



smartAlpha™ Condition Monitoring for Maritime Applications

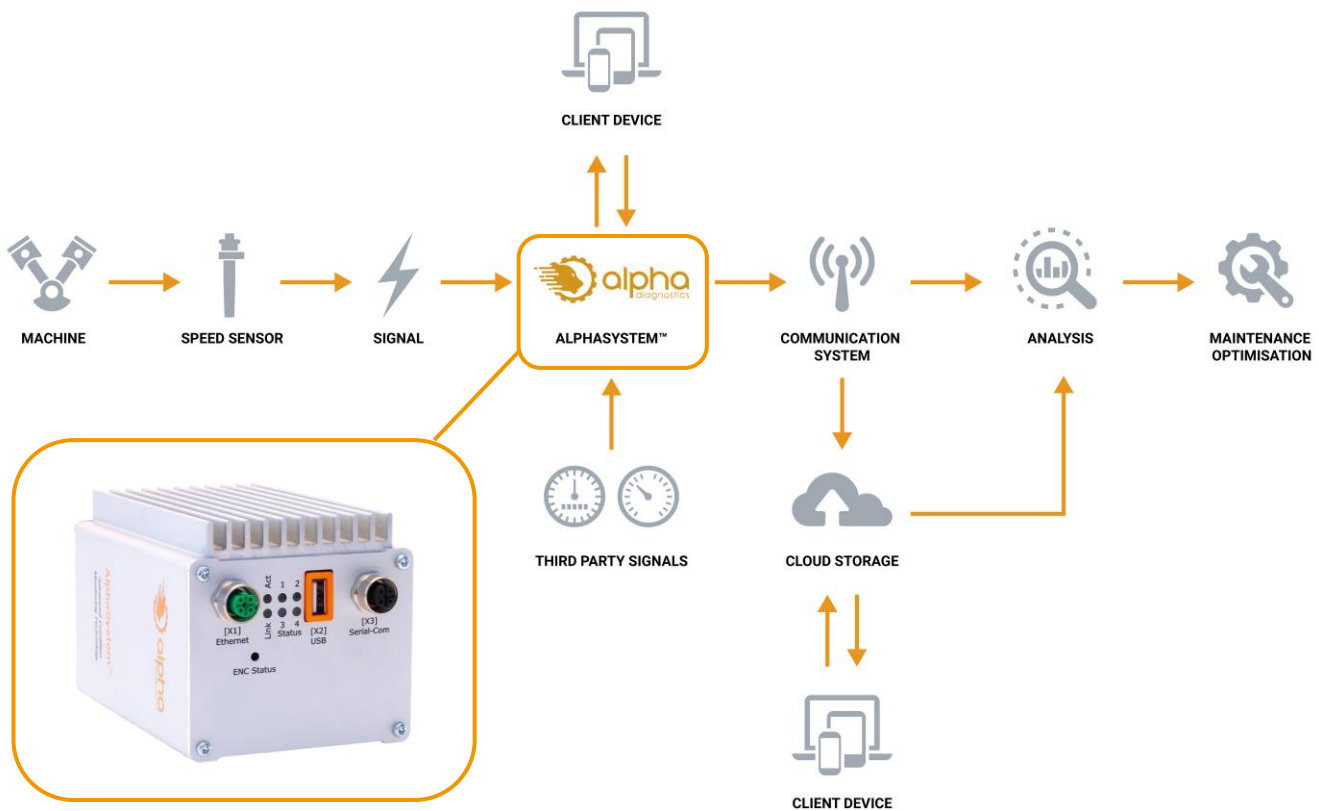
Keep fleets on the move with a diagnostic solution for main engines, auxiliaries and other equipment

alphadiagnostics.ch



System Architecture

Based on the analysis of instantaneous speed of the machine, smartAlpha™ is a plug and play solution which detects anomalies within minutes. Multiple extension modules allow the integration of additional condition data to form a powerful monitoring platform.



The alphaCloud™ dashboard allows users to easily visualize the diagnostic data collected by smartAlpha™ devices:



Main & Auxiliary Engine Monitoring



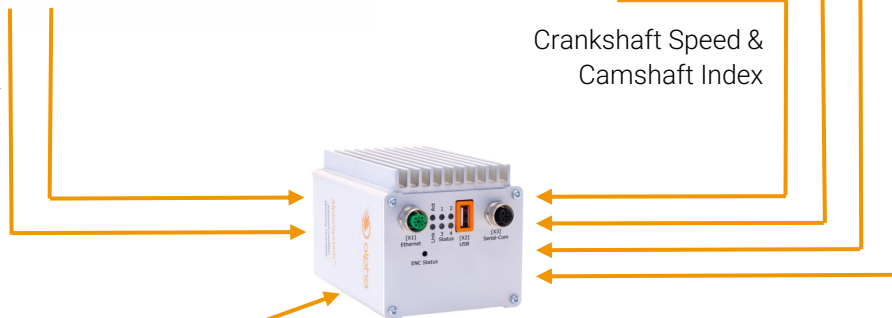
(example configuration for vessel with 1 main engine & 2 aux engines)



Crankshaft Speed & Camshaft Index

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Ethernet

Remote Access

smartAlpha™ is non-intrusive and easy to retrofit. Existing speed sensor signals can often be used.

Engine diagnostic features

- Engine health indicators are provided graphically and/or numerically.
- Various cylinder-specific indicators for combustion and over-/underpower issues.
- Requires only 2 speed sensor signals per engine.
- Works with 2-stroke and 4-stroke engines of all manufacturers and with all fuel types.
- Easy integration into existing IoT environments.

Further applications

Due to its modular architecture, monitoring the condition of a vessel's main and auxiliary engines is not the only function smartAlpha™ provides - it also allows crews to monitor other equipment:

- Turbochargers
- Bearings
- Electric motors and generators
- Pumps

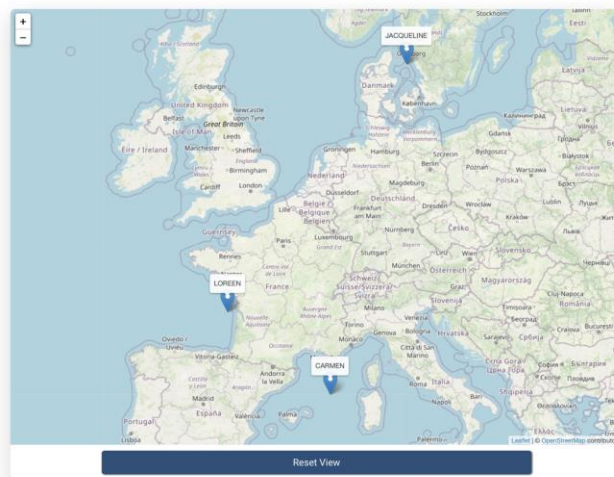
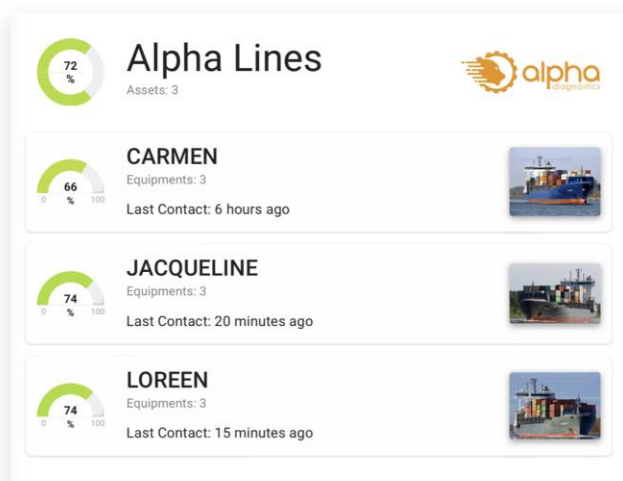
The product can also be used for torque and shaft power measurement.

Please contact us for more information on these features.

Fleet-wide Trend Analysis

Monitoring the condition of an entire fleet offers the advantage of being able to compare performance and condition data from multiple engines and analyse trends.

smartAlpha™ can easily interface with a variety of IoT platforms for data collection and visualisation. As condition indicators are generated locally on the vessel, results can be easily transferred via limited bandwidth networks.



Business Benefits

- Early detection of impending failures
- Avoidance of unnecessary shutdowns
- Quick ROI and reduced energy cost
- Easy retrofit on all vessels
- Significant savings due to targeted maintenance
- Extended and optimised propulsion system lifetime
- Easily expandible with extension modules
- Support for predictive and condition based maintenance strategies.



ALPHA DIAGNOSTICS LTD

Christoph Merian-Ring 11 • 4153 Reinach, Switzerland
Tel: +41 61 511 32 40
info@alphadiagnostics.ch
www.alphadiagnostics.ch

