What is Inclinometer Sensor?

Inclinometers, also called tilt sensor, clinometers or slope sensors, are designed to measure the angle of an object with respect to the force of gravity. These tilt or level meters determine the pitch and/or roll angle and output these values via the appropriate electrical interface.

A tilt sensor can measure the tilting in often two axes of a reference plane in two axes. In contrast, a full motion would use at least three axes and often additional sensors. One way to measure tilt angle with reference to the earth's ground plane, is to use an accelerometer. Typical applications can be found in the industry and in game controllers. In aircraft, the "ball" in turn coordinators or turn and bank indicators is sometimes referred to as an inclinometer.

Types of Inclinometers

There are many types of inclinometers according to different standards.

According the working environment, the inclinometer sensor can be divided into following types:

- Static inclinometer

- Dynamic inclinometer (vertical gyro)

According to the axis number, the inclinomter sensor includes two types:

- Single axis inclinometer

- 2 axis inclinometer

According to the output interface, the inclinometer sensor includes the following types:

- Digital inclinometer

  > RS485 output inclinometer

  > RS232 output inclinometer

  > TTL output inclinometer

  > CAN output inclinometer

- Analog inclinometer

  > Voltage output inclinometer

  > Current output inclinometer

According to the protocol, the inclinometer includes two types:

- Hexadecimal

- MODBUS

Applications of Inclinometers

SkyMEMS has different types of series inclinometer sensors, from cost effective type to super high precision inclinomters, which has been widely used in the following fields:

- Solar Tracking System

- Heavy Engineering Machinery

- High Building Monitoring

- Power / Communication Tower Monitoring

- Overhead Working Truck

- Platform Stability

- Shield Tunneling

- Oil Drilling

- Medical Equipment

- High Speed Train Track Gauge Leveling

- Heavy Engineering Machinery

- Bridge / Dam Monitoring

- High Precision Laser Platform