

## ICMflex



The ICMflex high voltage instrument family offers inherent operator safety and greatly simplifies distribution class cable testing and other field tasks involving partial discharge and loss factor testing. With the unique concept of the ICMflex instruments, the entire acquisition hardware is placed on high voltage potential right at the position where the signals are. Thus, no signal cables are needed, as the instrument is fully self-contained and battery operated. The instruments are fully remote controlled via high speed Bluetooth or fiber optic communication.

### Unique Concept

The ICMflex instrument family is available with different options and for different voltage levels. Additionally, the self-contained ICMflex acquisition unit can be placed on top of any third-party coupling or reference capacitor. The option TD offers  $\tan\delta$  and power factor (PF) measurements. The option PD provides partial discharge measurements according to the IEC 60270, whereas the option LOC includes partial discharge location for power cables.

### *Wireless signal transmission via Bluetooth communication*

Finally, the option TF covers a high voltage T-filter to sufficiently de-noise a high voltage supply for sensitive partial discharge measurements. The detachable NiMH battery provides >8 hours of

continuous operation, while a second battery is charged. Any high voltage AC source can be used including resonant test sets and VLF high voltage sources.

Testing distribution-class cables in a field environment becomes an easy and inherently safe task. The ICMflex unit is simply placed between high voltage source and the cable to be tested – no further leads required. Thus, with one unit requiring only high voltage and ground connection all essential measurements on laid power cable are performed in one step:  $\tan\delta$ , partial discharge, and partial discharge location.

Off-line testing of generator and motor stator coils is simplified in the same way. Using any high voltage source, the critical AC measurements on the stator coil are done simultaneously:  $\tan\delta$ , PF, and partial discharge.



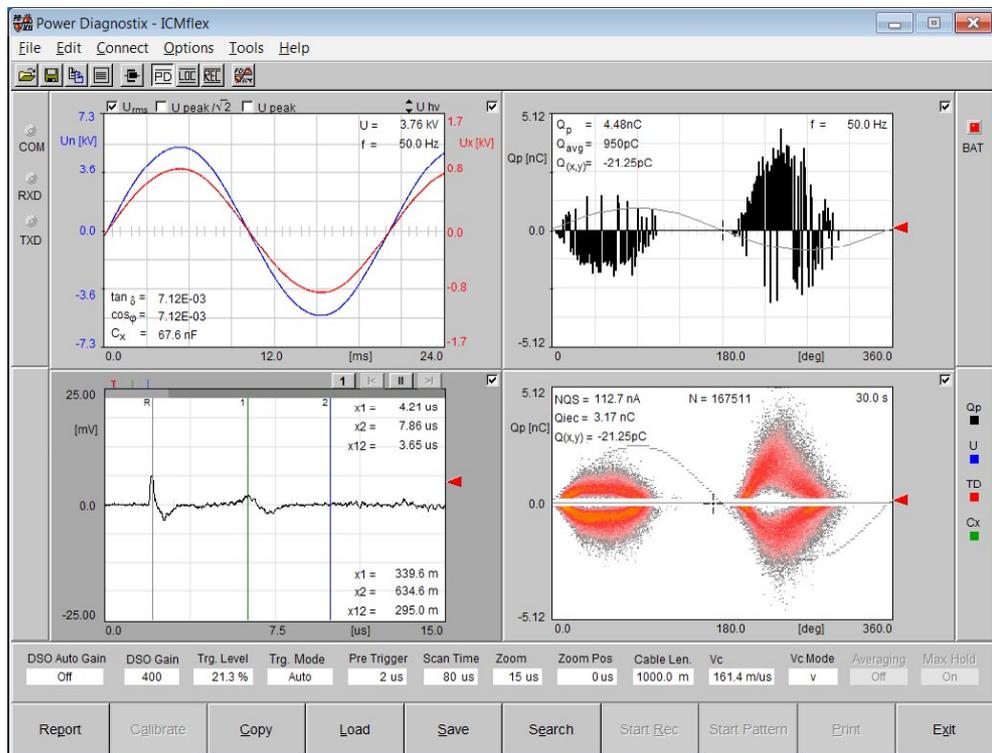
ICMflex & HV filter



On-site cable testing



TD measurement on motor bars



ICMflex software

**Option TD**

The tan delta analyzer uses an unbalanced bridge formed by internal shunt capacitors, the reference capacitor and the device under test. Here, the ICMflex software shows  $\tan \delta$ , PF, capacitance, voltage, and frequency.

**Option PD**

With the option PD the ICMflex software offers a meter display according to IEC60270 and an oscilloscopic display of the partial discharge activity as well as a colored  $\phi-q-n$  pattern (above) based on the data received via Bluetooth. Placing the quadrupole and acquisition unit on high voltage

potential greatly improves the sensitivity and avoids any noise pickup on signal cables.

**Option LOC**

The partial discharge location option uses high speed (100 Msample) sampling of the PD pulses traveling the cable. Along with the analog bandwidth of 20 MHz this enables precise location and mapping of the discharge activity along the cable.

**Option TF**

The ICMflex unit can be equipped with a high voltage T-Filter to block high frequency noise signals from the HV supply.

Using wireless Bluetooth or fiber optic technology the ICMflex  $\tan \delta$  and partial discharge analyzer family increases operator's safety and greatly simplifies off-line testing and analysis of distribution class cables and rotating machine stator windings.