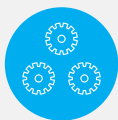


Electronic Compass v2



Multipurpose sensor



Wide operating range



Multiple interfaces



In-system configuration

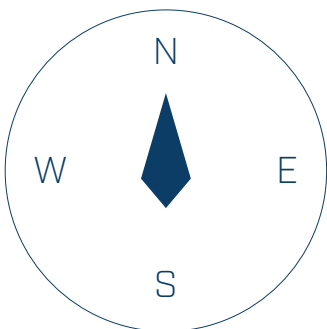


Wide data output

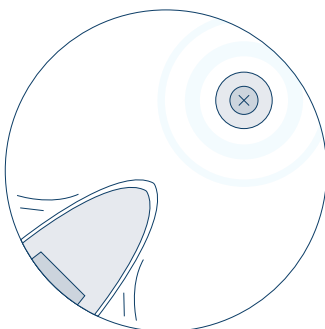


The E-Compass is a device primary intended for use as an electronic compass. It combines a precision 3-axis solid-state magnetometer and linear accelerometer to provide accurate heading and tilt measurement over a wide range of environmental conditions with magnetic declination compensation.

In addition, the device functions as an impact and anti-theft detection sensor. The IP 66 provides sufficient protection against intensely splashing water and enables mounting to the sea buoys or external environment without any additional enclosure.



COMPASS



IMPACT SENSOR



ANTI-THEFT DETECTION

Technical specifications

Temperature range	operating: -40 to 85 °C storage: -50 to 85 °C
Humidity	0 – 100 %
Housing	plastic case
Heat dissipation	passive
Type of connection	6 - wires cable
Dimensions (H x W x D)	93.88 x 93.88 x 56.74 mm
Weight	approximately 180 g

E-compass mode

Magnetic measurement range	±8 Gauss
Magnetic sensitivity	0.29 milliGauss
Sampling frequency	20 Hz
Single measurement time	952 ms
Continual measurement time	50 ms

Impact detection mode

Linear acceleration measurement range	±8 Gal
Linear acceleration sensitivity	0.244 milliGal
Sampling frequency	119 Hz
Single measurement time	818 ms
Continual measurement time	270 ms

Anti-theft detection mode

Linear acceleration measurement range	±8 Gal
Linear acceleration sensitivity	0.244 milliGal
Sampling frequency	50 Hz
Single measurement time	1 s
Continual measurement time	514 ms

RAW mode

Magnetic measurement range	±8 Gauss
Magnetic sensitivity	0.29 milliGauss
Magnetic sampling frequency	20 Hz
Linear acceleration measurement range	±8 Gal
Linear acceleration sensitivity	0.244 milliGal
Linear acceleration sampling frequency	119 Hz
Continual measurement time	50 ms

Operating values

Power supply	+12 to +30 V DC
Current consumption operating	max. 8.6 mA
Current consumption sample	max. 6.4 mA
Current consumption in sleep mode (RS-232 OFF)	max. 250 uA
SDI-12 (SDI-12 - GND) tolerant	3.5 V

Features

Multipurpose sensor

- E-Compass
- Impact detection (optional)
- Anti-Theft detection (optional)
- MEMS raw output
- Simultaneous measurement (E-compass & Impact detection, Impact & Anti-Theft detection or E-Compass & Impact & Anti-Theft detection, etc.)

Accuracy

- Heading within $\pm 5^\circ$ or better
- Tilt within 0.3° or better

Wide Operating Range

- $\pm 180^\circ$ pitch
- $\pm 90^\circ$ roll
- $\pm 8G$ magnetic range
- $\pm 8G$ acceleration range
- Temperature -40 to 85°C

Wide data output

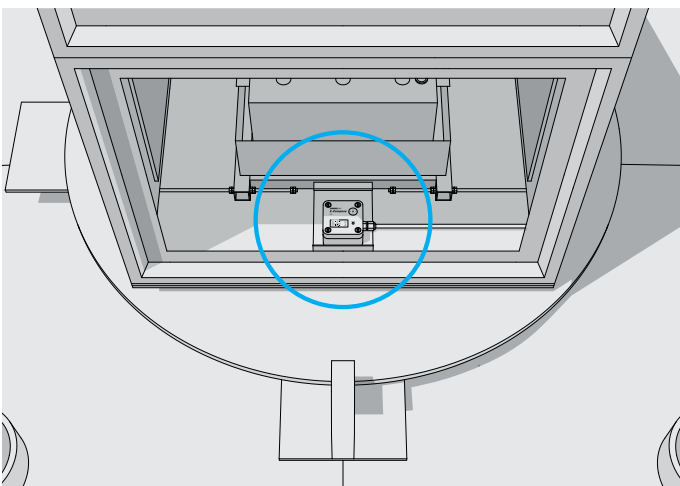
- Heading geographic, heading magnetic, pitch and roll, acceleration vector
- Magnetometer X, Y, Z
- Accelerometer X, Y, Z
- Gyroscope X, Y, Z
- Statistic of detections

In-System Configuration

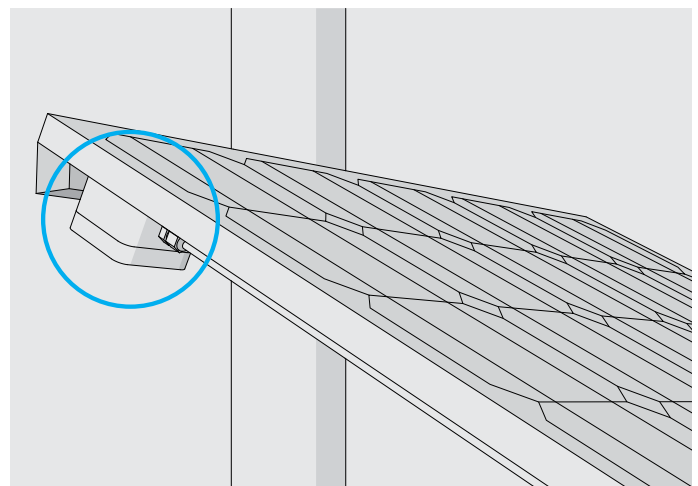
- PC or laptop can be connected while unit operates
- Perform hard and soft iron calibration
- Accelerometer calibration
- Declination setting for true north
- Alarm threshold for impact and anti-theft detections

Multiple interfaces

- SDI-12
- RS-232



Marine Buoy Station: Firstly, the sensor serves as an electronic compass by determining the direction rotation of the buoy against the north pole for the best wind direction measurement. Secondly, it functions as an impact detection sensor and generates notifications about an eventual crash of a sea ship into the marine buoy.



Automatic Weather Station: The sensor is installed on the back side of a solar panel or any other device to protect it from theft.