

PD-NOISE-IMPULSE-COMPARATOR

LDK-5

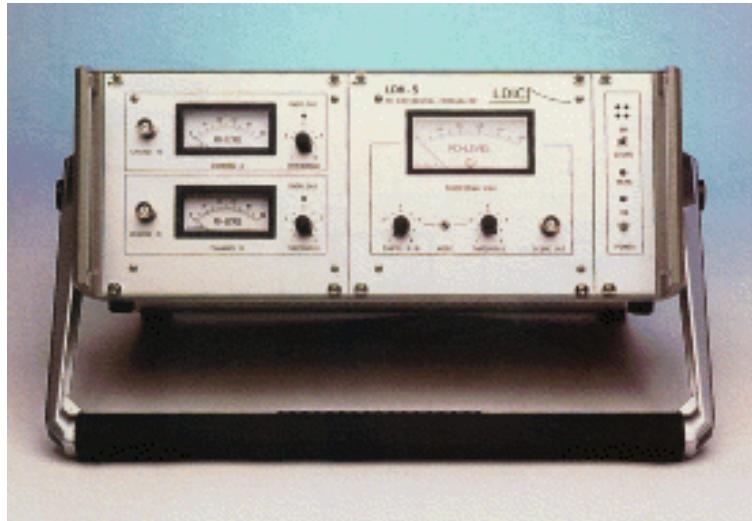


Fig. 1: LDK-5

Field of application

The measuring sensitivity of PD diagnosis tests on site may be influenced adversely by environmental noises (corona discharges, power electronics). The PD-Noise-Impulse-Comparator LDK-5 is applicable for an efficient elimination of pulse shaped noise signals.

Special Features

- Simple balancing procedure
- Noise pulse rejection at enhanced time resolution capability
- Possibility of coincidence measurements by comparison the PD patterns of two measuring points
- Power mains independent operation possible by means of internal batteries

System Components

- PD-Noise-Impulse-Comparator LDK-5 (Fig. 1)
- Two PD Probes LDP-5 resp. one LDD-5 and one LDP-5 with appropriate sensor
- Computer Aided PD-Measuring System LDS-5 or scope

Technical Specifications

- Max. input signal amplitude from PD-detector	+ 4 V
- Max. output magnitude	± 4 V
- Output pulse duration	< 100 μ s
- Pulse gating mark	- 0.6 V; 50 μ s

Function Description

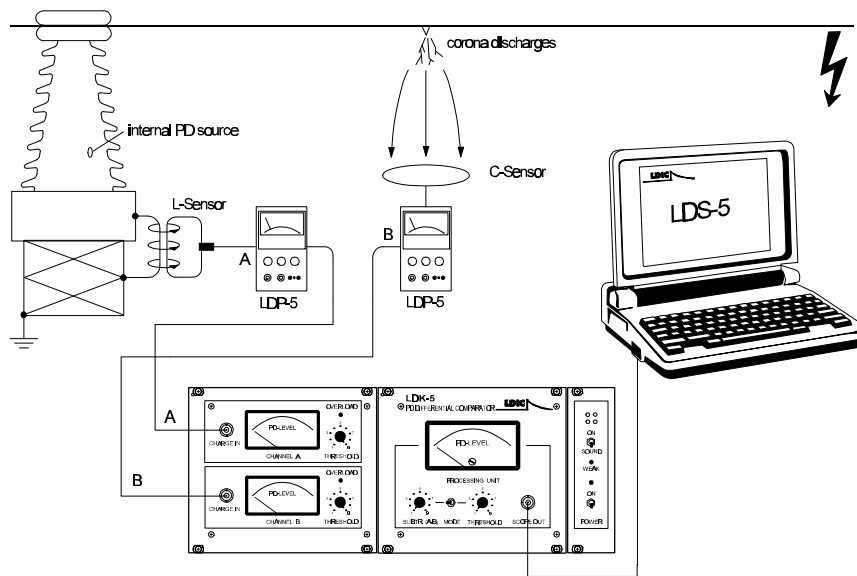


Fig. 2: Example for application of LDK-5

Fig. 2 shows schematically the measuring arrangement of diagnostic PD measurements on-site at instrument transformers performing the elimination of noise pulses caused by external corona discharges. The useful PD signal at measuring point A (internal PD) is superimposed by undesirable corona pulses. The signal mixture is pre-processed in the LDP-5 (channel A). Simultaneously a second PD-probe LDP-5 (channel B) captures the corona pulses via capacitive field sensor. The PD signal post processing inside the LDK-5 provides a separation of information and noise signal. Two operation modes are applicable:

- **Compensation:**

By means of subtraction the noise pulses (channel B) from the signal mixture (channel A) the noise pulses at the output can be compensated resp. overcompensated via stepless adjustment. The residual useful PD signal is identified by positive polarity (Fig. 3) while the noise signals are indicated by having a negative polarity on the screen.

- **Windowing:**

The occurrence of a noise pulse at channel B (reference measuring point) triggers an immediate blocking of channel A (useful + noise signal) for a short time interval, which is indicated by a negative gating mark. In this way the noise pulses are cancelled out. The main content of the useful signal, which is in general not coincident with the noise signal keeps the positive polarity (Fig. 4).

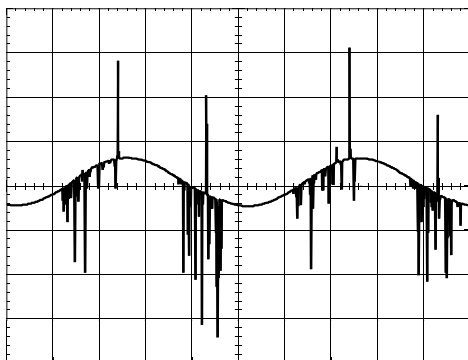


Fig. 3: Signal + overcompensated Noise

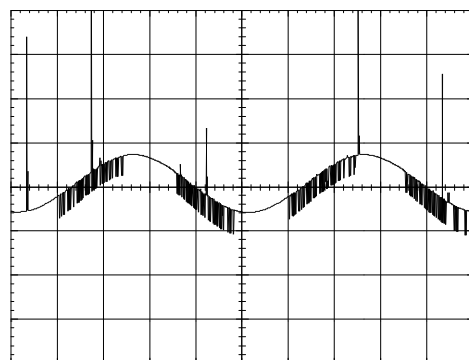


Fig. 4: Signal + suppressed Noise