

# ERGO-NAV EGN-J Series Analog Joystick Navigation Device

**NEW!**



## Features/Benefits

- **Omni-directional analog control**
- **Variable speed (rate and control)**
- **Small form factor**
- **Low power (instant wake-up)**
- **Integrated switch (center click)**
- **True deflection device (pointing device)**
- **Simple electrical interface**
- **Environmental protection**
- **Long life**

## Typical Applications

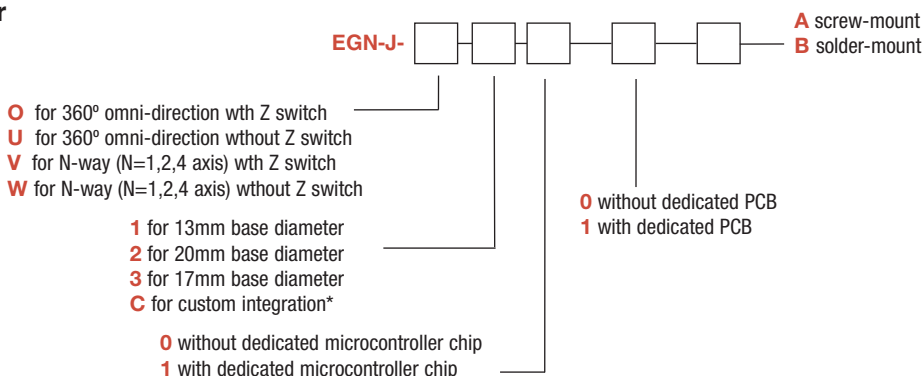
- **Cell phones**
- **Gaming devices**
- **MP3 players**
- **PDA's**
- **GPS devices**
- **Remote controls**
- **Laptops**
- **Convergent devices**
- **Others**

|  | Series Values | EGN-Jx3x-xx                  | EGN-Jx2x-xx                 |
|--|---------------|------------------------------|-----------------------------|
| PCB FOOTPRINT REQUIREMENT (mm):                  | 17.3-20.3     | 16.3 topside,<br>17.3 bottom | 19.3 topside<br>20.3 bottom |
| PCB TO ACTUATOR TIP HEIGHT (mm):                 | 5.8-7.5       | 5.8                          | 7.5                         |
| MIN ACTUATION ANGLE (deg):                       | less than 2   | less than 2                  | less than 2                 |
| MAX DEFLECTION FROM VERTICAL (deg):              | 25            | 25                           | 25                          |
| LATERAL FORCE @ MIN ACTUATION (g force):         | 23-24         | 23 or less                   | 24 or less                  |
| LATERAL FORCE @ MAX ACTUATION (g force):         | 74-120        | 74                           | 120                         |
| MIN VERTICAL FORCE TO ACTIVATE (g force):        | 9-20          | 9                            | 20                          |
| DOMES SWITCH ACTUATION FORCE (g force):          | 210-380       | 210                          | 380                         |
| SINGLE LARGE LATERAL FORCE SURVIVABLE (g force): | 2000          | 2000                         | 2000                        |

## User Interface

|                                 |                        |
|---------------------------------|------------------------|
| NUMBER OF AXIS PROVIDED:        | 1, 2, 4 & continuous   |
| DIRECTIONS/VECTORS:             | >360                   |
| NUMBER OF RATE STEPS FROM FULL: | Up to 1024             |
| SOUTH to FULL NORTH DEFLECTION  | 64 standard            |
| POSITION SAMPLING RATE:         | 25-40hz                |
| SIGNAL LATENCY:                 | 40hz standard<br>< 4ms |

## How To Order



\*Custom Integration - ErgoNav EGN-J Series can be customized per the design rules and limitations:

- Joystick footprint and actuator height (scalable per the design rules)
- Joystick top cap (plastic or silicone; color & fashion)
- Joystick plastic retainer (reference retainer integratable to device chassis per the design rules)
- Dedicated microcontroller (contains firmware for quick I/O interface, or firmware compiled into device controller)

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## ELECTRICAL/SOFTWARE

|  |                      |
|--|----------------------|
| LINEARITY OF DEVICE OUTPUT:                            | R <sup>2</sup> >0.97 |
| REPEATABILITY OF SINGLE DEVICE OUTPUT:                 | ±2%                  |
| SETTING TIME OF SIGNAL VOLTAGE IN DEVICE:              | Negligible           |
| RESISTANCE FOR NS OR EW AXIS:                          | 400-10,000Ω          |
| JOYSTICK NOT ACTUATED RESISTANCE:                      | 10MΩ                 |
| DOME SWITCH OPEN/CLOSED RESISTANCE:                    | 500kΩ /250Ω          |
| POWERING VOLTAGES:                                     | 1.8-5                |
| # OF A/D INPUTS REQUIRED:                              | One 8 bit ADC        |
| # OF GPIO INTERFACE NEEDED:                            | 5                    |
| ROM REQUIREMENTS:                                      | 10kb max             |
| CONTINUOUS USE CURRENT PEAK*<br>TYPICAL/WORST CASE:    | 3.1/8.3 mA           |
| CONTINUOUS USE CURRENT AVERAGE*<br>TYPICAL/WORST CASE: | 62/165μA             |
| SLEEP POWER CONSUMPTION:                               | 0μW                  |

\* Typical transducers are 800-1600 ohms, worse case current is for 400 ohm transducer

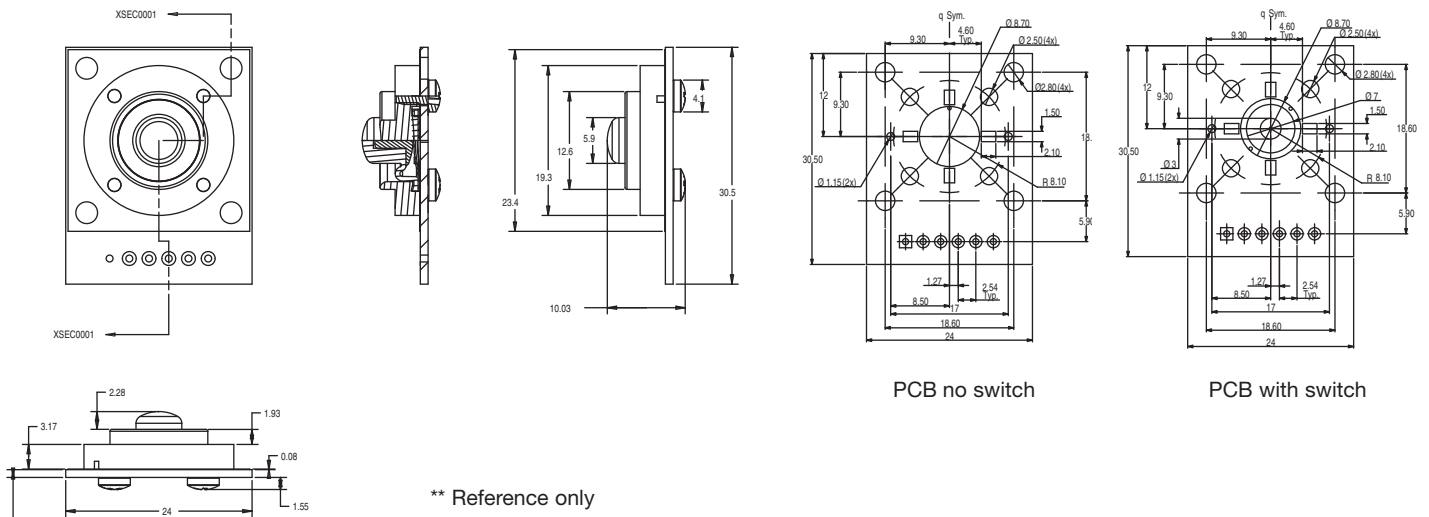
## RELIABILITY

## ENVIRONMENTAL

|                                       | Series Values | Series Values   | Series Values      |
|---------------------------------------|---------------|---|--------------------|
| OPERATING LIFE (DEFLECTIONS):         | >3M           | OPERATING TEMP (deg C):   | -10 TO 45          |
| DOME SWITCH OPERATING LIFE, (CYCLES): | 500,000       | STORAGE TEMP (deg C):   | -30 TO 70          |
| VIBRATION:                            | No Effects    | SHIPPING ALTITUDE (feet):   | 40,000ft (0.2 atm) |
| PULLOUT FORCE:                        | 2kgf/4.5lbf   | RELATIVE HUMIDITY:  | 0-85%              |
| DROP TEST:                            | Pass          | DUST PROTECTION:  | IP5X               |
| EMI/EMC:                              | Pass          | CONTAMINATION RESISTANCE: BABY<br>OIL, HAND CREAM:                        | No effect          |
| ESD RATING:                           | Pass          | ROBUST CONTAMINANT RESISTANCE; WATER,<br>SUGAR WATER, SALT WATER, COFFEE: | IPX4               |

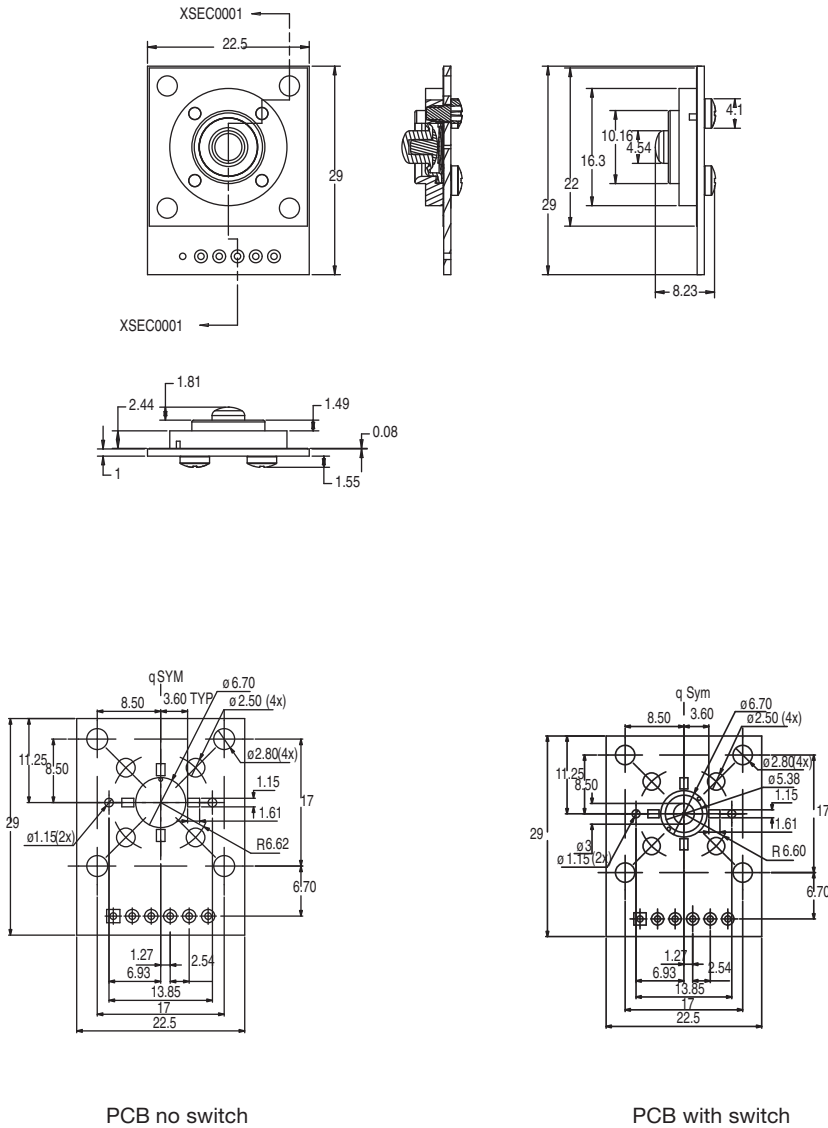
Specific test reference / method is available upon request

### EGN-J-X-2



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## EGN-J-X-3



\*\* Reference only

