



Model 3010

*Portable Automated
Test System*

W E C O

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Introduction... For over twenty-five years Watthour Engineering has been working with meter testers and manufacturers to develop industry-leading tools that make testing meters easier and the results more accurate. It takes a company with this much experience to take the power and versatility of its laboratory test systems and turn them into a package ideal for gathering test results out in the field with the accuracy your company demands.

WECO's highly accurate, powerful and fully ANSI compliant Model 3010 Portable Automated Test System gives you the portability to head out into the field for precision testing. This lightweight test system is ideal for testing right at a customer's site using a single voltage, and currents up to 50 Amps. The Model 3010's CT burden testing and built-in phase angle meter give you the comfort that the entire metering installation is correct. A removable reference standard allows you to independently verify the unit's accuracy.

The Model 3010 uses its own internal software for stand-alone operation and record storage, or you can use WECO's PC based, state-of-the-art Winboard™ meter testing software for added versatility. Design your own custom record structure to suite the way your company manages its data. Add an optional Model 3200 Shop Stand to convert your Portable Automated Test System into a stationary testboard that's ideal for meter shop or van use.



Testboard Features...

- **Test potential:** 69–600V — Programmable 1V increments
- **Test currents:**
 - » 0.25–50A
 - » Programmable in 0.1A increments 2.5–9.9A
 - » Programmable in 1.0A increments 10.0–50A
 - » Light load is 10% of full load
- **Power factor test:**
 - » 0–359°
 - » Selectable in 0.1° increments
- **Test revolutions:** 1–999
- **System demand test mode for making KW tests either by time run (HH:MM:SS) or standard equivalent disk revolutions (1-9999)**
 - » Mode 1: Revolutions from 1–9999
 - » Mode 2: Time run 99 HRS, 59 MINS, 59 SECS
- **Contact device testing:** Form “C” and Form “A” test capability
- **Solid state current and voltage loading**
- **Voltage and current electronically ramped between tests**
- **Automatic slew between tests to lessen test time**
- **Optical pickup for the infrared LED on solid state meters**
- **Light source/sensor is triggered from the meter disk rotations**
- **Both visual and audible (volume controlled) pulse indication for aid in aligning the optical sensor**
- **The internal standard may be compared to an external standard for easy standard checks without removing the standard**
- **Easily removable reference standard for recertification**
- **Computer:** Internal microprocessor with large LCD display
- **Large 4 line by 20 character (0.384”) backlit LCD display with contrast adjustment for monitoring**
- **Test parameters and data system is microprocessor controlled with operating software contained in non-volatile ROM**
- **System diagnostic test capability (self test)**
- **Battery backed up internal system clock for time and date**
- **Battery backed up memory for setup and test records**
- **The system will store numerous meter test records in non-volatile RAM (dependent on record size)**
- **Color-coded test leads for transformer and rated meters are provided for easy hook-up**

- Automatic or manual testing of full load, light load, and power factor tests for series and elements. No lead changes required
- Visual LED indication of test status
- System displays all test parameters as necessary and indicates present test in progress
- Both “As Found” and “As Left” data are displayed and stored
- Creep test capability
- Automatic return to creep (voltage on the meter) for solid state meters
- Unit has built-in voltage, current, and phase angle measurement capabilities in the “Read” mode
- Built-in context sensitive “Help” to aid operator
- Communication port for optional remote control software
- Communication port for optional barcode reader
- WATT-Net™ data acquisition system

Testboard Options...

- Barcode reader with software
- RD-20-202 Watt-Var-Q standard
- RD-21-102 High Accuracy Watt-Var standard
- RD-21-202 High Accuracy Watt-Var-Q standard
- Remote control software
- PC or laptop
- CT burden test
- Voltage reversing switch for received power testing



Standard Accessories...

Nylon Carry Bag: The Model 3010's Nylon Carry Bag gives meter testers the ability to grab-and-go. With ample storage room for all of the cables, leads, and optics adapters that come standard with the PAT, the Nylon Carry Bag is both convenient and portable. (A)

BNC Adapter: With the BNC Adapter you can conduct accuracy tests using KYZ pulses on meters without optical ports. (B)

Transformer Current Leads: These 6' cables attach easily to any transformer rated meter for convenient and accurate testing at the meter site. (C)

Field Input Power Cable: Power up your PAT right at the test site with the Field Input Power Cable. Pull power right from the line by connecting this Agency Approved cable to the meter. (D)

Field Safety Ground Cable: Safety is our chief concern at Watthour Engineering. To that end, we supply each PAT with a Field Safety Ground Cable, so you can protect your equipment, and yourself, while testing in the field. (E)

KYZ Cable: Conducting a KYZ test with your Model 3010 (in demand mode) is only a KYZ Cable away. A single plug connects right to the PAT while standard yellow, black, and red plugs connect to the meter. (F)

Potential Leads: Plug your PAT right to the meter's voltage switches and take control of the amount of potential applied to the meter. Our standard Potential Leads are 6' long, with heavy-duty plugs on each end for safety and durability. (G)

AC Shop Power Cable: Back at the shop, the AC Shop Power Cable provides a convenient way to power your PAT right from a standard 120VAC power outlet. (H)

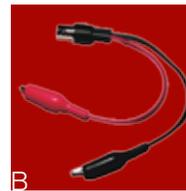
Remote Control Cable: Connect to a PC and transfer your test results from the PAT to WECO's WATT-Net™ software with the Remote Control Cable, or use the connected PC to run WECO's WinBoard™ meter testing software (available optionally). (I)

Optics Clamp: Attach your optics to the meter for easy aligning with WECO's Optics Clamp. The secure connection ensures that the optics remain in the proper position for the duration of the test. (J)

Solid State Optics: WECO's Solid-State Optics attach easily to the Optics Clamp and allow you to detect the pulses generated by solid-state meters. The plastic gooseneck keeps the optics properly aligned while providing a lifetime of durability. (K)

Reflect Optics: For testing electromechanical meters WECO provides a sophisticated Reflect Optics system that attaches easily to the Optics Clamp and delivers highly accurate test results off of the black mark on the meter's edge. (L)

Standards Compare Cable: With the Standards Compare Cable you can connect an outside standard to your PAT to verify that your Model 3010 is giving you the most accurate meter test results possible without having to remove the internal standard. (M)



Optional Accessories... In addition to the numerous accessories that come standard with the Model 3010 Portable Automated Test System, WECO offers several product-enhancing accessories.

A powerful, magnetic mount optics system makes connecting your PAT to can-mounted meters as simple as flipping a switch. When optics aren't an option, you can turn to a click switch adapter to manually record pulses. Extension cables make testing hard-to-reach meters safer and easier.

Be prepared for any meter testing situation by rounding out the standard accessories of your PAT with these advanced features.

Magnetic Mount Optics: With just the flip of a switch you can easily attach the Magnetic Mount Optics to any can-mounted meter and is ideal for substation situations. Increase the number of meters you can test using either reflect or pulse modes by cutting down on optics attachment time. The powerful magnet holds to the meter under any circumstances. A 6' cable comes standard with the optional Magnetic Mount Optics and provides the link between the optional optics and the PAT. (A)

Click Switch Adapter: Don't let optics-limiting situations keep you from conducting a meter test. When direct sunlight makes light-based optics unreliable, you can turn to WECO's Click Switch Adapter to manually record the disk's rotation. (B)

12' Voltage Extension Cable: The Voltage Extension Cable gives you twelve feet of length to connect your PAT to a meter's voltage switches. Combined with WECO's other extension cable options, the Voltage Extension Cable gives you unparalleled mobility and freedom. (C)

Model 3200 Shop Stand: Effortlessly convert your Model 3010 Portable Automated Test System into a stationary testboard that's ideal for meter shop or van use. With the Model 3200 you get the benefit of WECO's Smart Socket™ technology, which allows you to insert a meter into the socket with minimal insertion force. Furthermore, the Smart Socket™ holds the meter securely in place for the duration of the test. The gooseneck optics arm is ideal for quickly aligning the optics to take a reflect reading against the disk's edge. The Model 3200 comes with all the leads necessary to connect it

to the PAT. With the Shop Stand Adapter you get the functionality of a testboard without sacrificing the portability of a PAT. (D)

12' KYZ Extension Cable: With the KYZ Extension Cable you can test a meter from up to twelve feet away, ideal for reaching pole mounted meters. (E)

12' Optics Extension Cable: Extend the reach of both the PAT's standard optics or optional Magnetic Mount Optics to twice the standard distance with the Optics Extension Cable. Now you can safely and easily reach meters up to twelve feet away. (F)

12' Current Extension Leads: This set of three 12' Current Leads allows you to connect the PAT to the current switches on a meter. Once connected the PAT can control the current applied to any self-contained meter. Set of three color-coded (red, white, black) cables. (G)



Specifications...

- **Source:**
 - » 90–300VAC single-phase 50/60Hz
 - » 450VA Max.
- **Optics:** Reflect and solid state pickups
- **System accuracy:** Based on the accuracy of the equipped reference standard
 - » *KWH $\pm 0.04\%$ at 1.0 PF ($\pm 0.01\%$ typical)*
 - » *KWH $\pm 0.04\%$ at 0.5 PF ($\pm 0.01\%$ typical)*
 - » *KW $\pm 0.075\%$*
- **Meter forms tested:** 1S-6S, 8S-10S, 12S-16S, 25S, 26S, 29S, 30S, 35S, 36S, 45S
- **Dimensions:** 19.86" L \times 14.8" W \times 10.4" H
- **Weight:** 45 lbs
- **Housing:**
 - » *Fiberglass case with handle*
 - » *Water resistant and shock resistant to 1.0G*
- **Warranty:** Two (2) year limited warranty (all parts and labor). Manufacturer warranty on optional computer.

