

# TransCal™ Services



## On-site Transducer Calibration and Vibration Monitoring System Health Check

Vibration is an important parameter for shut-down protection and on-line vibration monitoring systems installed to protect key plant. Measurement accuracy and integrity are crucial for making sound operational decisions.

### Be Confident in the Health of your Plant

In a modern condition monitoring system, the performance of the vibration transducers and their associated integration and filtering electronics is critical. Poorly calibrated transducers or faulty cabling can severely downgrade system performance, resulting in wrong – and potentially costly – operational decisions, particularly where condition monitoring is used to extend periods between maintenance and to help pinpoint developing fault conditions.

### Garbage in = Garbage out

Condition monitoring systems analyse vibration signals by measuring the amplitude and phase of individual frequencies (harmonics) across a range of frequencies relevant to the plant being monitored. This can be as wide as 10Hz-10kHz in the case of pumps and gearboxes.

Vibration sensors have traditionally been calibrated at a single frequency (usually 50 or 60Hz), even though their performance at other frequencies may be significantly different. This is clearly inadequate for a modern condition monitoring system, where sensor measurements must give accurate readings across the frequency range.

### Peace of Mind

With over 20 years' experience, Beran has the expertise to perform a wide range of transducer calibrations. Using the Beran TransCal™ Vibration Calibration System, our engineers perform repeatable and accurate calibrations to ensure that your vibration condition monitoring system delivers accurate and reliable results.

*"Beran offers a very comprehensive calibration service, provided by professional engineers and accompanied by a detailed report. The calibration identified some devices that were out of specification and also picked up some cabling issues which we were able to resolve with Beran's assistance. A superb and excellent service that we will definitely be using again next year."*

*C & I Manager, Coal Fired Power Station*



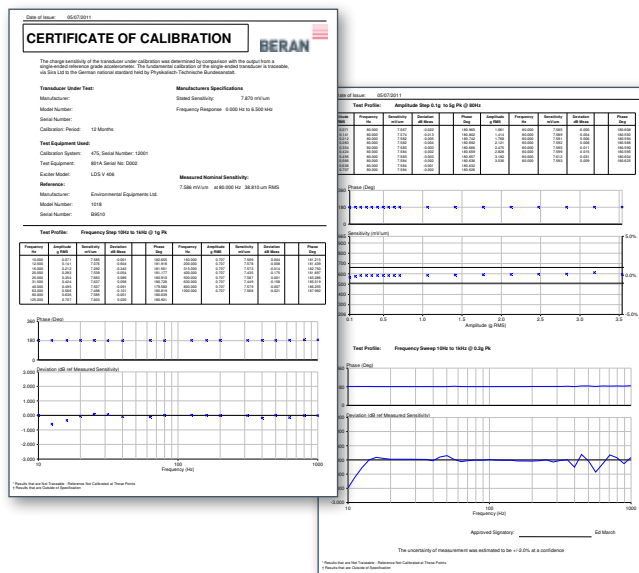
Beran engineers perform on-site calibration and system checks

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## Beran's On-site Calibration Service

The service includes:

- Calibration of accelerometers, velocity and proximity probes
- Multi-point UKAS-traceable calibration
- Frequency range testing to manufacturer's specification
- Frequency sweep testing to ensure functionality (no peaks or troughs) between UKAS reference standard points
- Amplitude linearity testing over increasing vibration levels
- Full calibration results including phase information
- Static gap check for displacement probes
- Open loop checks to ensure complete system functionality, including trip systems and vibration monitoring systems



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## System Integrity Check Using Signal Loop Testing

Beran's TransCal™ system is used to calibrate vibration devices that are sensitive to acceleration, velocity or displacement. The test sensor is removed from the plant item and calibrated in isolation for both frequency and amplitude response.

As well as transducers, the TransCal™ system allows any integration stages, filters and displays to be calibrated as a complete system, including chart recorders, analogue meters and condition monitoring instrumentation.

Following transducer calibration, the following system checks are made:

- The transducer under test is connected back into the system and tests are performed to verify the operation of the protection and vibration monitoring equipment.
- Signal cabling check to ensure that signal cabling goes to the correct measurement channels and that short or open circuits, power supply failures or polarity issues are not affecting the system operation.
- Sensor set-up verification: to check that sensitivity, frequency range and other channel-specific configurations are set up correctly.
- System check: to ensure your equipment is functioning correctly, alarms are triggering at the appropriate levels and current loop outputs are working.

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Beran Instruments is registered to BS EN ISO 9001 / AS9100

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