

4000 Series

Automated Test Platforms

*The Fastest Meter
Testing Hardware*

WECO 4050X



Accuracy - Affordability - Convenience



WECO 4050X Automated Test Platform

The WECO 4050X is the latest in a range of affordable automated meter test platforms from Radian Research. Delivering true three phase voltage and current from 0.001 to 50 Amps and 20 to 600 VAC. The 4050X houses the latest generation RX energy reference standard providing a choice of accuracy from 0.04% to 0.01%. Furthermore, the 4050X delivers precision sinewaves in addition to distorted voltage and current as well as harmonic waveforms. The internal NIST traceable RX series reference standard provides unparalleled accuracy to the testboard.

The foundations for this innovation hardware is enhanced by WATT-Net Basic Software. Developed in a .NET environment with fully integrated SQL database and Winboard 3 meter test software. With Winboard 3 you can build advanced test sequences that allow you to control every parameter of a test, simplifying even complex tasks, and generate results that are compatible with all major databases (MS SQL, Oracle, Sybase). Connectivity to a shared or enterprise database can be realized through enhanced WATT-Net Express, Limited or Plus. The WATT-Net family of data management solutions gives you unparalleled test result organization, reporting, and exporting abilities. The innovative WECO 4050X automated test platform is designed to help utilities maneuver today's real world metering issues.

Low insertion force Smart Socket™ technology, fitted with high conduction silver and gold connections, and an electronic socket control, provide an excellent connection and extended hardware lifespan. A laser based optics system employing high intensity light delivers highly accurate results from black marks or creep holes through even the dirtiest covers. Front mounted controls allow simple test selection and testboard control. An optional barcode scanner and printer cuts meter processing and data entry time.

Harmonic Generation

The WECO 4050X has harmonic generation capabilities, you can now put various meter brands and meter technologies through a full harmonic analysis in accordance with waveforms defined in ANSI C12.20. With generation to the 60th harmonic and independent harmonic control in each of the current and voltage circuits (6 channels) as defined by order, magnitude and phase, you can get the full picture of how a metering device is going to perform.

Multiple VAR Test Types

There is more than one way to run a VAR test, and ANSI is constantly approving new calculation methods. Unlike other test systems, the WECO 4050X allows you to select from any ANSI approved calculation method to test a meter. This gives your utility the ability to choose the method that best fits its structure and needs, rather than having to accept the single method that a particular system is capable of testing.

Future Proof Your Investment

Testboards today have an average working life of more than 20 years. Therefore, future proofing your investment is of paramount importance. The 4000 family can handle any meter form currently available and due to the ability to programmatically route Voltages and Currents to any socket conductor, the 4050X is ready and capable of handling the next generation of 1XX meter forms now being defined. In addition, the absence of a built-in computer was a deliberate attempt to future proof the product while ensuring some autonomy to select your own IT approved PC network controller.

High Speed Meter Testing

Do not let your choice of testboards slow you down. Meter test throughput is an increasing concern to most utilities. Meters are getting more complex and 'under the glass' functionality needs testing, this can increase test time exponentially. The 4050X can cut test times tenfold. Turbo Test, designed for meter manufacturing, can be enabled for a range of meters. Using hyper sequencing and direct read/write communication through the optics port the 4050X will significantly cut test times. Even without Turbo Test using conventional optics pulse accuracy the WECO 4050X is four times faster than other testboards.

Fully Isolated Socket

A testboard design using internal reference measurement must fully isolate the internal current and voltage amplifiers to accurately test all meter forms. The WECO 4050X uses high quality isolation relays to ensure when current is energized in element A the leakage path to elements B and C as measured by the internal reference are zero.

Features

Test Voltage:

20–600V; independently programmable per phase in 0.01V steps, with four digits of resolution

True three-phase or single-phase

Voltage phase-angle setting relative to VA, 0-359.99° in 0.01° increment

Test Current:

Model 4050X: 0.001-50A; independently programmable per phase in 0.001A steps, with four digits of resolution

Current phase-angle setting relative to Va, 0-359.99°, selectable in 0.01° increments per phase

Test Revolutions:

Selectable from 1–65,534

Test Time:

Selectable from 1–9999 seconds (minimum of at least one energy pulse)

Demand (KW) Testing:

Standard revolutions (1–99999 revolutions)
Time run (up to 99 HRS, 59 MIN, 59 SEC)

VAR Testing:

All ANSI defined VAR calculation methods are supported

Contact Device Testing:

Form “A” or “C” capability

Voltage and Current Burden:

Displays the actual VA load per active element

Harmonic Generation:

Generation to the 60th harmonic, independent control in each current and voltage circuits, 6 channels and meets the ANSI C12.20-2016 requirements

Analog Test:

Analog testing using a current loop configuration of voltage, current, phase, power factor, Watt, VAR and VA transducers

All analog devices with a maximum output of $\pm 20\text{mA}$ are supported

Supports internal loop power or external loop power transducers

Meter Disconnect Switch Test:

Requires a user supplied method to communicate to the AMI Module, typically provided by the AMI vendor or meter manufacture.

Automatic crossed stator wiring check during three-phase testing.

Modulated laser optics for through hole and reflect disk sensing.

Three IR Optical Pickups: :

Top, bottom, and middle/center

Visual and audible (volume controlled) pulse indication for aid in aligning optical sensor.

LED bar graph for signal strength for mechanical meters.

Easily removable reference standard for recertification or standard upgrade

PC sold separately, WATT-Net Basic Software is provided with purchase of the WECO 4050X.

Specifications

Input Voltage:

90 - 264VAC (3 wire), 50 or 60Hz single-phase auto ranging

Input Power:

1500W Maximum

System Accuracy:

KWH +/- 0.04% at 1.0 P.F.

Higher accuracy standards available

System accuracy is based upon the high accuracy of the NIST traceable Radian RX-30 series reference standard.

Test Frequency:

45 – 65Hz in 0.001Hz steps, accuracy 25ppm

Voltage and Current Harmonic Distortion:

Less than 1.0% THD (pure sine selected)

Voltage and Current Sources:

Features fuseless self-protection technology

Meter Forms Tested:

All current and future ANSI meter forms:
except for forms without a common current return (i.e. Form 7).

New meter forms can be added using the testboard utility included in the software package.

Dimensions and Weight:

21"W x 20"H x 21"D

WECO 4050X: 150 LBS (Approximately)

Warranty:

Two (2) limited warranty (all parts and labor).

Testboard Options:

OPTOCOM™: Optics coupler allows pulse testing and meter programming through the optical port of many solid state meters without changing the optics coupler.

Barcode printer with software

Barcode reader with software

Multi-function testing capability

Higher accuracy reference standards available:

RX-31, accuracy 200ppm ($\pm 0.02\%$)

RX-33, typical accuracy 100ppm ($\pm 0.01\%$)

A unit with a RX-33 standard requires a maximum ambient temperature of 30°C to remain within specification.

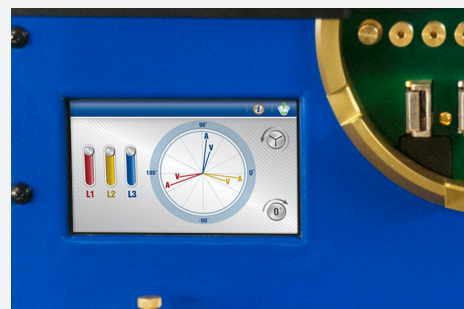
Computer memory, storage, and operating system upgrades

Bottom connected single stator adapter

Bottom connected multi stator adapter

Custom adapter designs available

Standards compare adapter for RM, RD or RX standards, single-phase or three-phase



Front Panel Display The 4000 family now features a color touch screen display built into the test board front panel. This display provides information from the internal removable RX Reference Standard; including Energy Metrics, Vectors, Status, and more.