



HD160C Heavy-Duty Digital Multimeter

Rugged autoranging meter with true-rms

Key features:

- Measures 1500 VDC
- CAT IV 1000 V
- IP67 Rated
- Temperature, Frequency & Capacitance
- Magne-Grip™ holster with magnetic hanging strap

No hassle warranty

No waiting.

No shipping charges.



Our commitment to high-quality products and customer service is demonstrated by our industry exclusive "No Hassle" warranty. In the unlikely event that an Amprobe Test Tool requires warranty service, any of our local dealers are authorized to replace it, on the spot.

- Highest voltage capability, measuring to 1500 Vdc and 1000 Vac
- CAT IV 1000 V rated
- Special sealing for environment and water resistance. IP67 rated
- Constructed with drop-resistant housing and PCB mounting
- Measures capacitance, temperature and frequency
- Superior 10,000 count resolution with bar graph
- Magne-Grip™ holster, frees both hands for work
- Includes high voltage test leads with threaded alligator clips
- Temperature measurement built-in
- Frequency and capacitance
- Digi-Glo™ bright backlight

The HD160C is designed for professional use in harsh environments. The meter is unusually rugged and reliable in everyday heavy use applications. The meter is made using waterproof construction to prevent dirt, grime and moisture from entering the case and causing inaccurate readings or damaging shorts.

Built of tough, fire-retardant thermoplastic resistant to grease and chemical spills, with all sensitive components shock-mounted for a drop resistance to at least eight feet.

Model HD160C has an extended voltage measurement capability of 1500 V dc and 1000 V ac, unmatched by any other line of digital multimeters. The extended voltage ranges can withstand transients up to 12 kV.




HD160C



HD160C Technical Specifications

Data Sheet

General Specifications

| | |
|---|--|
| Display | 4 digit LCD, 9999 counts, with annunciators, menu features and 41 segment bargraph. |
| Polarity Indication | Automatic |
| Input overload indication | OL, -OL. |
| Low Battery Indication |  ; less than 50 hours battery life remain, accuracy is no longer guaranteed |
| Display Update Rate | 2/sec, nominal; 20/sec for bargraph. |
| Oper. Temp. | 0 °C to +50 °C @ 0 to 75 % R.H. |
| Storage Temp. | -20 °C to 60 °C @ 0 to 80 % RH, battery removed |
| Altitude | 2000 meters - indoor use |
| Temperature coefficient | 0.1 x (spec. accuracy)/°C (0 °C to 18 °C and 28 °C to 50 °C) |
| Fuse | F 2 A/1500 V fuse (8 mm x 65 mm), I.R. 30 kA – Amprobe® p/n FP700 |
| Power | Standard 9-volt battery, NEDA 1604, JIS 006P, IEC 6F22 |
| Auto Power-Down | Meter powers down after approximately 30 minutes of inactivity. Not in Min/Max function. |
| Battery Life (typical) | 150 hours, alkaline. Backlight usage consumes extra power and will decrease battery life significantly. Backlight auto-off after approx. 60 seconds. |
| Dimensions, without holster (H x W x D) | 200 x 102 x 59 mm (7.9 in x 4.0 in x 2.3 in) |
| Weight (incl. battery) | 642 g (22 oz) |
| Accessories | Heavy Duty CAT IV 1000 V Test leads with threaded alligator clips (TL1500), battery (installed), hex wrench (inside holster), Holster with Magne-Grip strap, Type K thermocouple probe (TP255), Temperature Adaptor (TA-1A) and User Manual. |
| Case material | Reinforced, high-impact, fire retardant thermoplastic |
| Safety | Meets EN 61010-1 CAT IV 1000 V (1500 V DC max) Class II, EN 60529:IP67 |
| EMC | Meets EN 61326-1 |

Electrical Specifications *(Accuracy at 23 °C ± 5 °C, <75 % RH, guaranteed for one year.)*

| Function | Range | Accuracy |
|--------------------------|--|------------------------|
| DC Volts | | |
| Ranges | 1000 mV, 10 V, 100 V, 1500 V | |
| Resolution | 0.1 mV in 1000 mV range | |
| Accuracy | ±(0.1 % rdg + 5 dgt) | |
| Input Impedance | 10 MΩ | |
| CMRR | >120 dB up to 1500 V dc | |
| NMRR | >60 dB at 50 or 60 Hz | |
| OL Protection | 1500 V dc or 1000 V ac rms. | |
| Transient protection | 12 kV impulse (1.2 μS/50 μS) based on EN 61010-1:2001 impulse requirement for at CAT IV 1000 V/1500V dc product. This product should not be used in installations where transients exceed 12 kV. | |
| AC Volts True rms | | |
| Ranges | 1000 mV, 10 V, 100 V, 1000 V | |
| Resolution | 0.1 mV in 1000 mV range | |
| Accuracy | 1000 mV (45 Hz to 400 Hz) | ± (1.2 % rdg + 10 dgt) |
| | 10 V, 100 V (45 Hz to 500 Hz) | ± (1.2 % rdg + 10 dgt) |
| | 10 V, 100 V (500 Hz to 2 kHz) | ± (2.0 % rdg + 10 dgt) |
| | 1000 V (45 Hz to 1 kHz) | ± (2.0 % rdg + 10 dgt) |
| Input Impedance | 10 MΩ | |
| Conversion type | True rms, ac coupled 5 % to 100 % of range | |
| Crest factor | ≤ 3 | |
| OL Protection | 1500 V dc or 1000 V ac rms | |
| Transient protection | 12 kV impulse (1.2 μS/50 μS) based on EN 61010-1:2001 impulse requirement for at CAT IV 1000 V product. This product should not be used in installations where transients exceed 12 kV | |

HD160C Technical Specifications (continued)

Data Sheet

| Function | Range | Accuracy |
|---------------------------------|--|-----------------------------------|
| DC Current | | |
| Ranges | 100 μ A, 1000 μ A, 10mA, 100mA, 400mA, 2A (Auto/Manual ranging) | |
| Resolution | 0.01 μ A in 100 μ A range | |
| Accuracy | 100 μ A range | \pm (0.5% rdg + 10 dgts) |
| | 1000 μ A to 400 mA ranges | \pm (0.5% rdg + 5 dgts) |
| | 2 A range | \pm (1.5% rdg + 10 dgts) |
| Input protection | 2 A/1500 V fast blow ceramic fuse 8x65 mm on A input , FP700 | |
| Burden voltage | μ A range of 1 mV/1 μ A, mA range of 10 mV/1 mA, 2A range of 500 mV/1A, 500 mV max. (2 V max. on 1000 μ A, 100 mA, 400 mA, 2 A ranges) | |
| OL Protection | A Input (F 2 A/1500 V, size 8 x 65 mm IR fast blow ceramic) | |
| AC Current True rms | | |
| Ranges | 100 μ A, 1000 μ A, 10 mA, 100 mA, 400 mA, 2 A | |
| Resolution | 0.01 μ A in 100 μ A range | |
| Accuracy (45 Hz to 1kHz) | 100 μ A to 100 mA | \pm (1.5 % + 10 dgts) |
| | 400 mA | \pm (2.0 % + 10 dgts) |
| | 2 A | \pm (2.5 % + 20 dgts) |
| Voltage burden | see DC Current | |
| Conversion type | True rms ac coupled 10 to 100% of range | |
| Crest factor | \leq 3 | |
| OL protection | see DC Current | |
| Resistance | | |
| Ranges | 1000 Ω , 10 k Ω , 100 k Ω , 1000 k Ω , 10 M Ω , 40 M Ω | |
| Resolution | 0.1 Ω in 1000 Ω range | |
| Accuracy | 1000 Ω to 1000 k Ω ranges | \pm (0.5 % rdg + 8 dgts) |
| | 10 M Ω range | \pm (1.0 % rdg + 10 dgts) |
| | 40 M Ω range | \pm (2.0 % rdg + 10 dgts) |
| Overload protection, all ranges | 1500 V dc or 1000 V ac rms | |
| Continuity Test | | |
| Audible indication | Less than 40 Ω | |
| Response time | 100 ms | |
| Overload protection | 1500 V dc or 1000 V ac rms | |
| Capacitance | | |
| Ranges | 40 nF, 400 nF, 4 μ F, 40 μ F, 400 μ F (3999 counts) (Auto/Manual ranging) | |
| Resolution | 0.01 nF | |
| Accuracy | 40 nF, 400 μ F ranges | \pm (3.0% rdg +10 dgts) |
| | 400 nF to 40 μ F ranges | \pm (3.0% rdg +5 dgts) |
| Test voltage | < 1 V | |
| Test Frequency | 1.3 Hz on 40 nF to 40 μ F ranges; 0.7 Hz on 400 μ F range | |
| Overload protection | 1500 V dc or 1000 V ac rms | |
| Temperature | | |
| Ranges | -20 $^{\circ}$ C ~ 1300 $^{\circ}$ C (-4 $^{\circ}$ F ~ 2372 $^{\circ}$ F) | 3999 counts |
| Resolution | 1 $^{\circ}$ C, 1 $^{\circ}$ F | |
| Accuracy | -20 $^{\circ}$ C ~ 10 $^{\circ}$ C | \pm (2.0% rdg + 4 $^{\circ}$ C) |
| | 10 $^{\circ}$ C ~ 200 $^{\circ}$ C | \pm (1.0% rdg + 3 $^{\circ}$ C) |
| | 200 $^{\circ}$ C ~ 1300 $^{\circ}$ C | \pm (2.0% rdg + 2 $^{\circ}$ C) |
| | -4 $^{\circ}$ F ~ 50 $^{\circ}$ F | \pm (2.0% rdg + 8 $^{\circ}$ F) |
| | 50 $^{\circ}$ F ~ 400 $^{\circ}$ F | \pm (1.0% rdg + 6 $^{\circ}$ F) |
| | 400 $^{\circ}$ F ~2372 $^{\circ}$ F | \pm (2.0% rdg + 4 $^{\circ}$ F) |
| Overload protection | 1500 V dc or 1000 V ac rms | |

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HD160C Technical Specifications (continued)

Data Sheet

| Function | Range | Accuracy |
|---------------------|--|---|
| Frequency | | |
| Ranges | 100Hz, 1000Hz, 10kHz, 100kHz, 1000kHz, 10MHz | |
| Resolution | 0.01 Hz on 100 Hz range | |
| Accuracy | ±(0.1% rdg + 5 dgts) | |
| Sensitivity | 3 Hz to 1 MHz 1MHz to 10MHz | >2.5 V ac rms >2.5 V ac rms, <5 V ac rms |
| Minimum input range | 100 Hz range 1000 Hz range | >3 Hz; >30 Hz |
| Minimum pulse width | > 25 ns | |
| Duty cycle limits | > 30 % and < 70 % | |
| Overload protection | 1500 V dc or 1000 V ac rms | |



Included Accessories

Heavy Duty CAT IV 1000 V Test leads with threaded alligator clips (TL1500), battery (installed), hex wrench (inside holster), Holster with Magne-Grip strap, Type K thermocouple probe (TP255), Temperature Adaptor (TA-1A) and User Manual.

Optional Accessories

- TL1500 Cat IV 1000 V Test Leads with Alligator Clips
- CT235A 1000 A ac/dc Clamp
- CT237A 200 A ac/dc Current Clamp
- CT238A 20 A ac/dc Current Clamp
- VC221B Padded Vinyl Case. Fits meter & holster.
- DC205C Deluxe Hard-Shell Carry Case
- DC207C Large Deluxe Hard-Shell Carry Case with extra space for accessories
- HV231-10A High Voltage Probe
- FP700 Replacement Fuse, 2 A/1500 V, pack of two
- TA-1A K-type thermocouple, temperature adapter

Amprobe® Test Tools

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