

Contactless MEMS Tilt Angle Sensor

MIDORI ESC1000ZA Series



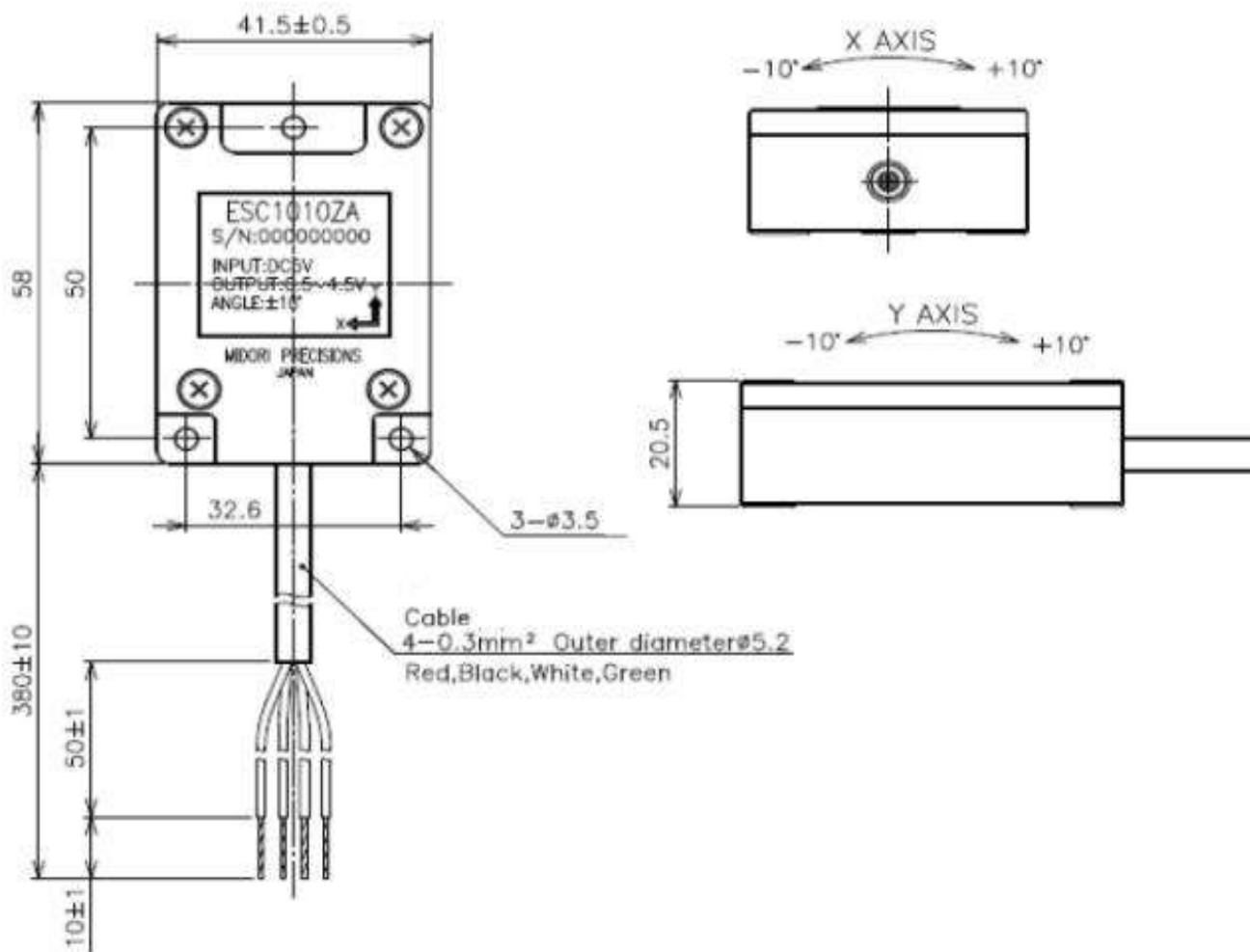
General

- Contactless Dual Axis Tilt Angle Sensor
- Effective Electrical Tilt Angle: $\pm 10^\circ$ (ESC1010ZA)
 $\pm 20^\circ$ (ESC1020ZA)
 $\pm 30^\circ$ (ESC1030ZA)
 $\pm 45^\circ$ (ESC1045ZA)
- Center Based Lin: $\pm 0.5\% \sim \pm 2.5\%FS$ (X, Y axis)
- Ratio Output
- EMS 100V/m

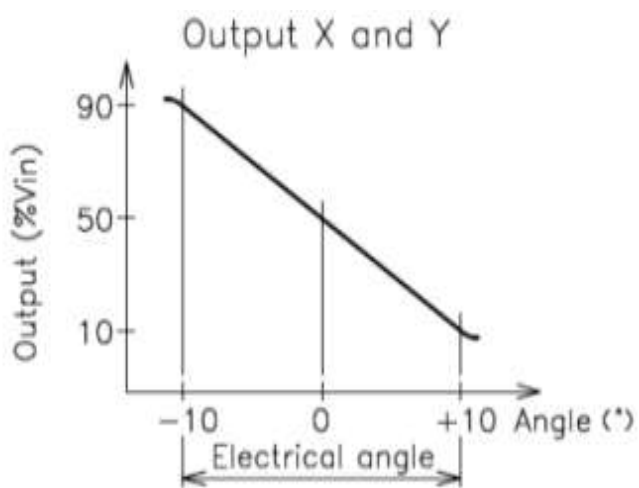
Material

- Housing: PBT

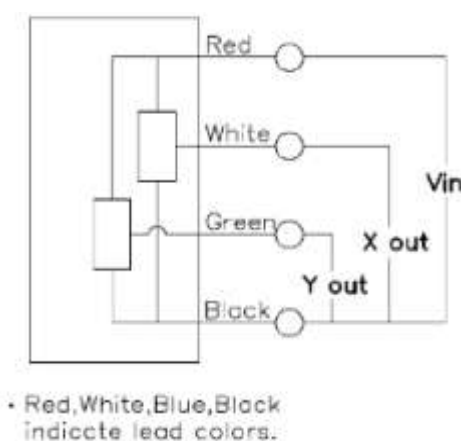
Dimension (mm)



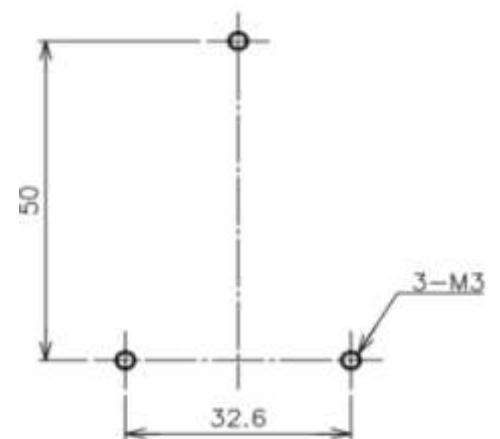
Output Characteristics



Schematic



Mounting



Specifications

| | ESC1010ZA | ESC1020ZA | ESC1030ZA | ESC1045ZA |
|---|---|--------------------|--------------------|--------------------|
| Electrical Specifications | | | | |
| Effective Electrical Tilt Angle | ± 10° | ± 20° | ± 30° | ± 45° |
| Output Range | 10~90%Vin | | | |
| Index Point | 50±3%Vin | | | |
| Input Voltage | DC5V±0.25V | | | |
| Center Based Linearity | ± 0.5%FS (FS=20°) | ± 1.0%FS (FS=40°) | ± 1.5%FS (FS=60°) | ± 2.5%FS (FS=90°) |
| Load Resistance | 100KΩ MIN. | | | |
| Supply Current | 10mA MAX. | | | |
| Insulation Resistance | 100MΩ/ DC50V MIN. | | | |
| Temp. Characteristics -20~80°C (Ref. Temp.+25°C) | ± 0.6° | ± 0.6° | ± 0.8° | ± 0.8° |
| Mechanical Specifications | | | | |
| Response Time | Approx. 0.5 sec | | | |
| Mass | Approx. 60g | | | |
| Environmental Specifications | | | | |
| Category Temperature | -20~+80°C | | | |
| Storage Temperature | -40~+80°C | | | |
| Vibration | 70m/S2~200Hz (10min) Horizontal 2axis 2hours, Upside to down 4hours | | | |
| Shock | 1000m/S2 6directions 3times | | | |
| EMS | 100V/m 10M-1GHz | | | |
| ESD (Case to Each Terminal) | ±12KV(IEC61000-4-2) | | | |
| ESD (Between Each Terminal) | ±12KV (IEC61000-4-2) | | | |
| IP Level | IP50 | | | |

Options

Different Electrical Tilt Angle Setting between X and Y axis.

Handling Instruction

- This product is impossible to measure resistance value as a variable resistor.
- As this unit is using CMOS IC, handle the lead wires at place where is protected from ESD.
- Cover fixation screws by thread-locking agent to avoid slackening of the screws.