

# AC/DC Current Probe Model MR521



The AEMC® MR Series AC/DC Probes are professional AC/DC current probes designed to extend current measuring capabilities of DMMs, oscilloscopes and other instruments. They are built to the latest safety and performance standards, including the CE Mark. Two different hook-shaped jaws are offered, both permitting the user to “pry” or “hook” onto cables (will accept 2 x 500MCM) or even onto small bus bars.

The MR Series probes use Hall effect technology and measure AC and DC current. The electronics and batteries are self-contained in the handles. The output of the AC/DC probes is 1mV/A and 10mV/A. The Model MR521 measures to 1000AAC/1500AAC. The Model MR521 has two ranges and an auto-zero push button (patent pending) for quick DC zeroing.

There is no output filtering — True RMS with DC component measurements are possible. Phase shift is excellent, making the MR Series of current probes well suited for power and power quality applications.

## Features

- Measurement range of 1000AAC/1500ADC
- Distinct jaw shapes to be used for hooking or prying around the conductor
- Auto-zero push button
- Auto off after ten minutes
- Conforms to EN 61010, 600V, CAT III safety standard
- Low phase shift for power measurements
- mV output signals
- Designed for DMMs, recorders, oscilloscopes, power and harmonic meters
- Double Insulation
- CE Mark

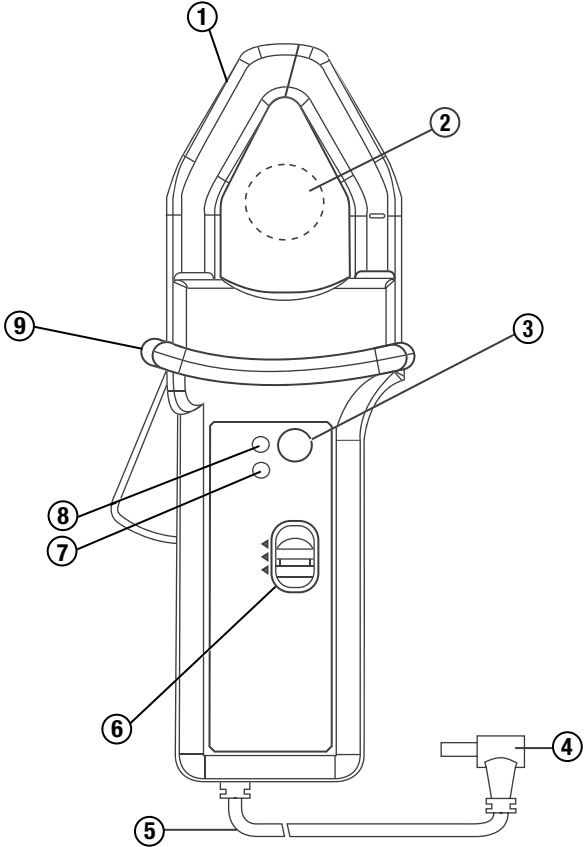
## Applications

- DC motors
- Batteries
- Automobile engine testing
- Power measuring quality analysis
- Power load monitoring

Specifications

| MODEL                                                                                                 | MR521                                                                                                                    |
|-------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------|
| ELECTRICAL                                                                                            |                                                                                                                          |
| Nominal Range                                                                                         | 100A <sub>AC</sub> /150A <sub>DC</sub> &<br>1000A <sub>AC</sub> /1500A <sub>DC</sub>                                     |
| Measurement Range                                                                                     | 0.2 to 1500A                                                                                                             |
| Output Signal                                                                                         | 150A: 10mV/A<br>1500A: 1mV/A                                                                                             |
| Accuracy (150 Range)<br>0.5 to 20A                                                                    | 1.5% of Reading ± 0.5A                                                                                                   |
| 20 to 100A                                                                                            | 1.5% of Reading                                                                                                          |
| 100 to 150A <sub>DC</sub> only                                                                        | 2.5% of Reading                                                                                                          |
| Phase Shift (150 Range)<br>10 to 20A                                                                  | 45 to 65Hz: ≤3.5°                                                                                                        |
| 20 to 100A                                                                                            | <3°                                                                                                                      |
| Accuracy (1500A <sub>DC</sub> Range)<br>1 to 100A                                                     | 1.5% of Reading ± 1A                                                                                                     |
| 100 to 800A                                                                                           | 2.5% of Reading                                                                                                          |
| 800 to 1000A                                                                                          | 4% of Reading                                                                                                            |
| 1000 to 1400A <sub>DC</sub> only                                                                      | 4% of Reading                                                                                                            |
| Phase Shift (1500A Range)<br>10 to 200A                                                               | 45 to 65Hz: <3°                                                                                                          |
| 200 to 1000A                                                                                          | <2.5°                                                                                                                    |
| Overload                                                                                              | 1000A <sub>AC</sub> and 1500A <sub>DC</sub><br>continuous up to 1kHz                                                     |
| Frequency Range                                                                                       | DC to 10kHz @ -3dB                                                                                                       |
| Load Impedance                                                                                        | >100kΩ/100pF                                                                                                             |
| Working/Common<br>Mode Voltage                                                                        | 600V <sub>rms</sub>                                                                                                      |
| Battery                                                                                               | 9V Alkaline<br>(Approx. 50 hours life)                                                                                   |
| Output Termination                                                                                    | 5 ft Lead                                                                                                                |
| MECHANICAL                                                                                            |                                                                                                                          |
| Operating Temperature                                                                                 | 14° to 131°F (-10° to 55°C)                                                                                              |
| Storage Temperature                                                                                   | -40° to 176°F (-40° to 80°C)                                                                                             |
| Operating Relative<br>Humidity                                                                        | 10 to 35°C 90% ± 5% RH (without condensation), 40 to 55°C 70% ± 5% RH (without condensation)                             |
| Zero Adjustment                                                                                       | Auto-zero                                                                                                                |
| Jaw Opening                                                                                           | 1.55" (40mm)                                                                                                             |
| Maximum Conductor Size                                                                                | One 1.5" (39mm) or two 0.95" (24mm) or two bus bars 1.96 x 0.19" (50 x 5mm)<br>or one bus bar 1.96 x 0.49" (50 x 12.5mm) |
| Dimensions                                                                                            | 9.31 x 3.82 x 1.73" (236 x 97 x 44mm)                                                                                    |
| Weight                                                                                                | 1.06 lb (480g)                                                                                                           |
| Polycarbonate Material                                                                                | Handles: Polycarbonate + ABS, Gray, UL94 V0. Jaws: Polycarbonate, Red, UL94 V0                                           |
| SAFETY                                                                                                |                                                                                                                          |
| Electrical                                                                                            | EN 61010-2-32                                                                                                            |
| Double Insulation  | Yes                                                                                                                      |
| CE Mark                                                                                               | Yes                                                                                                                      |

Note: Reference conditions: 18°C to 28°C, 20 to 75% RH, external magnetic field <40A/m, no DC component, no external current carrying conductor, test sample centered, 1MΩ ≤ 100pF load, zero adjustment (DC only) DC to 65Hz, battery voltage 9V ± 0.1V.



1. Jaws
2. Conductor
3. Automatic zero DC button
4. Safety banana plug ø 4mm
5. Lead, 5 ft (1.5m)
6. Three-position range selection switch:
  - On/Off
  - 1500A (1mV/A)
  - 150A (10mV/A)
7. Green light (on when battery voltage ≥6.5V)
8. Red light (overrange and incorrect zero adjustment)
9. Protective non-slip guard



**Leads:**  
Double/reinforced  
5 ft (1.5m) lead  
with safety 4mm  
banana plug

| ORDERING INFORMATION                                                                   | CATALOG NO.   |
|----------------------------------------------------------------------------------------|---------------|
| AC/DC Current Probe Model MR521 (Lead – 10mV/A – 150A max & 1mV/A 1500A max) . . . . . | Cat. #1200.69 |
| Includes a user manual                                                                 |               |
| <b>Accessories (Optional)</b>                                                          |               |
| Banana plug adaptor (to nonrecessed plug) . . . . .                                    | Cat. #1017.45 |
| Adapter – Banana (Female) – BNC (Male) (XM-BB) . . . . .                               | Cat. #2118.46 |

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