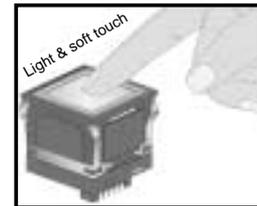


ST Lighted Touch Switch

**Easy operation with light and soft touch. (No click)
LED Full-Face and Dual-Color illumination available.**

■ FEATURES

- Easy operation with light and soft touch.(No click)
- As resistive film type, it is possible to operate with wearing gloves.
- Depth behind panel : Only 22.5mm
- LED Full-Face, Dual-Color, Illumination available.
- Button Size: 17mm square type
- Legend on filter with engraving/printing available.
- Wiring connection : With connector (Appended connector provided)



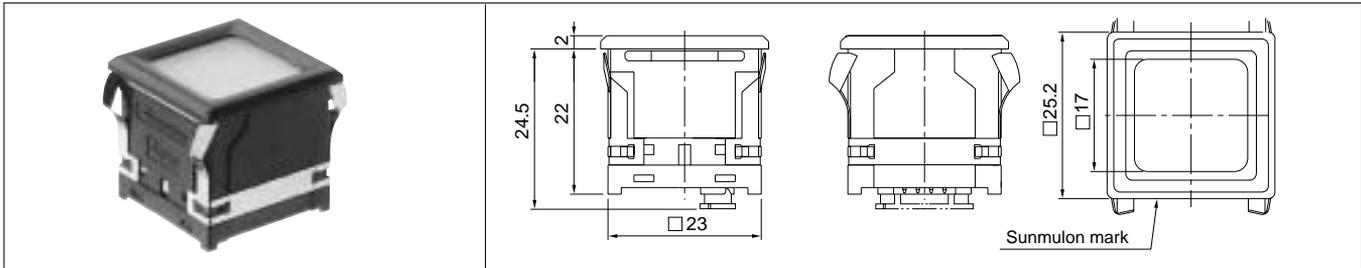
OPERATION THEORY



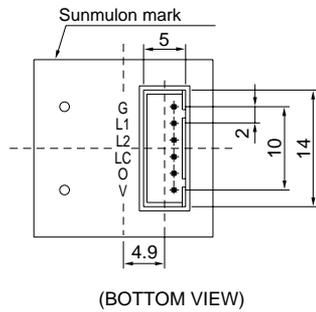
SPECIFICATIONS

Operation	Momentary/Alternate action
Supply Voltage	DC5~24V(±10%)
Current Output	Voltage DC35V, Current 200mA MAX
Current Consumption (Unload)	Less than 5mA (Apply DC12V)
Dielectric Strength	500V AC RMS between terminals and ground 50/60Hz for 60sec. At normal ambient temperature and humidity
Insulation Resistance	More than 100MΩ at 500V DC
Operating Force	0.3~0.6N(Reference)
Operation Life	More than 1,000,000 operations
Ambient Temperature	-10 to 50°C
Ambient Humidity	10~80% RH

DIMENSIONS

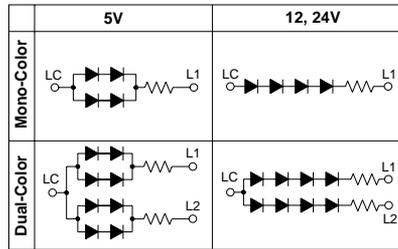


TERMINALS LAYOUT



INTERNAL CONNECTION ARRANGEMENTS

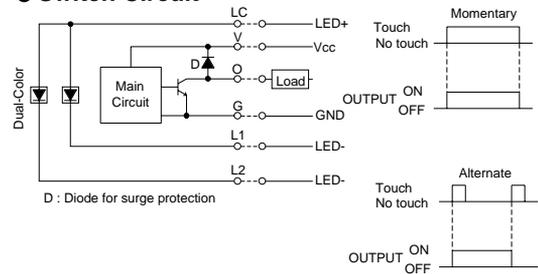
● LED Circuit



● Dual-Color Combination

LC-L1	R	G	OY
LC-L2	G	OY	R

● Switch Circuit



LED DATA

● LED RATINGS

R=Red, G=Green, OY=Orange Yellow

DC Supply Voltage (V)	Current Rating (mA)					
	R	G	OY	R	G	OY
5 (±5%)	12	25	22	12	25	22
12,24 (±5%)	6	12	11	6	12	11

● EXTERNAL RESISTOR

Switches are normally fitted with internal resistors to operate on 5, 12, 24V DC supply. In case of non-resistor type, suitable external current limiting resistors must be installed as shown by the table and formula.

ITEM	Mono Color						Dual Color					
	5V			12,24V			5V			12,24V		
	R	G	OY	R	G	OY	R	G	OY	R	G	OY
Max. operating current IFM (mA)	50	50	50	25	25	25	50	50	50	25	25	25
DC reverse voltage VR (V)	8	8	8	16	16	16	8	8	8	16	16	16
Forward voltage VF (V)	3.5	4.0	3.8	7.0	8.0	7.6	3.5	4.0	3.8	7.0	8.0	7.6
Recommended operating current IF (mA)	12	25	22	6	12	11	12	25	22	6	12	11
Wiring diagram	Fig. 1						Fig. 2					

Current Reduced Factor(Over 25°C working Temperature) : 0.33mA/°C(DC)
: 1.6mA/°C(PULSE)

* Pulse Lighting
Pulse Width Pw = 100μS
Duty Ratio DR = 10⁻¹
IFM = 120mA (any color)

* The value of the series resistor can be determined by the formula:

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

Vcc: Supply Voltage
VF: Forward Voltage

IF: Forward Current With Guard Cover

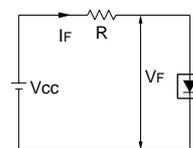


Fig. 1

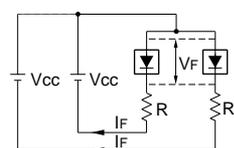
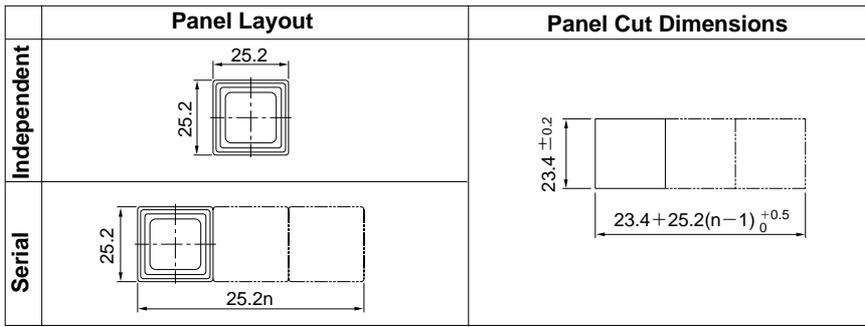


Fig. 2

Tolerance : ±0.4mm

Panel Layout / Panel Cut Dimensions



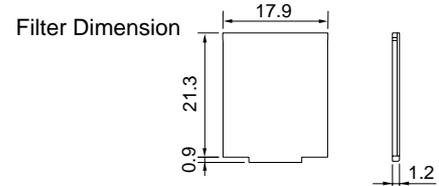
* Panel Cut Dimension should be after panel paintings.

Panel thickness: 1.0 ~ 3.2mm
n : number of switches

REPLACEMENT PARTS

● Filter

Red	ST-3100-LR
Green	ST-3100-LG
Orange Yellow	ST-3100-LO
Milk White	ST-3100-LM
Yellow	ST-3100-LY



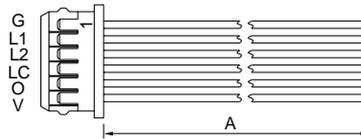
APPENDED CONNECTER / WIRE HARNESS

APPENDED CONNECTER PART NO. ST-3121
(1 pc. of Housing and 6pcs. of Pin-Contact)

* Pin-Contact Presser :
DF3-TA2428HC (Hirose Electric)

WIRE HARNESS WITH CONNECTER

Wire : UL1007 AWG26 equivalent



Length A	Part No.
250mm	ST-3120-1
500mm	ST-3120-2

Pin No.	1	2	3	4	5	6
Wire Color	Bk.	Bl.	G	Y	W	R

* This case, appended connector is not needed, please select (×) Without connector.

ORDERING CODE

ST - 2 1 2 K

● OPERATION

M	Momentary
A	Alternate

● OUTPUT

2	Current Output
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● BUTTON SHAPE / ILLUMINATION TYPE

S0	Mono-Color
S3	Dual-Color

● LED COLOR

7	Red	Full-Face : Put color no. into the frame 1 Dual-Color : Put color no. into the frame 1,2 (78,89,97)
8	Green	
9	Orange Yellow	

● FILTER COLOR

1	Red
2	Green
3	Orange Yellow
4	Milk White
8	Yellow

● HOUSING COLOR

K	Black
H	Gray

● APPENDED CONNECTER

A	Appended
×	Without

● Supply Voltage to LED

1	5V Built-in Resistor
2	12V Built-in Resistor
3	24V Built-in Resistor
4	5V Non-Resistor
5	12V Non-Resistor
6	24V Non-Resistor

● TERMINAL

K	CONNECTER
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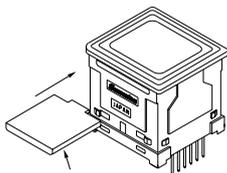
● NOTES

- In case of Dual-Color, filter color should be selected as Milk-White.
- Regarding as Dual-Color, simultaneous lighting is not possible with built-in resistor type, so please select non-resistor type and apply external resistor accordingly.
- Filter always should be installed when operate.

- Switch circuit could be effected by any noise, therefore, that time, please use sealed wire or apply absorbing circuit.
- Regarding as alternate action type, please be noted that cutting off DC supply while the switch be locked, the switch will be reset.

Installing / Removing Filter

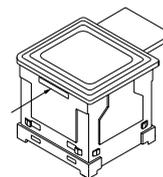
1. Installing Filter



Install as shown with sliding in until click.

* Cannot be installed after mounting switch on panel.

2. Removing Filter



Remove as shown with pushing out by tweezers or something like that.