

SPECIAL FEATURES :

- AutoV (LoZ);
- BeepLit™ Continuity;
- Backlighted LCD;
- Display Hold;
- VFD;
- BeepJack™ on mA/mA / A terminals
- Auto-ranging MAX / MIN / AVG Record;
- Auto-ranging Relative Zero mode;
- EF-Detection (NCV);



GENERAL SPECIFICATIONS :

- Sensing : True RMS sensing
- Display : 3½ digits 6,000 counts
- Update Rate : 3½ digits: Max 5 per second nominal
60 Segment Bar-graph: 40 per second max
- Operating Temperature : -10°C to 50°C continuous operating
(except on A function, see Electrical Specifications below for more details)
- 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
- Ingress Protection : Ip40
- 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) : 4.0mA
- APO Consumption (typical) : 20A
- APO Timing : Idle for approx. 30 minutes
- Dimension : Aprox. 161(L) x 80(W) x 50(H)mm (With Holster)
- Weight : Aprox. 334 gm (With Holster)
- Accessories : Test lead pair; Batteries installed; User's manual;
BKP60 banana plug type-K thermocouple
- Optional purchase accessories : BKB32 banana plug to type-K socket plug adaptor;
BMH-01 magnetic hanger; USB interface kit BRUA-20X

Preliminary Data

SAFETY :

- Certified per IEC/UL/EN/BSEN 61010-1 Ed. 3.1, IEC/UL/EN/BSEN 61010-2-033 Ed. 2.0, IEC/UL/EN/BSEN 61010-031 Ed. 2.0 and the corresponding CAN/CSA-C22.2 regulations to Measurement Categories : CAT II 1000V, CAT III 600V and CAT IV 300V AC & DC
- Transient Protection : 6.0kV (1.2/50ms surge)
- Pollution Degree : 2
- E.M.C.: Meets EN61326-1
In an RF field of 3V/m:
Temperature function is not specified
Ohm function: Total Accuracy = Specified Accuracy + 15 digits
Other functions: Total Accuracy = Specified Accuracy
Performance above 3V/m is not specified

● **Overload Protection :**

mA & mA: 0.63A/1000V DC/AC rms, IR 30kA, F fuse;
or better A: 11A/1000V DC/AC rms, IR 20kA, F fuse;
or better V & AutoV: 1100V DC/AC rms mV, Ohm &
others: 1000V DC/AC rms

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

ELECTRICAL SPECIFICATION

Accuracy is given as (% of reading digits + number of digits) or otherwise specified @ 23°C 5°C ACV & ACA 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 frequency components fall within the meter specified frequency bandwidth for non-sinusoidal waveforms

AC Voltage

RANGE	Accuracy
50Hz ~ 60Hz	
6.000V, 60.00V, 600.0V, 1000V	0.7% + 3d
45Hz ~ 500Hz	
6.000V, 60.00V, 600.0V, 1000V	1.0% + 5d

Input Impedance: 10MΩ, 54pF nominal

VFD_ACV (with Low Pass Filter)

RANGE	Accuracy ¹⁾
10Hz ~ 100Hz (fundamental)	
600.0V, 1000V	1.0% + 3d
100Hz ~ 400Hz (fundamental)	
600.0V, 1000V	10% + 3d ²⁾

¹⁾Not specified for fundamental frequency > 400Hz

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

DC Voltage

RANGE	Accuracy
60.00mV, 600.0mV, 6.000V	0.3% + 4d
60.00V	0.4% + 3d
600.0V	0.2% + 3d
1000V	0.4% + 3d

Input Impedance: 10MΩ, 54pF nominal

AutoV_DCV

RANGE	Accuracy ¹⁾
6.000V, 60.00V, 600.0V, 1000V	1.0% + 4d

¹⁾Not specified at <1.5VDC

Threshold: > +1.5VDC or < -1.5VDC nominal

Input Impedance:

Initially approx. 2.1kW, 164pF nominal; Impedance increases abruptly within a fraction of a second as display voltage is above 50V (typical). Ended up impedances vs display voltages typically are:

12kW @100V
100kW @300V
240kW @600V
580kW @1000V

Ohm

RANGE ¹⁾	Accuracy
600.0Ω, 6.000kΩ, 60.00kΩ, 600.0kΩ	0.5% + 4d
6.000MΩ ²⁾	0.7% + 4d
60.00MΩ ³⁾	2.0% + 4d ⁴⁾

¹⁾Open Circuit Voltage: 1.6VDC typical

²⁾Constant Test Current: 0.2μA Typical

³⁾Constant Test Current: 0.02μA Typical

⁴⁾5%+20d @ >30MΩ

CREST mode (Instantaneous Peak Hold)

Accuracy: Specified accuracy ± 250 digits for changes > 5ms in duration

Availability: Voltage and Current functions

Resolution: 6000 counts

ACmV

RANGE	Accuracy
40Hz ~ 500Hz	
60.00mV ²⁾ , 600.0mV ³⁾	1.0% + 3d
500Hz ~ 1kHz	
60.00mV ²⁾ , 600.0mV ³⁾	2.0% + 3d

Input Impedance: 10MΩ, 54pF nominal

²⁾Signal peak absolute values, including DC bias, less than 130mV_{peak}

³⁾Signal peak absolute values, including DC bias, less than 1300mV_{peak}

AutoV_ACV

RANGE	Accuracy ¹⁾
50Hz ~ 60Hz	
6.000V, 60.00V, 600.0V, 1000V	1.0% + 5d

¹⁾Not specified at <1.5VAC

Threshold: > 1.5VAC nominal

Input Impedance: Initially approx. 2.1kW, 164pF nominal; Impedance increases abruptly within a fraction of a second as display voltage is above 50V (typical). Ended up impedances vs display voltages typically are:

12kW @100V
100kW @300V
240kW @600V
580kW @1000V

DC Current

RANGE	Accuracy	Burden Voltage
600.0μA, 6000μA	0.5% + 5d	0.1mV/μA
60.00mA, 600.0mA		1.9mV/mA
6.000A, 10.00A ¹⁾	1.0%+5d	0.04V/A

¹⁾10A continuous up to ambient 40°C only, and is <3mins on per >15 mins off @ 40°C~ 55°C;

>10A to 20A for <30 seconds on per >15 mins off

AC Current

RANGE	Accuracy	Burden Voltage
50Hz ~ 400Hz		
600.0μA, 6000μA	1.0% + 5d	0.1mV/μA
60.00mA, 600.0mA		1.9mV/mA
6.000A, 10.00A ¹⁾		0.04V/A

¹⁾10A continuous up to ambient 40 C only, and is <3 mins on per >15 mins off @ 40°C~ 55°C; >10A to 20A for <30 seconds on per >15 mins off

Capacitance

RANGE	Accuracy
20.00nF, 200.0nF	1.5% + 8d
2000nF, 20.00μF, 200.0μF, 2000μF	1.5% + 2d
10.00mF	4.5% + 10d

Accuracies with film capacitor or better

BeepLit™ Continuity Tester

Continuity Threshold: Between 30Ω and 480Ω

Continuity ON Response Time: <15ms

Audible Indication: Beep sound

Visible Indication: LCD Backlight

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

Temperature

RANGE	Accuracy ^{1) 2)}
-40.0 °C ~ 99.9°C	1.0% + 1 °C
100 °C ~ 1000°C	0.3%+3°C
-40.0 °F ~ 99.9 °F	1.0% + 2 °F
100 °F ~ 1832 °F	0.3%+6°F

¹⁾Accuracies assume 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 of ambient temperature. It can take up to an hour for changes > 5°C.

²⁾Type-K thermocouple range & accuracy not included

Diode Tester

RANGE	Accuracy
3.000V	1.0% + 3d

Test Current: 0.3mA typical

Open Circuit Voltage: < 3.2VDC typical

AutoHold Real-Read™

Accuracy: Specified accuracy ± 50 digits

Availability: Resistance, Continuity, LoZ AutoV, VFD Volts, Voltage and Current functions

Logic Level Hz (DCmV Function)

Range	Sensitivity (Square wave)
10.00 Hz ~ 200.0 kHz	3Vpeak

Accuracy: 0.03% + 3d

Line Frequency

Function	Sensitivity (Sine RMS)	Range
6V	0.4V	10Hz - 50kHz
60V	4V	
600V	40V	10Hz - 1kHz
1000V	400V	
VFD 600V	50V	
VFD 1000V	500V	
600µA	40µA	10Hz - 5kHz
6000µA	400µA	
60mA	40mA	
600mA	400mA	
6A	0.6A	50Hz - 1kHz
10A	6A	

Accuracy: 0.03% + 3d

Non-Contact EF-Detection

Bar-Graph Indication	EF-H (Hi Sensitivity)	EF-L (Lo Sensitivity)
	Typical Voltage (Tolerance)	
-	10V (3V ~ 19V)	40V (16V ~ 71V)
--	20V (10V ~ 38V)	80V (32V ~ 142V)
---	40V (21V ~ 79V)	160V (63V ~ 285V)
----	80V (40V ~ 156V)	300V (105V ~ 608V)
-----	160V (>80V)	500V (>300V)

Indication: Bar-graph segments & audible beep tones proportional to the field strength

Detection Frequency: 50/60Hz

Detection Antenna: Top-left end of the meter

Probe-Contact EF-Detection: For more precise indication 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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