

Full Functions & True-RMS For Your Tasks In 600A Cat-III 600V Areas!

BeepLit™ Continuity & Diode, CREST MaxMin, REC MaxMin, Relative, Hold, Backlight
AmpTip™ ACA DCA, LPF ACV, LPF Hz, DCV, MΩ, Cx, °C, °F, μA, Hi-Lo EF NCV

BM030 SERIES

Patented AmpTip™ Jaws
Clamp-on DMM



WW Patented:
I442059
2359464
Nr 20 2011 052 429.9
US 8,754,636 B2
M383120
1530122
Nr 20 2009 015 109.3
US 8,504,604 B2
I414796
ZL201010271977.9
Nr 20 2010 017 434.1
US 8,432,172 B2
& Patents Pending



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Intertek



BM037



BM035



BM033



BM031

037	035	033	031	FUNCTIONS & FEATURES
•	•			600A DC/AC Hall-effect Jaws, Max 26mm conductor size
		•	•	600A AC Extra-slim Jaws, Max 26mm conductor size
•	•			Regular DCA 600.0A range + AmpTip™ DCA 60.00A range
•	~6kΩ	•	~6kΩ	Ohm ranges 600.0Ω, 6.000kΩ, 60.00kΩ, 600.0kΩ, ~6000kΩ
•		•		Type-K temperature -40.0°C to 400°C or -40.0°F to 752°F selectable
•		•		Cx ranges 200.0μF to 2500μF for start & run motor capacitors
•		•		Line-level ACV Frequency (LPF Added) 5.00Hz up to 999.9Hz
•		•		DCμA ranges 200.0μA to 2000μA (via probes) for HVAC flame sensors
•	•	•	•	6,000 counts 3-5/6 digits LCD display; Updates 5/sec
•	•	•	•	AmpTip™ Low-current-range calibrated at Jaw-tip for thin-conductors
•	•	•	•	600V AC/DC input protection on General functions
•	•	•	•	True RMS AC Voltage and Current functions
•	•	•	•	LPF Added On ACV For Fundamentals Of VFDs And Noisy Signals
•	•	•	•	Back-lighted easy-to-read LCD Display
•	•	•	•	Intelligent Auto Power Off
•	•	•	•	Data HOLD
•	•	•	•	RECORD MAX/MIN mode (Auto-ranging)
•	•	•	•	5ms CREST MAX/MIN mode to capture instantaneous +Peak & -Peak
•	•	•	•	Relative mode (Auto-ranging) with DC-Zero mode on DCA ranges
•	•	•	•	Non-Contact EF-Detection (NCV) with Hi/Lo Selectable Sensitivities
•	•	•	•	Probe-Contact EF-Detection for more precise indication of live
•	•	•	•	ACV (LPF Added) range 600.0V; DCV range 600.0V
•	•	•	•	BeepLit™ Continuity. Features Audible Beep & Visible Backlight effects
•	•	•	•	BeepLit™ Diode. Features 0.85V Beep-Alert, and <0.1V BeepLit™ effects
•	•	•	•	Regular ACA 600.0A range + AmpTip™ ACA 60.00A range
•	•	•	•	Soft carrying pouch
•	•	•	•	Rugged fire retarded housing
•	•	•	•	Transient protection 6kV 1.2/50μs lightning surge
•	•	•	•	LVD EN61010-1/61010-2-032/61010-2-033 to CAT-III 600V & CAT-IV 300V
•	•	•	•	EMC EN61326-1

Compact AC/DC 600A! Cat-III 600V! AmpTip™! Precise Rotary Switch!

AmpTip™ To Fit, Accurate To Read, Compact To Carry, Safe To Trust, Reliable To Last
Body width <50mm For Handy Operations, Overall Length <190mm For Easy Carrying

PATENTED AmpTip™ CLAMP JAWS

Easy Access & Excellent Repeatability
For Measuring Thin Conductors In Tight Areas

LVD CAT III 600V & CAT IV 300V

Certified EN61010-2-032, EN61010-2-033,
EN61010-1 & Relevant Standards On
CAT III 600V & CAT IV 300V

REGULAR CURRENT

Measures At Jaw Center For
Regular Conductors Up To 600 Amps

AmpTip™ LOW-CURRENTS

Ergonomically Measures At Jaw Tip For
Small-sized Thin Conductors Up To 60 Amps

1.0% DCV BASIC ACCURACY

Measures Up To 600V DC

DIRECT LPF ACV & Hz FOR VFD

Measures Voltage & Frequency
Of Most Variable Frequency Drives
And Noisy Electrical Signals
Up To 600V AC

BACKLIGHTED LCD DISPLAY

For Easy Viewing In The Dark

FULLY AUTO-RANGING

Shortens The Time To Measure
And Increases The Ease Of Use

INTELLIGENT AUTO-POWER-OFF (APO)

Stays ON While In Measurements;
Intelligently Turns OFF To Extend Battery Life

ERGONOMIC & STREAMLINE BODY

Body width <50mm Fits Nicely In A Hand
Overall Length <190mm For Easy Carrying

TRUE RMS MEASUREMENTS

For Non-sinusoidal & Complex
Waveforms Of Voltages & Currents

RUGGED & DURABLE

Robust Enclosure;
Precise & Reliable Rotary Switch;
Premium Plating & Low Leakage PCB

EMC

Superior Immunity To Interference;
Reliable Operations And Readings;
Meets The Latest EN61326-1

DUAL SENSITIVITIES EF-DETECTION

Features Non-Contact (NCV) & Single-Probe
Voltage Detection For Identifying Live Lines;
Added User Selectable Hi/Lo Sensitivities

MAX CONDUCTOR SIZE 26mm, 600Amps

Features 600A Extra-slim Jaws ACA Models
And Hall-effect Jaws ACA/DCA Models

CREST MaxMin IN-RUSH CURRENTS

Fast Captures In-rush +/- Peak Signals
At Durations As Short As 5ms;
Automatic APO Disable Feature

REC MaxMin DISPLAY READINGS

Records Max & Min Readings Over Time;
Automatic APO Disable Feature

RELATIVE ZERO & DC_ZERO

REL For Convenient Readings Comparison;
DC_Zero For DCA Residue Offset (BM037 & 035)

DATA HOLD

Freezes The Displaying
Reading For Later View

INNOVATIVE BeepLit™ DIODE TEST

Short-Beep Alert On Forward Voltages <0.85V;
Beep & Backlight Effects For Shorted Diodes

DCμA (BM037 & 033)

For HVAC Flame Sensors
Testing Via Test Probes

TYPE-K TEMPERATURE (BM037 & 033)

Selectable °C And °F Readings;
Comes With Bkp60 Bead Probe

CAPACITANCE (BM037 & 033)

2 Auto-ranges Up To 2500μF
To Measure Motor Capacitors

INNOVATIVE BeepLit™ CONTINUITY

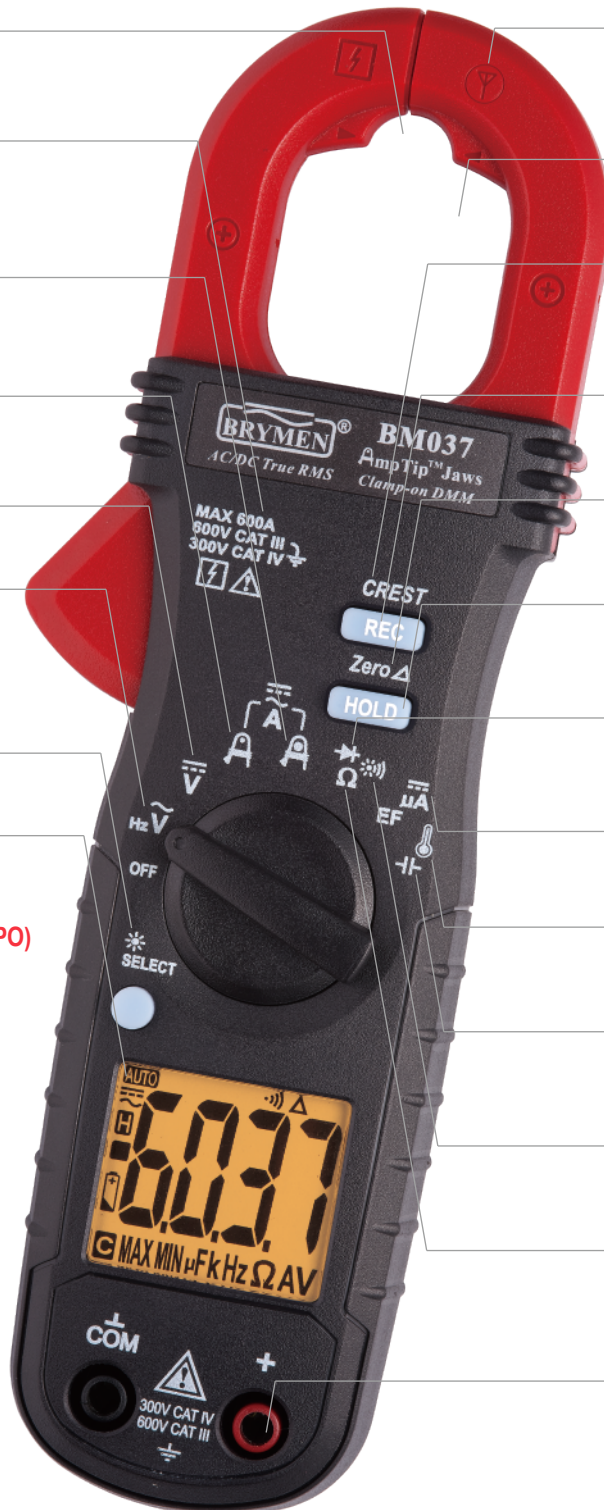
Quick Open-short Tests On Switches And Wires;
Beep & Backlight Effects For Noisy Environments

RESISTANCE

Best Resolution 0.1Ω At 600Ω Range;
2 Auto-ranges Up To 6kΩ (BM035 & 031);
5 Auto-ranges Up To 6000kΩ (BM037 & 033)

TRANSIENT PROTECTION

Up To 6kV 1.2/50μs Lightning Surge;
Fully Certified By Independent Test Lab;
Years Of Credibility For Serious Users



GENERAL SPECIFICATIONS

Display: 3-5/6 digits 6000 counts

Polarity: Automatic

Update Rate: 5 per second nominal

Operating Temperature: 0°C to 40°C

Relative Humidity: Maximum relative humidity 80% for temperature up to 31°C decreasing linearly to 50% relative humidity at 40°C

Pollution degree: 2

Storage Temperature: -20°C to 60°C, < 80% R.H. (with battery removed)

Altitude: Operating below 2000m

Temperature Coefficient: nominal 0.1 x (specified accuracy) / °C @ (0°C -- 18°C or 28°C -- 40°C), or otherwise specified

Sensing: True RMS

Safety: Certified per IEC/UL/CSA_C22.2_#EN standards:

61010-1 Ed. 3.0, 61010-2-032 Ed. 3.0, 61010-2-

033 Ed. 1.0 & 61010-031 Ed. 2.0 to

Measurement Categories CAT III 600V and CAT IV 300V ac & dc

Transient Protection: 6.0kV (1.2/50µs surge)

Overload Protections:

Current via jaws: 600Adc/Aac rms at <400Hz

Voltage via terminals: 660Vdc / 920Vac rms

Other functions via terminals: 600Vdc/Vac rms

E.M.C.: Meets EN61326-1

DCA and ACA Functions, in an RF field of 1V/m:

Total Accuracy = Specified Accuracy + 40 digits at around 87MHz

DCµA and Ohm Functions, in an RF field of 1V/m:

Total Accuracy = Specified Accuracy + 25 digits

Other Functions, in an RF field of 3V/m:

Total Accuracy = Specified Accuracy + 20 digits

Power Supply: 1.5V AAA Size battery X 2

Power Consumption: Typical 14mA for Current functions of BM037 & BM035; 4mA for others

Low Battery Indication:

Below approx. 2.85V for Capacitance & Hz

Below approx. 2.5V for other functions

APO Timing: Idle for 32 minutes

APO Consumption: 5µA typical

Dimension (LxWxH): 188 x 66 x 32mm

Weight: 202g for BM037 & BM035; 158g for BM033 & BM031

Jaw opening & Conductor diameter : 26mm max

Accessories: Test lead set, User's manual, Soft carrying pouch, Bkp60 banana plug type-K thermocouple (BM037 & BM033 only),

Optional purchase accessories: BKB32 banana plug to type-K socket plug adaptor (BM037 & BM033 only)

Special Features: AmpTip™ low-current range; MAX/MIN Recording mode; MAX/MIN Crest (Peak-Hold) mode; Relative-Zero mode; Display Hold; EF-Detection (NCV); BeepLit™ Feature

ELECTRICAL SPECIFICATIONS

Accuracy is ±(% reading digits + number of digits) or otherwise specified, at 23°C ± 5°C.
Maximum Crest Factor < 2 : 1 at full scale & < 4 : 1 at half scale or otherwise specified, and with frequency spectrum not exceeding the specified frequency bandwidth for non-sinusoidal waveforms.

DC Voltage

RANGE	Accuracy
600.0V	1.0% + 5d

Input Impedance: 10MΩ, 100 pF nominal

AC Voltage (with Low-Pass Filter)

RANGE	Accuracy
50Hz ~ 60Hz	
600.0V	1.5% + 5d

Input Impedance: 10MΩ, 100 pF nominal

Ohm

RANGE	Accuracy
600.0Ω, 6.000KΩ (All models)	1.0% + 5d
600.0Ω, 60.00kΩ, 600.0kΩ, 6000kΩ (BM037 & BM033 only)	

Open Circuit Voltage: 1.0VDC typical

BeepLit™ Continuity Tester:

Continuity Threshold: Between 30Ω and 480Ω

Continuity ON Response Time: 15ms approx.

Audible Indication: Beep sound

Visible Indication: LCD Backlight

Capacitance (BM037 & BM033 only)

RANGE	Accuracy ¹⁾
200.0µF, 2500µF	2.0% + 4d

¹⁾Accuracies with film capacitor or better

BeepLit™ Diode Tester

RANGE	Accuracy
3.000V	1.5% + 5d

Test Current: 0.3mA typically

Open Circuit Voltage: < 3.5VDC typically

Short Beep Alert Threshold: Drop across 0.850V

BeepLit™ ON Threshold: < 0.100V

Audible Indication: Beep sound

Visible Indication: LCD Backlight

DCµA (BM037 & BM033 only)

RANGE	Accuracy	Burden Voltage
200.0µA, 2000µA	1.0% + 5d	3.5mV/µA

Temperature (BM037 & BM033 only)

RANGE	Accuracy ^{1) 2)}
-40.0 °C ~ 99.9 °C	1.0% + 1.0°C
100 °C ~ 400 °C	1.0% + 1°C
-40.0 °F ~ 211.8 °F	1.0% + 2.0°F
212 °F ~ 752 °F	1.0% + 2°F

¹⁾Accuracies assume meter interior has the same temperature of the ambient (isothermal stage) for a correct junction voltage compensation. Allow the meter and the type-K probe set to reach isothermal stage 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

Clamp-on AmpTip™ ACA

RANGE	Accuracy ¹⁾
50Hz ~ 60Hz	
60.00A	1.0% + 5d

¹⁾Induced error from adjacent current-carrying conductor:

<0.01A/A for BM037 & BM035

<0.06A/A for BM033 & BM031

Clamp-on AmpTip™ DCA (BM037 & BM035 only)

RANGE	Accuracy ^{1) 2) 3)}
60.00A	1.0% + 5d

¹⁾Induced error from adjacent current-carrying conductor: <0.01A/A

²⁾Specified with DC-Zero mode applied to offset the non-zero residual readings, if any

³⁾Add 5d to the specified accuracy @ < 4A

Clamp-on Regular ACA

RANGE	Accuracy ^{1) 2)}
50Hz ~ 100Hz	
600.0A	1.5% + 5d
100Hz ~ 400Hz	
600.0A	2.0% + 5d

¹⁾Induced error from adjacent current-carrying conductor:

<0.1A/A for BM037 & BM035

<0.6A/A for BM033 & BM031

²⁾For BM033 & BM031, specified accuracy is for measurements made at the jaw center. When the conductor is not positioned at the jaw center, add 2% to specified accuracy for position errors

Clamp-on Regular DCA (BM037 & BM035 only)

RANGE	Accuracy ^{1) 2)}
600.0A	2.0% + 5d

¹⁾Induced error from adjacent current-carrying conductor: <0.1A/A

²⁾Specified with DC-Zero mode applied to offset the non-zero residual readings, if any

Hz Line Level Frequency (BM037 & BM033 only)

Function	Sensitivity ¹⁾ (Sine RMS)	Range
600V	50V	5.00Hz ~ 999.9Hz

Accuracy: 1%+5d

¹⁾DC-bias, if any, not more than 50% of Sine RMS

Non-Contact EF-Detection

Bar-Graph Indication	EF-H (Hi Sensitivity)	EF-L (Lo Sensitivity)
	Typical Voltage (Tolerance)	
-	10V (2V ~ 20V)	40V (10V ~ 70V)
--	20V (4V ~ 40V)	80V (20V ~ 140V)
---	40V (8V ~ 70V)	160V (40V ~ 280V)
----	80V (16V ~ 140V)	320V (80V ~ 560V)
-----	160V (>40V)	500V (>160V)

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

Detection Frequency: 50/60Hz

Detection Antenna: Inside the top side of the stationary jaw

Probe-Contact EF-Detection: For more precise indication of live wires, such as distinguishing between live and ground connections, use one single probe to test via terminal COM for direct metal Probe-Contact EF-Detection to achieve the most distinctive indication.

CREST (Peak-Hold):

Applicability: Voltage and Non-invasion Current functions

Accuracy: Add +/- 250 digits to specified accuracy for changes > 5ms in duration



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