

A-ISOMETER® IRDH375

Insulation monitoring device for unearthed AC, AC/DC and DC systems (IT systems)



A-ISOMETER® IRDH375

Device features

- Insulation monitoring for unearthed AC, AC/DC systems 0...793 V, DC 0...650 V
- Nominal voltage extendable via coupling device
- Two separately adjustable response values 1 kΩ...10 MΩ
- AMPPlus measurement method
- Automatic adaptation to the system leakage capacitance
- Info button to display device settings and the system leakage capacitance
- Continuous self monitoring, with automatic alarm message
- Automatic self test, selectable
- Connection for external kΩ indication
- Test and reset button
- Connection external test and reset button
- Two separate alarm relays with two voltage-free changeover contacts
- N/O or N/C operation, selectable
- Alarm relay for system fault (N/C operation)
- Backlit LC display
- RS-485 interface
- Plug-in terminals

Standards, approvals and certifications



Product description

The A-ISOMETER® of the IRDH375(B) series is designed to monitor the insulation resistance of unearthed main circuits (IT systems) AC, AC/DC 0...793 V resp. DC 0...650 V. The **AMPPlus** measurement method meets the particular requirements of modern power supplies which often include rectifiers, converters, thyristor-controlled DC drives and directly connected DC components. In these systems often high leakage capacitances against earth occur due to interference suppression measures. The IRDH375(B) automatically adapts itself to the existing system conditions.

In combination with a coupling device, the devices can also be used for higher voltages. An external supply voltage allows de-energised systems to be monitored too.

Application

- AC, DC or AC/DC main circuits
- AC/DC main circuits with directly connected DC components, such as rectifiers, converters, and thyristor-controlled DC drives
- UPS systems, battery systems
- Heaters with phase control
- Systems including switched-mode power supplies
- IT systems including high leakage capacitances
- Coupled IT systems

Function

When 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. Two separately adjustable alarm relays allow to distinguish between prewarning and alarm. The measured value is indicated on the LC display or an externally connectable measuring instrument. In this way any changes, for example when circuits are connected to the system, can be recognised easily. 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 as well as the connections to system and earth can be tested. Pressing the Info button provides additional information, such as the existing system leakage capacitance or device settings.

The function of the device and the earth connections are monitored. When a fault occurs, the system fault relay switches and the alarm LED "system fault" lights up. The parameterisation of the device can be carried out via the LC display or the function buttons integrated in the front plate.

Device version IRDH375B

Device version IRDH375B includes the following additional functions:

- History memory with real-time clock to store all alarm messages with date and time stamp
- Electrically isolated RS-485 interface (BMS protocol) for communication with other Bender devices
- Isometer disconnecting relays for the operation of several A-ISOMETER®s in coupled IT systems
- Current output 0(4)...20 mA

Use in coupled IT systems

Only one A-ISOMETER® may be active when several IT systems are coupled. Isometer disconnecting relays and the control inputs F1/F2 integrated in version IRDH275B guarantee that only one A-ISOMETER® is active at any one time.

Measurement method

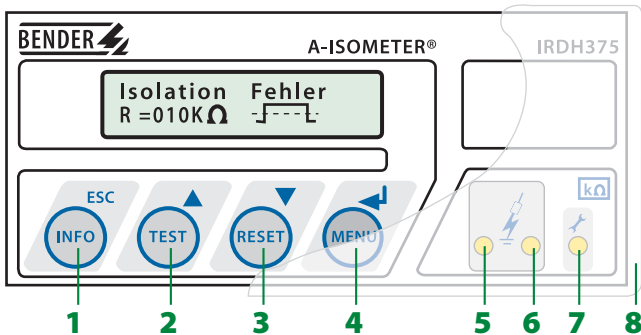
AMPPlus The IRDH375(B) uses the patented **AMPPlus** measurement method. This measurement method allows concise monitoring of modern power supply systems, also in case of extensive, directly connected DC components and high system leakage capacitances.

Standards

The A-ISOMETER® was designed in accordance with the following standards: IEC 61557-8, IEC 61326-2-4, IEC 60664-1, IEC 60664-3, ASTM F1669M-96 (2007), ASTM F1207M-96 (2007).

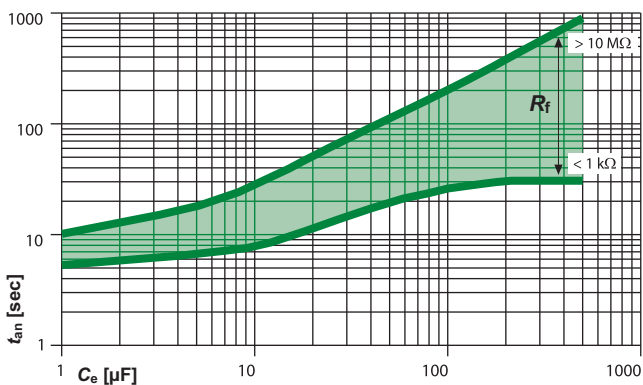
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Operating elements

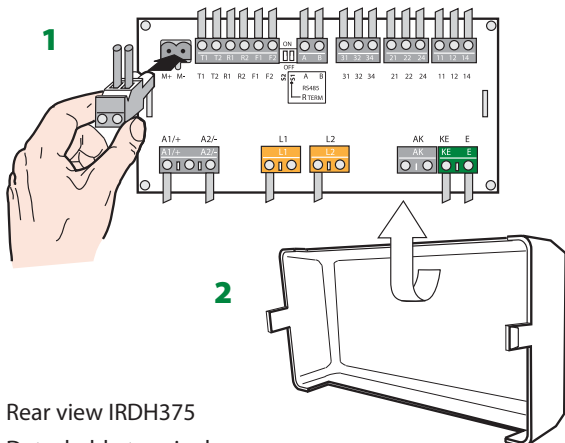


- 1- "INFO" button: to query standard information
ESC button: back to the menu function
- 2- "TEST" button: to call up the self test
Arrow up button: parameter change, scroll
- 3- "RESET" button: to delete alarm and fault messages
Arrow down button: parameter change, scroll
- 4- "MENU" button: to activate the menu system
Enter button: to confirm parameter change
- 5- Alarm LED 1, yellow, lights when the value falls below the set response value R_{ALARM1}
- 6- Alarm LED 2, yellow, when the value falls below the set response value R_{ALARM2}
- 7- Alarm LED, yellow, lights in case of fault in the connecting leads to the system or to earth, or in case of system fault
- 8- Transparent front plate cover (accessory)

Response times

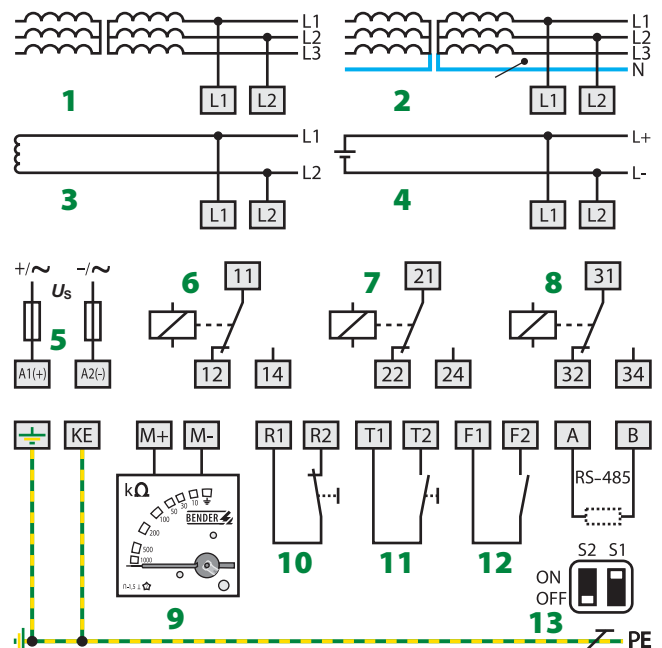


Wiring diagram – rear view



- 1- Rear view IRDH375
- 2- Detachable terminal cover

Wiring diagram

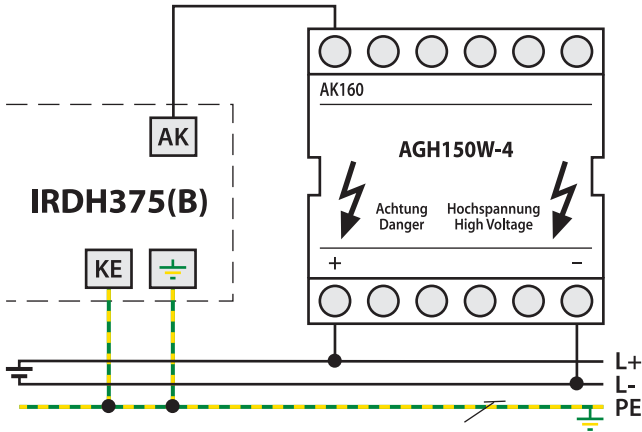


- 1- 3AC system
 - 2- 3NAC system
 - 3- AC system
 - 4- DC system
 - 5- Supply voltage U_s (see ordering information) via 6 A fuse; for UL and CSA applications, it is mandatory to use 5 A fuses.
 - 6- Alarm relay R_{ALARM1}
 - 7- Alarm relay R_{ALARM2}
 - 8- Alarm relay system fault
 - 9- External kΩ indication 0...400 µA or current output 0(4)...20 mA (option).
 - *10- External reset button (N/C contact or wire jumper) when the terminals R1/R2 are open, the fault message will not be stored, provided that the memory has not been activated via the operating menu.
 - *11- External test button, if required
 - *12- STANDBY by means of the function input F1, F2: When the contact is closed, insulation measurement does not take place; system disconnection
 - 13- DIP switch, S1 "ON"- RS-485 terminated (120 Ω on), S2 - unassigned
- * The terminal pairs 10, 11 and 12 must be wired galvanically isolate and must not have a connection to PE!

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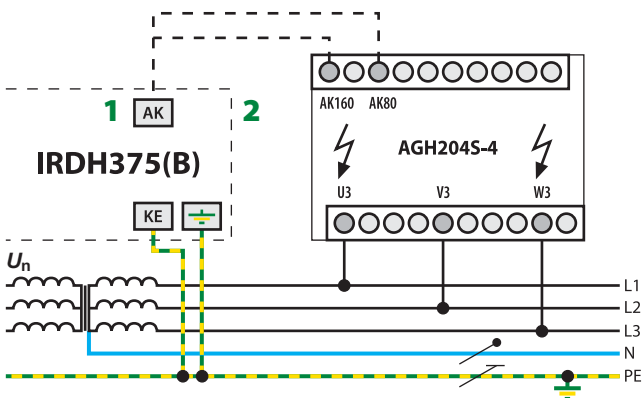
**Wiring diagrams –
IRDH375 connected to different types of coupling devices**

A-ISOMETER® IRDH375 with coupling device AGH150W-4



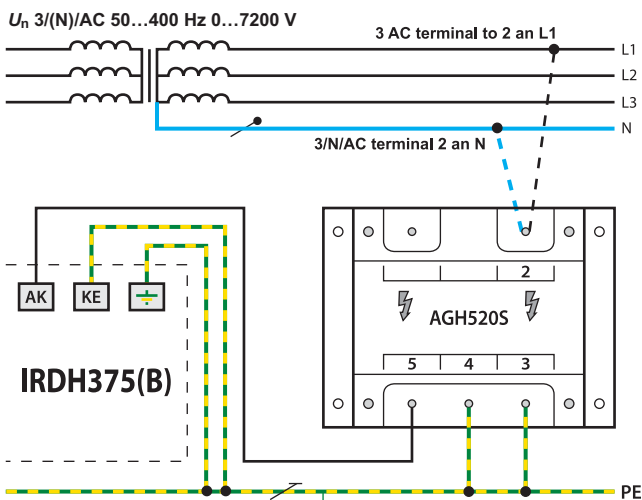
U_n DC 0...1760 V

A-ISOMETER® IRDH375 with coupling device AGH204S-4



- 1 - without rectifier $U_n = 3AC\ 0...1650\ V$
- 2 - with rectifier $U_n = 3AC\ 0...1300\ V$
(rectifier or DC voltage intermediate circuit max. DC 1840 V)

A-ISOMETER® IRDH375 with coupling device AGH520S



Ordering information

Type	Nominal system voltage U_n	Supply voltage U_s	Art. No.
IRDH375-435	AC 0...793 V/ DC 0...650 V*	AC 88...264 V/ DC 77...286 V*	B 9106 5000
IRDH375-427	AC 0...793 V/ DC 0...650 V*	DC 19.2...72V*	B 9106 5002
IRDH375B-435	AC 0...793 V/ DC 0...650 V*	AC 88...264 V/ DC 77...286 V*	B 9106 5004
IRDH375B-427	AC 0...793 V/ DC 0...650 V*	DC 19.2...72V*	B 9106 5006

* Absolute values

Accessories

External kΩ measuring instruments (400 μA)

Type	SKMP *2)	Art. No.
7204-1421	120 kΩ	B 986 763
9604-1421	120 kΩ	B 986 764

*2) SKMP = scale centre point

External kΩ measuring instrument 20 mA

Type	Art. No.
9620-1421	B 986 841

Transparent front plate cover IP65

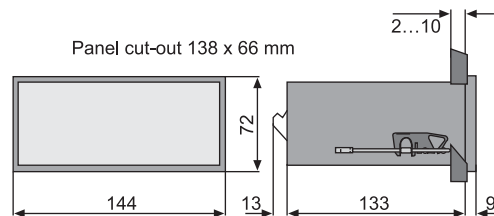
Type	Art. No.
144 x 72	B 9806 0005

Coupling devices

Type	Nominal system voltage U_n	Art. No.
AGH150W-4	DC 0...1760 V	B 9801 8006
AGH204S-4	AC 0...1300 V / 0...1650 V	B 914 013
AGH520S	AC 0...7200 V	B 913 033

Dimension diagram X300

Dimensions in mm



Technical data
Insulation coordination acc. to IEC 60664-1

Rated insulation voltage	AC 800 V
Rated impulse voltage/pollution degree	8 kV / 3

Voltage ranges
IRDH375...:

Nominal system voltage U_n	AC / 3/(N) AC 0...793 V*
Nominal frequency f_n	50...460 Hz
Nominal system voltage U_n	DC 0...650 V*

IRDH375...-435:

Supply voltage U_S (also see nameplate)	AC 88...264 V*
Frequency range U_S	42...460 Hz
Supply voltage U_S (also see nameplate)	DC 77...286 V*

IRDH375...-427:

Supply voltage U_S (also see nameplate)	DC 19.2...72 V*
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IRDH375...:

Power consumption	≤ 14 VA
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Response values

Response value R_{an1} (Alarm1)	1 kΩ...10 MΩ
Response value R_{an2} (Alarm2)	1 kΩ...10 MΩ
Relative uncertainty (20 Ω...1 MΩ) (acc. to IEC 61557-8)	± 15 %
Relative uncertainty (1 kΩ...20 kΩ+2 kΩ / +20 %)	
Reactive uncertainty (1 MΩ...10 MΩ)	0.2 MΩ / +20 %
Response time t_{an} at $R_f = 0.5 \times R_{an}$ and $C_e = 1 \mu F$	≤ 5 s
Measuring time	see characteristic curves
Hysteresis (1 kΩ...10 kΩ)	+2 kΩ
Hysteresis (10 kΩ...10 MΩ)	25 %

Measuring circuit

Measuring voltage U_m	≤ 40 V
Measuring current I_m (at $R_f = 0 \Omega$)	≤ 220 μA
Internal DC resistance R_i	≥ 180 kΩ
Impedance Z_i at 50 Hz	≥ 180 kΩ
Permissible extraneous DC voltage U_{fg}	≤ DC 1200 V
Permissible system leakage capacitance	≤ 500 μF
Factory setting	150 μF

Displays

Display, illuminated	two-line display
Characteristics (number)	2 x 16
Display range measured value	1 kΩ...10 MΩ
Operating uncertainty (20 kΩ...1 MΩ) (acc. to IEC 61557-8)	± 15 %**
Operating uncertainty (1 kΩ...20 kΩ)	± 1 kΩ / ± 15 %**
Operating uncertainty (1 MΩ...10 kΩ)	± 0.1 MΩ / ± 15 %**

Outputs/Inputs

Test / reset button	internal/external
Cable length test/reset button, external	≤ 10 m
Current output for measuring instrument SKMP (scale centre point = 120 kΩ):	
Current output IRDH375 (load)	400 μA (≤ 12.5 kΩ)
Current output IRDH375B (load)	20 mA (≤ 500 Ω)
Accuracy current output (1 kΩ...1 MΩ) related to the value indicated	± 10 %, ± 1 kΩ

Serial interface

Interface / protocol IRDH375	RS-485 / ASCII
Interface / protocol IRDH375	RS-485 / BMS
Connection	terminals A/B
Cable length	≤ 1200 m
Recommended cable (shielded, shield on one side connected to PE)	min. J-Y(St)Y 2x0.6
Terminating resistor	120 Ω (0.5 W)
Device address, BMS bus	1...30 (factory setting = 3)

Switching elements

Switching elements	3 changeover contacts
	K1 (Alarm 1), K2 (Alarm 2), K3 (device error)
Operating principle K1, K2 (Alarm 1/Alarm 2)	N/O or N/C operation
Factory setting (Alarm 1/Alarm 2)	N/O operation
Operating principle K3 (device error)	N/C operation
Electrical endurance, number of cycles	12 000
Contact class	IIB
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
Contact rating at DC 24 V	≥ 2 mA (50 mW)

General data

EMC	acc. to IEC 61326-2-4
Shock resistance acc. to IEC 60068-2-27 (device in operation)	15 g/11 ms
Bumping IEC 60068-2-29 (transport)	40 g/6 ms
Vibration resistance IEC 60068-2-6 (during operation)	1 g/10...150 Hz
Vibration resistance IEC 60068-2-6 (during transport)	2 g/10...150 Hz
Ambient temperature (during operation)	-10 °C...+55 °C
Ambient temperature (during storage)	-40 °C...+70 °C
Climatic class acc. to IEC 60721-3-3	3K5
Operating mode	continuous operation
Mounting	display-oriented
Distance to adjacent devices	≥ 30 mm
Connection	screw-type terminals
Connection, rigid/flexible	0.2...4 mm ² / 0.2...2.5 mm ²
Connection, flexible with ferrule, without/with plastic sleeve	0.25...2.5 mm ²
Conductor sizes (AWG)	24...12
Degree of protection, internal components (IEC 60529)	IP30
Degree of protection, terminals (IEC 60529)	IP20
Type of enclosure	X300, free from halogen
DIN rail mounting acc. to	IEC 60715
Flammability class	UL94 V-0
Software version IRDH375	D183 V1.4
Software version IRDH375B	D184 V1.4
Operating manual	TGH1352
Weight	approx. 510 g

Option "W"

Shock resistance IEC 60068-2-27 (during operation)	30 g/11 ms
Bumping IEC 60068-2-29 (during transport)	40 g/6 ms
Vibration resistance IEC 60068-2-6	1.6 mm / 10...25 Hz 4 g / 25...150 Hz
Ambient temperature, during operation	-25 °C...+70 °C
Ambient temperature for storage	-40 °C...+85 °C
Screw mounting	2 x M4

The data labelled with an * are absolute values

** = under test conditions according to IEC 61326-2-4, the tolerances may double

Coupling device AGH150W-4



Coupling device AGH150W-4

Technical data

Insulation coordination acc. to IEC 60664-1

Rated insulation voltage	DC 1600 V
Rated impulse withstand voltage/pollution degree	12 kV/3

Voltage ranges

Nominal system voltage U_n	DC 0...1760 V
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General data

Shock resistance IEC 60068-2-27 (device in operation)	15 g/11 ms
Bumping IEC 60068-2-29 (transport)	40 g/6 ms
Vibration resistance IEC 60068-2-6 (device in operation)	1 g/10...150 Hz
Vibration resistance IEC 60068-2-6 (transport)	2 g/10...150 Hz
Ambient temperature (during operation)	-10 °C...+55 °C
Ambient temperature (during storage)	-40 °C...+70 °C
Climatic class acc. to IEC 60721-3-3	3K5
Operating mode	continuous operation
Mounting	any position
Connection	flat terminals
Connection properties rigid / flexible	0.2...4 mm ² / 0.2...2.5 mm ²
Degree of protection, internal components (IEC 60529)	IP 30
Degree of protection, terminals (IEC 60529)	IP 20
DIN rail mounting acc. to	IEC 60715
Flammability class	UL94 V-0
Operating manual	BP109001
Weight approx.	900 g

Ordering information

Type	Nominal system voltage U_n	Art. No.
AGH150W-4	DC 1760 V	B 9801 8006

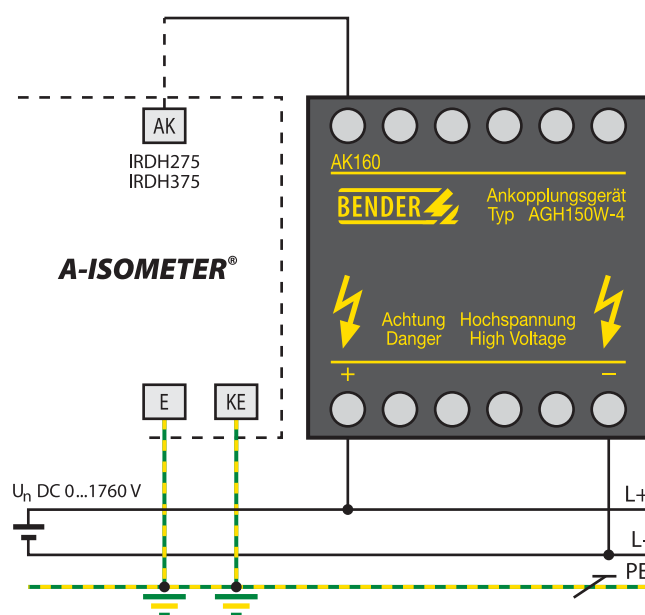
Product description

The AGH150W-4 coupling device is designed to extend the nominal voltage range of the A-ISOMETER® IRDH265-4/IRDH365-4/IRDH1065B-4 series to DC 0...1760 V. The coupling device is connected to the system being monitored by two poles and connected to the terminal AK of the A-ISOMETER® by means of the terminal AK160.

Standards, approvals and certifications

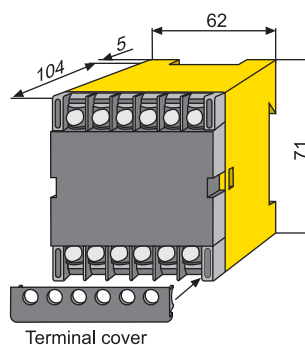


Wiring diagram



Dimension diagram X150

Dimensions in mm



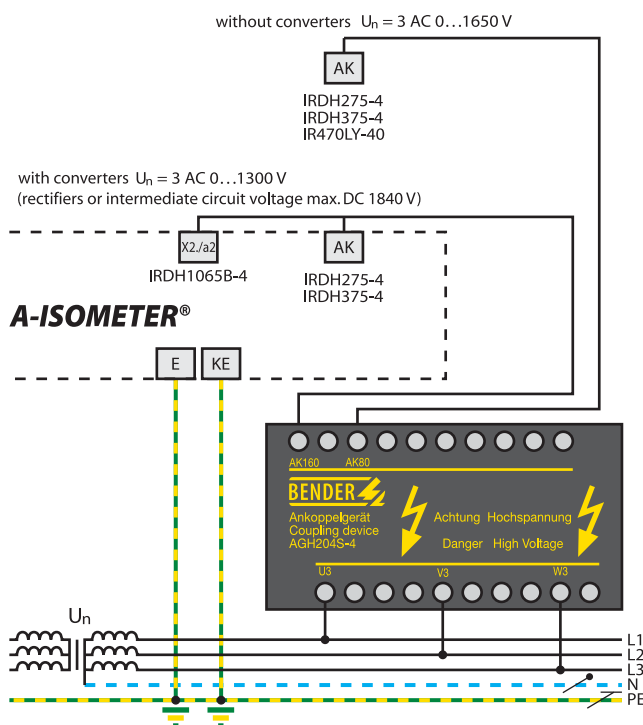
Product description

The coupling device AGH204S-4 is designed to extend the nominal voltage range of the A-ISOMETER® series described in the wiring diagram below to AC, 3(N)AC 50...400 Hz, 0...16500...1300 V. The coupling device is connected to the system to be monitored according to the wiring diagram and connected to the terminal AK of the A-ISOMETER® by means of terminal AK...

Standards, approvals and certifications

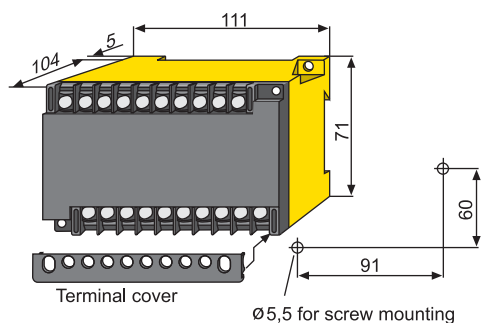


Wiring diagram



Dimension diagram X200

Dimensions in mm



Coupling device AGH204S-4

Technical data

Insulation coordination acc. to IEC 60664-1

Rated insulation voltage	AC 1500 V
Rated impulse withstand voltage/pollution degree	12 kV/3

Voltage ranges

Nominal system voltage U_n	AC, 3(N)AC 50...400 Hz 1650 V/0...1300 V
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General data

Shock resistance IEC 60068-2-27 (device in operation)	15 g/11 ms
Bumping IEC 60068-2-29 (transport)	40 g/6 ms
Vibration resistance IEC 60068-2-6 (device in operation)	1 g/10...150 Hz
Vibration resistance IEC 60068-2-6 (transport)	2 g/10...150 Hz
Ambient temperature (during operation)	-10 °C...+55 °C
Ambient temperature (during storage)	-40 °C...+70 °C
Climatic class acc. to IEC 60721-3-3	3K5
Operating mode	continuous operation
Mounting	any position
Connection	flat terminals
Connection properties rigid / flexible	0.2...4 mm ² / 0.2...2.5 mm ²
Degree of protection, internal components (IEC 60529)	IP 30
Degree of protection, terminals (IEC 60529)	IP 20
Screw mounting	2 x M4
DIN rail mounting acc. to	IEC 60715
Flammability class	UL94 V-0
Operating manual	BP109002
Weight approx.	1350 g

Ordering information

Type	Nominal system voltage U_n	Art. No.
AGH204S-4	AC 0...1650 V / 0...1300	B 914 013

1.8.1

Coupling device AGH520S



Coupling device AGH520S

Technical data

Insulation coordination acc. to IEC 60664-1

Rated insulation voltage	AC 6.3 V
Rated impulse withstand voltage/pollution degree	17 kV/3

Voltage ranges

Netznominalspannung U_n	3(N)AC 0...7200 V
Nominal frequency f_n	50...400 Hz

General data

Shock resistance IEC 60068-2-27 (device in operation)	15 g/11 ms
Bumping IEC 60068-2-29 (transport)	40 g/6 ms
Vibration resistance IEC 60068-2-6 (device in operation)	1 g/10...150 Hz
Vibration resistance IEC 60068-2-6 (transport)	2 g/10...150 Hz
Ambient temperature (during operation)	-10 °C...+55 °C
Ambient temperature (during storage)	-40 °C...+70 °C
Climatic class acc. to IEC 60721-3-3	3K5
Operating mode	continuous operation
Mounting	any position
Connection	screw-type terminals
Degree of protection, internal components (IEC 60529)	IP 64
Degree of protection, terminals (IEC 60529)	IP 20
Type of enclosure	resin-encapsulated block
Screw mounting	4 x M5
Flammability class	UL94 V-0
Operating manual	BP109003
Weight approx.	4500 g

Ordering information

Type	Nominal system voltage U_n	Art. No.
AGH520S	3(N)AC 0...7200 V	B 913 033

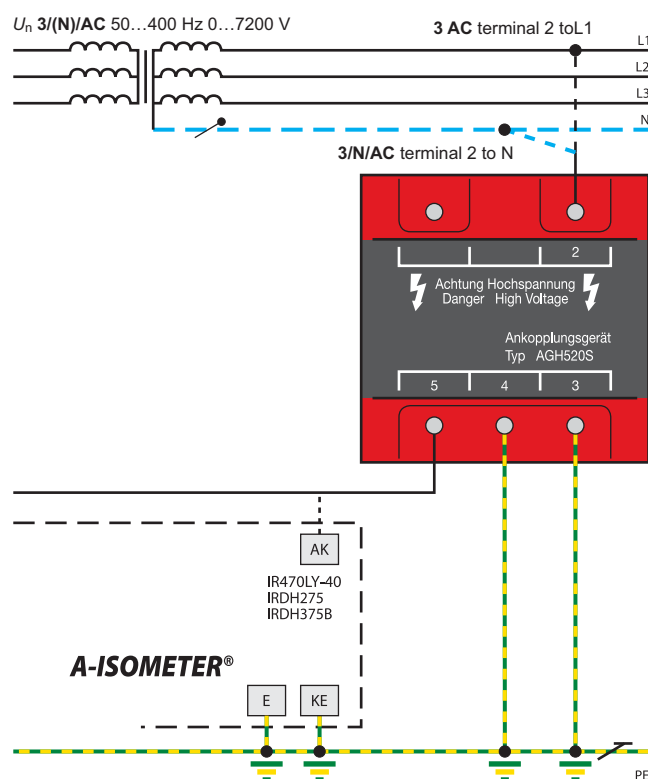
Product description

The coupling device AGH520S is designed to extend the nominal voltage range of the A-ISOMETER® series described in the wiring diagram below to (3)AC 50...400 Hz, 0...7200 V. The coupling device is connected to the system to be monitored by one pole and connected to the terminal AK of the A-ISOMETER® by means of the terminal 5.

Standards, approvals and certifications

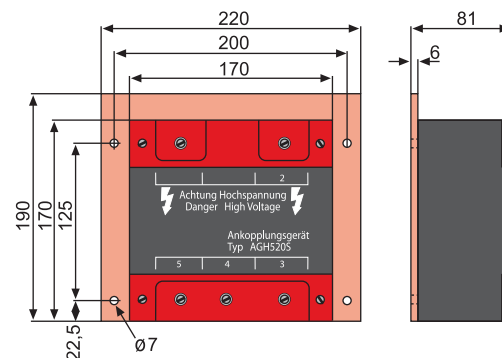


Wiring diagram



Dimension diagram

Dimensions in mm



1.8.1

Measuring transducer RK170



Measuring transducer RK170

Device features

- Plastic enclosure for DIN rail mounting
- Zero setting 0 or 4 mA
- Electrical separation between the input and output signal

Product description

The measuring transducer RK170 is designed to convert current signals of measuring instrument outputs of A-ISOMETER[®]s (0...400 μ A) and residual current monitors (RCM, RCMA) into standard current signals 0(4)...20 mA or into voltage signals (0...10 V). These currents and voltages are usually required in process technology.

Application

- Conversion of DC 0...400 μ A current signals into 0(4)...20 mA or 0...10 V signals
- For A-ISOMETER[®]s and residual current monitors RCM, RCMA with measuring instrument output of DC 0...400 μ A

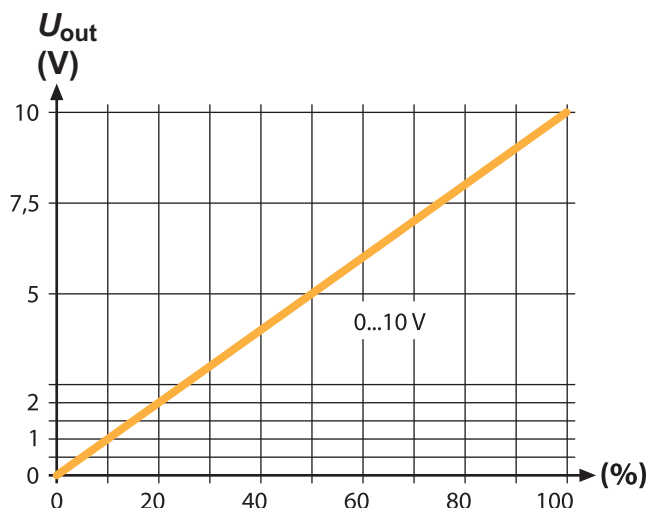
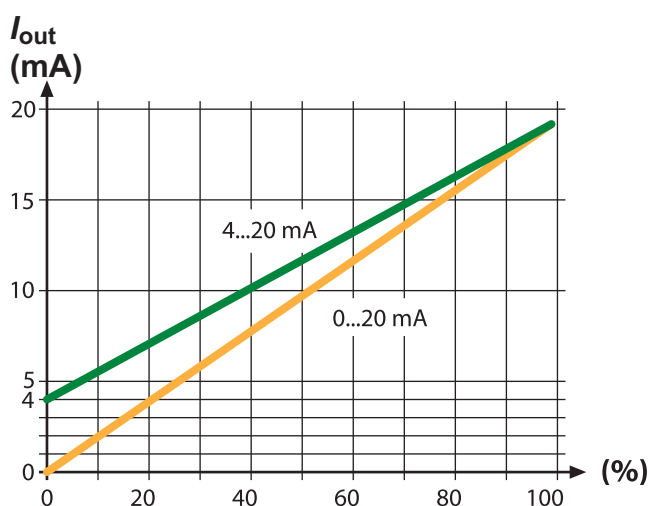
RK170 adjustments

The signals at the outputs 0(4)...20 mA and 0...10 V are simultaneously available and their own nominal load must not be exceeded.

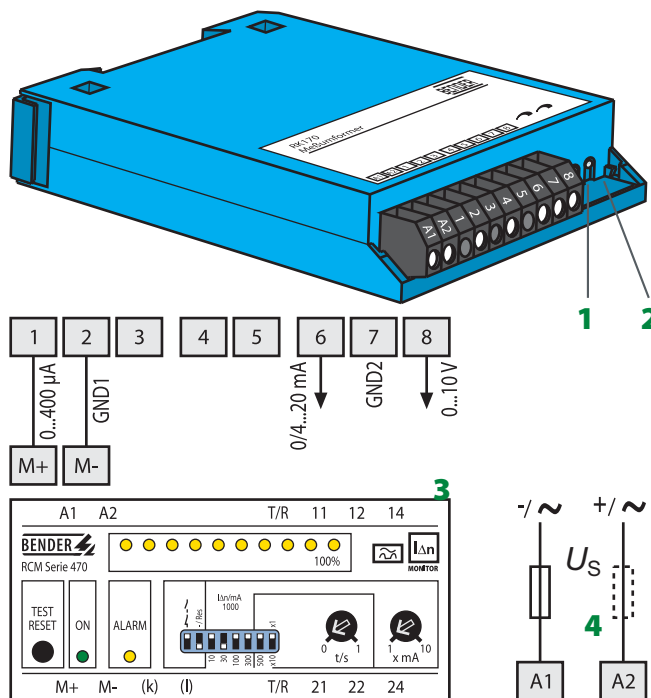
Setting the zero and the full-scale value will have an effect on both outputs. Hence, optimum adjustment is only possible for one output at a time.

The measuring transducer RK170 is factory-set to an input signal of DC 0...400 μ A providing a galvanically isolated output signal of 0...20 mA or 0...10 V. When an output signal of 4...20 mA is required or the measuring transducer RK170 is to be adjusted for other reasons, the adjustment can be carried out using the trimmers "Zero" and "Scale".

Characteristic curve



Wiring diagram



- 1 - Zero: zero setting
- 2 - Scale: full-scale value calibration
- 3 - RCM series device
- 4 - U_S see nameplate, 2 A slow-blow fuse recommended

Ordering information

Type	Supply voltage U_S	Art. No.
RK170	AC 19...264 V* / DC 20...297 V*	B 9804 1500

*Absolute value

1.8.6

Technical data

Voltage ranges

Supply voltage U_s	DC 20...297 V / AC 19...264 V
Frequency range U_s	50...120 Hz
Power consumption	≤ 3 VA

Inputs

Current input	DC 0...400 μ A
Max. permissible current	DC 4 mA
Rated input resistance	approx. 2.5 k Ω

Outputs

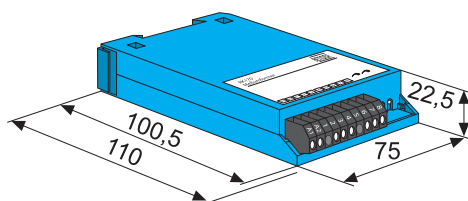
Outputs	two outputs with common ground
Voltage output	DC 0...10 V
Open-circuit voltage	DC 12 V
Rated burden	1 k Ω
Current output	DC 0 / 4...20 mA
Short-circuit current	≤ DC 50 mA short-circuit proof
Rated burden	500 Ω
Accuracy at $T_u = 23\text{ }^\circ\text{C}$	class 0.5
Temperature coefficient	0.025 % / $^\circ\text{C}$
Rated rise time T 0.9	50 ms
Dielectric strength input/output/supply	AC 2500 V

General data

Shock resistance IEC 60068-2-27 (during operation)	5 g/11 ms
Vibration resistance IEC 60068-2-6 (device in operation)	1 g/10...150 Hz
Vibration resistance IEC 60068-2-6 (transport)	2 g/10...150 Hz
Ambient temperature (during operation)	0 $^\circ\text{C}$...+50 $^\circ\text{C}$
Ambient temperature (during storage)	-20 $^\circ\text{C}$...+70 $^\circ\text{C}$
Climatic class acc. to IEC 60721-3-3	3K3
Operating mode	continuous operation
Mounting	any position
Connection type	modular terminals
Connection properties rigid / flexible	0.5...2.5 mm ² / 0.14...1.5 mm ²
Degree of protection, internal components (IEC 60529)	IP40
Degree of protection, external components (IEC 60529)	IP20
Dimensions	75 x 22.5 x 110 mm
DIN rail mounting acc. to	IEC 60715
Flammability class	UL94 V-2
Operating manual	BP109006
Weight	≤ 200 g

Type of enclosure/dimension diagram

Dimensions in mm



Measuring instruments 9604 / 7204 / 7220 / 9620



Measuring instruments 9604 / 7204 / 9620

Device features

- Dimensions: 72 x 72 mm (7204) or 96 x 96 mm (9604 / 9620)
- Version S for increased shock and vibration resistance
- Scale background: white, imprint: black

Product description

The analogue measuring instruments of the 9604 7204 series are designed for indication of measured values from Bender devices equipped with the appropriate current output.

Measuring instruments for A-ISOMETER®

The respective internal resistance of the insulation monitoring device has to be considered. The internal resistance must be equal to the scale centre point (e.g. 120 kΩ). The instruments utilize either a division scale or a scale with a segment display.



Measuring instruments 9604-4241

"Standard" version

The enclosures are made of polycarbonate, which is self-extinguishing and of non-melting material (according to UL94 V-0). For space-saving arrangement, several instruments can be installed close together without spacers. Connection is made via hexagon head bolts with spring-loaded terminal bolts. The terminals of the enclosure are protected against accidental contact.

"S" version

The measuring instruments of the "S" series are designed to meet the requirements of harsh environmental conditions, e.g. for use on ships.

Ordering information and A-ISOMETER®/RCM assignment

Type	Input current	Dimensions	Suitable for A-ISOMETER® / RCM	Art. No.
7204-1421	0...400 µA	72 x 72 mm	IR470LY-4..., IRD1007L-4..., IRDH275 / 375	B 986 763
9604-1421	0...400 µA	96 x 96 mm	IR470LY-4..., IRD1007L-4..., IRDH275 / 375	B 986 764
7204S-1421	0...400 µA	72 x 72 mm	IR470LY-4..., IRD1007L-4..., IRDH275 / 375	B 986 804
9604S-1421	0...400 µA	96 x 96 mm	IR470LY-4..., IRD1007L-4..., IRDH275 / 375	B 986 784
9620-1421	0...20 mA	96 x 96 mm	IRDH275B/375B/575	B 986 841
9620S-1421	0...20 mA	96 x 96 mm	IRDH275B/375B/575	B 986 842
9604-1621	0...400 µA	96 x 96 mm	IR470LY2-6...	B 986 782
9604-4241	0...400 µA	96 x 96 mm	RCM470 / RCMA470	B 986 807
7220-1421	0...20 mA	72 x 72 mm	IRDH275B/375B/575	B 986 844
7220S-1421	0...20 mA	72 x 72 mm	IRDH275B/375B/575	B 986 848

Technical data

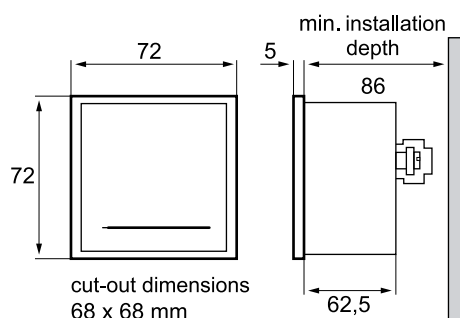
Test voltage	3 kV
Accuracy class acc. to DIN 43780	1.5
Normal position	vertical + 5 degree
Temperature range	-25...+40 °C

Protection class acc. to DIN 40050

Enclosure	IP52
Terminals	IP00
Terminals with contact protection	IP20

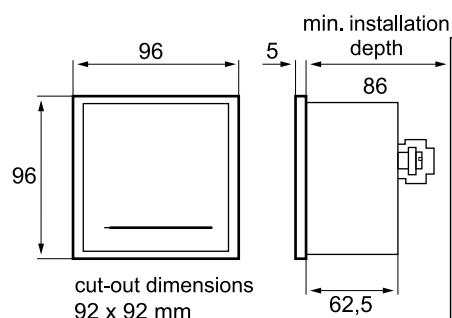
Type of enclosure / dimension diagram measuring instrument 7204 / 7220

Dimensions in mm



Type of enclosure / dimension diagram measuring instrument 9604 / 9620

Dimensions in mm



Enclosure mounting



Mounting frame

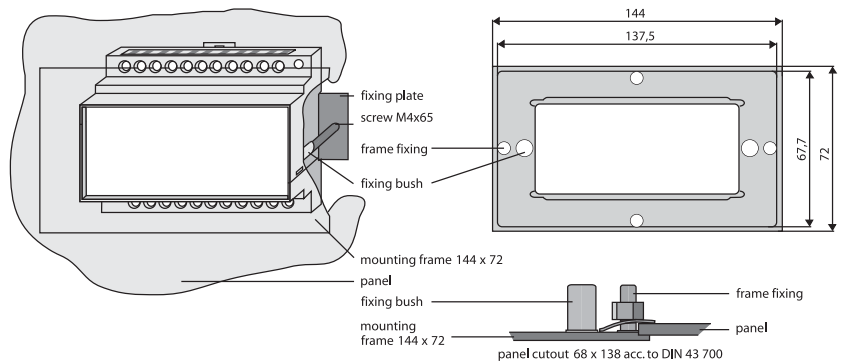
Ordering information

Type	Art. No.
X470 Mounting frame	B 990 991
XM460 Mounting frame	B 990 995
XM490 Mounting frame	B 990 996

Mounting frame for enclosure fixing into panels with standard cutout

For mounting X470/XM460 enclosures into panels with 144 x 72 mm cutout, made of silver anodised aluminium. Suitable for the 470 and 460 series, e.g. IR470, EDS470, RCMS470, RCMS460 and EDS460 devices.

For mounting XM490 enclosures into panel cutouts of 198 x 72 mm. Suitable for 490 series device, e.g. RCMS490, EDS490/491. Dimensions are given in mm.



Fixing set

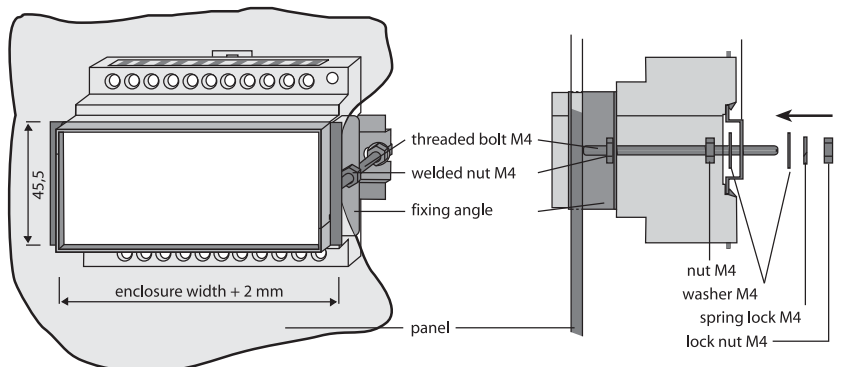
Ordering information

Type	Art. No.
X450 Fixing set	B 990 992
X460 Fixing set	B 990 993
X470 Fixing set	B 990 990

Fixing set for enclosure mounting into panels with 45 mm cutout

For mounting X440, X460, X470 enclosures into 45 mm panel cutouts, made of stainless steel. Suitable for all 470 series devices, e.g. RCM470, RCMA470.

Dimensions in mm



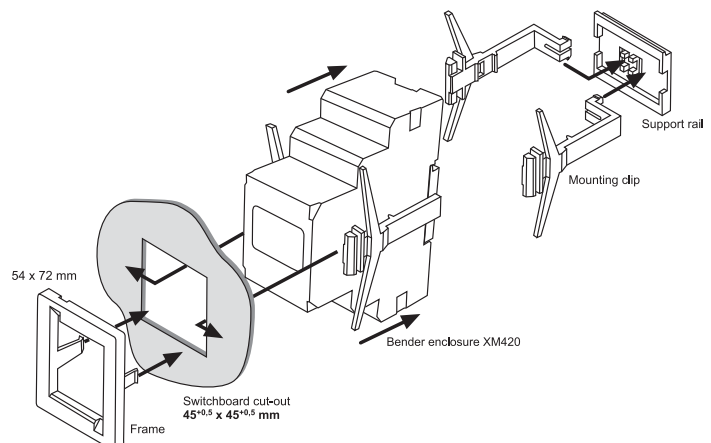
XM420 Mounting frame

Ordering information

Type	Art. No.
XM420 Mounting frame	B 990 994

XM420 mounting frame for mounting enclosures into panels

For mounting XM420 enclosures into panels. Suitable for all XM420 series devices, e.g. RCM420, RCMA420.



Front plate cover



Front plate cover IRDH375



Front plate cover IRDH575

Front plate cover IP65

Transparent front plate cover for use in harsh environmental conditions and for increasing the degree of protection (IP65), suitable for devices of the IRDH375/575 series.

Ordering information

Type	Suitable for	Art. No.
Front plate cover 144 x 72 mm	IRDH375	B 9806 0005
Front plate cover 144 x 96 mm	IRDH575	B 9806 0007