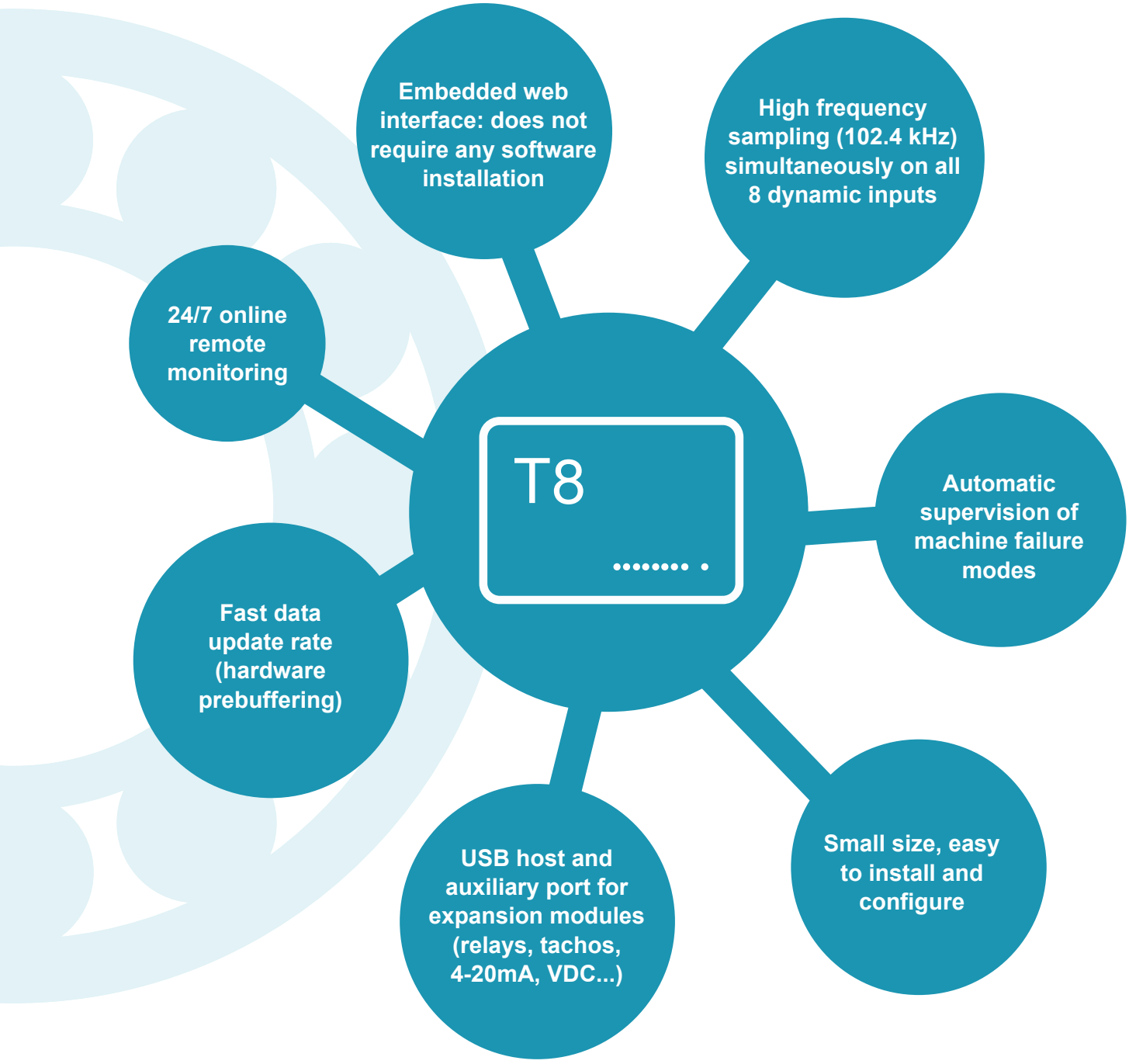
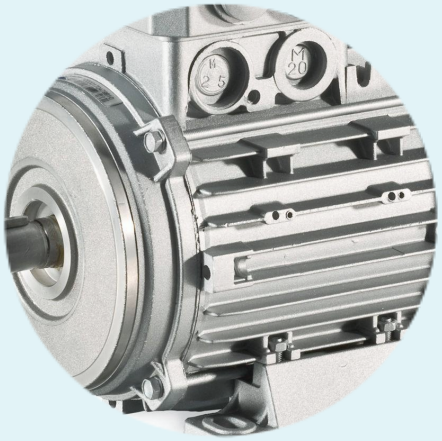
TWave

T8 Online Machinery Supervisor

New times. New tools.





Applications

- Pumps
- Fans
- Gear boxes
- Cranes
- Compressors
- Wind Turbines
- Gas and Steam Turbines
- Electric Motors

TWave T8 - Online Machinery Supervisor

TWave T8 is the ultimate monitoring solution. It is suitable for any predictive maintence technique and any type of industry

It provides information about the machine condition, its failure modes and its evolution over time, with an user friendly, intuitive and flexible interface.

TWave T8 automatically detects the machine states (running, stopped, start-up, high load, low load, etc.) and establishes different alarms for each of them. It is also able to monitor calculated parameters.

TWave T8 protects, supervises and diagnoses your machinery

Its powerful interface provides advanced tools for industrial machinery diagnosis, using a simple web bowser

T8 is a simple solution for supervising machinery. Its small size, low consumption, high processing power, storage capabilities, and embedded configuration and visualization interfaces, make the system very easy to install, operate and maintain, while keeping all the functionalities required by expert analysts or plant operators.

Main Benefits

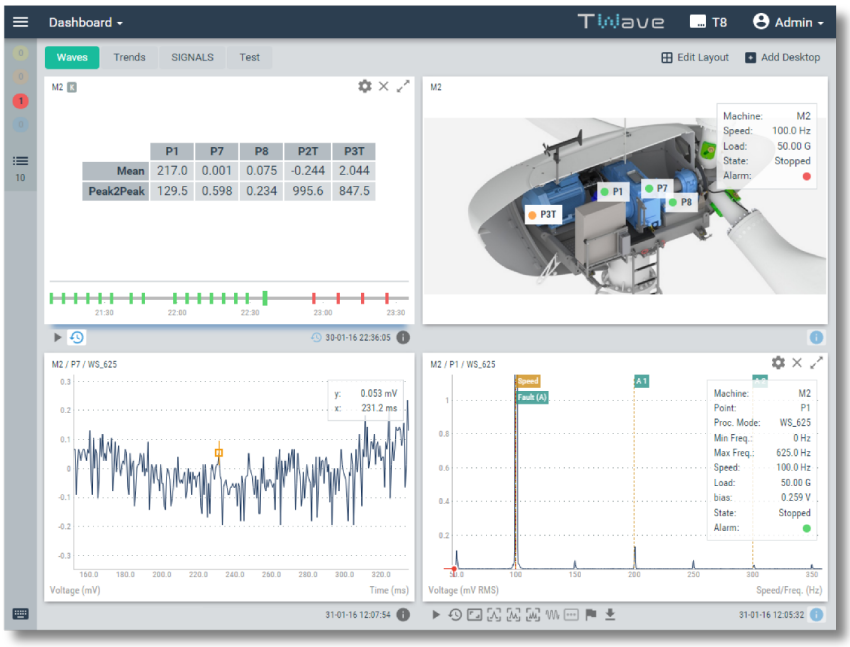
TWave T8 alerts of any failure modes being developed on the machinery, decreasing production downtime and maintenance costs.

- Increases productivity.
- Extends machinery lifespan.
- Optimises the periodic maintenance program.
- Reduces machinery maintenance expenditures.
- Reduces the cost of spare parts in stock.
- Keeps machinery health condition under control.

The Dashboard

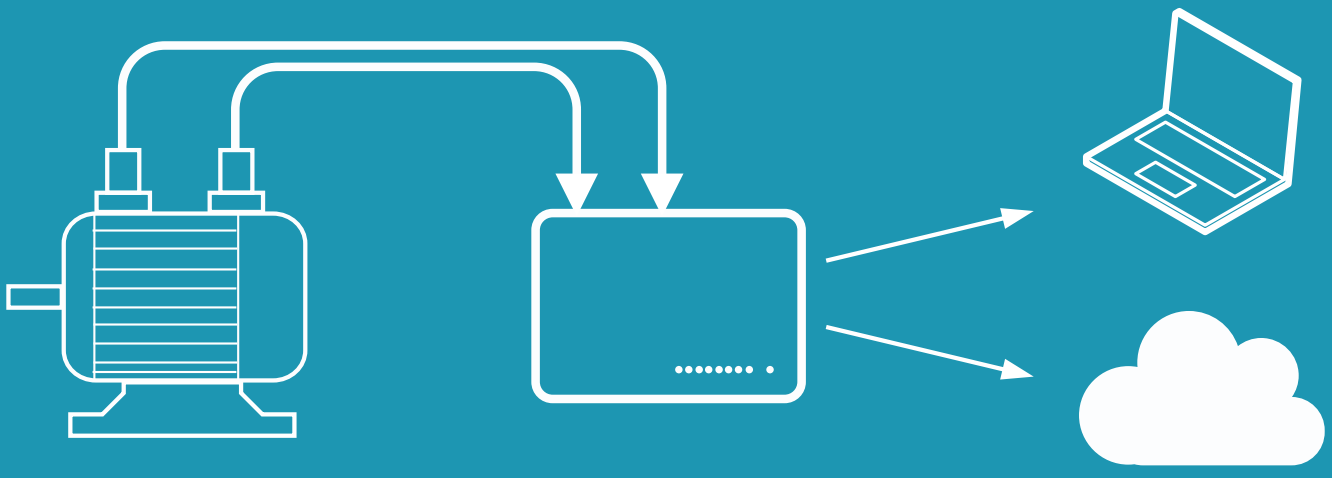
The visualization of the data acquired by TWave T8 is very flexible and intuitive.

The interface is composed of multiple desktops. On each of them the data is shown in independent windows called widgets, whose size and position can be easily defined by the user. The widgets provide all the graphic tools required for the plant operators and analysts.



All the data measured and stored on TWave T8 can be accessed directly from any web browser, and it is optimized to be used from remote locations using an internet connection. This gives several advantages:

- Eliminates the need for a local server, thus reducing installation and maintenance costs.
- No software licenses are required. The interface is embedded within the hardware, and can be accessed from any computer or mobile device using a web browser.
- Allows automatic upgrades of the system using a remote connection to the updating server.
- User friendly, flexible and intuitive interface, which accelerates the learning proccess. It allows the user to access all features from the beginning.
- Reduces the initial investment due to the simplicity of the monitoring system and its installation.



Smart Monitoring

TWave T8 has been designed to accomodate the real conditions of the industrial equipment.

- Evaluates the machine condition depending on its different states, avoiding false alarms.
- Measures all parameters continuously due to its internal buffering capabilities.
- Provides a flexible configuration of data storage based on time, alarm or machine status changes, and conditions defined by the user.
- Measures into a single value the energy contained in several spectral bands, and can combine different parameters using a predefined formula.
- Captures long waveforms based on user defined events and pretriggering options.
- Includes the most advanced demodulation techniques.

High Frequency Analysis

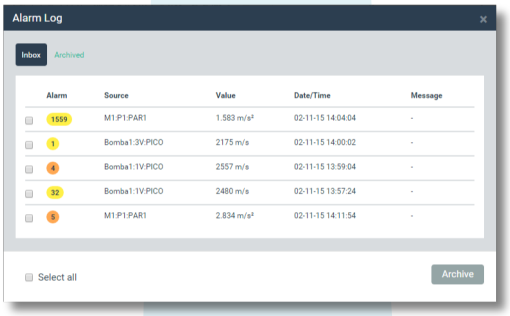
TWave T8 uses ultrasonic sampling rate (102.4 kHz) regardless of the machine speed, which allows detecting very short time spikes on the signal related to a faulty component, in both slow and fast speed machinery.

It also includes the heterodyne signal processing technique that allows ultrasonic frequency activity to be transported into an audible frequency range.

Alarm Register

TWave T8 registers any alarm and machine condition change into an alarm log.

The alarm log can show both the currently active and historical alarms. They can be sorted, acknowledged or deleted by the user.

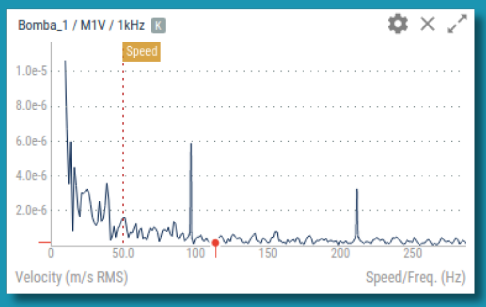


Graphs and Tools

TWave T8 includes all the kinds of graphs required for the analysis of the machine condition (spectrum, waveforms, orbits, trends, waterfalls, FIFOs, etc.).

Advanced functions are also included within each type of graph (single, harmonic and side-band cursors, zooms, peak detection, fault frequencies, etc.).

Stored data is represented using timelines, allowing a quick and easy access to historical data.

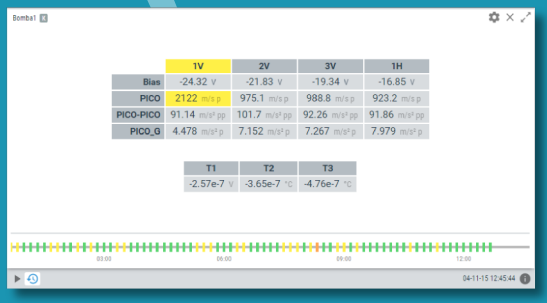


Parameter Monitoring

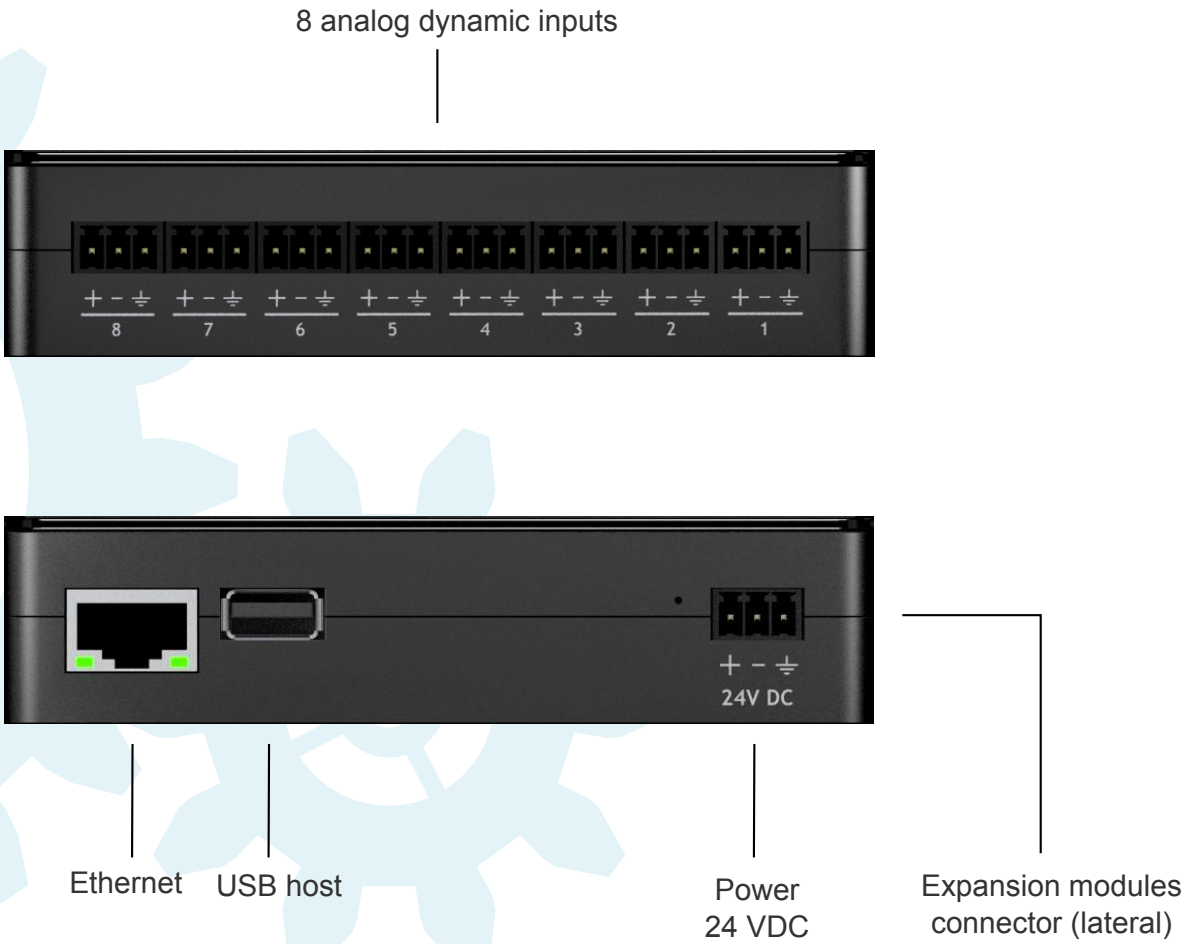
TWave T8 is constantly monitoring the machine condition by measuring different type of parameters (RMS overall values, spectral bands, Peak-Phase values, Peak and Peak-to-Peak values, Peak Extraction, Crest Factor, Kurtosis, Mean, DC), which provide early symptoms of machine faults.

These measurements can be easily supervised using the Widget called Parameter Matrix, which presents all parameters and its alarm condition into a single view.

Machine Health Matrix is provided through the combination of parameters via an user defined formula linked to each machine failure mode.



Instrument Connections



TWave T8 stands out from any other technology on the market

- **Low installation and maintenance costs** due to its simple architecture and reduced size.
- **Simultanous data acquisition** at high frequencies on all its 8 dynamic inputs.
- **Real time measurements** on all channels, regardless the sampling time required by any particular parameter, due to its buffering capabilties.
- **Does not require any software installation**, only a web browser is needed.
- **User friendly and intuitive interface** that facilitates the access to the information through multiple desktops, configurable layouts and Widgets.
- **Easy access** to historical data based on timelines interface.
- **Advanced diagnostic tools** optimized to facilitate the analyst work even through a remote access to the unit.
- **Accessible** from any operating system and device connected to the network (computer, tablet, mobile phone, etc.).
- **Flexible storage capabilities** allow users to define what data to store and when, by configuring conditions and events based on time, alarm change, machine state change, etc.
- **Automatic supervision** of machine failure modes.

Analog Inputs	
Number of analog channels	8
Simultaneous recording	8 Channels
Sampling rate	512 to 102400 Hz
Compatible sensors	Almost any kind of analog/digital voltage or current output sensor
DC range	±24 V
AC range	24 Vpp
IEPE sensors drive current	5.5 mA @20 V
Resolution	16 bit
Input configuration modes	Dynamic Analog, Static Analog, Digital, Pulse Train
Harmonic distortion	-70 dB
Accuracy	1%
Dynamic range	110 dB
Point types	Static, Dynamic, Tachometer

Signal Processing	
Spectral lines (bins)	100, 200, 400, 800, 1600, 3200, 6400, 12800
Time waveform samples	128 up to 8192
Window types	Hann, Hamming, Blackman, Rectangular
Processing modes	Waveform only, spectrum & waveform, demodulation, heterodyne
Filter types	Butterworth, Bessel, Chevyshev
Number of averages	1 up to 32
Overlap	0% up to 99%

System General Features	
Internal Storage (OS)	4 GB
Main CPU	ARM Cortex™-A9 Quad Core NVIDIA® Tegra™ 3
CPU clock	1.4 GHz
RAM	1 GB
Storage Capacity (Database)	4 GB
USB ports	1 Host
Status indicator	RGB LED
Analog channels indicator	8x Red/Green LEDs
Network communication	IEEE1588 Ethernet Gigabit
Power Supply	20-26 Vdc, 24 Vdc nominal
Power consumption	<7 W

Mechanical Characteristics	
Mounting	Standard 35 mm DIN rail
Size	119x95x28 mm
Optional sealed housing	IP 65
Temperature range	-30 to +65 ºC
Humidity	95% RH
EMI/EMC	EN55022:2011/AC:2012, EN61000-4-2:2010, EN61000-4-3:2007/A2:2011, EN61000-4-4:2005/A1:2010/CORR:2010, EN61000-4-5:2007/CORR:2010, EN61000-4-6:2009
Electrical security	UNE-EN 60950:2007

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A WAY TO MAKE EUROPE

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