

## Product Introduction

ER-D-10 is a dual-axis inclination sensor with serial port output type for industrial field control. A high-precision A/D differential converter is built in, and the 5-order filtering algorithm is adopted to measure the sensor output tilt and pitch Angle relative to the horizontal surface. Output interfaces RS485, RS232, RS422, TTL, CAN, MODBUS are available.

Due to the inbuilt ADI's high-precision digital temperature sensor, the temperature drift of the sensor can be corrected according to the change of the inbuilt temperature sensor to guarantee the high repeatability of the product in the low temperature and high temperature environment. The output response frequency standard can reach 18Hz. If higher response frequency is needed, our company can customize it according to users. The product is a real industrial grade product with reliable and stable performance and good expansibility. Suitable for all kinds of harsh industrial control environment.



## Main Features

- Dual Axis Inclination Measurement
- Range $\pm 1\sim\pm 90^\circ$  for optional
- Accuracy: refer to performance table
- DC9~36V Wide voltage input
- Wide working temperature-40~+85°C
- Resolution 0.01 °
- IP67 protection grade
- High vibration resistance >2000g
- Direct lead interface
- Size 91 x 40 x 26mm (customizable)
- Output mode RS232/RS485/RS422/TTL/PWM/CAN optional

## Product application

- Satellite dishes search the stars•Railway locomotive monitoring
- All kinds of engineering machinery dip measurement•Petroleum drilling equipment
- Radar vehicle platform detection•Attitude navigation of underground drill
- Measurement of initial firing Angle of gun barrel

- Directional measurement based on dip Angle
- Satellite communication vehicle attitude detection
- Measurement of navigation posture of ships
- Shield pipe jacking application
- Slope monitoring of geological equipment

### Product performance index

| Parameter                           | Condition  | ER-D-10-10 | ER-D-10-30 | ER-D-10-60 | ER-D-10-90 | Unit  |
|-------------------------------------|--|------------|------------|------------|------------|-------|
| Measurement Range                   |  | ±10        | ±30        | ±60        | ±90        | °     |
| Measurement Axis                    |  | X Y        | X Y        | X Y        | X Y        |       |
| Absolute Accuracy                   | @25℃   | 0.02       | 0.05       | 0.08       | 0.1        | °     |
| Long-term Stability                 |  | 0.05       | 0.05       | 0.05       | 0.05       |       |
| Zero Temperature Coefficient        | -40~85°  | ±0.006     | ±0.006     | ±0.006     | ±0.006     | °/℃   |
| Sensitivity Temperature Coefficient | -40~85°  | ≤100       | ≤100       | ≤100       | ≤100       | Ppm/℃ |
| Power on start time                 |  | 0.5        | 0.5        | 0.5        | 0.5        | S     |
| Response Time                       |  | 0.02       | 0.02       | 0.02       | 0.02       | S     |
| Output Rate                         | 5Hz, 15Hz, 35Hz,50Hz and 100Hz can be set  |            |            |            |            |       |
| Output Signal                       | RS232/RS485/RS422/TTL/PWM/CAN/MODBUS   |            |            |            |            |       |
| Electromagnetic Compatibility       | According To EN61000 And GBT17626  |            |            |            |            |       |
| MTBF                                | ≥50000hours/time   |            |            |            |            |       |
| Insulation Resistance               | ≥100Ω  |            |            |            |            |       |
| Impact Resistant                    | 100g@11ms、Triaxial harmony (half normal)   |            |            |            |            |       |
| Resistance To Vibration             | 10grms、10~1000HZ   |            |            |            |            |       |
| Waterproof Level                    | IP67   |            |            |            |            |       |
| Cable                               | Standard: 1 meter length, wear resistance, oil proof, wide temperature, shielding cable 4*0.4mm2 |            |            |            |            |       |
| Weight                              | 120g(No cable)   |            |            |            |            |       |

### Electrical parameters of products

| Parameter      | Condition         | Minimum Value | Typical Value | Maximum Value | Unit |
|----------------|-------------------|---------------|---------------|---------------|------|
| Supply Voltage | Standard          | 9             | 12、24         | 36            | V    |
|                | Can be customized |               | 5             |               | V    |

|                       |         |     |    |      |    |
|-----------------------|---------|-----|----|------|----|
| Working Current       | no load |     | 40 |      | mA |
| Operating Temperature |         | -40 |    | +85  | °C |
| Storage Temperature   |         | -55 |    | +125 | °C |

**Product mechanical parameters**

- Connector: 1m straight leads (customizable)
- Protection class: IP67
- Material: aluminum alloy grinding sand oxidation
- Installation: four M6 screws