

Motwane Reliability in Your Pocket



M21C^{handy} Digital Multimeter

Motwane's **M21C handy** is a Technician Grade, "M"-series pocket-sized, general purpose, handy Digital Multimeter. M21C handy comes with the trustworthy Motwane reliability, 2400 Counts, Basic accuracy of 0.5%, Voltage measurement up to 1000V DC/750V AC, Current measurement up to 10A AC/DC, Resistance measurement up to 24M Ω , CE and CAT II 600V protection.

In addition to the standard DMM features such as measurement of basic Power parameters – V, A & R, M21C handy also offers capacitance, frequency & duty-cycle measurement, Diode & Continuity Testing with audio-visual indication addressing a wide range of general purpose, low voltage applications.

M21C handy is provided with a magnet which enables the user to stick the multimeter on to a metallic surface and perform handsfree operations.

FEATURES

- 0.5% Accuracy, 2400 Count LCD display with large digits for easy visibility
- Voltage range up to 1000V DC/750V AC
- AC/DC current range up to 10A
- Resistance measurement up to 24M Ω
- Capacitance, Frequency, Duty-cycle and Diode measurement facility
- Continuity measurement with audio-visual indication
- CE and CAT II 600V protection
- Pollution Degree 2 for enhanced safety in outdoor use
- Highly Rugged casing
- Overload protection on all ranges
- Calibration Certificate

APPLICATIONS

The new DMM M21C handy can serve a wide range of Low Voltage indoor applications to suit the general purpose needs of Electrical Contractors, Medium~Large Industries, SMEs, Educational Institutions, Hobbyists and Students.

M21C **handy** Digital Multimeter



M21C^{handy} TECHNICAL SPECIFICATIONS

Measurement	Range	Resolution	Max. Reading	Accuracy ±(reading + digits)	Overload Protection
DC Voltage	240mV	0.1mV	240.0mV	±(0.5% + 3)	1050V DC/AC rms
	2.4V	1mV	2.400V	±(0.5% + 3)	
	24V	10mV	24.00V	±(0.5% + 3)	
	240V	100mV	240.0V	±(0.5% + 3)	
	1000V	1V	1000V	±(0.8% + 3)	
	Note : Input impedance 10MΩ approx.				
AC Voltage (50Hz - 500Hz) Only Sine Wave (Average)	2.4V	1mV	2.400V	±(1.0% + 5)	1050V DC/AC rms
	24V	10mV	24.00V	±(1.0% + 5)	
	240V	100mV	240.0V	±(1.0% + 5)	
	750V	1V	750V	±(1.2% + 8)	
	Note : Input impedance 10MΩ approx. shunted by 30pF approx.				
Resistance Range	240Ω	0.1Ω	240.0Ω	±(0.5 % + 3)	250V DC/AC rms (For 30 sec.)
	2.4KΩ	1Ω	2.400KΩ	±(0.5 % + 3)	
	24KΩ	10Ω	24.00KΩ	±(0.5 % + 3)	
	240KΩ	100Ω	240.0KΩ	±(0.5 % + 3)	
	2.4MΩ	1KΩ	2.400MΩ	±(1.5 % + 3)	
	24MΩ	10KΩ	24.00MΩ	±(3.5 % + 5)	
Note : Open circuit Voltage on 240Ω - 24MΩ ranges are 0.400V DC approx.					
Diode	1.5V	1mV	1.52VDC	Test Current 0.5 mA approx.	250V DC/AC rms (For 30 sec.)
Continuity	240Ω	0.1Ω	Meter beeps at < 50Ω approx.		
	Note : Open Circuit Voltage on continuity range is 0.400 V DC approx.				
Capacitance	2.5nF	0.001nF	2.500nF	±(5.0 % + 50)	250V DC/AC rms (For 30 sec.)
	25nF	0.01nF	25.00nF	±(5.0 % + 10)	
	250nF	0.1nF	250.0nF	±(5.0 % + 10)	
	2.5μF	1nF	2.500μF	±(5.0 % + 10)	
	25μF	10nF	25.00μF	±(5.0 % + 10)	
	Note : 1. Capacitance measurement accuracy is specified after pressing REL at zero input 2. Settling time on 25μF range in 30 sec. approx.				
Frequency	5Hz	0.001Hz	5.000Hz	±(0.3 % + 3)	250V DC/AC rms (For 30 sec.)
	50Hz	0.01Hz	50.00Hz	±(0.3 % + 3)	
	500Hz	0.1Hz	500.0Hz	±(0.3 % + 3)	
	5KHz	1Hz	5.000KHz	±(0.3 % + 3)	
	50KHz	10Hz	50.00KHz	±(0.3 % + 3)	
	500KHz	100Hz	500.0KHz	±(0.3 % + 3)	
	5MHz	1KHz	5.000MHz	±(0.3 % + 3)	
Duty Cycle	0.1%- 99.9%	0.1%	99.9%	±(0.5%+20Digit)	250V DC/AC rms (For 30 sec.)
	Note : Measurement Accuracy is specified at < 20VAC rms				
	Note : Sensitivity 5Hz- 50KHz > 400mV rms, 500KHz to 5MHz > 6V rms				
DC Current	24mA	0.01mA	24.00mA	±(1.0 % + 5)	250mA/250V DC/AC fast blow, Ceramic Fuse 10A/250V DC/AC fast blow, Ceramic Fuse
	240mA	0.1mA	240.0mA	±(1.2 % + 5)	
	2.4A	1mA	2.400A	±(2.0 % + 5)	
	10A	10mA	10.00A	±(2.0 % + 5)	
AC Current (50Hz - 500Hz) Only sine wave (Average)	24mA	0.01mA	24.00mA	±(1.0 % + 5)	250mA/250V DC/AC
	240mA	0.1mA	240.0mA	±(1.2 % + 5)	fast blow, Ceramic Fuse
	2.4A	1mA	2.400A	±(2.0 % + 5)	10A/250V DC/AC
	10A	10mA	10.00A	±(2.5 % + 5)	fast blow, Ceramic Fuse

Note : For current measurement, 10A AC/DC for 30 sec. max., after every 15 min. cool down interval.
Electromagnetic Compatibility : In RF Field, overall accuracy is equal to 10% of reading + 30 digits.
For AC voltage measurement from freq. 400 Hz to 500 Hz add 1% extra tolerance

M21C^{handy} GENERAL SPECIFICATIONS

- Display : 2400 Count LCD Display
- Polarity : Automatic
- Display Update Rate : 3 times per sec. nominal
- Sensing : Average sensing calibrated for rms
- Dimension (W X H X D) : 63 x 138 x 28 mm approx.
- Weight : 180g. approx.

Power:

- Power Supply : Battery 1.5V x 2 (AAA size or equivalent)
- Power Consumption : 1mA Typical
- Low Bat Indication : '⎓' is displayed below 2.3V approx.
- Auto Power OFF : After 30 minutes, idle sleep mode consumption 2.5µA approx.

Environmental:

- Operating Temperature : 0° C to 50° C
- Storage Temperature : -20° C to 60° C
- Relative Humidity : 80% RH at 5° C to 31° C,
50% RH at 31° C to 40° C
non-condensing

Safety:

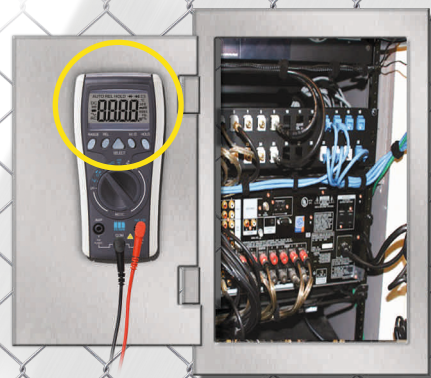
- Measurement Category : CAT II (600V)
- Pollution Degree : 2

Accuracy:

- Temperature Co-efficient : (0.1% x Specified Accuracy) per °C referred to 25°C
- Accuracy is valid from 10% of range to 95% of the range
- Accuracy is not valid if display shows low battery symbol '⎓'. In this case immediately replace the battery
- Accuracy is specified as ±(% of reading + digits) and is valid at 25 ± 3°C, ≤ 55% RH

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

It is recommended to re-calibrate the meter once in a year



Accessories

- Standard Accessory : Pair of test leads, Battery 1.5V X 2 (AAA or equivalent)
- Optional Accessory : Magnet

Notes

1. The Instrument is accompanied with Test & calibration sheet. 2. Test Facilities can be provided 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% of the range to 95% of the range. 5. Accuracy Specified for temperature range of 25°C ± 5°C & 55% RH ± 10%



Designed and Manufactured by:

The Motwane Manufacturing Company Pvt. Ltd.

Gyan Baug, Motwane Road, Nashik 422101, Maharashtra, India. Tel. No.: +91-253-2463752 / 53

Fax.: +91 - 253 - 2463197 e-mail: sales@motwane.com visit : www.motwane.com