

**BS3608****3 3/4 Digits Auto Range Multimeter with Frequency, Capacitance, Duty Cycle and Temperature Measurement**

## Features:

- 3 3/4 Digits LCD Display
- DC Voltage 400mV to 600V
- AC Voltage 400mV to 600V
- DC Current 400 $\mu$ A to 20A
- AC Current 400 $\mu$ A to 20A
- Resistance 400 $\Omega$  to 40M $\Omega$
- Capacitance 50nF to 100 $\mu$ F
- Frequency 5Hz to 1MHz
- Duty Cycle 20% to 80%
- Temperature Measurement  
-40°F to 1832°F)
- Diode Test
- Continuity Test
- Relative Measurement
- Low Battery Warning
- Auto Power Off
- Data Hold
- Conform to IEC1010/EN61010-1, CE-EMC & LVD CATII 600V

**General Specifications**

|                       |   |
|-----------------------|---|
| Display               | : 3 3/4 digits LCD with max. reading of 3999.                   |
| Polarity              | : Automatic, (-) negative polarity indication.                  |
| Zero adjustment       | : Automatic.  |
| Over range indication | : Only the MSD "OL" is displayed.                               |
| Power                 | : Single, standard 9 volt battery NEDA 1604, JIS 006P, IEC6F22. |
| Dimension             | : 94 (W) x 205 (H) x 62 (D) mm.                                 |
| Weight                | : Approx. 620 g (including battery).                            |

## Electrical Specification

Accuracies are  $\pm$ (% of reading + number of least significant digits) at 23°C $\pm$ 5°C, less than 75%RH

### DC Voltage Measurement

| Range | Resolution | Accuracy         | Input Impedance | Overload Protection |
|-------|------------|------------------|-----------------|---------------------|
| 400mV | 0.1mV      | $\pm(1.0\% + 2)$ | 10M $\Omega$    | 600V DC/AC rms      |
| 4V    | 0.001V     | $\pm(0.8\% + 1)$ |                 |                     |
| 40V   | 0.01V      |                  |                 |                     |
| 400V  | 0.1V       |                  |                 |                     |
| 600V  | 1V         |                  |                 |                     |

### AC Voltage Measurement

| Range  | Resolution | Accuracy         | Frequency Range | Input Impedance | Overload Protection |
|--------|------------|------------------|-----------------|-----------------|---------------------|
| 400mV* | 0.1mV      | $\pm(2.0\% + 5)$ | 40-400Hz        | 10M $\Omega$    | 600V DC/AC rms      |
| 4V     | 0.001V     | $\pm(1.2\% + 3)$ |                 |                 |                     |
| 40V    | 0.01V      |                  |                 |                 |                     |
| 400V   | 0.1V       |                  |                 |                 |                     |
| 600V   | 1V         |                  |                 |                 |                     |

\*AC 400mV only available in manual mode.

### DC Current Measurement

| Range** | Resolution | Accuracy         | Voltage Drop | Overload Protection         |
|---------|------------|------------------|--------------|-----------------------------|
| 400uA   | 0.1uA      | $\pm(1.0\% + 2)$ | 400mV        | Fast<br>400mA/250V<br>Fused |
| 4000uA  | 1uA        |                  |              |                             |
| 40mA    | 0.01mA     |                  |              |                             |
| 400mA   | 0.1mA      |                  |              |                             |
| 4A      | 0.001A     | $\pm(1.2\% + 5)$ | 200mV        | Fast 10A/250V<br>Fused      |
| 10A     | 0.01A      | $\pm(1.5\% + 5)$ |              |                             |


**AC Current Measurement**

| Range** | Resolution | Accuracy         | Voltage Drop | Frequency Range | Overload Protection         |
|---------|------------|------------------|--------------|-----------------|-----------------------------|
| 400uA   | 0.1uA      | $\pm(1.2\% + 5)$ | 400mV        | 40-400Hz        | Fast<br>400mA/250V<br>Fused |
| 4000uA  | 1uA        |                  |              |                 |                             |
| 40mA    | 0.01mA     |                  |              |                 |                             |
| 400mA   | 0.1mA      |                  |              |                 |                             |
| 4A      | 0.001A     | $\pm(1.5\% + 5)$ |              |                 |                             |
| 20A     | 0.01A      | $\pm(2.0\% + 5)$ | 200mV        |                 | Fast 10A/250V<br>Fused      |


**Resistance Measurement**

| Range         | Resolution      | Accuracy         | Max Open Circuit Voltage | Overload Protection     |
|---------------|-----------------|------------------|--------------------------|-------------------------|
| 400 $\Omega$  | 0.1 $\Omega$    | $\pm(1.0\% + 2)$ | <700mV                   | 250V DC/AC<br>rms<30sec |
| 4k $\Omega$   | 0.001k $\Omega$ |                  |                          |                         |
| 40k $\Omega$  | 0.01k $\Omega$  |                  |                          |                         |
| 400k $\Omega$ | 0.1k $\Omega$   |                  |                          |                         |
| 4M $\Omega$   | 0.001M $\Omega$ |                  |                          |                         |
| 40M $\Omega$  | 0.01M $\Omega$  | $\pm(2.0\% + 5)$ |                          |                         |

**Diode Test**

| Range   | Forward Voltage Drop | Test Current     | Max Open Circuit Voltage | Overload Protection      |
|---|----------------------|------------------|--------------------------|--------------------------|
|  | 0 – 1.000V           | Approx.<br>0.6mA | 1.5V                     | 250V DC/AC<br>rms <30sec |

**Continuity Test**

| Range   | Sound Level  | Test Current   | Max Open Circuit Voltage | Overload Protection      |
|---|--|----------------|--------------------------|--------------------------|
|  | Approx $\leq 100\Omega \pm 30\Omega$<br>resistance value | Approx.<br>1mA | Approx.2.8V              | 250V DC/AC<br>rms <30sec |



Capacitance Measurement

| Range | Resolution   | Accuracy    | Overload Protection      |
|-------|--------------|-------------|--------------------------|
| 50nF  | 0.01nF       | ±(3.0% + 5) | 250V DC/AC rms<br><30sec |
| 500nF | 0.1nF        |             |                          |
| 5uF   | 0.001uF      |             |                          |
| 50uF  | 0.01uF       |             |                          |
| 100uF | 0.1uF(15sec) | ±(3.5% + 5) |                          |

Test Frequency: Approx 20kHz

Frequency Measurement

| Range  | Resolution | Min Input Volt. | Accuracy    | Overload Protection      |
|--------|------------|-----------------|-------------|--------------------------|
| 5Hz    | 0.001Hz    | ≥ 1Vp-p         | ±(1.5% + 5) | 250V DC/AC rms<br><30sec |
| 50Hz   | 0.01Hz     |                 |             |                          |
| 500Hz  | 0.1Hz      |                 |             |                          |
| 5kHz   | 0.001kHz   |                 |             |                          |
| 50kHz  | 0.01kHz    |                 |             |                          |
| 500kHz | 0.1kHz     | ≥ 2Vp-p         |             |                          |
| 500kHz | 0.001MkHz  | ≥ 12Vp-p        |             |                          |

Duty Cycle Measurement

| Range   | Resolution | Accuracy    | Overload Protection   |
|---------|------------|-------------|-----------------------|
| 20%-80% | 0.1%       | ±(3.5% + 5) | 250V DC/AC rms <30sec |

Minimum input voltage: 400mV



Temperature Measurement

Degree Celsius (°C)

| Range         | Resolution | Accuracy      | Overload Protection |
|---------------|------------|---------------|---------------------|
| -40°C -400°C  | 1°C        | ±(0.75 % + 5) | Fuse 400mA/250V     |
| 400°C -1000°C |            | ±(2.0% + 5)   |                     |

Degree Fahrenheit (°F)

| Range          | Resolution | Accuracy    | Overload Protection |
|----------------|------------|-------------|---------------------|
| -40°F -500°F   | 1°F        | ±(1.0% + 4) | Fuse 400mA/250V     |
| 501°F -1000°F  |            | ±(5.0% + 5) |                     |
| 1001°F -1832°F |            | ±(6.0% + 5) |                     |

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