

Digital Multimeter



DM6K3

True RMS

With **CE** and CAT - IV



6000 Count True RMS, Polycarbonate casing, Blue Backlit Digital Multimeter

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INTRODUCTION

DM6K3 is a versatile Industrial grade multimeter for Maintenance, Field service and Lab application with CE CAT-IV certification, perfectly suitable for harsh industrial environment. The DM6K3 is designed in our research laboratory and manufactured under stringent manufacturing processes and comes with calibration certificate traceable to national standards and a standard warranty.



Features:

- TRMS 6000 Count POLYCARBONATE CASE Digital Multimeter with pleasant blue backlit LCD display.
- CE and EN 61010-1 CAT IV-For enhanced safety in outdoor use.
- Sealed function keypad for splashproof applications.
- AC/DC Current 20A range Fuse and Diode protected.
- mV Range with 1000MΩ input impedance.
- Capacitance, Diode and Continuity measurement.
- Selectable Frequency and Duty Cycle measurement.
- Auto ranging.
- Highly linear readings.
- SELECT, RANGE, HOLD/ LIGHT, REL, Hz/DUTY and MIN/MAX measurement facilities.
- 60 position Analog bar graph for trend indication.
- 15 minutes Auto power off facility which can be selectively disabled for continuous use.
- Compatible with Motwane HV-40 AC/DC high voltage probe to measure voltage upto 40KV AC/DC.

Why True RMS ?

True RMS responding DMM's are used for giving accurate results for sinusoidal and non-sinusoidal wave forms. Average responding DMM's are accurate only for pure sinusoidal waveforms. The error in average responding DMM for non-sinusoidal waveforms is indicated in Fig -1.

What is CAT-IV Safety?

IEC61010-1 specifies categories of overvoltage based on the distance from the power source and the natural damping of transient energy that occurs in an electrical distribution system. Higher categories are closer to the power source and require more protection. Category IV refers to the overhead or underground utility service to an installation with 8KV Impulse Transient Protection.

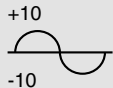
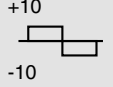
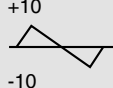
	WAVEFORM	RMS VALUE OF WAVEFORM	TRUE RMS READING	AVERAGE DMM READING	ERROR FOR AVERAGE METER
SINE WAVE		7.07V	7.07V	7.07V	0%
SQUARE WAVE		10.00V	10.00V	11.11V	11.1%
TRIANGULAR WAVE		5.77V	5.77V	5.55V	3.8%

Fig-1

Technical Specification



Measurement	Range	Resolution	Accuracy ± (%Reading + Digit)	
DC Voltage	600 mV	0.1 mV	± (0.5%+3)	
	6 V	1 mV		
	60 V	10 mV		
	600 V	100 mV		
	1000 V	1 V		
Input impedance: 10 MΩ approx and Overload Protection of 1050V DC/AC RMS.				
AC Voltage. (50Hz to 500Hz) Trms.	6 V	1mV	±(1%+5)	
	60 V	10 mV		
	600 V	100 mV		
	750 V	1 V		
Input impedance: 10 MΩ approx shunted by 30pF approx. and Overload Protection of 1050V DC/AC RMS.				
DC mV/AC mV (50Hz to 1KHz) Trms.	60 mV	0.01 mV	±(0.5%+3)	
	600 mV	0.1 mV		
Input impedance: 1000 MΩ approx. and Overload Protection of 440V DC/AC RMS.				
Ohms	600 Ω	0.1 Ω	±(0.5%+3)	
	6 KΩ	1 Ω		
	60 KΩ	10 Ω		
	600 KΩ	100 Ω		
	6 MΩ	1 KΩ		±(1%+5)
	60 MΩ	10 KΩ		±(3%+5)
Open Circuit voltage on all OHM ranges is 0.6V DC approx. and Overload Protection of 440V DC/AC RMS.				
DC Current /AC Current (50Hz to 500Hz) Trms.	60 mA	0.01 mA	DC Current : ±(1%+5) AC Current : ±(1.2%+5)	
	600 mA	0.1 mA		
	6 A	1 mA		
	20 A	10 mA		DC Current : ±(1.2%+5) AC Current : ±(1.5%+5)
20A for 20 Seconds after 15 min. cool down interval. 0.8A/ 600V DC/AC Fuse Protection, 20A/500V Fuse Protection.				
Capacitance	40 nF	0.01nF	±(3.0%+10)	
	400 nF	0.1 nF		
	4 μF	1 nF		
	40 μF	10 nF		
	400 μF	100 nF		
	4000 μF	1 μF		±(5.0%+10)
Settling Time on 4000 μF range is 30sec. Approx.				
Frequency	10 Hz	0.001 Hz	±(0.1%+3) Sensitivity : 10 Hz to 100 KHz > 50 mV RMS, 1000 KHz to 10 MHz > 5 V RMS.	
	100 Hz	0.01 Hz		
	1 KHz	0.1 Hz		
	10 KHz	1.0 Hz		
	100 KHz	10 Hz		
	1000 KHz	100 Hz		
	10 MHz	1 KHz		
440V DC/AC RMS Overload Protection.				
Duty Cycle	0-99.9%		±(0.5%+3)	
	440V DC/AC RMS Overload Protection, Accuracy is specified at <20V AC RMS.			
Continuity	Gives audible beep when resistance measured is below 30 Ω approx.			
Diode test	Open Circuit voltage < 2.0VDC and Test current of 0.8mA approx.			

Accuracy:

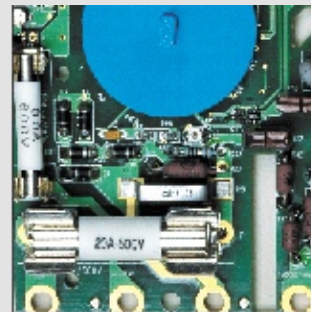
Accuracy is valid from 10% of range to 95% of the range.

Accuracy is specified as ± % of reading and Digit is valid at 25°C ± 3°C, 55% ± 10% RH.

It is recommended that calibration equipment used to verify the accuracy of the instrument should be 10 times more accurate.

General Specification (DM6K3):

- **Display** : 6000 Counts, Blue Backlit LCD display, update rate 3/sec and 60 segment bargraph.
(Blue Backlit will automatically switch off after about 10 seconds)
- **Overload Fuse Protection** : For mA Input Terminal: 0.8A/600V fast blow type ceramic fuse.
For 20A Input Terminal: 20A/500V fast blow type ceramic fuse.
- **Safety** : Transient Protection of 8KV(1.2/50us Surge) as per IEC 61010-1:2001 Pollution Degree-2.
For safety : EN61010-1:2001, EMC EN61326:2006 CAT IV Reinforced Insulation as per LVD:2006/95/EC, EMC:2004/108/EC.
Maximum voltage between any terminal and ground: 1000V DC/AC.
- **Power** : 9V battery type-6F22 or Equivalent.
Low Battery is indicated by " LO BAT" .
Auto Power Off disable facility available .
- **Environmental** : Operating Temperature : 0°C to 50°C.
Storage Temperature : -20°C to 60°C.
Relative Humidity : 80% @ 5°C to 31°C, 50% @ 31°C to 40°C non-condensing.
- **Calibration Certificate** : Traceable to National Standards.
- **Dimensions (L x W x H)** : 205 x 94x 36 mm approx.
- **Weight** : 450 g. approx.



Standard Accessories:

- Pair of leads
- Battery (Installed)
- User Manual
- Carrying Case
- Calibration Certificate traceable to National standards

Optional Accessory:

- Motwane make HV-40 AC /DC Probe to measure high voltage upto 40KV AC/DC
- Range : 1KV to 40KV
- Division Ratio : 10⁵:1
- Length : 350mm (Total Length with cable -2m)



Designed and Manufactured by:

The Motwane Manufacturing Company Pvt. Ltd.

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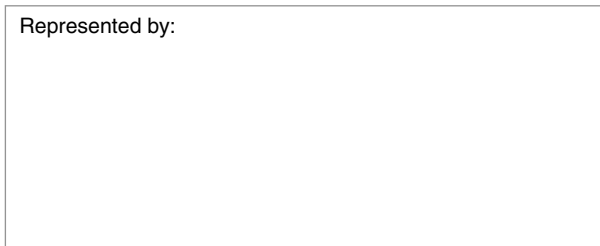
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Represented by:



NOTES

1. The Instrument is accompanied with Test & calibration certificate. 2.Tests can be conducted at the factory with the available test set-ups only. 3. The Company's policy is continuous improvement of its products. we therefore reserve the Right of any deviation from illustration or specifications without notice. 4.Stated accuracies are valid from 10% to 95% of the range.