

Stand-Alone Hi-Lo Logging Feature At Sampling Speed Of <math>< 50\text{ms}</math>

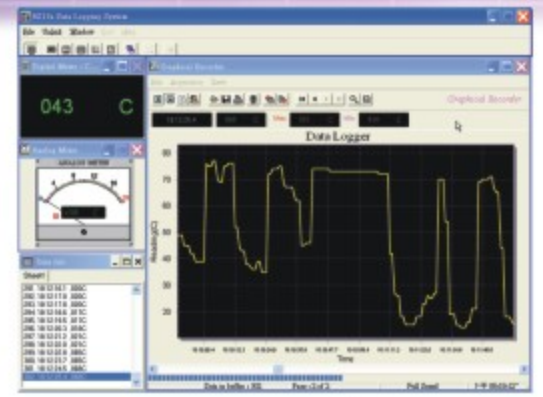
Plus On-Screen Logged-Data Recall &
PC Communication Features



CE

BM130
LoggerClamp™ Series

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



**BR13XPC Interface Kit
(Optional Purchase)**

135	132	131	FUNCTIONS & FEATURES
●	●	●	Stylish & Versatile
●	●	●	45mm Large jaws opening; 1000A AC Clamp-on + Multimeter ranges
●	●	●	600VAC/DC input protection on all functions
●	●		AC True RMS voltage and current functions
●	●		Back lighted LCD display
●			Total Harmonic Distortion THD%-R (% of Total Harmonics / Total RMS)
●	●	●	Data HOLD
●	●	●	Auto HOLD (Automatic capture and display stable values)
●	●	●	PC-Comm (Optical isolated PC interface capability)
●	●	●	Software for Win 95/98/ME/2000/XP (Optional purchase)
●	●	●	5400 points Hi-Lo logging (captures surges & sags of every minute)
●	●	●	On screen Hi-Lo logging data review capability
●	●	●	K-Type Temperature -50°C to 300°C (-58°F to 572°F)
●	●	●	5.00Hz ~ 500.0Hz line Frequency measurements
●	●	●	Overload-Alert, On > 600V AC or DC (OL Indication)
●	●	●	DCV & ACV 0.1V to 600.0V
●	●	●	ACA 0.01A to 1000A non-invasive current measurements
●	●	●	Ohm 0.1Ω to 999.9Ω
●	●	●	Fast Audible Continuity
●	●	●	Battery cover with Probe holders
●	●	●	Rugged Fire retarded casing; Soft carrying pouch
●	●	●	Transient protection 6.5kV 1.2/50μs lightning surge
●	●	●	LVD EN61010-2-032 CAT III 600V
●	●	●	EMC EN61326(97/98A1)/EN61000-4-2(95)/EN61000-4-3(96)

A Handy & Cost-Effective Solution For Surges & Sags Monitoring !

Long Term Monitoring Up To 5400 Minutes Without The Need Of A Computer !

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

LOGGED DATA RECALL

UP/DOWN QUICK VIEW OF HI-Lo DATA
ON LCD. NO COMPUTER IS REQUIRED

PC-COMM INTERFACE CABILITIES

BUILT-IN OPTICAL ISOLATED DATA
OUTPUT PORT. OPTIONAL PURCHASE
INTERFACE KIT FOR PC CONNECTION

TRUE RMS MEASUREMENTS (BM132 & BM135)

FOR NON-SINUSOIDAL WAVEFORMS
OF AC VOLTAGES & AC CURRENTS

WIDE ACV & ACA BAND-WIDTH (BM132 & BM135)

UP TO 3.1KHz AC BAND-WIDTH
TO MEASURE MORE TRUE RMS DETAILS

DISPLAY BACKLIGHT (BM132 & BM135)

FOR EASY VIEWING IN THE DARK

0.5% DCV BASIC ACCURACY

UP TO 600 VOLTS, 0.1V RESOLUTION

TEMPERATURE

TYPE-K MEASUREMENT;
SELECTABLE °C OR °F READINGS;
COMES WITH BKP60 BEAD PROBE

UP TO AC 1000 AMPS MEASUREMENTS

3 NON-INVASIVE AC CURRENT RANGES
VIA CLAMP JAWS; BEST RESOLUTION 0.01A

EMC

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

TRANSIENT PROTECTION

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

STYLISH & HANDY

ALSO COMES WITH A SOFT POUCH
FOR EASY CARRYING & PROTECTION

AUTO-HOLD

AUTOMATICALLY CAPTURES & DISPLAYS
SIGNIFICANT STABLE READINGS

DATA HOLD

FREEZES THE DISPLAYING
READING FOR LATER VIEW

BATTERY COMPARTMENT

WITH ACCESS DOOR FOR
EASY BATTERY REPLACEMENT

PROBE HOLDERS

BUILT-IN PROBE STORAGE HOLDERS

5400 MINUTES HI-Lo LOGGING

LOGS V OR A SURGE (Hi) & SAG (Lo)
OF EVERY 1 MINUTE INTERVAL
AT SAMPLING SPEED < 50ms

HIGH CURRENT Hz

MEASURES NON-INVASIVE
ACA FREQUENCY VIA CLAMP JAWS

HIGH VOLTAGE Hz

MEASURES NOISY HIGH VOLTAGE
ACV FREQUENCIES VIA TEST LEADS

THD%-R (BM135 ONLY)

INDICATES TOTAL HARMONIC DISTORTION-RMS
ON CURRENT OR VOLTAGE MEASUREMENTS

250µs FAST AUDIBLE CONTINUITY

FOR QUICK OPEN-SHORT TESTS
ON SWITCHES, FUSES, AND WIRES

RESISTANCE

UP TO 999.9 OHMS, 0.1 OHM
RESOLUTION WITH 600V PROTECTION



BM131, BM132 & BM135 GENERAL SPECIFICATION

Display:
Voltage function: 6000 counts
Ohm & Hz functions: 9999 counts
ACA clamp-on function: 4000 counts
Update Rate:
Voltage, ACA clamp-on, Ohms & Temperature functions: 4 per second nominal
Hz function: 2 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 BM131; True RMS sensing for BM132 & BM135

Pollution Degree: 2
Safety: Meets IEC61010-2-032 (1994), EN61010-2 (1995), UL3111-2-032 (1999)
Measurement Category: CAT III 600V AC & DC
Transient Protection:
6.5kV for all models (1.2/50µs surge)
E.M.C.:
Meets EN61326 (1997, 1998/A1), EN61000-4 -2 (1995), & EN61000-4-3 (1996)
In an RF Field of 3V/m:
Total accuracy = Specified accuracy + 45 digits;
Performance above 3V/m is not specified
Overload Protection:
ACA Clamp-on jaws: AC 1000A rms continuous + & COM terminals (all functions): 600VDC/VAC rms
Power Supply: standard 1.5V AAA Size (NEDA 24A or IEC LR03) battery x 2
Power Consumption (typical):
Voltage & ACA functions: 3.5mA typical
Ohm & Temperature functions: 4mA typical
Low Battery: Below approx. 2.4V

APO Consumption: 10µA typical
APO Timing: Idle for 16 minutes
Dimension: L224mm x W78mm x H40mm
Weight: approx. 224 gm
Jaws Opening & Conductor Diameter:
45mm max
Special Features: Auto-Hold; Display Hold; Display Backlight (BM132 & BM135 only); THD%-R Total harmonic distortion-RMS (BM135 only); On screen stand-alone Hi-Lo Logging (5400 minutes) at sampling speed of faster than:
20 per second for Voltage & ACA functions
4 per second for Temperature & Ohms functions
2 per second for Hz function
Accessories: Test lead pair, user's manual, batteries installed, BKP60 banana plug type-K thermocouple & soft carrying pouch
Optional Accessories: BR13X PC interface kit (including BA-1XX optical adaptor back, BC-100R cable & Bs13x software CD), BKB32 banana plug to type-K socket plug adaptor

BM131, BM132 & BM135 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 models BM132 & BM135 ACV & ACA clamp-on accuracies are specified from 5% to 100% of range or otherwise specified. Maximum Crest Factor are as specified below, and with frequency spectrums, besides fundamentals, fall within the meter specified AC bandwidth for non-sinusoidal waveforms. Fundamentals are specified at 50Hz or 60Hz.

DC Voltage

RANGE	Accuracy
600.0V	0.5%+5d

NMR: > 50dB @ 50Hz/60Hz
CMRR: > 120dB @ DC, 50Hz/60Hz, Rs=1kΩ
Input Impedance: 2MΩ, 30pF nominal

AC Voltage

RANGE	Accuracy
50Hz / 60Hz	
600.0V	1.0%+5d
45Hz ~ 500Hz	
600.0V	1.5%+5d
500Hz ~ 3.1kHz (BM132 & BM135 only)	
600.0V	2.5%+5d

CMRR: > 60dB @ DC to 60Hz, Rs=1kΩ
Input Impedance: 2MΩ, 30pF nominal
True RMS models Crest Factor:
< 2.3 : 1 at full scale & < 4.6 : 1 at half scale

AC Current (Clamp-On)

RANGE	Accuracy ^{1) 2) 3)}
50Hz / 60Hz	
40.00A, 400.0A, 1000A	1.0%+5d
45Hz ~ 500Hz	
40.00A, 400.0A	2.0%+5d
1000A	2.5%+5d
500Hz ~ 3.1kHz (BM132 & BM135 only)	
40.00A, 400.0A	2.5%+5d
1000A	3.0%+5d

True RMS models Crest Factor:
< 2.5 : 1 at full scale & < 5.0 : 1 at half scale for 40.00A & 400.0A ranges
< 1.4 : 1 at full scale & < 2.8 : 1 at half scale for 1000A range

- 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)

Ohms

RANGE	Accuracy
999.9Ω	1.0%+6d

Open Circuit Voltage: 0.4VDC typical

Audible Continuity Tester

Audible threshold: between 10Ω and 300Ω
Response time: 250µs typical

Frequency

RANGE	Accuracy
5.00Hz ~ 500.0Hz	0.5%+4d

Sensitivity (Sine RMS):
40A range: > 4A
400A range: > 40A
1000A range: > 400A
600V range: > 30V

Temperature

RANGE	Accuracy ^{1) 2)}
-50°C ~ 300°C	2%+3°C
-58°F ~ 572°F	2%+6°F

- ¹⁾Type-K thermocouple range & accuracy not included
²⁾Add 3°C (or 6°F) to specified accuracy @ -20°C ~ -50°C (@ -4°F ~ -58°F)

THD%-R ¹⁾ (BM135 only)

RANGE	Harmonic order	Accuracy ²⁾
0.0%~99.9%	Fundamental	1.5% of Reading + 6d
	2nd ~ 3rd	5.0% of Reading + 6d
	4th ~ 10th	2.5% of Reading + 6d
	11th ~ 51st	2.0% of Reading + 6d

- ¹⁾THD%-R is defined as:
(Total Harmonic RMS / Total RMS) x 100%
²⁾Specified accuracy @ ACA Fundamental > 5A; ACV Fundamental > 50V



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