# NEW!



### Features/Benefits

- Omni-directional analog control
- Variable speed (rate and control)
- Low profile
- Low power (instant wake-up)
- Intergrated switch (center click)
- Force/deflection 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

### Mechanical

OVERALL HEIGHT (mm): < 2
ACTUATOR DIAMETER (mm): 20
NOMINAL PCB AREA REQUIRED (cir. mm²): 615
NOMINAL DEFLECTION TO FIRST CONTACT (mm): 0.25
MAX. DEFLECTION (mm): <0.75
MIN. FORCE TO FIRST CONTACT (g force): < 30
MAX. OPERATIONAL FORCE (g force): 1000
DOME SWITCH ACTUATION FORCE (g force): 300 typ.

### Interface/Output

POINTING MODES: Realtive or Absolute

ANGULAR DIRECTIONS: 360°

ANGULAR RESOLUTION (deg): 1.8° (8 bit)

RATE STEPS: 32

SNAP TO AXIS: Optional

POSITION SAMPLING RATE: 25-40hz

REPEATABILITY: ±2%

### Electrical

TRANSDUCER RESISTANCE: 600  $\Omega$  ± 200  $\Omega$  OUT OF CONTACT RESISTANCE: >10M  $\Omega$  REFERENCE RESISTOR VALUE (R): 1,500  $\Omega$  ± 5% DOME SWITCH RESISTANCE: Open>500k  $\Omega$ 

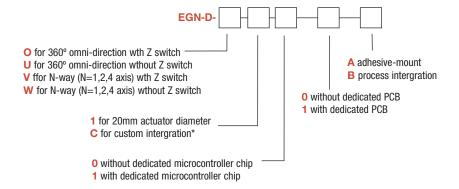
Closed<250  $\Omega$ 

POWERING VOLTAGES: ≤8 - 12 Vdc

# OF A/D INPUTS REQUIRED: One 8 bit ADC

# OF GPIO INTERFACE NEEDED: 4
CONTINOUS USE CURRENT PEAK
TYPICAL/WORST CASE: 1.1mA/1.7 mA
CONTINOUS USE CURRENT AVERAGE
TYPICAL/WORST CASE: 22µA/34µA
SLEEP POWER CONSUMPTION: 0µW

### **How To Order**



- \*Custom Integration ErgoNav EGN-D Series can be customized per the design rules and limitations:
- -Nav-disc diameter and actuator height (scalable per the design rules)
- -Nav-disc actuator (plastic or silicone; color, surface texture, fashion; process Integration)
- \_Nav-disc plastic retainer (integratable to device chassis per the design rules)
- \_Nav-disc silicone sensor pill and pad (process integratable to device membrane elements per the design rules)
- -Dedicated microcontroller (contains firmware for quick I/O interface, or firmware compiled into device controller)



# **ERGO-NAV EGN-D Series Analog Navigation Disc**

# **RELIABILITY**

# **Operating life**

LIFE CYCLING: >3,000,000

ACCELERATED USE CYCLING: >28,000

DOME SWWITCH OPERATING LIFE, (cycles): >500,000

### **Mechanical Stress**

MAXIMUM SINGLE VERTICAL FORCE (grams): >5,000 MAXIMUM REPEAT VERTICAL FORCE (grams): >2,000

VIBRATION: Pass DROP TEST: IPXX5

#### **Environmental**

OPERATING TEMP (deg C): -10 to 55 STORAGE TEMP (deg C): -40 to 85 SHIPPING ALTITUDE (feet/m): 40,000/12,200 OPERATING HUMIDITY (%RH): 5<>98

### **Contamination/Ingress protection**

**DUST PROTECTION: IP5XX** 

CONTAMINATION RESISTANCE: HUMAN SKIN

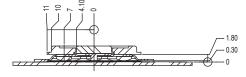
OILS, HAND CREAM: no effect

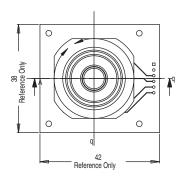
ROBUST CONTAMINANT RESISTANCE; WATER, SUGAR

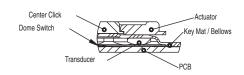
WATER, SALT WATER, COFFEEE, COLA,

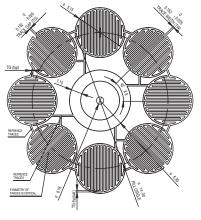
GASOLINE: IPX4X EMI/EMC/RFI: N/A ESD RATING: Pass

Specific test reference / method is available upon request









Note: Trace pattern must retain a flatness to within 0.10 mm across t span of the pill circle. See included FEA for more information.

