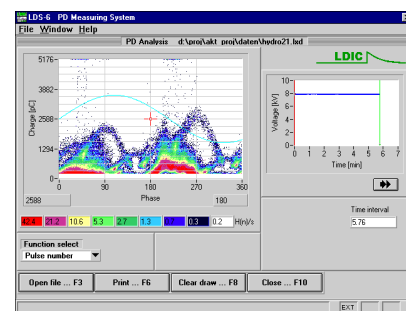


DIGITAL PARTIAL DISCHARGE

MEASURING AND DIAGNOSTIC SYSTEM LDS-6



LDS-6



Field of Application

The LDS-6 is designed for the quality control of the insulation property of HV equipment. It is developed as a high sophisticated digital measuring system for standardized measurements and evaluations according to IEC 270. Moreover it is used for investigations on high voltage insulations and fundamental PD studies in research and development. Based on the wide-band detection and processing of PD-signals, the internal noise suppression features permit an application not only in screened test laboratories but even under on-site conditions and in production-test-facilities.

Features

- C Measuring and evaluation of the characteristic PD quantity „apparent charge“ according to IEC 270
- C Computer-based, phase resolved PD-data acquisition, storage, analysing and post-processing
- C Diagnostic tools for PD-failure recognition/statistical data evaluation
- C Computer-based transmission and processing of the PD data
- C minimal Superposition error up to 100 kHz pulse repetition rate
- C synchronous test voltage acquisition
- C Double pulse resolution $\leq 2 \mu\text{s}$
- C internal 30 MHz wide band preamplifier
- C Polarity recognition of the PD-pulse possible
- C Sensitivity range: 1 pC to 100 000 pC
- C autoranging up to 10 000 pC
- C 2D/3D display modes for PD-pattern of all PD-characteristics
- C all hardware settings software controlled

Representation possibilities

The magnitude of the apparent charge, the phase position and the event-time of each PD-signal will be recorded and stored together with instantaneous value of the voltage with a very high resolution. In this way a continuous monitoring and phase resolved analysis of the PD results can be performed without any data loss. By using high sophisticated and very user-friendly software tools the stored PD-data can be postprocessed and shown on the display. Additional software options for statistical evaluation of the measured results and for automatic PD fault recognition using a PD-data-base are available.

Hardware

- C highest dynamic range, using wide-band, switchable amplifiers/attenuators
- C narrow-band processing unit, optional
- C wide-band, logarithmic signal processing unit, optional
- C effective noise suppression facility using wide-band PD-processing technology
- C high resolved digitalization of the PD-signals and the test voltage
- C IBM compatible Personal Computer
Intel Pentium® processor/32 Mbyte RAM/Data Acquisition Card/VGA graphic card/TFT active matrix color display
- C 19" industrial PC- or desktop design

Software

- C LDS-6 software with PD measuring and analysis incl. 3D representation, Statistic and Diagnosis
- C Operating system MS Windows® 95/NT
- C interface to other Windows®-Applications possible

Program overview

- Setup setup window for default settings of the measuring system (password protected)
- Calibration automatic PD calibration of the measuring circuit and display of the measuring signals (oscilloscope mode: line, x-y mode)
- Measurement online measurement, display (phase resolved) and data storage
- Analysis extensive possibilities of replaying, displaying and evaluation incl. Graphical presentation of different functions of the stored data
- Statistics displaying and processing of the stored data using different statistical methods
- Diagnose PD failure type recognition with user expandable PD-reference database of typical fingerprints

Specification

- | | | |
|---|--|-------------|
| C | Minimum detectable apparent charge at 50 Ω matching impedance: | < 1 pC |
| C | Maximum detectable apparent charge: | > 10 000 pC |
| C | upper limited frequency: | 30 MHz |
| C | Bandwidth of the PD-processing unit: | 300 kHz |
| C | Digital signal acquisition: | 12 bit |

Optional peripheral components (not included in the standard version)

- C Bridge impedance LDB-5 for PD detection on the basis of balanced bridge (IEC 270)
- C Calibrator LDC-5 for external calibration of the PD measuring circuit in pC of apparent charge
- C Charge injector LDJ-5 for calibration of the PD measuring circuit with higher charge magnitudes
- C Filter LDF-5 for reduction in influence due to radio interferences
- C Measuring impedance LDM-5 or LDM-5/U, for signal or test voltage decoupling (bandwidth 30 MHz, maximum current 5 A or 50 A)
- C Extension unit LDM-5/E for matching the voltage measurement adjustment of LDM-5/U to several ranges for different coupling capacitors
- C Switching box LDM-5/M6 for channel switching of the PD- and voltage measuring points (software controlled)
- C System printer