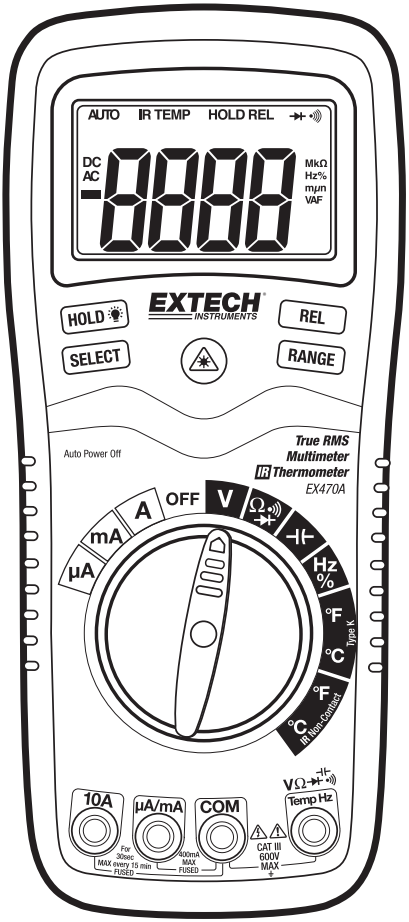
EXTECH INSTRUMENTS

USER MANUAL

True RMS Multimeter plus IR Thermometer

Extech EX470A



CE

Introduction

Congratulations on your purchase of the Extech EX470A True RMS Autoranging Multimeter plus IR Thermometer. This meter measures AC/DC Voltage, AC/DC Current, Resistance, Capacitance, Frequency, Duty Cycle, Diode Test, and Continuity plus Thermocouple and Non-Contact IR Temperature. Proper use and care of this meter will provide many years of reliable service. For copies of this user manual in other languages please visit the www.extech.com website.

Safety

International Safety Symbols

This symbol, adjacent to another symbol or terminal, indicates the user must refer to the manual for further information.

This symbol, adjacent to a terminal, indicates that, under normal use, hazardous voltages may be present

Double insulation

WARNING

This **WARNING** symbol indicates a potentially hazardous situation, which if not avoided, could result in death or serious injury.

CAUTION

This **CAUTION** symbol indicates a potentially hazardous situation, which if not avoided, may result damage to the product.

This symbol advises the user that the terminal(s) so marked must not be connected to a circuit point at which the voltage with respect to earth ground exceeds (in this case) 600 VAC or VDC.

This symbol indicates there is a potential hazard from a laser light source.

CAUTIONS

- Improper use of this meter can cause damage, shock, injury or death. Read and understand this user manual before operating the meter.
- Always remove the test leads before replacing the battery or fuses.
- Inspect the condition of the test leads and the meter itself for any damage before operating the meter. Repair or replace any damage before use.
- Use great care when making measurements if the voltages are greater than 25VAC rms or 35VDC. These voltages are considered a shock hazard.
- Warning! This is a class A equipment. This equipment can cause interference to devices in the home; in this case the operator can be required to carry out adequate measures to prevent interference.
- Always discharge capacitors and remove power from the device under test before performing Diode, Resistance or Continuity tests.
- Voltage checks on electrical outlets can be difficult and misleading because of the uncertainty of connection to the recessed electrical contacts. Other means should be used to ensure that the terminals are not "live".
- If the equipment is used in a manner not specified by the manufacturer, the protection provided by the equipment may be impaired.
- This device is not a toy and must not reach children's hands. It contains hazardous objects as well as small parts that children could swallow. In case a child swallows any of the parts, please contact a physician immediately.
- Do not leave batteries and packing material unattended; they can be dangerous for children.
- In case the device is going to be unused for an extended period of time, remove the batteries to prevent them from draining.
- Expired or damaged batteries can cause cauterization on contact with skin. Always use suitable hand protection.
- See that the batteries are not short-circuited. Do not throw batteries into fire.
- **Do not directly view or direct the laser pointer at an eye.** Low power visible lasers do not normally present a hazard, but may present some potential for hazard if viewed directly for extended periods of time

OVERVOLTAGE CATEGORY III

This meter meets the IEC 61010-1 (2010) 3rd edition standard for OVERVOLTAGE CATEGORY III. Cat III meters are protected against overvoltage transients in fixed installation at the distribution level. Examples include switches in the fixed installation and some equipment for industrial use with permanent connection to the fixed installation.

SAFETY INSTRUCTIONS

This meter has been designed for safe use, but must be operated with caution. The rules listed below must be carefully followed for safe operation.

1. **NEVER** apply voltage or current to the meter that exceeds the specified maximum:

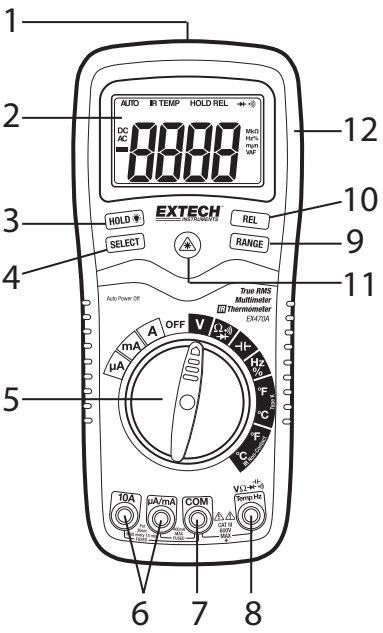
Input Protection Limits	
Function	Maximum Input
V DC or V AC	600V, 200Vrms on 400mV range
mA AC/DC	500mA 600V fast acting fuse
A AC/DC	10A 600V fast acting fuse (30 seconds max every 15 minutes)
Frequency, Resistance, Capacitance, Duty Cycle, Diode Test, Continuity	250Vrms for 15sec max
Temperature	60V DC/24V AC

2. **USE EXTREME CAUTION** when working with high voltages.
3. **DO NOT** measure voltage if the voltage on the "COM" input jack exceeds 600V above earth ground.
4. **NEVER** connect the meter leads across a voltage source while the function switch is in the current, resistance, or diode mode. Doing so can damage the meter.
5. **ALWAYS** discharge filter capacitors in power supplies and disconnect the power when making resistance or diode tests.
6. **ALWAYS** turn off the power and disconnect the test leads before opening the covers to replace the fuse or batteries.
7. **NEVER** operate the meter unless the back cover and the battery and fuse covers are in place and fastened securely.
8. **NEVER** look directly at the laser light source or aim the pointer at an eye.

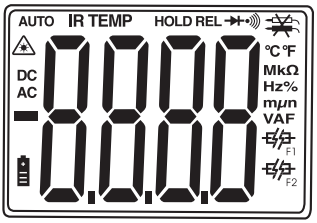
Description

1. IR Thermometer and laser pointer
2. 4000 count LCD display
3. HOLD and Backlight button
4. SELECT button
5. Function switch
6. mA, uA and A input jacks
7. COM input jack
8. Positive input jack
9. RANGE hold button
10. RELATIVE button
11. Laser pointer button
12. Protective holster

Note: Tilt stand and battery compartment are on rear of unit.



Symbols and Annunciators



•)))	Continuity		
▶|	Diode test		
⚠	Laser pointer		
▮	Battery status		
⚠	Test lead connection error		
n	nano (10^{-9}) (capacitance)		
µ	micro (10^{-6}) (amps, cap)		
m	milli (10^{-3}) (volts, amps)	A	Amps
k	kilo (10^{3}) (ohms)	F	Farads (capacitance)
M	mega (10^{6}) (ohms)	Ω	Ohms
Hz	Hertz (frequency)	V	Volts
%	Percent (duty ratio)	REL	Relative
AC	Alternating current	AUTO	Autoranging
DC	Direct current	HOLD	Display hold
ºF	Degrees Fahrenheit	ºC	Degrees Centigrade

Operating Instructions

WARNING: Risk of electrocution. High-voltage circuits, both AC and DC, are very dangerous and should be measured with great care.

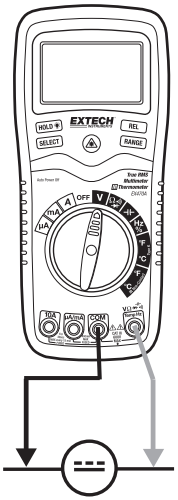
1. ALWAYS turn the function switch to the OFF position when the meter is not in use.
2. If "OL" appears in the display during a measurement, the value exceeds the range you have selected. Change to a higher range.

NOTE: On some low AC and DC voltage ranges, with the test leads not connected to a device, the display may show a random, changing reading. This response is normal and is caused by the high-input sensitivity. The reading will stabilize and give a proper measurement when connected to a circuit.

DC VOLTAGE MEASUREMENTS

CAUTION: Do not measure DC voltages if a motor on the circuit is being switched ON or OFF. Large voltage surges may occur that can damage the meter.

1. Set the function switch to the green V position.
2. Press the SELECT button to indicate "DC" on the display.
3. Insert the black test lead banana plug into the negative **COM** jack. Insert the red test lead banana plug into the positive **V** jack.
4. Touch the black test probe tip to the negative side of the circuit. Touch the red test probe tip to the positive side of the circuit.
5. Read the voltage in the display.

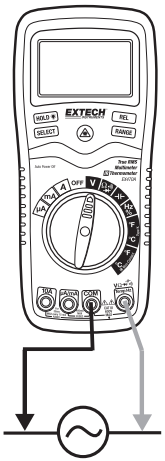


AC VOLTAGE MEASUREMENTS

WARNING: Risk of Electrocution. The probe tips may not be long enough to contact the live parts inside some 240V outlets for appliances because the contacts are recessed deep in the outlets. As a result, the reading may show 0 volts when the outlet actually has voltage on it. Make sure the probe tips are touching the metal contacts inside the outlet before assuming that no voltage is present.

CAUTION: Do not measure AC voltages if a motor on the circuit is being switched ON or OFF. Large voltage surges may occur that can damage the meter.

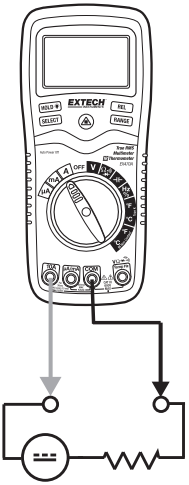
1. Set the function switch to the green V position.
2. Press the SELECT button to indicate "**AC**" on the display.
3. Insert the black test lead banana plug into the negative **COM** jack. Insert red test lead banana plug into the positive **V** jack.
4. Touch the black test probe tip to the neutral side of the circuit. Touch the red test probe tip to the "hot" side of the circuit.
5. Read the voltage in the display.



DC CURRENT MEASUREMENTS

CAUTION: Do not make current measurements on the 10A scale for longer than 30 seconds. Exceeding 30 seconds may cause damage to the meter and/or the test leads.

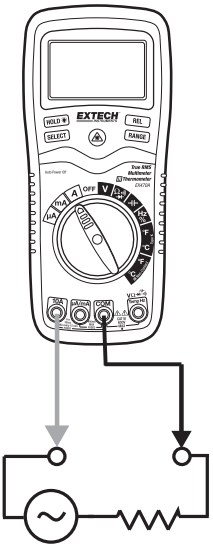
1. Insert the black test lead banana plug into the negative **COM** jack.
2. For current measurements up to 4000µA DC, set the function switch to the yellow µA position and insert the red test lead banana plug into the **µA/mA** jack.
3. For current measurements up to 400mA DC, set the function switch to the yellow mA position and insert the red test lead banana plug into the **µA/mA** jack.
4. For current measurements up to 10A DC, set the function switch to the yellow A range and insert the red test lead banana plug into the **A** jack.
5. Press the SELECT button to indicate "**DC**" on the display.
6. Remove power from the circuit under test, then open up the circuit at the point where you wish to measure current.
7. Touch the black test probe tip to the negative side of the circuit. Touch the red test probe tip to the positive side of the circuit.
8. Apply power to the circuit.
9. Read the current in the display.



AC CURRENT MEASUREMENTS

CAUTION: Do not make current measurements on the 10A scale for longer than 30 seconds. Exceeding 30 seconds may cause damage to the meter and/or the test leads.

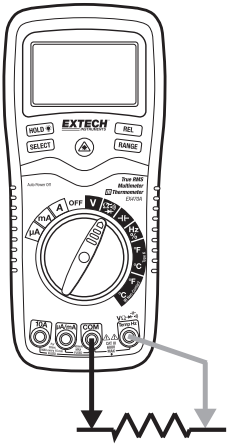
1. Insert the black test lead banana plug into the negative **COM** jack.
2. For current measurements up to 4000µA AC, set the function switch to the yellow µA position and insert the red test lead banana plug into the **µA/mA** jack.
3. For current measurements up to 400mA AC, set the function switch to the yellow mA position and insert the red test lead banana plug into the **µA/mA** jack.
4. For current measurements up to 10A AC, set the function switch to the yellow A range and insert the red test lead banana plug into the **A** jack.
5. Press the SELECT button to indicate "**AC**" on the display.
6. Remove power from the circuit under test, then open up the circuit at the point where you wish to measure current.
7. Touch the black test probe tip to the neutral side of the circuit. Touch the red test probe tip to the "hot" side of the circuit.
8. Apply power to the circuit.
9. Read the current in the display.



RESISTANCE MEASUREMENTS

WARNING: To avoid electric shock, disconnect power to the unit under test and discharge all capacitors before taking any resistance measurements. Remove the batteries and unplug the line cords.

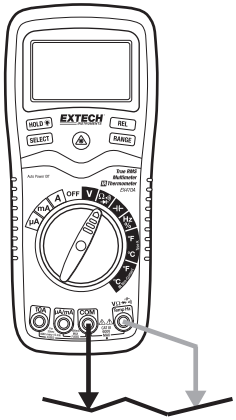
1. Set the function switch to the green Ω position.
2. Insert the black test lead banana plug into the negative **COM** jack. Insert the red test lead banana plug into the positive **Ω** jack.
3. Press the SELECT button to indicate "**Ω"** on the display.
4. Touch the test probe tips across the circuit or part under test. It is best to disconnect one side of the part under test so the rest of the circuit will not interfere with the resistance reading.
5. Read the resistance in the display.



CONTINUITY CHECK

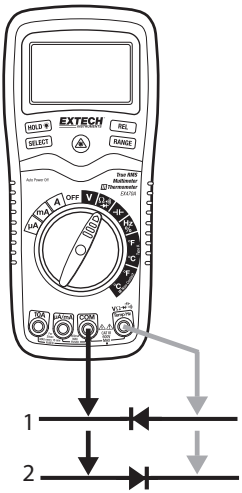
WARNING: To avoid electric shock, never measure continuity on circuits or wires that have voltage on them.

1. Set the function switch to the green **Ω** position.
2. Insert the black lead banana plug into the negative **COM** jack. Insert the red test lead banana plug into the positive **Ω** jack.
3. Press the SELECT button to indicate and **Ω** on the display
4. Touch the test probe tips to the circuit or wire you wish to check.
5. If the resistance is less than approximately 150Ω, the audible signal will sound. If the circuit is open, the display will indicate "**OL**".



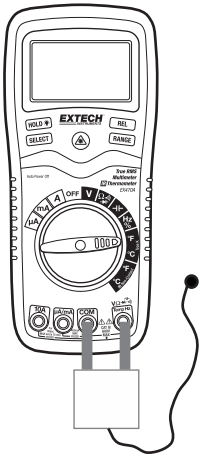
DIODE TEST

1. Set the function switch to the green **Ω** position.
2. Insert the black test lead banana plug into the negative **COM** jack and the red test lead banana plug into the positive **V** jack.
3. Press the SELECT button to indicate and **V** on the display.
4. Touch the test probes to the diode under test. Forward voltage will typically indicate 0.400 to 0.700V. Reverse voltage will indicate "**OL**". Shorted devices will indicate near 0V and an open device will indicate "**OL**" in both polarities.



CONTACT TEMPERATURE MEASUREMENTS

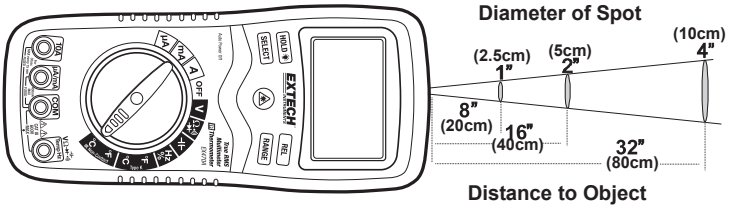
1. Set the function switch to the black Type K ºC or ºF position.
2. Insert the Temperature Probe into the input jacks, making sure to observe the correct polarity.
3. Touch the Temperature Probe head to the part whose temperature you wish to measure. Keep the probe touching the part under test until the reading stabilizes (about 30 seconds).
4. Read the temperature in the display.



Note: The temperature probe is fitted with a type K mini connector. A mini connector to banana connector adaptor is supplied for connection to the input banana jacks.

NON-CONTACT TEMPERATURE MEASUREMENTS

1. Set the function switch to the red IR Non-Contact ºC or ºF position.
2. Point the meter at the surface to be measured.
3. If needed, press the red IR Laser Pointer button to locate the exact spot being measured.
4. The area of the surface to be measured must be larger than the spot size as determined by the distance to spot size specification.
5. Read the temperature in the display.

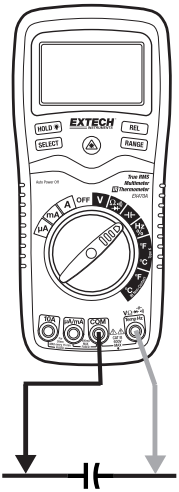


WARNING: Do not directly view or direct the laser pointer at an eye. Low power visible lasers do not normally present a hazard, but may present some potential for hazard if viewed directly for extended periods of time.

CAPACITANCE MEASUREMENTS

WARNING: To avoid electric shock, disconnect power to the unit under test and discharge all capacitors before taking any capacitance measurements. Remove the batteries and unplug the line cords.

1. Set the rotary function switch to the green position.
2. Insert the black test lead banana plug into the negative (COM) jack. Insert the red test lead banana plug into the positive jack.
3. Touch the test leads to the capacitor to be tested.
4. Read the capacitance value in the display

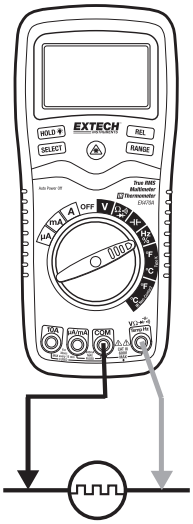


FREQUENCY MEASUREMENTS

1. Set the rotary function switch to the green “Hz” position.
2. Insert the black lead banana plug into the negative COM jack and the red test lead banana plug into the positive Hz jack.
3. Touch the test probe tips to the circuit under test.
4. Read the frequency on the display.

% DUTY CYCLE

1. Set the rotary function switch to the “Hz” position.
2. Insert the black lead banana plug into the negative COM jack and the red test lead banana plug into the positive Hz jack.
3. Press the SELECT key momentarily to select **“%”** in the display.
4. Touch the test probe tips to the circuit under test.
5. Read the % duty cycle on the display.



AUTORANGING/MANUAL RANGE SELECTION

When the meter is first turned on, it automatically goes into AutoRanging. This automatically selects the best range for the measurements being made and is generally the best mode for most measurements. For measurement situations requiring that a range be manually selected, perform the following:

1. Press the RANGE key. The "**AUTO"** display indicator will turn off.
2. Press the RANGE key to step through the available ranges until you select the range you want.
3. To exit the Manual Ranging mode and return to AutoRanging, press and hold the RANGE key for 2 seconds.

Note: Manual ranging does not apply for the Capacitance, Frequency and Temperature functions.

RELATIVE MODE

The relative measurement feature allows you to make measurements relative to a stored reference value. A reference voltage, current, etc. can be stored and measurements made in comparison to that value. The displayed value is the difference between the reference value and the measured value.

1. Perform the measurement as described in the operating instructions.
2. Press the REL button to store the reading in the display and the "REL" indicator will appear on the display.
3. The display will now indicate the difference between the stored value and the measured value.
4. Press the REL button to exit the relative mode.

Note: The Relative function does not operate in the Frequency function.

DISPLAY BACKLIGHT

Press and hold the HOLD key for >1 second to turn on or off the display backlight function.

Note: The HOLD feature will activate when the Backlight is turned on. Press the HOLD key again to exit Hold.

HOLD

The hold function freezes the reading in the display. Press the HOLD key momentarily to activate or to exit the HOLD function.

AUTO POWER OFF

The auto off feature will turn the meter off after 15 minutes.

LOW BATTERY INDICATION

The  icon will appear in the lower left conner of the display when the battery voltage becomes low. Replace the battery when this appears.

WRONG CONNECTION INDICATION

The  icon will appear in the upper right conner of the display and the buzzer will sound whenever the positive test lead is inserted into the 10A or uA/mA input jack and a non-current (green, black or red) function is selected. If this occurs, turn the meter off and reinsert the test lead into the proper input jack for the function selected.

Specifications

Function	Range	Resolution	Accuracy	
DC Voltage	400mV	0.1mV	±(0.3% reading + 2 digits)	
	4V	0.001V	±(0.5% reading + 2 digits)	
	40V	0.01V		
	400V	0.1V		
	600V	1V	±(0.8% reading + 3 digits)	
AC Voltage			50 to 400Hz	400Hz to 1kHz
	400mV	0.1mV	±(1.5% reading + 15 digits)	±(2.5% reading + 15digits)
	4V	0.001V	±(1.5% reading + 6 digits)	±(2.5% reading + 8 digits)
	40V	0.01V		
	400V	0.1V		
	600V	1V	±(1.8% reading + 6 digits)	±(3% reading + 8 digits)
DC Current	400μA	0.1μA	±(1.5% reading + 3 digits)	
	4000μA	1μA		
	40mA	0.01mA		
	400mA	0.1mA		
	4A	0.001A	±(2.5% reading + 5 digits)	
	10A	0.01A		
AC Current			50 to 400Hz	400Hz to 1KHz
	400μA	0.1μA	±(1.8% reading + 8 digits)	±(3.0% reading + 7 digits)
	4000μA	1μA		
	40mA	0.01mA		
	400mA	0.1mA		
	4A	0.001A	±(3.0% reading + 8 digits)	±(3.5% reading + 10 digits)
	10A	0.01A		
Resistance	400Ω	0.1Ω	±(0.8% reading + 4 digits)	
	4kΩ	0.001kΩ	±(0.8% reading + 2 digits)	
	40kΩ	0.01kΩ	±(1.0% reading + 2 digits)	
	400kΩ	0.1kΩ		
	4MΩ	0.001MΩ		
	40MΩ	0.01MΩ	±(3.0% reading + 5 digits)	
Capacitance	40nF	0.01nF	±(5.0% reading + 7 digits)	
	400nF	0.1nF	±(3.0% reading + 5 digits)	
	4μF	0.001μF	±(3.5% reading + 5 digits)	
	40μF	0.01μF		
	100μF	0.1μF	±(5.0% reading + 5 digits)	
Temp (type-K)	-20 to 750°C	1°C	±(3.0% reading + 3 digits) (probe accuracy not included)	
	-4 to 1382°F	1°F		
Temp (IR)	-50 to 270°C	1°C	±2.0% reading or ±2°C, ± 4 °F	
	-58 to 518°F	1°F		

NOTE: Accuracy is stated at 65ºF to 83ºF (18ºC to 28ºC) and less than 75% RH.

Function	Range	Resolution	Accuracy
Frequency	5.000Hz	0.001Hz	±(1.5% reading + 5 digits)
	50.00Hz	0.01Hz	
	500.0Hz	0.1Hz	±(1.2% reading + 2 digits)
	5.000kHz	0.001kHz	
	50.00kHz	0.01kHz	
	500.0kHz	0.1kHz	
	5.000MHz	0.001MHz	±(1.5% reading + 4 digits)
	10.00MHz	0.01MHz	
	Sensitivity: 0.8V rms min. @ 20% to 80% duty cycle and <100kHz; 5Vrms min @ 20% to 80% duty cycle and > 100kHz.		
Duty Cycle	0.1 to 99.9%	0.1%	±(1.2% reading + 2 digits)
	Pulse width: 100µs - 100ms, Frequency: 5Hz to 150kHz		

Note: Accuracy specifications consist of two elements:

- (% reading) – This is the accuracy of the measurement circuit.
- (+ digits) – This is the accuracy of the analog to digital converter.

Diode Test	Test current of 0.3mA maximum, open circuit voltage 1.5V DC typical
Continuity Check	Audible signal will sound if the resistance is less than 150Ω (approx.), test current <0.7mA
Temperature Sensor	Requires type K thermocouple
IR Spectral response	6 to 16µm
IR Emissivity	0.95 fixed
IR distance ratio	8:1
Input Impedance	>7.5MΩ (VDC & VAC)
AC Response	True rms
ACV Bandwidth	50Hz to 1kHz
Crest Factor	<3:1 at full scale & <6:1 at half scale
Display	4000 count backlit liquid crystal
Overrange indication	"**OL**" is displayed
Auto Power Off	15 minutes (approximately)
Polarity	Automatic (no indication for positive); Minus (-) sign for negative
Measurement Rate	2 times per second, nominal
Low Battery Indication	**"**  **"** is displayed if battery voltage drops below operating voltage
Battery	One 9 volt (NEDA 1604) battery
Fuses	mA, µA ranges; 0.5A/600V fast blow A range; 10A/600V ceramic fast blow
Operating Temperature	41ºF to 104ºF (5ºC to 40ºC)
Storage Temperature	-4ºF to 140ºF (-20ºC to 60ºC)
Operating Humidity	Max 80% up to 87ºF (31ºC) decreasing linearly to 50% at 104ºF (40ºC)
Storage Humidity	<80%
Operating Altitude	7000ft (2000 meters) maximum.
Weight	0.753lb (342g) (includes holster).
Size	7.36" x 3.2" x 2.0" (187 x 81 x 50mm) (includes holster)
Safety	For indoor use and in accordance with the requirements for double insulation to IEC1010-1 (EN61010-1) 3RD edition (2010) Overvoltage Category III 600V, Pollution Degree 2.
Patent Notice	U.S. Patent 7056012

Maintenance

WARNING: To avoid electrical shock, disconnect the meter from any circuit, remove the test leads from the input terminals, and turn OFF the meter before opening the case. Do not operate the meter with an open case.

This MultiMeter is designed to provide years of dependable service, if the following care instructions are performed:

1. **KEEP THE METER DRY**. If it gets wet, wipe it off.
2. **USE AND STORE THE METER IN NORMAL TEMPERATURES.** Temperature extremes can shorten the life of the electronic parts and distort or melt plastic parts.
3. **HANDLE THE METER GENTLY AND CAREFULLY.** Dropping it can damage the electronic parts or the case.
4. **KEEP THE METER CLEAN.** Wipe the case occasionally with a damp cloth. DO NOT use chemicals, cleaning solvents, or detergents.
5. **USE ONLY FRESH BATTERIES OF THE RECOMMENDED SIZE AND TYPE.** Remove old or weak batteries so they do not leak and damage the unit.
6. **IF THE METER IS TO BE STORED FOR A LONG PERIOD OF TIME**, the batteries should be removed to prevent damage to the unit.

Battery Replacement

1. Remove the Phillips head screw that secures the rear battery door
2. Open the battery compartment
3. Replace the 9V battery
4. Secure the battery compartment

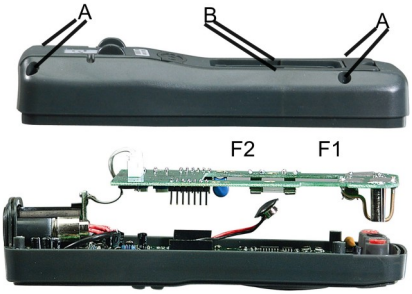
WARNING: To avoid electric shock, do not operate the meter until the battery cover is in place and fastened securely.

NOTE: If your meter does not work properly, check the fuses and batteries to make sure that they are still good and that they are properly inserted.

REPLACING THE FUSES

WARNING: To avoid electrical shock, disconnect the meter from any circuit, remove the test leads from the input terminals, and turn OFF the meter before opening the case. Do not operate the meter with an open case.

1. Disconnect the test leads from the meter.
2. Remove the protective rubber holster.
3. Remove the battery cover (two “B” screws) and the battery.
4. Remove the four “A” screws securing the rear cover.
5. Lift the center circuit board straight up from the connectors to gain access to the fuse holders.
6. Gently remove the old fuse and install the new fuse into the holder.
7. Always use a fuse of the proper size and value (0.5A/600V fast blow for the 400mA range, 10A/600V fast blow for the 10A range).
8. Align the center board with the connectors and gently press into place.
9. Replace and secure the rear cover, battery and battery cover.



WARNING: To avoid electric shock, do not operate your meter until the fuse cover is in place and fastened securely.

Warranty

FLIR Systems, Inc. warrants this Extech Instruments brand device *to be free of defects in parts and workmanship for* ***one year*** *from date of shipment (a six month limited warranty applies to sensors and cables). If it should become necessary to return the instrument for service during or beyond the warranty period, contact the Customer Service Department for authorization. Visit the website www.extech.com for contact information. A Return Authorization (RA) number must be issued before any product is returned. The sender is responsible for shipping charges, freight, insurance and proper packaging to prevent damage in transit. This warranty does not apply to defects resulting from action of the user such as misuse, improper wiring, operation outside of specification, improper maintenance or repair, or unauthorized modification. FLIR Systems, Inc. specifically disclaims any implied warranties or merchantability or fitness for a specific purpose and will not be liable for any direct, indirect, incidental or consequential damages. FLIR's total liability is limited to repair or replacement of the product. The warranty set forth above is inclusive and no other warranty, whether written or oral, is expressed or implied.*

Calibration, Repair, and Customer Care Services

FLIR Systems, Inc. offers repair and calibration services for the Extech Instruments products we sell. NIST certification for most products is also provided. Call the Customer Service Department for information on calibration services available for this product. Annual calibrations should be performed to verify meter performance and accuracy. Technical support and general customer service is also provided, refer to the contact information provided below.

Support Lines: U.S. (877) 439-8324; International: +1 (603) 324-7800

Technical Support: Option 3; E-mail: support@extech.com

Repair & Returns: Option 4; E-mail: repair@extech.com

Product specifications are subject to change without notice

Please visit our website for the most up-to-date information

www.extech.com

FLIR Commercial Systems, Inc., 9 Townsend West, Nashua, NH 03063 USA

ISO 9001 Certified

www.extech.com

Garantie

FLIR Systems, Inc. garantit que cet appareil Extech Instruments *est exempt de défauts matériaux et de fabrication pendant un an à partir de la date d'envoi (une garantie limitée de six mois s'applique aux capteurs et aux câbles). Si le renvoi de l'appareil pour réparation devient nécessaire durant ou après la période de garantie, contactez le service client pour autorisation. Pour obtenir les coordonnées, visitez le site Web suivant : www.extech.com. Un numéro d'autorisation de retour (AR) doit être délivré avant tout retour de produit. L'expéditeur prend à sa charge les frais d'expédition, le fret, l'assurance et l'emballage correct de l'appareil afin de prévenir toute détérioration durant le transport. Cette garantie ne s'applique pas aux dommages imputables à l'utilisateur, tels que l'usage impropre ou abusif, un mauvais câblage, une utilisation non conforme aux spécifications, un entretien ou une réparation incorrecte, ou toute modification non autorisée. FLIR Systems, Inc. déclinera spécifiquement toute garantie ou qualité marchande ou aptitude à l'emploi prévu, et ne sera en aucun cas tenu responsable pour tout dommage conséquent, direct, indirect ou accidentel. La responsabilité totale de FLIR est limitée à la réparation ou au remplacement du produit. La garantie définie ci-dessus est inclusive et aucune autre garantie, écrite ou orale, n'est exprimée ou implicite.*

Calibrage, réparation et services après-vente

FLIR Systems, Inc. offre des services de calibrage et de réparation pour les produits Extech Instruments que nous commercialisons. Nous fournissons également une certification NIST pour la plupart des produits. Contactez notre service client pour toute information sur les services de calibrage disponibles pour ce produit. Un calibrage doit être effectué chaque année pour vérifier les performances et la précision du mètre. Nous offrons également une assistance technique et un service à la clientèle. Veuillez vous reporter aux coordonnées fournies ci-dessous.

Lignes d'assistance: États-Unis (877) 439-8324; international: +1 (603) 324-7800

Service d'assistance technique : Option 3 ; E-mail : support@extech.com

Réparations et retours : Option 4 ; E-mail : repair@extech.com

Les spécifications produit sont sujettes à modifications sans préavis.

Pour les toutes dernières informations, veuillez visiter notre site Web.

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Garantía

***FLIR Systems, Inc.**, garantiza este dispositivo marca Extech Instruments para estar libre de defectos en partes o mano de obra durante un año a partir de la fecha de embarque (se aplica una garantía limitada de seis meses para cables y sensores). Si fuera necesario regresar el instrumento para servicio durante o después del periodo de garantía, llame al Departamento de Servicio a Clientes para obtener autorización. Visite www.extech.com para Información de contacto. Se debe expedir un número de Autorización de Devolución (AD) antes de regresar cualquier producto. El remitente es responsable de los gastos de embarque, flete, seguro y empaque apropiado para prevenir daños en tránsito. Esta garantía no se aplica a defectos resultantes de las acciones del usuario como el mal uso, alambrado equivocado, operación fuera de las especificaciones, mantenimiento o reparación inadecuada o modificación no autorizada. FLIR Systems, Inc., rechaza específicamente cualesquier garantías implícitas o factibilidad de comercialización o idoneidad para cualquier propósito determinado y no será responsable por cualesquier daños directos, indirectos, incidentales o consecuentes. La responsabilidad total de FLIR está limitada a la reparación o reemplazo del producto. La garantía precedente es inclusiva y no hay otra garantía ya sea escrita u oral, expresa o implícita.*

Servicios de calibración, reparación y atención a clientes

FLIR Systems, Inc., ofrece servicios de reparación y calibración para los productos que vendemos de Extech Instruments. Además ofrecemos certificación NIST para la mayoría de los productos. Llame al Departamento de Servicio al Cliente para solicitar información de calibración para este producto. Para verificar el funcionamiento y precisión se debe realizar la calibración anual. Además se provee Soporte Técnico y servicios generales al cliente, consulte la información de contacto en seguida.

Líneas de soporte: EE.UU. (877) 439-8324; Internacional: +1 (603) 324-7800

Soporte Técnico Opción 3; correo electrónico: support@extech.com

Reparación / Devoluciones: Opción 4; correo electrónico: repair@extech.com

Las especificaciones del producto están sujetas a cambios sin aviso

Por favor visite nuestra página en Internet para la información más actualizada

www.extech.com

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Certificado ISO 9001