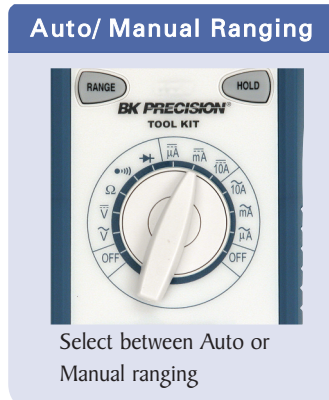
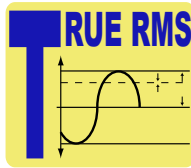


# Data Sheet

## True RMS AC + DC Tool Kit® DMM

### Model 2712



The 2712 is a full featured auto ranging true RMS DMM that combines performance, value and functionality. The 40000 count LCD has a green back light that allows the meter to be used in dimly lit environments. The 2712 can measure resistance values up to 40 Mohm and capacitance to 40 uF. With the auto power off feature you won't have to worry about accidental battery consumption. Value-packed features make this meter a must in every "Tool Kit®".

Specifications		model
		2712
<b>DC Volts</b>		
Ranges	400 mV, 4 V, 40 V, 400 V, 1000 V	
Resolution	0.01 mV, 1 mV, 10 mV, 100 mV, 1 V	
Accuracy	400 mV range: $\pm(0.15\% \text{ rdg} + 10 \text{ dgts})$ 4 V to 1000 V ranges: $\pm(0.1\% \text{ rdg} + 5 \text{ dgts})$	
Input Impedance	400 mV: $>3 \text{ M}\Omega$ ; 4 V to 1000 V: $2.3 \text{ M}\Omega$	
Overload Protection	1000 VDC or 750 VACrms	
<b>AC Volts (True RMS) (45 Hz-1 kHz)</b>		
Ranges	400 mV, 4 V, 40 V, 400 V, 750 V	
Resolution	0.01 mV, 1 mV, 10 mV, 100 mV, 1 V	
Accuracy	400 mV to 400 V ranges: $\pm(1.2\% \text{ rdg} + 20 \text{ dgts})$ 45 ~ 60 Hz 4 V range: $\pm(1.5\% \text{ rdg} + 20 \text{ dgts})$ 60 ~ 500 Hz 40 V to 400 V ranges: $\pm(1.5\% \text{ rdg} + 20 \text{ dgts})$ 60 ~ 1 kHz 750 V range: $\pm(2.0\% \text{ rdg} + 20 \text{ dgts})$ 45 ~ 500 Hz	
<b>AC + DC Volts (True RMS) (45 Hz-1 kHz)</b>		
Ranges	400 mV, 4 V, 40 V, 400 V, 750 V	
Resolution	0.01 mV, 1 mV, 10 mV, 100 mV, 1 V	
Accuracy	400 mV to 400 V ranges: $\pm(1.5\% \text{ rdg} + 20 \text{ dgts})$ 45 ~ 60 Hz 4 V range: $\pm(2.0\% \text{ rdg} + 20 \text{ dgts})$ 60 ~ 500 Hz 40 V to 400 V ranges: $\pm(2.0\% \text{ rdg} + 20 \text{ dgts})$ 60 ~ 1 kHz 750 V range: $\pm(2.0\% \text{ rdg} + 20 \text{ dgts})$ 45 ~ 500 Hz	
Crest Factor	$\leq 3$	
AC coupled True RMS	Specified from 10% to 100% of range	
Input Impedance	400 mV: $>3 \text{ M}\Omega$ ; 4 V to 750 V: $2.3 \text{ M}\Omega$	
Overload Protection	1000 VDC or 750 VACrms	
<b>DC Current</b>		
Ranges	40 mA, 400 mA, 10 A	
Resolution	1 uA, 10 uA, 10 mA	
Accuracy	40 mA to 400 mA ranges: $\pm(0.5\% \text{ rdg} + 10 \text{ dgts})$	

Input Protection	10 A range: $\pm(2.0\% \text{ rdg} + 10 \text{ dgts})$
10A Input	0.5 A/500 V & 10 A/500 V fast blow ceramic fuses
Voltage Burden	10 A for 60 sec max. followed by a 10 minute cooling period
AC Current (True RMS) (50 Hz-1 kHz)	40 mA, 10 A ranges: 0.2V; 400 mA range: 1 V
Ranges	40 mA, 400 mA, 10 A
Resolution	1 uA, 10 uA, 10 mA
Accuracy	40 mA to 400 mA ranges: $\pm(2.0\% \text{ rdg} + 30 \text{ dgts})$ 10 A range: $\pm(2.5\% \text{ rdg} + 30 \text{ dgts})$
Crest Factor	$\leq 3$
AC coupled True RMS	Specified from 10% to 100% of range
Voltage Burden	40 mA, 10 A ranges: 0.2V; 400 mA range: 1 V
Input Protection	0.5 A/500 V & 10 A/500 V fast blow ceramic fuses
10A Input	10 A for 60 sec max. followed by a 10 minute cooling period
<b>Resistance</b>	
Ranges	400 $\Omega$ , 4 k $\Omega$ , 40 k $\Omega$ , 400 k $\Omega$ , 4 M $\Omega$ , 40 M $\Omega$
Resolution	0.01 $\Omega$ , 0.1 $\Omega$ , 1.0 $\Omega$ , 10 $\Omega$ , 1 k $\Omega$ , 10 k $\Omega$
Accuracy	400 $\Omega$ range: $\pm(0.3\% \text{ rdg} + 15 \text{ dgts})$ 4 k $\Omega$ to 400 k $\Omega$ ranges: $\pm(0.3\% \text{ rdg} + 5 \text{ dgts})$ 4 M $\Omega$ range: $\pm(0.5\% \text{ rdg} + 10 \text{ dgts})$ 40 M $\Omega$ range: $\pm(1.5\% \text{ rdg} + 20 \text{ dgts})$
Open Circuit Voltage (typical)	1.2 Vdc (2.5 Vdc on 400 $\Omega$ range)
Overload Protection	500 VDC/ACrms
<b>Capacitance</b>	
Ranges	4 nF, 40 nF, 400 nF, 4 uF, 40 uF
Resolution	1 pF, 10 pF, 100 pF, 1 nF, 10 nF
Accuracy	4 nF range: $\pm(3.0\% \text{ rdg} + 20 \text{ dgts})$ 40 nF to 400 nF ranges: $\pm(3.0\% \text{ rdg} + 5 \text{ dgts})$ 4 uF to 20 uF $\pm(3.0\% \text{ rdg} + 5 \text{ dgts})$ 20 uF to 40 uF $\pm(5.0\% \text{ rdg} + 5 \text{ dgts})$
Overload Protection	500 VDC/ACrms
<b>Frequency</b>	
Ranges	100 Hz, 1 kHz, 10 kHz, 100 kHz, 500 kHz
Resolution	0.01 Hz, 0.1 Hz, 1 Hz, 10 Hz, 100 Hz
Accuracy	$\pm(0.1\% \text{ rdg} + 10 \text{ dgts})$
Sensitivity	5 Hz-100 kHz: $>500 \text{ mVrms}$ , 100 kHz-500 kHz: $>1.5 \text{ Vrms}$
Minimum Pulse Width	$>2 \text{ us}$
Duty Cycle Limits	$>30\%$ and $<70\%$
Overload Protection	500 VDC/AC rms
<b>Diode Test</b>	
Test Current	0.8 mA (typical)
Resolution	0.1 mV
Accuracy	$\pm(1.5\% \text{ rdg} + 10 \text{ dgts})$
Open Circuit Voltage	3.0 VDC (typical)
Overload Protection	500 VDC/ACrms
<b>Continuity</b>	
Audible Indication	Less than 40 $\Omega$
Response Time	500 ms
Overload Protection	500 VDC/ACrms
<b>General</b>	
Display	4 3/4 digit, 40000 count LCD
Analog Bargraph	40 segments with measurements of 20 times per second
Polarity	Automatic, positive implied, negative polarity indication
Overrange	MSD (Most Significant Digit) Blinks
Low Battery Indication	Battery symbol will display when battery voltage drops below operating levels
Measurement Rate	2 times per second
Auto Power Off	Approximately 30 minutes
Operating Environment	0°C to 50°C at $<70\%$ relative humidity
Storage Environment	-20°C to 60°C at 0 to 80% relative humidity
Accuracies	Stated accuracy at 23°C +5°C at $<75\%$ relative humidity
Temperature Coefficient	0.1 x (specified accuracy) per °C. (°C to 18°C, 28°C to 50°C)
Power	Single standard 9 volt battery, NEDA 1604, IIS 006P, IEC 6F22
Battery Life	150 hours typical
Dimensions	165 mm (H) x 78 mm (W) x 42.5 mm (D)
Weight	Approximately 10 oz. (285 g) with battery and hanger

**Three-Year Warranty**

Supplied Accessories: User manual, one set of test leads, one spare fuse, and 9V battery (installed)

# B&K Precision's 2700 Tool Kit® Series

## Models 2703C, 2704C, 2705B, 2706B, 2707B, 2708B, 2709B & 2712

These excellent meters are for most jobs that require flexibility, accuracy and speed. Value-packed features make these meters a must for everyone's "Tool Kit®".

Common Features:

- DC Voltage to 1000V
- DC Current to 10A
- Diode test
- Magnetic hanging strap
- AC Voltage to 750V
- Continuity test
- Drop resistant case



### Magnetic Hanging Strap

This convenient feature allows you to hang your DMM on any magnetic metallic surface freeing up your hands for troubleshooting.

### Back Light / Easy-to-Read LCD

Model 2706B

Ultra-bright blue LCD back light for low ambient light measurements

Models 2709B & 2712

Large easy-to-read LCD with green LED backlight

### Single-handed operation

The ergonomic design allows both left and right handed users to rotate the knob while holding the meter in one hand. While one hand keeps the probe on the circuit, the other hand changes the meter's function. This speeds up troubleshooting because you don't have to locate the probe point in the circuit again.



Features	models							
	2712	2709B	2708B	2707B	2706B	2705B	2704C	2703C
Ranging	Auto/Manual	Auto/Manual	Auto/Manual	Manual	Manual	Auto/Manual	Manual	Manual
True RMS	AC + DC	√	√	√	-	-	-	-
Current	10 A AC/DC	10 A AC/DC	10 A AC/DC	10 A AC/DC	200 mA AC/DC	10 A AC/DC	10 A AC/DC	10 A DC
Capacitance	to 40 uF	to 66 mF	-	to 20 uF	to 20 mF	-	to 20 uF	-
Transistor Test	-	-	-	√	-	-	√	-
Frequency Counter	to 500 kHz	to 66 MHz	-	to 20 MHz	to 40 kHz	-	to 20 MHz	-
Temperature	-	-	-	-	√	-	-	-
Logic Probe	-	-	-	√	-	-	√	-
Backlight LCD	√	√	-	-	√	-	-	-
Analog Bar Graph	√	-	√	-	-	-	-	-
Battery Test	-	-	-	-	-	-	-	√
Auto Power off	√	√	√	-	√	√	-	-

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