Partial Discharge Monitoring
Global Diagnostic System

Affordable, fast, reliable and flexible, the ultimate solution for industrial monitoring.

DS-04.06.095_ENG - REV. 03 - 27/08/2010

Innovative instrument for Partial Discharge recording, storage & processing

Wide band, fast processing and large memory acquisition unit

Flexible, Ideal for periodic or permanent monitoring of 3-phase electrical assets

Powerful, PD Pulse detector and Waveform analyzer

Fuzzy logic diagnostic tools and statistical processing

Compact, 3 simultaneous channels digital acquisition unit

Accurate knowledge of the condition of electrical assets is essential for the establishment of Condition Based Maintenance (CBM) strategies. In this frame, on-line monitoring is getting more and more important since this practice can provide timely information about asset conditions.
Partial Discharge (PD) measurement is recognized as the most important test for the assessment of the condition of electrical systems.

Reliable on-line PD Monitoring gives a powerful insight into the condition of the insulation system and provides real benefits, because it allows early fault detection, thus minimizing costly unplanned outages and equipment failures.
The **PDCheck** is the ultimate solution for industrial monitoring: a compact and powerful instrument which represents the state-of-the-art technology

Field of applications

PDCheck is suitable for periodic assessment or permanent monitoring of:

- Cable and cable accessories (such as joints and terminations);
- Electric Generators & Motors;
- Power and Measurement Transformers;
- Gas Insulated and Air Insulated Switchgears;
- Outdoor Insulators for Overhead Lines (pollution assessment).

A complete set of sensors covering all range of applications (**Partial Discharge, Dissolved Gas Analysis, tanδ, Vibration Monitor** and **Distributed Temperature Sensing**) grants a better diagnostic coverage exploiting synergies among information provided by different diagnostic techniques.

www.techimp.com

Techimp PDCheck

Techimp ultimate technology

Techimp technology (patented) allows different PD phenomena to be classified on the basis of their pulse shape, so that further analysis can be carried out on each dataset, separately. This enhances the likelihood of PD source identification, even in the absence of a skilled operator.

Techimp acquisition technology also provides efficient noise rejection. As a matter of fact, noise signals have been observed to be very different from PD signals. Therefore, Techimp classification system can be successful in separating the contributions of PD from those generated by disturbances. Specifically, 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.

Specifications

Wide Band Acquisition PD channel

Acquisition rate	100MS/s, 3 PD Channels
Bandwidth	16kHz÷30MHz built in UWB filter Additional external filters available
Input range	1÷4000 mVpp
Input sensitivity	< 1 mVpp
Resolution	10 bits
Input Impedance	50 Ohm

Input channel for IEC 60270 HW

PD channel	1 channel with 12 bits A/D converter @20MS/s

Trigger Mode

Pre-Trigger Recording	0–100% @ 10µsec
Dead time min	1 µs, non continuous

Input channels for AC signals

Quantity	3 AC inputs
Bandwidth	0.2 ÷ 5000 Hz
Resolution	14 bit
Maximum sampling frequency	20 kHz
Input voltage range	15 Vpp
Input impedance	1 MOhm

Input channels for DC signals

Quantity	4 DC inputs
Resolution	14 bit
Maximum sampling frequency	20 kHz
Input voltage range	0 ÷ 2 V
Input impedance	1 MOhm

Improved Synchronization channel

Input range	5÷200 Vpp - DC Coupled Sw selectable input range
Frequency range	0.1Hz÷1kHz
Input Impedance	> 10 MOhm
Over voltage protection (surge arrester)	230 V_{DC} spark ± 20%

Test Voltage frequency

Phase accuracy	<1°

Data Storage

Flash memory card	1-16 GB standard

Communications and Connections

Physical Interface	Ethernet 10/100 Mb/sec
External Connections	n° 4 BNC Type connectors n° 2 Type female connectors n° 1 Type female connector n° 1 external synchrounous interface for channel expansion multiplexer n° 1 RJ-45 Type connector n° 2 Standard ST FO connectors n° 1 Clean (SPDT) Contact connector

PC platform recommended requirements

Hardware	PIII 1 GHz, 512MB RAM, HDD 20GB, 1024x68 screen resolution, FDD & RW, Ethernet 10/100, serial/USB port, Win XP.
OS/Software	OS: Win XP (professional) compatible. MS Office for report generation required. Acquisition and processing programs provided by Techimp.

Operating environmental conditions

Temperature	5÷50°C;
Humidity	90%, not condensing
Altitude	≤2000 meters

Power Supply

Voltage	5 V_{DC} , 2 A max

Casing

Box Dimensions	203mm x 135mm x 55 mm
Overall Dimensions	250mm x 180mm x 55 mm
Weight	1 kg

World Wide Warranty

1 year	

Options

- Portable version (stand-alone)
- Techimp SW for IEC 60270 compliance
- External Wireless module
- External Edge modem
- Flash memory card up to 16Gb

COMMUNICATION INTERFACE

	RJ 45[1]	Fiber Optic[2]	SPort[3]
PDCheck MK-II	✓		
PDCheck MK-III	✓	✓	
PDCheck MK-IV	✓	✓	✓

[1] , for standard applications
[2] , for portable and DGA applications
[3] , for vibration monitor, MiniPDtrans, tanδ and portable applications

Condition Based Maintenance

Under CBM, diagnostic signals are recovered from power apparatus to infer their state. Maintenance operations are carried out only when some parts of the system show poor reliability.

The Product

PDCheck is a compact, stand alone, global diagnostic system for the condition assessment of medium and high voltage electrical systems, based on the detection and analysis of PD

The software: 3 steps for PD Monitoring

The **PDCheck** acquisition software contains all the functions needed to control the instrument, to set the correct values of the acquisition parameters, to acquire and visualize the PD dataset in order to get an immediate diagnostic response.

PD sensors and accessories

Techimp can offer a wide and complete range of sensors, filters and signal conditioning device to cover any possible PD acquisition need and optimize the measurement circuit setup, detection and analysis of PD.

TECHIMP SpA
Your partner for asset management