## 12 mm Square GS Encoders

## Type <br> EVEG/EVEH/EVEK/EVEL

## - Features

- Lineup of high rotation-torque-type ( $50 \mathrm{mN} \cdot \mathrm{m}$ )
- A wide range of standard products

■ Recommended Applications


- Volume for audio/visual equipment
- Tuner for communication units
- Mode selection for measurement instruments


## Explanation of Part Numbers



Product Chart

| Torque type | Combination of Bushing |  | Thickness | Height |  |  |  |  |  | Detents (Resolution/Pulses) |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  | 15.0 mm | 17.5 mm | 20.0 mm | 22.5 mm | 25.0 mm | 30.0 mm | 12 points (12 pulses) | 24 points (24 pulses) | Without detents (12 pulses, 24 pulses) |
| Heavy-rotationtorque$(10 \mathrm{mN} \cdot \mathrm{m}$ to $50 \mathrm{mN} \cdot \mathrm{m})$ | Die-cast | (7.0,12.0 mm) |  | 5.5 mm |  |  |  |  | $\bigcirc$ | $\bigcirc$ |  |  | $\bigcirc$ |
|  | Sleeve | (7.0,12.0 mm) | 5.5 mm |  |  |  |  | $\bigcirc$ | $\bigcirc$ |  |  | $\bigcirc$ |
| Standard type <br> ( $3 \mathrm{mN} \cdot \mathrm{m}$ to $20 \mathrm{mN} \cdot \mathrm{m}$ ) | Barling | $(5.0 \mathrm{~mm})$ | 5.0 mm |  | $\bigcirc$ | $\bigcirc$ | $\bigcirc$ | $\bigcirc$ |  | $\bigcirc$ | $\bigcirc$ | $\bigcirc$ |
|  | Barling | $(1.6 \mathrm{~mm})$ | 5.0 mm | $\bigcirc$ |  |  |  |  |  | $\bigcirc$ | $\bigcirc$ | $\bigcirc$ |
|  | Die-cast | $(7.0 \mathrm{~mm})$ | 5.5 mm |  |  | $\bigcirc$ | $\bigcirc$ | $\bigcirc$ |  | $\bigcirc$ | $\bigcirc$ | $\bigcirc$ |
|  | Sleeve | $(7.0 \mathrm{~mm})$ | 5.5 mm |  |  | $\bigcirc$ | $\bigcirc$ | $\bigcirc$ |  | $\bigcirc$ | $\bigcirc$ | $\bigcirc$ |

Specifications

| Mechanical | Rotation Angle |  | $360{ }^{\circ}$ (Endless) |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Shaft Pull/Push Strength |  | 80 Nmin . |  |  |  |
|  | Shaft Wobble |  | $0.7 \times \mathrm{L} / 30 \mathrm{~mm}$ max. |  |  |  |
|  | Rotation Torque | Standard Type | $3 \mathrm{mN} \cdot \mathrm{m}$ to $20 \mathrm{mN} \cdot \mathrm{m}$ |  |  |  |
|  |  | Heavy Rotation Torque | $10 \mathrm{mN} \cdot \mathrm{m}$ to $50 \mathrm{mN} \cdot \mathrm{m}$ |  |  |  |
|  | Detents |  | 12 points, 20 points, 24 points, without detents (Heavy rotation-torque without detents) |  |  |  |
| Electrical | Output Signals |  | Phase A and B |  |  |  |
|  | Resolution |  | 12, 20, 24 pulses/360 ${ }^{\circ}$ |  |  |  |
|  | Rating |  | $1 \mathrm{~mA} 5 \mathrm{Vdc}, 1 \mathrm{~mA} 10 \mathrm{Vdc}$ |  |  |  |
|  | Contact Resistance |  | $1 \Omega$ max. |  |  |  |
|  | Chattering |  | 2 ms max . |  |  |  |
|  | Insulation Resistance |  | $10 \mathrm{M} \Omega \mathrm{min}$. (at 50 Vdc ) |  |  |  |
|  | Dielectric Withstanding Voltage |  | 50 Vac for 1 minute |  |  |  |
|  | Bouncing |  | 5 ms max . |  |  |  |
| Endurance | Operating Life | Standard Type | 30000 cycles min. |  |  |  |
|  |  | Heavy Rotation Torque | 15000 cycles min. |  |  |  |
|  | Operating Temperature |  | $-10^{\circ} \mathrm{C}$ to $+60^{\circ} \mathrm{C}$ |  |  |  |
|  | Storage Temperature |  | $-40^{\circ} \mathrm{C}$ to $+85{ }^{\circ} \mathrm{C}$ |  |  |  |
| Minimum Quantity/Packing Unit |  |  | L $\leq 25.0 \mathrm{~mm}$ | 100 pcs. Polyethylene Bag(Buk) | L>26.0 mm | 200 pcs. Polyethylene Bag(Buk) |
| Quantity/Carton |  |  | L $\leq 25.0 \mathrm{~mm}$ | 1000 pcs. | L>26.0 mm | 2000 pcs. |

- Dimensions in mm (not to scale)
- High rotation-torque / Bushing Type with Sleeve

No. 1


- Standard rotation-torque / Bushing Type with Barling

With detents : EVEGA1

No. 2


Without detents : EVEGA2
2


PWB thickness : $t=1.6$
PWB mounting hole for reference
(pitch tolerance : $\pm 0.1$ )

With detents : EVEGC1

- Standard rotation-torque / Bushing Type with Die-cast

Without detents: EVEGC2


Design and specifications are each subject to change without notice. Ask factory for the current technical specifications before purchase and/or use.

Shaft Trims and Dimensions in mm


Phase Difference



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