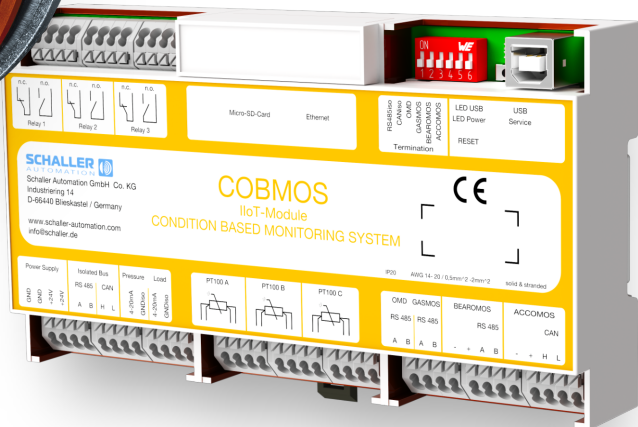


ACCELERATION MONITORING SYSTEM



Real-Time Vibration Monitoring for Early Damage Detection.

Your Benefits at a Glance

ACCOMOS is a fast, sensitive, and reliable sensor for vibration analysis in large engines.

With ACCOMOS, you benefit from:

- Valuable insights into the operating condition through vibration monitoring
- Very easy installation
- Measurement of engine vibrations according to DIN 10816-6

Why ACCOMOS?

ACCOMOS monitors the vibration behavior of large engines to detect critical changes in the machine condition at an early stage. Vibrations are considered one of the most reliable early warning indicators, as deviations in vibration patterns can directly point to mechanical, thermal, or operational changes — such as emerging bearing damage, imbalance, misalignment, or combustion irregularities.

To keep evaluation effort low while still enabling meaningful analysis, ACCOMOS operates within a deliberately limited frequency range. This range is wide enough to capture relevant frequency profiles under load, yet narrow enough to reduce data volume and complexity. This al-

lows vibration assessment in accordance with DIN 10816-6, the recognized standard for vibration monitoring of large combustion engines.

By using intelligent algorithms through its connection to the COBMOS MODULE, ACCOMOS detects even the smallest changes in vibration behavior at an early stage. In addition, vibration data can be combined with information from other sensors to filter out non-critical changes and more accurately determine the relevance of actual condition deviations.

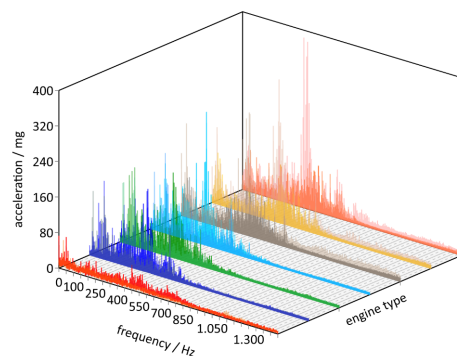
Technical Background

Vibration sensors enable continuous monitoring of the dynamic operating behavior of machinery. Every rotating machine — such as large engines, pumps, or gearboxes — generates a characteristic frequency spectrum or frequency profile during operation. This profile is closely linked to the respective operating conditions, particularly rotational speed and engine load. As a result, each machine develops a typical vibration pattern, comparable to a fingerprint, that describes normal operation across different load conditions.

Even small deviations from this characteristic vibration fingerprint can indicate the onset of functional irregularities.

For identifying this characteristic fingerprint, a measurement range from 0 to 3 kHz is often sufficient. Within this frequency range, the essential mechanical vibration components of many machines are present. This allows ACCOMOS to reliably monitor machine condition without requiring high-resolution, high-frequency measurements.

The significance of vibration analysis can be further increased by combining vibration data with additional sensor signals. When other Schaller Automation sensors are included in the evaluation, the measured frequency profile can be clearly assigned to a specific operating condition. This makes it possible to distinguish normal load changes from actual functional faults.



Vibration profiles of different engine types

Features of ACCOMOS & the COBMOS MODULE

The data analysis performed by the COBMOS MODULE can provide the following information:

- RMS values of all three axes
- Peak values of all three axes
- Maximum values of RMS and Peak

Who Is ACCOMOS Designed For?

ACCOMOS is designed for companies that need a simple, reliable, and cost-effective way to monitor the condition of rotating machinery. While the system was originally developed with large combustion engines in mind, its capabilities make it relevant far beyond traditional engine applications. Wherever mechanical components such as bearings, shafts, couplings, gearboxes, pumps, compressors, generators, or electric motors are exposed to vibration, ACCOMOS can provide valuable condition information.

One particularly interesting target group is operators of industrial machinery with a large installed base of rotating equipment. In industries such as manufacturing, chemical processing, steel, cement, paper, water and wastewater treatment, and logistics, unexpected machine failures can lead to significant downtime and maintenance costs. ACCOMOS can be used as an easy-to-install monitoring solution to detect abnormal vibration behaviour at an early stage.

ACCOMOS is also well suited for applications where conventional condition monitoring systems are considered

too complex or expensive. Its compact design and straightforward installation make it particularly interesting for brownfield applications, where existing machines need to be equipped with monitoring capabilities without major modifications. This allows operators to gradually introduce condition monitoring across their machinery fleet.

Potential applications include electric motors, pumps, compressors, industrial fans, gearboxes, generators, conveyor systems, and turbines. Wind energy and hydropower are also promising fields, as vibration monitoring can help identify mechanical abnormalities in critical components such as bearings, gearboxes, generators, and drive trains.

So ACCOMOS is designed for companies that want to move from reactive maintenance toward condition-based maintenance without having to implement a complex monitoring infrastructure. It is especially valuable wherever early detection of mechanical problems can reduce unplanned downtime, improve maintenance planning, and increase machine availability.



Installation & Retrofit

ACCOMOS can be mounted easily and at any location on magnetic surfaces. The very strong magnets on the underside of ACCOMOS ensure a secure hold, even on machines with high vibration levels.

The COBMOS MODULE is installed on a DIN rail inside an electrical cabinet and connected to ACCOMOS. When integrated into an existing network (LAN), the integrated web server can be accessed, and with an active internet connection, the COBMOS HUB can also be used.

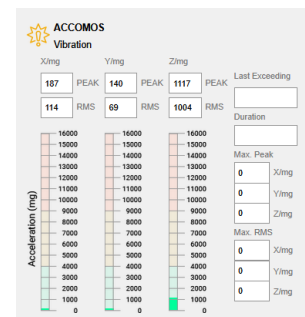


Installation example of the ACCOMOS

COBMOS MODULE – Integrated Web Server & COBMOS HUB

On the dashboard of the integrated web server of the COBMOS MODULE, the following information is displayed:

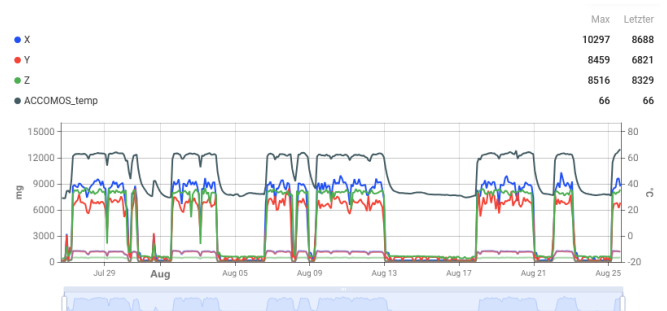
- RMS values of all three axes
- Peak values of all three axes
- Maximum RMS and Peak values



Dashboard example from internal webserver of COBMOS MODULE

With an active internet connection, measurement data can be transmitted from the COBMOS Module to the COBMOS HUB via MQTT. This enables clear visualization of data and the display of time-based developments in meaningful trend graphs. By observing changes over time in relation to operating conditions, deviations in vibration behavior can be easily identified.

The application allows users to create their own dashboards, enabling personalized views tailored to individual requirements.



Dashboard example from COBMOS HUB

Technical Data

Mechanical Data	
Dimensions (Ø)	Ø89,5 mm
Total length	39,5 mm
Connection	magnetic
Weight	400 g
Electrical Data	
Power supply	9...36 V DC
Related voltage	24 V DC
Current consumption	max. 0,11 A
Cable Connection	1 x M8 connector, 4-pin
Interfaces & Communication	
Communication interface	RS485 (galvanic isolated) CAN (galvanic isolated)
Recommended communication cable	CANbus / DeviceNet specification 2x AWG 24/19 + 2x AWG 22/19
Environmental Conditions	
Operating Temperature	-25...85 °C
Storage Temperature	-25...85 °C
Maximum vibration for the device in compliance with approvals	5...13,2 Hz 1,6 mm Peak 13,2...100 Hz 40 m/s ² Peak
Relative humidity	0...95 % rF
Protection class	IP 67





Safety for you and your engine: Worldwide!

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