

INCLINOMETER

For outdoor applications

Kuebler (Germany) presented its CANopen inclinometers IN88 and IN81. They comply with the CiA 410 device profile.

Inclinometers are required in applications such as: measuring the horizontal position of a fire truck basket or of a working platform, vehicle leveling for agricultural and forestry machinery, dynamic measurement of the elevation angle of the distributing boom on vconstruction machinery for tunnel and mining, and on heliostats in the solar branch.

The recently introduced sensors feature IP67 or IP69K protection class. They are qualified for temperature range from -40 °C to +85 °C, shock resistance up to 100 g, and vibration resistance up to 10 g. The products measure 2-dimensional inclinations of $\pm 85^\circ$ or 1-dimensional inclinations up to 360° . Their resolution reaches 0,01 ° and an absolute accuracy of $\pm 0.4^\circ$ is possible at a temperature of +25 °C. The measuring principle is capacitive or [Mems](#). Filter settings and parameter configuration via CANopen allow adapting the inclinometers to the application.

The inclinometers are available in the variants with one M12 connector or with two M12 connectors. Supply voltage is 10 VDC to 30 VDC. According to the company, these inclinometers are particularly easy to mount, and can be stacked on each other for applications requiring redundant sensors. The products measure 80 mm x 60 mm x 23 mm. They are E1 and UL certified.



The inclinometers come in IP67- or IP69K-rated enclosures (Photo: Kuebler)

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