得亚电力
专业电力测试设备生产商

DY3122A

指针式绝缘电阻测试仪

产品使用说明书
Product instructions

缔造完美品质　　服务更上一层

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目 录

1. 特性

1-1 本仪表适用于高压电力设备,电缆,变压器,电力电容和高压开关等电气测试设备的绝缘测试.

1-2 本仪表采用电池供电,具有体积小,重量轻,便于携带等优点,仪表内部自动量程转换电路的运用大大提高了仪表的测量上限值.

1-3 硬质的包装机壳作为必要的配件,仪表各探头的外壳都是塑料的紧密结构,具有很好的密封性和防水性.

1-4 采取低功耗设计,最大消耗电流为 80mA,8 节 1.5V 五号电池在最大负载时能够连续工作 7 小时,或者最小负载时,工作 12 小时

1-5 带有充电电池的新型表具有交、直流两用功能,短路电流在 1mA 以上,配备高容量锂电池。专业制作的锂电充电器，具有过压、过流充电自动保护功能。充满电后充电器由红灯转换成绿灯。无需守候。充电速度快，提高工作效率。

1、Features

- Battery powered,the instrument test insulation test
Insulation up to 100000MΩ at 2500V for Model 2550
100GΩ at 2500V and 200GΩ at 5000V for Model 2520,
200GΩ at 5000V and 400GΩ at 10000V for Model 2503,
- Suited for heavy duty electrical maintenance and servicing of industrial installations,cables , transformers, generators and switchgear where high voltage insulation tests are required.
- Dual scales for low and high ranges which changes change automatically.Colour coded scales for easy reading plus LED`s that illuminate in matching colour.
- Hard carrying case furnished as standard accessory. Houses both instrument and test leads in compact from. Made of plastic, it is highly water resistant.
- Desianed for low power consumption. Since the maximum current consumption is 90mA eight pieces of 1.5V SUM-3(or equivqlent) permit adout 6 hours of continuo us operation even when the instrument in used on maximum load or twice longer minimun load.
- Rated output voltage is maintained down to 100MΩ for Model 2550 ,0.1GΩ/0.2GΩ for Model 2520 and 0.2GΩ/0.4GΩ for Model 2503. This permits accurate measurements of low insulation resistance.

2.技术指标

DC 测试电压	500V	1000V	2500V	5000V	10000V
各系列表电压对应测量范围	0-0.5GΩ/ 0.2-20 GΩ 自动转换	0-1 GΩ/ 0.4-40 GΩ 自动转换	0-2 GΩ/ 1-100 GΩ 自动转换	0-5 GΩ/ 2-200 GΩ 自动转换	0-10 GΩ/ 4-400 GΩ 自动转换
精度	温度 23℃±5℃ 湿度≦70%时 40MΩ-20GΩ 读数的±5% 其他范围时 读数的±10%	温度 23℃±5℃ 湿度≦70%时 40MΩ-20GΩ 读数的±5% 其他范围时 读数的±10%	温度 23℃±5℃ 湿度≦70%时 100MΩ-50G 读数的±5% 其他范围时 读数的±10%	温度 23℃±5℃ 湿度≦70%时 400MΩ-100G 读数的±5% 其他范围时 读数的±10%	温度 23℃±5℃ 湿度≦70%时 400MΩ-200G 读数的±5% 其他范围时 读数的±10%
输出电压	温度 23℃±5℃,湿度≦70%时输出电压小于标称电压的±10%				
工作温度与湿度	-10℃-40℃ ≦85%				
保存温度与湿度	-20℃-60℃ ≦95				
绝缘阻抗	电路与机壳间大于 1 GΩ				
耐压	电路与机壳间电压 5000VAC,承受 1 分钟				
尺寸	200(长)*140(宽)*80(高)mm				
重量	2kg 左右				
电源	8 节 1.5V(5 号)碱性环保电池				
附件：工程塑胶磨具盒（或铝合金包装箱）碱性环保电池,测试导线,产品说明书,合格证 充电型表附 8 节可充电池,专业充电器一个					

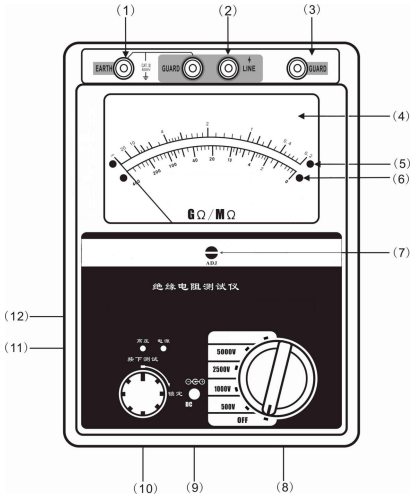
2.Specifications

MODEL		（2500V 型）	（5000V 型）		（10000V 型）	
DC Test voltage		500V,1000V,2500V	2500V	5000V	5000V	10000V
Measuring Ranges		0-2000MΩ/ 1000-100000 MΩ (automatic change)	0-2GΩ/1-100 GΩ (automatic change)	0-5GΩ/2-200 GΩ (automatic change)	0-5GΩ/2-200 GΩ (automatic change)	0-10GΩ/4-400 GΩ (automatic change)
Accuracy	Insulation Resistance	±5% of reading (100-50000MΩ) ±10% of reading or 0.5% of scale length (ranges other than listed above) At 23℃±5℃	±5% of reading (0.1-50GΩ) ±10% of reading or 0.5% of scale length (ranges other than listed above)	±5% of reading (0.2-100GΩ) ±10% of reading or 0.5% of scale length (ranges other than listed above)	±5% of reading (0.2-100GΩ) ±10% of reading or 0.5% of scale length (ranges other than listed	±5% of reading (0.4-200GΩ) ±10% of reading or 0.5% of scale length (ranges other than listed

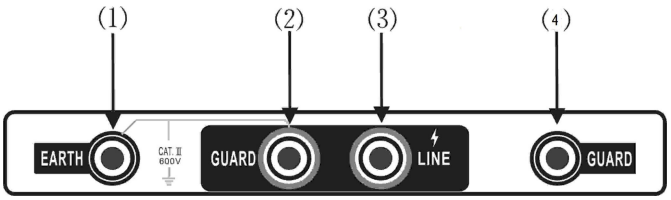
		±10% of reading (100-50000MΩ) ±20% of reading or 1.0% of scale length (ranges other than listed above) At -10℃-+40℃	At 23℃±5℃ ±10% of reading (0.1-50GΩ) ±20% of reading or 1.0% of scale length (ranges other than listed above) At -10℃-+40℃	At 23℃±5℃ ±10% of reading (0.2-100GΩ) ±20% of reading or 1.0% of scale length (ranges other than listed above) At -10℃-+40℃	above) At 23℃± 5℃ ±10% of reading (0.2-100GΩ) ±20% of reading or 1.0% of scale length (ranges other than listed above) At -10 ℃ -+40℃	above) At 23℃± 5℃ ±10% of reading (0.4-200GΩ) ±20% of reading or 1.0% of scale length (ranges other than listed above) At -10 ℃ -+40℃
	Output Volltage	2500V± 5%(100-50000MΩ)	2500V± 5%(0.1-50GΩ)	5000V± 5%(0.2-100GΩ)	5000V± 5%(0.2-100GΩ)	10000V± 5%(0.4-200GΩ)

Operating Temperature & Humidity	-10℃-+40℃ at 85% max.Reletive humidity
Storage Temperature & Humidity	-20℃-+60℃ at 90% max.Reletive humidity
Insulation Resistance	100M max./1000V between electrical circuit & housing case
Withstand Voltage	500V AC for one minute between electrical circuit & housing case
Dimensions	200(L)x140(W)x80(D)mm
Weight	Aprox.Lkg (including batteries & line probe)
Pover Sourse	8pc s of 1.5V SUM-3 battery or equivalent
Accessories	Hard Carrying Case,Batteries, Test Leads (earth & guard leads)

3.仪表结构图



①低压接线端（黑色线）②接高压测试探帮，（可换钩子、夹子方式）（红色） ③接屏蔽保护端（绿色线） ④刻度区⑤⑥绿色灯指示上刻度盘GΩ，红色灯指示下刻度盘MΩ⑦使用前指针对准∞⑧选择测试电压⑨充电型充电型充电插孔⑩输出测试开关，按下往右锁定。⑪⑫电池欠压输出指示**（不是充电型有 BA**AT. CHECK 档位是检查电池欠压，表盘有刻度线指示，超过刻度线表示电池足够，否则要换电池）



注意 E（1）中插入黑色硅胶线，接被试品低压端，（2）中插入高压测试棒带屏蔽的绿色插头，高压孔 LINE（3）中插入高压测试棒线的红色插头。此处是仪表输出高压口。GUARD（4）中插入单根绿色线，接被试品屏蔽端。一般测试不接 GUARD（4）绿线，仅有 E（1）中黑色线和（2）（3）高压测试棒接试品测试，如需要接屏蔽测试消除干扰时才接 GUARD（4）绿线。

3、Instrument Layout

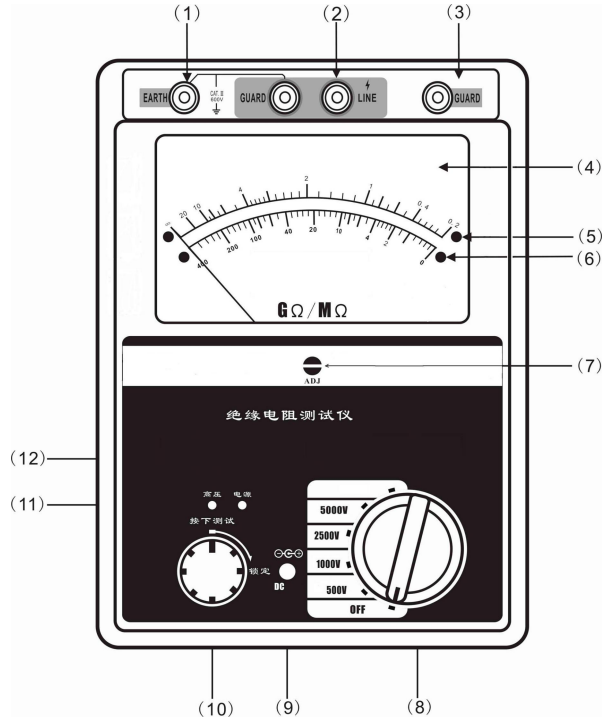


Fig.1

1、Line Probe　　2、Guard Terminal
3、Earth Terminal　　4、LED,s for High & LowRangeIndication
5、Press to Test Button　　6、Funtion Switch
7、Battery Compartment Cover

4. 使用说明

特别注意:当测试旋纽按下工作时蜂鸣器发声,提示有高压出现在仪表的接线端和地端(LINE 端和 EARTH 端),在测试时,确保电路接地,通常仪表的接地保护端(GUARD 端)接大地.

4-1 机械调零

功能开关⑥置于 OFF 位,调表针指示在”∞”刻度上.用起子转动调零螺丝(安装在前面板的中央).

4、Operating Instructons

AUTON:

BE CAREFUL ABOUT HIGH VOLCTAGE　PRE_SENT ACROSS LINE AND EARTH TERMINALS OF INSTRUMENT WHEN PRESS TO TEST BUTTON IS OPERATED. MADE SURE TO EARTH THE CIRCUIT UNDER TEST.ALWAYS CONNECT EARTH TERMINAL OF INSTRU-MENT TO EARTH.THE BUZZER WILL KEEP SOUNDING DURING INSULATION RESISTANCE MEASUREMENT.

4-1.Mechanical Zero adjustment

With the function switch set at off position,

Adjust the meter pointer to mark on the scale.Use screwdriver to turn the zero adjust screw located at the center of the front panel.

4-2 电池检查

功能开关⑥置于 BATT.CHECK 位,按下测试按纽⑤,当指针指示在 BATT.GOOD 区起始端向右,则电池电量足够使仪表正常工作,否则需更换电池或需充电,500V,1000V,2500V 三档电压将功能开关⑥置于 OFF 位,按下测试按纽⑤并锁住,再按 BAAT.CHECK 键,即可电池检查.

注意:应避免此项长时间检测,因为此时将比绝缘测试时消耗更大的电流.

4-2.Battery cheek

With the function switsh set at BATT.CHECK position,

Operate the press to test button.The batteries are good when the pointer stays in BATT.GOOD area or to the right of this area .If not, replace them.

Note: Rorfain from holding down or locking the press to test button during this test as it will result in Current consumption larger than insulation resistance measurement while the batters are still new.

4-3 绝缘阻抗测量

通常仪表的功能开关⑥置于 OFF 位,在进行测量时将它置于 MΩ 或 GΩ 位,从仪表的地端③和②分别引出两根测试线到被测物的地端和大地,再将仪表的探头①接被测物测试点并按测试纽⑤(顺时针方向旋转后可自锁)既可开始测量.

注意:应确保测试电路中不含有易被高压所损害的元件.

4-3.Insulation resistance

Measutrment With the function switch set at OFF position,always connect thecircuit under test to earth.Attach the test lead to earth terminal of the instrument and connect to the earthed side of the cireuit under test. With the function switch set at MΩ position for Model 2550 or GΩ position for Model 2501 or GΩ position for Model 2503,place the line probe in contact with the circuit under test and operate the pess to test button.When the green LED illuminates, red insulation resisance on the outer scale(for high range).Use the inner scale where the red LED illuminates,For insulation testing at 2500V or 5000V and 10000V, read the black and red scales respectively(for Model 2550 and 2503).After a test,release the press to test button and wait for several seconds without disconnecting the line probe from the circuit tested.the is intended to discharge the charge stored in the circuit tested.

4-4 绝缘阻值读取

本仪表为了拓宽量程,内部采用了量程自动转换电路,因此表盘为双色刻度显示,上档为绿色区,下档为橙色区,当仪表测量绝缘阻抗时,表盘上如红色发光二极管亮,则绝缘阻值按橙色区内的刻度值读取,如绿色发光二极管亮则绝缘阻值按绿色区内的刻度值读取.

根据电压等级,仪表分为以下几种型号:

型(2500V)　　单档
型(5000V)　　单档
型(2500V,5000V)　　双档
型(5000V,10000V)　　双档
型(500V,1000V,2500V)　　三档

单档(2500V,5000V)直接读取.

双档电压型，低电压档按黑色字体读取.
高电压档按红色字体读取.

三档电压型 500V 档按兰色字体读取.
1000V 档按黑色字体读取.
2500V 档按红色字体读取.

注意:该仪表为水平放置,倾斜将产生读数误差.

4-4.Continuous Measurement

Make sure that the circuit under test is earthed and that the test lead attached to the earth terminal of the instrument is connected to the earthed side of the ciruit under test.Push the press to test button and turn clockwise to lock for continuous measurement. When making this measurement, good care must be taken against high voltage continuously present across the line and earth terminals of the instrument.

Note: Make certain that the circuit under test does not include components which will be damaged by the high voltage applieb.

4-5.Use of Guard Terminal

Illustrated in Fig.2 is an example of the insulation resistance measurement of an electric wire.If the line probe is simply connected to the wire conductor and the earth lead to the immersion liquid conductor and the earth lead to the immersion liquid container as shown, a measurement error will be introduced as this results in the measurement and the surface leakage resistance at the cut end of the electric wire .In crder to remove this surface leakage current ,wind a guard wire around the cut end of the conductor and connect it to the guard teminal of the instrument using the guard lead. Then, the indicating meter of the insulation resistance tester.

5.电池更换

松开机壳后面板螺丝,打开电池盒盖,换下全部电池.当仪表用于零下温度时,建议使用碱性电池,一般电池可能在零下温度失效.

5、Battery Replacement

Remove the battery compartment cover by loosening the screw located on the back of the hosing

case.Replace the whole battery pack.Alkaine batteries are recommended where the instrument is used at a temperature below the freezing point.The ordinary manganese batteries will deteriorate below the freezing point.

6.电池充电型

带有充电电池的新型表具有交,直流两用功能,配备高容量锂电池。专业制作的锂电池充电器，具有过压、过流充电自动保护功能。充满电后充电器由红灯转换成绿灯。无需守候。充电速度快，提高工作效率。

由 220V 市电引入，插头插在仪器面板空上，只需 2 小时左右即可使用。

- 变压器测试系列
- 断路器/开关测试系列
- 避雷器、绝缘子测试系列
- 电缆故障/线路测试系列
- 承装修试1-5级系列
- 接地及绝缘测试系列
- 二次回路测试系列
- Sf6气体、油化测试系列
- 串联谐振、高压试验系列
- 甲级、乙级防雷检测系列

主要合作单位

国家电网 STATE GRID　中国南方电网 CHINA SOUTHERN POWER GRID　中国国电 CHINA GUODIAN　国家电投 SPIC

中国大唐集团公司 China Datang Corporation　華潤　中国石油　中国华电 CHD

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