

CAT III Card-Sized Meter That Fits Your Pockets

Plus Powerful AutoCheck™
& EF-Detection Features!



CE

**BM20 AutoCheck™
DMM Series**

BRYMEN®

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

sales@prom-elec.com / ООО ПРОМЭЛЕКТРОНИКА



BM27



BM25



BM22



BM27	BM25	BM22	Functions & Features
6,000 Counts	6,000 Counts	4,000 Counts	Large Easy To Read LCD Display
5/Sec	5/Sec	3/Sec	Fast Data Measurement
600V	450V	600V	Input Protection On All Functions
•	•	•	Fully Auto-Ranging
•	•		AutoCheck™ Feature (Automatic DCV, ACV & Ohms Selection)
•	•		Electric Field EF-Detection (Non-Contact Voltage Detection)
•	•		Intelligent Auto Power Off -- Operation & Measurement Reset
		•	Standard Auto Power Off -- Operation Reset
		•	Data Hold
		•	30ms High Speed Max Hold
600V	450V		AutoCheck™ Lo-Z DCV & ACV Measurements (Auto-V Ω Position)
600V		600V	Standard Hi-Z DCV & ACV Measurements (V Position)
•	•		AutoCheck™ Ohms 6k Ω To 6M Ω , 4 Ranges (Auto-V Ω Position)
•			Ohms 600 Ω Range
•		•	Ohms 400 Ω To 40M Ω , 6 Ranges
•	•		Capacitance 100nF To 2000 μ F, 5 Ranges
	•		Capacitance 100nF To 100 μ F, 4 Ranges
	•	•	Capacitance 500nF To 3000 μ F, 5 Ranges
•	•	•	Audible Continuity
•		•	Diode Test
•			Micro-Amps AC/DC 400.0 μ A To 2000 μ A For Flame Sensors
•			Line-Voltage FREQUENCY With 3 Trigger Levels (V Position)
•	•		FREQUENCY 10Hz TO 30kHz (Auto-V Ω Position)
		•	FREQUENCY 5Hz TO 1MHz
•	•	•	Fire-Retarded Material Thick Wall Housing
•	•	•	Optional Purchase Protective Silicon Holster
•	•	•	EMC Meets EN61326, EN61000-4-2 & EN61000-4-3
•	•	•	Transient Protection Up To 4kV 1.2/50 μ s Lightning Surge
•		•	UL Listed To UL61010B-1 CAT III 300V & CAT II 600V AC/DC
	•		UL Listed To UL61010B-1 CAT III 300V & CAT II 450V AC/DC

A Really Smart & Handy Tool

Having Patented Functions & Features To Meet Your Daily Application Need



Optional Purchase Protective Silicon Holster



BM22, BM25 & BM27 GENERAL SPECIFICATIONS

Display:

BM22: 3-3/4 digits 4000 counts
BM25 & BM27: 3-5/6 digits 6000 counts

Update Rate:

BM22: 3 per second nominal
BM25 & BM27: 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

Airflow:

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 on all models

Pollution Degree:

2

Safety: Meets IEC61010-1 (First Edition with Amendment 1 & 2), UL61010B-1 (First Edition), CAN/CSA-C22.2 No. 1010-1-92

Measurement Category:

BM22 & BM27: CAT II 600V, CAT III 300V

BM25: CAT II 450V, CAT III 300V

Transient Protection:

4kV lightning surge (1.2/50µs)

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 + 45d

Performance above 3V/m is not specified

Overload Protection:

600VDC & VAC rms for BM22 & BM27

450VDC & VAC rms for BM25

Low Battery:

Below approx. 2.4V

Power Supply: 3V standard button battery x 1

(IEC-CR2032; Sanyo-NEDA-5004LC)

Power Consumption (typical):

BM22 & BM25: 2mA

BM27: 6mA for Voltage functions on Auto-V_Ω

position; 2mA for other functions

APC Consumption:

1µA typical

APC Timing:

BM22: Idle for 30 minutes

BM25 & BM27: Idle for 3 minutes

Dimension: L113mm x W53mm x H10.2mm

Weight: approx. 78 gm

Special Features:

BM22: Data Hold; 30ms MAX Hold

BM25 & BM27: AutoCheck™ (Automatic V & Ω

Selection); EF-Detection

Accessories: battery installed, user's manual

Optional Accessories: protective holder, soft

carrying pouch

BM22, BM25 & BM27 ELECTRICAL SPECIFICATIONS

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

DC Voltage (BM22)

RANGE	Accuracy
400.0mV	1.0%+2d
4.000V, 40.00V, 400.0V	2.0%+2d
600V	2.5%+4d

NMR: > 50dB @ 50Hz/60Hz

CMRR: > 120dB @ DC, 50Hz/60Hz; R_s=1kΩ

Input Impedance: 10 MΩ, 30pF nominal;

(100MΩ for 400.0mV range)

DC Voltage (BM25 & BM27)

RANGE	Accuracy
6.000V	0.5%+3d
60.00V	1.0%+5d
450.0V ¹⁾	1.2%+5d
600.0V ²⁾	2.0%+5d
600.0V ³⁾	1.5%+5d

NMR: > 30dB @ 50Hz/60Hz

CMRR: > 100dB @ DC, 50Hz/60Hz; R_s=1kΩ

BM25 Input Impedance:

AutoCheck™ Lo-Z DCV:

160kΩ, 160pF nominal

BM27 Input Impedance:

AutoCheck™ Lo-Z DCV:

833kΩ (4.2kΩ when displaying Auto),

90pF nominal

Hi-Z DCV:

5MΩ, 90pF nominal

DCV AutoCheck™ Threshold:

> +1.2VDC or < -0.6VDC nominal

¹⁾BM25 AutoCheck™ DCV only

²⁾BM27 AutoCheck™ DCV only

³⁾BM27 Hi-Z DCV only

Ohms (BM22)

RANGE	Accuracy
400.0Ω	1.5%+6d
4.000kΩ, 40.00kΩ, 400.0kΩ	1.0%+4d
4.000MΩ	1.5%+4d
40.00MΩ	2.5%+4d

Open Circuit Voltage: 0.4VDC typical

Ohms (BM25 & BM27)

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

Open Circuit Voltage: 0.4VDC typical

¹⁾AutoCheck™ is for 6.000kΩ ~ 6.000MΩ ranges;

600.0Ω is an independent range for BM27

only

²⁾Specified accuracy plus 40d while reading is

below 20% of range

Diode Tester (BM22 & BM27 only)

Test Current (Typical)	Open Circuit Voltage
0.25mA for BM22	< 1.6VDC
0.48mA for BM27	

AC Voltage (BM22)

RANGE	Accuracy
50Hz ~ 60Hz	
4.000V, 40.00V, 400.0V	2.0%+5d
60Hz ~ 500Hz	
4.000V, 40.00V, 400.0V	3.0%+5d
50Hz ~ 500Hz	
600V	3.5%+5d

Input Impedance: 10 MΩ, 30pF nominal

CMRR: > 60dB @ DC to 60Hz; R_s=1kΩ

AC Voltage (BM25 & BM27)

RANGE	Accuracy
50Hz ~ 60Hz	
6.000V, 60.00V, 450.0V ¹⁾	1.5%+5d
600.0V ²⁾	

CMRR: > 60dB @ DC to 60Hz; R_s=1kΩ

BM25 Input Impedance:

AutoCheck™ Lo-Z ACV:

160kΩ, 160pF nominal

BM27 Input Impedance:

AutoCheck™ Lo-Z ACV:

833kΩ (4.2kΩ when displaying Auto),

90pF nominal

Hi-Z ACV:

5MΩ, 90pF nominal

ACV AutoCheck™ Threshold:

> 1.5VAC (50/60Hz) nominal

¹⁾Range for BM25 only

²⁾Range for BM27 only

Capacitance (BM22)

RANGE ¹⁾	Accuracy ²⁾
500.0nF, 5.000µF, 50.00µF,	3.5%+6d ³⁾
500.0µF, 5000µF	

¹⁾Additional 500.0nF range accuracy is not

specified.

²⁾Accuracies with film capacitor or better.

³⁾Specified with battery voltage above 2.8V (half

full battery). Accuracy decreases gradually to

12% at low battery warning voltage of approx

2.4V

Capacitance (BM25 & BM27)

RANGE ¹⁾	Accuracy ²⁾
100.0nF, 1000nF, 10.00µF,	3.5%+6d ³⁾
100.0µF, 2000µF ³⁾	

¹⁾Accuracy below 50nF is not specified

²⁾Accuracies with film capacitor or better.

³⁾BM27 only

⁴⁾Specified with battery voltage above 2.8V (half

full battery). Accuracy decreases gradually to

12% at low battery warning voltage of approx

2.4V

DC µA Current (BM27 only)

RANGE	Accuracy	Burden Voltage
400.0µA	1.5%+3d	3mV/µA
2000µA	1.2%+3d	3mV/µA

Audible Continuity Tester

Open Circuit Voltage: 0.4VDC typical

BM22:

Audible Threshold: between 10kΩ and 120kΩ

BM25 & BM27:

Audible Threshold: between 50kΩ and 150kΩ

Hz Frequency (BM22)

RANGE	Accuracy
5.000kHz ~ 1.000MHz	0.5%+4d

Operating Input Voltage: < 20VAC rms
Input Signal: Sine Wave, or square wave with
duty cycle > 40% & < 70%
Sensitivity:
5Hz ~ 100kHz : > 1.3Vp
100kHz ~ 500kHz : > 2.2Vp
500kHz ~ 1MHz : > 4.2Vp

Hz Frequency (BM25 & BM27¹⁾)

RANGE	Accuracy
10.00Hz ~ 30.00kHz	0.5%+4d

Sensitivity (Sine RMS):
Hz (Auto-V_Ω position): > 3V
*60.0VAC range (V position): > 4V
*60.0VAC range (V position): > 30V
*600.0VAC range (V position): > 60V

Electric Field EF-Detection (BM25 & BM27)

Typical Voltage	Bar Graph Indication
15V to 55V	-
30V to 85V	-
55V to 145V	-
85V to 190V	-
above 120V	-

Indication: Bar graph segments & audible beeper

tone proportional to the field strength

Detection Frequency: 50/60Hz

Detection Antenna: Top left corner of the meter

(Measurement can also be made through single

test lead (+) for live line detection)



BRYMEN TECHNOLOGY CORPORATION

http://www.brymen.com

TEL: +886 2 2228 3396 (rep)

FAX: +886 2 2225 0025

Copyright © MMIII B.T.C. All rights reserved

Specifications subject to change without notice

Patented & Patents pending. Printed in Taiwan.