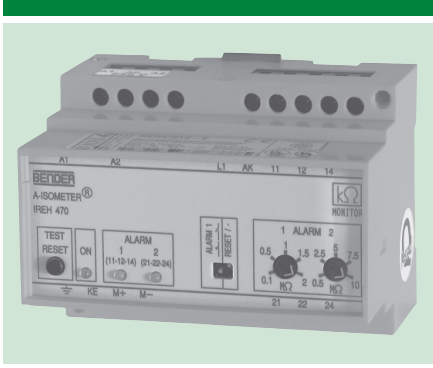


## A-ISOMETER® IREH470Y2-6...

Off-line monitor for disconnected  
AC, DC and 3(N) AC loads in TN, TT and IT systems



IREH470Y2

### Device characteristics

- Insulation monitoring device for off-line TN, TT and IT systems
- AC, 3(N) AC and DC systems 0...793 V
- Nominal voltage extendable via coupling devices
- Two separately adjustable response values 100 kΩ...2 MΩ / 500 kΩ...10 MΩ
- Power On LEDs and alarm LEDs for the indication of insulation faults, ALARM1 and ALARM2
- Connection for external kΩ indication
- Combined TEST and RESET button
- Two separate alarm relays with one voltage-free changeover contact each
- Alarm relay 1 N/C operation  
Alarm relay 2 N/O operation
- Fault memory, selectable

### Certifications



### Product description

The A-ISOMETERs® of the IREH470Y2-6 series monitor the insulation resistance of deenergized TN, TT and IT systems and energized systems with voltages 0...793 V. These loads, e. g. fire extinguisher pumps, slide-valve drives etc., are only switched on in "case of emergency". During the shutdown periods, however, humidity or other effects may cause insulation faults in the supply leads or loads which may go undetected. Switching the device on may then lead to the tripping of the protective device to or may even result in motor fires so that operation of the device is no longer possible. In combination with a coupling device, the A-ISOMETERs® can also be used for higher voltages.

### Application

Disconnected loads such as fire extinguisher pumps, emergency drives, ship cranes, slide-valve drives in supply lines (gas, water, oil), motor-driven closing systems, diving pumps, drives for anchors, elevators, flue gas valves and stand-by generators.

### Function

If the insulation resistance between the system conductors and earth falls below the set response value, the alarm relays switch and the alarm LEDs light up. The measured value is indicated on an externally connectable measuring instrument. In this way changes, e. g. the connection of branch circuits, can easily be detected. The fault message can be stored. The fault memory can be reset by pressing the RESET button. By pressing the TEST button, the function of the device can be tested. Two separately adjustable response values and two separate alarm relays allow prewarning already in case of very high-resistance insulation faults. When the lower response level is reached an interlocking function will be activated and the connection of a defective load can be prevented.

The insulation resistance can be measured via the output L1 or via a contact to the system being monitored. The contact is controlled via the contact element K1. With the contact in closed position, the system is deenergized and the insulation resistance is being measured. If the system or load is in operation, K1 opens the contact and insulation monitoring is deactivated. Note that the main switch disconnects all poles. Ensure a low-resistance connection between all line conductors (e. g. by motor windings) so that the measuring voltage can be superimposed onto the system.

**Note:** If the IREH470Y2-6 is operated via a coupling device, the auxiliary contact (NC contact) of K1 between the A-ISOMETER® and the coupling device need not to be designed for the nominal voltage of the system. A rated contact voltage of AC 230 V will be sufficient.

### Measuring principle



Superimposed DC measuring voltage with reversing stage (see chapter annex – measurement technology).

### Standards

The IREH470Y2-6.. series complies with the standards: DIN EN 61557-8 (VDE 0413 part 8): 1998-05; EN 61557-8: 1997-03, IEC 61557-8: 1997-02, ASTM F 1669M-96, ASTM F 1134-94.

### Ordering details

Type	Supply voltage $U_s$	Art. No.
IREH470Y2-6	AC 230 V	B 9107 8001
IREH470Y2-615	AC 400 V	B 9107 8003
IREH470Y2-613	AC 90...132 V*	B 9107 8002

Other voltages on request \*Absolute values

### Accessories

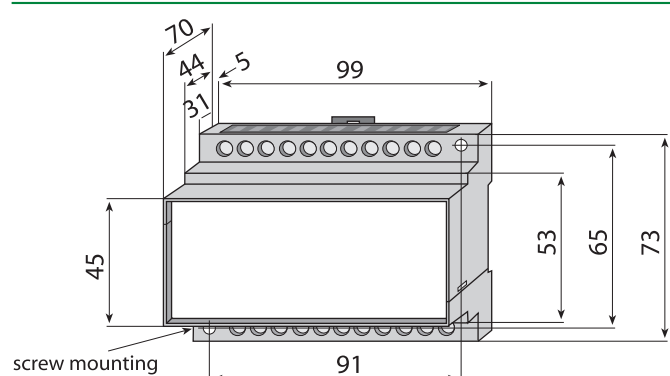
#### External kΩ measuring instruments

Type	Art. No.
7204-1621	B 986 700
9604-1621	B 986 782

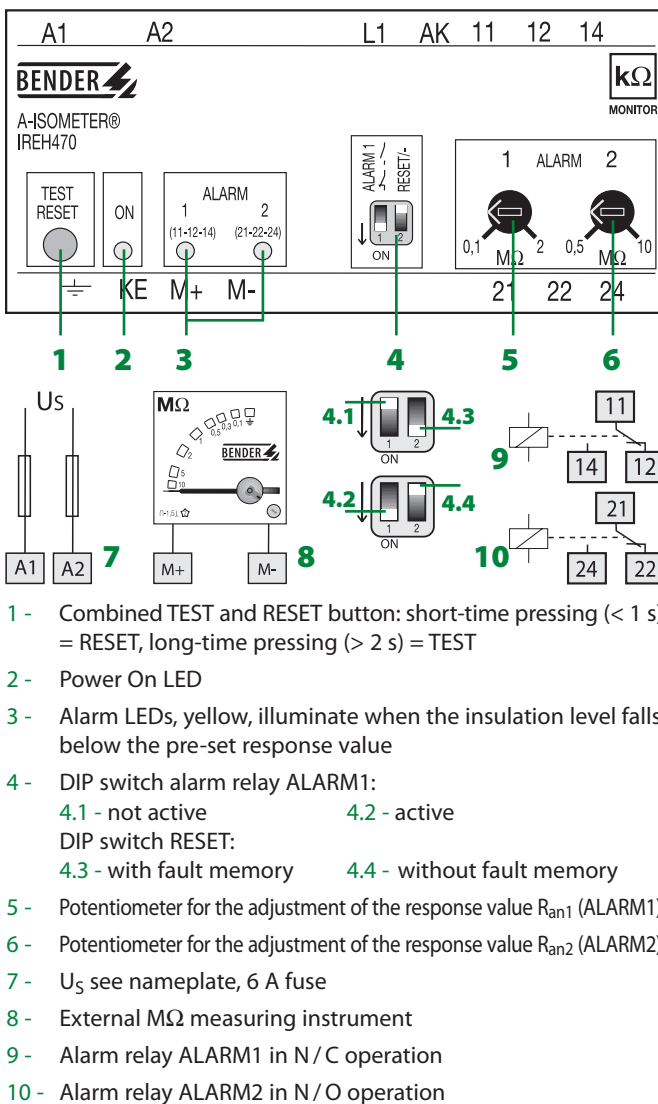
#### Coupling devices

Type	Nominal system voltage $U_n$	Art. No.
AGH520S	AC 0...7200 V	B 913 033

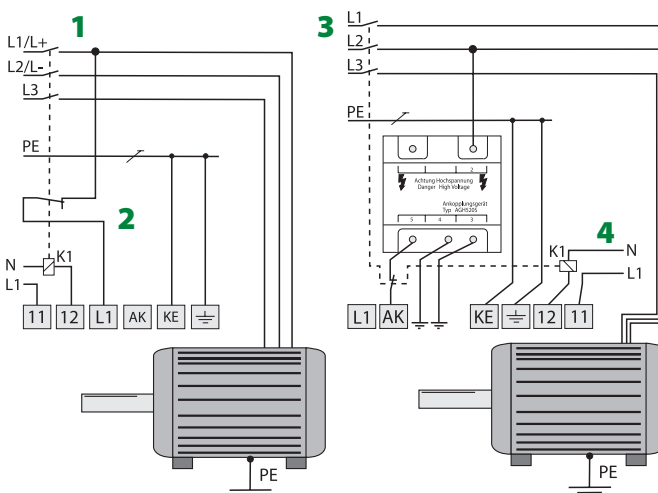
### Dimension diagram, enclosure X470 Dimensions in mm



## Wiring diagram – operating elements



## Wiring diagram – system connection



- 1** - 3(N) AC system  
**2,4** - Auxiliary voltage for main contactor  
**3** - 3(N) AC system AGH520S 0...7200 V

## Technical data A-ISOMETER® IREH470Y2-6...

### Insulation coordination acc. to IEC 60664-1

Rated insulation voltage	AC 630 V
Rated impulse voltage / pollution degree	6 kV/3

### Voltage ranges

Nominal system voltage $U_n$	AC, 3(N) AC 0...793 V, DC 0...793 V
Nominal frequency $f_n$	DC, 40...460 Hz
Supply voltage $U_S$	see ordering details
Operating range of $U_S$	0.8...1.15 x $U_S$
Frequency range $U_S$	50...460 Hz
Power consumption	≤ 3 VA

### Response values

Response value $R_{an1}$ (ALARM1)	100 k $\Omega$ ...2 M $\Omega$
Response value $R_{an2}$ (ALARM2)	500 k $\Omega$ ...10 M $\Omega$
Response time $t_{an}$ at $R_f = 0.5 \times R_{an}$ and $C_e = 1 \mu F$	≤ 4 s

### Measuring circuit

Measuring voltage $U_m$	≤ 20 V
Measuring current $I_m$ max. (at $R_f = 0 \Omega$ )	≤ 17 $\mu A$
Internal d.c. resistance $R_i$	≥ 1.2 M $\Omega$
Internal impedance $Z_i$ at 50 Hz	≥ 1 M $\Omega$
Max. permissible extraneous DC voltage $U_{fg}$	≤ 800 V
System leakage capacitance $C_e$	≤ 10 $\mu F$

### Outputs

TEST / RESET button	internal / external
Current output at measuring instrument (scale centre point 120 k $\Omega$ )	0...400 $\mu A$
Max. load	25 k $\Omega$

### Switching elements

Switching elements	2 x 1 changeover contact
Operating principle ALARM1	N / O operation
Operating principle ALARM2	N / C operation
Electrical endurance	12000 cycles
Contact class	IIB acc. to DIN IEC 60255 part 0-20
Rated contact voltage	AC 250 V / DC 300 V
Making capacity	AC / DC 5 A
Breaking capacity	2 A, AC 230 V, cos phi = 0.4 0.2 A, DC 220 V, L/R = 0.04 s

### General data

Shock resistance acc. to IEC 60068-2-27 (device in operation)	15 g / 11 ms
Bumping acc. to IEC 60068-2-29 (during transport)	40 g / 6 ms
Vibration resistance acc. to IEC 60068-2-6 (device in operation)	1 g / 10...150 Hz
Vibration resistance acc. to IEC 60068-2-6 (during transport)	2 g / 10...150 Hz
Ambient temperature (during transport)	-10 °C...+70 °C
Storage temperature range	-40 °C...+70 °C
Climatic class according to IEC 60721-3-3	3K5
Operating mode	continuous operation
Mounting	any position
Connection	screw terminals
Wire cross section, rigid, flexible	0.2...4 mm <sup>2</sup> / 0.2...2.5 mm <sup>2</sup>
Degree of protection, internal components (DIN EN 60529)	IP30
Degree of protection, terminals (DIN EN 60529)	IP20
Screw mounting	2 x M4
DIN rail mounting according to	DIN EN 60715 / IEC 60715
Flammability class	UL94V-0
Instruction leaflet	107001
Weight approx.	350 g