

# 24mm Combination Jog Switch B5V-1422

## Hall Effect Technology Facilitates Scroll Functionality, Combined with Tactile Switching Capability:

- Integral FFC mates with Omron's XF2W FPC-Connector
- Jog Dial provides 360 Degrees of continuous Rotation
  - Reliable detection of clockwise or counterclockwise rotation
  - Resolution of 12 detents per 360° rotation
- Use of 5 internal switches, including a center actuator, enhances design of navigational capability
- Power-Down functionality reduces overall power consumption
- RoHS Compliant



**NEW**

## Ordering Information

### Chrome Combojog

Part Number	Number of LEDs	Jog Disc Diameter	Center Key Diameter	Order Unit
B5V-1422-D01-L4	4	24 mm	7.2 mm	800 pcs
B5V-1422-D01-L0	0	24 mm	7.2 mm	800 pcs

**Note:** Orders must be made in multiples of the order unit specified above.

## General Characteristics – at room temperature (T<sub>a</sub> = 25°C, 65% RH)

### Encoder Block – Absolute Maximum

Power Supply (V <sub>CC</sub> )	0 to 5.0 VDC
PDN Input Voltage	0 to (V <sub>CC</sub> + 0.1) VDC
PDN Input Current	-20 to +20 mA
Output Current	-0.5 to +0.5 mA

### LED

Forward Voltage (V <sub>F</sub> )*	2.0 Volts, Typical (I <sub>F</sub> = 20 mA)
Wavelength (λ)	611 nm
Absolute Max. Forward Current (I <sub>F</sub> )	30 mA

\*Max. Forward Voltage (V<sub>F</sub>) = 2.4 VDC

### Tactile Switch

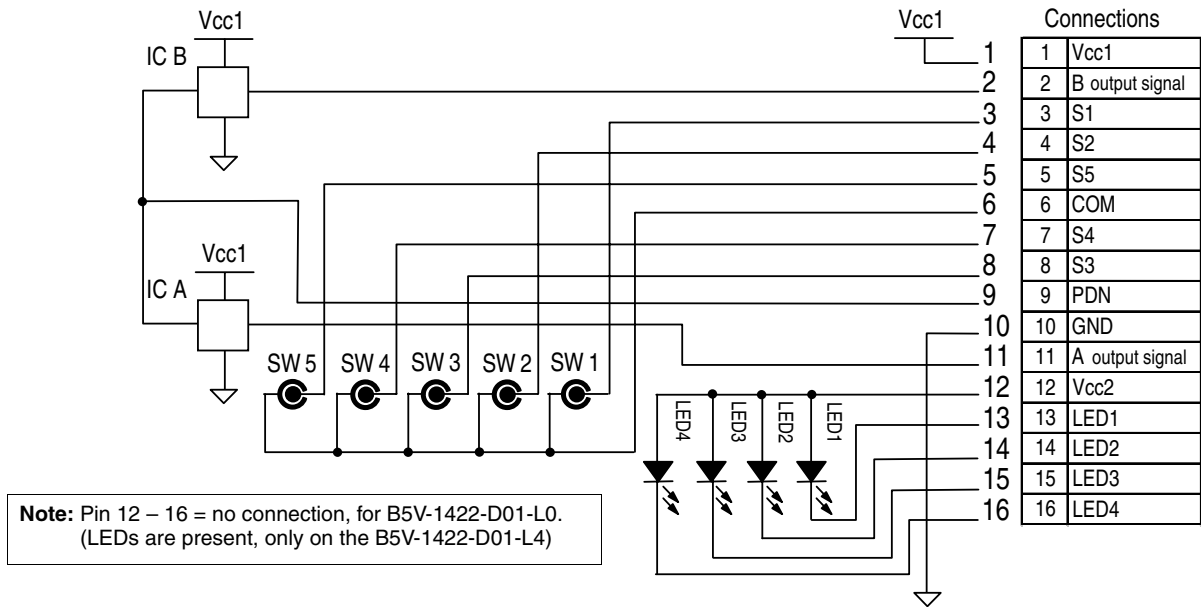
Operating Force	2 +/- 1N (203 +/- 100 gf)
Drop Force Ratio	10% min.
Initial Contact Resistance*	20 Ω Max.
Rated Resistive Load	10 mA @ 12 VDC

\*Using 1 mA @ 3 VDC

### Miscellaneous

Operating Temperature	-20°C to +60°C
Storage Temperature	-40°C to +85°C
Insulation Resistance	≥ 50 MΩ Initial (using 100 VDC between terminals and keytop)
Withstand Voltage (1 mA max. leakage)	120 VAC, 50/60 Hz, for 1 sec. between terminals and keytop
Shock Withstand (typ.)	490 m/s <sup>2</sup> (approx 50 G)
Vibration Withstand (typ.)	1.5mm @ 10 to 55 Hz double amplitude
Electrostatic Discharge Withstand	+/- 15 kV, discharged through Keytop Surface, three times.
Jog Wheel Rotational Torque	≤ 2 mN-m initial (approx. 20 gf-cm or less)
Rotational Angle / Output Resolution	12 detents / 360° continuous rotation.
Rotational Life	100k rotations, typical
Switch Electrical Life	100k ops at rated loads, typical (100 ops per minute)

# Schematic

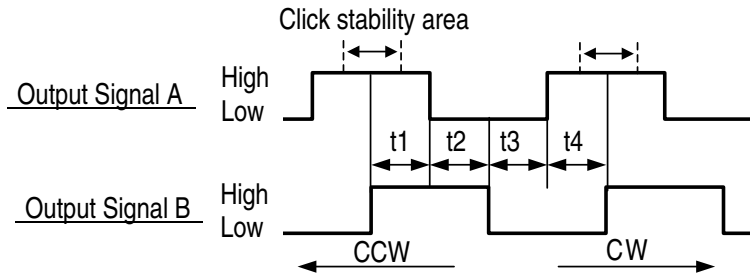


## Timing Charts and Logic Level Characteristics

### Output Signal, Phase Difference\*

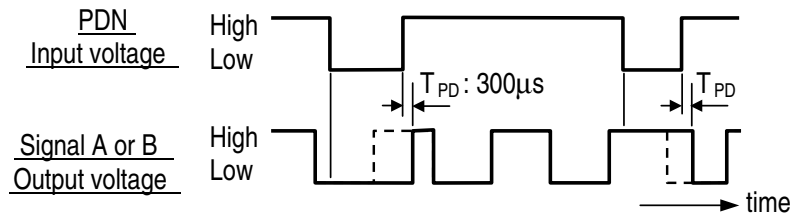
\* When PDN is voltage high

t1=t2=t3=t4= 0.5 msec minimum  
when rotation speed is 150 rpm.



### Power Down (PDN) Usage\*\*

\*\* PDN "High": Operational  
PDN "Low": Jog Feature Disabled



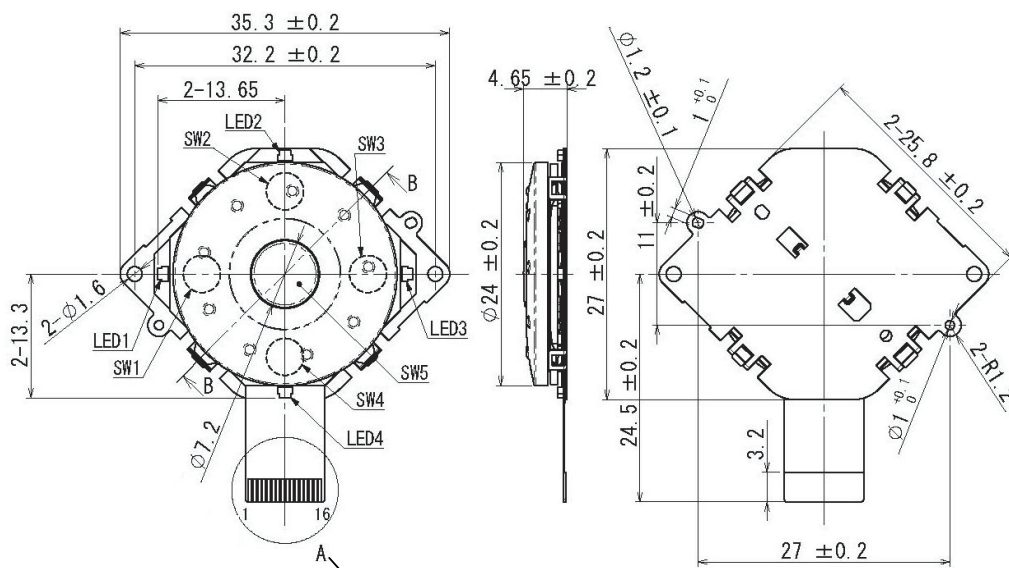
**Note:** Ensure that PDN is Logic High, if the Power Down Function is not used.  
Do not leave the PDN terminal in an unconnected state.

Characteristic	Initial Value*
High Level Output Voltage	V <sub>CC</sub> -0.4 VDC minimum
Low Level Output Voltage	0.4 VDC maximum
PDN Input Voltage	High: 0.7 x V <sub>CC</sub> minimum Low : 0.3 VDC maximum
Current Consumption, Jog Encoder Block	PDN=High: 5.0 mA typical (12 mA maximum.) PDN=Low: 4 µA maximum.

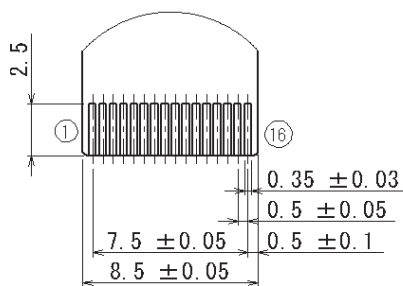
\* When V<sub>CC1</sub> = 2.7 to 3.3 VDC. Typical operation value = 3.0 VDC

# Dimensions

(millimeters)



Detail A



Pin Map	
1	Vcc1
2	B output signal
3	S1
4	S2
5	S5
6	COM
7	S4
8	S3
9	PDN
10	GND
11	A output signal
12	Vcc2
13	LED1
14	LED2
15	LED3
16	LED4

No connection for B5V-1422-D01-L0

Omron Mating Connector = XF2W-1615-1A

# Packaging Information

800 pieces per package  
(40 per tray, with one retaining tray on top)

Item	Quantity per 800 pcs	
1	Carton	1
2	Cushioning Material	2
3	Stacked Trays	21
4	Vinyl Bag	1

Package Weight: approx 2.5 kg

## Label and Lot Code Information

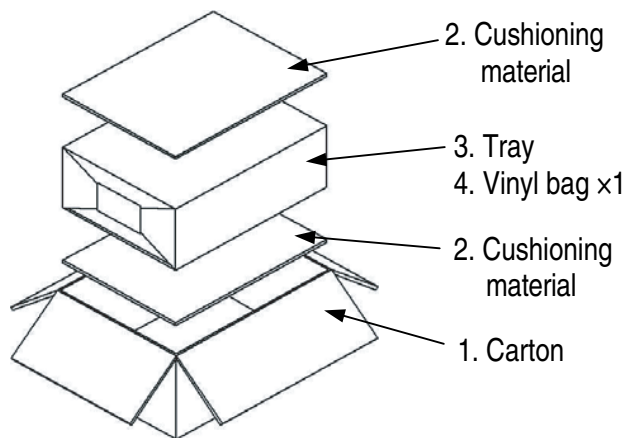
A: TYPE= B5V-1422-D01-L4 or B5V-1422-D01-L0

B: Product quantity (QTY)

C: Lot No. (Located on the label)



- ① : Manufacturing date (01 to 31)
- ② : Manufacturing month (Jan to Sep — 1 to 9, Oct: X, Nov: Y, Dec: Z)
- ③ : Manufacturing year (The last digit of the production year)
- ④ : Production management number (for our internal use)



# General Precautions

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## ■ Usage and Storage

Avoid direct sunlight and maintain normal temperature, humidity and atmospheric pressure conditions.

Avoid contact with corrosive gases such as hydrogen sulfide and salt water vapor.

The B5V combination jog switches are not sealed. Avoid contact with water, chemicals, oil and solvents, such as thinners and gasoline. Otherwise, rusting, corrosion or contamination will occur, resulting in product failure.

Avoid using the product in dust-laden or sandy environments. Otherwise, particulates may impede rotation of the jog dial or contaminate the switch domes.

## ■ Handling and Installation

Avoid exceeding the specified vibration or shock limits when handling or using the combination or jog switch. Do not use any products that have been dropped, without first verifying that damage has not occurred.

Avoid warping or bending the metal base of the jog switch during panel assembly, to ensure proper functioning of all switches and rotational jog dial after assembly. Avoid applying excess forces to the combination jog switch at all times.

Wear anti-dust gloves during assembly to maintain the cosmetic appearance of the dial and center keytop.

Do not use any water or solvent to wash the product after assembly.

In order to ensure proper operation and signal generation, avoid placing magnets or sources of magnetic flux density close to the combination jog switch.

## ■ Electrostatic Discharge

The B5V-1422 combination jog switches are electrostatic sensitive devices. Keep them in the original packaging until required to use. Avoid touching the terminals of bare FCC connections. Take static handling precautions during processing.

The use of anti-electrostatic, grounding wristband or anti-electrostatic gloves is recommended.

All devices, equipment and machinery must be properly grounded.

## ■ FPC Termination

Utilize a stable Top Contact FPC Connector, such as Omron's XF2W-1615-1A, to provide connection to the B5V-1422 combination jog switch.

Do not solder the combination jog switch's Flat Flexible Cable directly to any PCB, connector or wire.

Avoid application of excess heat. Do not subject the combination jog switch to any Reflow or Wave solder process.

Do not pull on the FFC or exert excess forces to the FFC, in order to ensure continuity and avoid damage.

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To convert millimeters into inches, multiply by 0.03937. To convert grams into ounces, multiply by 0.03527.

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