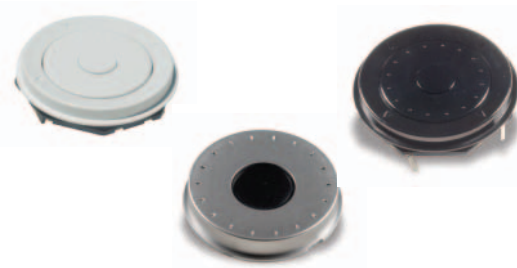


# TSW Series

## 3 or 7 Function Tact and Scroll Wheel



### Features/Benefits

- Compact and slim
- Multiple function in one component (rotary, select)
- Easy installation
- Through hole termination
- Integrated decoration (B type)

### Typical Applications

- Remote controls
- Desk phones
- Keyboards
- Printers
- Entertainment systems
- White goods

### Operation Characteristics

OPERATING FORCE: See chart below  
24 detent - 12 pulses/360°

### Specifications

INITIAL CONTACT RESISTANCE: Max. 300mΩ  
INSULATION RESISTANCE: Min. 100 MΩ (100 VDC)  
RATING: 1mA 10 VDC  
LIFE CYCLE: See chart below  
OPERATING FREQUENCY:  
Rotation - Max. 30 operations per minute  
Push - Max. 120 operations per minute  
Depression - Max. 300 gf

### Environmental

OPERATING TEMPERATURE: 0°C / 40°C  
STORAGE TEMPERATURE: -40°C / 70°C  
VIBRATION RESISTANCE: 10 ~ 55 Hz, displacement 0.75mm (p-p)  
SHOCK RESISTANCE: Destruction 1,000 m/s<sup>2</sup> (approx. 100G) max.  
WAVE SOLDERING: Max. 260°C for 5 seconds  
HAND SOLDERING: Max. 260°C for 5 seconds



Navigation

Designation	Number of Circuits	Rotation Actuation Force	Push Actuation Force	Cycle Life Rotation (per direction)	Cycle Life Push
TSWA	3	Max. 60g - cm	220g ± 50g	1,000K cycles	1,000K cycles
TSWB	5	Max. 50g - cm	Max 300g	1,000K cycles	1,000K cycles

Part Number	Description	Tray	Box
TSWA-3N-C LFS	Base switch with jog and select, no decoration	80	160
TSWA-3N-CB11 LFS	Base switch with jog and select, white central button, white dial	65	130
TSWA-3N-CD23 LFS	Base switch with jog and select, black central button, grey dial	30	60
TSWB-3N-CB111 LFS	Central select with jog and 4 directions, white central button, dial & direction ring	30	60
TSWB-3N-CB222 LFS	Central select with jog and 4 directions, black central button, dial & direction ring	30	60

### TSWA-3N-C LFS

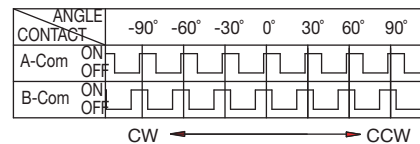
Base switch with jog and select, no decoration

### CONTACT CONFIGURATION

Push

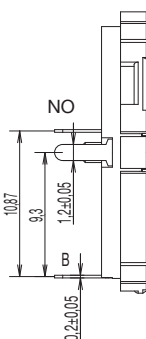
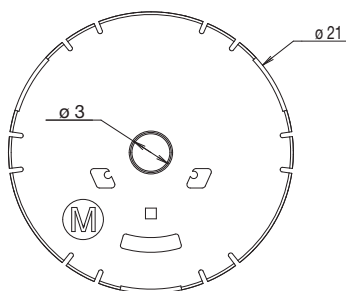
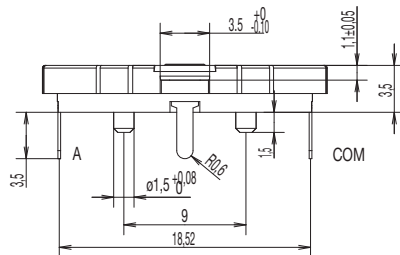
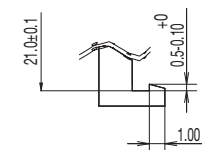


### Rotation output waveform

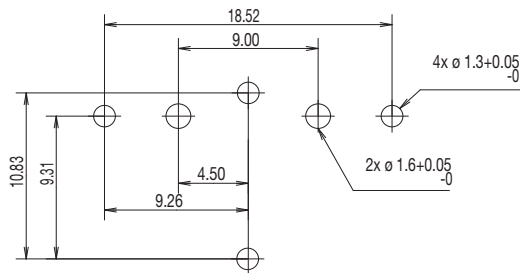


Numbers of detent : 24  
Pulse/Rotation : 12 pulse/360°

### COVER DESIGN GUIDELINE



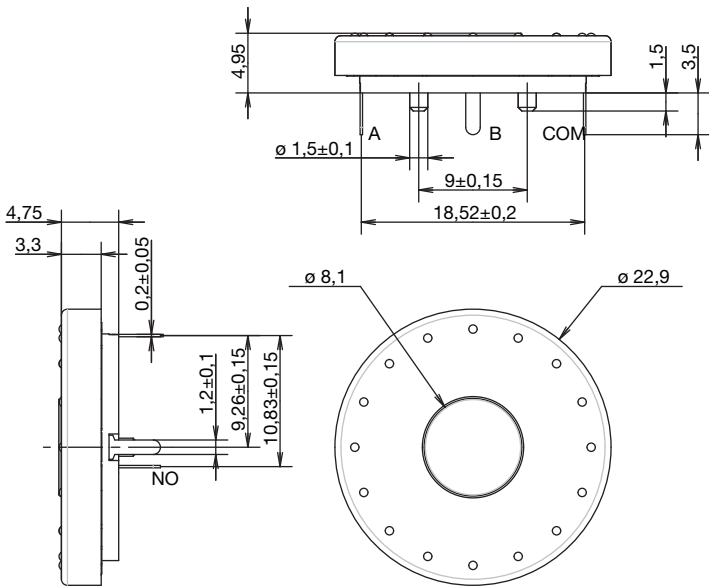
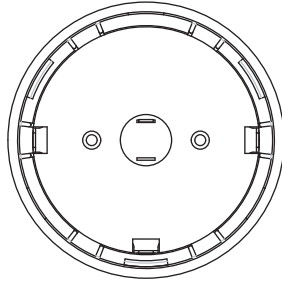
### PCB LAYOUT



# TSW Series 3 or 7 Function Tact and Scroll Wheel

## TSWA-3N-CB11 LFS

Base switch with jog and select, white dial

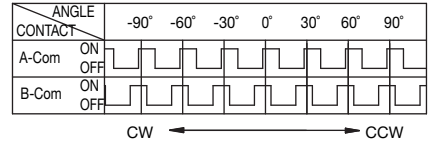


### CONTACT CONFIGURATION

Push



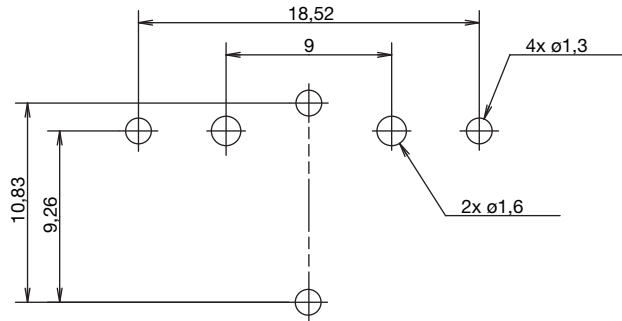
### Rotation output waveform



Numbers of detent : 24

Pulse/Rotation : 12 pulse/360°

### PCB LAYOUT



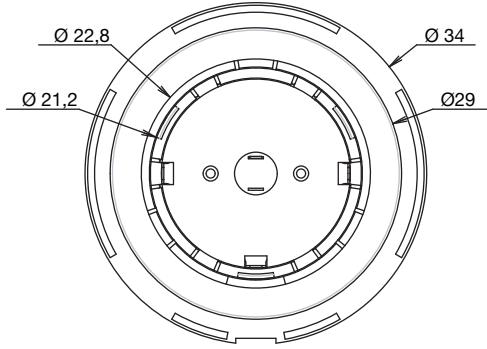
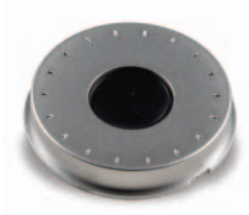
Navigation

# TSW Series

## 3 or 7 Function Tact and Scroll Wheel

### TSWA-3N-CD23 LFS

Base switch with jog and select, black central button, grey dial

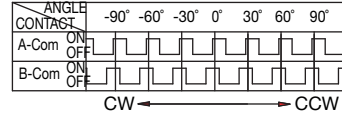


#### CONTACT CONFIGURATION

Push



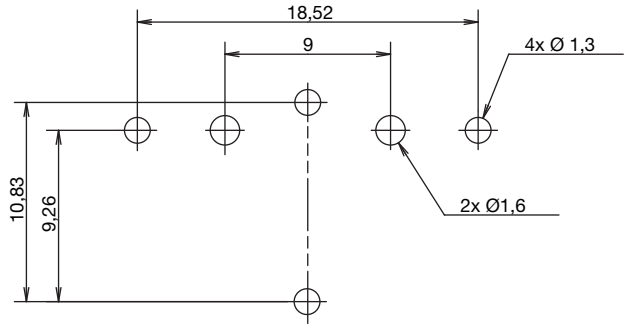
Rotation output waveform



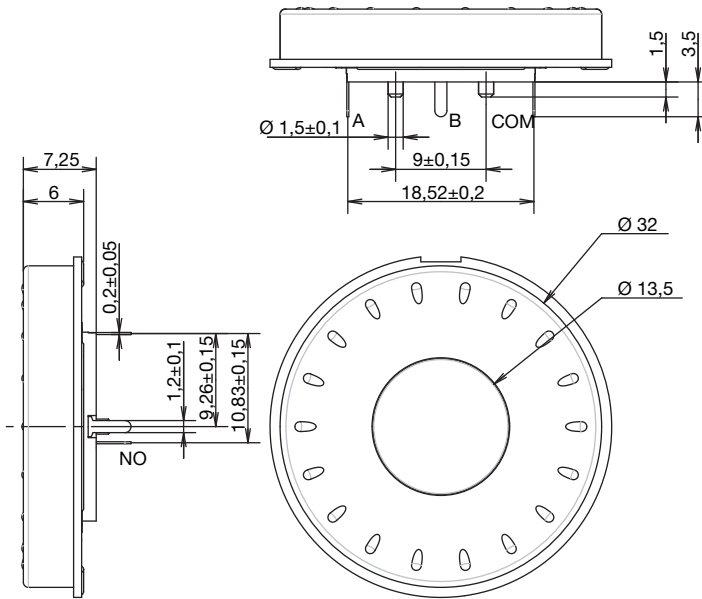
Numbers of detent : 24

Pulse/Rotation : 12 pulse/360°

#### PCB LAYOUT



Navigation



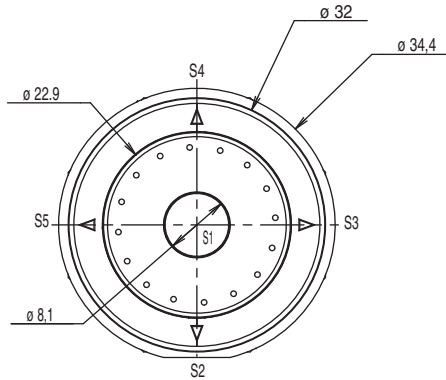
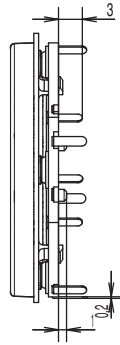
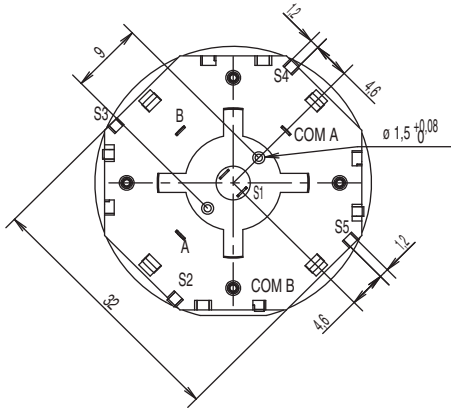
First Angle Projection

Dimensions are shown: mm  
Specifications and dimensions subject to change

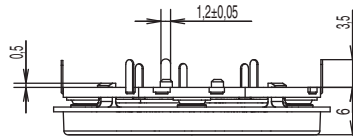
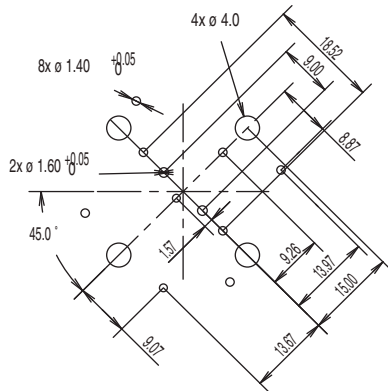
# TSW Series 3 or 7 Function Tact and Scroll Wheel

**TSWB-3N-CB111 LFS**  
**TSWB-3N-CB222 LFS**

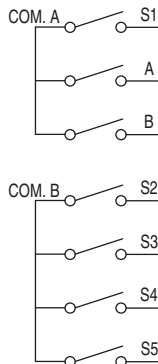
Central select with jog and 4 directions, white central button, dial & direction ring  
Central select with jog and 4 directions, black central button, dial & direction ring



PCB LAYOUT



## ELECTRICAL FUNCTION



## Rotational Output Waveform

ANGLE CONTACT	-90°	-60°	-30°	0°	30°	60°	90°
A-COM A ON	ON	OFF	ON	OFF	ON	OFF	ON
A-COM A OFF	OFF	ON	OFF	ON	OFF	ON	OFF
B-COM A ON	ON	ON	ON	ON	ON	ON	ON
B-COM A OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF

CW ← → CCW

Numbers of detent : 24  
Pulse/Rotation : 12 pulse/360°



C

Navigation



Dimensions are shown: mm  
Specifications and dimensions subject to change