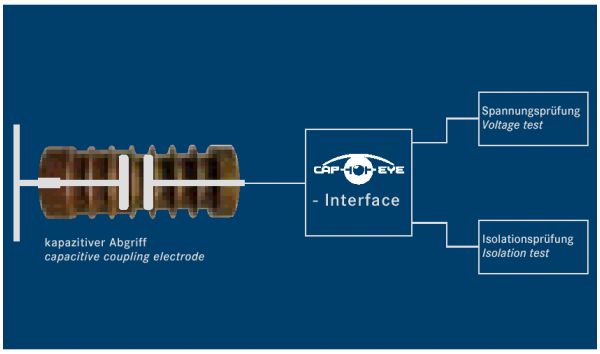
CapEye®
Combined Voltage Testing and Insulation Monitoring

MAY-ELEKTRONIK

Brief description

- Used in high-voltage and medium-voltage installations
- Online monitoring, surveillance and diagnosis of partial discharges
- Integrated voltage testing system without repeat testing
- Personnel protection
- Event-driven maintenance
- Can be retrofitted on old installations
- Designed as operational measuring instruments and for constant duty
- Compact design and practically orientated installation system



What is CapEye?

CapEye is based on the idea of using a capacitive coupling electrode to detect and monitor as many operating parameters of a switchgear installation as possible, i.e. using one sensor for more than one purpose. This saves costs, reduces the space required, reduces the cabling complexity and installation costs and minimises the failure probability of the entire array. CapEye is not an independent product but defines a common interface for simultaneous utilisation of the capacitive coupling electrode in high-voltage installations by several devices without mutual interference. The Kries-Energietechnik and May Elektronik companies propose implementing this idea consistently.
CapEye is a joint trademark of both companies. Devices featuring this trademark are inter-compatible and can be used simultaneously.

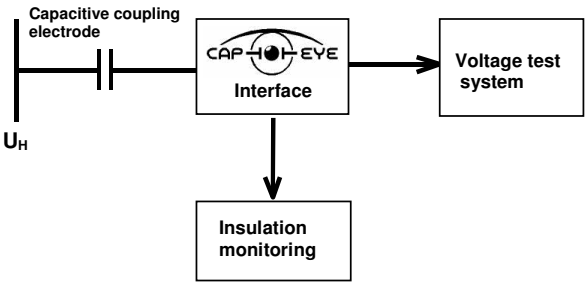
Together with the other components, CapEye forms an operating monitor for:

- **voltage testing and**
- **permanent insulation monitoring**

CapEye unites the advantages of both systems:

- Verifying safe isolation from supply
- Remote voltage monitoring
- Earth fault detection by asymmetry monitoring
- Online partial discharge monitoring (insulation monitoring)
- Early warning of flashover/sparkover
- Event-driven maintenance
- Reduction in maintenance costs

CapEye, the principle



CapEye allows interconnection and simultaneous use of a voltage test system and an insulation monitoring system on one capacitive coupling electrode. The CapEye interface branches the signals to the relevant devices connected and ensures that they do not interfere with each other. In this case, it is of no significance whether CapEye forms one unit with a device or is implemented separately.

The following 3 components are required for equipping a high-voltage or medium-voltage installation at low cost with a combined voltage testing and insulation monitoring system:

CapEye, the components required

1. Capacitive coupling electrodes as partial discharge and voltage sensors, either already in the system for each phase or to be retrofitted

2. Integrated Capdis-S1-C voltage test system with CapEye interface and fitted partial discharge amplifier
   or
   3-phase partial discharge amplifier IDPS-GTU-E with CapEye interface without voltage test function.

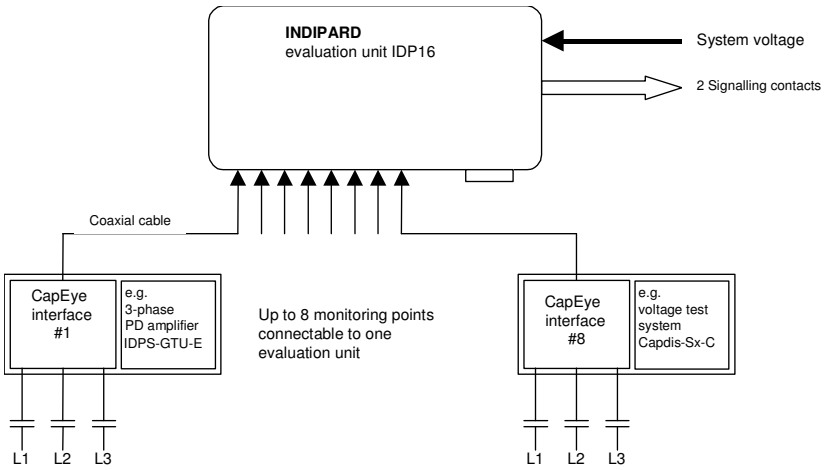
3. INDIPARD IDP 16 central partial discharge evaluation unit for insulation monitoring which can be expanded for up to 8 monitoring points and be cascaded for large substations.

MAY ELEKTRONIK GMBH Postfach 1244 67456 Boehl-Iggelheim Germany Tel. +49 6324 76091
www.may-elektronik.de E-mail: info@may-elektronik.de

CapEye®
Combined Voltage Testing and Insulation Monitoring

MAY-ELEKTRONIK

CapEye and INDIPARD, application



Advantages over two separate systems

- Voltage test system and simultaneous insulation monitoring
- Dual use of the capacitive coupling electrodes
- Only one additional cable required per switchgear cell
- Reduced installation costs
- Less components
- Less space required

The CapEye interface converts the measured values of up to three capacitive coupling electrodes to a monopolar signal for Indipard. No information is lost during this process. The range for detection of partial discharges is approx. 5 m in both directions along the conductor to which the capacitive coupling electrode is connected. The range in cable is approx. 1 m. The familiar search coils and inductive partial discharge sensors from Indipard can also be used with the evaluation unit, even in a mixed configuration. The evaluation unit is connected to the sensors by means of coaxial cables. The evaluation unit monitors up to eight inputs and can be cascaded for large substations. If partial discharges occur in the installation, it alerts the user by means of signalling contacts. Indipard is entirely self-monitoring and is also suitable for retrofitting on old installations.
The Capdis-Sx-C also contains a CapEye interface with partial discharge (PD) amplifier, in addition to the voltage test function in accordance with IEC 61243-5. Together with the capacitive coupling electrodes and the evaluation unit, it forms a complete system for combined voltage and insulation monitoring.

Devices and components

Indipard
partial discharge
evaluation unit IDP 16

Indipard 3-phase
CapEye amplifier
IDPS-GTU-E

Voltage test system
with CapEye interface
Capdis-Sx-C

INDIPARD

Indipard is a trademark of the May Elektronik company

As per: 2010/11

CAP EYE

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

MAY ELEKTRONIK GMBH Postfach 1244 67456 Boehl-Iggelheim Germany Tel. +49 6324 76091
www.may-elektronik.de E-mail: info@may-elektronik.de