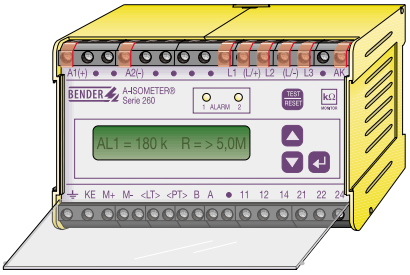
| Device type | IRDH265-4.. | IRDH365-4.. | IRDH1065B-4.. |
|---|---|---|---|
| **Insulation coordination acc. to IEC 60664-1:** | | | |
| Rated insulation voltage | AC 630 V | AC 630 V | AC 500V |
| Rated impulse withstand voltage/contamination level | 6 kV/3 | 6 kV/3 | 4 kV/3 |
| **Voltage range** | | | |
| Nominal voltage range $U_n$ | (3)AC 0 ... 793 V / DC 0... 650 V | (3)AC 0 ... 793 V / DC 0... 650 V | (3)AC/DC 0 ... 575 V |
| Supply voltage $U_S$ | up to 500 V *1) | up to 500 V *1) | AC 230 V *1) |
| Operating range of $U_S$ | 0.8 ... 1.15 x $U_S$ | 0.8 ... 1.15 x $U_S$ | 0.8 ... 1.15 x $U_S$ |
| Max. power consumption | 6 VA | 6 VA | 10 VA |
| **Response values** | | | |
| Response value $R_{an1}$ | 10 kΩ to 990 kΩ | 10 kΩ to 990 kΩ | 10 kΩ to 990 kΩ |
| Response value $R_{an2}$ | 10 kΩ to 990 kΩ | 10 kΩ to 990 kΩ | 10 kΩ to 990 kΩ |
| Response time at $R_F = 0.5$ x $R_{an}$ and $C_e = 1$ µF | approx. 6 s / see characteristic curve | approx. 6 s / see characteristic curve | approx. 6 s / see characteristic curve |
| Max. admissible system leakage capacitance $C_e$ | 150 (500) µF | 150 (500) µF | 150 (500) µF |
| **Measuring circuit** | | | |
| Measuring voltage $U_m$ | 27 V | 27 V | 27 V |
| Measuring current $I_m$ | max. 230 µA | max. 230 µA | max. 225 µA |
| Internal DC resistance $R_i$ | 120 kΩ | 120 kΩ | 120 kΩ |
| Impedance $Z_i$ at 50 Hz | >250 kΩ | >250 kΩ | >250 kΩ |
| Max. admissible extraneous DC voltage | - | - | - |
| **Outputs** | | | |
| Current output at measuring instrument SKMP *4) | 120 kΩ | 120 kΩ | 120 kΩ |
| Max. load | 400 µA (12.5 kΩ) | 400 µA (12.5 kΩ) | 400µA (12.5kΩ)/0/4...20mA (400Ω) |
| Contact circuit | 2 separate alarm relays | 2 separate alarm relays | 2 separate alarm relays |
| Switching components | 1 change-over contact each | 1 change-over contact each | 1 change-over contact each |
| Contact class acc. to DIN IEC 60255 part 0-20 | IIB | IIB | IIB |
| Rated contact voltage | AC 250 V / DC 300 V | AC 250 V / DC 300 V | AC 250 V / DC 300 V |
| Admissible number of operations | 12000 cycles | 12000 cycles | 12000 cycles |
| Making capacity | UC 5 A | UC 5 A | UC 2 A |
| Breaking capacity | | | |
| AC 230 V and cos phi = 0.4 | 2 A | 2 A | 2 A |
| DC 220 V and L/R = 0.04 s | 0.2 A | 0.2 A | 0.2 A |
| Tests of the Electromagnetic Compatibility (EMC) | | | |
| acc. to EC directives, test data see Annex | Yes | Yes | Yes |
| **General data** | | | |
| Ambient temperature, during operation | -10℃ to +55℃ | -10℃ to +55℃ | -10℃ to +70℃ |
| Storage temperature range | -40℃ to +70℃ | -40℃ to +70℃ | -40℃ to +70℃ |
| Climatic class acc. to IEC 60721 | | | |
| (except condensation and formation of ice) | 3K5 | 3K5 | |
| Operating mode | continuous operation | continuous operation | continuous operation |
| Mounting | any position | any position | any position |
| Connection | modular terminals | modular terminals | connectors acc. to DIN 46 612 / E48 |
| Cross sectional area of connecting cable, single wire | 0.2...4 mm² | 0,2...4 mm² | - |
| Cross sectional area of connecting cable, flexible | 0.2...2.5 mm² | 0,2...2,5 mm² | - |
| Protection class acc. to DIN EN 60529 | | | |
| Built-in components | IP 30 | IP 30 | IP 00 |
| Terminals / with terminal covers | IP 20 | IP 20 | - |
| Type of enclosure /dimension diagram | XM 112 | X 300 | Eurocard 100 x 160 mm (12TE) |
| Screw fixing | with mounting plate | - | - |
| DIN rail mounting acc. to | DIN EN 50022 | enclosure for panel mounting | - |
| Flammability class | UL94V-0 | UL94V-1 | - |
| Technical manual | TGH1249 E | TGH1249 E | TGH 1264 E |
| Weight max. | 825 g | 1075 g | 920 g |

*1) see device description "ordering details" *2) see device description "measuring circuit"

*3) see device description "response values" *4) SKMP = scale centre point

# A-ISOMETER® IRDH265-4..

**Insulation monitoring device for IT AC systems with DC components and IT DC systems**




## Application in modern power supply systems

- One and three-phase systems with converter drives
- DC systems with power converters
- Mixed AC/DC supply systems
- UPS systems
- Heaters with phase control
- Systems with switched-mode power supply
- Systems with very high leakage capacitances

## Product description

The A-ISOMETER® IRDH265-4 monitors today´s power supply systems by microprocessor-controlled measuring voltage. These systems frequently contain converters, power converters, thyristor controls and directly connected DC components and due to interference suppression arrangements often high system leakage capacitances to earth exist. The AMP measuring principle adapts itself automatically to the respective system conditions. The voltage range can be extended with coupling devices. Further details on this subject you will find in chapter 1.9 "Coupling devices".

### Device characteristics

- Universal for 3/(N)AC systems, AC/DC systems up to 793 V and DC systems up to 650 V.
- The voltage range can be extended with coupling devices.
- Automatic adaptation to system leakage capacitances up to 500 µF.
- Safe measuring thanks to the AMP measuring principle and microcontrollers.
- Two adjustable response values 10 ... 990 kΩ.
- LC display.
- RS485 interface.
- Connection monitoring.
- Automatic self test.

## Ordering details

| Type | Nominal voltage range $U_n$ | Supply voltage $U_S$ | Art. No. |
|---|---|---|---|
| IRDH265-4 | AC 0-793/DC 0-650 V | AC 230 V | B 9106 8001 2) |
| IRDH265-413 | AC 0-793/DC 0-650 V | AC 90 ... 132 V* | B 9106 8004 2) |
| IRDH265-415 | AC 0-793/DC 0-650 V | AC 400 V | B 9106 8017 2) |
| IRDH265-416 | AC 0-793/DC 0-650 V | AC 500 V | B 9106 8009 2) |
| IRDH265-422 | AC 0-793/DC 0-650 V | DC 19.2 ...84 V* | B 9106 8002 1) |
| IRDH265-423 | AC 0-793/DC 0-650 V | DC 77...286 V* | B 9106 8003 1) |

Other supply voltages on request.

* This information represents absolute values for the supply voltage, to which the working range is not applicable.

1) only for use in the industrial sector

2) for use in the household as well as industrial sector

## Measuring principle


IRDH265-4 series operates with the AMP measuring principle.

This ensures safe monitoring of todays control voltage systems. The Annex contains a detailed description of the measuring principle.

## Standards

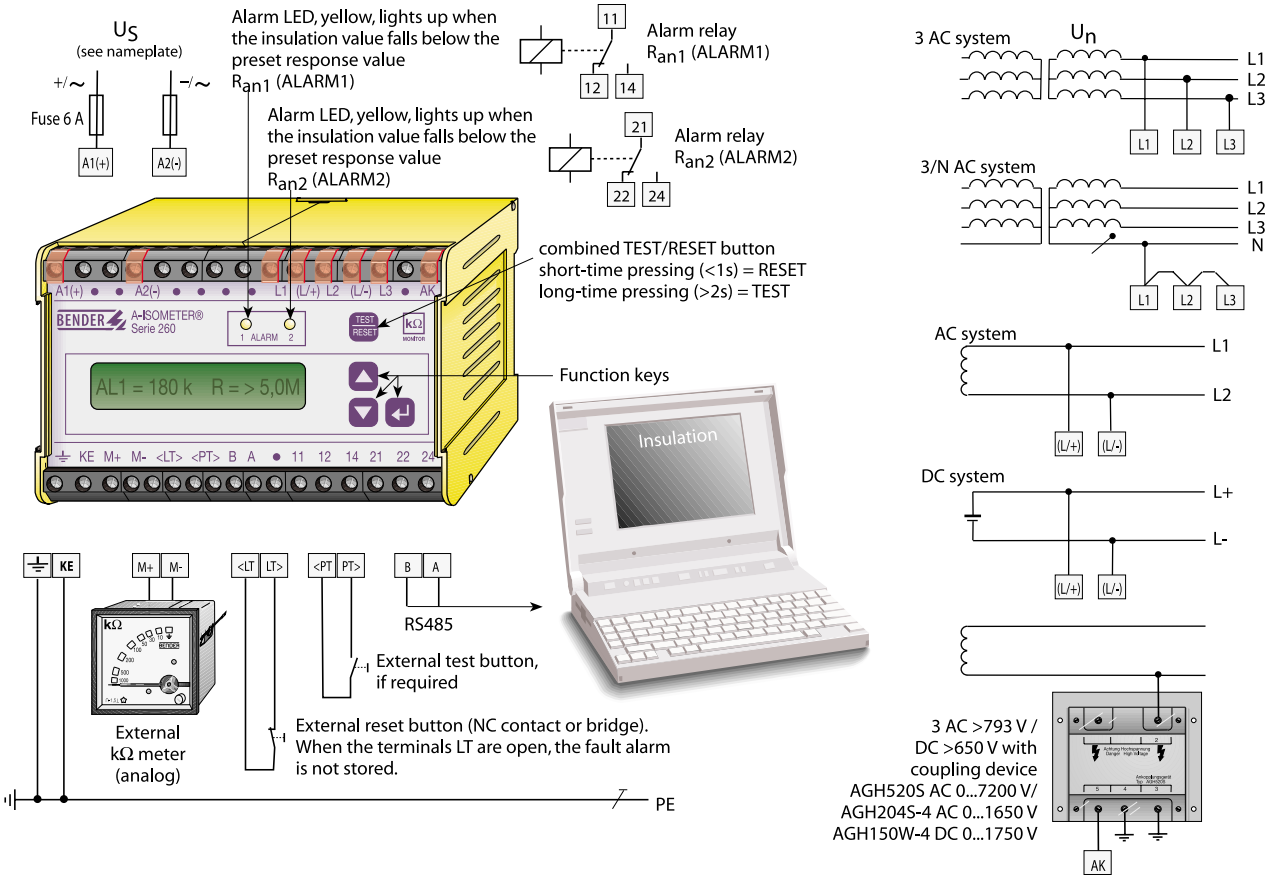
IRDH265-4 series complies with the standards DIN EN 61557-1 (VDE0413 part1):1998-05, IEC 61557-8, EN 61557-8 and ASTM F1669M-96.

Details about these standards you will find in the Annex.

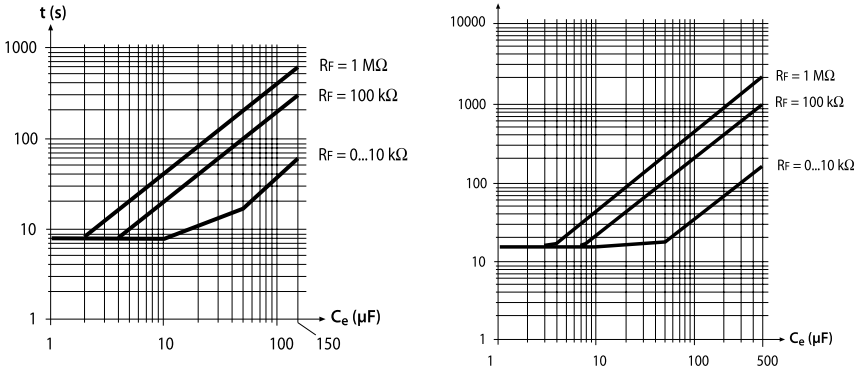
When installing the device, the safety instructions enclosed with the equipment must be observed !

### Certifications:

## Wiring diagram




## Response time




## Accessories

### External kΩ measuring instruments

| Type | Art. No. |
|---|---|
| 7204-1421 | B 986 763 |
| 9604-1421 | B 986 764 |

### Coupling devices

| Type | Nominal voltage range $U_n$ | Art. No. |
|---|---|---|
| AGH150W-4 | DC 0 ... 1760 V | B 98018006 |
| AGH204S-4 | AC 0...1300 /0...1650 V | B 914 013 |
| AGH520S | AC 0 ... 7200 V | B 913 033 |

Wiring diagrams see chapter 1.9