YR1035+

Generic YR1035+ Lithium Battery Internal Resistance Tester User Manual

Model: YR1035+

1. Introduction

The Generic YR1035+ is a high-accuracy, fast lithium battery internal resistance test instrument designed for measuring the internal resistance and voltage of various battery types. It utilizes true 4-wire AC sinusoidal measurements to ensure precise results by minimizing the effects of test leads and contact resistance. This manual provides essential information for the safe and effective use of your YR1035+ tester.

2. Safety Information

- Always handle batteries with care.
- Do not attempt to measure batteries beyond the specified voltage range (up to 100V).
- Ensure proper connection of test probes to avoid short circuits or damage to the device.
- Keep the device dry and away from extreme temperatures.
- Do not disassemble the device; there are no user-serviceable parts inside.

3. Package Contents

Verify that all items are present in your package:

- 1 x YR1035+ Internal Resistance Tester
- 1 x Set of Test Probes

4. Device Overview

The YR1035+ features a compact design with a clear display and intuitive controls.


60mm/2.4in
120mm/4.7in
AUTOR
AUTOU
OL
Ω
-.00063V
POWER
HOLD
RANGE R
RANGE U
YR1035+
电池内阻测试仪
YAOREA
济南耀锐电子

Figure 4.1: Front view of the YR1035+ tester with approximate dimensions: 120mm (4.7in) length and 60mm (2.4in) width.

Figure 4.2: Top and bottom view of the YR1035+ tester, showing the MicroUSB charging port and the dedicated port for connecting the test probes.

4.1. Controls and Display

- **POWER Button:** Turns the device on or off.
- **HOLD Button:** Freezes the current measurement on the display. Also enables the ZR function for low resistance measurements.
- **RANGE R Button:** Manually adjusts the resistance measurement range.
- **RANGE U Button:** Manually adjusts the voltage measurement range.
- **LCD Display:** Shows internal resistance figures (2000 counts) and voltage figures (99999 counts), updated 4 times per second.

5. Setup

5.1. Charging the Device

The YR1035+ has a built-in 2500mAh lithium battery. To charge, connect a standard phone charger (MicroUSB) to the MicroUSB port on the device (refer to Figure 4.2).

5.2. Connecting Test Probes

Connect the provided test probes to the dedicated port on the bottom of the YR1035+ tester. Ensure a secure connection.

Figure 5.1: The set of test probes included with the YR1035+ tester, designed for 4-wire measurements.

6. Operating Instructions

6.1. Powering On/Off

Press the **POWER** button to turn the device on. Press and hold the**POWER** button to turn it off.

6.2. Performing Measurements

The YR1035+ is a true four-wire internal resistance tester, capable of testing internal resistance and voltage simultaneously. The measurement results are displayed on the same screen.

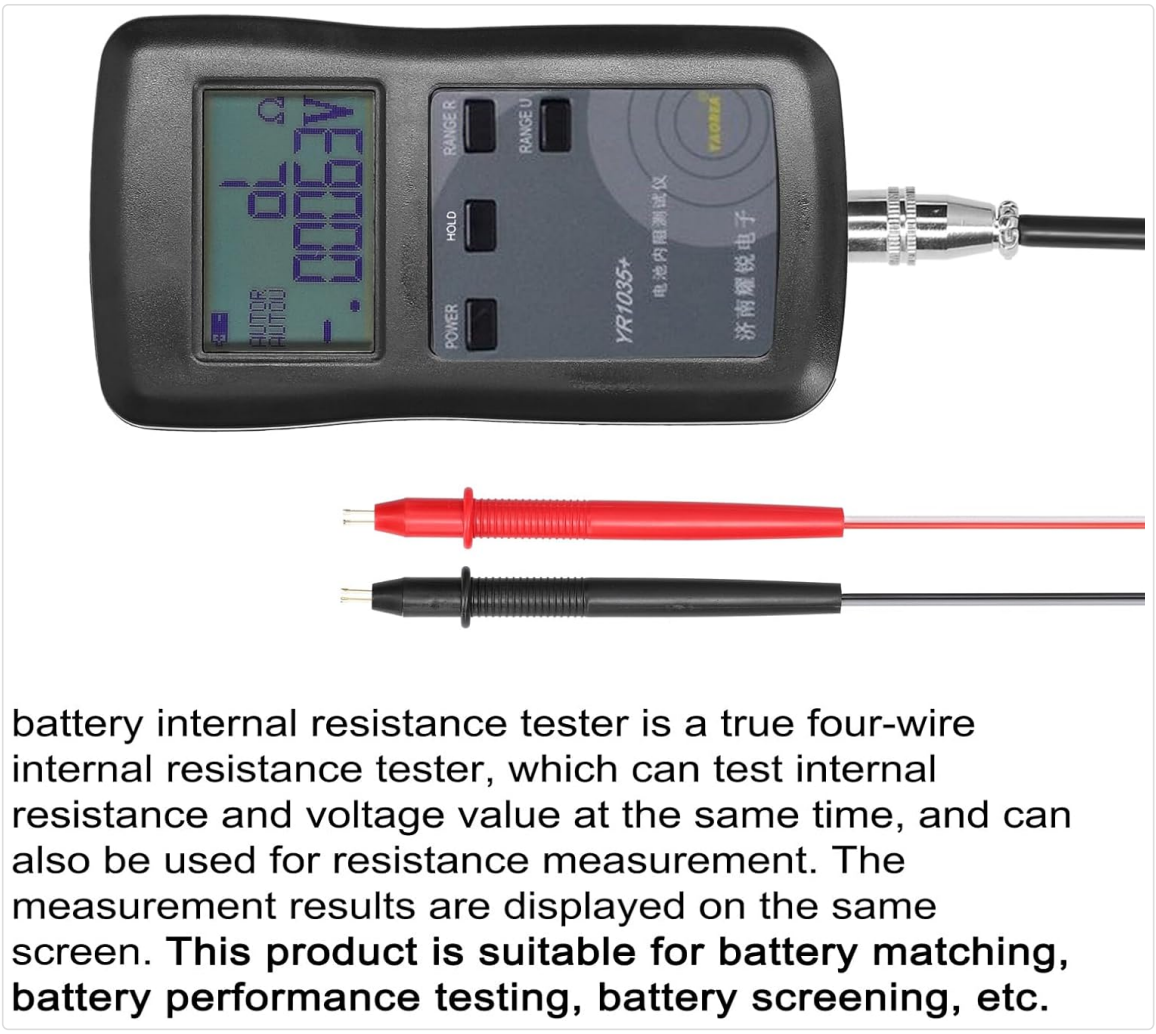

Figure 6.1: The YR1035+ tester in operation, displaying both internal resistance and voltage values. This product is suitable for battery matching, battery performance testing, and battery screening.

6.2.1. 4-Wire AC Sinusoidal Measurement

The device uses true 4-wire AC sinusoidal measurements, which effectively minimize the effects of test leads and contact resistance, providing more accurate readings.

Figure 6.2: The YR1035+ tester connected to a battery using its 4-wire probes, demonstrating the measurement setup.

6.2.2. ZR Function

Press the **HOLD** button to enable the ZR function. This function allows for the measurement of extremely low internal resistance, down to 0.30-0.50 milliohms.

6.3. Applicable Battery Types

The YR1035+ can measure a wide range of battery types, including:

- Lead-acid batteries
- Lithium-ion batteries
- Lithium polymer batteries
- Lithium iron phosphate batteries
- Alkaline batteries
- Dry cell batteries
- Nickel-hydrogen batteries
- Nickel-cadmium batteries
- Button cell batteries

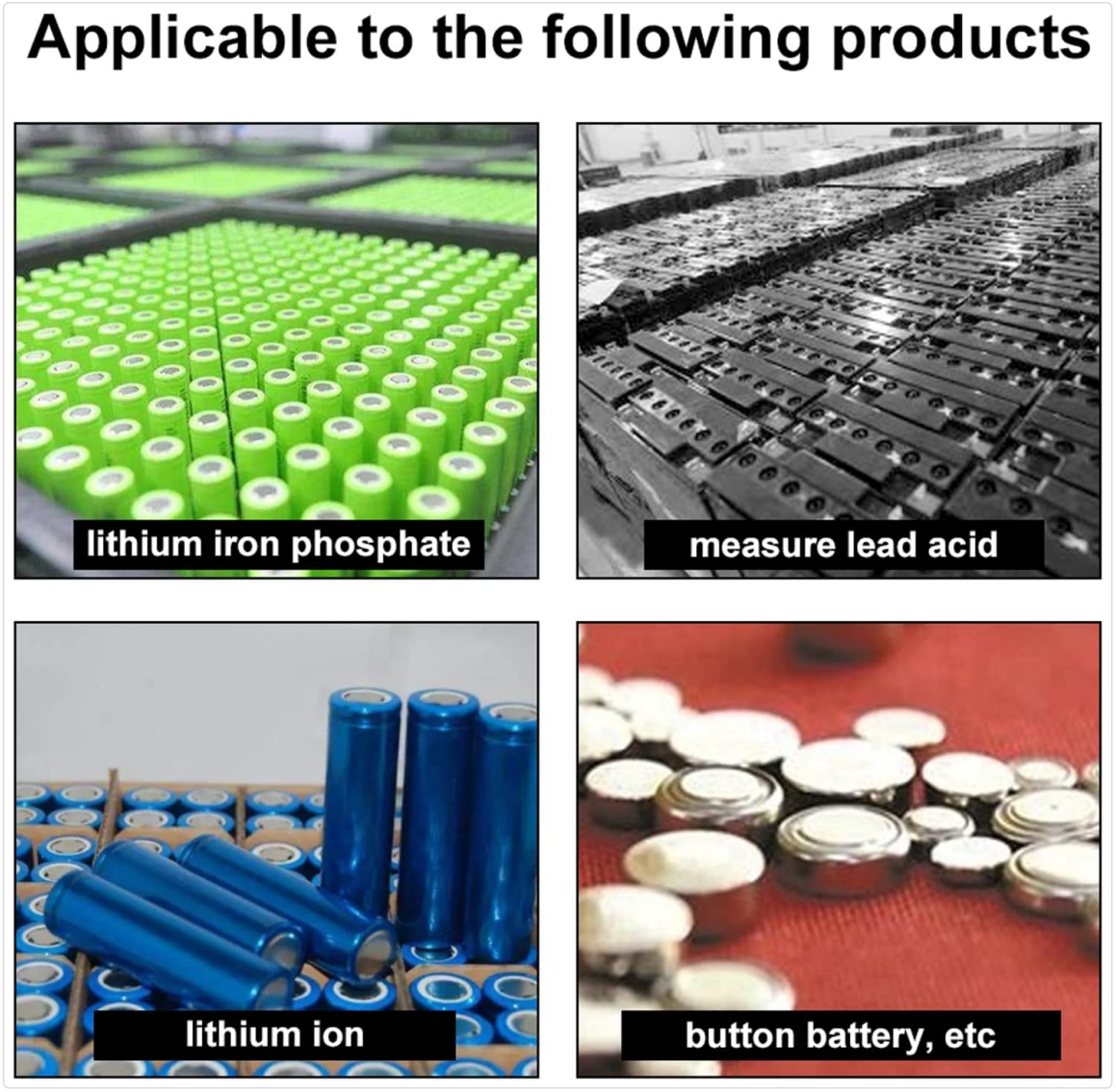

Figure 6.3: Visual examples of battery types compatible with the YR1035+ tester, including lithium iron phosphate, lead acid, lithium ion, and button batteries.

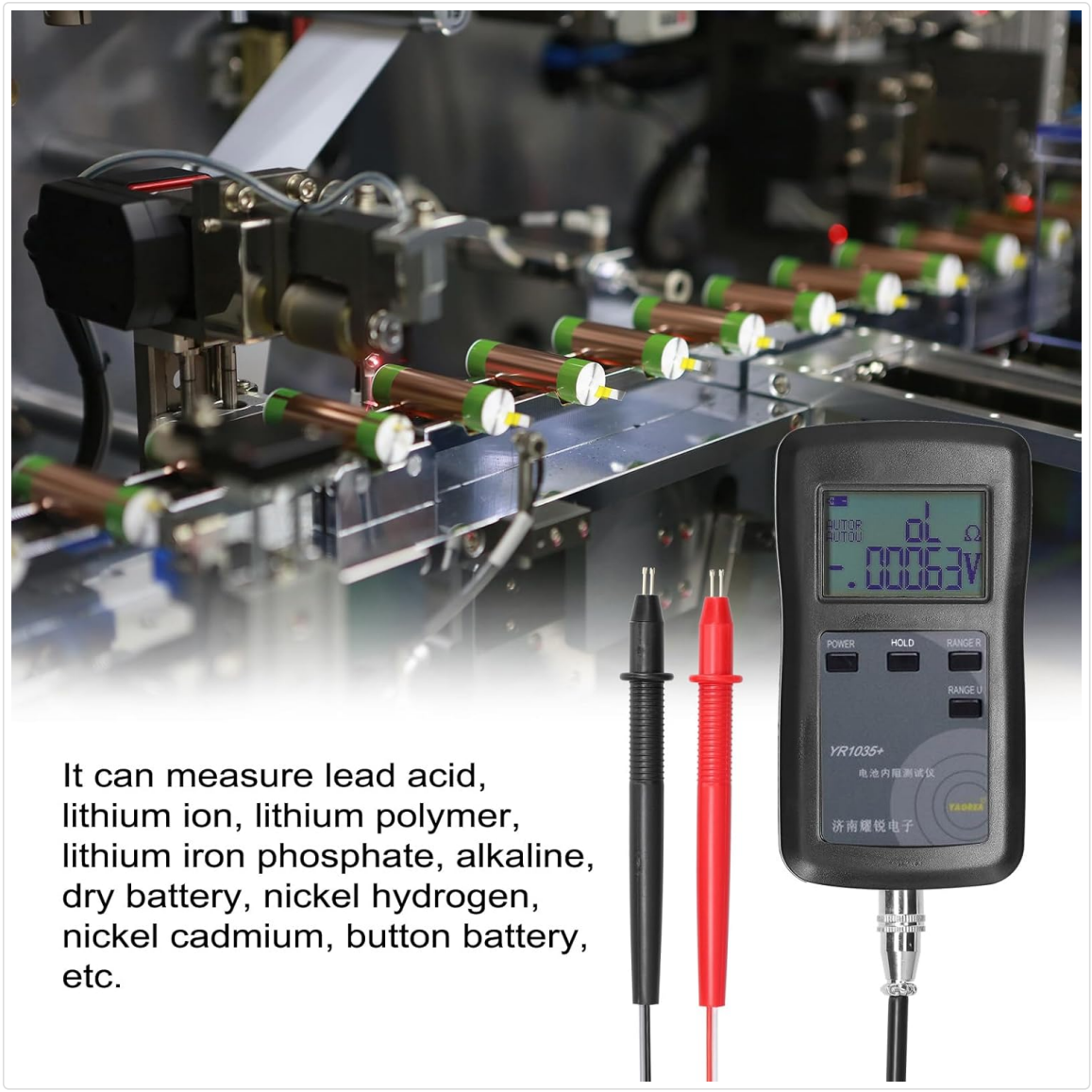

Figure 6.4: The YR1035+ tester being used to measure different battery types, illustrating its versatility.

7. Maintenance

7.1. Cleaning

Wipe the device with a soft, dry cloth. Do not use abrasive cleaners or solvents.

7.2. Battery Care

The built-in lithium battery should be charged regularly, especially if the device is not used for extended periods, to maintain battery health.

7.3. Storage

Store the YR1035+ in a cool, dry place, away from direct sunlight and extreme temperatures. The recommended storage temperature is -20°C to 60°C (-4°F to 140°F).

8. Troubleshooting

8.1. Calibration and Factory Reset

The calibration and factory reset functions are disabled to prevent incorrect adjustments by users. If you suspect a calibration issue, please contact customer support.

8.2. Inaccurate Readings

- Ensure test probes are clean and making good contact with the battery terminals.
- Verify the battery is within the specified voltage and resistance ranges for the device.
- Check if the ambient temperature is within the normal operating range (10℃-40℃).

9. Specifications

Parameter	Specification
Material	ABS
Color	Black
Internal Battery	1 x Lithium battery, 2500mAh (included)
Accuracy Format	±([accuracy percentage]+[least significant digit])
Resistance Measurement	
Ranges	20mΩ/200mΩ/2Ω/20Ω/200Ω
Maximum Resolution	0.01mΩ/0.1mΩ/1mΩ/10mΩ/0.1Ω
Accuracy	0.7%+7 / 0.5%+5 / 0.5%+5 / 0.5%+5 / 0.6%+5
Display Mode	22.00mΩ (ZR function enabled) / 220.0mΩ / 2.200Ω / 22.00Ω / 220.0Ω
Voltage Measurement	
Ranges	1V/10V/100V
Maximum Resolution	0.00001V/0.0001V/0.001V
Accuracy	0.15%+0.015 / 0.15%+0.010 / 0.15%+0.015
Display Mode	0.99999V / 9.9999V / 99.999V
Positive/Negative Symmetry Error	±(0.012%+5 words)

Maximum Voltage between any terminals	100V
Display	
Internal Resistance Figures	2000 counts
Voltage Figures	99999 counts
Update Rate	4 times per second
Environmental	
Working Temperature	10℃-40℃ (50℉-104℉)
Storage Temperature	-20℃-60℃ (-4℉-140℉)
Internal Resistance Temperature Coefficient	0.1 * (prescribed accuracy)/℃ (<18℃ or >28℃)
Power Consumption	
<60mA	(200mΩ and above range, 3.7V power, backlight off)
<120mA	(20mΩ range, 3.7V power, backlight off)
<10mA	(Low power consumption mode)
0mA	(Shutdown)
Physical Characteristics	
Package Size	120 x 60 x 40mm (4.7 x 2.4 x 1.6in)
Package Weight	320g (11.3oz)

10. Warranty and Support

Warranty information for this product is not explicitly provided in the available documentation. For support, technical assistance, or warranty inquiries, please contact the retailer or manufacturer directly through their official channels.