

Mobile Measurement Case: Diagnostics and fault tracing made easy!

**Cost savings for service engineers, maintenance technicians and
commissioning engineers**

Reduced downtimes through fast fault diagnosis

Simple sensor configuration

Many different uses

Delphin's mobile measurement case is a tried and test tool used by service engineers around the world. Users benefit not only from **more simple working procedures** but also from major **cost savings** in respect of fault tracing, commissioning and process analysis in plant and machinery. These savings arise because just one multifunctional measurement system can be used for on-site measurement data recording. *Service engineers, maintenance technicians and commissioning engineers, as well as test and inspection organizations, save on valuable working time and can significantly reduce their traveling expenses.*

Being proactive instead of reactive:

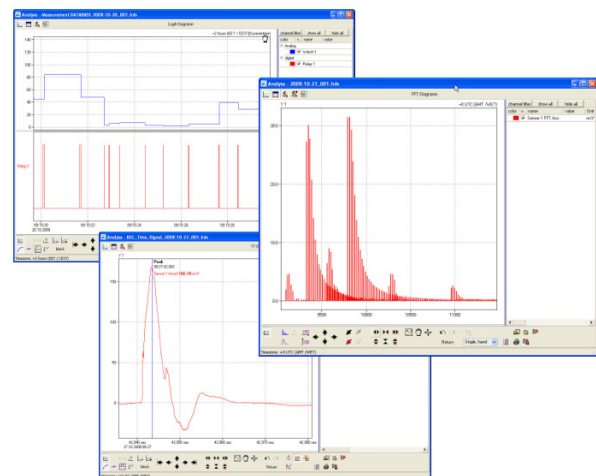
In the event of a fault, you normally react by traveling to the customer site to detect and analyse the problem. The mobile measurement case, however, enables you to be proactive because it records measurement data independently. This data can then be accessed remotely in the event of a malfunction. Detailed analyses and diagnostics can be performed off-site enabling service engineers to be optimally prepared for an onsite visit.

Bespoke System:

The compact measurement and diagnostics system is designed and equipped exactly according to individual customer requirements and measurement needs. Nine different modules can be combined as required focusing on either analog or digital inputs or outputs. A module for vibration monitoring, with a sampling rate of up to 20 kHz, is also available.

Analysis with ProfiSignal:

ProfiSignal is a powerful software package that has a wide range of graphical analysis functions (Yt, XY, FFT and logic diagrams) - it is the ideal tool for maintaining control over plant and machinery. Process analysis provides continuous recording and evaluation of process and status parameters, at high resolution and at high sampling rates, and enables the detection of any irregularities.



Logic and process analysis diagrams from ProfiSignal



Hardware technology:

Measurement and process data is recorded within Message devices. An integrated ring memory with a 1 GB capacity can store up to 128 million records and **requires no PC support**. Data recording is performed as a continuous or an event triggered procedure.

Mobile process diagnostics at a power plant

Internal signal conditioning enables the direct connection of sensor signals such as mV, mA, thermocouple or RTD sensors. There is no requirement for additional measurement transducers, which means working procedures are much easier.

Sensor connectors are available as required with 4mm plugs, screw terminals and thermo or BNC connectors in common usage. Message devices are protected against earth loops and are therefore secure against errors occurring during data recording. Sensor inputs are true differential and consequently ensure a high level of accuracy.

The mobile measurement case can be connected directly to plant and machinery via a range of interfaces and ports (LAN; ModBus RTU+TCP, RS232, 422, 485; ProfiBus DP). These also enable information from control systems to be recorded in addition to the data from sensors.

Remote access:

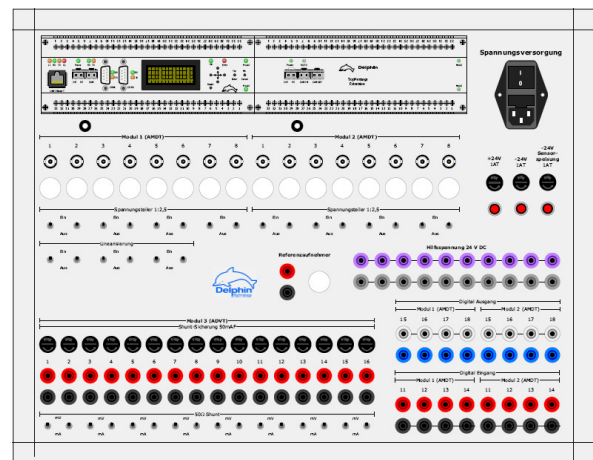
If required the mobile measurement case can also be equipped with a GSM modem. Users then have direct access to online data via telecommunication networks. There are optional trigger procedures that transfer data to a central control point in the event of a fault. Alarm notifications take place via text messaging, fax or email.

Features and benefits:

- Custom made systems according to individual requirements
- Robust construction within an aluminum or strong plastic case
- A choice of 9 different I/O modules
- Independent 1 GB data storage (128 million records)
- Recording of pre and post event data and integrated alarm procedures
- Direct sensor connection for mV, mA, RTD sensors and thermocouples
- Depending on module up to 20 kHz sample rate and with up to 24 bit resolution
- Separate plugs, terminals and connector attachments
- Remote linking via radio and internet (GSM)

Example 1: Mobile case for vibration measurement

Voith Siemens Hydro Power Generation use a custom-made mobile measurement case for the commissioning of hydroelectric power plants. The measurement system provides commissioning engineers at Siemens with a reliable tool. The system records vibration, process and performance data for the duration of the commissioning and final approval phases. When set values for vibrations or pressures are not achieved, the reasons can be very quickly analyzed. The various sensors required are simply and quickly attached using BNC connectors.



Connector diagram for vibration measurement case

Example 2: Universal mobile case

TÜV use a universal mobile case for the performance testing of gas and steam turbines, compressors, boiler units, pumps, blowers, ventilators and many other types of plant and machinery. The measurements are carried out as part of performance testing for approval procedures and the certification of guarantee information.

