

KUSAM-MECO

An ISO 9001:2015 Company

**3-4/5 DIGIT 5000 COUNTS DIGITAL MULTIMETER WITH
ANALOG BAR GRAPH & RS-232 COMPUTER INTERFACE****Model - KM 5040-T**

THINK SAFETY

THINK **KUSAM-MECO****SPECIAL FEATURES :**

- Basic DC Voltage Accuracy : 0.08%
- 50ms record MAX-MIN readings at fast 20/second measurement mode
- 0.8ms Crest (instantaneous Peak-HOLD)
- Data Hold & Range- Hold
- Backlighted Display
- Autoranging
- MAX-MIN readings
- Fire retarded casing.
- Diode & Continuity Test
- Type-K Temperature
- Audible & Visible BeepJack™ Input warning against improper plug in.
- Relative-Zero offset mode
- Zoom 5x Analog pointer at 60/s
- Auto power off
- PC Interface (BRUA-85Xa) (Optional)

GENERAL SPECIFICATIONS

- * Sensing : AC True RMS
- * 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 : 50µA typical
- * Power Supply : Single 9V battery.
- * Dimension : Approx.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, User's Manual, Bkp60 banana plug K Type Thermocouple.

OPTIONAL ACCESSORIES :

BRUA-85Xa PC interface Kit (BC-85Xa RS232 optical adapter cable+ Software CD + BUA-2303 USB-to-Serial adaptor)
Bkb32 banana plugs to K-type socket plug adaptor.

SAFETY

- **Safety** : Double insulation per IEC / UL / EN61010-1 2nd Ed., 3.0, IEC / EN61010-2-030 Ed. 1.0, IEC / EN61010-2-033 Ed. 1.0, IEC / UL / EN61010-031 Ed. 1.1 & CAN / CSA-C22.2 No.61010-1-12 Ed. 3.0 to CAT III 1000V AC & DC and CAT IV 600V AC & DC.
- **E. M. C.** : Meets EN61326-1:2013
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 (1.2/50µs)
- **Terminals (to COM) Measurement Category** :
V / A / mAµA : CAT III 1000 Volts AC & DC, and CAT IV 600 Volts AC & DC.
- **Overload Protections** :
µA & mA : 0.44A/1000V, IR 10kA , F fuse;
A : 11A/1000V, IR 20kA, F fuse
V : 1100V DC/AC rms
mV, Ω & Others : 1000V DC/AC rms

8 FUNCTIONS 39 RANGES**NEW**

All Specifications are subject to change without prior notice.

ELECTRICAL SPECIFICATIONS : KM 5040-T

Accuracy is \pm (% reading digits + number of digits) or otherwise specified @ 23°C \pm 5°C & less than 75% R.H. TRMS ACV & ACA accuracies are specified from 5% to 100% of range or otherwise specified. Maximum Crest Factor <4.2:1 at full scale & <2.1:1 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
50Hz -- 60Hz		
50.00 mV	10 μ V	$\pm(0.5\%rdg + 3dgts)$
500.0 mV	100 μ V	
5.000 V	1 mV	
50.00 V	10 mV	
500.0 V	100 mV	
1000 V	1 V	
40Hz -- 500Hz		
50.00 mV	10 μ V	$\pm(0.8\%rdg + 3dgts)$
500.0 mV	100 μ V	
5.000 V	1 mV	$\pm(1.0\%rdg + 4dgts)$
50.00 V	10 mV	
500.0 V	100 mV	$\pm(1.2\%rdg + 4dgts)$
1000 V	1 V	
Upto 20 KHz		
50.00 mV	10 μ V	0.5dB*
500.0 mV	100 μ 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

Input Impedance : 10M Ω , 16pF nominal
(44pF nominal for 50mV & 500mV ranges)

DC VOLTAGE

Range	Resolution	Accuracy
50.00 mV	10 μ V	$\pm(0.12\%rdg + 2dgts)$
500.0 mV	100 μ V	$\pm(0.06\%rdg + 2dgts)$
5.000 V	1 mV	$\pm(0.08\%rdg + 2dgts)$
50.00 V	10 mV	
500.0 V	100 mV	
1000 V	1 V	

Input Impedance : 10M Ω , 16pF nominal
(44pF nominal for 50mV & 500mV ranges)

RESISTANCE

Range	Resolution	Accuracy
50.00 Ω	0.01 Ω	$\pm(0.3\%rdg + 6dgts)$
500.0 Ω	0.1 Ω	$\pm(0.1\%rdg + 3dgts)$
5.000 K Ω	1 Ω	$\pm(0.1\%rdg + 2dgts)$
50.00 K Ω	10 Ω	
500.0 K Ω	100 Ω	$\pm(0.4\%rdg + 3dgts)$
5.000 M Ω	1 K Ω	
50.00 M Ω	10 K Ω	$\pm(2.0\%rdg + 5dgts)$

Open Circuit Voltage : <1.3VDC (<3VDC for 50 Ω & 500 Ω ranges)

TEMPERATURE

Range	Accuracy*
-50°C ~ 1000°C	$\pm(0.3\%rdg + 3dgts)$
-58°F ~ 1832°F	$\pm(0.3\%rdg + 5dgts)$

* Thermocouple range & accuracy not included
Accuracies assume meter interior & the ambient have reached the same temperature (Isothermal stage) for a correct junction voltage compensation. Allow enough setting time for a significant change of ambient temperature. It can take upto an hour for changes > 5°C.
Supplied Thermocouple suitable for measurement upto 250°C.

AC CURRENT

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

* 10A continuous, >10A to 20A for 30 seconds max with 5 minutes cool down interval

DC CURRENT

Range	Resolution	Accuracy	Burden Voltage
500.0 μ A	0.1 μ A	$\pm(0.2\%rdg + 4dgts)$	0.15mV/ μ A
5000 μ A	1 μ A		0.15mV/ μ 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 20A for 30 seconds max with 5 minutes cool down interval

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
Ω , Cx, Diode	300 mV	10Hz - 125kHz
μ A, mA, A	10% F.S.	10Hz - 125kHz

Accuracy : 0.01% rdg + 2 dgts

CAPACITANCE

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

* Accuracies with film capacitor or better.

** In manual-ranging mode, measurements not specified below 45.0 μ F and 450 μ F for 500.0 μ F & 9999 μ F ranges respectively.

))) AUDIBLE CONTINUITY TESTER

Audible Threshold	Between 20 Ω & 200 Ω
Fast Response Time	< 100 μ s

CREST MODE FOR V & A FUNCTIONS

Accuracy :
Specified accuracy \pm 150 digits for changes > 0.8ms in duration.

➔ DIODE TEST

Range	Resolution	Accuracy
2.000V	0.001 V	$\pm(1.0\%rdg + 1dgt)$

Test Current: 0.4 mA Open Circuit Volt : <3.5V DC

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