

**SPECIAL FEATURES :**

- VFD-ACV & VFD-Hz;
- Display Hold w/Hold-alert™ warning;
- BeepLit™ Diode w/BeepPass™ indication;
- Relative-Zero mode;
- BeepJack™ audible & visible input warning
- Hi/Lo EF-Detection (NCV & Single pole);
- MAX Hold;
- BeepLit™ Continuity;
- Backlighted LCD display;



Preliminary Data

**GENERAL SPECIFICATIONS :**

- **Sensing:** True RMS sensing
- **Display:** 3-5/6 digits 6,000 counts
- **Update Rate:** 5 per second nominal
- **Operating Temperature:** -10°C to 50°C
- **Relative Humidity:** Maximum relative humidity 80% for temperature up to 31°C decreasing linearly to 50% relative humidity at 50°C
- **Altitude:** Operating below 2000m
- **Storage Temperature:** -20°C ~ 60°C, < 80% R.H. (with battery removed)
- **Temperature Coefficient:** Nominal 0.15 x (specified accuracy)/ °C @ (-10°C ~ 18°C or 28°C ~ 50°C), or otherwise specified
- **Low Battery:** Below approx. 2.5V
- **Power Supply:** 1.5V AAA Size battery X 2
- **Power Consumption (typical):** 3.2mA
- **APO Consumption (typical):** 10A
- **APO Timing:** Idle for approx. 32 minutes
- **Accessories:** Test lead set, User's manual, Banana-plug type-K thermocouple
- **Optional purchase accessories:** BKB32 banana-plug to type-K socket plug adaptor

**SAFETY :**

- Certified per IEC/UL/EN61010-1 Ed. 3.1, IEC/UL/EN61010-2-033 Ed. 2.0, IEC/UL/EN61010-031 Ed. 2.0 and the corresponding CAN/CSA-C22.2 regulations to Measurement Categories: CAT III 1000V and CAT IV 600V
- **Transient Protection:** 8.0kV (1.2/50µs surge)
- **Pollution Degree:** 2
- **E.M.C.:** Meets EN61326-1:2013  
mV, Diode, Ohm, & Temperature; in an RF field of 1V/m:  
Total Accuracy = Specified Accuracy + 100 digits  
Other functions; in an RF field of 3V/m:  
Total Accuracy = Specified Accuracy + 100 digits
- **Overload Protection:**  
µA & mA: 0.63A/1000V DC/AC rms, IR 10kA, F fuse; or better  
A: 11A/1000V DC/AC rms, IR 20kA, F fuse; or better  
V: 1100V DC/AC rms  
mV, Ohm, & others: 1000V DC/AC rms

**ELECTRICAL SPECIFICATION**

Accuracy is given as ± (% of reading digits + number of digits) or otherwise specified @ 23°C ± 5°C

AC Voltage & Current accuracies are specified from 1 % to 100 % of range or otherwise specified. Maximum Crest Factor <2:1 at full scale & <4:1 at half scale, and with signal component frequencies limited to the specified bandwidth of the AC functions for non-sinusoidal waveforms

**AC VOLTAGE**

RANGE	Accuracy
<b>50Hz ~ 60Hz</b>	
60.00mV <sup>1)</sup> , 600.0mV <sup>2)</sup>	1.0% + 3d
6.000V, 60.00V, 600.0V, 1000	0.7% + 3d
<b>45Hz ~ 500Hz</b>	
60.00mV <sup>1)</sup> , 600.0mV <sup>2)</sup>	2.0% + 3d
6.000V, 60.00V, 600.0V, 1000V	2.0% + 3d
<b>500Hz ~ 1kHz</b>	
60.00mV <sup>1)</sup> , 600.0mV <sup>2)</sup>	2.0% + 3d
6.000V, 60.00V, 600.0V, 1000V	Unspecified

Input Impedance: 10M, 20pF nominal

<sup>1)</sup>Signal peak absolute values, including DC bias, less than 130mV<sub>peak</sub>

<sup>2)</sup>Signal peak absolute values, including DC bias, less than 1300mV<sub>peak</sub>

**VFD-ACV (with Low Pass Filter)**

RANGE	Accuracy <sup>1)</sup>
<b>10 ~ 100Hz</b>	
600.0V, 1000V	1.0% + 3d
<b>100 ~ 400Hz</b>	
600.0V, 1000V	10.0% + 3d <sup>2)</sup>

<sup>1)</sup>Not specified for fundamental frequency > 400Hz

<sup>2)</sup>Accuracy linearly decreases from 1% + 3d @100Hz to 10% + 3d @400Hz

**DC Voltage**

RANGE	Accuracy
60.00mV, 600.0mV, 6.000V	0.3% + 2d
60.00V	0.4% + 2d
600.0V	0.2% + 2d
1000V	0.4% + 2d

Input Impedance: 10M, 20pF nominal

Note: All Specification are Subject to change without prior notice.

### DC Current

RANGE	Accuracy	Burden Voltage
600.0µA, 6000µA	1.0% + 3d	0.1mV/µA
60.00mA, 600.0mA	0.7% + 3d	3.0mV/mA
6.000A, 10.00A <sup>1)</sup>		25mV/A

<sup>1)</sup>10A continuous, >10A to 20A for 30 seconds max with 5 minutes cool down interval

### AC Current

RANGE	Accuracy	Burden Voltage
50Hz ~ 500Hz	1.5% + 3d	0.1mV/µA
600.0µA, 6000µA		3.0mV/mA
60.00mA, 600.0mA	1.0% + 5d	25mV/A
6.000A, 10.00A <sup>1)</sup>		

<sup>1)</sup>10A continuous, >10A to 20A for 30 seconds max with 5 minutes cool down interval

### Ohm

RANGE <sup>1)</sup>	Accuracy
600.0Ω, 6.000kΩ	0.3% + 3d
60.00kΩ, 600.0kΩ	0.5% + 3d
6.000MΩ <sup>2)</sup> , 60.00MΩ <sup>3)</sup>	0.9% + 2d <sup>4)</sup>

<sup>1)</sup>Open Circuit Voltage: 1.6VDC typical

<sup>2)</sup>Constant Test Current: 0.2A Typical

<sup>3)</sup>Constant Test Current: 0.02A Typical

<sup>4)</sup>5%+20d @ >30M

### Capacitance

RANGE	Accuracy
20.00nF, 200.0nF	1.5% + 8d
2000nF	1.5% + 3d
20.00µF, 200.0µF, 2000µF	

Accuracies with film capacitor or better

### Logic Frequency

Range	Sensitivity(Squarewave)
5.00Hz ~ 300.0kHz	3Vpeak

Accuracy: 0.03% + 4d

### Line Frequency

Function	Sensitivity(Sine RMS)	Range
6V	5V	10Hz-50kHz
60V	10V	10Hz-50kHz
600V	50V	10Hz-1kHz
1000V	500V	50Hz-1kHz
VFD 60V	50V	10Hz-1kHz
VFD 100V	500V	50Hz-1kHz
600µA, 6000µA	500µA	10Hz-5kHz
60mA, 600mA	50mA	10Hz-5kHz
6A, 10A	8A	50Hz-1kHz

Accuracy: 0.03% + 4d

### BeepLit™ Continuity Tester

Continuity Threshold: Between 30 and 480

Continuity ON Response Time: <15ms

Audible Indication: Beep sound

Visible Indication: LCD Backlight

### BeepLit™ Diode Tester

RANGE	Accuracy	Test Current (Typical)	Open Circuit Voltage
3.0000V	0.9% + 2d	0.3mA	<3.2 VDC

### Temperature

RANGE	Accuracy <sup>1) 2)</sup>
-40.0°C ~ 0.0°C	1% + 2°C
0.0°C ~ 99.9°C	1% + 1°C
100°C ~ 400°C	1% + 4°F
-40.0°F ~ 32.0°F	1% + 2°F
32.0°F ~ 99.9°F	
100°F ~ 752°F	

°F selection can be left out as factory calibration default for countries that only accept metric units

<sup>1)</sup>Accuracies assume the meter interior and the ambient have reached the same temperature (isothermal stage) for a correct junction voltage compensation. Allow enough settling time for a significant change in ambient temperature. It can take up to an hour for changes > 5°C

<sup>2)</sup>Type-K thermocouple range & accuracy not included

### Non-Contact EF-Detection

Bar-segment Indication	EF-H (Hi Sensitivity)	EF-L (Lo Sensitivity)
	Typical Voltage (Tolerance)	
-	15V (3V ~ 30V)	70V (30V ~ 120V)
--	30V (10V ~ 60V)	140V (60V ~ 240V)
---	60V (20V ~ 120V)	280V (120V ~ 480V)
----	120V (40V ~ 240V)	560V (240V ~ 960V)
-----	240V (>80V)	1000V (>900V)

Indication: Display bar-segments, backlight flashing, & beep tones in proportion to the field strength

Detection Frequency: 50/60Hz

Detection Antenna: Top end center of the meter

Probe-Contact EF-Detection: For more precise indications of live wires, such as distinguishing between live and ground connections, use direct contact testing with one single test-probe via the input terminal COM or V. The COM terminal (Black) has the best sensitivity.

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