tab · Soldering ※1)
C	PCB
K	Connector with Accessories ※2) 3)
N	Connector without Accessories ※3)

● HOUSING COLOR

K	Black ※3) 4)
H	Gray ※3) 4)
KN	Black without Flange
HN	Gray without Flange

● NOTES

- ※1) For Silent type, specify SPST · Crossbar (1) and #110 Tab · Soldering (P).
- ※2) For the connector, refer to Accessories page.
- ※3) For the connector, Housing without flange type cannot be selected.
- ※4) For vertical mounting (002), Housing without flange type cannot be selected.

ORDERING CODE [2-Split-Face] EH type

Assembled Part (Light cartridge and Housing)

EH

● OPERATION

L	Indicator
F	Flat Indicator
S	Momentary Silent type ※2)
M	Momentary
A	Alternate

● CONTACT

0	Indicator
1	SPST · Crossbar (Silent type only) ※2)
3	SPDT · Silver (Gold-Plated)
4	DPDT · Silver (Gold-Plated)
5	SPDT · Crossbar
6	DPDT · Crossbar

● BUTTON SHAPE · ILLUMINATION TYPE

S1	Square Vertical ※1)
S2	Square Horizontal
K1	Square Dimple Vertical ※1) 3)
K2	Square Dimple Horizontal ※3)
W1	Rect. Vertical ※1)
W2	Rect. Horizontal
N1	Rect. Dimple Vertical ※1) 3)
N2	Rect. Dimple Horizontal ※3)

● LED COLOR ※1)

70	Red	Put the color numbers into frame 1, 2. (2-Split-Face combination) 7070 · 7080 · 7090 · 7014 · 7016 · 7018 8070 · 8080 · 8090 · 9070 · 9080 · 9090 · 9014 1414 · 1416 · 1418 · 1470 · 1490 · 1614 · 1616 1618 · 1670 · 1814 · 1816 · 1818 · 1870
80	Green	
90	Yellow	
14	Super-Blue	
16	Super-White	
18	Super-Green	

● OPTION

0759	Low brightness ※5)
001	Cathode common
002	Vertical mounting ※7)
Blank	No option

For other options except for the above, please contact us.

● Supply Voltage to LED

1	DC 5V Built-in resistor
2	DC12V Built-in resistor
3	DC24V Built-in resistor ※5)
4	Non-resistor

For Non-resistor type, use external protective resistor.

● TERMINAL

P	# 110 Tab · Soldering ※2)
C	PCB
K	Connector with Accessories ※4) 6)
N	Connector without Accessories ※6)

● FILTER COLOR ※1)

1	Red	Put the color numbers into frame 1, 2. For without filter : XX
2	Green	
3	Yellow	
4	Milk-white	
6	Blue	
X	Without filter	

The combination of With filter and Without filter cannot be specified.

● HOUSING COLOR

K	Black ※6) 7)
H	Gray ※6) 7)
KN	Black without Flange
HN	Gray without Flange

● BUTTON COLOR

C	Clear
---	-------

● NOTES

- ※1) How to specify the color of LED and filter
Select the color symbols listed in the ordering code, and put them into the frame 1 and 2 referring to the figure below. The numbers in the figure match the location specified in the ordering code.
The color of "Yellow" for LED (90) and filter (3) is actually "Orange Yellow" not Lemon Yellow.
Vertical Split type terminal (L1, L2) and LED color 1 and 2 are opposite.
- Sunmulon mark

1	2
---	---

Vertical

Sunmulon mark

1
2

Horizontal

Sunmulon mark

1	2
---	---

Vertical

Sunmulon mark

1
2

Horizontal
- ※2) For Silent type, specify SPST · Crossbar (1) and #110 Tab · Soldering (P).
- ※3) The guard cover and dust proof cover cannot be used for Dimple button.
- ※4) For the connector, refer to Accessories page.
- ※5) DC24V Built-in resistor (3) can only be specified for option Low brightness (0759) .
- ※6) For the connector, Housing without flange type cannot be selected.
- ※7) For vertical mounting (002), Housing without flange type cannot be selected.

For simultaneous lighting in 2-Split-Face

Simultaneous lighting is not possible for DC12V Built-in resistor type, cause heat. Please select Non-resistor type and apply required external resistor or socket for simultaneous lighting.

Supply Voltage to LED	Simultaneous lighting	Lighting condition
1 DC5V Built-in resistor	A	
2 DC12V Built-in resistor	N/A	2 to 3 minutes possible.
3 DC24V Built-in resistor	N/A	Not specified
	A	Only 0759 can be specified.

Supply Voltage to LED	Simultaneous lighting	Lighting condition
4 Non-resistor	DC 5V	A Use external protective resistor.
	DC12V	A Use external resistor 510Ω1/4W or use socket EH-3210-2A
	DC24V	A Use external resistor 1.3kΩ1/2W or use socket EH-3210-2B

In case of Built-in resistor type with optional Low brightness (0759) is possible for simultaneous lighting.

- ◇Dimensions : page EH-4~6

◇Internal connection arrangements : page EH-30

◇Mounting design / Panel cutout : page EH-37~38

◇Accessories : page EH-7~8

◇LED specifications : page EH-33

◇Accessories' dimensions / Panel cutout : EH-39~45

◇Terminals / PCB hole cutout : page EH-35~36

ORDERING CODE [2-Split-Face] EH type

EH-N and EH type are not interchangeable since they have different internal structures.
Use the same type of Light cartridge and Housing in combination.

LIGHT CARTRIDGE

EH

● BUTTON SHAPE · ILLUMINATION TYPE

S1	Square Vertical	※1)
S2	Square Horizontal	
K1	Square Dimple Vertical	※1, 2)
K2	Square Dimple Horizontal	※2)
W1	Rect. Vertical	※1)
W2	Rect. Horizontal	
N1	Rect. Dimple Vertical	※1,2)
N2	Rect. Dimple Horizontal	※2)

● LED COLOR ※1)

70	Red	Put the color numbers into frame 1, 2. (2-Split-Face combination) 7070 · 7080 · 7090 · 7014 · 7016 · 7018 8070 · 8080 · 8090 · 9070 · 9080 · 9090 · 9014 1414 · 1416 · 1418 · 1470 · 1490 · 1614 · 1616 1618 · 1670 · 1814 · 1816 · 1818 · 1870
80	Green	
90	Yellow	
14	Super-Blue	
16	Super-White	
18	Super-Green	

● BUTTON COLOR

C	Clear
X	Without button

● OPTION

0759	Low brightness	※3)
001	Cathode common	
Blank	No option	

For other options except for the above, please contact us.

● Supply Voltage to LED ※4)

1	DC 5V Built-in resistor	
2	DC12V Built-in resistor	
3	DC24V Built-in resistor	※3)
4	Non-resistor	

For Non-resistor type, use external protective resistor.

● FILTER COLOR ※1)

1	Red	Put the color numbers into frame 1, 2.
2	Green	
3	Yellow	
4	Milk-white	
6	Blue	
X	Without filter	

The combination of With filter and Without filter cannot be specified.

● NOTES

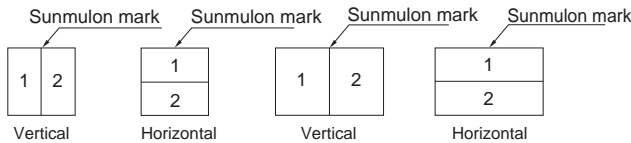
※1) How to specify the color of LED and filter

Select the color symbols listed in the ordering code, and put them into the frame 1 and 2 referring to the figure below.

The numbers in the figure match the location specified in the ordering code.

The color of "Yellow" for LED (90) and filter (3) is actually "Orange Yellow" not Lemon Yellow.

Vertical Split type terminal (L1, L2) and LED color 1 and 2 are opposite.



※2) The guard cover and dust proof cover cannot be used for Dimple button.

※3) DC24V Built-in resistor (3) can only be specified for option Low brightness (0759).

※4) For use with Simultaneous lighting, refer to page EH-19.

HOUSING

EH

● OPERATION

L	Indicator	
F	Flat Indicator	
S	Momentary Silent type	※1)
M	Momentary	
A	Alternate	

● CONTACT

0	Indicator	
1	SPST · Crossbar (Silent type only)	※1)
3	SPDT · Silver (Gold-Plated)	
4	DPDT · Silver (Gold-Plated)	
5	SPDT · Crossbar	
6	DPDT · Crossbar	

● BUTTON SHAPE

S1	Square
W1	Rectangle

● OPTION

002	Vertical Mounting	※4)
Blank	No option	

● TERMINAL

P	#110 Tab · Soldering	※1)
C	PCB	
K	Connector with Accessories	※2) 3)
N	Connector without Accessories	※3)

● HOUSING COLOR

K	Black	※3) 4)
H	Gray	※3) 4)
KN	Black without Flange	
HN	Gray without Flange	

● NOTES

※1) For Silent type, specify SPST · Crossbar (1) and #110 Tab · Soldering (P).

※2) For the connector, refer to Accessories page.

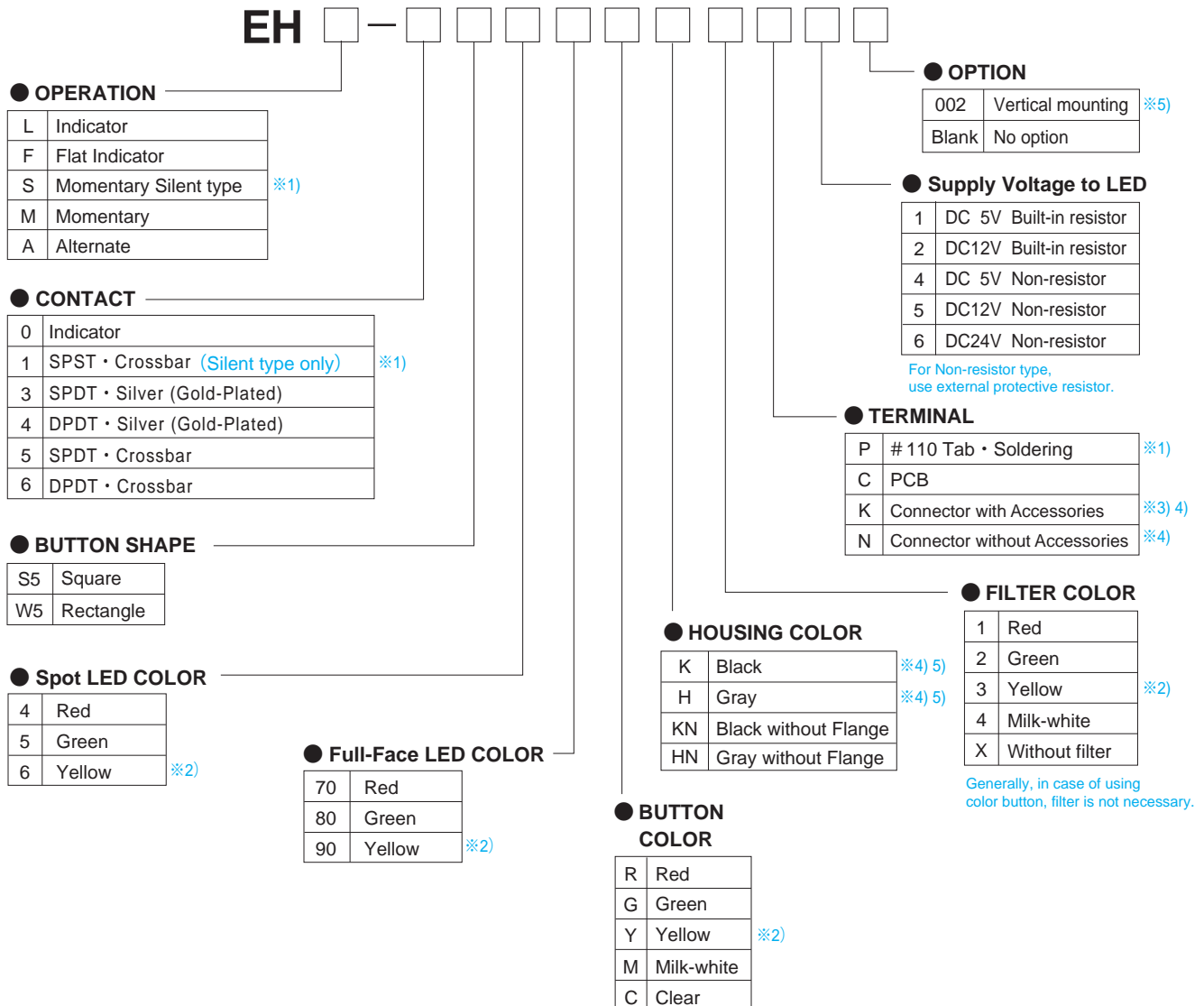
※3) For the connector, Housing without flange type cannot be selected.

※4) For vertical mounting (002), Housing without flange type cannot be selected.

ORDERING CODE [Standby] EH type

Standby illumination is only available for EH type.

Assembled Part (Light cartridge and Housing)



● NOTES

- ※1) For Silent type, specify SPST • Crossbar (1) and #110 Tab • Soldering (P).
- ※2) The color of "Yellow" for LED (90) and filter (3) is actually "Orange Yellow" not Lemon Yellow.
- ※3) For the connector, refer to Accessories page.
- ※4) For the connector, Housing without flange type cannot be selected.
- ※5) For vertical mounting (002), Housing without flange type cannot be selected.

For Standby illumination at DC 24V.

Please select DC 24V Non-resistor type (6) and apply required external resistor or socket. Simultaneous lighting is possible.

External resistor

	LED color	External resistor
Full-Face LED	All color	1.1kΩ 1/2W
	Red	4.3kΩ 1/4W
Spot LED	Green	1.1kΩ 1W
	Yellow	2.2kΩ 1/2W

Socket

Full-Face LED	Spot LED	Socket Part no.
All color	Red	EH-3210-2F
	Green	EH-3210-2G
	Yellow	EH-3210-2H

◇Dimensions : page EH-4~6
 ◇Internal connection arrangements : page EH-31
 ◇Mounting design / Panel cutout : page EH-37~38
 ◇Accessories : page EH-7~8
 ◇LED specifications : page EH-33
 ◇Accessories' dimensions / Panel cutout : EH-39~45
 ◇Terminals / PCB hole cutout : page EH-35~36

ORDERING CODE [Standby] EH type

Standby illumination is only available for EH type.

LIGHT CARTRIDGE

● **BUTTON SHAPE**

S5	Square
W5	Rectangle

● **Spot LED COLOR**

4	Red
5	Green
6	Yellow

● **Full-Face LED COLOR**

70	Red
80	Green
90	Yellow ※1)

● **BUTTON COLOR**

R	Red
G	Green
Y	Yellow ※1)
M	Milk-white
C	Clear
X	Without button

● **Supply Voltage to LED ※2)**

1	DC 5V Built-in resistor
2	DC12V Built-in resistor
4	DC 5V Non-resistor
5	DC12V Non-resistor
6	DC24V Non-resistor

For Non-resistor type, use external protective resistor.

● **FILTER COLOR**

1	Red
2	Green
3	Yellow ※1)
4	Milk-white
X	Without filter

Generally, in case of using color button, filter is not necessary.

● **NOTES**

※1) The color of "Yellow" for LED (6) (90) , button (Y) and filter (3) is actually "Orange Yellow" not Lemon Yellow.

※2) For use with DC24V, refer to page EH-21.

HOUSING

● **OPERATION**

L	Indicator
F	Flat Indicator
S	Momentary Silent type ※1)
M	Momentary
A	Alternate

● **CONTACT**

0	Indicator
1	SPST • Crossbar (Silent type only) ※1)
3	SPDT • Silver (Gold-Plated)
4	DPDT • Silver (Gold-Plated)
5	SPDT • Crossbar
6	DPDT • Crossbar

● **BUTTON SHAPE**

S1	Square
W1	Rectangle

● **OPTION**

002	Vertical Mounting ※4)
Blank	No option

● **TERMINAL**

P	# 110 Tab • Soldering ※1)
C	PCB
K	Connector with Accessories ※2) 3)
N	Connector without Accessories ※3)

● **HOUSING COLOR**

K	Black ※3) 4)
H	Gray ※3) 4)
KN	Black without Flange
HN	Gray without Flange

● **NOTES**

※1) For Silent type, specify SPST • Crossbar (1) and #110 Tab • Soldering (P).

※2) For the connector, refer to Accessories page.

※3) For the connector, Housing without flange type cannot be selected.

※4) For vertical mounting (002), Housing without flange type cannot be selected.

ORDERING CODE [Spot] EH type

Spot illumination is only available for EH type.

Assembled Part (Light cartridge and Housing)

EH -

● OPERATION

L	Indicator
F	Flat Indicator
S	Momentary Silent type ※1)
M	Momentary
A	Alternate

● CONTACT

0	Indicator
1	SPST • Crossbar (Silent type only) ※1)
3	SPDT • Silver (Gold-Plated)
4	DPDT • Silver (Gold-Plated)
5	SPDT • Crossbar
6	DPDT • Crossbar

● BUTTON SHAPE

S0	Square
W0	Rectangle

● Spot LED COLOR

4	Red
5	Green
6	Yellow ※2)

● BUTTON COLOR

R	Red
G	Green
Y	Yellow ※3)
M	Milk-white
B	Blue
K	Black
C	Clear

● HOUSING COLOR

K	Black ※5) 6)
H	Gray ※5) 6)
KN	Black without Flange
HN	Gray without Flange

● OPTION

002	Vertical mounting ※6)
Blank	No option

● Supply Voltage to LED

1	DC 5V Built-in resistor
2	DC12V Built-in resistor
3	DC24V Built-in resistor
4	Non-resistor

For Non-resistor type, use external protective resistor.

● TERMINAL

P	# 110 Tab • Soldering ※1)
C	PCB
K	Connector with Accessories ※4) 5)
N	Connector without Accessories ※5)

● FILTER COLOR

1	Red
2	Green
3	Yellow ※3)
4	Milk-white
6	Blue
7	Black
X	Without filter

Generally, in case of using color button, filter is not necessary.

● NOTES

- ※1) For Silent type, specify SPST • Crossbar (1) and #110 Tab • Soldering (P).
- ※2) The color of "Yellow" for LED (6) is actually "Orange Yellow" not Lemon Yellow.
- ※3) The color of "Yellow" for button (Y) and filter (3) is Lemon Yellow.
- ※4) For the connector, refer to Accessories page.
- ※5) For the connector, Housing without flange type cannot be selected.
- ※6) For vertical mounting (002), Housing without flange type cannot be selected.

◇Dimensions : page EH-4~6	◇Accessories : page EH-7~8	◇Terminals / PCB hole cutout : page EH-35~36
◇Internal connection arrangements : page EH-31	◇LED specifications : page EH-34	◇Accessories' dimensions / Panel cutout : EH-39~45
◇Mounting design / Panel cutout : page EH-37~38		

ORDERING CODE [Spot] EH type

Spot illumination is only available for EH type.

LIGHT CARTRIDGE

EH — □ □ □ □ □ □

● **BUTTON SHAPE**

S5	Square
W5	Rectangle

● **Spot LED COLOR**

4	Red
5	Green
6	Yellow ※1)

● **BUTTON COLOR**

R	Red
G	Green
Y	Yellow ※2)
M	Milk-white
B	Blue
K	Black
C	Clear
X	Without button

● **Supply Voltage to LED**

1	DC 5V Built-in resistor
2	DC12V Built-in resistor
3	DC24V Built-in resistor
4	Non-resistor

For Non-resistor type, use external protective resistor.

● **FILTER COLOR**

1	Red
2	Green
3	Yellow ※2)
4	Milk-white
6	Blue
7	Black
X	Without filter

Generally, in case of using color button, filter is not necessary.

● **NOTES**

- ※1) The color of "Yellow" for LED (6) is actually "Orange Yellow" not Lemon Yellow.
- ※1) The color of "Yellow" for button (Y) and filter (3) is Lemon Yellow.

HOUSING

EH □ — □ □ □ □ □ □

● **OPERATION**

L	Indicator
F	Flat Indicator
S	Momentary Silent type ※1)
M	Momentary
A	Alternate

● **CONTACT**

0	Indicator
1	SPST • Crossbar (Silent type only) ※1)
3	SPDT • Silver (Gold-Plated)
4	DPDT • Silver (Gold-Plated)
5	SPDT • Crossbar
6	DPDT • Crossbar

● **BUTTON SHAPE**

S0	Square
W0	Rectangle

● **OPTION**

002	Vertical Mounting ※5)
Blank	No option

● **TERMINAL**

P	#110 Tab • Soldering ※1)
C	PCB
K	Connector with Accessories ※2) 3)
N	Connector without Accessories ※3)

● **HOUSING COLOR**

K	Black ※3) 4)
H	Gray ※3) 4)
KN	Black without Flange
HN	Gray without Flange

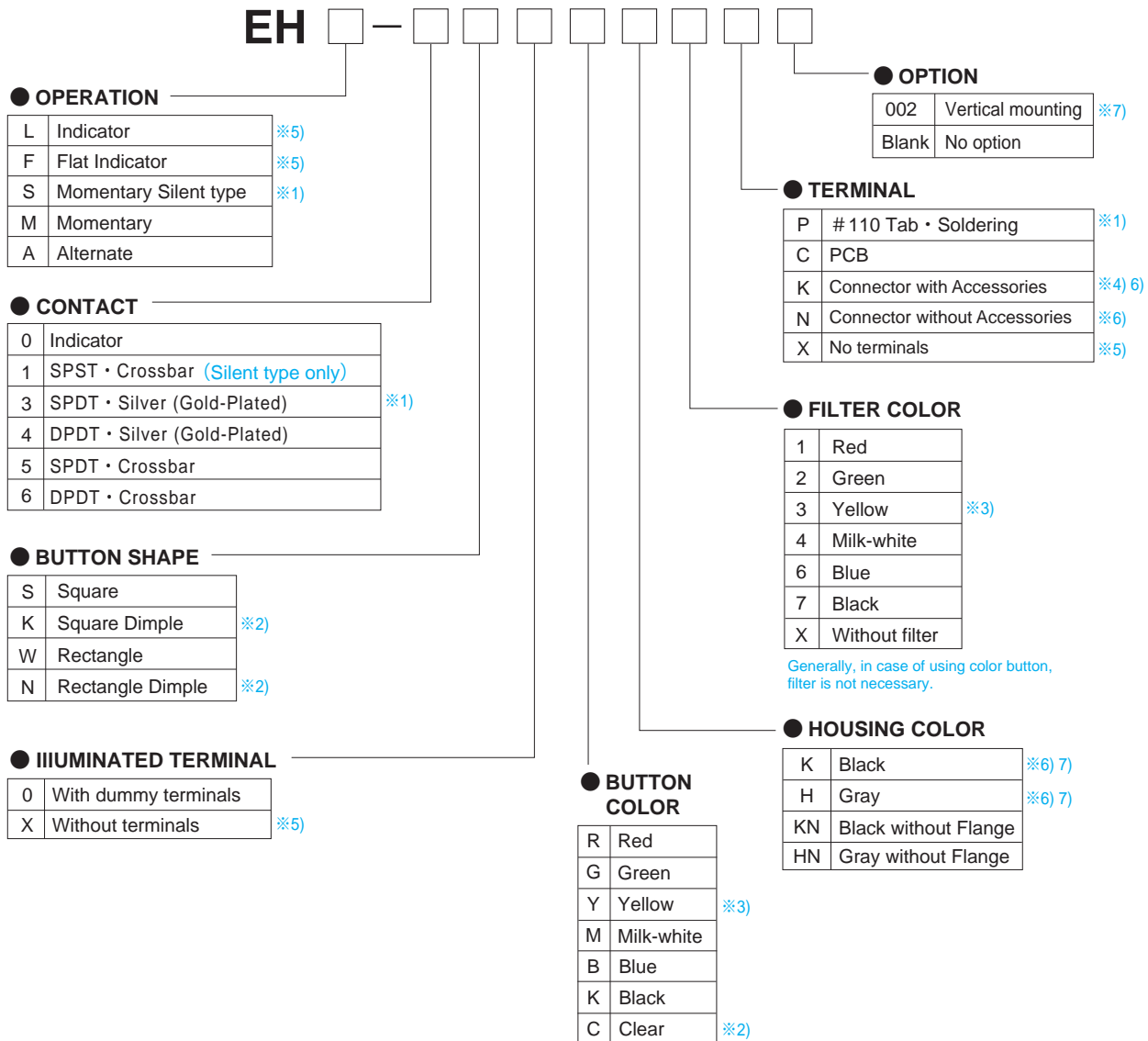
● **NOTES**

- ※1) For Silent type, specify SPST • Crossbar (1) and #110 Tab • Soldering (P).
- ※2) For the connector, refer to Accessories page.
- ※3) For the connector, Housing without flange type cannot be selected.
- ※4) For vertical mounting (002), Housing without flange type cannot be selected.

ORDERING CODE [Non-illumination] EH type

Non-illumination is only available for EH type.

Assembled Part (Light cartridge and Housing)



● **NOTES**

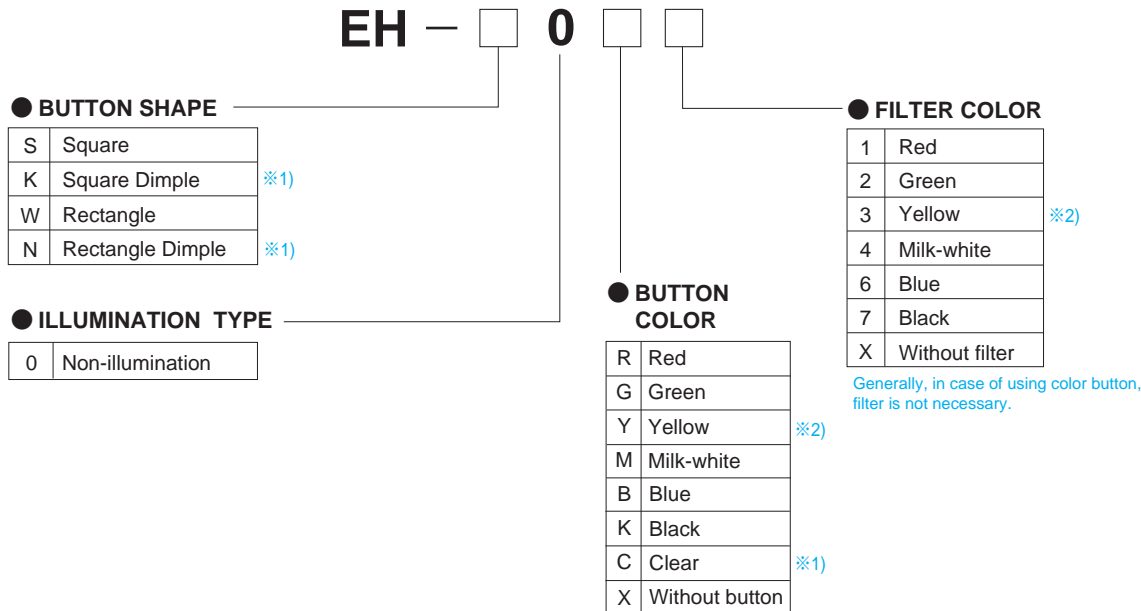
- ※1) For Silent type, specify SPST • Crossbar (1) and #110 Tab • Soldering (P).
- ※2) Dimple button type is only clear color. Therefore, button color should be C (Clear). The guard cover and dust proof cover cannot be used for Dimple button.
- ※3) The color of "Yellow" for button (Y) and filter (3) is Lemon Yellow.
- ※4) For the connector, refer to Accessories page.
- ※5) In case of Indicator (L) or Flat Indicator (F) without terminals (X), specify No terminals (X).
- ※6) For the connector, Housing without flange type cannot be selected.
- ※7) For vertical mounting (002), Housing without flange type cannot be selected.

◇Dimensions : page EH-4~6 ◇Accessories : page EH-7~8
 ◇Terminals / PCB hole cutout : page EH-35
 ◇Mounting design / Panel cutout : page EH-37~38 ◇Accessories' dimensions / Panel cutout : EH-39~45

ORDERING CODE [Non-illumination] EH type

Non-illumination is only available for EH type.

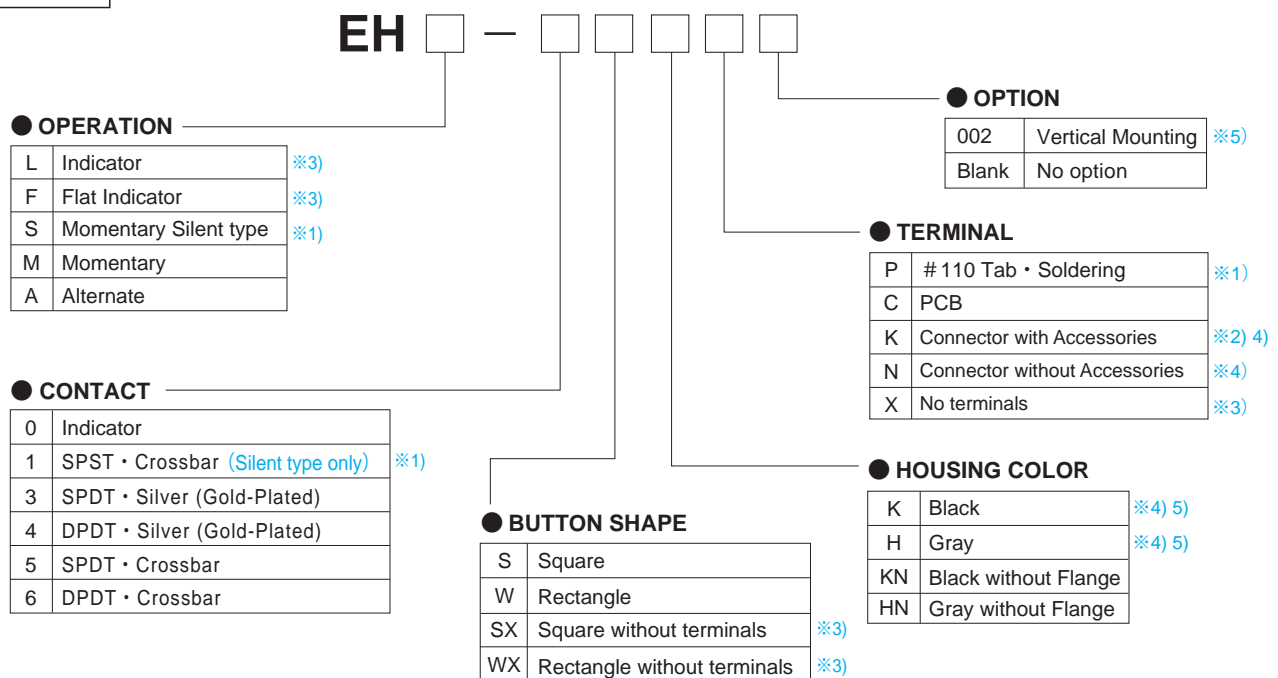
LIGHT CARTRIDGE



● **NOTES**

- ※1) Dimple button type is only clear color. Therefore, button color should be C (Clear).
The guard cover and dust proof cover cannot be used for Dimple button.
- ※2) The color of "Yellow" for button (Y) and filter (3) is Lemon Yellow.

HOUSING



● **NOTES**

- ※1) For Silent type, specify SPST • Crossbar (1) and #110 Tab • Soldering (P).
- ※2) For the connector, refer to Accessories page.
- ※3) In case of Indicator (L) or Flat Indicator (F) without terminals (SX) (WX), specify No terminals (X).
- ※4) For the connector, Housing without flange type cannot be selected.
- ※5) For vertical mounting (002), Housing without flange type cannot be selected.

REPLACEMENT PARTS

● Full-Face BUTTON/FILTER

		Red	Green	Yellow	Blue	Milk-white	Clear	Dimple
BUTTON	Square	EH-1008-1LR	EH-1008-1LG	EH-1008-1LY	EH-1008-1LB	EH-1008-1LM	EH-1008-2C	EH-2374-2C
	Rectangle	EH-1013-1LR	EH-1013-1LG	EH-1013-1LY	EH-1013-1LB	EH-1013-1LM	EH-1013-2C	EH-2375-2C
FILTER	Square	EH-1010-LR	EH-1010-LG	EH-1010-LY	EH-1010-LB	EH-1010-LM		
	Rectangle	EH-1015-LR	EH-1015-LG	EH-1015-LY	EH-1015-LB	EH-1015-LM		

● Dual-Color BUTTON/FILTER

		Milk-white	Clear	Dimple
BUTTON	Square	EH-1008-1LM	EH-1008-2C	EH-2374-2C
	Rectangle	EH-1013-1LM	EH-1013-2C	EH-2375-2C
FILTER	Square	EH-1010-LM		
	Rectangle	EH-1015-LM		

● 2-Split-Face BUTTON/FILTER

		Red	Green	Yellow	Blue	Milk-white	Clear	Dimple
BUTTON	Square						EH-1008-2C	EH-2374-2C
	Rectangle						EH-1013-2C	EH-2375-2C
FILTER	Square	EH-1012-LR	EH-1012-LG	EH-1012-LY	EH-1012-LB	EH-1012-LM		
	Rectangle (Vert.)	EH-1017-LR	EH-1017-LG	EH-1017-LY	EH-1017-LB	EH-1017-LM		
	Rectangle (Horiz.)	EH-1018-LR	EH-1018-LG	EH-1018-LY	EH-1018-LB	EH-1018-LM		

● DIVIDER

	EH type	EH-N type
Square 2-Split-Face	EH-3182	EH-3593
Rectangle 2-Split-Face (Vert.)	EH-3182	EH-3593
Rectangle 2-Split-Face (Horiz.)	EH-3183	EH-3594

● Standby BUTTON/FILTER

		Red	Green	Yellow	Milk-white	Clear
BUTTON	Square	EH-1009-LR	EH-1009-LG	EH-1009-LY	EH-1009-LM	EH-1009-C
	Rectangle	EH-1014-LR	EH-1014-LG	EH-1014-LY	EH-1014-LM	EH-1014-C
FILTER	Square	EH-1011-LR	EH-1011-LG	EH-1011-LY	EH-1011-LM	
	Rectangle	EH-1016-LR	EH-1016-LG	EH-1016-LY	EH-1016-LM	

● Spot BUTTON/FILER

		Red	Green	Yellow	Milk-white	Blue	Black	Clear
BUTTON	Square	EH-1009-R	EH-1009-G	EH-1009-Y	EH-1009-M	EH-1009-B	EH-1009-K	EH-1009-C
	Rectangle	EH-1014-R	EH-1014-G	EH-1014-Y	EH-1014-M	EH-1014-B	EH-1014-K	EH-1014-C
FILTER	Square	EH-1011-R	EH-1011-G	EH-1011-Y	EH-1011-M	EH-1011-B		
	Rectangle	EH-1016-R	EH-1016-G	EH-1016-Y	EH-1016-M	EH-1016-B		

※ Black button do not transmit light.

※ The yellow button and filter for Spot illumination is Lemon Yellow.

● Non-illumination BUTTON/FILTER

		Red	Green	Yellow	Milk-white	Blue	Black	Clear
BUTTON	Square	EH-1008-1R	EH-1008-1G	EH-1008-1Y	EH-1008-1M	EH-1008-1B	EH-1008-1K	EH-1008-2C
	Rectangle	EH-1013-1R	EH-1013-1G	EH-1013-1Y	EH-1013-1M	EH-1013-1B	EH-1013-1K	EH-1013-2C
FILTER	Square	EH-1010-R	EH-1010-G	EH-1010-Y	EH-1010-M	EH-1010-B	EH-1010-K	
	Rectangle	EH-1015-R	EH-1015-G	EH-1015-Y	EH-1015-M	EH-1015-B	EH-1015-K	

※ Black button do not transmit light.

※ The yellow button and filter for Non-illumination is Lemon Yellow.

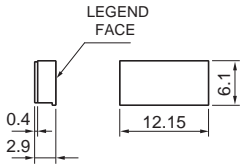
● Long Snap spring

Part no.	EH-1034-2
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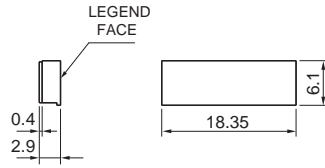
The option (002) for vertical mounting with Rectangle incorporated two long snap springs.

To change Horizontal mounting to Vertical mounting, replace two long snap springs.

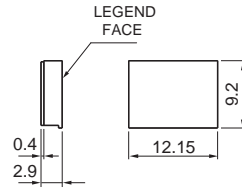
FILTER DIMENSIONS



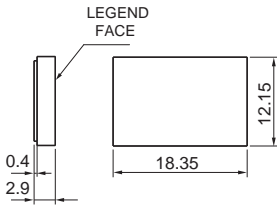
EH-1012



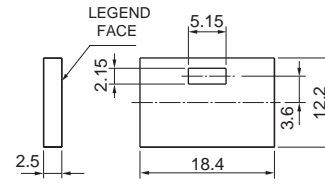
EH-1018



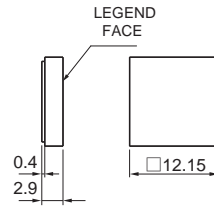
EH-1017



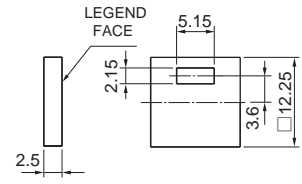
EH-1015



EH-1016



EH-1010

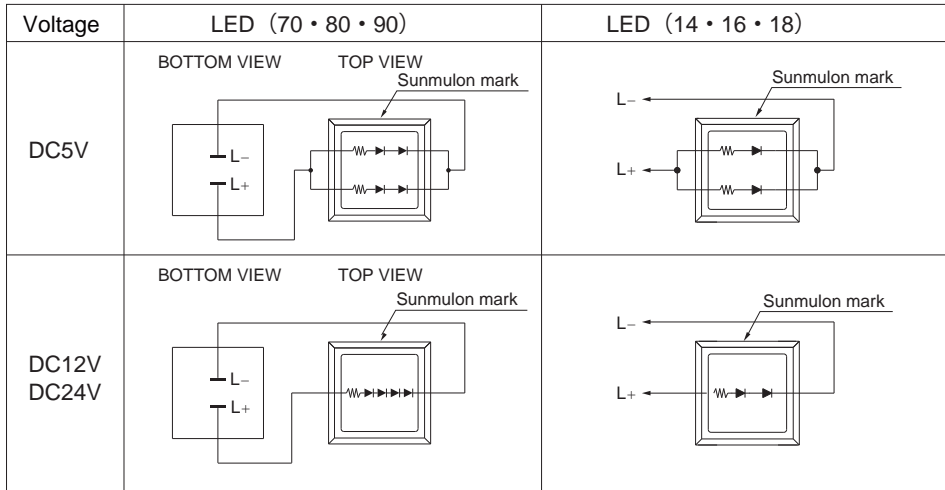


EH-1011

Tolerance : ± 0.4 mm

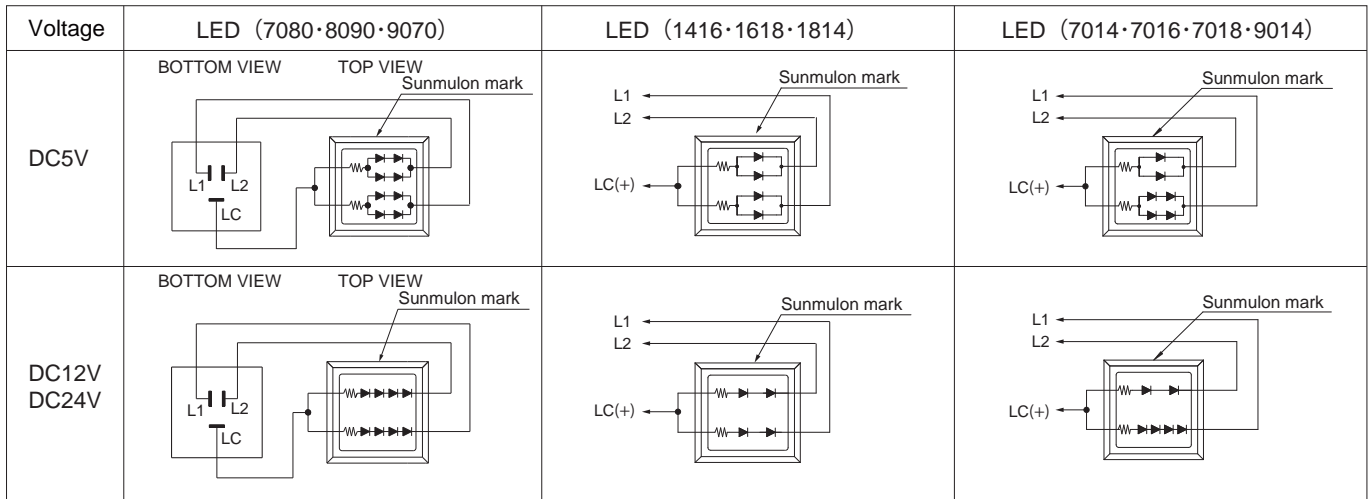
INTERNAL CONNECTION ARRANGEMENTS

● Full-Face



LED color : 70 (Red), 80 (Green), 90 (Yellow), 14 (Super-Blue), 16 (Super-White), 18 (Super-Green)

● Dual-Color



LED color : 70 (Red), 80 (Green), 90 (Yellow), 14 (Super-Blue), 16 (Super-White), 18 (Super-Green)

● Dual-Color combination (Common for each voltage)

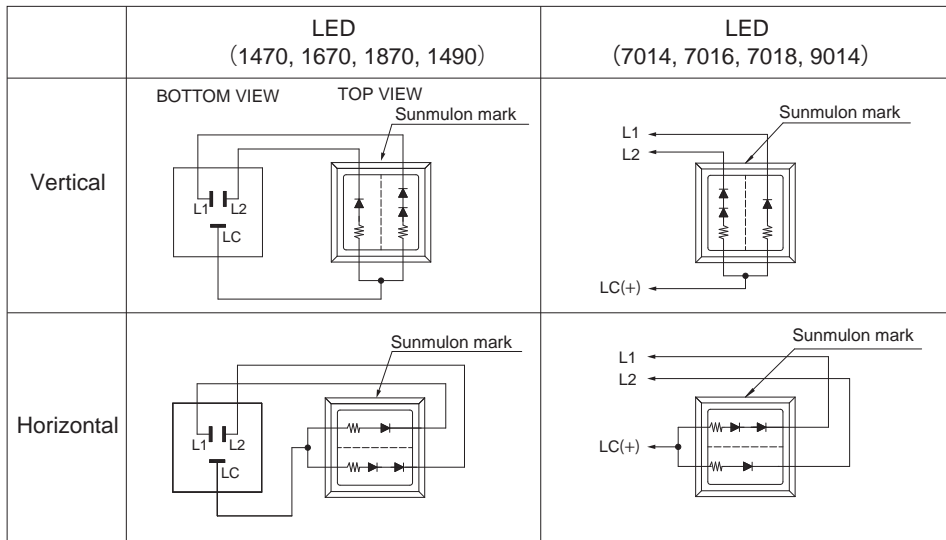
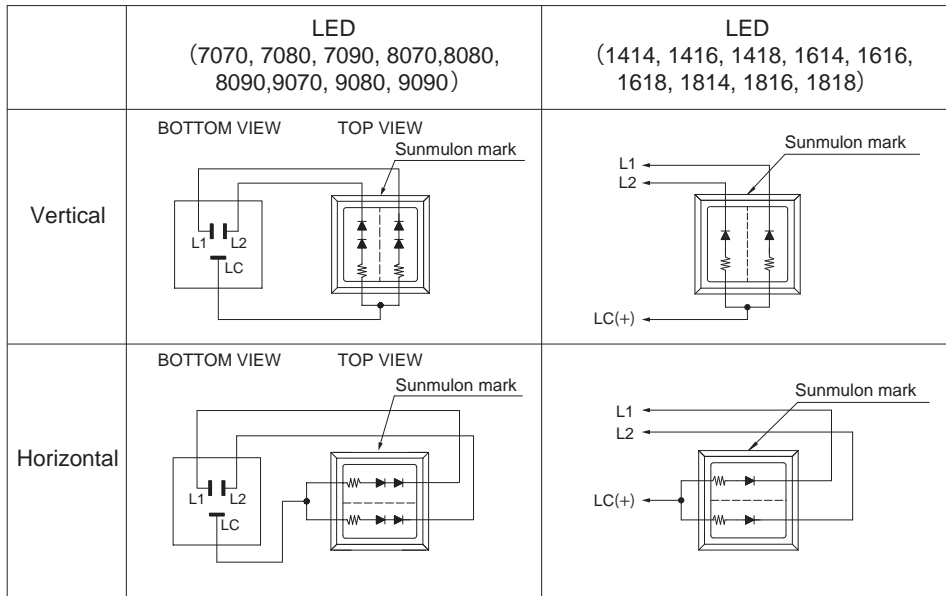
Terminals	LED Color									
LC-L1	Red	Red	Red	Red	Green	Yellow	Yellow	Super Blue	Super White	Super Green
LC-L2	Green	Super Blue	Super White	Super Green	Yellow	Red	Super Blue	Super White	Super Green	Super Blue

- ※ These are all internal connection diagrams for built-in resistor type.
- ※ For Non-resistor type, the resistor part in the diagram should be short-circuited.
- ※ The common diagram is for Anode Common type.
For Cathode Common type, LED polarity (current flow direction) is opposite.

INTERNAL CONNECTION ARRANGEMENTS

● 2-Split-Face

※ DC24V has no built-in resistor type.



LED color : 70 (Red), 80 (Green), 90 (Yellow), 14 (Super-Blue), 16 (Super-White), 18 (Super-Green)

● Dual-Color combination (Common for each voltage)

Terminals	LED Color											
LC-L1	Red	Red	Red	Red	Red	Red	Green	Green	Green	Yellow	Yellow	Yellow
LC-L2	Red	Green	Yellow	Super Blue	Super White	Super Green	Red	Green	Yellow	Red	Green	Yellow

Terminals	LED Color											
LC-L1	Yellow	Super Blue	Super Blue	Super Blue	Super Blue	Super Blue	Super White	Super White	Super White	Super White	Super Green	Super Green
LC-L2	Super Blue	Super Blue	Super White	Super Green	Red	Yellow	Super Blue	Super White	Super Green	Red	Super Blue	Super White

Terminals	LED Color	
LC-L1	Super Green	Super Green
LC-L2	Super Green	Red

- ※ These are all internal connection diagrams for built-in resistor type.
- ※ For Non-resistor type, the resistor part in the diagram should be short-circuited.
- ※ The common diagram is for Anode Common type.
For Cathode Common type, LED polarity (current flow direction) is opposite.

INTERNAL CONNECTION ARRANGEMENTS

● Standby

Voltage	LED (Spot : 4, 5, 6) + (Full-Face : 70, 80, 90)
DC5V	<div style="display: flex; justify-content: space-around;"> <div style="text-align: center;"> <p>BOTTOM VIEW</p> </div> <div style="text-align: center;"> <p>TOP VIEW</p> </div> </div>
DC12V DC24V	<div style="display: flex; justify-content: space-around;"> <div style="text-align: center;"> <p>BOTTOM VIEW</p> </div> <div style="text-align: center;"> <p>TOP VIEW</p> </div> </div> <p style="text-align: center; color: blue;">※ DC24V has no built-in resistor type.</p>

Spot LED color : SPOT 4 (Red), 5 (Green), 6 (Yellow)
 Full-Face LED color : 70 (Red), 80 (Green), 90 (Yellow)

● Spot

Voltage	2 × 5 LED (Spot : 4, 5, 6)
DC 5V DC12V DC24V	<div style="display: flex; justify-content: space-around;"> <div style="text-align: center;"> <p>BOTTOM VIEW</p> </div> <div style="text-align: center;"> <p>TOP VIEW</p> </div> </div>

Spot LED color : SPOT 4 (Red), 5 (Green), 6 (Yellow)

- ※ These are all internal connection diagrams for built-in resistor type.
- ※ For Non-resistor type, the resistor part in the diagram should be short-circuited.

LED SPECIFICATIONS [Full-Face]

● BUILT-IN RESISTOR

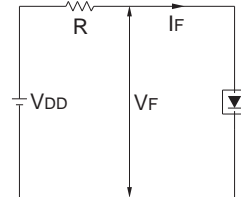
Voltage	Rated Current (mA)											
	Red	Green	Yellow	Super Blue	Super White	Super Green	Low brightness type					
							Red	Green	Yellow	Super Blue	Super White	Super Green
DC 5V ±5%	30	30	30	12	18	10	6	22	10	8	10	6
DC12V ±5%	15	15	15	6	10	6	4	8	5	4	5	3
DC24V ±5%	9	9	9	6	10	6	4	7	4	4	5	3

● NON-RESISTOR (EXTERNAL RESISTOR)

Supply Voltage	DC5V			DC12V · 24V			DC5V			DC12V · 24V		
LED Color	Red	Green	Yellow	Red	Green	Yellow	Super Blue	Super White	Super Green	Super Blue	Super White	Super Green
Max. Forward Current I_{FM} (mA)	50	40	50	25	20	25	40	40	40	20	20	20
DC Reverse Voltage V_R (V)	10	10	10	20	20	20	5	5	5	10	10	10
Forward Voltage V_F (Typ.) (V)	3.8	4.2	3.8	7.6	8.4	7.6	2.9	2.9	3	5.8	5.8	6
Derating (Operating temperature) (over 25°C working temperature) (mA/°C)	0.66			0.33			0.54			0.27		
Pulse Lighting	Pulse Width PW (μ s)			100			100			100	1000	
	Duty Ratio DR			10^{-1}			10^{-1}			10^{-1}	1/20	
	I_{FM} (mA)			90			90			50	48	

Forward Voltage V_F of LED color : Red · Green · Yellow [$I_F=20mA$]
 Super Blue · Super White · Super Green [$I_F=5mA$]

● Wiring Diagram



Refer to the following formula to calculate external resistance values.

$$R = \frac{V_{DD} - V_F}{I_F}$$

V_{DD} : Supply Voltage
 V_F : Forward Voltage
 I_F : Forward Current

I_F (Forward Current) : Refer to the Rated Current of BUILT-IN RESISTOR type, and be sure to set less than I_{FM} (Max. Forward Current).

LED SPECIFICATIONS [Dual-Color]

● BUILT-IN RESISTOR

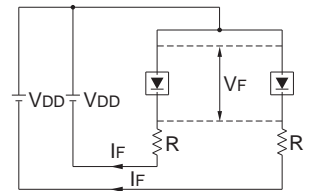
Voltage	Rated Current (mA)											
	Red	Green	Yellow	Super Blue	Super White	Super Green	Low brightness type					
							Red	Green	Yellow	Super Blue	Super White	Super Green
DC 5V ±5%	30	30	30	12	18	10	6	24	11	8	10	6
DC12V ±5%	15	15	15	6	10	6	4	8	5	4	5	3
DC24V ±5%	9	9	9	6	10	6	4	7	4	4	5	3

● NON-RESISTOR (EXTERNAL RESISTOR)

Supply Voltage	DC5V			DC12V · 24V			DC5V			DC12V · 24V		
LED Color	Red	Green	Yellow	Red	Green	Yellow	Super Blue	Super White	Super Green	Super Blue	Super White	Super Green
Max. Forward Current I_{FM} (mA)	50	40	50	25	20	25	40	40	40	20	20	20
DC Reverse Voltage V_R (V)	10	10	10	20	20	20	5	5	5	10	10	10
Forward Voltage V_F (Typ.) (V)	3.8	4.2	3.8	7.6	8.4	7.6	2.9	2.9	3	5.8	5.8	6
Derating (Operating temperature) (over 25°C working temperature) (mA/°C)	0.66			0.33			0.54			0.27		
Pulse Lighting	Pulse Width PW (μ s)			100			100			100	1000	
	Duty Ratio DR			10^{-1}			10^{-1}			10^{-1}	1/20	
	I_{FM} (mA)			90			90			50	48	

Forward Voltage V_F of LED color : Red · Green · Yellow [$I_F=20mA$]
 Super Blue · Super White · Super Green [$I_F=5mA$]

● Wiring Diagram



Refer to the following formula to calculate external resistance values.

$$R = \frac{V_{DD} - V_F}{I_F}$$

V_{DD} : Supply Voltage
 V_F : Forward Voltage
 I_F : Forward Current

For resistance value calculation

<https://www.sunmulon.co.jp/english/products/led.html>

The resistance value can be calculated just by entering the items.

I_F (Forward Current) : Refer to the Rated Current of BUILT-IN RESISTOR type, and be sure to set less than I_{FM} (Max. Forward Current).

LED SPECIFICATIONS [2-Split-Face]

● BUILT-IN RESISTOR

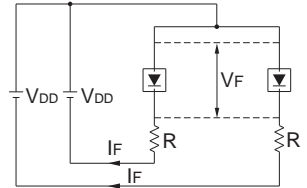
Voltage	Rated Current (mA)											
	Red	Green	Yellow	Super Blue	Super White	Super Green	Low brightness type					
							Red	Green	Yellow	Super Blue	Super White	Super Green
DC 5V ±5%	15	15	15	6	9	5	4	7	4	4	5	3
DC12V ±5%	15	15	15	6	10	6	6	8	4	4	5	3
DC24V ±5%							6	7	5	4	5	3

● NON-RESISTOR (EXTERNAL RESISTOR)

Supply Voltage		DC5V · 12V · 24V					
LED Color		Red	Green	Yellow	Super Blue	Super White	Super Green
Max. Forward Current I _{FM} (mA)		25	20	25	20	20	20
DC Reverse Voltage V _R (V)		10	10	10	5	5	5
Forward Voltage V _{F(Typ.)} (V)		3.8	4.2	3.8	2.9	2.9	3.0
Derating (Operating temperature) (over 25°C working temperature) (mA/°C)		0.33			0.27		
Pulse Lighting	Pulse Width PW (μs)	100			100		1000
	Duty Ratio DR	10 ⁻¹			10 ⁻¹		1/20
	I _{FM} (mA)	90			50		48

Forward Voltage V_F of LED color : Red · Green · Yellow [I_F=20mA]
 Super Blue · Super White · Super Green [I_F=5mA]

● Wiring Diagram



Refer to the following formula to calculate external resistance values.

$$R = \frac{V_{DD} - V_F}{I_F}$$

V_{DD} : Supply Voltage
 V_F : Forward Voltage
 I_F : Forward Current

I_F (Forward Current) : Refer to the Rated Current of BUILT-IN RESISTOR type, and be sure to set less than I_{FM} (Max. Forward Current).

LED SPECIFICATIONS [Standby]

● BUILT-IN RESISTOR

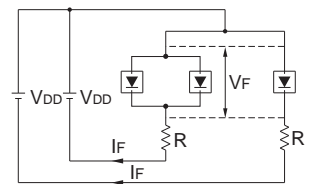
Voltage	Rated Current (mA)					
	2×5 Spot LED			Full-Face LED		
	Red	Green	Yellow	Red	Green	Yellow
DC 5V ±5%	5	20	10	30	30	30
DC12V ±5%	5	20	10	15	15	15
DC24V ±5%						

● NON-RESISTOR (EXTERNAL RESISTOR)

		2×5 Spot LED			Full-Face LED					
Supply Voltage		DC5V			DC5V			DC12V · 24V		
LED Color		Red	Green	Yellow	Red	Green	Yellow	Red	Green	Yellow
Max. Forward Current I _{FM} (mA)		10	30	20	50	40	50	25	20	25
DC Reverse Voltage V _R (V)		5	5	4	10	10	10	20	20	20
Forward Voltage V _{F(Typ.)} (V)		1.9	2.1	1.9	3.8	4.2	3.8	7.6	8.4	7.6
Derating (Operating temperature) (over 25°C working temperature) (mA/°C)		0.13	0.4	0.26	0.66			0.33		
Pulse Lighting	Pulse Width PW (μs)	100			100			100		
	Duty Ratio DR	10 ⁻¹			10 ⁻¹			10 ⁻¹		
	I _{FM} (mA)	50						90		

Forward Voltage V_F of LED color : Red · Green · Yellow [I_F=20mA]

● Wiring Diagram



Refer to the following formula to calculate external resistance values.

$$R = \frac{V_{DD} - V_F}{I_F}$$

V_{DD} : Supply Voltage
 V_F : Forward Voltage
 I_F : Forward Current

For resistance value calculation

<https://www.sunmulon.co.jp/english/products/led.html>

The resistance value can be calculated just by entering the items.

I_F (Forward Current) : Refer to the Rated Current of BUILT-IN RESISTOR type, and be sure to set less than I_{FM} (Max. Forward Current).

LED SPECIFICATIONS [Spot]

● BUILT-IN RESISTOR

Voltage	Rated Current (mA)		
	2×5 Spot LED		
	Red	Green	Yellow
DC 5V ±5%	5	20	10
DC12V ±5%	5	20	10
DC24V ±5%	5	20	10

● NON-RESISTOR (EXTERNAL RESISTOR)

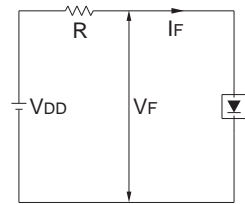
		2×5 Spot LED		
Supply Voltage		DC5V·12V·24V		
LED Color		Red	Green	Yellow
Max. Forward Current I_{FM} (mA)		10	30	20
DC Reverse Voltage V_R (V)		5	5	4
Forward Voltage V_F (Typ.) (V)		1.9	2.1	1.9
Derating (Operating temperature) (over 25°C working temperature) (mA/°C)		0.13	0.4	0.26
Pulse Lighting	Pulse Width PW (μ s)	100		
	Duty Ratio DR	10^{-1}		
	I_{FM} (mA)	50		

For resistance value calculation

<https://www.sunmulon.co.jp/english/products/led.html>

The resistance value can be calculated just by entering the items.

● Wiring Diagram



Refer to the following formula to calculate external resistance values.

$$R = \frac{V_{DD} - V_F}{I_F}$$

V_{DD} : Supply Voltage

V_F : Forward Voltage

I_F : Forward Current

I_F (Forward Current) : Refer to the Rated Current of BUILT-IN RESISTOR type, and be sure to set less than I_{FM} (Max. Forward Current).

TERMINALS / PCB HOLE CUTOUT

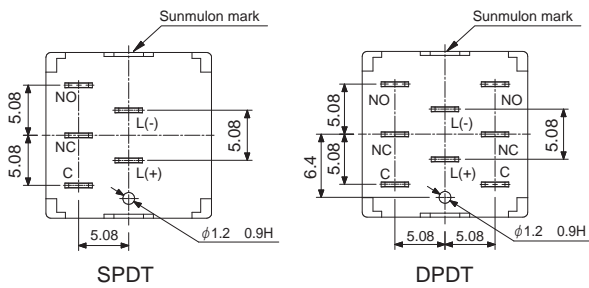
■ Full-Face • Spot • Non-illumination

● TERMINALS LAYOUT (BOTTOM VIEW)

Terminal	SPDT	DPDT	INDICATOR	SPST (Silent type)
#110 Tab • Soldering PCB				
Connector				

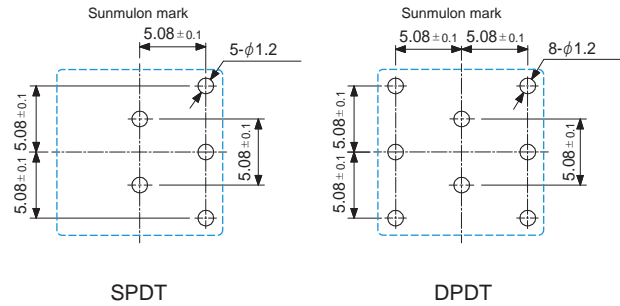
※ Non-illumination type can be selected with or without terminals (L+, L-) by ordering code.

● TERMINALS DIMENSIONS (BOTTOM VIEW)



Silent type has no NC terminal.

● PCB hole cut-out (TOP VIEW)



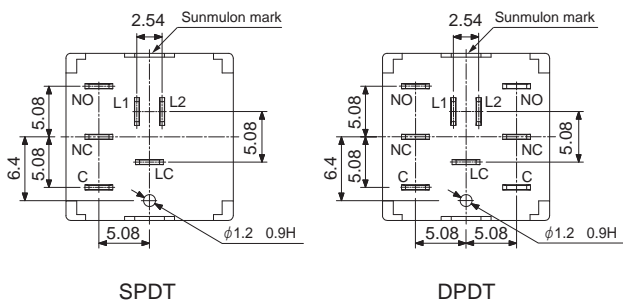
Silent type has no NC terminal.

■ Dual-Color • 2-Split-Face • Standby

● TERMINALS LAYOUT (BOTTOM VIEW)

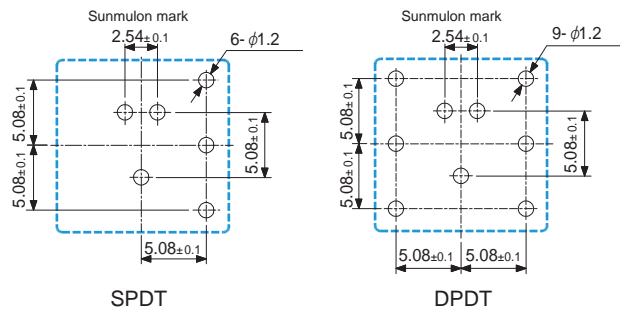
Terminal	SPDT	DPDT	INDICATOR	SPST (Silent type)
#110 Tab • Soldering PCB				
Connector				

● TERMINALS DIMENSIONS (BOTTOM VIEW)



Silent type has no NC terminal.

● PCB hole cut-out (TOP VIEW)



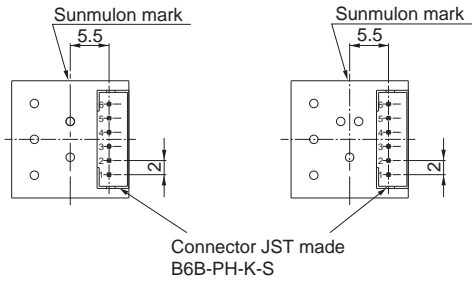
Silent type has no NC terminal.

Tolerance : ± 0.4 mm

TERMINALS / CONNECTOR

● SPDT · INDICATOR (BOTTOM VIEW)

Full-Face, Spot, Non-illumination Dual-Color, 2-Split-Face, Standby



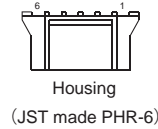
※ The connector pin numbers shown on the board have the letters upside down.

	Full-Face, Spot Non-illumination	Dual-Color 2-Split-Face, Standby
6	—	L2
5	L (-)	L1
4	L (+)	LC
3	NO	NO
2	NC	NC
1	COM	COM
Pin No.	Terminal	Terminal

※ Silent type has no NC terminal.
 ※ Non-illumination has no L (+), L (-) terminals.

Connector

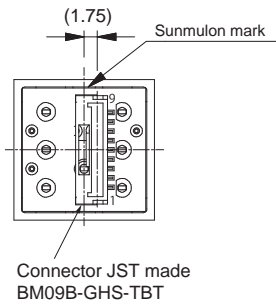
Part no. EH-3251 1 Housing & 6 contact pins to be appended.



Contact pin

(JST made SPH-002T-P0.5S)
 Applicable wire : AWG#30 ~ #24

● DPDT (BOTTOM VIEW)

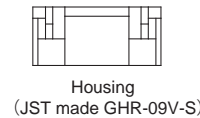


	Full-Face, Spot Non-illumination	Dual-Color, 2-Split-Face, Standby
9	NO2	NO2
8	NC2	NC2
7	COM2	COM2
6	—	L2
5	L (-)	L1
4	L (+)	LC
3	NO1	NO1
2	NC1	NC1
1	COM1	COM1
Pin No.	Terminal	Terminal

※ Non-illumination has no L (+), L (-) terminals.

Connector

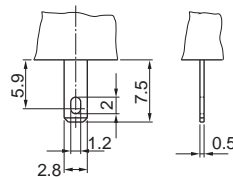
Part no. EH-5180 1 Housing & 9 contact pins to be appended.



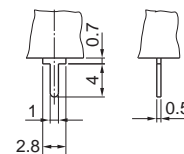
Contact pin

(JST made SSSL-002T-P02)
 Applicable wire : AWG#30 ~ #26

TERMINAL SHAPE



#110 Tab · Soldering Terminal

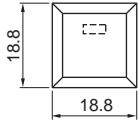
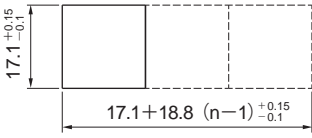
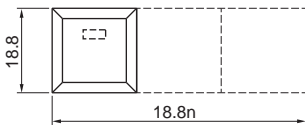
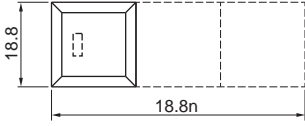
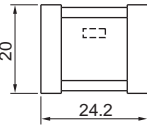
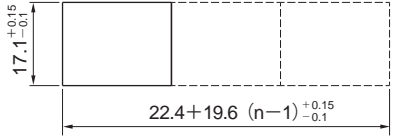
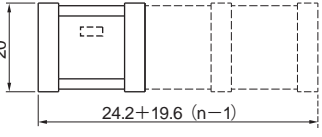
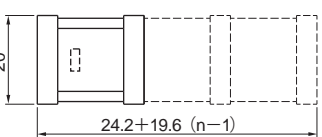


PCB Terminal

Tolerance : ± 0.4 mm

MOUNTING DESIGN / PANEL CUTOUT

● Square

	Mounting design	Panel cutout	
Without Barriers	Individual (Horizontal) 	Recommended panel thickness : 1 to 3.2 mm 	
	Multiple (Horizontal) 		
	Multiple (Vertical)  <p>※ The option code for vertical mounting (002), snap springs protrudes to the left and right.</p>		n : Number of Units
With Barriers	Individual (Horizontal) 	Recommended panel thickness : 1 to 3.2 mm  <p>※ Panel cut dimensions when guard covers are used are also the above dimensions.</p>	
	Multiple (Horizontal) 		n : Number of Units
	Multiple (Vertical)  <p>※ The option code for vertical mounting (002), snap springs protrudes to the left and right.</p>		

※ If the panel is to be finished (e.g. coated), make sure that the panel meets the specified dimensions after the coating.

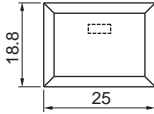
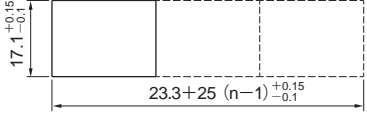
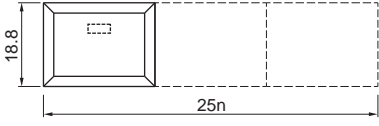
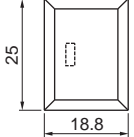
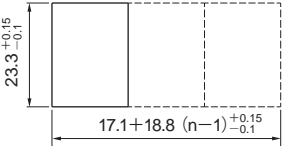
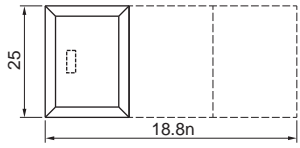
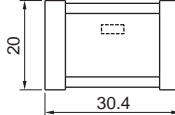
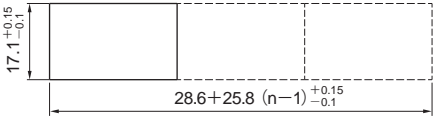
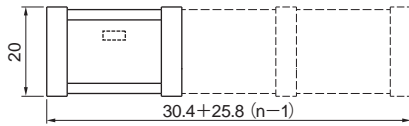
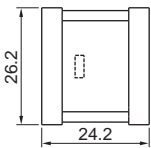
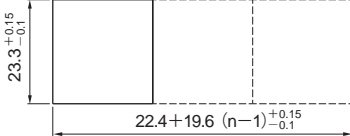
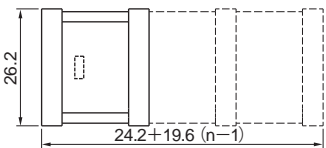
In case the panel cut dimension is too small, it may cause malfunction.

※ After the panel-cutting process, make sure to remove burrs on the surface.

Tolerance : ± 0.4 mm

MOUNTING DESIGN / PANEL CUTOUT

● Rectangle

	Mounting design	Panel cutout
Without Barriers	Individual (Horizontal) 	Recommended panel thickness : 1 to 3.2 mm 
	Multiple (Horizontal) 	$17.1 \begin{matrix} +0.15 \\ -0.1 \end{matrix}$ $23.3 + 25(n-1) \begin{matrix} +0.15 \\ -0.1 \end{matrix}$ n : Number of Units
	Individual (Vertical) 	Recommended panel thickness : 1 to 3.2 mm 
	Multiple (Vertical)  <p>※ The option code for vertical mounting (002), already assembled these 2 long snap springs into the product.</p>	$23.3 \begin{matrix} +0.15 \\ -0.1 \end{matrix}$ $17.1 + 18.8(n-1) \begin{matrix} +0.15 \\ -0.1 \end{matrix}$ n : Number of Units
With Barriers	Individual (Horizontal) 	Recommended panel thickness : 1 to 3.2 mm 
	Multiple (Horizontal) 	$17.1 \begin{matrix} +0.15 \\ -0.1 \end{matrix}$ $28.6 + 25.8(n-1) \begin{matrix} +0.15 \\ -0.1 \end{matrix}$ ※ Panel cut dimensions when guard covers are used are also the above dimensions.
	Individual (Vertical)  <p>※ Guard cover cannot be used.</p>	Recommended panel thickness : 1 to 3.2 mm 
	Multiple (Vertical)  <p>※ Guard cover cannot be used.</p> <p>※ The option code for vertical mounting (002), already assembled these 2 long snap springs into the product.</p>	$23.3 \begin{matrix} +0.15 \\ -0.1 \end{matrix}$ $22.4 + 19.6(n-1) \begin{matrix} +0.15 \\ -0.1 \end{matrix}$ n : Number of Units

※ If the panel is to be finished (e.g. coated), make sure that the panel meets the specified dimensions after the coating.

In case the panel cut dimension is too small, it may cause malfunction.

※ To change a horizontal mounting type to a vertical mounting type, replace 2 short snap springs with these 2 long snap springs (Part no. EH-1034-2).

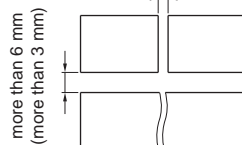
※ After the panel-cutting process, make sure to remove burrs on the surface.

● Panel cut spacing dimensions for spaced individual mounting

With Flange

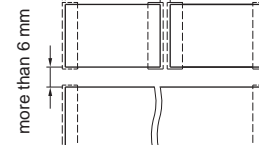
The figures are all for horizontal individual.
For vertical individual, the dimensions are shown in brackets.

more than 3 mm (more than 6 mm)



With Barriers

0.9 more than 3 mm



Tolerance : ± 0.4 mm

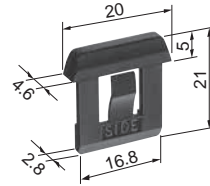
ACCESSORIES

BARRIER

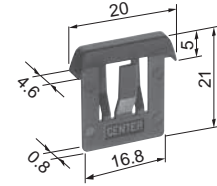
● SHORT BARRIER

Color	Side barrier	Center barrier
Black	EH-1085-K	EH-1084-K
Gray	EH-1085-H	EH-1084-H

※ Cannot be used with guard cover and matrix fitting frame.



Side barrier



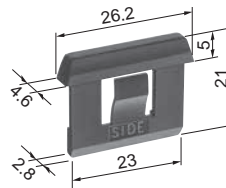
Center barrier

3D
DXF

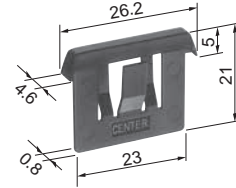
● LONG BARRIER

Color	Side barrier	Center barrier
Black	EH-1087-K	EH-1086-K
Gray	EH-1087-H	EH-1086-H

※ Cannot be used with guard cover and matrix fitting frame.



Side barrier



Center barrier

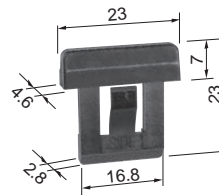
3D
DXF

BARRIER for GUARD COVER

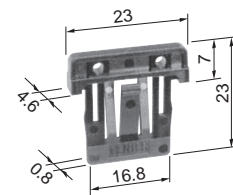
Color	Side barrier	Center barrier
Black	EH-1092-K	EH-1091-K
Gray	EH-1092-H	EH-1091-H

※ Use as a set with the guard cover.

※ Cannot be used with matrix fitting frame.



Side barrier



Center barrier

3D
DXF

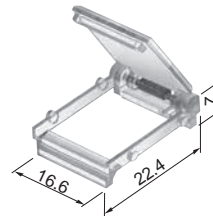
GUARD COVER used with BARRIERS

Square	EH-1080
Rectangle	EH-1081

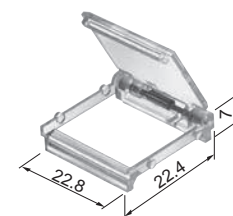
※ Use as a set with the barrier for guard cover.

※ The cover to be opened 180° and returned by spring force.

※ Cannot be used with matrix fitting frame and dimple button.



Square



Rectangle

3D
DXF

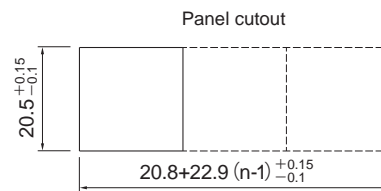
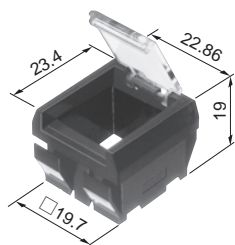
ACCESSORIES

GUARD COVER without Flange

Square	Black	EH-1545-K
	Gray	EH-1545-H
Rectangle	Black	EH-3409-K
	Gray	EH-3409-H

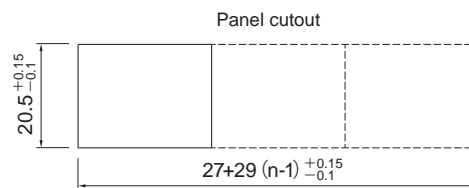
- ※ The cover to be opened 180° and returned by spring force.
- ※ Cannot be used with matrix fitting frame and dimple button.

3D
DXF



n : Number of Units
Recommended panel thickness : 1 to 3.2 mm

3D
DXF

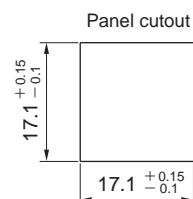
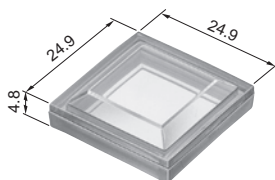


n : Number of Units
Recommended panel thickness : 1 to 3.2 mm

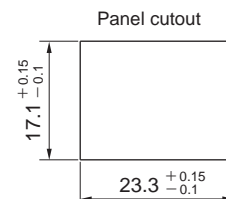
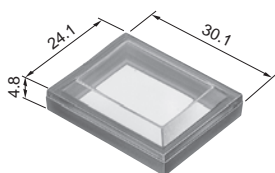
Dust-Proof Cover

Square	DH-361
Rectangle	EH-1083

- ※ Cannot be used with matrix fitting frame and dimple button.



Recommended panel thickness : 1 to 2.5 mm



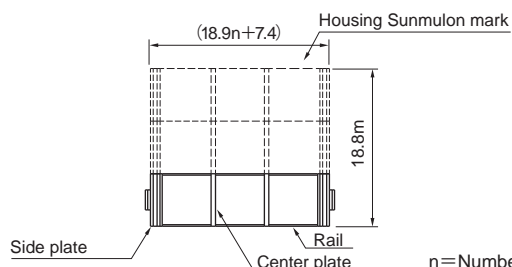
Recommended panel thickness : 1 to 2.5 mm

MATRIX FITTING FRAME

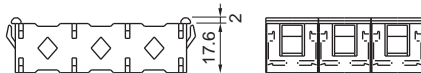
Square	Black	EH-1610-K□
	Gray	EH-1610-H□
Rectangle	Black	EH-1815-K□
	Gray	EH-1815-H□

- ※ □ = number of switch (1~15)
- ※ Can be used with socket.
- ※ Cannot be used with barrier, guard cover and dust-proof cover.

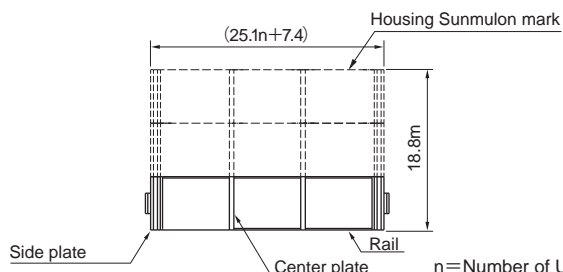
- ※ When using a matrix fitting frame, use a vertical mounting type.
- ※ For vertical mounting type, please specify the optional code (002) at the end of the switch model number.



n = Number of Units



Recommended panel thickness : 1 to 3.2 mm
n : Number of Units (Horizontal)
n : Number of Units (Vertical)



n = Number of Units



Recommended panel thickness : 1 to 3.2 mm
n : Number of Units (Horizontal)
n : Number of Units (Vertical)

ACCESSORIES

SOCKET

※ When using a socket, use #110 Tab・Soldering terminal for the Housing.

● Full-Face

Socket terminal shape	Type to be used	Part no.	Resistance value	Remarks
#110 Tab・Soldering terminal	Built-in resistor type	EH-1088-1	0 Ω	Housing should be a built-in resistor type.
PCB terminal		EH-1196-1	0 Ω	Housing should be a #110 Tab・Soldering terminal type with built-in resistor.

● Dual-Color

Socket terminal shape	Type to be used	Part no.	Resistance value	Remarks
#110 Tab・Soldering terminal	Built-in resistor type	EH-1088-2	0 Ω	Housing should be a built-in resistor type.
	Non-resistor type for DC 5V	EH-3210-2C	36 Ω 1/4W	Housing should be a Non-resistor type. Simultaneous lighting is possible.
	Non-resistor type for DC 12V	EH-3210-2D	270 Ω 1/4W	
	Non-resistor type for DC 24V	EH-3210-2E	1.1k Ω 1/2W	
PCB terminal	Built-in resistor type	EH-1196-2	0 Ω	Housing should be a #110 Tab・Soldering terminal type with built-in resistor.

● 2-Split-Face

Socket terminal shape	Type to be used	Part no.	Resistance value	Remarks
#110 Tab・Soldering terminal	Built-in resistor type	EH-1088-2	0 Ω	Housing should be a built-in resistor type.
	Non-resistor type for DC 12V	EH-3210-2A	510 Ω 1/4W	Housing should be a Non-resistor type. Simultaneous lighting is possible.
	Non-resistor type for DC 24V	EH-3210-2B	1.3k Ω 1/2W	
PCB terminal	Built-in resistor type	EH-1196-2	0 Ω	Housing should be a #110 Tab・Soldering terminal type with built-in resistor.

● Standby

Socket terminal shape	Type to be used	Part no.	Resistance value	Remarks
#110 Tab・Soldering terminal	Built-in resistor type for DC 5V・12V	EH-1088-2	0 Ω	Housing should be a built-in resistor type.
	2×5 LED Red for DC 24V	EH-3210-2F	4.3k Ω 1/4W	Simultaneous lighting is possible. 1.1 kΩ 1/2W resistor for Full-Face LED is also built-in.
	2×5 LED Green for DC 24V	EH-3210-2G	1.1k Ω 1W	
	2×5 LED Yellow for DC 24V	EH-3210-2H	2.2k Ω 1/2W	
PCB terminal	Built-in resistor type	EH-1196-2	0 Ω	Housing should be a #110 Tab・Soldering terminal type with built-in resistor.

● Spot

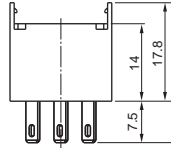
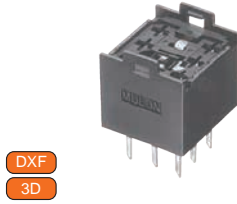
Socket terminal shape	Type to be used	Part no.	Resistance value	Remarks
#110 Tab・Soldering terminal	Built-in resistor type	EH-1088-1	0 Ω	Housing should be a built-in resistor type.
PCB terminal		EH-1196-1	0 Ω	Housing should be a #110 Tab・Soldering terminal type with built-in resistor.

ACCESSORIES

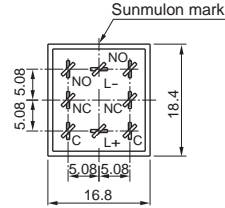
SOCKET

※ When using a socket, use #110 Tab · Soldering terminal for the Housing.

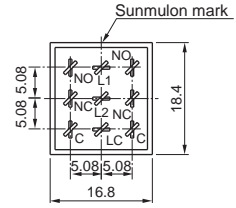
● #110 Tab · Soldering Terminal (Square, Rectangle)



Full-Face, Spot



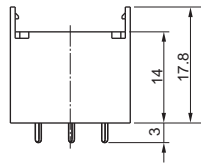
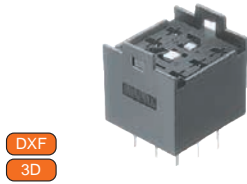
Dual-Color, 2-Split-Face Standby



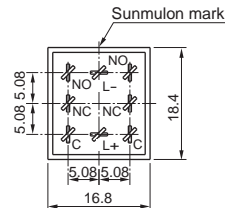
(BOTTOM VIEW)

※ When installing, align the sunmulon mark side of the socket and the Housing.

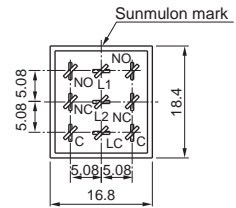
● PCB Terminal (Square, Rectangle)



Full-Face, Spot



Dual-Color, 2-Split-Face Standby



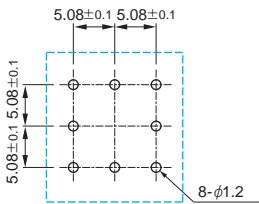
(BOTTOM VIEW)

※ When installing, align the sunmulon mark side of the socket and the Housing.

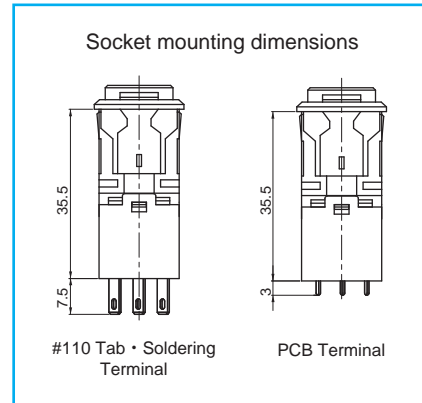
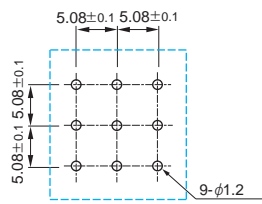
● PCB hole cut-out

(TOP VIEW)

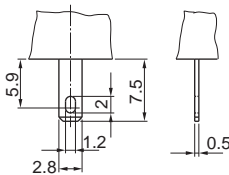
Full-Face, Spot



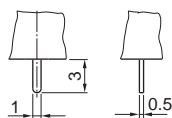
Dual-Color, 2-Split-Face Standby



● Terminal shape



110 Tab · Soldering Terminal



PCB Terminal

ACCESSORIES

RELAY BOARD

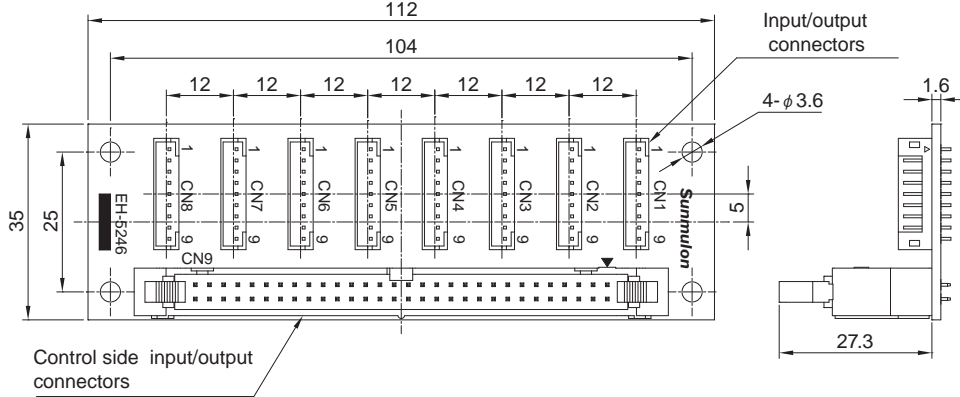
Part no. EH-5246

• We do not sell connection harnesses, so please prepare your own.

Simply connect it to the common wiring.

Wiring for up to 8 switched can be integrated onto a single board.

Dimensions



【Applicable connectors】

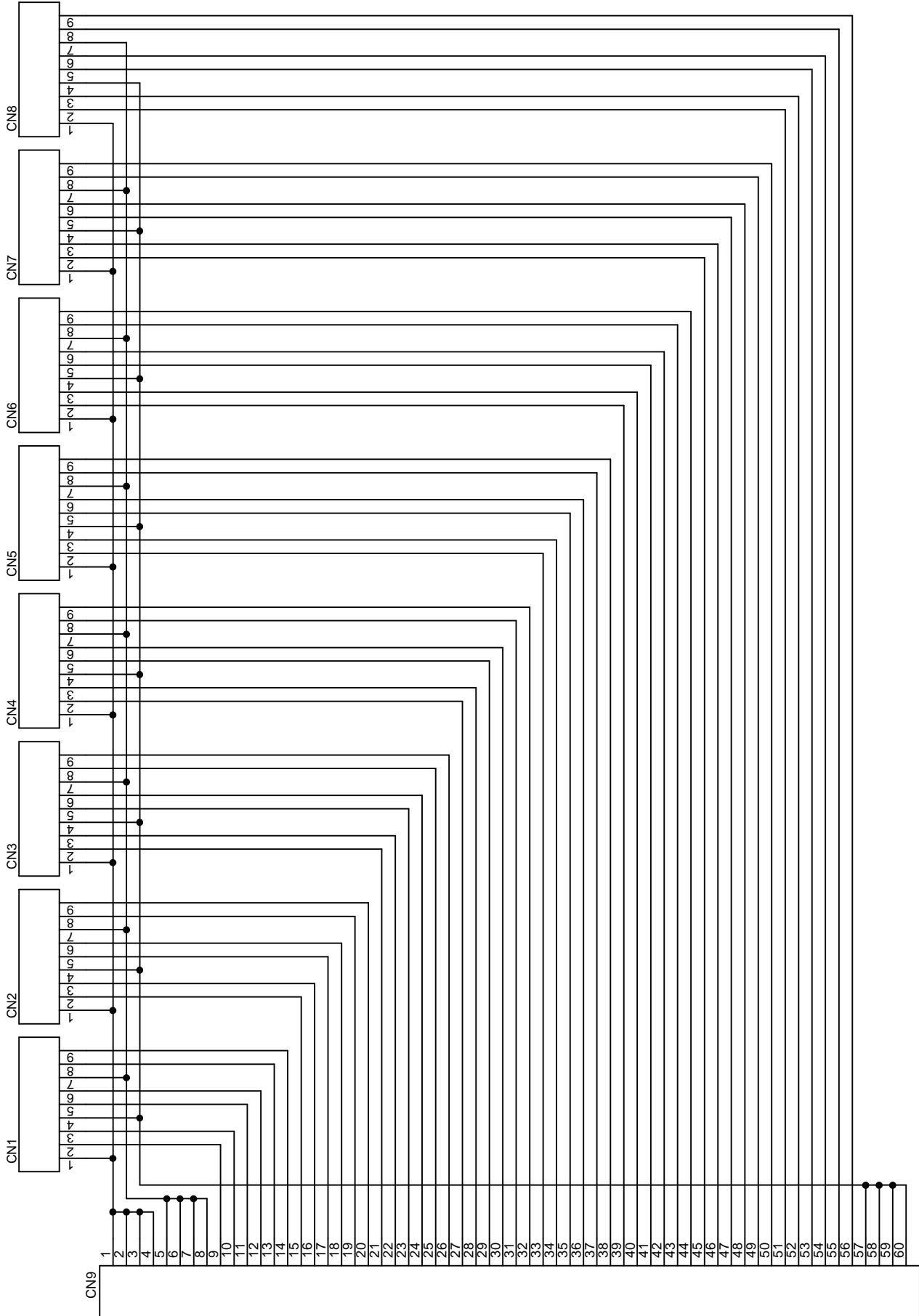
- Output connector
 - HRS made
 - HIF3BB-60D-2.54R (IDC)
 - HIF3BB-60D-2.54C (Crimp)
 - HIF3-2022SC (Crimping terminal)
 - HIF3-2226SC (Crimping terminal)
 - HIF3-2428SC (Crimping terminal)
- Input connector
 - JST made
 - PHR-9 (Housing)
 - SPH-002-T-P0.5S (Contact)
 - SPH-002-T-P0.5L (Contact)

Input/Output terminal list

CN1~CN8 Pin No.		CN9 Pin No.		CN1~CN8 Pin No.			
Connector No.	Pin No.			Pin No.	Connector No.		
CN1~CN8	1	1	2	1	CN1~CN8		
		3	4				
CN1~CN8	7	5	6	7	CN1~CN8		
		7	8				
CN1	2	9	10	3	CN1		
		5	11			12	6
		8	13			14	9
CN2	2	15	16	3	CN2		
		5	17			18	6
		8	19			20	9
CN3	2	21	22	3	CN3		
		5	23			24	6
		8	25			26	9
CN4	2	27	28	3	CN4		
		5	29			30	6
		8	31			32	9
CN5	2	33	34	3	CN5		
		5	35			36	6
		8	37			38	9
CN6	2	39	40	3	CN6		
		5	41			42	6
		8	43			44	9
CN7	2	45	46	3	CN7		
		5	47			48	6
		8	49			50	9
CN8	2	51	52	3	CN8		
		5	53			54	6
		8	55			56	9
CN1~CN8	4	57	58	4	CN1~CN8		
		59	60				

Tolerance : ± 0.4 mm

● Relay Board wiring diagram (EH-5246)



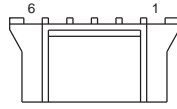
ACCESSORIES

● SPDT • INDICATOR

Connector

Part no.	EH-3251
----------	---------

Connector (1 Housing & 6 Contact Pins) to be appended.



Housing
(JST made PHR-6)

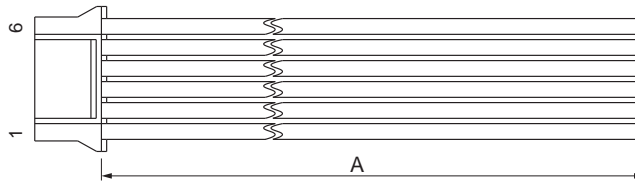


Contact Pin
(JST made SPH-0002T-P0.5S)
Applicable wire : AWG#30~#24

Wire Harness

Part no.	EH-3250-1	EH-3250-2
A length	100cm	200cm

Wire : UL1061 AWG26



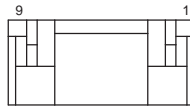
Pin No.	1	2	3	4	5	6
Wire Color	Brown	Red	Orange	Yellow	Green	Blue

● DPDT

Connector

Part no.	EH-5180
----------	---------

Connector (1 Housing & 9 Contact Pins) to be appended.



Housing
(JST made GHR-09V-S)

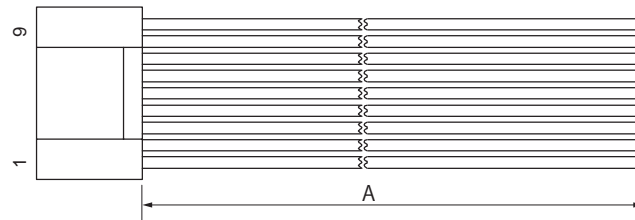


Contact Pin
(JST made SSSL-002T-P02)
Applicable wire : AWG#30~#26

Wire Harness

Part no.	EH-5177-1	EH-5177-2
A length	100cm	200cm

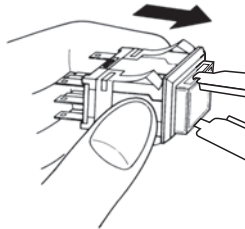
Wire : UL1061 AWG26



Pin No.	1	2	3	4	5	6	7	8	9
Wire Color	Brown	Red	Orange	Yellow	Green	Blue	Purple	Gray	White

1. Removing Light cartridge

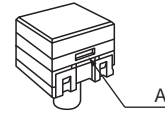
Be sure to remove with the removing tool (SJ-0001). Hang the cartridge with the removing tool in the groove, and pull it straight out.



- ※ In case removing in any other way than the above, it may cause damage to light cartridge.
- ※ Do not touch the other parts such as spring incorporated in light cartridge.

2. Removing Button

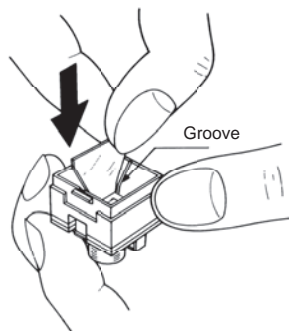
Remove the part A by pushing it open.



Do not reuse buttons that have been removed and deformed.

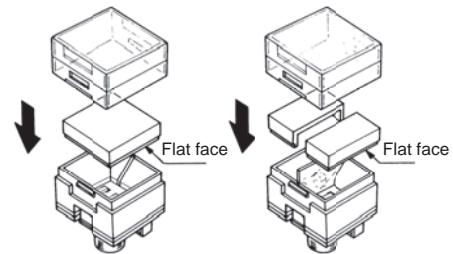
3. Fitting Divider (Split-Face)

Insert the divider into the groove inside the LED unit.



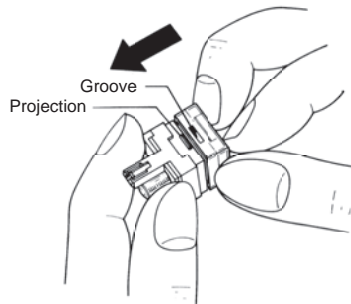
4. Fitting Filter

Place the filter with the flat face upward on to the LED unit, then put button on it.



5. Fitting Button

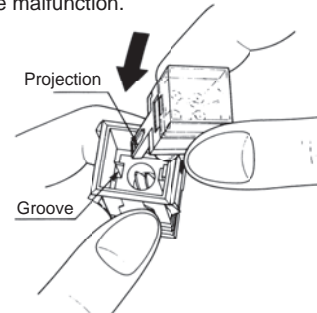
Align the groove on the button, the projection on the LED unit, and fit the button until click.
Do not push the Spot LED and Standby LED when fitting button.



- ※ If it is not assembled properly, it may cause malfunction.

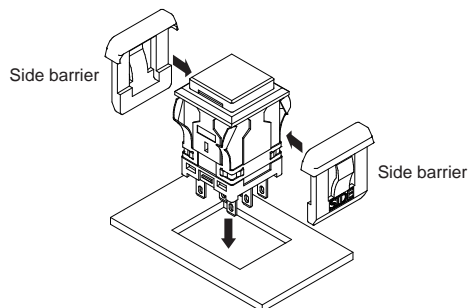
6. Fitting Light cartridge

Be sure to check the correct orientation.
Align the projection on the light cartridge and the the groove on the Housing, then push in until click.
Be sure not to insert strongly with the wrong orientation as it may cause malfunction.



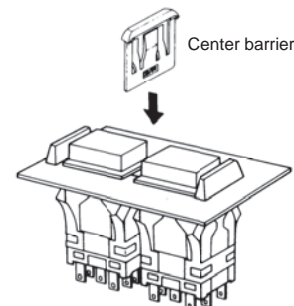
7. Installing Side Barriers

After setting the side barriers on the housing, and insert it into the panel cut-out.



Installing Center Barriers

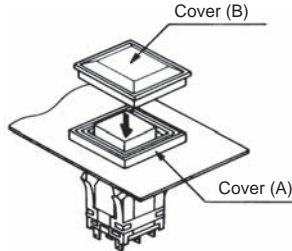
Insert the center barrier between the switches after mounting the switches with the side barriers into the panel cut-out.



ASSEMBLY & DISASSEMBLY

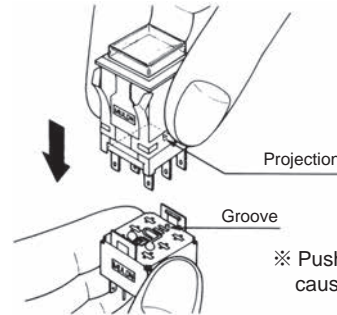
8. Installing Dust-Proof Cover

Put the switch through the cover frame (A), and mount on the panel. Afterwards press cover (B) into the groove of cover frame (A) from above and install it.



9. Installing Socket

Align the Sunmulon mark on switch and socket, then insert the switch until it stops.



10. Installing Guard Cover

● Individual (Figure 1)

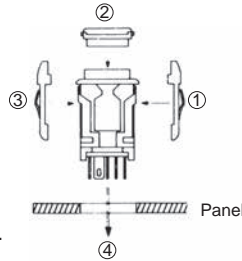
- ① Set one of the side barrier for guard cover on the housing.
- ② Set the guard cover on the switch.
- ③ Set the other side barrier for guard cover on the housing.
- ④ Insert a set of switch into the panel cut-out.

● Multiple (Figure 2)

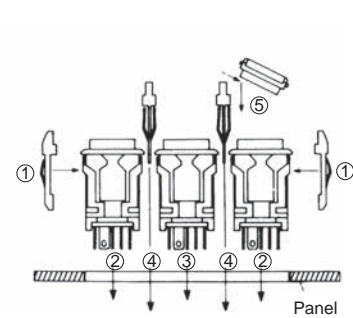
- ① Set the side barriers for guard cover on both sides of the housing.
- ② Insert a set of them into the panel cut-out.
- ③ Insert housing into the panel cut-out.
- ④ Insert the center barrier for guard cover between the housing.
- ⑤ Push the head of the barrier open to the left or right.

Place projection of the guard cover in the hole in the barrier on one side at a time and install it.

Individual (Figure 1)



Multiple (Figure 2)



11. Indication of rated voltage

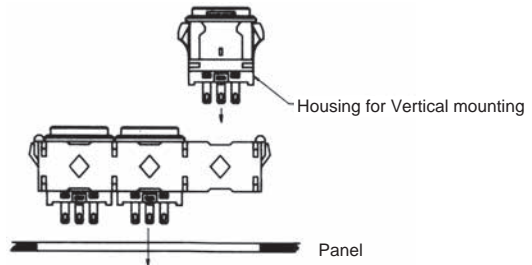
The rated voltage is shown on the side of the LED unit.
Use the voltage within $\pm 5\%$.

12. Installing Matrix fitting frame

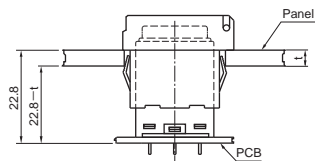
After inserting the switches into the matrix fitting frame, and then into the panel cut-out.

Use a vertical mounting type as the optical code (002) at the end of the switch model number.

※ Cannot be used with barrier, guard cover and dust-proof cover.



13. Installing Guard Cover without Flange

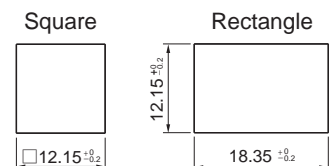


The installation is as shown above.

PRECAUTIONS FOR CORRECT USE

1. Solder quickly and correctly at 380°C max. and 3 seconds or less. Be careful not to touch the soldering iron to the main body.
2. Wait for one minute during and after soldering before exerting any external force on the solder.
3. The rated voltage is shown on the side of the LED unit.
4. Character films are not included.

If preparing the character film separately, use a heat-resistant film with a thickness of 0.1 mm. For the dimensions, please refer to the figure on the right.



※ For handling instructions and precautions other than the above, please refer to "Safety Precautions for All illuminated Pushbutton Switches".

Tolerance : ± 0.4 mm

As of September 2024

Safety Precautions for All Illuminated Pushbutton Switches

1. Notes on contents of Catalogs

- (1) Rated values, performance values, and specification values of Sunmulon products listed in this catalog are values acquired under respective conditions in independent testing, and do not guarantee values gained in combined conditions.
- (2) The ambient operating temperature(humidity) is guaranteed by evaluation based on characteristics, and does not guarantee continuous use for a long period of time near the upper or lower limit of the ambient operating temperature(humidity) or permanent use at that temperature(humidity).
- (3) Reference data and reference values listed in catalogs are for reference purposes only, and do not guarantee that the product will always operate appropriately in that range.
- (4) The specifications / appearance and accessories of Sunmulon products listed in catalogs are subject to change or termination of sales without notice, for improvement or other reasons.
- (5) The content of catalogs is subject to change without notice.

2. Note on applications

- (1) If using Sunmulon products in combination with other products, confirm the following suitability by yourself. Sunmulon shall provide no guarantees regarding the combination suitability.
 - (a) Regulations, standards, or laws to which your machinery, equipment, etc. must conform
 - (b) Functionality and safety of your machinery and equipment
- (2) Wiring and installation that ensures the Sunmulon product used in your system, machine, device, or the like can perform and function according to its specifications.
- (3) When using Sunmulon products, be cautious when implementing the following.
 - (a) Use of Sunmulon products with sufficient allowance for rating and performance.
 - (b) Safety design, including redundant design and malfunction prevention design that prevents other danger and damage even in the event that Sunmulon product fails.
- (4) Sunmulon products are designed and manufactured as general-purpose products for general industrial products. They are not intended for use in the following applications, and in the event that you use Sunmulon product for these applications, unless otherwise agreed upon between you and Sunmulon, Sunmulon shall provide no guarantees whatsoever regarding Sunmulon products.
 - (a) Safety devices intended for human body protection
 - (b) Direct control of transport equipment (railroads / airplanes / ships / vehicles / vehicle instruments, etc.)
 - (c) Space equipment, submarine equipment
 - (d) Nuclear power control equipment, radiation related equipment
 - (e) Combustion equipment, electric heat equipment
 - (f) Disaster prevention and security equipment
 - (g) Elevating equipment
 - (h) Amusement facilities
 - (i) Facilities subject to government or industry regulations
 - (j) Use in applications that require a high degree of safety, any other equipment, instruments, or the like that could endanger life or human health

3. Warranty

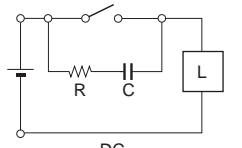
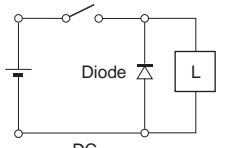
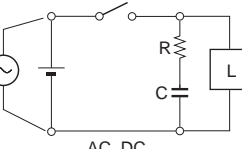
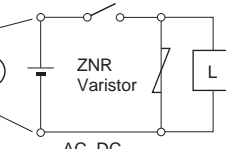
- (1) The warranty period for Sunmulon products shall be 1 year after purchase or delivery to the specified location.
- (2) Warranty scope should a failure occur in Sunmulon product during the above warranty period for reasons attributable to Sunmulon, then Sunmulon shall provide that product, free of charge, the same quantity. Further, in no event shall liability of Sunmulon exceed the individual price of the product on which liability is asserted.
- (3) Failures cause by the following reasons shall be deemed outside the scope of this warranty.
 - (a) The product was handled or used deviating from conditions / environment listed in the catalogs
 - (b) The failure was caused by reasons other than Sunmulon product
 - (c) Modification or repair was performed by a party other than Sunmulon
 - (d) Replacement of maintenance parts, installation of accessories, or the like was not performed properly in accordance with the user's manual and catalogs
 - (e) The failure could not have been predicted with the scientific and technical standards at the time when the product was shipped from Sunmulon
 - (f) The failure was due to other causes not attributable to Sunmulon (including cases of force majeure such as natural disasters and other disasters)
- (4) The warranty listed in this Safety Precautions is the full and complete warranty for Sunmulon products, and Sunmulon shall bear no liability whatsoever regarding special damages, indirect damages, incidental damages, or passive damages that occurred due to Sunmulon product.

4. Handling precautions for switch

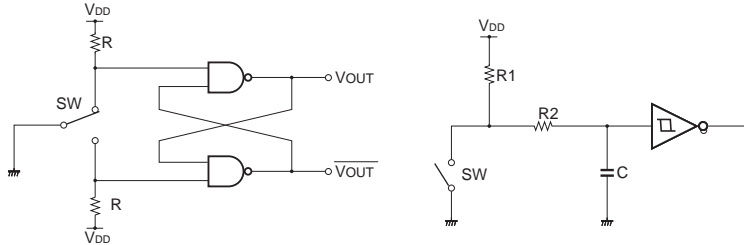
- (1) Do not perform wiring with power supplied to the switch. Do not touch the terminals or other charged parts of the switch while power is being supplied. Doing so may result in electric shock.
- (2) Be careful of electrostatic breakdown when handling.
- (3) Do not drop or otherwise apply strong force to the switch.
- (4) Do not place heavy objects on the switch.
- (5) Do not operate or use the housing (switch unit) by itself. Use the switch with assembled the illuminated part (LED module or button).
- (6) Pushbutton switches are designed to be operated by fingertips. Operating the switch using a sharp object (screwdrivers, tweezers, etc.), hard object (metal, etc.), or with a large or sudden force, may cause deform or damage the switch.
- (7) Do not use the switch under loads that exceed the rated switching capacity or other contact ratings. Doing so may result in welding of the contact, or burnout accidents.

Safety Precautions for All Illuminated Pushbutton Switches

(8) For inductive load, the arc by back EMF may cause contact failure. Insertion of arc prevention circuit as the following is recommended.

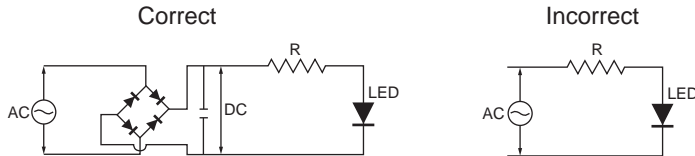
Circuit	Element selection	Circuit	Element selection
 <p style="text-align: center;">DC</p>	<p>C : 1 to 0.5 μF \times switch current (A) R : 0.5 to 1 Ω \times switch voltage (V)</p> <p>The values may change according to the characteristics of the load. Determine ideal capacitance and resistance values through testing.</p>	 <p style="text-align: center;">DC</p>	<p>The diode must withstand a peak inverse voltage 4 times higher than the power supply voltage and regarding a forward current must as high or higher than the load current.</p>
 <p style="text-align: center;">AC, DC</p>		 <p style="text-align: center;">AC, DC</p>	

(9) Following circuits show examples of an anti-chattering circuit.



(10) Illumination

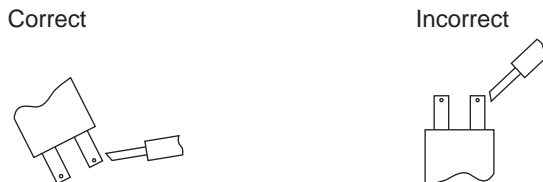
- (a) Do not apply a voltage between the LED terminal that is greater than the rated voltage. Doing so may damage the LED, cause lighting failure.
- (b) LEDs cannot be lit directly by AC circuit should be provided rectifier smoothing circuit for products other than AC input type.



- (c) When wiring, pay attention to the polarity of the terminals.
- (d) Simultaneous lighting may not be possible with Dual-Color illumination or Split-Face illumination (2, 3, or 4 split illumination), check the catalog.
- (e) Apply voltage directly to LEDs of Non-built-in resistor type will damage the LEDs, so connect an appropriate external resistor.

(11) Wiring

- (a) Do not apply a soldering iron to the switch housing. Doing so may deform the terminals and cause defects.
- (b) See catalog for models compatible with flux prevention measures terminal. Be careful not to allow flux to penetrate sliding parts such as buttons. Use non-corrosive rosin solution as flux for dip soldering.
- (c) For soldering other than flux-preventive models, hand solder with the terminals facing down to prevent flux from penetrating into the switch.



- (d) The housing of KA, K2, and K9 series are designed for reflow soldering.
- (e) Use the appropriate wire size for the applied voltage and current, and solder properly. Use of the product with incomplete soldering may cause abnormal heat generation, resulting in a fire hazard.
- (f) After wiring is completed, maintain an appropriate insulation distance.

Safety Precautions for All Illuminated Pushbutton Switches

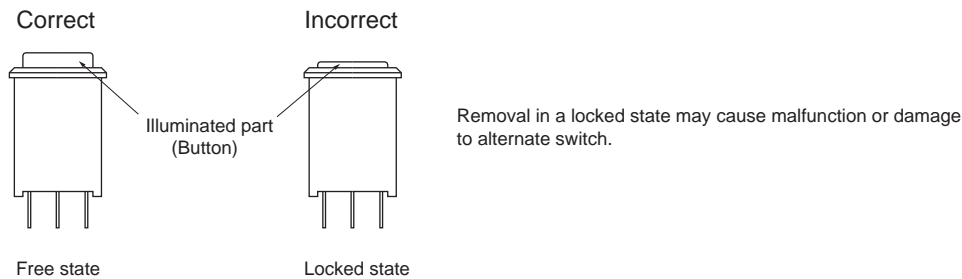
(12) Usage environment

- (a) Do not use in the presence of flammable or explosive gases such as gasoline, thinner, LPG, etc.
- (b) Avoid using the product in places where corrosive or silicon gas is generated, high temperature, high humidity, sea breeze or direct sunlight.
- (c) Provide appropriate protection when using the product in places where it is exposed to water, oil, metal powder, or dust.
- (d) Do not use the product in a place subject to vibration or shock. It may cause malfunction or damage.
- (e) When installed in a close grouping or continuously lit, the ambient temperature may exceed the specified value due to heat generation. Take measures such as ventilation and lowering the operating voltage.
- (f) When checking the actual equipment, load conditions and operating environment should be the same as the actual operating conditions.
- (g) The ambient temperature for storage is -25°C to 65°C (No freeze, no condensation).

(13) When wiping off dirt on the exterior of the switch and accessories such as side plates, wipe lightly with a soft, dry cloth. Organic solvents such as thinner, benzene, alcohol, or other acidic chemicals may cause deformation, discoloration, or malfunction.

(14) Store the product away from malignant gases, dust, high temperature and high humidity, and keep it in our packing condition.

(15) When removing the illuminated part (or button) from the alternate switch housing, switch state should be in a free state.



(16) Periodic inspection and replacement

- (a) Although mechanical and electrical durability are listed in the specifications column, deterioration of various parts (deterioration of resins and corrosion of metal parts) is possible due to the operating environment and method of use. We ask that you implement inspections for Sunmulon products to prevent accidents from occurring by conducting periodic inspections and replacements.
- (b) When the switch is left unused or stored for long periods, contact reliability may deteriorate due to oxidation of contacts, which may cause continuity failure, etc. Therefore, it is necessary to check the operation before use.

(17) Service scope

The price of Sunmulon products do not include the cost of services, such as dispatching technicians.