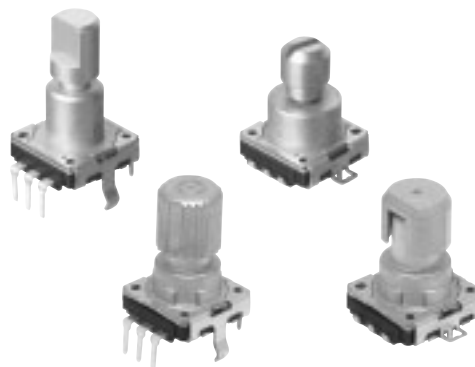


## 11 mm Square GS Encoders

Type: **EVER/EVEU/EVEV/EVEY**

### ■ Features

- Low Profile : Reflow Type 3.5 mm,  
Wave Soldering Type 4 mm
- Minimized shaft wobble type is also available
- The reflow type allows the product to be automatically mounted and reflow-soldered



### ■ Recommended Applications

- Car audio, car navigation, car air conditioners

### ■ Explanation of Part Numbers

1	2	3	4	5	6	7	8	9	10	11	12
E	V	E									
Product Code				Specifications		Shaft Trims & Dimensions			Output(Pulses)		
			4 th	Type							
			R	Reflow Type							
			U	Minimized Shaft Wobble Reflow Type							
			V	Wave Soldering Type							
			Y	Minimized Shaft Wobble Wave Soldering Type							

### ■ Specifications

		EVER (Reflow Type)	EVEV (Wave Soldering Type)	EVEU (Minimized Shaft Wobble Reflow Type)	EVEY (Minimized Shaft Wobble Wave Soldering Type)
Mechanical	Rotation Angle	360 ° (Endless)			
	Shaft Pull/Push Strength	100 N min.			
	Shaft Wobble	0.6×L/30 (mm) max.		0.35×L/30 (mm) max.	
	Rotation Torque	3 mN·m to 20 mN·m			
	Detents	16 points, 24 points, 32 points			
	Shaft Length Range	L <sub>1</sub> =15 to 20 mm	L <sub>1</sub> =15 to 30 mm	L <sub>1</sub> =16 to 20 mm	
Electrical	Output Signals	Phase A and B			
	Resolution	8, 12, 16 pulses/360 °			
	Rating	1 mA 10 Vdc (at each bit)			
	Contact Resistance	1 Ω max.			
	Chattering	3 ms max.			
	Insulation Resistance	50 MΩ min. (at 250 Vdc)			
	Dielectric Withstanding Voltage	300 Vac for 1 minute			
	Bouncing	5 ms max.			
Switch Part	Type	SPST Push-on			
	Rating	20 mA 16 Vdc			
	Contact Resistance	100 mΩ max.			
	Operating Force	0.4 mm travel type : 3 N, 4 N , 6 N 1.5 mm travel type : 4 N			
	Travel	0.4 mm, 1.5 mm			
Endurance	Rotation Life (Encoder)	30000 cycles min.			
	Operating Life (Switch)	30000 cycles min.			
Minimum Quantity/Packing Unit		50 pcs. (Tray Pack)	100 pcs. (Tray Pack)	50 pcs. (Tray Pack)	100 pcs. (Tray Pack)
Quantity/Carton		250 pcs. or 300 pcs.	500 pcs.	250 pcs. or 300 pcs.	500 pcs.

## No. 1

Technical drawing of the ZN-1000 connector, showing top and side views with dimensions and material specifications.

**Top View Dimensions:**

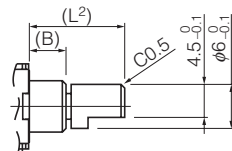
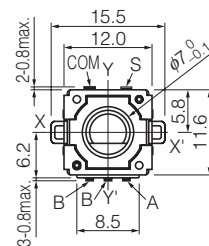
- Overall width:  $2-1.5 \pm 0.1$
- Distance between mounting holes:  $5.0$
- Mounting hole diameter:  $\phi 1.8 \pm 0.1$
- Distance from mounting hole to center:  $2-3$
- Distance from center to mounting hole:  $3-1 \pm 0.1$  (ENC)
- Overall height:  $4.5 \pm 0.1$
- Inner hole diameter:  $\phi 1.0 \pm 0.1$
- Distance from inner hole to mounting hole:  $5.0$

**Side View Dimensions:**

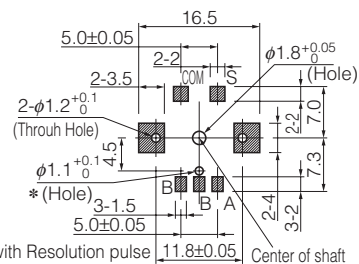
- Overall length:  $L1$
- Distance from mounting surface to first step:  $3.5$
- Distance between steps:  $2-1$
- Step height:  $0.8$
- Distance from mounting surface to second step:  $2.08$
- Step height:  $1.0$
- Distance from mounting surface to third step:  $3-1$
- Step height:  $0.5$

**Material:** Zinc alloy for die casting

**Mounting Surface**



### Shaft shape and dimension

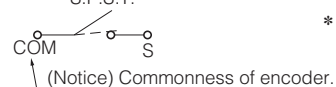


\* The position changes with Resolution pulse  $11.8 \pm 0.05$  Center of shaft

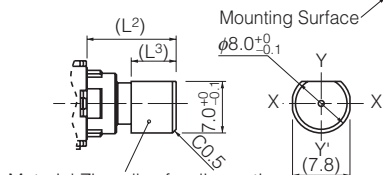
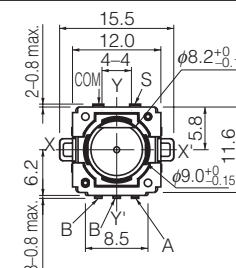
PWB mounting hole for reference (Tolerance :  $\pm 0.1$ )  
View from mounting side

Bushings length		L <sup>1</sup>	(L <sup>2</sup> )
B	5.0 mm	15.0 mm to 17.0 mm	11.5 mm to 13.5 mm
	7.0 mm	17.0 mm to 20.0 mm	13.5 mm to 16.5 mm

Switch circuit diagram.  
SPST



## No. 2



Material: Zinc alloy for die casting  
Shaft shape and dimension



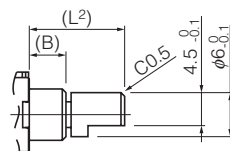
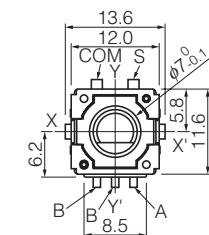
\* The position changes with Resolution pulse  $11.8 \pm 0.05$  Center of shaft

PWB mounting hole for reference (Tolerance :  $\pm 0.1$ )  
View from mounting side

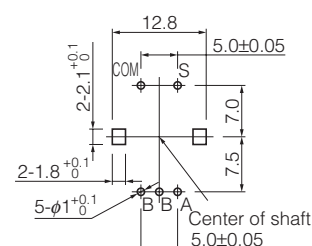
L <sup>1</sup>	(L <sup>2</sup> )	(L <sup>3</sup> )
16.0 mm to 20.0 mm	12.5 mm to 16.5 mm	6.5 mm to 10.5 mm

(Notice) Commonness of encoder.

## No. 3

[illegible]

### Shaft shape and dimension



PWB mounting hole for reference

View from mounting side  
PWB thickness  $t=1.6$

Bushings length		L <sup>1</sup>	(L <sup>2</sup> )
B	5.0 mm	15.0 mm to 17.0 mm	11.0 mm to 13.0 mm
	7.0 mm	17.0 mm to 30.0 mm	13.0 mm to 26.0 mm

Switch circuit diagram.  
S.P.S.T.



