

# DIRECTIONAL COUPLER MEASURING SYSTEM

## LDY-722



The Directional Coupler Measuring System is developed for high sensitive, exact location of PD faults in High- and Extra High Voltage cable accessories. The fault location will be determined by evaluation of the propagation direction of the PD signals decoupled by Directional Coupler Sensors. External noise can clearly be discriminated from internal PD signals of the detection area considering the original signal-location.

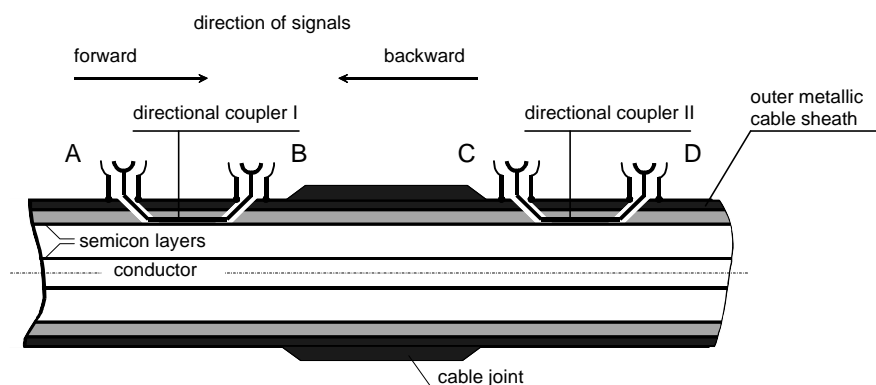
The bandwidth of the measuring system reaches the HF/VHF-range. In connection with the digital PD-measuring system LDS-5 it is possible to run the PD signal representation, storage and evaluation separated to the place of origin of the PD impulses. Because of the exact noise suppression, the Directional Coupler System is extremely suitable for high sensitive PD measurement and location in unscreened areas.

### Field of application

- Type, acceptance and development tests of pre-fabricated cable accessories and components in unscreened areas
- after laying and installation tests, on-site
- permanent or sequential PD monitoring of lay

### Performance

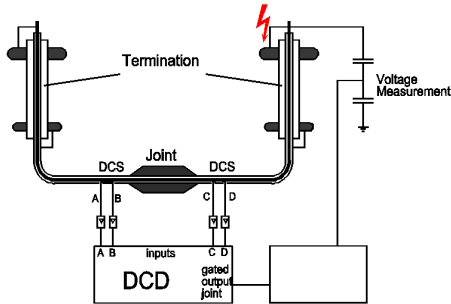
The Directional Coupler Sensors are installed inside or outside of the accessory housing on both sides of the monitored PD detection area. The sensors are always installed above the semicon layer of the cable. The sensor outputs are connected with the DCD system.



The system records, amplifies and filters the signals of the sensors. After digitalization of the PD-signals the original PD-location is determined by evaluating a logical function.

	noise from left	PD in the joint	noise from right
SENSOR I - A	X		
SENSOR I - B		X	X
SENSOR II - C	X	X	
SENSOR II - D			X

Classification of the signals



Application of the Directional Coupler System with sensors and LDS-5

The signals, that are separated to their place of origin are transmitted to the PD-measuring-system LDS-5 for post-processing. The user can operate the system by a touch screen or can use the LDS-5 for complete remote control.

## Specification

Bandwidth (maximal):

2 - 600 MHz

Sensitivity:

< 1 pC

Gain:

≤ 60 dB

Input attenuation:

0, 10, 20, 30, 40 dB

Filters:

80 - 110 MHz (UKW)

100 - 600 MHz

Time gating to suppress reflections:

25 - 95 ns

## Features

- 2- / 4-channel operation - 1 or 2 Directional Coupler Sensor
- Period of the time gating adjustable
- processor-controlled, digital logical signal evaluation
- analog or digital location-gated PD signal output to the LDS-5 (optical analog or digital output optional)
- remote controlled by a serial interface (optical digital serial interface optional)
- operated by a touch screen
- Calibration by using the Directional Coupler Sensors
- Counting and displaying of the PD-signals (phase-resolved)
- adjustable filters

## Optional accessories

- Calibrator LDC-5/RUF  
reference calibrator with ultra fast calibration impulses; risetime: < 1 ns
- computer-based, digital PD-measuring system LDS-5  
for evaluation, analysis, displaying and post processing of the location-separated PD signals;  
for remote control of the Directional Coupler Measuring system
- Directional Coupler Sensors (DCS) for wide-band decoupling of the PD signals
- digital optical transmitter for remote control
- analog optical transmitter for PD-signal transmission LDO-5