

CAPDIS-S2_55 (R5)

Capacitive Voltage Detecting Systems VDIS with Partial Discharge Detection

The **CAPDIS-S2_55 (R5)** is an integrated Voltage Detecting Systems for checking for absence of voltage in medium voltage switchgear applications according to IEC 62271-213:2021 (or IEC 61243-5) with integrated three-phase continuous indication and Signaling outputs. It also allows detection of partial discharges in the station and its surroundings.



Properties

Voltage Detecting Systems VDIS for Medium Voltage (1..52 kV)

Testing for absence of voltage in medium voltage switchgear according to IEC 61243-5 or IEC 62271-213 with integrated three-phase continuous indication.

Application in power switchgear and for protection purposes

As an active element of the protection chain

Fail-safe voltage testing and protection function

Voltage Detecting Systems according to protection device standard IEC 60255 and voltage tester standard IEC 61243-5 resp. IEC 62271-213. The CAPDIS-S2_55 is specially dimensioned for use in power systems as well as for protection purposes and absorbs high-frequency disturbance variables from atmospheric surge voltage loads, backfiring and resonance oscillations at all inputs and outputs. This also prevents the propagation of interference to the rest of the secondary equipment. The extended immunity to interference also allows the CAPDIS-S2_55 to be used for safety-relevant functions.

Switching fault protection

The propagation of decentralized feeders requires the installation of reverse voltage detection with switching fault protection in substations and protection stations. Reverse voltage detection provides personnel safety and switching fault protection by interlocking the grounding switch when reverse voltage is present.

Partial discharge detection

Critical partial discharge levels are detected, indicated on the display and output via the relay collective fault signal. The sensitivity of the PD detection is set or also deactivated via a DIP switch on the rear of the device. A socket behind the front flap is available for PD diagnostics.

Islanding network warning

In substations, for the islanding network warning, it must also be checked with the circuit breaker open whether reverse voltage is present. If this is the case, an islanding warning is



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generated in the field control and protection device, which prevents automatic connection during an AWE (automatic reclosure) when reverse voltage is present.

Protective device standard IEC 60255

Fulfills the IEC 60255 standard and is thus authorized for protection and safety functions. Integrated interface to the CAPDIS-M voltage monitoring module.

Maintenance-free, complete self-monitoring

The 3-level voltage display exempts the CAPDIS-S2_55 from repetition testing in accordance with IEC 61243-5 or IEC 62271-213 and BGV A3. The device also does not require a battery for the self-test according patent DE 103 04 396.

Protection relay outputs and LED indicators

Two power relays (changeover contacts) are operated with universal auxiliary voltage. Status indication by means of LEDs in the front.

Technical Data

Device data

Article number	2502134_H008
Product designation	CAPDIS-S2_55 (R5) Capacitive Voltage Detecting Systems with Relay Contacts for Protection Applications with Partial Discharge Detection
Standard	IEC 61243-5, IEC 62271-213, IEC 60255-1
Required data for order	Rated operating voltage U_n , coupling capacitance C1

Functions

Intrinsic safety	Device is intrinsically safe
Broken lead detection	Can be activated/deactivated via DIP switches
Partial discharge detection	<ul style="list-style-type: none">• Device detects partial discharges• 4 sensitivity levels adjustable• Remote indication of partial discharge e.g. to IKI-23, IKI-50_1F R2, IKI-50_1F R2e or IKI-55 for partial discharge trend detection

Controls and display

Response time relay	$\leq 0,2$ s
Front display	Monochrome LC display and colored LEDs
Controls	Self-test button



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Dimensions and type of installation

Case height x width x depth	48 x 96 x 37 mm
Cutout height x width	45 x 92 mm
Norm cutout dimensions	DIN IEC 61554:2002-08
Installation type	Panel mounting

Operating conditions

Operating temperature	-25°C ... 55°C
Storage temperature	-30°C ... 75°C
Protection class	IP54
Voltage level	1..52 kV (Medium-voltage)
Rated frequency	50 Hz, 60 Hz
Type of interface	LRM
Lifetime	Minimum 22 years (MTBF)

Signaling outputs

Connection of connecting cables	By means of flat plug sleeve 4.8 x 0.8 mm or system plug (order separately)
Switching capacity relay	250 VAC, 5 A (resistive load) / 30 VDC, 5 A / 250 VDC 0.3 A (resistive load)

Voltage supply

Auxiliary power supply	24 - 230 V AC/DC +-10%
Power supply	24 - 230 V AC/DC +- 10%; Power input < 1 Watt
Power consumption	< 1 W
Insulation voltage	2 kV
Battery	No battery required

Accessories

Article number	Product designation
3500939	Connector strip- 8-pole for CAPDIS-S2x
2502360	PD-Trend-Check
2510647_H001	Shield-Installation-Set for CAPDIS (R5)
C2m	C2m-Module for CAPDIS-Sx
2500828_S999	Cable set Custom-made for specific switchgear On request 0,5 - 40 m

