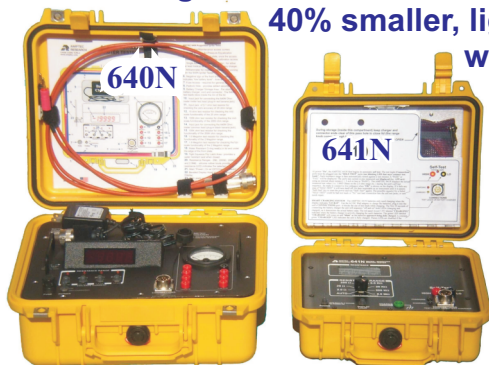


AMPTEC 641 series - Multipurpose Compact Igniter Tester Ruggedized Explosive Safety Squib Meter



AMPTEC 641 series ruggedized smart ICTs Water Resistant Explosive Safety Test Sets

Introducing AMPTEC 641 Series of ICTs, their
40% smaller, lighter, smarter,
with even more
capability and
even safer . . .



AMPTEC's new 641 series of ICTs (Igniter Circuit Testers) is 40% lighter weight (vs. 630ES, 630BN, 640N), even more compact, and smarter (Automatic Self-Test of the unit & test leads. The 641N comes US NAVY Ordnance Safety Board Approved. With a low power consumption LCD display, the AMPTEC 641's battery power outlasts the 630ES and 640N style ICT 4 fold.

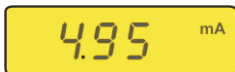
Running with the new smart rechargeable "AA" (NiMH) power system, keeps you informed and charges about 3 times faster. Features: "Autorange", Self-Test, automatic test lead integrity checks, a digital milliammeter to check the milliamper level (see below) of the failsafe current source, test lead storage compartment and more . . .

Automatic "Self-Test" Operational Safety Check



In the "Self-Test" mode the unit first automatically checks Test Lead continuity. If the Test Leads, plugged into the "SELF-TEST" jacks establish continuity with the "connection" port then the unit displays "PASS" and goes on to the next test. If it "FAILs" for any reason, (i.e. no continuity), the system performs a quick retest then powers off or shuts down automatically. Until good test leads are used or the particular failure mode is repaired, it is impossible to operate the AMPTEC 641 series of compact Igniter Testers.

Digital Milliammeter verifies Test Current Level



Self Test determines - it must be less than 5 mA

Still in the initial "Self-Test" mode, the unit next automatically tests/checks (the resistance circuit's) failsafe current source level (to be less than 5 mA). The AMPTEC 641 Series Igniter tester comes with a digital DC milliammeter built in. This lets the 641 Series operator truly verify that the test current is at "SAFE" levels (must be less than 5 mA to PASS), just prior to measuring squib resistance. The unit's automatic "SELF-TEST" is a mere 15 second routine to get it fully "Operational". In contrast, the older style igniter testers including the AMPTEC 630BN, 630ES, and 640N units take up to an hour to manually perform the equivalent Self-Tests and total verification of every range.

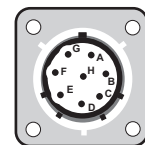
Reference Resistor Bank (8 levels) Built-in

Still in "Self-Test mode (only takes 15 seconds) - Each range of the AMPTEC 641 (either the 641N or 641RS) starting with the 2.0 ohm range is automatically tested against its precision internal cardinal point reference resistor (1.0 ohm resistor on the 2.0 ohm range). The unit's 20 ohm range is tested automatically against a precision 10 ohm reference resistor. A "PASS" or "FAIL" determination is made for each range. The AMPTEC 641N goes in continuous decades to 2.0 Megohms range (tops), while the AMPTEC 641RS version additionally offers a high level 20.0 Megohm range for even higher "isolation" measurement requirements. After passing the "Self-Test" for each range the meter displays "OK" then is fully operational.



US NAVY TOMAHAWK CRUISE MISSILE AND VARIANTS ORDNANCE SAFETY BOARD APPROVED

The AMPTEC 641N Igniter Tester is NAVY ORDNANCE SAFETY BOARD approved for use on US NAVY TOMAHAWK Cruise Missile and variant Missile squibs.



J1 Main Connection Jack
 A= I High
 B= V High
 C= V Low
 D= I Low
 E= Not Used
 F= Ground (-)
 G=Chassis Ground
 H= +6 V

Impossible to Connect Charger when Measuring

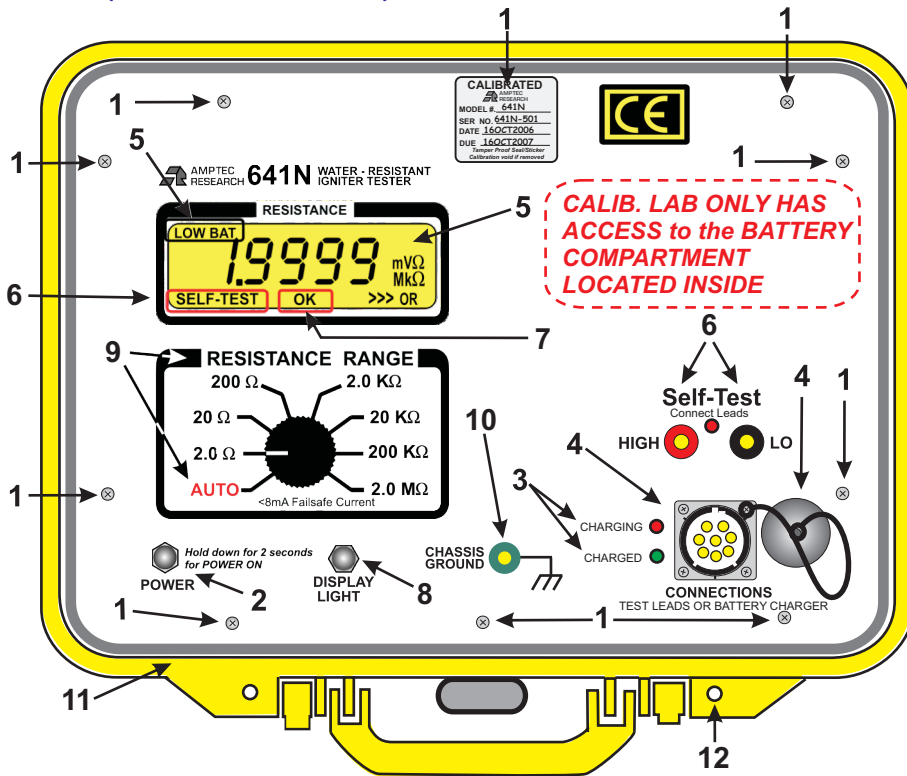
The notched limited access (one use at a time) external connection port makes it physically impossible to simultaneously connect the AC/DC Charger while measuring with the test leads. Whether charging the Ni-MH batteries or measuring a squib's resistance there is only one connection port, it's a case of "either/or" but never both.

The unit's smart charging system also informs the operator of its charging status, both while it is charging and when its fully charged. Its low power consumption design (i.e. LCD display, non ovenized zener reference etc) also means it operates much longer between charges - on about 1/4 of the power of older igniter testers with LED displays. Quick Charge Note: It also charges about 3 to 4 times faster than the AMPTEC 630BN or AMPTEC 640N. That means you could charge it up for 1 to 2 hours and get 4 to 6 hours of operation.

In addition the chassis ground jack is wired to an internal shielded Faraday cage for protection against EMP, Electrostatic Discharge (ESD), and noise immunity.

AMPTec 641N Compact ICT with "Auto-Test_{tm}" 40% lighter & smaller than 630BN and 640N

Test Leads, and slimline charger store in their own separate latched compartment in the unit's lid.



641N Resistance Range/Resolution

2.0 Ω	20 Ω	200 Ω	2.0 KΩ	20K Ω	200KΩ	2.0MΩ
100 μΩ	1.0 mΩ	10 mΩ	100 Ω	1.0 Ω	10 Ω	100 Ω
5mA	5mA	0.5mA	50μA	5μA	0.5μA	50nA
8mA	8mA	1.5mA	150μA	15μA	1.5μA	15nA

Nominal Test Current/Fail-Safe Current



Order Information

641N Intelligent Compact Igniter Tester includes 1 set of leads, compatible with all 630 series leads & probes
 Option "630-300" 48" 4 Wire Kelvin Clip Leads
 Option "630-304" 4 W Kelvin Banana Jack Leads . . .
 Option "630-305" Twin Single Banana Jack Leads . .

641N Front Panel Features and Operation

- Perimeter Calibration Access Screws** - User must break tamper resistant calib. sticker to access it's electronics and battery compartment that's O-Ring sealed.
- Power Switch** - sealed with silicone rubber boot switch cover is watertight (IP57).
- Rapid Smart Charging System Status Indicator** - informs user of battery charge status. The 641N charges about 3 to 4 times faster than the AMPTec 630BN or 640N.
- Can't "Measure When Charging" Test Lead Connection Port** - Single use at a time "Either OR" but never both (charge and measure an igniter) at the same time.
- 4 ½ digit LCD Display** with "SELF-TEST", "PASS or FAIL", low battery indication and resistance level ennuicators (i.e. KΩ, MΩ and overrange).
- Extremely easy to perform "Self-Test" takes approx. 20 seconds (when first turned on) to automatically check-out 641N's operation and its test lead integrity when plugged into the Self-Test port. An **internal milliammeter** measures and displays the actual level of the unit's failsafe current source (i.e. 4.97 mA). As part of the "Self-Test" the measured current must be less than 5mA for the 641N to "PASS" (see below). Each range is also automatically tested against an internal precision reference resistor (i.e. 2 ohm range is tested against an internal 1.00 ohm reference resistor). The unit's "PASS or FAIL" status is displayed and **automatically shuts itself off, if it fails any portion of "SELF-TEST"** (for safety integrity reasons). Plug back into the "SELF-TEST" jacks at any time to cross check the unit's selected range against a precision reference resistor (i.e. if on the 200 ohm range a 100.00 ohms reference resistor is switched into the unit's "Self-Test" jacks to be measured and displayed). The built-in "reference resistors" feature aids in trouble shooting a cable or intermittent wire harness connection problem.
- "OK" is **only displayed after:** a) successfully passing the automatic Self-Test of it's failsafe current source (level must be <5mA) and b) all resistance ranges pass after being checked against precision range reference resistors can the unit be operated.
- High Contrast Display Backlight** - for use in dim ambient light conditions. The switch is protected against dirt and moisture with a silicone rubber boot cover (IP57).
- Auto-range and/or manual resistance range selection** from 2.0 ohms, 20 ohms, 200 ohms, 2.0 Kohms, 20 Kohms, 200 Kohms and 2.0 megohms Fullscale. 4 Wire Kelvin is also standard with the AMPTec 641N. The 4 Wire Kelvin jacks can be piggy-backed to easily make them 2 wire mode configuration if needed.
- Chassis Ground Jack** - A shielded Faraday cage (all to chassis ground - common jack) lines the entire 641N case and all the test lead wiring (i.e. Vhi, Ihi, etc) are shielded. All shielding is connected to chassis ground to provide additional electronic noise immunity, ESD and EMP protection.
- Water Tight Seal** with a compression O-ring good to 4" depth (lid closed).
- Padlock Hole** - The unit can be secured and locked using this padlock hole.

Specifications

- Accuracy:** (180 days 25°C ± 10°C) ± 0.02% of reading ± 0.02% of range for 20 ohm through 200 Kohm ranges.
- Failsafe Current :** <8 mA for 2 ohm and 20 Ohm ranges, < 1.8 mA for 200 ohm and higher ranges.
- Display:** 4½ digit (19999) High Contrast LCD - 20,000 counts, Display is visible in direct sunlight.
- Terminal Configuration:** Four-wire Kelvin to Clip ends
- Overload Indication:** Display flashes
- Maximum Input:** 250 VDC or peak AC without damage
- Operating Temperature Range:** 0°C to 50°C
- Temperature Coefficient:** ±.002% per °C (from 0°C to 15°C and 35°C to 50°C)
- Conversion Rate:** Approximately 3 per second
- Power:** Meter will operate for at least 8 Hrs on full charge
- Charging System:** Rechargeable NiMH batteries (4 ea, type "AA", Charger (Universal Input 110 VAC 240 VAC)
- Humidity:** 5 to 95%, waterproof to 3' depth when closed
- Size:** 10" wide x 9" deep x 5" high
- Weight:** 6.5lbs NET 10 lbs shipping
- Drop/Impact Specification:** Commercially designed and tested to survive a 3' fall (i.e instrument cart to floor).
- CE Marked and Ingress Protection** rated at IP54 for dust resistance and water spray resistance



* AMPTec RESEARCH accepts VISA MASTERCARD and the U.S. GOVERNMENT IMPAC CREDIT CARD

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