

# Ultimate solution for PD assessment

## ALFA

Did you ever need to have a flexible and reliable instrument for fast Partial Discharge (PD) diagnostic campaigns? Did you ever consider the advantages for your plant operators in having a practical all-in one instruments, equipped with all you need for a complete PD assessment?

Techimp ALFA has been expressly designed to respond to all these needs being a robust and compact portable all-in-one PD detection station providing a full range of options ideal for on field applications.

### Benefits

- The most outstanding feature is that it can be used for testing of MV and HV cables, power and distribution transformers, motors and generators, GIS and MV switchgears together with the right combination of sensors and filters.
- The instrument can be used to measure on-line any electrical asset at any level of voltage.
- **One for All**, one device for all assets like cables, transformers, rotating machines and switchgears
- **Innovative** instrument for Partial Discharge recording
- **Ultra Wide Band**, fast integrated processing capability
- **Compact** PD Pulse detector
- **Multiple Connectivity** (Wi-Fi, Fiber Optics)
- **Automatic PD Data acquisition procedure**, simple & friendly user, no expertise needed



### Techimp Ultimate Technology

The design of ALFA is influenced by many years of field experience. It can cope with the toughest outdoor conditions while taking measurements on any electrical asset. The battery powered unit allows testing activities for up to 20 hours without auxiliary power available. The setup of the unit is simple and fast allowing for taking measurements within minutes.

### The Ultimate T/F-Map Technology

Techimp technology (patented) allows different PD phenomena to be classified on the basis of their pulse shape, thus enabling further analysis to be carried out separately on each dataset. PD source identification is, so, highly enhanced and even a non skilled operator will be able to carry it out.

Techimp acquisition technology provides efficient noise rejection as well. As a matter of fact, noise signals have been observed to be very different from PD signals. Techimp classification system is successful in separating PD phenomena from those generated by disturbances. In detail, each PD pulse waveform is acquired and the so-called equivalent time-length and bandwidth are evaluated and plotted on the TF map. Different types of discharges (e.g. PD due to distributed microvoids, slot discharges and noise in a rotating machine) shall group into different clusters in the TW map being characterized by different pulse shapes.

## Technical Data

### Wide Band Acquisition PD channel

PD Technology UWB - PRPD/TF map  
PD Channels 3 biased UWB Channels for active sensors power supply  
Bandwidth 16kHz-30MHz, built in UWB filter  
Resolution 10 bit  
Dynamic range 75 dB  
Maximum sampling frequency 100 MS/s  
Input voltage range 1-4000 mVpp  
Input sensitivity < 1.0 mVpp  
Input Impedance 50 Ohm  
Recording time / length 1  $\mu$ s (min) / 20  $\mu$ s (max)  
Connectors type BNC

### Synchronization channel

Input voltage range 0.2 - 200  $V_{RMS}$   
Frequency range 0.1 ÷ 1000 Hz  
Input Impedance 10 MOhm  
Connector type BNC

### Connectivity

Type  
For measurement Wi-Fi (IEEE 802.11g) + Ethernet Fiber Optics connection,  
for instrument setup: Bluetooth  
for maintenance and FM upgrade: USB

### Casing

Dimensions 410 x 345 x 205 mm  
Weight < 12 kg  
IP Degree IP42 cover Close; IP30 cover Open

### Operating environmental conditions

Temperature 0 to 60 °C \*\*  
Humidity 90%, not condensing

### Power Supply

Voltage 100 - 240 VAC, 50/60 Hz  
Outputs for accessories 5V (max 5 W) via USB-A connector, 12 V (max 5W)  
Battery 2 x 10,8V, 8 Ah With smart diagnostic system  
Autonomy > 8 hours\*

### Operating environmental conditions

Temperature 0 to 60 °C \*\*  
Humidity 90%, not condensing

### General

Firmware updating via USB  
Certifications  
IEC 60270 compliance  
EN 61326-1  
EN 61010-1

(\*): Depending on continuous/discontinuous usage (\*\*): 0 to 45 °C when battery is charging