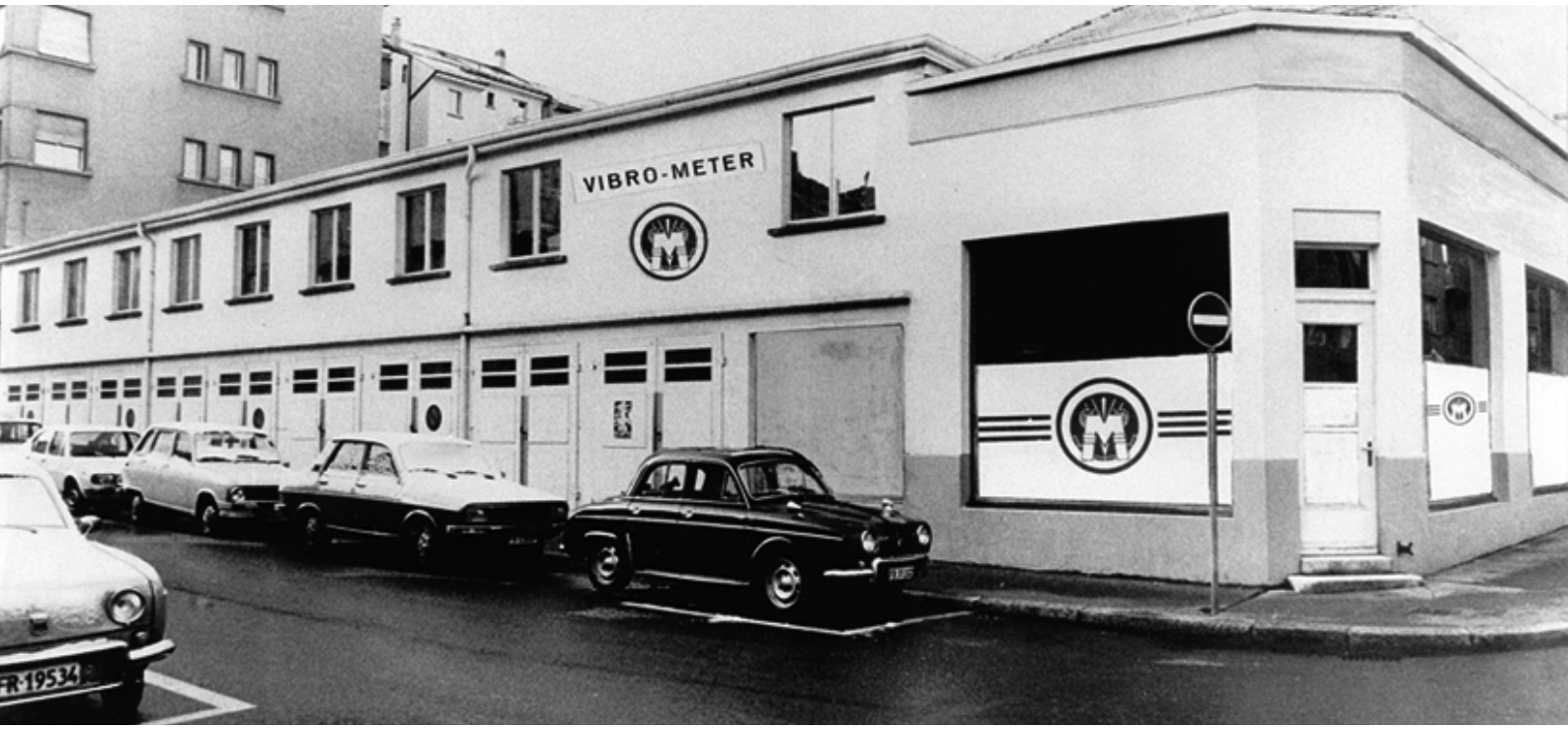
vibro-meter

Parker MEGGITT

vibro-meter solutions portfolio

Test cells & engine overhaul applications



Parker Meggitt engine and vibration monitoring systems have been used on almost all commercial aircraft and engines since 60 years.

Parker Meggitt engine and vibration monitoring systems have been used on almost all commercial aircraft and engines since 60 years. We design and manufacture high-end transducers systems for aircraft and rotorcraft applications, which are qualified for engines and airframes vibration analysis.

We are now addressing some critical aspects related to aero engines overhaul, providing trustable solutions to our customers.

Parker Meggitt supplies complete measuring chains as well as single components.

Our portfolio includes piezoelectric accelerometers, cables, charge converters and monitor systems. Some key features worth reporting:

- Millions of hours MTBF
- High temperature capability from -70°C to +815°C
- The legacy: all products shown herein benefit from more than 70 years' experience
- No maintenance required for our vibration measuring systems

all this experience on our on-board equipment is now available on the ground on your engine test benches through a line of products designed for vibration measurements.

Parker Meggitt sensor range can be used with our monitoring system hardware and software (or third-party systems) in order to provide complete solutions for engine vibration characterization and monitoring, and critical plant protection

The VM600 Mk2 is our centralized and modular architecture monitoring system with a high channel density that addresses even complex installations. Dynamic inputs from proximity probes, accelerometers, velocity and dynamic pressure sensors are fed into standard 19-inch, 6U racks. These signals will be used to automatically trip a machine when it exceeds pre-determined alarm set points.

VibroSight software is our fast, powerful and user-friendly software that enables the acquisition and processing of vibration measurements on your test bench. It can collect data from Parker Meggitt VM600 rack or Vibrosmart distributed modules, and communicate with third-party systems via Modbus, OPC or CSV files.

VibroSight is suitable for the most stringent test bench applications with continuous data acquisition even on short events, guaranteeing a very high level of operational safety and increased cyber security.

Test rig vibration protection

The application origins from customer need to provide safety and cost efficiency to test rigs. The use of Parker Meggitt protection system allows to avoid catastrophic engine failures and test rigs major damages as real time alarm and relays are promptly available.

These are the solution elements:

Accelerometer

Parker Meggitt manufactures a series of high-temperature, piezoelectric-based accelerometers designed for long-term measurement and monitoring of absolute vibration in the most critical environments. High Temperature sensors require external signal conditioners to convert the charge signal (pC/g) output into voltage such the IPC707 with automatic sensor fault detection function.

VM600Mk2 rack system

Designed to centrally process a wide range of dynamic inputs coming from a variety of critical assets such as high-value rotating machines, the equipment is now improved and customized to safeguard test facilities and overhauled engines. It features high resolution in frequency and time, extreme reliability and fast response time.

Protect: test rig protection set up

VibroSight Protect is a software tool exclusively dedicated to the configuration and commissioning of the test rig protection layout. It has been designed to guide the user through the configuration of all the protection chain components: input channels, processing functions, alarms, logical functions and relays.

Unbalance detection and calculation

Unbalanced rotating parts are a great origin of vibrations and noise. On an airplane it leads to passenger discomfort, it may anticipates bearings ware out and premature engine maintenance.It is possible to detect rotating parts unbalance before commissioning or during maintenance in terms of phase and amplitude thanks to tracking filter technics.

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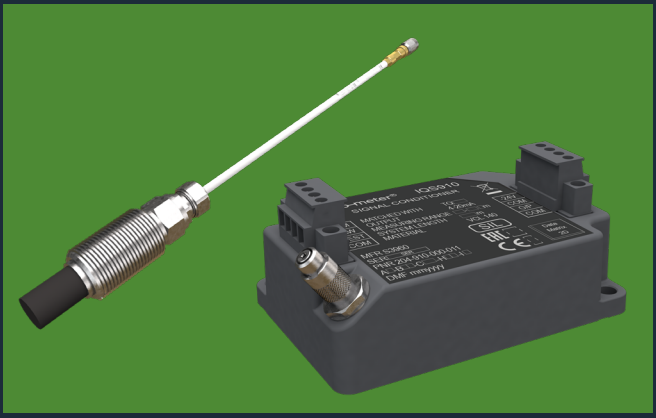


The phase reference signal

A TQ-based measurement chain consists of a proximity sensor, an optional extension cable and an IQS signal conditioner, configured for the particular application. The signal conditioner is required to perform all required signal processing and provide a current or voltage signal suitable for transmission to the monitoring system. TQ-based measurement chains can measure rotational speed and/or provide phase reference (1/REV pulse) signals.

VM600Mk2

Multiple accelerometers and tachometers inputs, highly performant computation capability, wide frequency and high dynamic, analog and digital outputs are the features required to perform single and multi-plane unbalancing calculation.

Data visualization & analysis

VibroSight Vision offers easy to use and advanced data handling and visualization capabilities for fast and accurate vector analysis with or without angle compensation.It includes a complete catalogue of plots with cursor synchronization that allows all of the information relevant to balancing with highly performant and fast calculations capability, in real-time as well as post event analysis

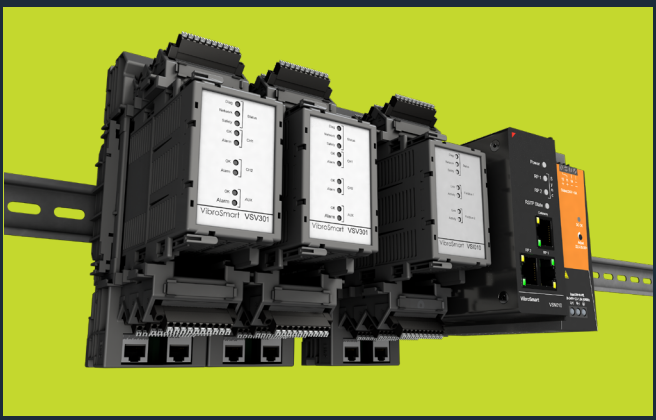
Engine qualification & overhaul

After hauling and maintaining the engine and its accessory gearboxes an acceptance run is completed. Only a certain level of vibration is accepted by engine manufacturers. Parker Meggitt can help on this precise and accurate measurement activity.

These are the solution elements:

Accelerometers

Engine onboard sensors and additional external units can be easily managed, detected, conditioned and their signals acquired without difficulties. Parker Meggitt offers a wide range of high temperature accelerometers and pressure sensors, suitable for permanent monitoring, diagnostics or R&D.



VSV301

VibroSmart is a comprehensive protection system, it includes: data acquisition and protection, relays, logical functions and analog outputs. System can grow as monitoring or protection needs become more and more important, or new safety requirements become required.

Capture: visualization and analysis software

VibroSight capture allows the user to configure the acquisition, processing and data analysis without impact to the machinery protection function. Visualization is user friendly and empowered by performing features in time, frequency and dynamic range. Thanks to high resolution is possible to display and reveal every detail. The software includes fine tuning, database logging and data import and export.

About us

Meggitt pioneered high performance sensing and condition monitoring solutions for extreme environments. After working with the world's turbine manufacturers for more than 60 years, Meggitt through vibro-meter portfolio remains master of all aspects of the condition monitoring and machinery protection disciplines.
From high performance sensing, data acquisition and management to the high speed digital networking and the signal processing algorithms that can deliver diagnostics for prescriptive maintenance solutions.

Meggitt PLC

Headquartered in the United Kingdom, Meggitt PLC is an international group operating in North and South America, Europe and Asia. Known for its specialised extreme environment engineering, Meggitt is a world leader in aerospace, energy and defence markets.
An 11,000-strong workforce serves customers from around 40 manufacturing facilities and regional offices worldwide.

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