



WEAS-180-1 Series



- Wireless range of 1,000+ feet through 12-14 walls
- Frequency Hopping Spread Spectrum (FHSS)
- Improved interference immunity
- Improved power management for longer battery life (10+ years on AA batteries)
- Encrypted AES-128bit Sensor data messages
- Onboard data storage up to 40 Days. (512 readings/sensor)
- Over-the-air Firmware updates.

DESCRIPTION

The WEAS-180-1 is an accelerometer manufactured for simple measurements on a variety of applications. This system can use Phoenix Sensors various sensors to supply the appropriate solution for industrial, consumer, and commercial applications.

Simply setup the Phoenix Sensors back-end Online and Mobile application from our website and connect to the device. The sensor can measure the relative humidity in a given area. The battery version will last up to 10 years on average. Please contact us for Custom design availability.

The Mobile Software enables the user to store data to the cloud for evaluate later. The output of this information will be in a data sheet or graph. You can also export your readings onto your device.

APPLICATIONS

- Inclination Monitoring
- Pitch & Roll
- And many more...

Maximum Environmental Ratings

Operating Temperature	-18 ⁰ C to 55 ⁰ C (alkaline)	Optimal Battery Temperature.....	+10 ⁰ C to +50 ⁰ C
	-40 ⁰ C to 85 ⁰ C (lithium)		

Inclination - Monitoring

The WEAS-180-1 is an accelerometer able to obtain measurements from 0 degrees to 180 degrees, making inclinations easy to read. Please take into consideration the orientation the sensor is supposed to be in, as that can drastically change readings.



Pitch and Roll – Monitoring



The WEAS-180-1 is an accelerometer that can get measurements up to 1000 feet away. This makes it perfect for applications that require a large distance between what's being measured and the sensor itself. This sensor can also reach through 12-14 walls, making it easier for the customer.

Wind Turbines - Monitoring

The WEAS-180-1 works perfectly in this application. The accelerometer can measure the rotation coming from the wind turbine, and that data can be read from as far as 1000+ feet away. Distance is extremely important, especially in most scenarios concerning wind turbines.



Airplanes – Monitoring



The WEAS-180-1 is very efficient when measuring pitch and roll. Similar to applications for sea ships, data can be gathered about the vehicles movements. An industrial version of this sensor is also available if needed, practical for applications like these.

WEAS-180-1 Operational Characteristics

900 MHz product; FCC ID: ZTL-G2SC1 and IC: 9794A-G2SC1. 868 and 433 MHz product tested and found to comply with: EN 300 220-2 V3.1.1 (2017-02), EN 300 220-2 V3.1.1 (2017-02) and EN 60950

PARAMETER	UNIT	INFORMATION	NOTE
Supply Voltage	V	2.0 - 3.8 VDC (3.0 - 3.8 VDC Using Power Supply)	Not Reverse Voltage Protected
Current Consumption	uA mA	0.2 uA (Sleep Mode) 2.5 mA (MCU Active) 5.5 mA (Radio RX Mode) 22.6 mA (Radio TX Mode)	
Security		Encrypted 256-bit key exchange; AES-128	
Wireless Range	Feet	1000+ feet	
Integrated Memory		Up to 512 sensor messages	
Sensitivity		4096 count/g	
Sensitivity range selections		+/-2 G, +/-4 G, +/-8 G	
Measurement range (profile 4 tilt only)	Degrees	0° to 180° ► -180° to -0° (Rotating in positive direction)	
Measurement resolution (profile 4 tilt only)		0.1°	
Accuracy		±2.5 % (force: X, Y, Z)	
Operating Temperature Range (Circuitry/Batteries)	Celsius	-18°C to 55°C (0°F to 130°F) using alkaline -40°C to 85°C (-40°F to 185°F) using lithium	Temps above 100°C damages processor
Optimal Temperature Range AA Battery)	Celsius	+10°C to +50°C (+50°F to +122°F)	

Application Information

Temperature

It is important you don't use this sensor outside of the normal temperature range. Doing so could cause the sensor to eventually fail. It is ideal to keep the temperature of the batteries anywhere from 10°C to 50 °C. The operating temperature range depends on if alkaline or lithium batteries are used (precise temperatures above). This is a large temperature range and will make sure it fits your needs.

Accuracy

The readings from this sensor are very accurate and will make sure the correct data is recorded. There can be an approximate ±2.5 % offset, depending on the application and the use of the sensor.

Range

This accelerometer can reach a connection of 1000+ feet. The connection can also go through approximately 12-14 walls. This ensures that this sensor will be a solid solution to most applications.

Media

If things like your sensor being water-proof, dust-resistant, and ice-resistant sound crucial to your application, then the industrial housing is for you. Weather is not an issue for the industrial WEAS-180-1.

Principle of Operation

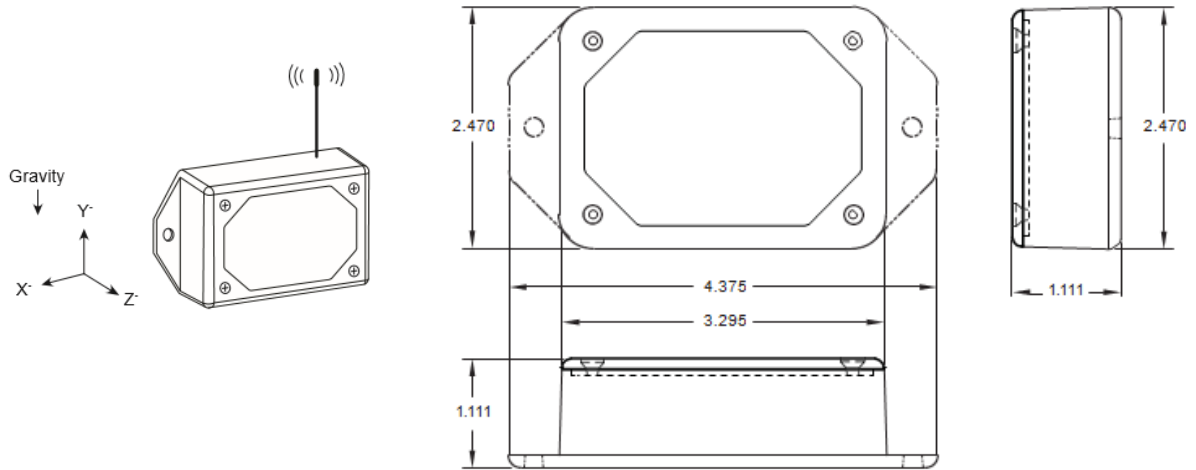
The WEAS-180-1 Accelerometer - Tilt Sensor activates at a set time interval (defined by user) and converts accelerometer measurements to pitch and roll (0 to 180° -> -180° to 0°). The data is displayed in degrees with 0.1° of resolution.

Example: Pitch: 1.6 Roll: -0.1

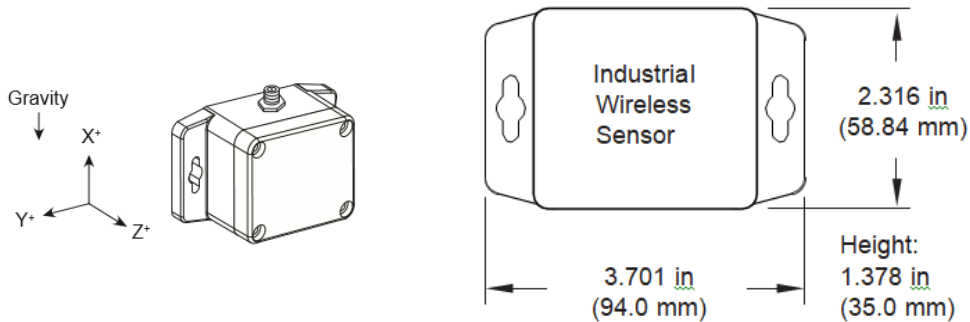
Important to Know

Using this sensor under extreme conditions will accelerate aging. Do not use this sensor for the following applications, as they can cause this sensor to fail: corrosive gas or deoxidizing gas, volatile or flammable gas, dusty conditions, under low or high pressure, wet or excessively humid locations, places with salt water, oils chemical liquids or organic solvents, or places with excessively strong vibrations.

Mechanical Dimensions (inches)

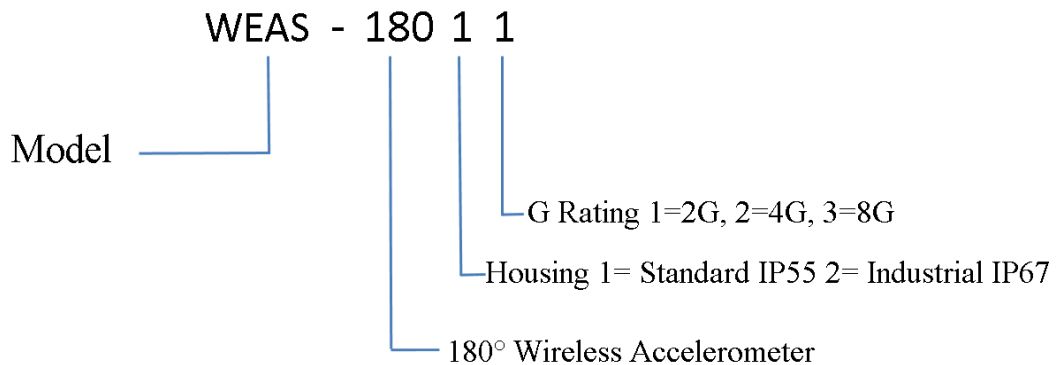


Pic. 1 - Standard Housing IP55



Pic. 2 - Industrial Housing IP65

Part Number Configuration



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