

TechNote #CM5 VIBSCANNER®

Orbit measurement with the signal adapter VIB 8.747 and the manual channel switch VIB 5.445*

Brief description

This technical note describes how VIBSCANNER can record the relative shaft vibration (orbit) of an aggregate (here: gas turbine) using the signal adapter VIB 8.747. The sensor signal is measured on the buffered outputs of a Bently Nevada machine protection system (3300 series).

Advantages

Quick and easy check of the turbine condition using an orbit measurement. This provides the maintenance staff with accurate information on which to base further maintenance decisions.

Measurement object

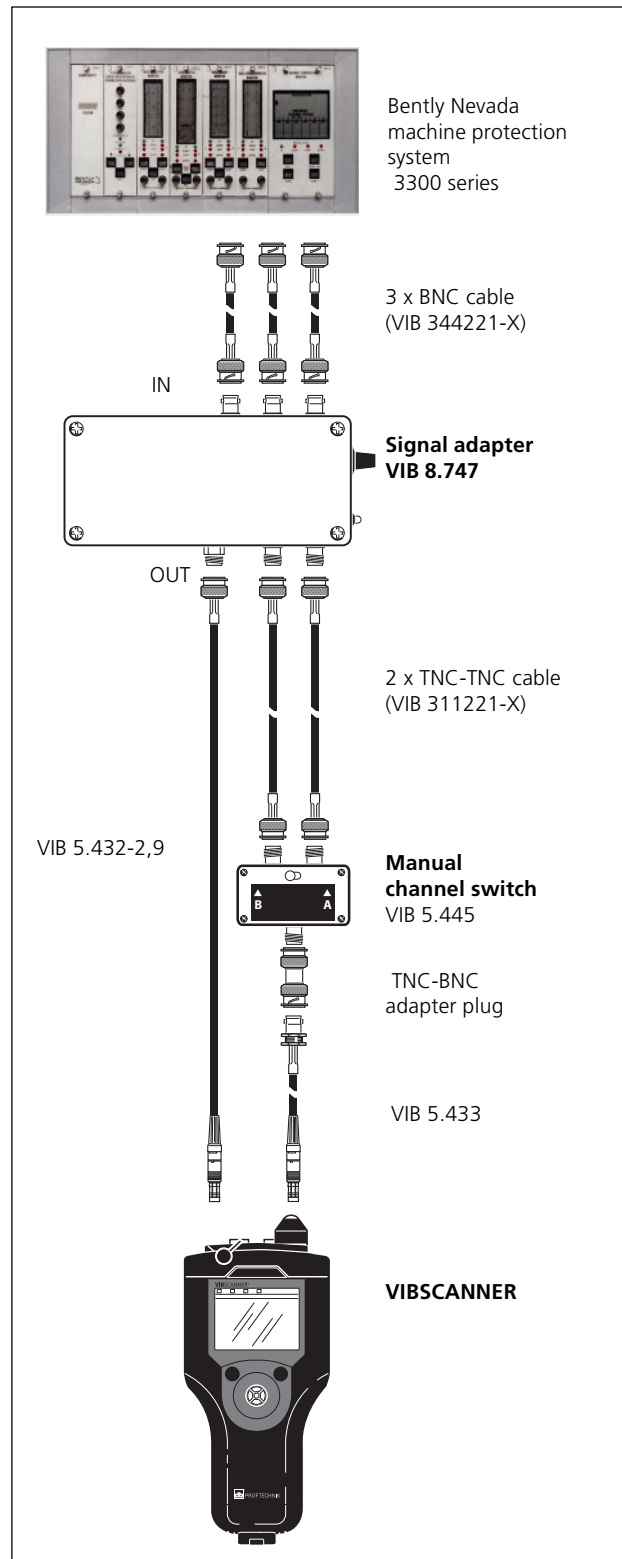
Gas turbine: Type GE Frame 6
 Output: 38 MW
 Site: Combined cycle co-generation site

Measurement configuration

The sensors and machine protection system have already been installed.

Signal adapter IN:
 Connect 3 BNC cables to the Bently Nevada measurement amplifier (3300 series).
 One channel for the trigger signal, two channels for the signals of the shaft vibration sensors.

Signal adapter OUT:
 Connect the trigger cable (VIB 5.432-2,9) to the VIBSCANNER digital input.
 Connect two TNC-TNC cables to the channel switch (VIB 5.445). Connect the channel switch with a TNC-BNC adapter plug and the VIBSCANNER cable for small signal voltage (VIB 5.433) to the analog VIBSCANNER measurement channel.



* Application with automatic channel switch (VIB 5.446) is described in TechNote CM3.

Measurement

Select orbit measurement, and open the sensor setup.

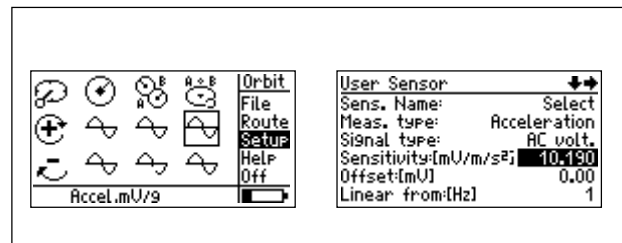
Select user-defined (voltage) sensor, and enter the parameters for sensitivity, frequency range, and offset. Note the specification of the signal adapter and measurement amplifier.

Start measurement:

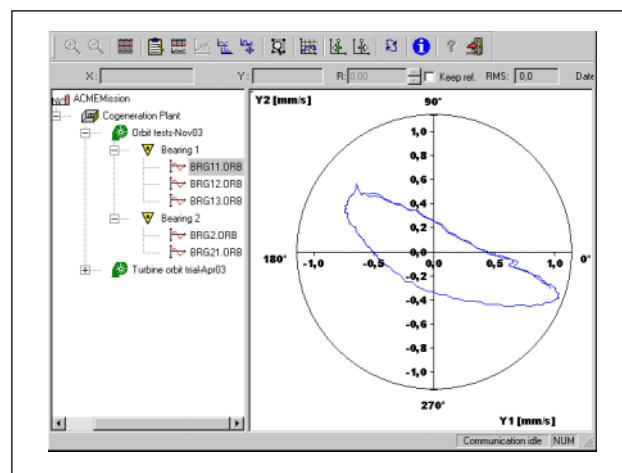
- RPM measurement and stability check via the trigger channel.
- First signal measurement via channel A.
- Measurement channel is changed
- RPM is checked.
- Second signal measurement via channel B.

Save the measurement and load the result in OMNI-TREND using 'Multimode-Import'.

The following example shows a typical shaft movement (orbit) of the gas turbine mentioned above.



Settings in VIBSCANNER



Evaluation in OMNI-TREND



Combined cycle co-generation site



Gas turbine

