

## BS503

### 3 3/4 Digits Auto Range TRMS DMM with DC/AC 10A, Frequency, Temperature and Capacitance

BS503 is a professional auto range digital multimeter, which can measure AC/DC voltage up to 750V and 1000V respectively, AC/DC current up to 10A, resistance, continuity, diode, capacitance, temperature and frequency. It also has TrueRMS (TRMS) function; frequency response extended to 500Hz. Simplifies the analysis of complex AC signals. The large 3 3/4 digits display LCD display (4000 counts) with backlight and analogue bargraph permits an easy readability also in dim light conditions.

The instrument is complying with IEC/EN61010-1, CAT IV 600V and it is designed for required high safety and high accuracy measurement both in domestic and industrial environments use.

Other features are PEAK, MAX and MIN hold function and relative measurement to read time freeze Peak/Maximum/Minimum reading value on display or sets the display to zero and saves the actual value as reference. Those are important in research and industrial environment use.



#### Features:

- 3 3/4 Digits 4000 counts LCD display with bargraph and backlight
- DC voltage 400mV to 1000V
- Trms AC voltage 4V to 750V
- DC current 400uA to 10A
- Trms AC current 400uA to 10A
- Frequency response 500Hz
- Resistance 400Ohm to 40MOhm
- Diode and Continuity Test
- Frequency 4kHz to 40MHz
- Capacitance 400nF to 40mF
- Temperature -40C to +800C (-40F ~ +1382F)
- Relative measurement mode
- PEAK hold

Due to our policy of continual product development we reserve the right to amend the specifications of all mentioned products without notice.



- DATA/MAX/MIN hold
- Auto Power Off
- Conform to IEC1010/EN61010-1, CE-EMC & LVD CATIV 600V/  
CATIII1000V

**Accessories:**

- Test Lead set x 1
- Instruction manual x 1
- Carrying case x 1
- 9V battery x 1

**Optional Accessories:**

- Adapter for type K thermocouple x 1
- Type K thermocouple x 1

**GENERAL SPEIFICATION**

Display	: 3 3/4 digits LCD with maximum reading of 4000.
Sampling rate	: 2.5 samples/second
Polarity	: Automatic, (-) negative polarity indication.
Zero adjustment	: Automatic.
Over range indication	: Only the message "OL" or "-OL" is displayed.
Power	: Single, standard 9 volt battery NEDA 1604, JIS 006P, IEC6F22.
Battery Life	: Typical 300hours
Dimension	: 88 (W) x 163 (H) x 48 (D) mm.
Weight	: Approx. 400 g (including battery).

**TECHNICAL SPECIFICATION**

Accuracies are  $\pm$  (% of reading + number of least significant digits), at  $23 \pm 5^\circ\text{C}$ , less than 80%RH

**DC voltage measurement**

Range	Resolution	Accuracy	Input Impedance	Overload Protection
400.0mV	0.1mV	$\pm(0.5 + 3)$	10M $\Omega$ // <100pF	1000VDC 750VACrms
4.000V	0.001V	$\pm(0.5 + 2)$		
40.00V	0.01V			
400.0V	0.1V			
1000.0V	1V	$\pm(1.0\%+2)$		

**TRMS AC voltage measurement**

Range	Resolution	Accuracy (50~500Hz)	Input Impedance	Overload Protection
400.0mV	0.1mV	N/A	10M $\Omega$ // <100pF	1000VDC 750VACrms
4.000V	0.001V	$\pm(1.3 + 5)$ (50~300Hz)		
40.00V	0.01V	$\pm(1.5 + 3)$ (50~500Hz)		
400.0V	0.1V			
750V	1V			

**DC Current measurement**

Range	Resolution	Accuracy (*)	Output voltage	Overload Protection
400.0 $\mu$ A	0.1 $\mu$ A	$\pm(1.0 + 2)$	<5mV/ $\mu$ A	750Vrms
4000 $\mu$ A	1 $\mu$ A			
10.00A	0.01A		2V max	Fuse 10A/1000V

**TRMS AC Current measurement**

Range	Resolution	Accuracy (50~500Hz)	Output Voltage	Overload Protection
400.0μA	0.1μA	±(1.2 + 5)	<5mV/μA	750Vrms
4000μA	1μA			
10.00A	0.01A	±(1.5%+5) (50 ~399Hz) ±(2.0%r+5) (400 ~ 500Hz)	2V max	Fuse 10A/1000V

**Resistance measurement**

Range	Resolution	Accuracy	Max Open Circuit Voltage	Overload protection
400.0Ω	0.1Ω	±(1.0 + 5)	Approx. 1.3V	600Vrms
4.000kΩ	0.001kΩ	±(0.8 + 2)	Approx. 0.45V	
40.00kΩ	0.01kΩ			
400.0kΩ	0.1kΩ			
4.000MΩ	0.001MΩ	±(1.0 + 2)		
40.00MΩ	0.01MΩ	±(1.5 + 5)		

**Capacitance measurement**

Range	Resolution	Accuracy	Overload protection
4.000nF	0.001nF	Not declared	600Vrms
40.00nF	0.01nF		
400.0nF	0.1nF	±(2.0 + 8)	
4.000μF	0.001μF		
40.00μF	0.01μF		
400.0μF	0.1μF		
4.000mF	0.001mF	±(5.0+20)	
40.00mF	0.01mF		

**Frequency measurement**

Range	Resolution	Accuracy	Sensitivity	Overload protection
4.000kHz	0.001kHz	±(0.1 + 2)	>1.5VACrms <5VACrms	600Vrms
40.00kHz	0.01kHz			
400.0kHz	0.1kHz			
4.000MHz	0.001MHz			
40.00MHz	0.01MHz	Not declared	>2VACrms <5VACrms	
400.0MHz	0.1MHz			

Minimum pulse duration: 25ns

 $30\% \leq \text{Duty Cycle} \leq 70\%$ 
**Temperature measurement**

Range	Resolution	Accuracy	Overload protection
°C	1°C	-40°C~0°C±(1.8% + 3°C) 1°C~400°C±(1.0% + 3°C) 401°C~800°C±(2.0% + 3°C)	Max. input voltage for thermocouple : DC60V/AC24V.
°F	1°F	-40°F~32°F±(1.8% + 5°F) 33°F~778°F±(1.0% + 5°F) 779°F~1382°F±(2.0% + 5°F)	

Using optional external thermocouple &amp; adaptor

The tolerance of temp probe excluded.

**Continuity Test**

Range	Resolution	Buzzer	Max. Open Voltage	Overload Protection
·))	0.1Ω	less than 35Ω	Approx.1.3V	600V rms

**Diode Test**

Range	Resolution	Accuracy	Max. Open Voltage	Overload Protection
▶+	10mV	± (1.5%+5)	Approx.3V	600V rms

Test Current: 1.5mA



**CALTEK INDUSTRIAL (HONG KONG) LIMITED**

[www.bstcaltek.com](http://www.bstcaltek.com)

Hong Kong Office

Address: Unit 11 10/F, Kwai Cheong Center, 50 Kwai Cheong Road, Kwai Chung, N.T., Hong Kong

Email: [caltek@caltek.com.hk](mailto:caltek@caltek.com.hk)

Tel: (852) 2401-1222

Fax: (852) 2420-3472

Singapore Office

Level 15, Suite 27, Prudential Tower, 30 Cecil Street, Singapore 049712

Email: [caltek\\_sg@caltek.com.hk](mailto:caltek_sg@caltek.com.hk)

Tel: (65) 6232-2903

Fax: (65) 6232-2888