

OPERATING INSTRUCTIONS



MEASURING ADAPTER for 3P + N + E

- Model No.: MS-838A-16 (16A)
- Model No.: MS-838A-32 (32A)

INTENDED USE

The adapter measures together with a clamp meter or multimeter (clamp meter and multimeter are not included in the delivery content) the electrical current and voltage of three-phase devices with CEE plug. The measuring adapter is easily inserted between the electrical consumer and the socket. The measuring adapter may only be used in the range of the overvoltage category CAT II in AC voltage networks with a nominal voltage of max. 415 V/ AC which are fused with 16 A (Model No.: MS-838A-16) and with 32 A (Model No.: MS-838A-32).

The current is measured with commercial AC current clamps on the insulated measuring chambers and the voltage is measured with voltage measuring devices on the measuring sockets. It is possible to measure the current from phase L1, L2, L3 or on the measuring chamber N and also the leakage current (stray current) at the measuring chamber PE.

Only use the measuring adapter for the duration of the measurement. A permanent retention in the mains cable circuit is not permitted.

The measuring operation is only permitted in dry surroundings.

For safety and approval purposes (CE/UKCA), you must not rebuild and/or modify this product. If you use the product for purposes other than those described above, the product may be damaged. In addition, improper use can cause hazards such as short circuiting, fire, electric shock etc. Read the instructions carefully and keep them. Make this product available to third parties only together with its operating instructions.

This product complies with the statutory national and European requirements. All company names and product names are trademarks of their respective owners. All rights reserved.

DELIVERY CONTENT

- Measuring adapter with CEE socket and CEE plug
- Operating instructions

SAFETY INSTRUCTIONS



Read the operating instructions carefully and especially observe the safety information. If you do not follow the safety instructions and information on proper handling in this manual, we assume no liability for any resulting personal injury or damage to property. Such cases will invalidate the warranty/guarantee.



b) Persons / Product

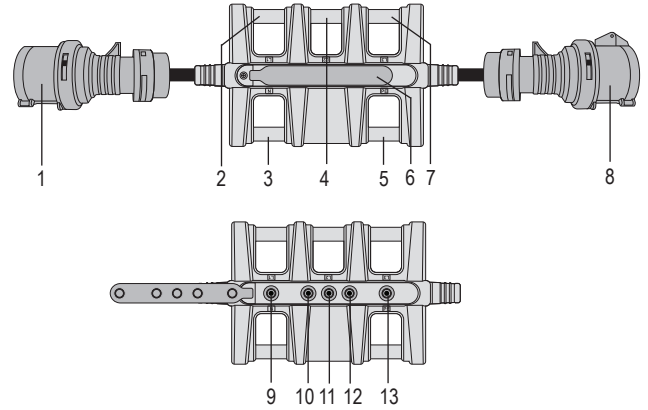
- The device is not a toy. Keep it out of the reach of children and pets.
- Do not leave packaging material lying around carelessly. These may become dangerous playing material for children.
- Protect the product from extreme temperatures, direct sunlight, strong jolts, high humidity, moisture, flammable gases, vapours and solvents.
- Do not place the product under any mechanical stress.
- If it is no longer possible to operate the product safely, take it out of operation and protect it from any accidental use. Safe operation can no longer be guaranteed if the product:
 - is visibly damaged,
 - is no longer working properly,
 - has been stored for extended periods in poor ambient conditions or
 - has been subjected to any serious transport-related stresses.
- Please handle the product carefully. Jolts, impacts or a fall even from a low height can damage the product.
- Also observe the safety and operating instructions of any other devices which are connected to the product.
- The measuring adapter and the plugs may not be disassembled.
- The voltage and current range specified should not be exceeded.
- The measuring adapter may only be used for current and voltage measurement.
- The user is not allowed to put other items than suitable safety measuring cables in the sockets
- Current measurement on the measurement sockets is not possible (an attempt would short-circuit the device)!
- The user may not short-circuit the contacts of the measuring adapter.

c) Miscellaneous

- Consult an expert when in doubt about operation, safety or connection of the device.
- Maintenance, modifications and repairs are to be performed exclusively by an expert or at a qualified shop.

If you are not sure about the correct connection or use, or if questions arise which are not covered by these operating instructions, please do not hesitate to contact our technical support or another qualified specialist.

OPERATING ELEMENTS



- | | |
|-------------------------------|-------------------------------------|
| 1 CEE plug (To source) | 8 CEE socket (To Load) |
| 2 Measuring chamber L1 | 9 Measuring socket N blue |
| 3 Measuring chamber N | 10 Measuring socket L1 brown |
| 4 Measuring chamber L2 | 11 Measuring socket L2 black |
| 5 Measuring chamber PE | 12 Measuring socket L3 grey |
| 6 Cover for measuring sockets | 13 Measuring socket PE green-yellow |
| 7 Measuring chamber L3 | |

OPERATION

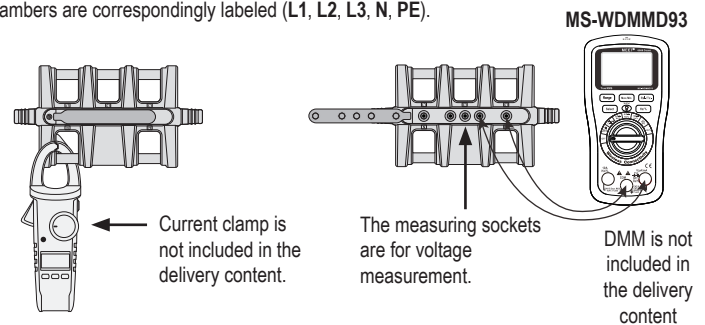


The current is measured with commercial AC current clamps on the insulated measuring chambers and the voltage is measured with voltage measuring devices on the measuring sockets. The current can be measured from measuring chamber L1, L2, L3 or N and the leakage current (stray current) can be measured at the measuring chamber PE. Both types of measurement can be carried out at the same time.

Only use the measuring adapter for the duration of the measurement. A permanent retention in the mains cable circuit is not permitted.

CAT II Overvoltage category II for measurements on electric and electronic devices connected to the mains supply with a mains plug. This category also covers all lower categories (e.g. CAT I for measuring signal and control voltages).

The measuring adapter allows for easy current measurement in closed line systems with power plugs. The five individual inner conductors are freely accessible via the insulated measuring chamber without opening the mains cable at great expense. The measuring chambers are correspondingly labeled (L1, L2, L3, N, PE).



Proceed as follows to conduct a measurement:

- Plug the measuring adapter between the electrical consumer and power socket. Ensure the firm fit of the power plugs.
- Observe the instruction manual of your current clamp or multimeter.
- Place the current clamp around the measuring chamber for the current to be determined. The current clamp must be completely closed to avoid measuring errors.

- If you use a multimeter for voltage measurement proceed in the following order:
 - Connect the safety measuring cables to the digital-multimeter according to the instruction manual.
 - Use only suitable safety measuring cables.
 - Open the cover of the measuring adapter and plug the measuring cables into the sockets on which you want to measure a voltage.
- Remove the current clamp from the measuring chamber and the plugs of the safety measuring cables from the measuring sockets after carrying out all measurements. Close the cover for the measuring sockets.
- Remove the measuring adapter from the power line.

The following measuring values can be determined:

Measuring chamber	Reading
L1	Current via phase L1
L2	Current via phase L2
L3	Current via phase L3
N	Current via neutral conductor N
PE	Leakage current (stray current) via earth conductor

MAINTENANCE AND CLEANING

- Disconnect the power plug from the socket and disconnect all connected devices before each cleaning.
- Apart from the occasional cleaning the adapter is maintenance free.
- The outside of the housing should only be cleaned with a soft, dry cloth or brush. Never use any aggressive cleaning agents or chemical solutions as they may cause damage to the housing or cause the product to malfunction.

DISPOSAL



Electronic devices are recyclable waste and must not be disposed of in the household waste.

At the end of its service life, dispose of the product according to the relevant statutory regulations.

You thus fulfil your statutory obligations and contribute to the protection of the environment.

TECHNICAL DATA

MS-838A-16 (16A)

Nominal voltage.....	max. 415 V/AC, 50/60 Hz (L to L)
	max. 240 V/AC, 50/60 Hz (L to N/PE)
Nominal current.....	max. 16 A
Protection type.....	IP40
Conductor cross section.....	5 x 1.5 mm ²
Operating conditions.....	0 to +54 °C, 0 – 75 % RH (non-condensing)
Storage conditions.....	0 to +54 °C, 0 – 75 % RH (non-condensing)
Overvoltage category	CAT II 240 V / 415 V 3~, 50/60 Hz, 16 A
Bar diameter of the measuring chambers	approx. 14 mm
Measuring sockets.....	4 mm
Total length	approx. 88 cm
Weight	approx. 950 g

MS-838A-32 (32A)

Nominal voltage.....	max. 415 V/AC, 50/60 Hz (L to L)
	max. 240 V/AC, 50/60 Hz (L to N/PE)
Nominal current.....	max. 32 A
Protection type.....	IP40
Conductor cross section.....	5 x 4 mm ²
Operating conditions.....	0 to +54 °C, 0 – 75 % RH (non-condensing)
Storage conditions.....	0 to +54 °C, 0 – 75 % RH (non-condensing)
Overvoltage category	CAT II 240 V / 415 V 3~, 50/60 Hz, 32 A
Bar diameter of the measuring chambers	approx. 14 mm
Measuring sockets.....	4 mm
Total length	approx. 91 cm
Weight	approx. 1300 g