

M402

DIGITAL MULTIMETER



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KEY FEATURES

- 40,000 counts with LCD Display with pleasant Amber backlit
- 0.05 % basic dc accuracy
- AC Voltage Frequency Response is up to 100 KHz.
- Resistance, Capacitance, Diode and Continuity measurement facility.
- Selectable Frequency & Duty Cycle measurement.
- Trms AC Voltage and Current measurement.
- 1000 Data storage, Hold & Recall facility
- USB Interface
- Auto Ranging with Dual Display
- CE, CAT IV 600V, IP54
- Overload Protections on all Ranges.
- Selectable Auto Power OFF time to save the Battery life.
- 40 position analog bar graph for trend indication.
- Low Battery status indicator on LCD display.
- Additional functions like Select, Clear, Store, Recall, Exit, Light, Hold, Max./Min., Set, Range, Rel, Up, Down.

APPLICATIONS

Process Industry, Railways, Calibration & Testing labs, Defence, R&D Centers

TECHNICAL SPECIFICATION

DC Voltage & AC Voltage (50HZ to 100KHZ) Trms

No	Range	Resolution	Max. reading	DC - Accuracy ± (reading + digit)	AC - Accuracy ± (reading + digit)			
					50Hz-500Hz	>500Hz-1kHz	>1kHz-10kHz	>10kHz-100kHz
1	4V	0.1mV	4.0000 V	± (0.05%+8)	± (0.4 %+30)	± (0.8 %+40)	± (3 %+50)	± (8 %+80)
2	40V	1mV	40.000 V	± (0.05%+8)	± (0.4 %+30)	± (0.8 %+40)	± (3.5%+50)	± (8 %+80)
3	400V	10mV	400.00 V	± (0.05%+8)	± (0.4 %+30)	± (1.2 %+50)	± (8%+50)	NA
4	1000V	100mV	1000.0 V	± (0.1%+8)	± (0.5 %+30)	± (2.5%+50)	Not Applicable	

NOTE : - 1. Input impedance: 10MΩ approx. shunted by 60pF approx.

2. Overload Protection : 1050V DC/AC rms

DC & AC mV (50Hz to 10KHz) Trms (manual ranging only)

No	Range	Resolution	Max. reading	DC - Accuracy ± (reading + digit)	AC - Accuracy ± (reading + digit)	
					50Hz-500Hz	>500Hz-1kHz
1	400mV	0.01 mV	400.00mV	±(0.05%+5)	±(0.4%+20)	±(2%+40)

Input impedance: ≥1000MΩ approx.

DC & AC CURRENT RANGE (50Hz to 10kHz) Trms.

No	Range	Resolution	Max. reading	DC - Accuracy ± (reading + digit)	AC - Accuracy ± (reading + digit)	
					50Hz-500Hz	>500Hz-1kHz
1	400 mA	10μA	400.00mA	±(0.1%+10)	±(0.75%+10)	±(1.5%+30)
2	10A	1mA	10.000A	±(0.5%+30)	±(1.2%+50)	±(5%+50)

DIODE TEST

No	Range	Resolution	Open Circuit Voltage	Test Current	Overload protection
1	400mV	0.01 mV	400.00mV	±(0.4%+20)	±(0.05%+5)

CONTINUITY TEST

No	Range	Resolution	Meter Beeps at < 40Ω approx	Overload protection
1	400Ω	0.1Ω		±(0.05%+5)

Note: - Open circuit voltage on continuity range is -1.2V DC approx.

RESISTANCE RANGE

No	Range	Resolution	Max. reading	Accuracy ± (reading + digit)	Overload Protection
1	400Ω	0.01Ω	400.00Ω	±(0.05%+10)	440V DC/AC rms
2	4KΩ	0.1Ω	4.0000KΩ	±(0.05%+10)	
3	40KΩ	1Ω	40.000KΩ	±(0.05%+10)	
4	400KΩ	10Ω	400.00 KΩ	±(0.05%+20)	
5	4MΩ	100Ω	4.0000 MΩ	±(0.5%+40)	
6	40MΩ	1kΩ	40.000 MΩ	±(1.5 %+50)	

Note: - Open Circuit voltage on 400Ω range is -1.2V DC approx.

Open Circuit voltage on 4KΩ to 40MΩ range is -400mV DC approx.

CAPACITANCE RANGES

No	Range	Resolution	Max. reading	Accuracy ± (reading + digit)	Overload Protection
1	40nF	0.01nF	40.00nF	±(3.0%+10)	440V DC/AC rms
2	400nF	0.1nF	400.0nF	±(3.0%+10)	
3	4μF	1nF	4.000μF	±(3.0%+20)	
4	40μF	10nF	40.00μF	±(3.0%+20)	
5	400μF	100nF	400.0μF	±(5.0%+30)	
6	4mF	1μF	4.000 mF	±(5.0%+50)	
6	40mF	10μF	40.00mF	±(5.0%+50)	

Note: 1. Settling Time on 4mF & 40mF range is 30 sec. approx.

FREQUENCY RANGES

No	Range	Resolution	Max. reading	Accuracy ± (reading + digit)	Overload Protection
1	40Hz	0.001 Hz	40.000 Hz	±(0.05%+5)	440V DC/AC rms
2	400Hz	0.01 Hz	400.00Hz	±(0.05%+5)	
3	4KHz	0.1 Hz	4.0000KHz	±(0.05%+5)	
4	40KHz	1 Hz	40.000 KHz	±(0.05%+5)	
5	400KHz	10 Hz	400.00 KHz	±(0.05%+5)	
6	3MHz	100 Hz	3.0000 MHz	±(0.05%+5)	

DUTY CYCLE MEASUREMENT (On sub display)

Range	Resolution	Accuracy ± (reading + digit)	Overload protection
10.00-99.90 %	0.01%	±(0.5%+30)	440V DC/AC rms

PC INTERFACE

- USB Interface.
- 1000 Internal Data Storage

POWER

- Power Supply : 9V Battery type 6F22 or equivalent, Make: Duracell.
- Power Consumption : 10 mA typical.
- Low Battery Indication : 'LO BAT' is displayed below 6.0V approx.
- Auto Power OFF : Selectable.

OVER LOAD PROTECTION

- Fuse protection for 'mA' Input Terminal : 0.5A/250V fast blow type Ceramic fuse
- Fuse protection for 10A Input Terminal : 20A/250V fast blow type Ceramic fuse.
- Ω / --- / --- / --- / Hz / D / IRT : 440V DC/AC rms.

SAFETY STANDARDS

- Directives for CE Certification : LVD: 2006/95/EC.
: EMC: 2004/104/EC.
- Measurement Category : CAT IV(600V) Reinforced insulation.
- Relevant Standard (S) Specification (S) : EN61010-1:2010,
: EN61326-1:2006.
- IP Rating (dust & water protection) : IP54.

ENVIRONMENTAL

- Operating Temperature : 0°C to 50°C
- Storage Temperature : -20°C to 60°C
- Relative Humidity : 80% RH @ 5°C to 31°C , 50 % RH @ 31°C to 40°C
Non-condensing
- Dimensions (W X H X D) : 94 X 205 X 36 mm approx.
- Weight : 450g. approx.
- Standard Accessories : Pair of test leads, Pair of short test leads, User Manual, Battery installed, Carrying bag, Spare fuses.
- Optional Accessories : Pair of test leads, USB interface cable, Software CD.



Standard Accessories



Optional software Accessories

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 $\pm$ 5°C & 55% RH $\pm$ 10%.



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