

A Smart & Versatile Tool For Electricians !

AutoCheck™, Ghost-Voltage-Buster & EF-Detection Features !



CE

BM117/BM118
AutoCheck™ Clamp-On Series

BRYMEN®

BRIGHT PEOPLE'S CHOICE
<http://www.brymen.com>



BM118



BM117

118	117	FUNCTIONS & FEATURES
●	●	Versatile & Stylish
●	●	2000A AC Clamp-on + Full Multimeter ranges
●	●	45mm Large jaws opening
●	●	Fully auto-ranging on all functions for ease of use
●	●	6000 counts high resolution; Fast measurements
●	●	600VAC/DC input protection on all functions
●		AC True RMS voltage and current functions
●		Back lighted display
●	●	Data HOLD
●	●	AutoCheck™ Feature (Automatic DCV, ACV & Ohms Selection)
●	●	Lo-Z Volts To Drain Ghost Voltages (Auto-V Ω Position)
●	●	Non-Contact EF-Detection (NCV)
●	●	Probe-Contact EF-Detection For More Precise Indication Of Live
●	●	High voltage Frequency with auto-ranging trigger levels
●	●	Overload-Alert On > 600VAC/DC (Beeps & OL Indication)
●	●	DCV & ACV 0.001V to 600.0V
●	●	ACA 0.1A to 2000A non-invasive current measurements
●	●	Capacitance 50nF to 2000 μ F
●	●	Ohm 0.1 Ω to 6.000M Ω
●	●	Diode Test
●	●	Fast Audible Continuity
●	●	Battery cover with Probe holders
●	●	Rugged Fire retarded casing; Soft carrying pouch
●	●	Transient protection 6.5kV 1.2/50 μ s lightning surge
●	●	LVD EN61010-2-032 CAT III 600V
●	●	EMC EN61326(97/98A1)/EN61000-4-2(95)/EN61000-4-3(96)

Features Oriented 2000 Amps AutoCheck-Clamps!

6000 Counts, AutoCheck™, Ghost-Voltage-Buster & EF-Detection !

LARGE U-SHAPE CLAMP JAWS
MEASURE ACA OF LARGE SINGLE CONDUCTOR
OR DIFFERENTIAL ACA OF MULTIPLE CONDUCTORS

RUGGED & DURABLE
HIGH-IMPACT FIRE-RETARDED ENCLOSURE
FOR REINFORCED SAFETY & RELIABILITY

LVD CAT III 600V SAFETY
MEETS EN61010-2-032 CAT III 600V

0.5% DCV BASIC ACCURACY
3 RANGES; AUTO-RANGING
UP TO 600 VOLTS, 0.1V RESOLUTION

TRUE RMS MEASUREMENTS (BM118 ONLY)
FOR NON-SINUSOIDAL WAVEFORMS
OF AC VOLTAGES & AC CURRENTS

DISPLAY BACKLIGHT (BM118 ONLY)
FOR EASY VIEWING IN THE DARK

HIGH IMPEDANCE VOLTAGE
600VAC/DC MEASURING CAPABILITIES;
HIGH INPUT IMPEDANCE FOR
LOAD SENSITIVE CIRCUITS

HIGH VOLTAGE Hz
MEASURES NOISY HIGH VOLTAGE
ACV FREQUENCIES VIA TEST LEADS

UP TO AC 2000 AMPS MEASUREMENTS
2 NON-INVASIVE AC CURRENT AUTO-RANGES
VIA CLAMP JAWS; BEST RESOLUTION 0.1A

EMC
MEETS EN61326(1997, 1998/A1),
EN61000-4-2(1995), & EN61000-4-3(1996)



EF ANTENNA
CONVENIENTLY LOCATED AT THE JAW TIP
FOR NON-CONTACT EF-DETECTION (NCV)

STYLISH & HANDY
ALSO COMES WITH A SOFT POUCH
FOR EASY CARRYING & PROTECTION

DATA HOLD
FREEZES THE DISPLAYING
READING FOR LATER VIEWING

BATTERY COMPARTMENT
WITH ACCESS DOOR FOR
EASY BATTERY REPLACEMENT

PROBE HOLDERS
BUILT-IN PROBE STORAGE HOLDERS

ELECTRIC FIELD EF-DETECTION
FEATURES BOTH NON-CONTACT &
PROBE CONTACT EF-DETECTION
FOR TRACING LIVE WIRING

AUTOCHECK™ FEATURE
AUTOMATIC SELECTION OF
LoZ DCV, LoZ ACV & OHMS

GHOST-VOLTAGE-BUSTER
LoZ DRAINS GHOST/ STRAY VOLTAGES
LEAVING ONLY HARD SIGNALS
ON METER READINGS

AUTOCHECK™ - RESISTANCE
4 RANGES; AUTO-RANGING UP TO 6 MΩ

CAPACITANCE
5 RANGES; AUTO-RANGING
UP TO 2000μF WITH 600V PROTECTION

DIODE TEST
FOR TESTING DIODES AND RECTIFIERS

600 OHMS RANGE WITH AUDIBLE CONTINUITY
FOR LOW RESISTANCE & QUICK OPEN-SHORT
TESTS ON SWITCHES, FUSES, AND WIRES

TRANSIENT PROTECTION
UP TO 6.5kV 1.2/50μs LIGHTNING SURGE;
MORE CONFIDENCE FOR SERIOUS USERS

BM117 & BM118 GENERAL SPECIFICATION

Display: 3-5/6 digits 6000 counts

Update Rate: 5 per second nominal

Polarity: Automatic

Operating Temperature: 0°C ~ 40°C

Relative Humidity: Maximum relative humidity 80% for temperature up to 31°C decreasing linearly to 50% relative humidity at 40°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 @ (0°C ~ 18°C or 28°C ~ 40°C), or otherwise specified

Sensing:

Average sensing for BM117

True RMS sensing for BM118

Pollution Degree: 2

Safety: Meets IEC61010-2-032 (1994),

EN61010-2-031 (1995), UL3111-2-032 (1999)

Measurement Category: CAT III 600VAC & VDC

Transient Protection:

6.5kV (1.2/50µs surge) for both models

E.M.C.:

Meets EN61326 (1997, 1998/A1), EN61000-4-2 (1995), & EN61000-4-3 (1996)

In an RF Field of 3V/m:

Capacitance function is not specified.

Other function ranges:

Total accuracy = Specified accuracy + 45 digits

Performance above 3V/m is not specified

Overload Protection:

ACA Clamp-on jaws: AC 2000A rms continuous

+ & COM terminals (all functions):

600VDC & VAC rms

Low Battery: Below approx. 2.4V

Power Supply: standard 1.5V size (NEDA 24A or IEC LR03) battery x 2

Power Consumption:

BM117: 2.2mA typical

BM118: 2.8mA typical

APO Consumption: 40µA typical on all model functions except that 230µA typical on BM118 voltage & current functions

APO Timing: Idle for 3 minutes

Dimension: L224mm x W78mm x H40mm

Weight: approx. 220 gm

Jaws opening & Conductor Diameter:

45mm max

Special Features: AutoCheck™ (Automatic V & Ω Selection); EF-Detection

Accessories: Test leads (pair), batteries installed, user's manual, soft carrying pouch

BM117 & BM118 Electrical Specification

Accuracy is ± (% of reading digits + number of digits) or otherwise specified, at 23°C ± 5°C and less than 75% R. H.

True RMS Model BM118 ACV & ACA clamp-on accuracies are specified from 5% to 100% of range or otherwise specified. Maximum Crest Factors are as specified below, and with frequency spectrums, besides fundamentals, fall within the meter specified AC bandwidth for non-sinusoidal waveform.

DC Voltage

RANGE	Accuracy
6.000V	0.5% + 3d
60.00V	1.0% + 5d
600.0V	2.0% + 5d

NMRR: > 30dB @ 50Hz/60Hz

CMRR: > 100dB @ DC, 50Hz/60Hz; Rs=1kΩ

Hi-Z DCV Input Impedance: 5.0MΩ, 90pF nominal

AutoCheck™ Lo-Z DCV Input Impedance:

Initially 1.6kΩ, 90pF nominal;

Impedance increases significantly as display voltage increases from 50V (typical). Typical impedances vs display voltages for reference are:

15kΩ @ 100V
100kΩ @ 300V
210kΩ @ 600V

AutoCheck™ DCV Threshold:

> +1.5VDC or < -1.0VDC nominal

Ohms

RANGE	Accuracy ¹⁾
6.000kΩ ²⁾	1.2% + 6d ³⁾
60.00kΩ, 600.0kΩ	1.0% + 4d
6.000MΩ	2.0% + 4d

Open Circuit Voltage: 0.4VDC typical

¹⁾Cool down interval 2 minutes after over 50V measurements in Auto-VΩ position

²⁾Beeper on while reading < 0.025kΩ

³⁾Add 40d to specified accuracy while reading is below 20% of range

600Ω with Continuity Beeper

RANGE	Accuracy
6.000kΩ	2.0% + 8d ¹⁾

Continuity Beeper Response: < 100µs

Open Circuit Voltage: 0.4VDC typical

Audible Threshold: between 10Ω and 300Ω

¹⁾Add 40d to specified accuracy while reading is below 20% of range

Diode Tester

Open Circuit Voltage	Test Current
< 1.6VDC	0.4mA typical

Audible Threshold: between 0.015V and 0.080V

AC Voltage

RANGE	Accuracy
50Hz / 60Hz	
6.000V, 60.00V	1.5% + 5d
600.0V	2.0% + 5d
50Hz ~ 500Hz	
6.000V, 60.00V	2.0% + 5d
600.0V	2.5% + 5d

CMRR: > 60dB @ DC to 60Hz, Rs=1kΩ

Hi-Z ACV Input Impedance: 5.0MΩ, 90pF nominal

AutoCheck™ Lo-Z ACV Input Impedance:

Initially 1.6kΩ, 90pF nominal;

Impedance increases significantly as display voltage increases from 50V (typical). Typical impedances vs display voltages for reference are:

15kΩ @ 100V
100kΩ @ 300V
210kΩ @ 600V

AutoCheck™ ACV Threshold:

> 2VAC (50/60Hz) nominal

True RMS model BM118 Crest Factor:

< 1.6 : 1 at full scale & < 3.3 : 1 at half scale

ACA Current (Clamp-on)

RANGE	Accuracy ^{1) 2) 3)}
50Hz / 60Hz	
400.0A, 2000A	1.5% + 5d

True RMS model BM118 Crest Factor:

< 2 at full scale & < 4 at half scale

¹⁾Add 8d to specified accuracy while reading is below 10% of range

²⁾Induced error from adjacent current-carrying conductor: < 0.06A/A

³⁾Specified accuracy is for measurements made at the jaw center. When the conductor is not positioned at the jaw center, position errors introduced are:

Add 1% to specified accuracy for measurements made WITHIN jaws marking lines (away from jaws opening)

Add 4% to specified accuracy for measurements made BEYOND jaws marking lines (toward jaws opening)

Frequency

Voltage Range	Sensitivity (Sine RMS)	Range
6.000V	4V	10Hz ~ 30kHz
60.00V	30V	10Hz ~ 1kHz
600.0V	60V	10Hz ~ 1kHz

Accuracy: 0.5% + 4d

Max display: 9999 counts

Capacitance

Range	Accuracy ¹⁾
100.0nF ²⁾ , 1000nF, 10.00µF, 100.0µF, 2000µF	3.5% + 5d ³⁾

¹⁾Accuracies with film capacitor or better

²⁾Accuracy below 50nF is not specified

³⁾Specified with battery voltage above 2.8V (approximately half full battery). Accuracy decreases gradually to 12% at low battery warning voltage of approximately 2.4V

Non-Contact EF-Detection

Typical Voltage	Bar Graph Indication
15V to 85V	-
40V to 130V	--
60V to 210V	---
90V to 300V	----
Above 120V	-----

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

Detection Frequency: 50/60Hz

Detection Antenna: Top side of the stationary jaw

Probe-Contact EF-Detection: For more precise indication of live wires, use the Red (+) probe for direct contact measurement



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