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, 17.3 bottom | 19.3 topside 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 |
| DOME SWITCH ACTUATION FORCE (g force): | 210-380 | 210 | 380 |
| SINGLE LARGE LATERAL FORCE SURVIVABLE (g force): | 2000 | 2000 | 2000 |

### User Interface

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

### How To Order

EGN-J- [ ] [ ] [ ] [ ] [ ] — **A** screw-mount / **B** solder-mount

**O** for 360º omni-direction wth Z switch
**U** for 360º omni-direction wthout Z switch
**V** for N-way (N=1,2,4 axis) wth Z switch
**W** for N-way (N=1,2,4 axis) wthout Z switch

**1** for 13mm base diameter
**2** for 20mm base diameter
**3** for 17mm base diameter
**C** for custom integration*

**0** without dedicated microcontroller chip
**1** with dedicated microcontroller chip

**0** without dedicated PCB
**1** with dedicated PCB

*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)

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

## ELECTRICAL/SOFTWARE

| | Series Values |
|---|---|
| LINEARITY OF DEVICE OUTPUT: | R^2>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* | |
| TYPICAL/WORST CASE: | 3.1/8.3 mA |
| CONTINUOUS USE CURRENT AVERAGE* | |
| TYPICAL/WORST CASE: | 62/165µA |
| SLEEP POWER CONSUMPTION: | 0µW |

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

Navigation

## RELIABILITY

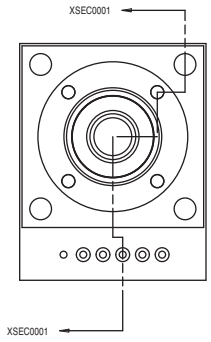
| | Series Values |
|---|---|
| OPERATING LIFE (DEFLECTIONS): | >3M |
| DOME SWITCH OPERATING LIFE, (CYCLES): | 500,000 |
| VIBRATION: | No Effects |
| PULLOUT FORCE: | 2kgf/4.5lbf |
| DROP TEST: | Pass |
| EMI/EMC: | Pass |
| ESD RATING: | Pass |

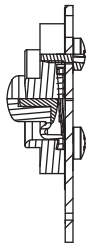
## ENVIRONMENTAL

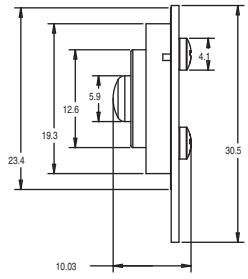
| | Series Values |
|---|---|
| OPERATING TEMP (deg C): | -10 TO 45 |
| STORAGE TEMP (deg C): | -30 TO 70 |
| SHIPPING ALTITUDE (feet): | 40,000ft (0.2 atm) |
| RELATIVE HUMIDITY: | 0-85% |
| DUST PROTECTION: | IP5X |
| CONTAMINATION RESISTANCE: BABY OIL, HAND CREAM: | No effect |
| ROBUST CONTAMINANT RESISTANCE; WATER, SUGAR WATER, SALT WATER, COFFEE: | IPX4 |

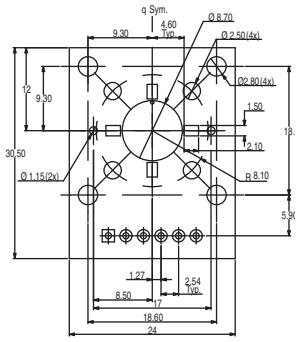
Specific test reference / method is available upon request

## EGN-J-X-2

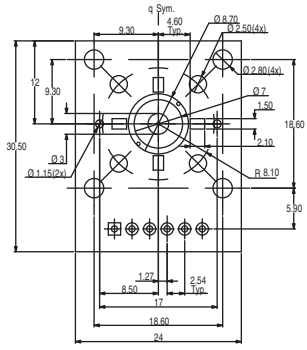


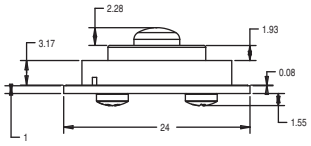



PCB no switch

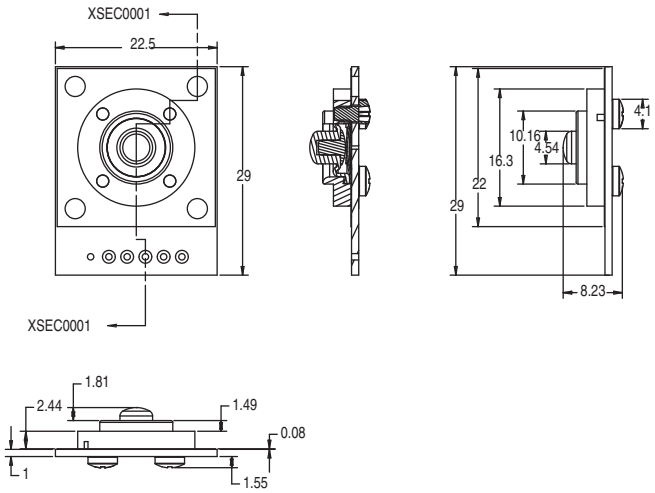


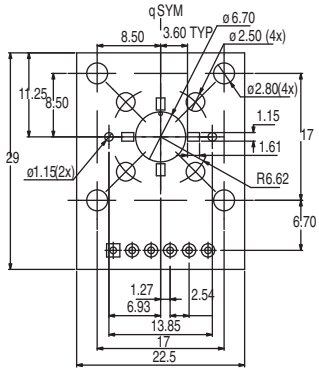

PCB with switch



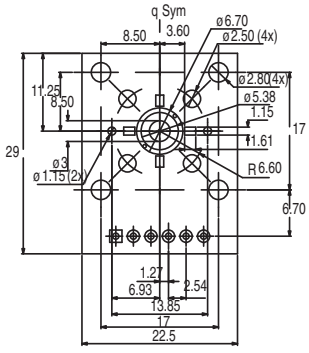

** Reference only

## EGN-J-X-3




PCB no switch




PCB with switch

** Reference only