

DIGITAL MULTIMETERS

Comparison Guide

FEATURE	DM-860A	DM-830A	DM-820A	DM-810A	DM-510A	DM-210A	DM-200A
Display counts	50,000/500,000	10,000	10,000	10,000	6,000	6,000	6,000
True RMS	AC+DC	AC+DC	X	X	X	–	–
ACV (V max)	1000	1000	1000	1000	1000	1000	1000
Maximum resolution (µV)	100	10	10	10	10	10	10
Best accuracy (%)	0.3	0.5	0.5	0.5	1.0	1.0	1.0
DCV (V max)	1000	1000	1000	1000	1000	1000	1000
Maximum resolution (µV)	1	10	10	10	10	10	10
Best accuracy (%)	0.02	0.06	0.06	0.06	0.2	0.2	0.2
ACA (A max)	10	10	10	10	8	8	8
Maximum resolution (µA)	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Best accuracy (%)	0.5	0.6	0.6	0.6	1.0	1.0	1.0
DCA (A max)	10	10	10	10	8	8	8
Maximum resolution (µA)	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Best accuracy (%)	0.1	0.2	0.2	0.2	0.5	0.5	0.5
Resistance (MΩ)	50	60	60	60	60	60	60
Maximum resolution (mΩ)	100	100	100	100	100	100	100
Best accuracy (%)	0.07	0.1	0.1	0.1	0.5	0.5	0.5
Conductance	X	X	X	–	–	–	–
Continuity and beeper	X	X	X	X	X	X	X
Diode Test	X	X	X	X	X	X	X
Capacitance	X	X	X	X	X	X	
Frequency	X	X	X	X	X	X	X
Frequency Response (Hz)	20-5000	50-20,000	50-20,000	50-20,000	50-400	50-400	50-400
Temperature Measurement	Dual	Dual	Single		Single	Single	
Display Type	Dual Digital	Dual Digital	Dual Digital	Dual Digital	Digital	Digital	Digital
Backlight	X	X	X	X	X	X	X
Display update X/sec	5	5	5	5	5	5	5
Analog bar graph segments	41	41	41	41	24	24	24
Analog update X/sec	60	60	60	60	40	40	40
Computer Interface	USB	USB	USB	USB	USB, RS-232	USB, RS-232	USB, RS-232
Auto and manual ranging	X	X	X	X	X	X	X
Auto Power Off	X	X	X	X	X	X	X
Non-Contact Voltage Detection	–	X	X	–	X	X	X
Low Impedance AutoCheck® mode	–	X	–	–	X	–	–
Beep-Jack™ Input error warning	X	X	X	X	X	X	X
Peak (crest) Hold - Max, Min	X	X	X	–	X	–	–
Data Hold	X	X	X	X	X	X	X
Max/Min/Avg	X	X	X	–	max, min	–	–
Relative offset mode (Δ)	X	X	X	X	X	X	X
Process loop measurement	X	–	–	–	–	–	–
Software interface compatibility (9U)	X	X	X	X	–	–	–
Software interface compatibility (2U)	–	–	–	–	X	X	X
Duty cycle	X	X	X	X	–	–	–
VFD (Variable Frequency Drive) ACV & Hz	X	–	–	–	–	–	–
Measurement Category Rating	IV, 1000V	IV, 1000V	IV, 1000V	IV, 1000V	IV, 300V III, 600V II, 1000V	IV, 300V III, 600V II, 1000V	IV, 300V III, 600V II, 1000V
UL or ETL	X	X	X	X	X	X	X
cUL, cETL or CSA	X	X	X	X	X	X	X
CE	X	X	X	X	X	X	X



DM-810A



DM-820A

FEATURING:



DM-830A



ESM™ Series 10,000-Count Digital Multimeters

DM-810A FEATURES:

- Backlit LCD with dual 10,000 count displays
- BeepJack™ warns when test leads are incorrectly inserted in current measurement terminals
- True RMS for no-compromise accuracy
- Measures voltage, current, resistance, capacitance and frequency
- Tests continuity and diodes
- Automatic and manual range selection
- Relative offset mode to see changes in measurements
- Data hold
- Use optional USB interface DMSC-9U for direct-to-PC logging

DM-820A HAS ALL DM-810A FEATURES PLUS:

- Crest capture (peak hold) plus recording of max, min, max-min and average
- Two voltage detection modes – non-contact or using a single test lead
- One temperature measurement using a type K thermocouple
- Conductance measurement

DM-830A HAS ALL DM-820A FEATURES PLUS:

- AC+DC True RMS gives accurate readings on complex waveforms
- Low impedance AutoCheck™ mode – automatically selects AC or DC volts, resistance or continuity. Low impedance masks “ghost” voltage pickup
- dBm function with 20 selectable reference impedance values

ACCESSORIES INCLUDED:

- (1) 9V battery, bead temperature probe (DM-820A, DM-830A only, 400°F/204°C max), test leads, protective boot and carrying case.

SPECIFICATIONS

Voltage Measurement	60.00, 600.0 mV; 9.999, 99.99, 999.9V
Amperage Measurement	600.0, 6000μA; 60.00, 600.0mA; 6.000, 10.00A
Resistance	600.0Ω; 6.000, 60.00, 600.0 kΩ; 6.000, 60.00 MΩ
Conductance	99.99nS
Capacitance	60.00, 600.0nF; 6.000, 60.00, 600.0μF; 6.000, 25.00 mF
Frequency	15.00Hz – 50.00kHz sine wave; 5.00Hz – 1.000MHz logic level square wave
Temperature	K type, -58 to 1832 °F (-50 to 1000 °C)
Measurement Category	CAT IV, 1000V

CAT. NO.	UPC NO.	DESCRIPTION
DM-810A	783310087434	10,000-Count Digital Multimeter, 1000V, 10A
DM-810A-C*	783310357599	10,000-Count Digital Multimeter, 1000V, 10A, Calibrated
DM-820A	783310087441	10,000-Count Digital Multimeter, 1000V, 10A
DM-820A-C*	783310357605	10,000-Count Digital Multimeter, 1000V, 10A, Calibrated
DM-830A	783310087458	10,000-Count Digital Multimeter, 1000V, 10A
DM-830A-C*	783310357704	10,000-Count Digital Multimeter, 1000V, 10A, Calibrated
TC-20	783310075356	Carrying Case
TSG-3	783310120346	Sure-Grip Test Leads
TPB	783310075929	Bead Temperature Probe (included with DM-820A, DM-830A)



*Includes Certificate of Calibration

FUSE SELECTION GUIDE

SUITABLE FUSES	BUSSMAN GDA-160MA LITTELFUSE 216.160	BUSSMAN GDA-315MA LITTELFUSE 216.315	BUSSMAN KTK-4/10 LITTELFUSE BLS-4/10	BUSSMAN DMM-B-44/100 LITTELFUSE FLU .44 FERRAZ FSM44/100	BUSSMAN GDA-500MA LITTELFUSE 216.500	FERRAZ 500V FA 0.63A 6.3X32 SIBA 189 020.0.630	FERRAZ 660V FA 0.63A 6.3X32	BUSSMAN AGC-10	BUSSMAN KTK-10 LITTELFUSE KLK-10	BUSSMAN DMM-B-11-A LITTELFUSE FLU011 FERRAZ FSM11	FERRAZ 500V FA 12.5A 6.3X32 SIBA 189 020.12.5	BUSSMAN KTK-15 LITTELFUSE KLK-15
DM-200A	-	-	-	-	-	X	-	-	X	-	-	-
DM-210A	-	-	-	-	-	X	-	-	X	-	-	-
DM-510A	-	-	-	-	-	X	-	-	X	-	-	-
DM-810A	-	-	-	X	-	-	-	-	-	X	-	-
DM-820A	-	-	-	X	-	-	-	-	-	X	-	-
DM-830A	-	-	-	X	-	-	-	-	-	X	-	-
DM-860A	-	-	-	X	-	-	-	-	-	X	-	-
FUSE RATINGS	-	-	-	-	-	-	-	-	-	-	-	-
AMPERAGE	160 mA	315 mA	400 mA	440 mA	500 mA	630 mA	630 mA	10 A	10 A	11 A	12.5 A	15 A
VOLTAGE	250V	250V	600V	1000V	250V	500V	660V	250V	600V	1000V	500V	600V
INTERRUPTING RATING (AMPS)	1,500	1,500	10,000	10,000	1,500	150,000	30,000	200	100,000	10,000	20,000	100,000

SOFTWARE COMPATIBILITY

CAT. NO.	DMSC-2U	DMSC-9U	DMSC-9	CMSC-1U
DM-200A	X	-	-	-
DM-210A	X	-	-	-
DM-510A	X	-	-	-
DM-810A	-	X	-	-
DM-820A	-	X	-	-
DM-830A	-	X	-	-