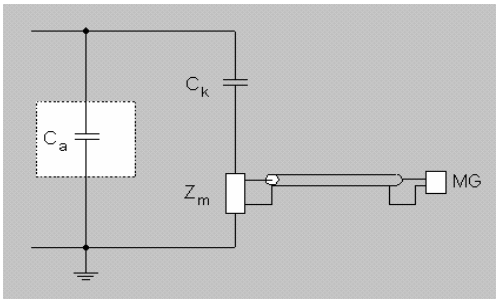
INDIPARD® IDPS

Sensors for Online Partial Discharge Monitoring

MAY-ELEKTRONIK

Brief description

- Active partial discharge sensors
- Integrated preamplifier
- Powered and monitored by Indipard evaluation unit
- Search coil for coupling without physical contact
- 3-phase CapEye® amplifier for capacitive coupling electrodes
- Compact design and practically orientated assembly system
- Can be retrofitted in old installations



Field of application and benefits

The partial discharge (PD) sensors, together with the INDIPARD evaluation unit, form an online monitoring system for insulation monitoring of high-voltage and medium-voltage installations. Continuous monitoring of partial discharge activities offers the opportunity of 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.

Mode of operation

The PD sensors are installed in the parts of a medium-voltage or high-voltage installation at risk. They detect the high-frequency electric fields generated by the partial discharges and forward them to the IDP16 via coaxial cable. The sensors are active, i.e. they feature a preamplifier. It is powered by the evaluation unit via the coaxial cable. Depending on application, either search coils, capacitive coupling electrodes with a CapEye® amplifier or devices with CapEye® interface may be used.

Search coil

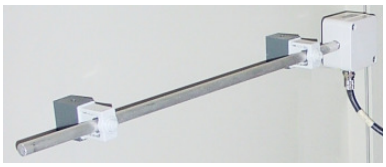
The search coil performs coupling without physical contact. It must be fitted in the electric field between high voltage and earth. Its metal bar forms a capacitive coupling electrode. Its range is approx. 2 m in open installations and approx. 1 m in enclosed installations. It is particularly suitable for retrofitting in old installations.
Complete installation kits are available for specific types of installation.

CapEye® amplifier

The CapEye® amplifier features three inputs for connection to capacitive coupling electrodes such as capacitive insulators or capacitive coupling electrodes. The range is approx. 5 m from the installation location in both directions of the conductor but ends after approx. 1 m in cable.
CapEye® amplifiers have improved common mode rejection cabability. The CapEye® amplifier is particularly suitable for monitoring twin switchgear cells, in the case of multi-tier design or in the case of multiple separation of switchgear cells.

Voltage test system with CapEye® amplifier

The Capdis-Sx-C is an integrated, capacitive voltage test system in accordance with IEC 61243-5, either with or without contact outputs.
It is also fitted with a CapEye® amplifier and thus allows monitoring of the voltage and condition of the insulation on the same coupling electrodes.



Search coil IDPS-A-F

CapEye amplifier IDPS-GTU-E

Voltage test system with CapEye amplifier Capdis-Sx-C

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Technical data

Connection cable to evaluation unit

Type	Coaxial cable
Length	up to 50 m per input

Search coil IDPS-A-F

Rated meas. range	400 pC
Antenna bar length	standard 50 cm, min. 30 cm, max. 200 cm
Installation	with 2 spacers directly on an earthed surface within the switchgear cubicle
Min. earthing clearance	2 cm
Opt. earthing clearance	4 ... 10 cm
Detection range	with 4 cm earthing clearance min. 100 cm in enclosed installations min. 200 cm in open installations
Perm. amb. temp	-20° ... 55°C in operation -30° ... 70°C for storage
Connection	F socket and earth

CapEye amplifier IDPS-GTU-E

Rated meas. range	1000 pC
Rated voltage	5 ... 36 kV, dep. on version
Coupling capacitance (C1)	5 ... 100 pF, dep. on version
Detection range	5 m in both directions from conn. point of coupling electrode but max. 1 m in cable
Dimensions	50 x 52 x 35 mm (W x H x D)
Installation	Wall mounting with 2 screws
Perm. amb. temp.	-20° ... 55°C in operation -30° ... 70°C for storage
Connection	F socket with 20 cm coaxial cable L1, L2, L3 each 12 cm flexible lead with tab receptacle 4.8 x 0.8 mm Earth, 20 cm lead with annular cable lug M6 Extension up to 6 m possible only with coaxial cable

Voltage test system with CapEye® amplifier Capdis-Sx-C

Mechanical

Installation	Front panel installation
Dimensions	96 x 48 mm (W x H)
Recommended cut-out	92 x 45 mm
Installation depth	60 mm
Metal thickness	1.5 ... 2.5 mm
Enclosure	IP 54
Ambient temperature	-20° ... 55°C in operation -30° ... 70°C for storage
Connection	Earth: 20 cm flexible lead with annular cable lug M6 L1, L2, L3 each 12 cm lead with tab receptacle 4.8 x 0.8 mm Extension up to 6 m possible only with coaxial cable.

Voltage testing

Standard applied	VDE 0682 T 415 resp. IEC 61243-5 (integrated radial voltage test circuit)
Rated voltage	5 ... 36 kV, dep. on version
Coupling capacitance (C1)	5 ... 100 pF, dep. on version
Indication per conductor	no indication: $U < 10\%$ of U_{Rated} Half lightning flash: $10\% \times U_{Rated} < U < 45\% \times U_{Rated}$ Self-test passed Full lightning flash: Rated voltage applied Repeat test passed
Relay outputs	(Only on Capdis-S2-C) 250 V AC / 5 A (resistive load) 30 V DC / 5 A (resistive load)

Insulation monitoring

Rated meas. range	1000 pC
Detection range	5 m in both directions from connection point of coupling electrode but max. 1 m in cable
Connection	F socket with 20 cm coaxial cable for Indipard evaluation unit

INDIPARD

Indipard is a registered trademark of the May Elektronik company

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

CAPEYE

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

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