



Digital multimeter 6in1

AX-190A




Instructional Manual





1. Safety instructions

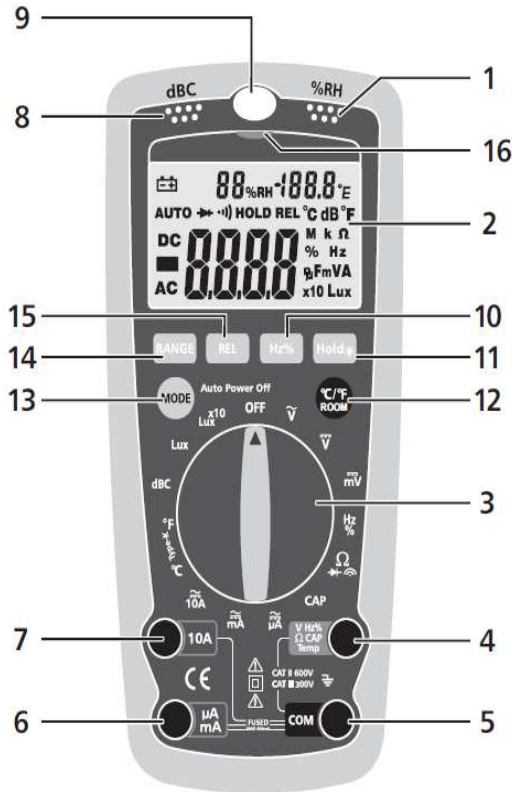
 **NEVER** apply voltage or current to the meter that exceeds the specified maximum.

Function	Maximum input
VDC lub VAC	600VDC/AC rms
mA AC/DC	500mA 660V fast acting fuse (500mA/660V)
A AC/DC	10A 600V fast acting fuse (10A for 30 seconds max every 15 minutes)
Frequency, Resistance, Capacitance, Duty Cycle, Diode Test, Continuity	600VDC/AC rms
Temperature	600VDC/AC rms

- ⚠ Before using verify that the insulation on test leads is not damaged and/or the leads' wire is not exposed.
- ⚠ Always be careful when working with voltages above 60V DC or 30V AC rms, keep fingers behind the probe barriers while measuring.
- ⚠ Before stir the transform switch to change functions, disconnect test leads from the circuit under test.
- ⚠ Never measure any of resistance , capacitance, diode or continuity measurements on live circuits.





2. Panel description



1. Humidity Sensor and Semiconductor Sensor inside for Indoor.
2. 3 4/5 digits LCD display
1. Function switch
2. V / Hz% / Ω / CAP / °C input jack



3. COM input jack
4. A / mA input jack
5. 10A input jack
6. Electric condenser microphone inside.
8. Photo Detector
9. Hz/% button
10. HOLD button
11. BACKLIGHT button
12. MODE button

The button to select AC or DC measurement when in A, mA, uA, and Ω , , , ranges.

13. RANGE button

The button to select AC or DC measurement when in Voltage, ranges.

15. REL button

Press the REL button to store the reading in the display and the “REL“ indicator will appear on the display.


16. NCV indicate lamp

3. Specifications

Display:

3 4/5 Digital 4000 counts LCD display with function of Lux, C, % and dB indication.

Low battery indication:

The “  ” is displayed when the battery voltage drops below the operating level.

Measurement rate:

3 times per second, nominal.





Operating environment:	0°C 40°C (32°F 104°F) at <70%
Storage temperature:	-10°C to 60°C (14°F to 140°F) at <80%RH
Power:	9V, NEDA1604 or 6F22 battery.
Dimensions:	170 (H)x78(W) x48(D) mm
Weight: Approx.:	335g

Accuracy is given at 18 C to 28 C (65 F to 83 F), less than 70%RH.

3.1. Sound level

Measurement range:	35 to 100dB
Resolution:	0.1dB
Typical instrument frequency range:	30Hz to 10kHz
Frequency Weighting:	C - weighting
Time Weighting:	Fast
Accuracy:	±5dB at 94dB sound level, 1kHz sine wave.
Microphone:	Electric condenser microphone.

3.2. Light

Measuring Range:	4000, 40,000Lux (40,000Lux range reading x10)
Accuracy:	±5% rdg +10 dgts (calibrated to standard incandescent lamp at color temperature 2856k).
Repeatability:	±2%
Temperature Characteristic:	±0.1% / °C
Photo detector:	One silicon photo diode with filter.





3.3. Temperature/Humidity

K-type temperatur Measurement Range:

Range	Resolution	Accuracy
-20°C to 1300°C	1°C	3% of rdg 5± dgts

Input Impedance: 10MΩ

Overload Protection: 250VDC or AC rms. for 400mV range and 250VDC or 250VAC rms. for other ranges.
Ω

Indoor Temperature Range

Range	Resolution	Accuracy
0°C to 50°C	0.1°C	3% of rdg ± 5 dgts

Indoor Humidity Range

Range	Resolution	Accuracy
33%RH to 99%RH	1%RH	3% of rdg ± 5 dgts

Impedancja wejściowa: 10 M Ω

Zabezpieczenie od przeciążeń : 250VDC lub AC rms. dla zakresu 400mV i 250VDC lub 250VAC rms. dla innych zakresów.





3.4. Multimetr

1.DC Voltage (Auto-ranging)

Range	Resolution	Accuracy
400.0mV	0.1mV	±1.0% of rdg ±4 dgts
4.000V	1.0mV	
40.00V	10mV	
400.0V	100mV	±1.5% of rdg ±4 dgts
600V	1V	

Input Impedance: 10MΩ

Overload Protection: 600VDC or AC rms. for 400mV range and 600VDC or 600VAC rms. For other ranges.

2.AC Voltage (Auto-ranging except 400mV)

Range	Resolution	Accuracy
400.0mV	0.1mV	±1.5% of rdg ±15 dgts
4.000V	1.0mV	±1.0% of rdg ±4 dgts
40.00V	10mV	
400.0V	100mV	±1.5% of rdg ±4 dgts
600V	1V	±2% of rdg ±4 dgts

Input Impedance: 10MΩ





Frequency Range: 50 to 400Hz

Maximum Input: 600VDC or 600VAC rms.

3.DC Current (Auto-ranging for uA and mA)

Range	Resolution	Accuracy
400.0uA	0.1uA	±1.0% of rdg ±2 dgts
4000uA	1uA	±1.0% of rdg ±2 dgts
400.0mA	100uA	±1.2% of rdg ±2 dgts
10.00A	10mA	±2.0% of rdg ±5 dgts

Overload Protection: 500mA/ 0V and 10A/ 0V Fuse

Maximum Input: 400mA DC or 400mA AC rms on uA/mA ranges, 10A dc or ac rms on 10A range.

4.AC Current (Auto-ranging for uA and mA)

Range	Resolution	Accuracy
400.0uA	0.1uA	±1.2% of rdg ±2 dgts
4000uA	1uA	±1.2% of rdg ±2 dgts
400.0mA	100uA	±1.5% of rdg ±2 dgts
10.00A	10mA	±2.0% of rdg ±5 dgts

Overload Protection: 500mA/ 0V and 10A/ 0V Fuse

AC Response: 50Hz to 400Hz





Maximum Input: 400mA DC or 400mA AC rms on uA/mA ranges,
10A DC or AC rms on 10A range.

5. Resistance (Auto-ranging)

Range	Resolution	Accuracy
400.0 Ω	0.1 Ω	$\pm 1.5\%$ of rdg ± 4 dgts
4.000k Ω	1 Ω	$\pm 1.5\%$ of rdg ± 2 dgts
40.00k Ω	10 Ω	
400.0k Ω	100 Ω	
4.000M Ω	10k Ω	$\pm 2.0\%$ of rdg ± 2 dgts
40.00M Ω	1M Ω	$\pm 2.5\%$ of rdg ± 2 dgts

Overload Protection: 15 seconds maximum 250V DC or 250V AC rms, on all ranges.

Maximum open circuit voltage: 2.8V

6. Capacitance (Auto-ranging)

Range	Resolution	Accuracy
50.00nF	10pF	$\pm 5.0\%$ of rdg ± 7 dgts





500.0nF	0.1nF	±3.0% of rdg ±5 dgts
5.000uF	1nF	
50.00uF	10nF	
100.0uF	0.1uF	±4.0% of rdg ±5 dgts

Input Protection: 600V DC or 600V AC rm

7.Frequency (Auto-ranging)

Range	Resolution	Accuracy
5.000Hz	0.001Hz	±1.2% of rdg ±3 dgts
50.00Hz	0.01Hz	
500.0Hz	0.1Hz	
5.000kHz	1Hz	
50.00kHz	10Hz	
500.0kHz	100Hz	
10.00MHz	1kHz	±1.5% of rdg ±4 dgts

Sensitivity: >0.5V RMS while <1MHz;

Sensitivity: >3V RMS while >1MHz;

Input Protection: 250V DC or 250V AC rms.






8. Diode and Continuity check

Diode:	Test current 1.4mA dc and open circuit voltage 2.8V DC.
Continuity:	Built in Buzzer will be sound if the circuit resistance is less than 50
Overload Protection:	maximum 600V DC or 600V AC rms.

4. Battery replacement

If the sign "" appears on the LCD display, it indicates that the battery should be replaced. Remove screws on the back cover and open the case. Replace the exhausted battery with new batteries. (1 x 9V battery NEDA 1604, 6F22 or equivalent)

