

CAN bus Interface

Data acquisition with OROS 3-Series analyzers



OROS 3-Series Analyzers



The CAN bus

Introduction

Modern cars process more and more real-time information in order to manage the vehicle dynamic behavior, optimize the engine operation as well as to control the air conditioning. These information are transmitted through a dedicated bus: **the CAN bus**. Many transducers emit on the CAN bus. These information are most of the time related to the structure or engine dynamic, measured with a classical noise and vibration analyzer. For vehicles or components tests the CAN data are sources of parametric data (Time, RPM, Torque, Temp, Throttle value, etc.) that complete measurements.

The reliability and immunity of the CAN bus (developed by Bosch in the 1980's for the automotive industry) makes this bus convenient for field and industrial applications. The CAN bus is now widely used for the **transmission of parametric sensors data** in aerospace, process control and factory automation.

OROS, as a specialist of measurement systems for automotive, aerospace, energy and process industries, offers an **integrated CAN BUS data acquisition as an option of the 3-Series analyzers range**.

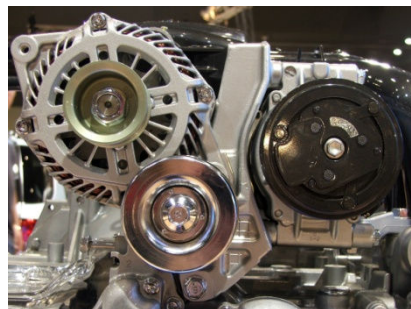
Industries

- > Automotive
- > Aerospace
- > Energy & Process



Machines

- > Engines
- > Service devices
- > Vehicles
- > Brake systems
- > Power Gen Diesels



Applications

- > In-vehicle testing
- > Automotive supplier component test
- > Parameters acquisition on machining optimization
- > Jet engine maintenance

Main Features

- > Record and analyze CAN info synchronously with dynamic inputs
- > CAN probe directly connected to the analyzer
- > Rugged and light CAN probe, can be placed in the engine compartment
- > Real-time display of CAN data (vu-meter, profiles)
- > Stand-alone recording
- > Setup 100 % controlled from NVGate software
- > Waterfall reference (Z axis) from CAN acquisition (Time, RPM, Torque, Temp, etc.)
- > Real-time and off-line data processing.
- > Back-plane plug. No loss of dynamic nor parametric inputs

The main advantages of using the CAN bus are **the measurements' setup time and cost reduction**. The setup of the transducer into the machinery under test is **reduced to zero** as they are already installed and calibrated. The cost of the transducers is also reduced to zero as they are already embedded in the unit under test.

Using CAN bus data is also a way to **access the internal parameters** which are difficult to gather with classical transducers. This is the case with the cars or power diesel engines rotation speed. For order analysis the RPM acquisition is compulsory. Using the CAN bus interface allows you getting easily these data into the OROS 3-Series analyzer for real-time, recording and post processing analyses.

Description

The CAN bus interface/data acquisition comes as an option of the OR36 and OR38 multi-analyzers/recorders.

It is a **combined hardware and software option**.

Hardware

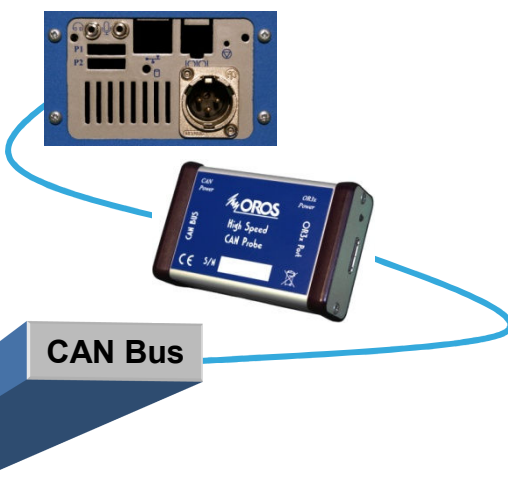
The CAN bus interface is composed of:

- > An acquisition board, integrated in the OR36 or OR38,
- > A high speed serial cable (1 or 5 m),
- > A CAN-Probe with impedance adaptation.

Software

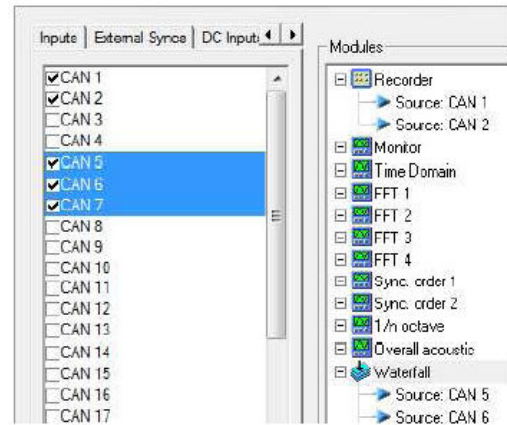
NVGate[®], the software platform for the OROS 3-Series analyzers accommodates the CAN interface and its data acquisition option.

The 24 CAN channels are activated and set like all other analyzer's input types. The **ergonomic drag & drop to the plug-in analyzers** allows processing the CAN data like a standard parametric or tachometer input.



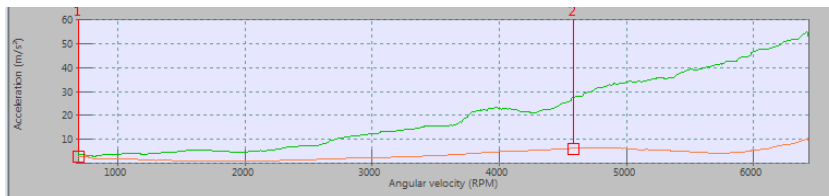
The CAN data can be used for:

- > Recording
- > Vu-meter (analog & digital)
- > Time profiles
- > Waterfall ref (Z axis)
- > Level trigger
- > Logical trigger
- > RPM
- > RPM & Delta RPM trigger
- > Comments in reports



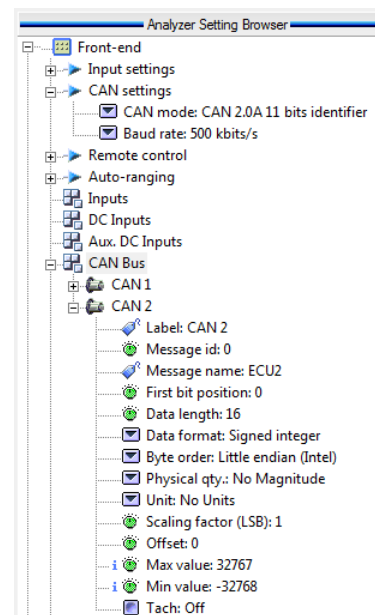
Order analysis with RPM Data from CAN-Bus

The rotating speed acquired from the CAN bus can be used for order analysis; each CAN bus channel can be converted into a tachometer that becomes available for any display, analysis or recording purpose.



The CAN-tachometer can be used as:

- > Reference axis for 3D (Waterfalls) & 2D (profiles) plots
- > Reference for order extraction from the waterfall
- > Reference for Constant band tracking (CBT) extraction
- > Re-sampling clock for synchronous order analysis (SOA)
- > Source for combined and fractional tachometers



Ordering Information

ORNV-CAN

CAN- bus hardware interface and software components for OR36 & OR38.
Includes one OR36/8-CAN-PR

OR36/8-CAN-PR

High speed CAN bus probe for OR36 & OR38 analyzers

ORNV-FFT

Real-time FFT plug-in analyzer

ORNV-ORD

Real-time synchronous order plug-in analyzer

OROS, Leadership through Innovation

About Us

Now approaching 30-years in business, OROS' designs and manufacturing have been renowned for providing the best in noise and vibration analyzers as well as in specific application solutions.

Our Philosophy

Reliability and efficiency are our ambition everyday. We know you require the same for your measurement instruments: comprehensive solutions providing performance and assurance, designed to fit the challenges of your demanding world.

Our Emphasis

Continuously paying attention to your needs, OROS collaborates with a network of proven scientific affiliates to offer the latest of the technology, always based on innovation.

Worldwide Presence

OROS products are marketed in more than 35 countries, through our authorized network of representatives, offices and accredited maintenance centers.

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