

# VIGILANT

Powered by SDT

Online  
Condition  
Monitoring

Be Vigilant over  
your critical assets

- Ultrasound
- Vibration
- Temperature
- Tachometer
- Process

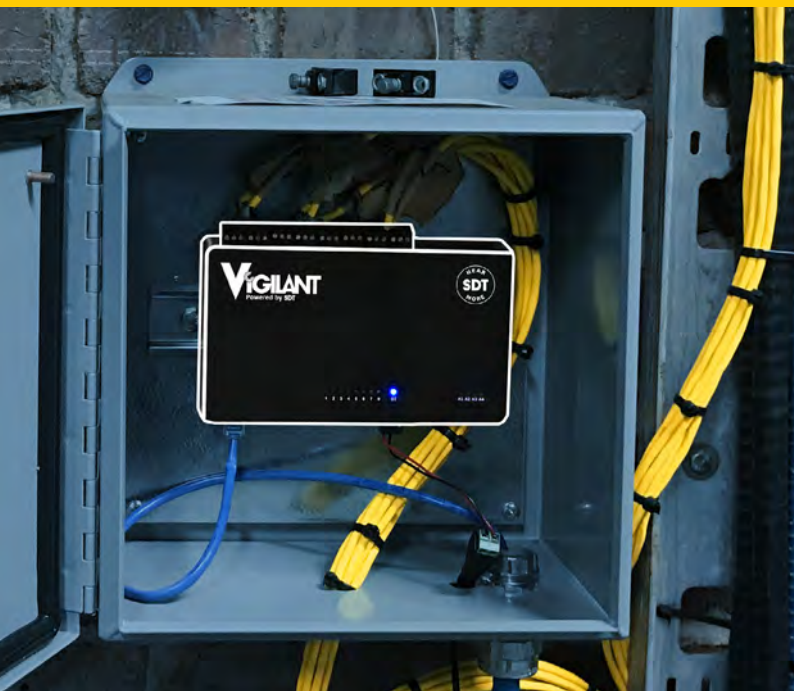


Ultrasound Solutions

[bevigilant.io](http://bevigilant.io)



**A turn-key condition monitoring solution combining the versatility of ultrasound, the analytics of vibration, standard communication protocols and an embedded trending and analysis software.**



### Configure Vigilant to any Critical Asset

Vigilant is a flexible data collection pod. Input any combo of eight ultrasound and vibration sensors and receive continuous feedback from your assets.

4 channels for Temperature, Tach and Pressure create an all-in-one solution for critical and guarded assets.

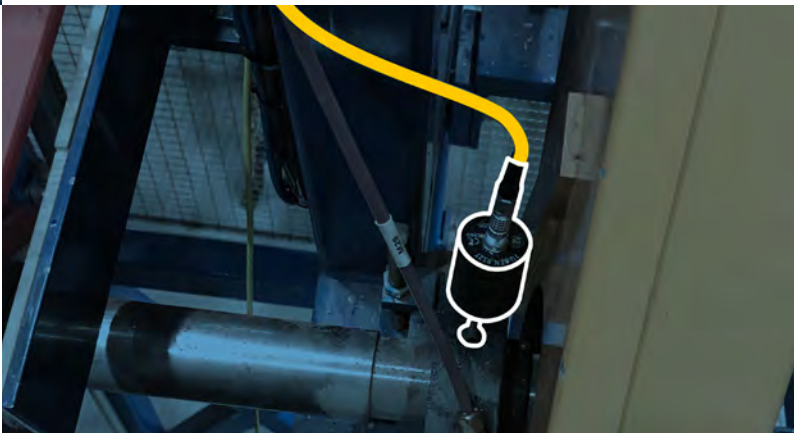
### Designed for COMMONSense

Vigilant accepts data from commonly available sensors including the COMMONSense Sensors from SDT, designed to provide repeatability in any industrial environment.



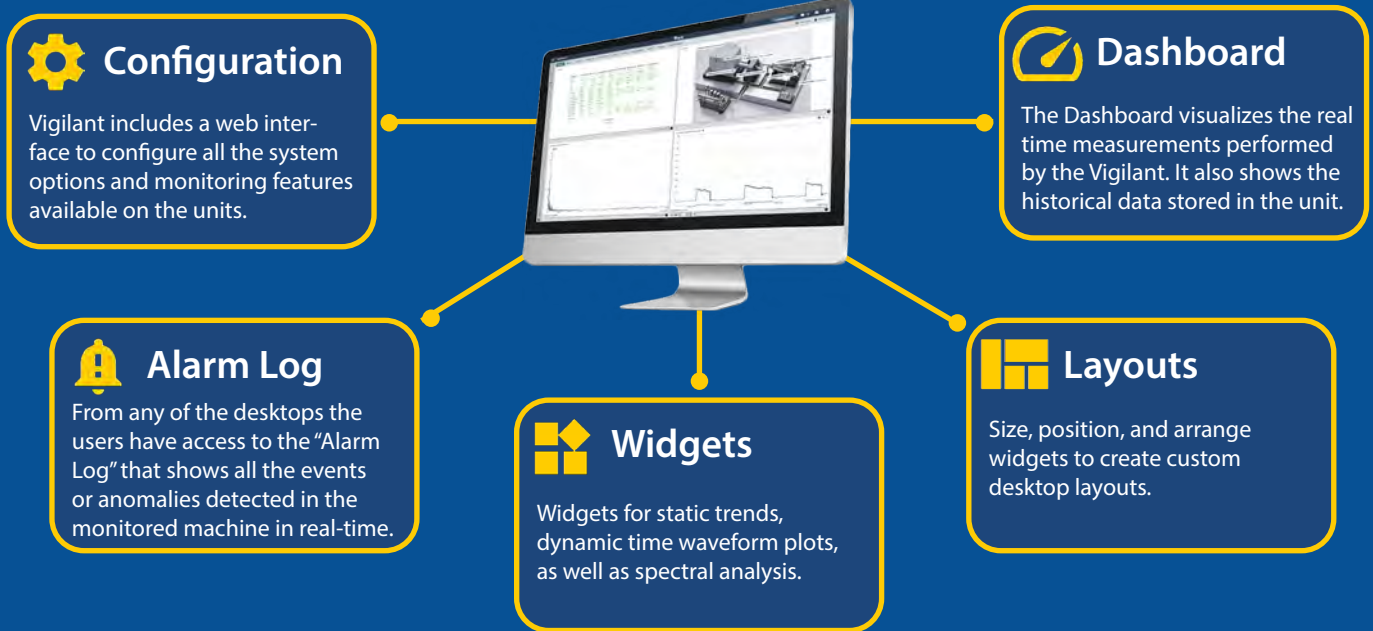
### Vigilant Highlights:

- 8 channels (Ultrasound or Vibration)
- 4 channels (Temp/Tach/Process)
- Embedded data management software
- Trends/Spectrum/Waveform/Waterfall
- Open communications protocol
- Static and Dynamic data



# Embedded Data Management Software

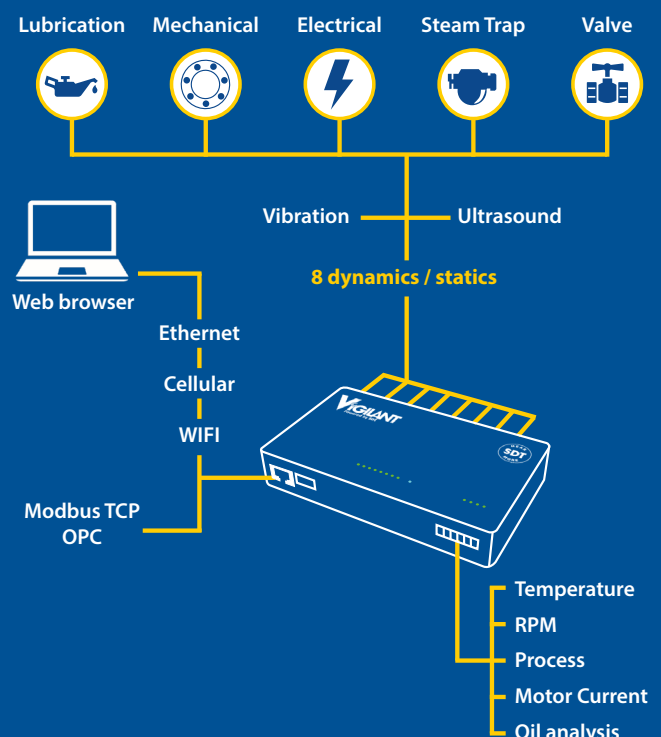
View the status of any asset from the security and convenience of your favourite web browser.



Vigilant manages both Static and Dynamic ultrasound data. This creates an opportunity to establish long-term trending, analysis, and diagnosis at the earliest point in the failure curve.

## Applications

- Early detection of rolling element bearing faults (especially in slow speed applications);
- Status of couplings on critical assets in limited access locations;
- Monitor guarded assets such as robotics or CNC machine centres;
- Lubrication status of roller bearings;
- Valves deemed critical to a process;
- Detection of partial discharge in electrical assets such as MCC panels and switchgear cabinets;
- Detection of friction or impacting in linear motion applications;
- Detection of turbulence produced by cavitation in pumps and valves;
- Detection of hydro-cyclones used in mining processes.



# Vigilant Hardware Versions

## Vigilant Permanent



- 8 high-speed (Dynamic) multipurpose analog inputs;
- 4 channels (Temp/Tach/Process);
- ICP power source available on all dynamic inputs;
- Ethernet TCP/IP communications;
- Powered at +24 Vdc.



## Vigilant Mobility

- Same function as Vigilant Permanent;
- Packaged in rugged, custom waterproof case;
- Designed to travel to off-site assets;
- Install on assets in alarm to closely monitor until planned shutdown.

## Technical Specifications

General		Signal acquisition	
Function	Permanent acquisition device		Main inputs
Main dynamic inputs	8 channels (ultrasound & vibration)	Sampling rate	512 Hz to 51.200 Hz
Auxiliary static inputs	4 channels (static & tachometers)	DC range	± 24 V
USB ports	1 Host	AC range	24 Vpp
Analog channels indicator	12x Red/Green LEDs	IEPE Sensors drive current	5.5 mA @20V
Power supply	20-26 Vdc, 24 Vdc nominal	ADC resolution	16 bits
Power consumption	<12W	Input configuration mode	Dynamic, Static, Digital, Pulse train
System features		Harmonic distortion	-70 dB
Operating system	Dedicated webserver application	Accuracy	1 %
CPU	ARM Cortex™-A9 Quad Core (NVIDIA® Tegra™ 3)	Dynamic range	110 dB
Storage capacity	4 GB	Gain	1 to 128
Network interface	IEEE1588 Ethernet 10/100 (WIFI/Cellular using an optional module)	Points type	Dynamic, Static, Tachometer
Communication	MODBUS TCP & OPC UA	Auxiliary inputs	
Mechanical features		Sampling rate	Up to 200 Hz
Mounting	Standard 35 mm DIN rail (plug&play mobility case in option)	DC range	± 24 V
Size	162.2x95x27 mm	ADC resolution	16 bits
Weight	0.42Kg	Power output	+24 V
Operating temperature range	-30°C to +44.5°C, non-condensing	Input configuration modes	Static, Digital, Pulse Train (A1 and A2 only)
Humidity	95% RH	Accuracy	1%
		Gain	1 to 32
		Points type	Static, Tachometer
		Signal processing	
		Spectral lines	Up to 12800 bins
		Time waveform samples	128 up to 262.016 ksp
		Windows type	Hann, Hamming, Blackman, Rectangular
		Processing modes	Waveform, Spectrum & Waveform, Demodulation, Long Waveform, Demodulation, Long-Waveform
		Available filters	Butterworth, Bessel, Chebyshev

## SDT Mission

SDT provides ultrasound solutions that help our customers gain a better understanding about the health of their factory. We help them predict failures, control energy costs, and improve product quality while contributing to the overall reliability of their assets.



**Ultrasound Solutions**

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