

Technical data

A-ISOMETER® for IT DC systems ≥ 230 V

Chapter 1.5

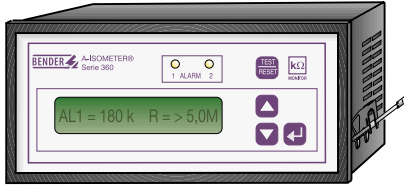
Device type	IRDH265-4..	IRDH365-4..	IRDH1065B-4..
Insulation coordination acc. to IEC 60664-1:			
Rated insulation voltage	AC 630 V	AC 630 V	AC 500V
Rated impulse withstand voltage/contamination level	6 kV/3	6 kV/3	4 kV/3
Voltage range			
Nominal voltage range U_n	(3)AC 0 ... 793 V / DC 0... 650 V	(3)AC 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 $R_F = 0.5 \times R_{an}$ and $C_e = 1 \mu\text{F}$	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)	400 μA (12.5 kΩ)/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 $L/R = 0.04 \text{ s}$	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°C to +55°C	-10°C to +55°C	-10°C to +70°C
Storage temperature range	-40°C to +70°C	-40°C to +70°C	-40°C to +70°C
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 mm ²	0.2...4 mm ²	-
Cross sectional area of connecting cable, flexible	0.2...2.5 mm ²	0.2...2.5 mm ²	-
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



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-ISOMETERS IRDH365-4 monitor today's power supply systems by micro-processor-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. Details on these devices 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 μ F.
- Safe measuring thanks to the AMP measuring principle and micro-controllers.
- Two adjustable response values 10 ... 990 k Ω .
- LC display.
- RS485 interface.
- Connection monitoring.
- Automatic self test.

Ordering details

Type	Nominal voltage range U_n	Supply voltage U_s	Art. No.
IRDH365-4	AC 0-793/DC 0-650 V	AC 230 V	B 9106 8006 ²⁾
IRDH365-413	AC 0-793/DC 0-650 V	AC 90 ... 132 V*	B 9106 8011 ²⁾
IRDH365-415	AC 0-793/DC 0-650 V	AC 400 V	B 9106 8012 ²⁾
IRDH365-416	AC 0-793/DC 0-650 V	AC 500 V	B 9106 8025 ²⁾
IRDH365-422	AC 0-793/DC 0-650 V	DC 19.2 ... 84 V*	B 9106 8014 ¹⁾
IRDH365-423	AC 0-793/DC 0-650 V	DC 77 ... 286 V*	B 9106 8021 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



IRDH365-4 series operates with the AMP measuring principle.

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

Standards

The IRDH365-4 series complies with the standards DIN EN 61557-1 (VDE0413 part 1):1998-05, IEC 61557-8, EN 61557-8 and ASTM F1669M-96.

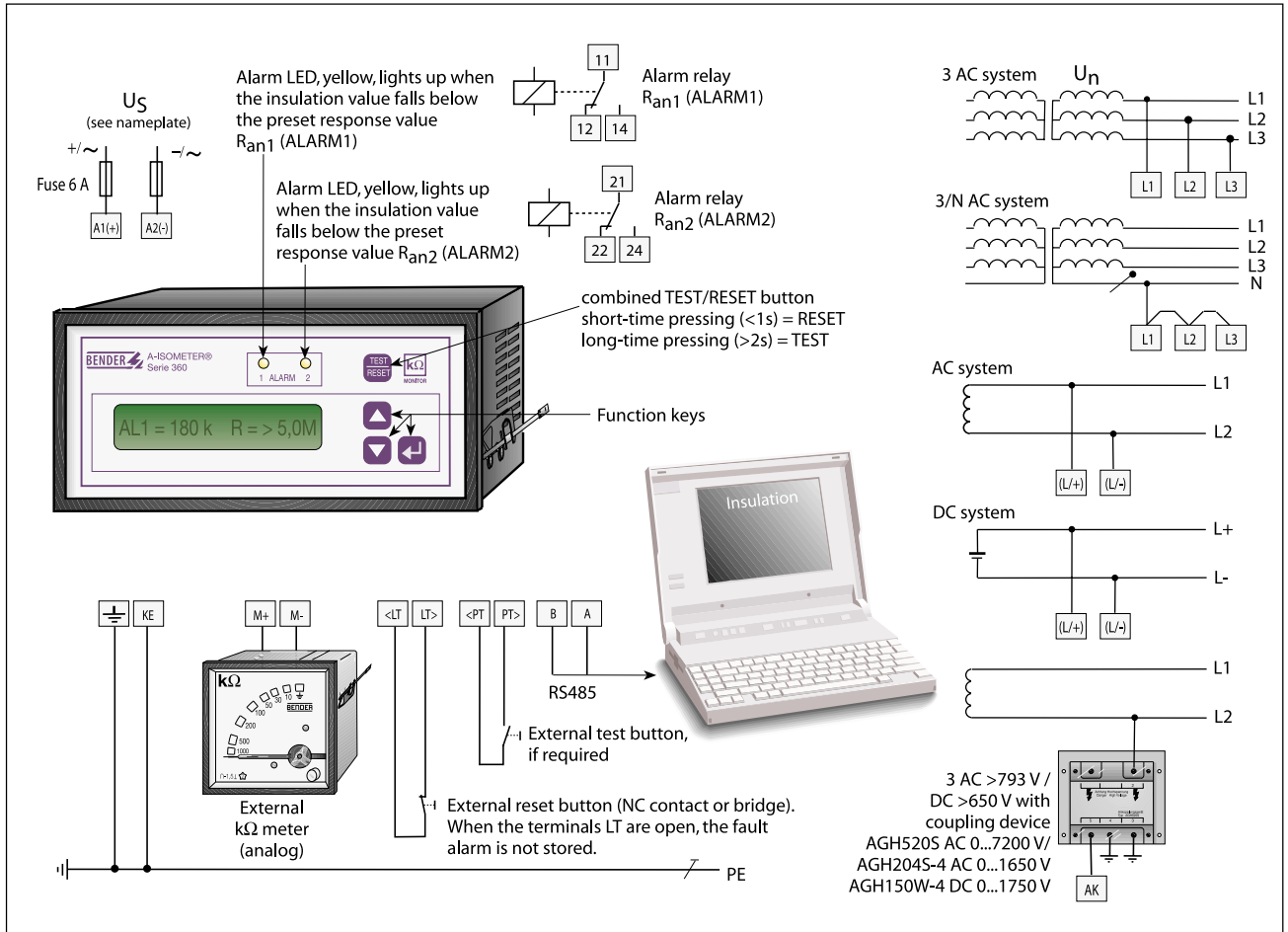
Details about these standards you will find in the Annex.

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

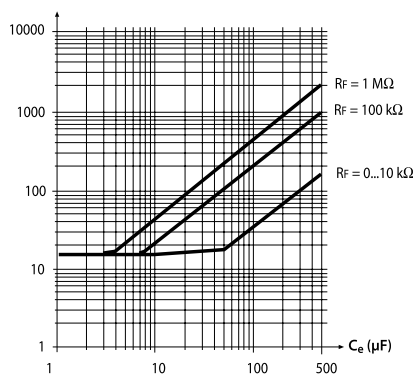
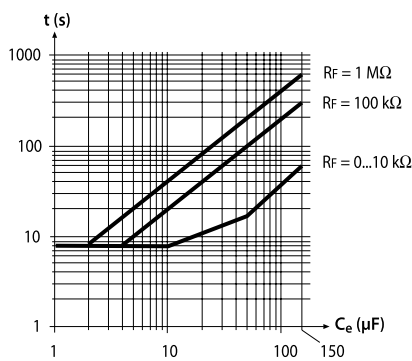
Certifications:



Wiring diagram



Response time



Accessories

External $k\Omega$ 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