



# AM-510

## Commercial / Residential Digital Multimeter

### AM-500 Digital Multimeter Series

The Amprobe AM-510 Commercial/Residential Multimeter is designed for light commercial and advanced residential applications. Re-wire electrical panels, install heated floors or new light fixtures, troubleshoot and repair home appliances, electrical sockets and automotive electrical problems with this easy-to-use multimeter. The AM-510 features a built-in flashlight to see wires and fuses in the dark, a rubber tilt stand and probe holder to give you the "third-hand" you need while taking measurements. Also offering safety features including Voltect non-contact voltage detection for quick go/no-go checks without the need for an additional tool. Compact yet tough, this multimeter is built to last through all your electrical projects.

- Voltage up to 600V ac/dc, ac/dc current and resistance
- Frequency, capacitance, duty cycle for troubleshooting applications
- Voltect™ Non-contact voltage detection
- Audible continuity
- Diode test
- Backlit LCD display
- Data hold
- Relative zero mode
- Auto and manual-ranging
- Built-in flashlight
- Built-in test leads storage and "third hand" probe holder
- Auto and manual-ranging
- Auto power off
- Low battery warning
- Safety rated: CAT III 600V



## AM-510 DETAILED SPECIFICATIONS

| Specifications | Range                                                            | Best Accuracy                                             |
|----------------|------------------------------------------------------------------|-----------------------------------------------------------|
| AC Voltage     | 400 mV<br>4.000 / 40.00 / 400.0 / 600 V                          | ±(1.0% Rdg + 3 LSD) @ 45 Hz to 400 Hz, 4 V to 400V ranges |
| DC Voltage     | 400 mV<br>4.000 / 40.00 / 400.0 / 600 V                          | ±(0.8% Rdg + 1 LSD) @ 4 V to 400 V ranges                 |
| Resistance     | 400.0 Ohms<br>4.000 / 40.00 / 400.0 kOhms<br>4.000 / 40.00 MOhms | ±(1.0% Rdg + 2 LSD) @ 4 kOhms to 400 kOhms ranges         |
| AC Current     | 400.0 / 4000 µA<br>40.00 / 400.0 mA<br>4.000 / 10.00 A           | ±(1.2% Rdg + 3 LSD)                                       |
| DC Current     | 400.0 / 4000 µA<br>40.00 / 400.0 mA<br>4.000 / 10.00 A           | ±(1.0% Rdg + 2 LSD)                                       |
| Frequency      | 10Hz to 10MHz                                                    | ±(0.1% Rdg + 4 LSD)                                       |
| Capacitance    | 40.00 / 400.0 nF<br>4.000 / 40.00 / 100.0 µF                     | ±(3.0% Rdg + 5 LSD) @ 400 nF to 40 µF ranges              |
| Battery Test   | 1.5 V, 9 V                                                       | ±(1.0% Rdg + 3 LSD)                                       |
| Duty Cycle     |                                                                  | 0.1% to 99.9%                                             |

For more detailed specifications see instruction manual.

## AM-500 SERIES SELECTION GUIDE

|                     |                                            |                     | AM-500                                                                            | AM-510                                                                            | AM-520                                                                              | AM-530                                                                              | AM-540                                                                              | AM-550                                                                              |
|---------------------|--------------------------------------------|---------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| MULTIMETER TYPE     |                                            |                     | Autoranging                                                                       | Com / Res                                                                         | HVAC                                                                                | Electrical                                                                          | Adv. HVAC                                                                           | Industrial                                                                          |
| <b>Application:</b> |                                            |                     |  |  |  |  |  |  |
| <b>Functions</b>    | Safety Rating                              | Safety              | CAT III 600V                                                                      | CAT III 600V                                                                      | CAT III 600V<br>CAT II 1000V                                                        | CAT III 600V<br>CAT II 1000V                                                        | CAT IV 600V<br>CAT III 1000V                                                        | CAT IV 600V<br>CAT III 1000V                                                        |
|                     | Measure voltage in noisy environments      | True-rms            |                                                                                   |                                                                                   |                                                                                     | ■                                                                                   |                                                                                     | ■                                                                                   |
|                     | Electrical panels, AC outlets              | AC Voltage (V)      | 600                                                                               | 600                                                                               | 750                                                                                 | 750                                                                                 | 1000                                                                                | 1000                                                                                |
|                     | DC systems, auto/marine batteries          | DC Voltage (V)      | 600                                                                               | 600                                                                               | 1000                                                                                | 1000                                                                                | 1000                                                                                | 1000                                                                                |
|                     | AC Current - electrical panels, appliances | AC Current (A)      | 10                                                                                | 10                                                                                | 10                                                                                  | 10                                                                                  | 10                                                                                  | 10                                                                                  |
|                     | DC Current - electronics, DC motors        | DC Current (A)      | 10                                                                                | 10                                                                                | 10                                                                                  | 10                                                                                  | 10                                                                                  | 10                                                                                  |
|                     | Specified resistance and continuity        | Resistance (MOhms)  | 20                                                                                | 40                                                                                | 40                                                                                  | 40                                                                                  | 60                                                                                  | 60                                                                                  |
|                     | Flame sensors                              | Micro Amps          | ■                                                                                 | ■                                                                                 | ■                                                                                   | ■                                                                                   | ■                                                                                   | ■                                                                                   |
|                     | Diodes in ac to dc converters              | Diode test          | ■                                                                                 | ■                                                                                 | ■                                                                                   | ■                                                                                   | ■                                                                                   | ■                                                                                   |
|                     | Fuses, light bulbs, wire connections       | Continuity          | ■                                                                                 | ■                                                                                 | ■                                                                                   | ■                                                                                   | ■                                                                                   | ■                                                                                   |
|                     | Household batteries                        | Battery test        | ■                                                                                 | ■                                                                                 |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
|                     | Motor startup or run capacitors            | Capacitance         |                                                                                   | ■                                                                                 | ■                                                                                   | ■                                                                                   | ■                                                                                   | ■                                                                                   |
|                     | Frequency verification                     | Frequency           |                                                                                   | ■                                                                                 | ■                                                                                   | ■                                                                                   | ■                                                                                   | ■                                                                                   |
|                     | VolTect™ Non-contact voltage detection     | Non-contact voltage |                                                                                   | ■                                                                                 | ■                                                                                   | ■                                                                                   | ■                                                                                   | ■                                                                                   |
|                     | Electrical load-time on vs. time off       | Duty cycle          |                                                                                   | ■                                                                                 |                                                                                     |                                                                                     | ■                                                                                   | ■                                                                                   |
|                     | Temp of air vents, fuses, transformers     | Temperature inputs  |                                                                                   |                                                                                   | 1                                                                                   | 1                                                                                   | 2                                                                                   | 2                                                                                   |
| <b>Features</b>     | Automatically selects measurement range    | Autoranging         | ■                                                                                 | ■                                                                                 | ■                                                                                   | ■                                                                                   | ■                                                                                   | ■                                                                                   |
|                     | Manually select measurement range          | Manual ranging      |                                                                                   | ■                                                                                 | ■                                                                                   | ■                                                                                   | ■                                                                                   | ■                                                                                   |
|                     | Voltage on variable frequency drives       | Low pass filter     |                                                                                   |                                                                                   |                                                                                     |                                                                                     | ■                                                                                   | ■                                                                                   |
|                     | Detect stray voltages                      | Low Z               |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     | ■                                                                                   |
|                     | Dimly lit areas                            | Built-in flashlight |                                                                                   | ■                                                                                 | ■                                                                                   | ■                                                                                   | ■                                                                                   | ■                                                                                   |
| <b>Display</b>      | Meter resolution                           | LCD Counts          | 2,000                                                                             | 4,000                                                                             | 4,000                                                                               | 4,000                                                                               | 6,000                                                                               | 6,000                                                                               |
|                     | Dimly lit areas                            | Backlight           |                                                                                   | ■                                                                                 | ■                                                                                   | ■                                                                                   | ■                                                                                   | ■                                                                                   |
|                     | Monitoring fast changing signals           | Bar graph           |                                                                                   |                                                                                   | ■                                                                                   | ■                                                                                   | ■                                                                                   | ■                                                                                   |
|                     | Two relative measurements on one screen    | Dual display        |                                                                                   |                                                                                   |                                                                                     |                                                                                     | ■                                                                                   | ■                                                                                   |
| <b>Events</b>       | Data memory                                | Data hold           | ■                                                                                 | ■                                                                                 | ■                                                                                   | ■                                                                                   | ■                                                                                   | ■                                                                                   |
|                     | Difference between two measurements        | Relative reading    |                                                                                   | ■                                                                                 | ■                                                                                   | ■                                                                                   | ■                                                                                   | ■                                                                                   |
|                     | Max/min peak measurement                   | Max/min hold        |                                                                                   |                                                                                   | ■                                                                                   | ■                                                                                   | ■                                                                                   | ■                                                                                   |
|                     | Specialized signal measurements            | Peak hold (crest)   |                                                                                   |                                                                                   |                                                                                     |                                                                                     | ■                                                                                   | ■                                                                                   |

## INCLUDED ACCESSORIES

| Model  | Batteries (Installed) | Test Leads | Temperature Probe | Temperature Adaptor | Velcro Strap | Carrying Case | User's Manual |
|--------|-----------------------|------------|-------------------|---------------------|--------------|---------------|---------------|
| AM-500 | AAA x2                | ■          |                   |                     |              |               | ■             |
| AM-510 | 9V (6F22) x1          | ■          |                   |                     |              |               | ■             |
| AM-520 | 9V (6F22) x1          | ■          | K-type probe x1   |                     | ■            | ■             | ■             |
| AM-530 | 9V (6F22) x1          | ■          | K-type probe x1   |                     | ■            | ■             | ■             |
| AM-540 | 9V (6F22) x1          | ■          | K-type probe x2   | ■                   | ■            | ■             | ■             |
| AM-550 | 9V (6F22) x1          | ■          | K-type probe x2   | ■                   | ■            | ■             | ■             |