# ESC-SERIES INDUSTRIAL INCLINOMETER

## Model ESC30xxZ

ESC-Series industrial inclinometers are high performance sensors using MEMS accelerometer for determining the inclination in the X and Y axes with excellent precision. Using Aluminum Die-Cast housing, these versions offer mechanical stability and encapsulated sensor, and in addition a high environmental protection in harsh industrial environments.

## Main Features

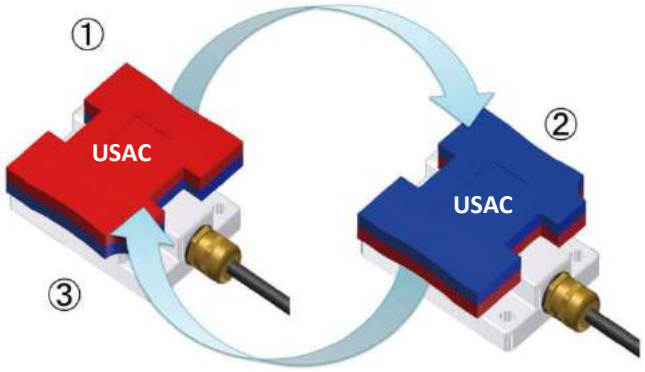
- ◆Dual Axis Measurement up to ±80°
- ◆High accuracy <±0.5%FS
- ◆Various Data Output : Voltage, Current, Serial RS-485
  *Requesting other serial interface such as SAE J1939 & CANopen, please contact us.
- ◆Stable measurement under vibration
- ◆Programmable Parameters
  Inclination range, Baud Rate, Data Transmissions Period, Filter factor
- ◆Highest Protection Class : IP67

## Specifications

| | Voltage | Voltage Ratio | Current | Serial (RS-485) |
|---|---|---|---|---|
| Electrical Angle | ±10°, ±20°, ±30°, ±45°, ±60°, ±80°<br>Separate choice of X and Y axes (Option)<br>Teach-in setting is available (Option) | | | ±80° |
| Absolute Linearity | ±0.5%FS | | | ±0.1°(～±10°)<br>±0.2°(～±30°)<br>±0.5°(～±80°) |
| Input Voltage | DC 8～30V | DC 5±0.25V | DC 24±4V | — |
| Current Consumption | 75mA max. | | | |
| Output Range | 0.5～4.5V | 10～90%Vin | 4～20mA | — |
| Output Resolution | 12bit equivalent | | | — |
| Index point setting | Resetting to 0° from ±5° error max. (Option) | | | |
| Damper Control | ・Time constant against input step : 443ms (Standard)<br>・Selectable 16 steps during 70ms~900ms (Option)<br>・Teach-in setting is available (Option) | | | |
| Temp. Characteristics | 0° position : ±0.5° (-30°C ~ 85°C deviation from 25°C) | | | |
| Mass | 300g approx. | | | |
| Cable | 6 cores Cabtyre Cable, Outer diameter: dia. 7.4mm, Core: 0.5mm$^2$ | | | |
| EMS | ISO11452 corresponding ±1% output shifting at 10MHz~1GHz<br>100V/m (Ratio, Current, Serial) / 50V/m (Voltage) | | | |
| EMI | CISPR25 3rd.edit CLASS1 corresponding | | | |
| Operating Temp. Range | -30～85℃ | | | |
| ESD | IEC61000-4-2 ±12kV | | | |
| Vibration | 70m/s$^2$, 5～200Hz/10min. 2 hours | | | |
| Shock | 1000m/s$^2$, Half sine wave 6ms | | | |
| IP Grade | IP67(Housing) | | | |

# New User-Friendly functions

## Easy Resetting Function for Index Point(0°)



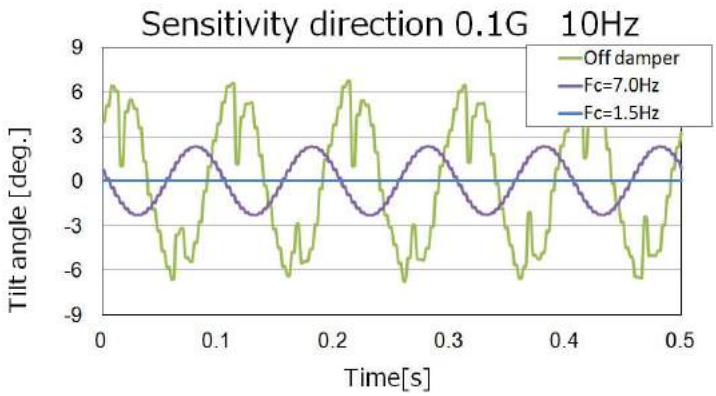

It takes only 5 seconds to reset index point (0°) using User-Settable Adjustment Card. (USAC)

(1) Please touch ESC 3times with USAC
①front→②back→③front
(2) Then current position (±5° max./horizontally) will be changed to index point.

Any electrical connections do not needed.

*Note: USAC is optional item.

## Programmable Digital Damping Control Function

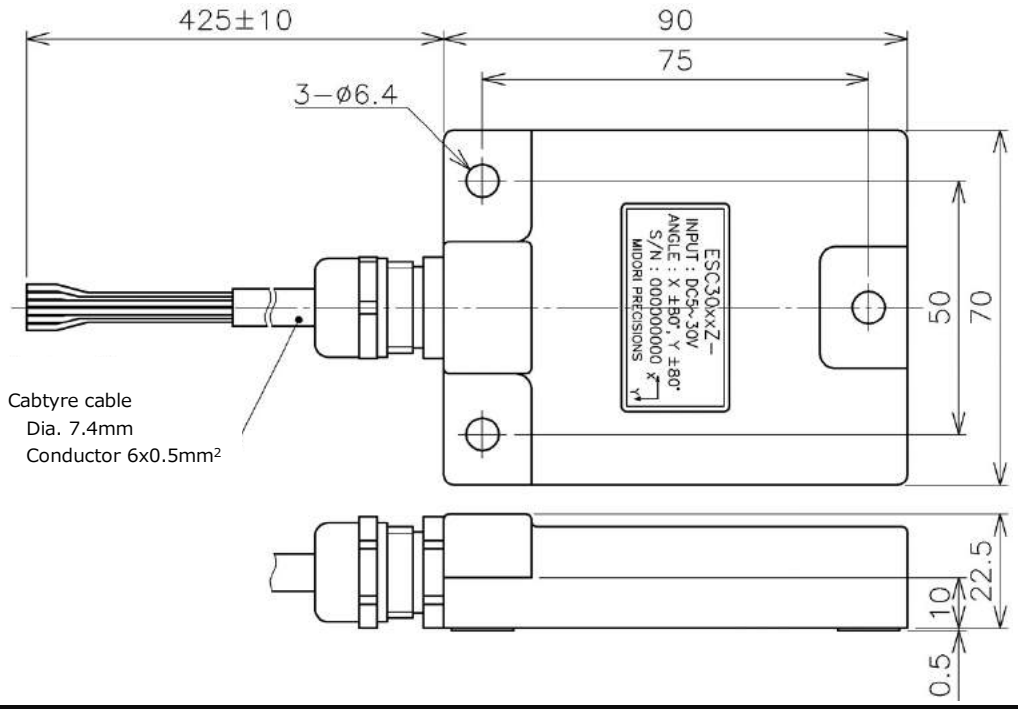



ESC30xxZ implements the digital filter that would remove external noise to give the user a choice of certain filter factor from 16 available settings whereas typical inclinometers have to be added with extra electrical low-pass filter or mechanical damping structure.
ESC30xxZ apples digital filter. This makes wider choice of cut-off frequency and easy for designing frequency response.

Note: Frequency response is set before shipping.
Programmable function will be option.

## Dimensions

[ mm ]





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