# WEARDC®

## Assets diagnostic tests and supervision

## Use Wearable Data Collector (WEARDC®) in order to:

(i) Acquire structured operating data from your plant and machinery, using commercial off-the-shelf sensors

(ii) Implement **COMBINED** preventive maintnance technologies (vibration analysis, ultrasounds, electric measurements, thermodynamic diesel engine analysis)

(iii) Manage energy inspections

(iv) Organize your assets using international standards

(v) Use the data on site or transfer it remotely for further processing

(vi) Integrate directly with computer maintenance management systems (CMMS)

- All in one portable device, one operating system

- Simply, fast, innovatively

- Compatible subsystems from leading manufacturers
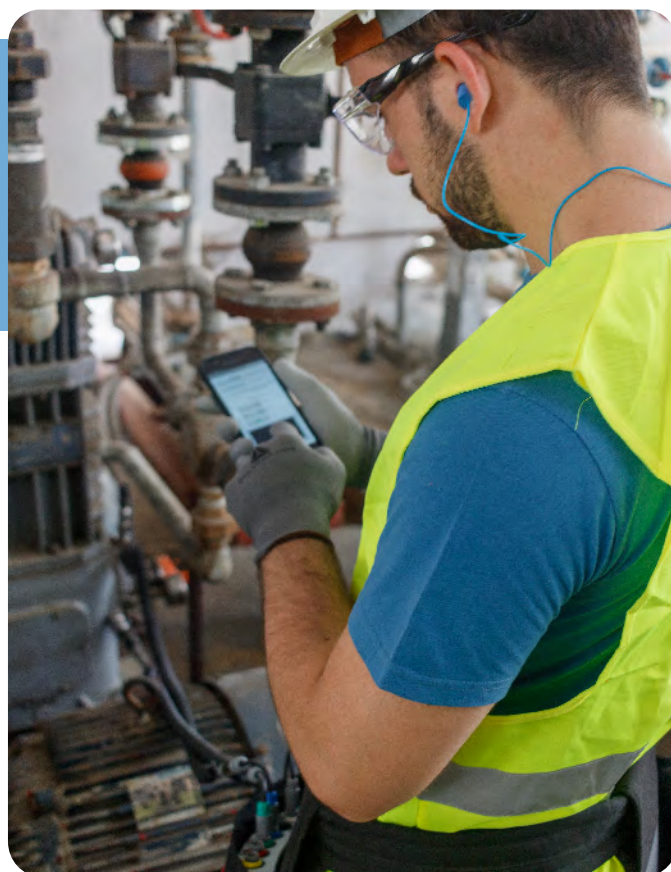
## Operating with great ease of use
- Touch screen Technology
- Plan/review measurements on the device
- View alarms and export reports
- Store data, sounds and images
- View historical data
- Use it in **ALL** of your plant applications

Can be "carried" ergonomically on a holster around the user's waist, for easy transportation and use without fatigue.

When acquiring data, the user holds in his/her hands the lightweight sensors and one smartphone/tablet.

## References by industry
- Facilities & buildings
- Packaging, delivery & mail
- Transportation
- Water treatment
- Power generation & distribution
- Steel & heavy
- Pulp & paper
- Shipping
- Oil & gas
- Chemical & pharmaceutical
- Food & beverage

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Multiple sensors, greater reliability

## WEARDC® applications

The system can be used in the following applications:

## General purpose data collection and inspections support device

Record, store and edit with the use of sensors:
- Pressure
- Temperature
- Thermography
- Flow
- Speed of revolution
- Asset status

## On-site machine check/monitoring

- Bearings status
- Wear check
- Cavitation
- Speed reducing gears/gearboxes
- Pumps/motors
- Lack of lubrication/over-lubrication

## On-site electrical inspection analysis

**For detection and analysis of the following faults:**
- Electric Arc
- Tracking
- Corona
- Voltage and current waveforms distortion

**For use in these applications:**
- Switchgears
- Transformers
- Insulators
- Relays
- Bus-bars
- Motors

## On-site leak detection/energy conservation analysis

- Valves
- Steam traps
- Compressed air
- Compressed gases

## Fault detection for industrial/marine Diesel engines

- Quality control of cylinder, fuel pump, injector, turbo compressor, air cooler
- Operation optimization

## Review measurements with ease

Once the device connects to a wireless local network, the data can be uploaded to the base station.

The Mechbase® software is being used so you can have reliable access from anywhere. It employs a powerful SQL database and modern application technologies.

The system allows for a **specialist (internal or external) partner to** diagnose problems remotely.

Operating or maintenance personnel can perform the inspection and a remote specialist advices. Quickly and wirelessly.

Findings are automatically uploaded to the computer maintenance management system (CMMS) if one is already in place, so that appropriate corrective actions can be scheduled.

## Automatic asset recognition

Using **QR code** labels on assets produced by the system, you can identify them and plan your actions.

Once the user is in front of an asset of interest, he/she can scan it and interact with the information automatically shown in our advanced user interface.



## Assets classification and hierarchy

A comprehensive set of classification and **hierarchy standards** are also included with categories of: business activities, assets, subsystems, failures, corrective actions.

It can be a powerful assisting tool in making decisions about the equipment state whether you are focusing on the component level or you want to concentrate on the overall condition of your enterprise assets status.

## Using Modern Human-Machine Interface

The device operates with what is most convenient for you: a smartphone or tablet; devices you use daily.

You can take advantage of all the excellent features the device can offer, regarding:
- Ease of use
- Bidirectional data transfer
- Continuous integration of new capabilities
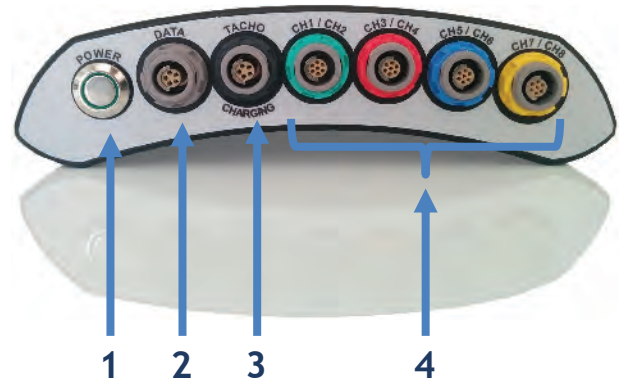- Easy replacement in case of a failure or loss

We listened to the needs of people operating and maintaining machinery, asking for simple devices, ease of data entry and continuous flow of instructions.

You can have such a device in your hands.

It allows for easy use from the operators or maintenance personnel.

## Main Unit Functions

1. Power switch with LED charging status
2. Data port USB 2.0
3. Charging port/speedometer
4. Data acquisition ports

# WEARDC® Specifications

## Data acquisition

| | |
|---|---|
| Sampling rate | 100 kHz / ch (max) |
| Channels | 8 single ended with 16 bit resolution |
| Simultaneous sampling | 8 channels |
| Event counter | Yes |
| Sensor supply capabilities | +22V, +12V, +5V |
| Maximum measurement range | +/- 10V |
| Input impedance | Greater than 100MΩ |
| Interface | USB 2.0 |

## Physical characteristics

| | |
|---|---|
| Dimensions | 150 x 200 x 54 mm (L x W x H) |
| Weight | 330 g |
| Casing | ABS (UL 94 HB), IP54 |
| Operating conditions | Temperature: 0 to 50˚C/32 to 122˚F<br>Humidity: 20 - 85% (non-condensing)<br>Drop test: From 1.5 m on concrete (with use of protecting cover) |
| Storage conditions | Temperature: -20 to 60˚C/-4 to 140˚F<br>Humidity: 20 - 85% (non-condensing) |

## Power

| | |
|---|---|
| Battery | 3400 mAh Lithium Ion/3.6V |
| Operating time (typical) | 8 hours |
| Battery charger | 5V, 1A |

## Human machine interface device

| | |
|---|---|
| Type | Smart phone or tablet running Android ™ 5.0 and above |
| Screen | Diagonal greater than or equal to 5 inch |
| Communication port | USB OTG |

## Compatible items

| | |
|---|---|
| Compatible sensors | Standard IEPE (IEEE 1451.4) industrial accelerometers (with warning capability for short circuit or no connection)<br>Ultraprobes®/UE Systems Inc. utrasound equipment<br>Sensors 0-10V (revolution speed, static and dynamic pressure temperature, infrared radiation, humidity, voltage/current, force, torque, strain) |
| Accessories | Cables for connection to the sensors<br>Magnetic bases<br>Headphones with 3.5 mm jack for use with ultrasound equipment<br>USB cable<br>Holster |

## Compliances

| | |
|---|---|
| Regulatory compliance | EU Directives, RoHS, EN 61010-1:2010, EN61010-2-032:210 EN61010-2-033:2012, EN61010-031:2015, EN61326-1:2013 EN61326-2-2:2013, EN61326-2-3:2013 |
| Classification and hierarchy standards | NACE Rev.2, ISO13373-2:2016 ISO14224:2006, MIMOSA™ |
| **Compatibility with CMMS software** | AIMMS / Atlantis, Coswin 8i®/Siveco Group |

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