



## 3-4/5 DIGIT 5000 COUNTS DIGITAL MULTIMETER WITH ANALOG BAR GRAPH & RS-232 COMPUTER INTERFACE

### SPECIAL FEATURES :

- Auto lead zero function
- 50ms record MAX-MIN readings at fast 20/second measurement mode
- 0.8ms Crest (instantaneous Peak-HOLD)
- Data Hold & Range- Hold
- Backlighted Display
- Autoranging
- Audible & Visible input warning.
- Optical isolated RS232 PC-interface capabilities
- MAX-MIN readings
- Relative-Zero offset mode
- Zoom 5x Analog pointer at 60/s. (Model 5040-T only)
- Auto power off

### GENERAL SPECIFICATIONS

- \* **Sensing** : Average Sensing (Model - 5040) , True RMS (Model-5040-T)
- \* **Display** : 3-4/5 digits 5000 counts LCD display
- \* **Update Rate** :  
Fast data : 5 / second nominal;  
52 Segment Bar-graph : 60 per second nominal.
- \* **Operating Temperature** : 0°C to 45°C
- \* **Relative Humidity** : Maximum 80% R.H. for Temperature upto 31°C decreasing linearly to 50% R.H. at 45°C
- \* **Storage Temperature** : -20°C to 60°C, 80% R.H. (With battery removed)
- \* **Pollution degree** : 2
- \* **Altitude** : Operating below 2000m
- \* **Temperature Coefficient** : Nominal 0.15 x (specified accuracy)/°C@(0°C ~ 18°C or 28°C ~ 45°C), or otherwise specified.
- \* **Power Consumption** : 4.3mA typical
- \* **Low Battery** : Below approx. 7V
- \* **APO Timing** : Idle for 17 minutes.
- \* **APO Consumption** : 50 A typical
- \* **Power Supply** : Single 9V battery.
- \* **Dimension** : 186(L)mm x 87(W)mm x 35.5(H)mm; 198(L)mm x 97(W)mm x 55(H)mm with holster
- \* **Weight** : Approx.340gm, Approx. 430gm with holster.

### ACCESSORIES :

Test leads (pair), Holster, Battery installed, User's Manual

### OPTIONAL ACCESSORIES :

PC interface Kit, (RS232 optical adapter cable+ software CD), RS232-USB Converter, K-type socket plug adapter (Model 5040-T), Current Clamp CA300, Current Clamp Adaptor CA500, CA1000, CA2000, High Voltage Probe PD-28.

### SAFETY

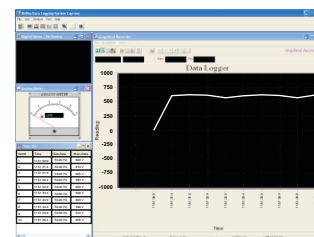
- **Safety** : Double insulation per IEC61010-1 2nd Ed., EN61010-1 2nd Ed., UL61010-1 2nd Ed., & CAN/CSAC22.2 No.61010.1-0.92 to CAT III 1000V AC & DC and CAT IV 600V AC & DC.
- **E. M. C.** : Meets EN61326-1:2006(EN55022, EN61000-3-2, EN61000-3-3, EN61000-4-2, EN61000-4-3, EN61000-4-4, EN61000-4-5, EN61000-4-6, EN61000-4-8, EN61000-4-11)  
In an RF field of 3V/m :  
Capacitance function is not specified.  
Other function ranges : Total Accuracy = Specified Accuracy + 100 digits  
Performance above 3V/m is not specified.
- **Transient Protection** : 8kV lightning surge (1.2/50 s)
- **Terminals (to COM) ratings** :  
V : CAT III 1000 Volts AC & DC, and CAT IV\* 600 Volts AC & DC.  
A / mA A : CAT III and CAT IV 600 Volts AC and 300 Volts DC.
- **Overload Protections** :  
A & mA : 1A/600V, IR 10kA or better, F fuse;  
A : 10A/600V, IR 100kA or better, F fuse  
V : 1050 Vrms, 1450V peak  
mV, & Others : 600VDC/VAC rms

**Model 5040 - 13 FUNCTIONS 45 RANGES**  
**5040-T - 14 FUNCTIONS 46 RANGES**

**Model - 5040 / 5040-T**



Software CD



Software



Software Cable

All Specifications are subject to change without prior notice



# ELECTRICAL SPECIFICATIONS : KM 5040/5040-T

Accuracy is  $\pm$  (% reading digits + number of digits) or otherwise specified @ 23°C  $\pm$  5°C & less than 75% R.H.  
 (For Model 5040-T) ACV & ACA accuracies are specified from 5% to 100% of range or otherwise specified. Maximum Crest Factor <3:1 at full scale & <6:1 at half scale, and with frequency spectrums, besides fundamentals, fall within the meter specified AC bandwidth for non-sinusoidal waveforms.

## AC VOLTAGE

| Range                | Resolution | Accuracy               |
|----------------------|------------|------------------------|
| <b>50Hz -- 60Hz</b>  |            |                        |
| 50.00 mV             | 10 V       | $\pm(0.5\%rdg + 3dgt)$ |
| 500.0 mV             | 100 V      |                        |
| 5.000 V              | 1 mV       |                        |
| 50.00 V              | 10 mV      |                        |
| 500.0 V              | 100 mV     |                        |
| 1000 V               | 1 V        |                        |
| <b>40Hz -- 500Hz</b> |            |                        |
| 50.00 mV             | 10 V       | $\pm(0.8\%rdg + 3dgt)$ |
| 500.0 mV             | 100 V      |                        |
| 5.000 V              | 1 mV       | $\pm(1.0\%rdg + 4dgt)$ |
| 50.00 V              | 10 mV      |                        |
| 500.0 V              | 100 mV     |                        |
| 1000 V               | 1 V        | $\pm(1.2\%rdg + 4dgt)$ |
| <b>Upto 20 KHz</b>   |            |                        |
| 50.00 mV             | 10 V       | 0.5dB*                 |
| 500.0 mV             | 100 V      |                        |
| 5.000 V              | 1 mV       | 3dB*                   |
| 50.00 V              | 10 mV      |                        |
| 500.0 V              | 100 mV     |                        |
| 1000 V               | 1 V        | Unspec'd               |

\*Specified from 30% to 100% of range  
**CMRR** : > 60dB @ DC to 60Hz, Rs = 1K  
**Input Impedance** : 10M , 16pF nominal  
 (44pF nominal for 50mV & 500mV ranges)

## DC VOLTAGE

| Range    | Resolution | Accuracy                |
|----------|------------|-------------------------|
| 50.00 mV | 10 V       | $\pm(0.12\%rdg + 2dgt)$ |
| 500.0 mV | 100 V      |                         |
| 5.000 V  | 1 mV       | $\pm(0.08\%rdg + 2dgt)$ |
| 50.00 V  | 10 mV      |                         |
| 500.0 V  | 100 mV     |                         |
| 1000 V   | 1 V        |                         |

**NMRR** : > 60dB @ 50 / 60Hz  
**CMRR** : > 120dB @ DC, 50 / 60Hz, Rs=1K  
**Input Impedance** : 10M , 16pF nominal  
 (44pF nominal for 50mV & 500mV ranges)

## RESISTANCE

| Range   | Resolution | Accuracy               |
|---------|------------|------------------------|
| 50.00   | 0.01       | $\pm(0.3\%rdg + 6dgt)$ |
| 500.0   | 0.1        |                        |
| 5.000 K | 1          | $\pm(0.1\%rdg + 2dgt)$ |
| 50.00 K | 10         |                        |
| 500.0 K | 100        |                        |
| 5.000 M | 1 K        | $\pm(0.4\%rdg + 3dgt)$ |
| 50.00 M | 10 K       |                        |

**Open Circuit Voltage** : < 1.3V DC  
 (< 3V DC for 50 & 500 ranges)

## AUDIBLE CONTINUITY TESTER

|                           |                  |
|---------------------------|------------------|
| <b>Audible Threshold</b>  | Between 20 & 200 |
| <b>Fast Response Time</b> | < 100 s          |

## AC CURRENT

| Range               | Resolution | Accuracy               | Burden Voltage |
|---------------------|------------|------------------------|----------------|
| <b>50Hz -- 60Hz</b> |            |                        |                |
| 500.0 A             | 0.1 A      | $\pm(0.6\%rdg + 3dgt)$ | 0.15mV/ A      |
| 5000 A              | 1 A        |                        | 0.15mV/ A      |
| 50.00 mA            | 0.01 mA    | $\pm(1.0\%rdg + 3dgt)$ | 3.3mV/mA       |
| 500.0 mA            | 0.1 mA     |                        | 3.3mV/mA       |
| 5.000 A             | 0.001 A    | $\pm(0.6\%rdg + 3dgt)$ | 45mV/A         |
| 10.00 A*            | 0.01 A*    |                        | 45mV/A         |
| <b>40Hz -- 1kHz</b> |            |                        |                |
| 500.0 A             | 0.1 A      | $\pm(0.8\%rdg + 4dgt)$ | 0.15mV/ A      |
| 5000 A              | 1 A        |                        | 0.15mV/ A      |
| 50.00 mA            | 0.01 mA    | $\pm(1.0\%rdg + 4dgt)$ | 3.3mV/mA       |
| 500.0 mA            | 0.1 mA     |                        | 3.3mV/mA       |
| 5.000 A             | 0.001 A    | $\pm(0.8\%rdg + 4dgt)$ | 45mV/A         |
| 10.00 A*            | 0.01 A*    |                        | 45mV/A         |

\* 10A continuous, >10A to 15A for 30 seconds max with 5 minutes cool down interval  
**Burden Voltage** : 0.15mV / A for 500 A, 5000 A.  
 3.3mV / mA for 50mA,  
 500mA & 45mV / A for 5A, 10A.

## DC CURRENT

| Range    | Resolution | Accuracy               | Burden Voltage |
|----------|------------|------------------------|----------------|
| 500.0 A  | 0.1 A      | $\pm(0.2\%rdg + 4dgt)$ | 0.15mV/ A      |
| 5000 A   | 1 A        |                        | 0.15mV/ A      |
| 50.00 mA | 0.01 mA    |                        | 3.3mV/mA       |
| 500.0 mA | 0.1 mA     |                        | 3.3mV/mA       |
| 5.000 A  | 0.001 A    |                        | 45mV/A         |
| 10.00 A* | 0.01 A*    |                        | 45mV/A         |

\* 10A continuous, >10A to 15A for 30 seconds max with 5 minutes cool down interval  
**Burden Voltage** : 0.15mV / A for 500 A, 5000 A.  
 3.3mV / mA for 50mA,  
 500mA & 45mV / A for 5A, 10A.

## CAPACITANCE

| Range     | Resolution | Accuracy*              |
|-----------|------------|------------------------|
| 50.00 nF  | 10 pF      | $\pm(0.8\%rdg + 3dgt)$ |
| 500.0 nF  | 100 pF     |                        |
| 5.000 F   | 1 nF       | $\pm(1.5\%rdg + 3dgt)$ |
| 50.00 F   | 10 nF      | $\pm(2.5\%rdg + 3dgt)$ |
| 500.0 F** | 100 nF     | $\pm(3.5\%rdg + 5dgt)$ |
| 9999 F    | 1 F        | $\pm(5.0\%rdg + 5dgt)$ |

\* Accuracies with film capacitor or better.  
 \*\* In manual-ranging mode, measurements not specified below 45.0 F and 450 F for 500.0 F & 9999 F ranges respectively.

## FREQUENCY

| Function   | Sensitivity (sine Rms) | Range         |
|------------|------------------------|---------------|
| mV         | 300 mV                 | 10Hz - 125kHz |
| 5 V        | 2 V                    | 10Hz - 125kHz |
| 50 V       | 20 V                   | 10Hz - 20kHz  |
| 500 V      | 80 V                   | 10Hz - 1kHz   |
| 1000 V     | 300 V                  | 10Hz - 1kHz   |
| ,Cx, Diode | 300 mV                 | 10Hz - 125kHz |
| A, mA, A   | 10% F.S.               | 10Hz - 125kHz |

**Accuracy** : 0.01% rdg + 2 dgt

## DIODE TEST

| Range   | Resolution | Accuracy               | Test Current | Open Circuit Volt |
|---------|------------|------------------------|--------------|-------------------|
| 2.000 V | 0.001 V    | $\pm(1.0\%rdg + 1dgt)$ | 0.4 mA       | <3.5V DC          |

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