

NA431		Battery button transistor tester, LCR-T4 graphical resistor, capacitor ESR, Transistor, Tester
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1. Using ATmega8, ATmega168, or ATmega328 microcontrollers.
2. 2x16 character LCD display results.
3. One click operation, automatically turning off the power.
4. The shutdown current is only 20 nA and supports battery operation.
5. The low-cost version does not require a crystal oscillator and supports automatic power off. The ATmega168 or ATmega328 version of the 1.05k software uses sleep mode to reduce power consumption when not measured.
6. Automatic detection of PNP and NPN bipolar transistors, N, P channel MOSFETs, JFETs, diodes, dual diodes, thyristor thyristors.
7. Automatically detect pin layout.
8. Measure the current amplification coefficient and threshold voltage of the emission junction of a bipolar transistor.
9. Darlington transistors can be identified by high threshold voltage and high current amplification coefficient.
10. Detection of protective diodes for bipolar transistors and MOSFETs.
11. Measure the threshold voltage and gate capacitance value of MOSFETs.
12. Supports the measurement and symbol display of two resistors, with up to four digits and units displayed. The displayed resistance symbol shows the connected tester probe numbers (1-3) at both ends. So the potentiometer can also measure. If the potentiometer is adjusted to one end, the tester cannot distinguish between the pins in the middle and at both ends.
13. The resolution of resistance measurement is 0.1 ohms, with a maximum measurement value of 50M ohms.
14. A capacitor can be detected and measured. Display the highest four digits and units. The value can range from 25pf (8 MHz clock, 50pF @ 1 MHz clock) to 100mF. The resolution can reach 1 pF (@ 8 MHz clock).

15. It is possible to measure the equivalent series resistance (ESR) capacitance value of capacitors with values above 2UF. The resolution is 0.01 ohms and displays two digit values. This feature requires at least 16K flash memory ATmega (ATmega168 or ATmega328).

16. It is possible to display symbols in the correct direction for two diodes. In addition, the positive voltage drop is displayed.

17. LED detection is a diode, and the forward voltage drop is much higher than normal. Double light-emitting diodes are detected as double diodes.

18. Zener diodes can be detected if the reverse breakdown voltage is below 4.5 V. This will be displayed as two diodes, which can only be determined by voltage. The symbols around the diode of the probe are the same, in this case, you can identify the true anode of the diode by the threshold voltage near 700 mV!

19. **** This one understands every year and won't be flipped****

If there are more than 3 diode type parts detected, establish the number of diodes and display another failed message. This will only occur if the diode is connected to all three probes and at least one is a type diode. In this case, you should only connect two probes and initiate the measurement again, one after the other.

20. Measure the capacitance value of a single diode in the opposite direction. Bipolar transistors can also be measured if you connect the base to the collector or emitter.

21. Only one measurement is needed to find the connection of the entire bridge.

22. Capacitors with values below 25pf are usually undetectable, but can be connected in parallel with a diode or at least 25pf capacitor. In this case, you must subtract the part of the parallel capacitance value.

23. Resistance below 2100 ohms will measure inductance, if your ATMEGA has at least 16K flash memory. The range will exceed 20H from 0:01mH, but the accuracy is not good. The measurement results only show a single component connection.

24. The testing time is about two seconds, and only capacitance and inductance measurements will take a longer time.

25. The software can set the number of measurements before the power is automatically turned off.

26. The built-in self check function and optional 50Hz signal check clock frequency accuracy and waiting for calls (ATmega168 and ATmega328).

27. Measurement of internal resistance and zero offset self check capability of optional device calibration port output (ATmega168 and ATmega328). A 100nF to 20uF capacitor needs to be connected between pins 1 and 3 to compensate for the offset voltage of the analog comparator. This can reduce the measurement error of capacitors above 40uF. Using the same capacitor to internally correct the voltage reference voltage was found to adjust the gain of the internal reference measurement ADC.

If the test current exceeds the maintenance current, the thyristor and bidirectional thyristor can be detected. But some semiconductor thyristors and bidirectional thyristors are better than what this tester can provide.