60,000 Counts, 100kHz TRMS and CAT-III 1kV

Now Come With BLE-Comm Wireless Data Communication Capability!

AutoHold Real-Read™! BeepLit™ Continuity! BeepLit™ Diode Alert! LoZ AutoV!
Hi-Lo EF Detection! VFD V & Hz! nS Measurements! T1-T2 Type-K!
Crest Peaks! Speedy MaxMinAvg! Relative Zero! BeepJack™!

BM788BT

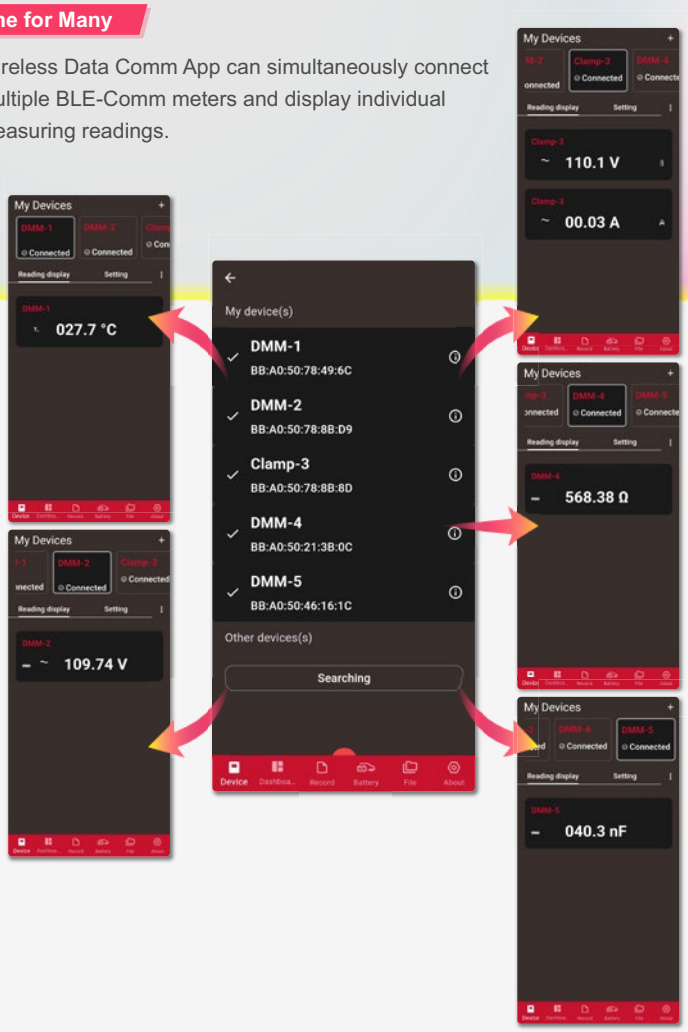
Professional
Multimeter

BRYMEN®
Bright People's Choice

www.brymen.com

One for Many

Wireless Data Comm App can simultaneously connect multiple BLE-Comm meters and display individual measuring readings.



Many in One

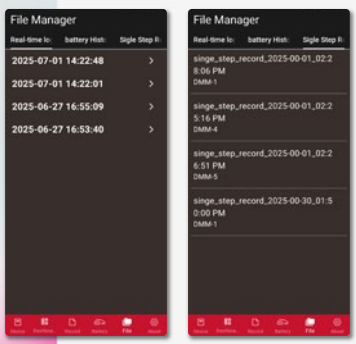
A collective Module can be created for displaying and logging multiple meter channels selected.

Designated Capture

Displaying data of the selected meter can be captured via SSR Single Step Record. Short-press the meter HOLD button to activate when ready. Setup photos can be bundled with the data for later viewing.

Save & Retrieve

Recorded Real-time logging graphs and SSR data can be temporarily saved and retrieved under the App for later review, along with data-only CSV files for long-term storage & portability.



BLE-Comm Wireless + Professional Performance

Superb Resolution, Accuracy, Speed, Bandwidth, Safety, & Quality!

BLE-Comm
Wireless Data Communication Capability for Data Logging & Remote Monitoring

DC+AC & AC 100kHz TRUE RMS
For Non-sinusoidal & Complex Waveforms of Volts & Amps. 100kHz High Bandwidth for ACV

LINE LEVEL Hz
Measures Noisy Line Level Voltage Frequencies

FULLY AUTO-RANGING
Shortens the Time to Measure and Increases the Ease of Use

INNOVATIVE BeepLit™ CONTINUITY
Quick Open-short Tests on Switches and Wires; Beep + Backlight Effects for Noisy Environments

BACKLIGHTED LCD DISPLAY
For Easy Viewing in The Dark; 16 mins Auto-Off to Save Battery Power

LOGIC LEVEL Hz AND %
Measures Digital Logic Level Frequencies and Duty Cycles

REC MAX MIN AVG READINGS
Speedy Records Max, Min and Calculates Average Readings Over Time; Automatic APO Disable

LPF ACV & Hz FOR VFDs
Measures Voltage & Frequency of Most Variable Frequency Drives and Noisy Electrical Signals up to 1000Vac

AutoV
Automatic Selection of ACV or DCV

LoZ GHOST-VOLTAGE-BUSTER
Low Ramp-up Input Impedance to Drain Ghost Voltages Leaving Only Hard Signal Meter Readings

0.03% BASIC DCV ACCURACY
Measures DCV up to 1000Vdc

BEEPJACK™ MIS-INPUT WARNING
Guards Against Improper Amps Terminals Plug-in for Voltage Measurements

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

INTELLIGENT AUTO-POWER-OFF (APO)
Stays ON While in Measurements; Intelligently Turns OFF to Extend Battery Life; Disable option

EMC
Superior Immunity to Interferences; Reliable Operations and Readings; Meets EN61326-1

ERGONOMIC & STREAMLINE BODY
Over-molded Holster Fits Nicely in One Hand; Reduced Size for Easy Carrying

RELATIVE ZERO
REL for Convenient Readings Comparison

DUAL SENSITIVITIES EF-DETECTION
Features Non-Contact (NCV) & Single-Pole Contact Voltage Detections; Selectable Hi/Lo Dual Sensitivities

LARGE 60,000 COUNTS LCD DISPLAY
5-5/6 Digits High Resolution; 5/Sec Fast Nominal Update Rate

DATA HOLD
Freezes the Displaying Reading for Later View

FAST ANALOG BAR-GRAPH
50/Sec Fast Nominal Update Rate

AUTOHOLD REAL-READ™
Shows Real-time Readings and automatically latches the last stable reading for later display

CREST MAX MIN PEAKS
Fast Captures +/- Peak Extremes at Durations as Short as 0.25ms; Automatic APO Disable

%4~20mA READINGS
Monitors and Verifies Process Control Loop Currents

TYPE-K TEMPERATURE
T1, T2 Dual Inputs; Selectable °C and °F Readings

INNOVATIVE BeepLit™ DIODE TEST
Short-Beep Alert on Forward Voltages <0.85V; Continuous Beep & Backlight Effects for Shorted Diode Continuities

CAPACITANCE
Up to 10mF for Measuring Motor Capacitors

LVD CAT III 1000V & CAT IV 600V
Certified EN61010-2-033, EN61010-1 & Relevant Standards on CAT III 1kV & CAT IV 600V

nS CONDUCTANCE
nS=1/GΩ virtually extends Resistance measurements to the order of GΩ

TRANSIENT PROTECTION
Up To 8kV 1.2/50μs Lightning Surge; Fully Certified by Independent Test Lab; Years of Credibility for Serious Users

RESISTANCE
Best Resolution 0.01Ω At 600Ω Range; 6 Auto-ranges Up To 60MΩ

ELECTRICAL SPECIFICATIONS

Accuracy is ±(% reading digits + number of digits) or otherwise specified, at 23°C ± 5°C & less than 75% relative humidity. Maximum Crest Factor <1.6:1 at full scale & < 3.2:1 at half scale, and with frequency components fall within the specified frequency bandwidth for non-sinusoidal waveforms.

DC Voltage

RANGE	Accuracy
600.00mV, 6.0000V, 60.000V	0.03% + 2d
600.00V	0.05% + 5d
1000.0V	0.15% + 5d

Input Impedance: 10MΩ, 75pF nominal (280pF nominal for 600mV range)

VFD AC Voltage

RANGE	Accuracy [1]
10Hz ~ 200Hz	
600.00V, 1000.0V	4% + 50d
200Hz ~ 440Hz	
600.00V, 1000.0V	10% + 50d [2]

[1]Signal fundamental frequency > 440Hz is unspecified
[2]Accuracy linearly decreases from 2% + 50d @ 200Hz to 10% + 50d @ 440Hz

CREST mode (Instantaneous Peak Hold)

Accuracy: Specified accuracy ± 100 digits for changes > 0.35ms in duration
Availability: Voltage and Current functions
Resolution: 6000 counts

AutoHold Real-Read™

Accuracy: Specified accuracy ± 50 digits
Availability: Resistance, Continuity, LoZ AutoV, VFD Volts, Voltage and Current functions

DC Loop Current %4~20mA

4mA = 0% (zero)
20mA = 100% (span)
Resolution: 0.01%
Accuracy: ± 25d

BeepLit™ Continuity Tester

Audible threshold: between 20Ω and 250Ω
Response time < 100µs
Audible Indication: Beep Sound
Visible Response: LCD Backlight

AC Voltage

RANGE	Accuracy [1]
50Hz ~ 60Hz	
600.00mV [2], 6.0000V, 60.000V, 600.00V, 1000.0V	0.5% + 30d
40Hz ~ 1kHz	
600.00mV [2], 6.0000V, 60.000V, 600.00V, 1000.0V	0.9% + 30d
1kHz ~ 7kHz	
600.00mV [2], 6.0000V, 60.000V, 600.00V	1.8% + 40d
1000.0V	Unspec'd
7kHz ~ 20kHz	
600.00mV [2], 6.0000V, 60.000V, 600.00V [3]	2.0%+60d
1000.0V	Unspec'd
20kHz ~ 100kHz	
600.00mV [2] [4], 6.0000V [4], 60.000V [4]	4.0%+60d
600.00V, 1000.0V	Unspec'd

[1]Accuracy specified from 10% to 100% of range
[2]Signal peak absolute values, including DC bias, less than 1000mV$_{peak}$
[3]Bandwidth specified to 10kHz only for 600V range
[4]Accuracy specified from 30% to 100% of range
Input Impedance: 10MΩ, 75pF nominal (140pF nominal for 600mV range)
Residual reading less than 50 digits with test leads shorted

AC+DC Voltage

RANGE	Accuracy [1]
50Hz ~ 60Hz	
600.00mV [2], 6.0000V, 60.000V, 600.00V, 1000.0V	0.7% + 40d
0Hz, 40Hz ~ 1kHz	
600.00mV [2], 6.0000V, 60.000V, 600.00V, 1000.0V	1.2% + 40d
1kHz ~ 7kHz	
600.00mV [2], 6.0000V, 60.000V, 600.00V	2.0% + 50d
1000.0V	Unspec'd
7kHz ~ 20kHz	
600.00mV [2], 6.0000V, 60.000V, 600.00V [3]	2.5%+70d
1000.0V	Unspec'd

[1]Accuracy specified from 10% to 100% of range
[2]Signal peak absolute values, including DC bias, less than 1000mV$_{peak}$
[3]Bandwidth specified to 10kHz only for 600V range
Input Impedance: 10MΩ, 75pF nominal (140pF nominal for 600mV range)
Residual reading less than 50 digits with test leads shorted.

LoZ Auto-DCV

RANGE	Accuracy
6.0000V, 60.000V, 600.00V, 1000.0V	0.5%+30d

LoZ Auto-DCV Threshold: > +1.0VDC or < -1.0VDC nominal
LoZ Auto-DCV Input Impedance:
Initially approx. 2.1kΩ, 140pF 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:
12kΩ @ 100V
90kΩ @ 300V
300kΩ @ 600V
670kΩ @ 1000V

LoZ Auto-ACV

RANGE	Accuracy [1]
50Hz ~ 60Hz	
6.0000V, 60.000V, 600.00V, 1000.0V	1.0%+40d

[1]Accuracy specified from 10% to 100% of range
LoZ Auto-ACV Threshold: > 1.0VAC (50/60Hz) nominal
LoZ Auto-ACV Input Impedance:
Initially approx. 2.1kΩ, 140pF 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:
12kΩ @ 100V
90kΩ @ 300V
300kΩ @ 600V
670kΩ @ 1000V

Ohms

RANGE	Accuracy [1]
600.00Ω	0.085%+10d
6.0000kΩ, 60.000kΩ	0.085%+4d
600.00kΩ	0.15%+4d
6.0000MΩ [2]	1.5%+5d
60.000MΩ [3] [4]	2.0%+5d
99.99nS [5]	1.0%+10d

Open Circuit Voltage: < 1.3VDC (< 1.5VDC for 600Ω range)
[1]Temperature Coefficient: 0.20 x (specified accuracy)/ °C @ (-20°C ~ 18°C or 28°C ~ 55°C)
[2]Constant Test Current: 0.1µA Typical
[3]Constant Test Current: 0.01µA Typical
[4]Specified accuracy adds 0.5% @ >50MΩ
[5]Specified accuracy adds 30d @ <10nS

BeepLit™ Diode Tester

RANGE	Accuracy	Test Current (Typical)	Open Circuit Voltage
3.0000V	1%+20d	0.35mA	< 3.1 VDC

Short-Beep-Alert Threshold: Drop Across 0.850V
BeepLit™ continuous ON Threshold: < 0.100V
Audible Indication: Beep Sound
Visible Indication: LCD Backlight

DC Current

RANGE	Accuracy	Burden Voltage
600.00µA [1] [2]	0.075%+20d	0.2mV/µA
6000.0µA	0.075%+20d	0.2mV/µA
60.000mA [2]	0.075%+20d	2.0mV/mA
600.00mA	0.15%+20d	2.0mV/mA
6.0000A	0.3%+20d	30mV/A
10.000A [3]	0.3%+30d	30mV/A

[1]Specified with Open-circuit-voltage (OCV) of Current-loop-under-test at > 100µV.
[2]The meter shows a few negative residue counts when the input is short-circuited, with OCV at zero volt. It is the nature of the internal protection circuity design, and will not affect measurement readings at nominal OCVs greater than 100µV in significant measurements.
[3]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 [1] [2]
10.00nF	1.0% + 10d
100.0nF~1000nF	1.0% + 2d
10.00µF~1.000mF	1.8% + 4d
10.00mF	2.0% + 4d

[1]Accuracies with film capacitor or better
[2]Temperature Coefficient: 0.20 x (specified accuracy)/ °C @ (-20°C ~ 18°C or 28°C ~ 55°C)

AC Current

RANGE	Accuracy [1]	Burden Voltage
40Hz ~3kHz		
600.00µA, 6000.0µA	0.9%+20d	0.2mV/µA
60.000mA, 600.00mA		2.0mV/mA
6.0000A, 10.000A [2]	1.0%+30d	30mV/A

[1]Accuracy unspecified @ <10% of range
[2]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

AC+DC Current

RANGE	Accuracy [1]	Burden Voltage
0Hz, 40Hz ~ 3kHz		
600.00µA, 6000.0µA	1.0%+30d	0.2mV/µA
60.000mA, 600.00mA	1.2%+40d	2.0mV/mA
6.0000A, 10.000A [2]		30mV/A

[1]Accuracy unspecified @ <10% of range
[2]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

Temperature

RANGE	Accuracy [1] [2]
-200.0°C to 1090°C	1.0%+1.0°C
-328.0°F to 1994°F	1.0%+1.8°F

[1]Accuracies assume meter interior has the same temperature (isothermal stage) of the ambient 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

Hz Logic Level Frequency

RANGE	Accuracy [1] [2]
5.000Hz ~ 1.0000MHz	0.002%+4d

[1]Sensitivity: >3.0Vp square wave
[2]Specified with Pulse Width > 0.5µs

%Duty Cycle

5V Logic Frequency	RANGE Specified	Accuracy
5Hz ~ 1kHz	0.10% ~ 99.99%	3d/kHz+2d
1kHz ~ 10kHz	1.00% ~ 99.00%	
10kHz ~ 500kHz	20.00% ~ 80.00%	

Sensitivity: >3.0Vp square wave

~ Hz Line Level Frequency

Function RANGE	Sensitivity (Sine RMS)	Range
6V	0.4V	10Hz ~ 50kHz
60V	4V	10Hz ~ 50kHz
600V	40V	10Hz ~ 30kHz
1000V	400V	10Hz ~ 5kHz
VFD 600V	40V	10Hz ~ 400Hz
VFD 1000V	400V	10Hz ~ 400Hz
600µA	40µA	10Hz ~ 5kHz
6000µA	400µA	10Hz ~ 5kHz
60mA	4mA	10Hz ~ 5kHz
600mA	40mA	10Hz ~ 5kHz
6A	0.6A	10Hz ~ 3kHz
10A	6A	10Hz ~ 3kHz

Accuracy: 0.05%+5d

Non-Contact EF-Detection (NCV)

Bar-Graph Indication	EF-H (Hi Sensitivity)	EF-L (Lo Sensitivity)
	Typical Voltage (Tolerance)	
-	25V (18V ~ 45V)	60V (50V ~ 140V)
--	50V (30V ~ 80V)	120V (100V ~ 260V)
---	80V (70V ~ 160V)	230V (180V ~ 400V)
----	120V (110V ~250V)	400V (330V ~ 490V)
-----	350V (>270V)	600V (>500V)

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 (Single-pole):
For more precise indication of live wires, such as distinguishing between live and ground connections, use one single test probe to test via terminal COM for direct metal contact probing to achieve the most distinctive indications.

RECORD mode (MAX MIN AVG)

Function Mode Where Available	Added Uncertainty [1] to Specified Accuracy	Min. Volts/Amps Signal Duration	REC Nominal Update Rate per Second
DC	±30d	300ms	10
AC	±80d [2]	460ms	10
VFD	±180d	800ms	5
DC+AC	±300d [2]	2s	1
nS	--	--	1
Cx	--	--	Subject to Cx Values
Hz, T1-T2	--	--	2
Ω, T1, T2, Others	--	--	5

[1] Specified at Range Locked (Manual-ranging)
[2] Specified at AC Inputs >15% of Range

GENERAL SPECIFICATIONS

Display: 4-5/6 digits 60,000 counts.
Polarity: Automatic
Update Rate:
4-5/6 digits: Max 5 per second nominal
31 Segment Bar-graph: 50 per second max
Operating Temperature: -20°C to 55°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 55°C
Pollution degree: 2
Storage Temperature: -20°C to 60°C, < 80% R.H. (with battery removed)
Altitude: Operating below 2000m
Temperature Coefficient: nominal 0.10 x (specified accuracy)/ °C @ (-20°C ~ 18°C or 28°C ~ 55°C), or otherwise specified
Sensing: AC and AC+DC True RMS
Safety: Double insulation per IEC/UL/EN/BSEN 61010-1, IEC/UL/EN/BSEN 61010-2-033, IEC/UL/EN/BSEN 61010-031 and the corresponding CAN/CSA-C22.2 regulations to Measurement Categories III 1000V AC & DC and Category IV 600V AC & DC
Overload Protections:
µA & mA: 0.4A/1000V DC/AC, IR 30kA or better, F fuse
A: 11A/1000V DC/AC, IR 20kA or better, F fuse
V: 1100V DC/AC rms
mV, Ω & Others: 1000 V DC/AC rms
Transient protection: 8kV (1.2/50µs surge)
Radio Frequency Certification: FCC ID: WAP2006; IC: 7922A-2006; MIC Japan: 203-JN0599; KC Korea: MSIP-CRM-Cyp-2006
Wireless Radio Frequency Range: 2402 MHz to 2480 MHz
E.M.C.: Meets EN/BSEN 61326-1:2021; ETSI EN 301 489-1 V2.2.3; ETSI EN 301 489-17 V3.2.4; EN 62479:2010; ETSI EN 300 328 V2.2.2; FCC CFR Title 47, Part 15, Subpart B, Class B; ISED Canada ICES-003 Issue 7 Class B
Power Supply: 1.5V AAA Alkaline battery x 3
Power Consumption: 10mA typical for AC & AC+DC Voltage/Current functions; 8mA typical for other functions; +2mA typical while BLE-Comm activates
Low Battery: Below approx. 3.7V
APO Timing: Idle for 15 minutes
APO Consumption: 15µA typical.
Dimension: L193mm X W89mm X H51mm
Weight: 635 gm
Accessories: Test lead pair, User's manual, Bkp60 banana plug K-type thermocouple x 1
Optional Accessories: BMH-02 magnetic hanger strap
Special Features: BLE-Comm; AutoHold; VFD; BeepLit™ Continuity; Record MAX, MIN, & AVG readings; Crest (Instantaneous Peak hold) MAX & MIN readings; Relative Zero mode; Data Hold; Backlighted LCD display; BeepJack™ audible & visible input warning; %4-20mA loop current readings; T1-T2 differential temperature readings

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