This version of the GISmonitor is a portable unit for partial discharge measurements on gas-insulated switchgear (GIS) caused by hopping particles, floating potentials, cracks in insulators or spacers, or other degradation in the insulation system. The instrument offers parallel real time PD acquisition on up to 40 channels. To eliminate disturbance signals from the measurement, the instrument can be connected to a disturbance antenna that provides a gating signal.

**Measuring Principle**
Partial discharge measurements can be easily applied on gas-insulated switchgear without the need of interrupting the operation. Such online measurements help to identify internal imperfections of the insulation system, which may lead to breakdown and system failure in the future.

Due to the dielectric properties of the SF6 gas, partial discharge activity in gas insulated switchgear covers a bandwidth of well beyond 2 GHz. The mechanical properties of the components of gas insulated switchgear further allow transmission of such signals over a distance of a couple of meters. Thus, the partial discharge monitoring of GIS equipment is done preferably in the UHF range.

**Sensors**
The GISmonitor is designed to suit all currently available UHF sensors for GIS PD monitoring. This includes embedded and external retrofit UHF sensors. A special input protection unit (IPU2) blocks strong transients (VFT). The preprocessing unit FCU2 demodulates UHF signals into a lower frequency band for easy submission over longer distances.

**Enclosure Models**
The instrument is available with different housings: Portable, lightweight desktop enclosures of ½ 19" and 19", shock resistant and watertight outdoor cases, and a black mini aluminum box.
The instrument can be connected to a PC or laptop via a USB or an optional LAN interface for data evaluation and diagnosis with the GIS\textsuperscript{monitor} Portable software. The program software visualizes the current readings of eight partial discharge sensors of a GIS in parallel. Each sensor is linked with a specific input channel of the GIS\textsuperscript{monitor}.

**AC Mode**

In AC mode the acquisition of partial discharge pulses is done versus phase position. The external or internal synchronization signal determines the phase position of every PD pulse. The panel in this mode shows the partial discharge activity of all eight channels in parallel. The meter displays the current highest amplitude and the black and white display shows the partial discharge activity versus phase position.

**DC Mode**

In addition to the standard acquisition of partial discharge versus phase position, the GIS\textsuperscript{monitor} Portable software offers the possibility to acquire partial discharge at DC voltage. In this mode the partial discharge pulses are displayed versus time. The time resolution can be set to 1, 10 or 100 ms.

Every portable version of the GIS\textsuperscript{monitor} can also be used with the software of the non-portable GIS\textsuperscript{monitor} systems.

The GIS\textsuperscript{monitor} Portable offers parallel real-time acquisition on gas-insulated switchgear (GIS) on up to 40 channels.