

Brief description

- Online monitoring, surveillance and diagnosis of partial discharges
- Can be expanded for up to eight monitoring points
- Alerting in the case of limit violation
- Adjustable limits and interference suppression per input
- Can be retrofitted on old installations
- Sensors with CapEye® interface connectable
- Designed as an operational measuring instrument and for constant duty
- Compact design and practically orientated installation system
- Self monitoring and alerting in the event of device failure
- Can be configured by user
- Optional: Data transfer via fixed-network or GSM modem
Data acquisition with PC



Field of application and benefits

High-voltage and medium-voltage power supply installations are required to achieve a very high availability. After installation and commissioning, it must be ensured that the condition of the insulation does not worsen over time. Ongoing surveillance (online monitoring) of partial discharge (PD) activities offers the opportunity for detecting a worsening or serious change in the condition of the insulation of the equipment at an early point, thus giving the user the opportunity to intervene in good time so as to prevent more serious damage.

Using Indipard makes it possible to

- restrict sudden total failures,
- increase the availability,
- adjust the cleaning intervals to the actual level of soiling and
- prolong the overall operating life of the installations.

Indipard is a low-cost online PD monitoring system designed for continuous duty in medium-voltage and high-voltage installations.

Using INDIPARD permits event-driven maintenance with minimal risk and at less cost.

Mode of operation

Active PD sensors are installed in the parts of a medium-voltage or high-voltage installation at risk. These sensors detect the high-frequency electric fields generated by the partial discharges and forward them to the IDP16 central evaluation unit via coaxial cable.

The sensors are powered via the coaxial cable. Up to eight sensors may be connected. Either search coils, capacitive coupling electrodes with CapEye® amplifier or devices with CapEye®

interface can be used as PD sensors. If there exists a voltage detecting system, its capacitive coupling devices may be used as PD sensors.

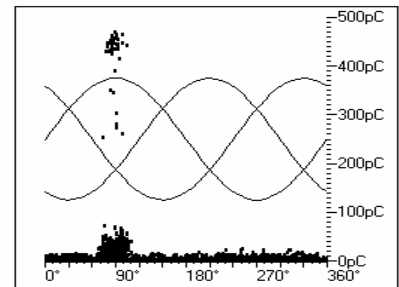
In the IDP16, a microcontroller monitors each individual measuring point for transgression of a limit value. If the limit value is exceeded, IDP16 indicates the measuring point, issues an alarm signal via a floating contact and thus calls the servicing staff. INDIPARD is self-monitoring so that a device failure also triggers an alarm signal. The sensors and cable connections are included in the self-monitoring system. Special training on the part of the operator is not required and the unit operates reliably and without the need for maintenance for years once programmed.

The current measurement data can be polled via the incorporated USB port, or optional modem, using a PC. This information allows the PD source to be located and localised better in the event of an alarm.

Several IDP16s can be cascaded for substations requiring more than eight monitoring points.

Installation

IDP16 is available as a wall mounting version or for mounting rail attachment.



Optional PC software
Phase diagram



IDP 16 evaluation unit
Wall mounting in a secondary substation

Technical data

Mechanical

- **Housing design:**
Wall mounting
Mounting rail attachment

- **Dimensions and weight:**
Wall mounting
Width: 200 mm
Height: 120 mm
Depth: 65 mm
Weight: approx. 0.9 kg

Mounting rail attachment

Width: 200 mm
Height: 120 mm
Depth: 76 mm
Weight: approx. 0.9 kg

Ambient temperature:
-20°C to 55°C in operation
-25°C to 70°C for storage

Electrical

- **Inputs:**
3, 4 or 8 inputs for PD sensors with short-circuit-proof remote power supply
Monitoring for cable discontinuity and short-circuit
Connection F socket

Connectable PD sensors:
IDPS-x-F search coils
IDPS-GTU-E CapEye® amplifier
Devices with CapEye® interface

Optional: Gate function for noise suppression

A PD input may be configured as gate

Optional: External frequency input
for synchronisation of PD sampling
16.7 / 25 / 50 / 60 / 400 Hz

- **Outputs:**
1 contact output for PD alarm
1 contact output for watchdog
Load rating 250 VAC / 25 VA
or 220 VDC / 25 W
Electrical isolation by relay
NO / NC selectable
Connection 150 cm cable stub

- **Indicators on front panel**
1 Status LED per input
1 Watchdog LED
1 General alarm LED, acknowledgeable

- **Liquid crystal display**
grafical, monochrome, 64 x 128 Dots
for measured values and messages
- **Real time clock**
maintenance free,
3 days power reserve
- **USB-B Interface**
for programming and reading
measured values
- **Optional: Ethernet port**
RJ45 jacket
- **Optional: RS-232**
Serial port
19200, 38400 Baud
9-pin D connector
- **Optional: GSM modem control firmware licence**
Reading of measurement data,
configuration and
SMS text message with measurement
data automatically in the event of alarm
or can be polled at any time
(Option RS-232 and additional GSM
modem are necessary)
- **Mains connection:**
via 150 cm cable stub
Power consumption max. 5 VA
230 V / 50...60 Hz, +- 15 %
Optional: 115 V / 50...60 Hz, +- 15 %
- **Device functions:**
Sampling: Peak value detection
Pulse resolution time: 1/180 of
mains period

Functions which can be called by buttons on front panel:

General display 8 measuring points
Single channel display
Self-test with diagnosis
Service menu
Last alarm with time and value
Acknowledgement of general alarm

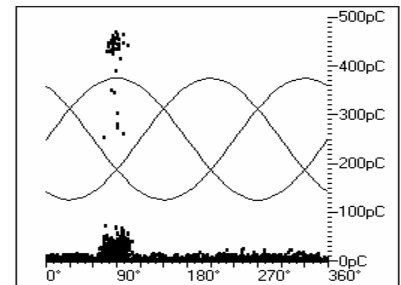
Internal messages generated by device:

PD alarm
Sensor cable discontinuity
Sensor short-circuit
Watchdog

- **Functions of the configuration program:**
Limit value programming
Measuring point labelling
Self-test and error diagnosis
General display of measured values

included in scope of delivery for
WinXP, Vista, Windows7

- **Optional PC software:**
Phase diagram (IDP phase)
In-phase recording of the
PD pulses and evaluation on
PC monitor for diagnostic purposes



Optional PC software
Phase diagram

Subject to technical
modification
and error.
(as per: 2010/11)

INDIPARD★
Indipard is a registered trademark
of the May Elektronik company



CapEye is a joint trademark
of the Kries-Energietechnik and
May Elektronik companies