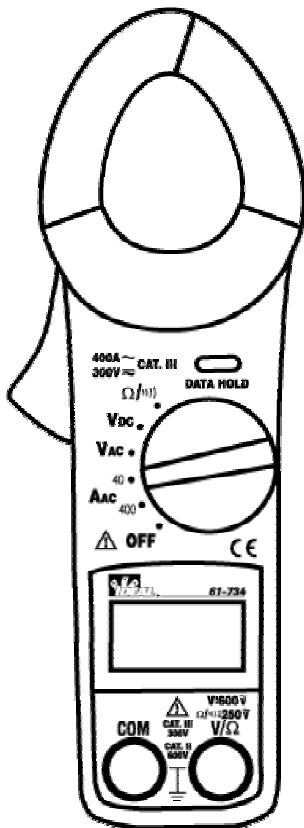




IDEAL INDUSTRIES, INC.
TECHNICAL MANUAL
MODEL: 61-734

The Service Information provides the following information:

- Precautions and safety information
- Specifications
- Performance test procedure
- Calibration and calibration adjustment procedure
- Basic maintenance (replacing the battery)



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Introduction

Warning

To avoid shock or injury, do not perform the verification tests or calibration procedures described in this manual unless you are qualified to do so.
The information provided in this document is for the use of qualified personnel only.

Caution

The 61-734 serials contain parts that can be damaged by static discharge.
Follow the standard practices for handling static sensitive devices.

*For additional information about IDEAL INDUSTRIES and its products,
and services, visit IDEAL INDUSTRIES web site at:*

www.idealindustries.com

SAFETY

Review the following safety precautions to avoid injury and prevent damage to this product or any products connected to it. To avoid potential hazards, use the product only as specified.

CAUTION.

These statements identify conditions or practices that could result in damage to the equipment or other property.

WARNING.

These statements identify conditions or practices that could result in personal injury or loss of life.

Specific precautions

Do not operate without covers. To avoid personal injury, do not apply any voltage or current to the product without the covers in place.

Electric overload. Never apply a voltage to a connector on the product that is outside the range specified for that connector.

Avoid electric shock. To avoid injury or loss of life, do not connect or disconnect probes or test leads while they are connected to a voltage source.

Do not operate in wet/damp conditions. To avoid electric shock, do not operate this product in wet or damp conditions.

General specifications

Characteristics	Description
Display	3 ½ Digit LCD display
Display Count	4000 count, maximum reading 3999
Overrange Indication	“OL” is shown on the display
Sampling Rate	2.5 times/second
Operating Environment:	0°C to 40°C
Relative Humidity	relative humidity 85% or less without condensation
Storage Environment:	-20°C to 60°C at <85% relative humidity
Power source:	Two R03 (DC 1.5V) batteries
Battery Live:	200 hours typical
Low Battery Indicator:	 symbol indicates low battery voltage
Dimensions	184mmL X 44mmW X27mmD
Weight:	Approximately 190g including battery

RANGES and ACCURACY SPECIFICATION

Function Setting	Ranges	Accuracy
AC Voltage	400.0/600 V	2.0% ± 5 digits
DC Voltage	400.0/600 V	1.5% ± 5 digits
AC Current	40.00/400.0A	2.0% ± 6 digits
Resistance	400.0/4000Ω	2.0% ± 5 digits

AC Converter: Average responding, RMS calibrated to sine wave

Overload Protection: AC and DC Voltage: 720VDC or AC rms for 10 seconds.

AC current: 480AAC for 10 seconds.

Resistance: 300VDC or AC rms for 10 seconds.

PERFORMANCE VERIFICATIONS

Perform the following analysis. If the meter conforms to the limits listed in Table 1 the meter is functioning correctly. If the meter does not conform to any of the listed limits the calibration procedure must be performed.

Performance Verification Preparation

1. Turn on the calibrator, allow calibrator to warm up. Temperature stabilization should be reached after 30 minutes.
2. Remove battery cover and using a calibrated meter to ensure the battery measures a minimum of 2.3V DC. If the battery measures under 2.3V DC, replace the battery before beginning the performance test.
3. Input the values listed in Table 1

Table 1 Performance Verification:

Function Setting	Input	Low Limit	High Limit
ACV 400	350.0V AC @ 50 or 60Hz	342.5	357.5
ACV 600	550V AC @ 50 or 60 Hz	534	566
DCV 400	350.0V DC	344.3	355.7
DCV 600	550V DC	537	563
ACA 40	35.00A AC @ 50 or 60Hz	34.24	35.76
ACA 400	350.0A AC @ 50 or 60Hz	342.4	357.6
Ω 400	350.0 ohms	342.5	357.5
Ω 4k	3500 ohms	3425	3575

CALIBRATION

Calibration Preparation

1. Turn on the calibrator, allow calibrator to warm up. Temperature stabilization should be reached after 30 minutes.
2. Disconnect the test leads and turn the range switch to "OFF".
3. Remove screws #8 and #10 holding the bottom case cover (refer Figure 2).
4. Remove the two batteries and connect outputs from DC power supply (DC 3V) to the battery snap.

Calibration Procedure

It is recommended that all IDEAL meters undergo the following calibration procedure on an annual basis.

DC Voltage Calibration

1. Set the function / range to VDC
2. Connect the calibrator to the V and COM inputs on the meter.
3. Output 200.0V DC.
4. Adjust VR3 until the display reads 200.1 $\pm$ 0.1

AC Voltage Calibration

1. Set the function / range to VAC
2. Connect the calibrator to the V and COM inputs on the meter.
3. Output 200.0V AC.
4. Adjust VR4 until the display reads 200.1 $\pm$ 0.1

Ohms Calibration

1. Set the function / range to OHM
2. Connect the calibrator to the V and COM inputs on the meter.
3. Output 3000 ohms.
4. Adjust VR2 until the display reads 3000 $\pm$ 1

AC Current Calibration

1. Set the function / range to 400A AC
2. Clamp the unit to 200A/50 or 60Hz AC Source.
3. Adjust VR1 until the display reads 200.1 $\pm$ 0.1

Calibration of the 61-734 is complete.

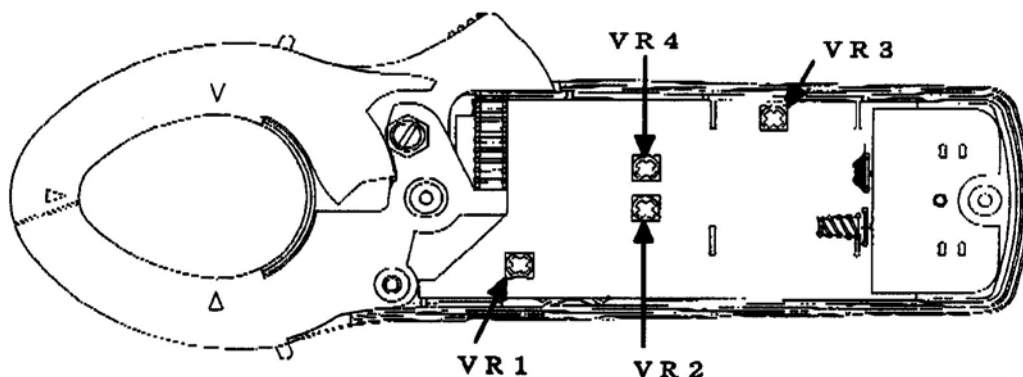


Figure 1 – Component location on the printed circuit board of 61-734

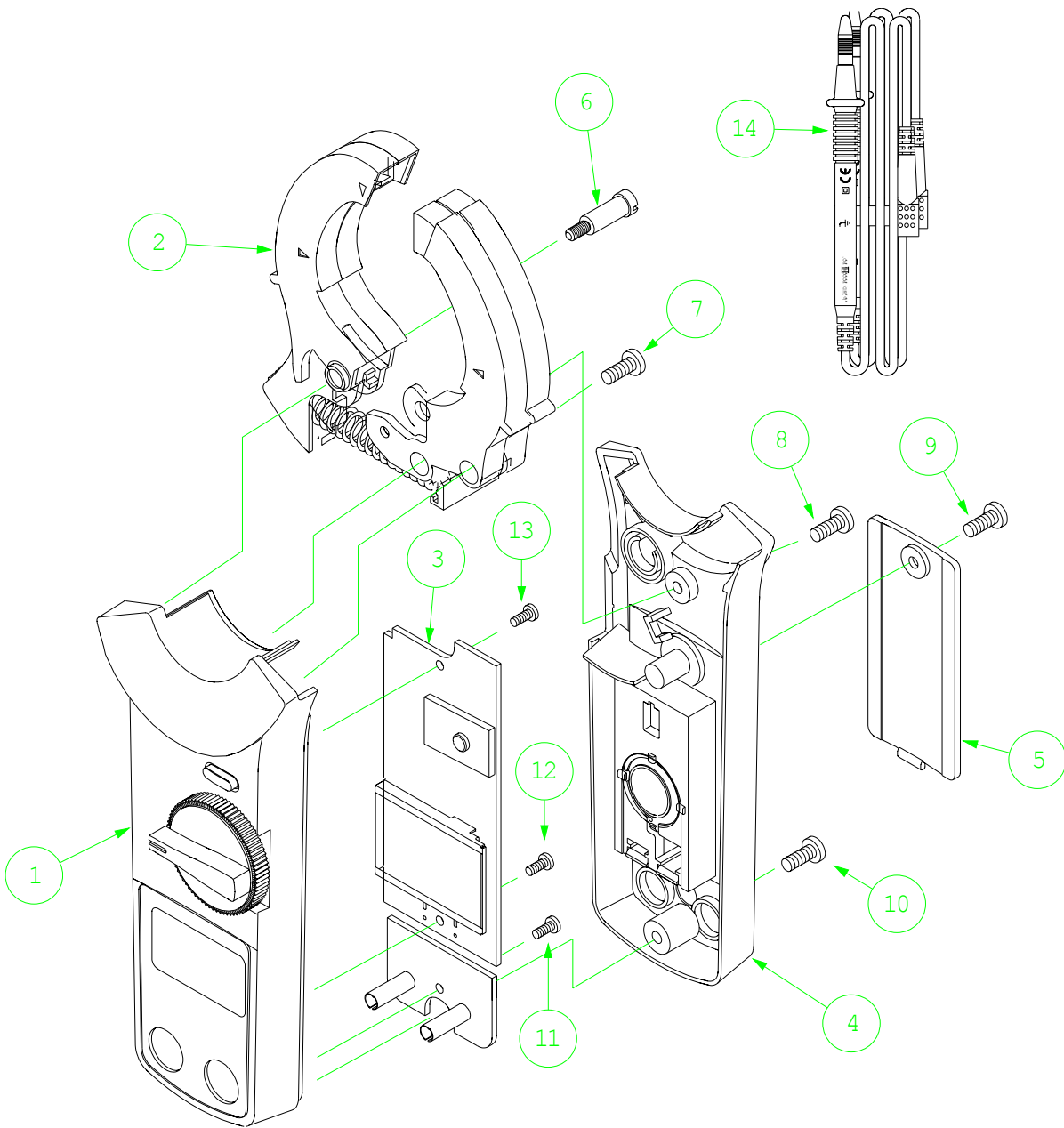


Figure 2

Battery Replacement (refer to Figure 2)

1. Disconnect the test leads from any circuit under test and turn off meter.
2. Remove screw #9, and remove the battery cover 5.
3. Remove batteries from compartment.
4. Install two new 1.5V batteries (R03).
5. Mount and screw the battery compartment cover.