Protection Relay Test Solutions
IEC61850 Test Solutions
Amplifier for Power Simulation Application
About us

Throughout the last decade, PONOVO POWER CO., LTD (previously known as Power Advanced Co., LTD) has been focusing on providing professional solutions to over 5000 clients in the fields of intelligent testing and power quality control.

2001: Foundation of PONOVO POWER CO., LTD
2001: Launch of PWA, the relay test system with in-built output monitoring and recording function
2002: Launch of PW466A, the relay test system with 6 currents and 6 voltages
2003: Launch of PH01, the testing system for Traveling Wave Fault Locator
2004: Launch of PWS, the relay test system for subway used protective relays
2005: Launch of PWF, the relay test system for digital substation with IEC61850 protocol
2005: Launch of e40, the software for automatic test and management
2006: Launch of the relay test system for serial compensation system used relays
2007: Launch of PM605A, the universal calibrator and test system
2008: Launch of T200A, the single phase universal tester which can provide 120s output time at 250A
2008: Launch of MR1200, the portable disturbance recorder with in-built oscilloscope function
2008: Launch of PowerTest relay test software
2009: Launch of the relay test system for 500KV DC converting station test application
2009: Launch of L336i, the compact relay test system with 6 currents and 4 voltages and has a weight of 8.8kg
2009: Launch of PCT100i, the CT/PT tester with a weight of 11kg
2009: Launch of HB-6000, the online DGA (dissolved gas analyzer) system for transformer
2009: Launch of PF3000, the test system for automatic test of power filters
2009: Launch of T1000/T2000, the primary injection kit which can provide 120s output time at 1000A
2009: Launch of TD4000A, which can continuously supply 4000A DC current for testing DC type CT
2010: Launch of PCT200i, new generation of CT/PT Tester
2010: Launch of PNS series handheld digital signal analyzer for intelligent substation maintenance
2010: Launch of new generation Nf801 portable Fiber Digital relay tester with 8 fiber optical ports
2010: Launch of SSCS, the solid state composite switch for improving the performance of capacitor bank control
2010: Launch of LVRT (Low voltage ride through)
2011: Launch of APF (Active Power Filter)
2011: Launch of STATCOM (Static compensator)
2012: Launch of Merging Unit(MU) Tester
2012: Launch of Nf802 Intelligent Relay Tester
2013: Launch of PNS610 digital signal analyzer
2014: Launch of PW40i, new 3-phase relay test set specially for G59 testing solution
Products introduction

**PW636i Universal Test System**
- 6×32A, 4×300V
- 8 binary inputs and 8 binary outputs, 4 counter inputs, 12 low-level outputs
- Adjustable threshold for binary inputs
- Auxiliary DC (0-300V)
- DC measuring inputs
- In-built output monitoring and recording function
- IEC61850 test optional

**PW460 Universal Test System**
- 6×15A, 4×300V
- 8 binary inputs and 8 binary outputs, 4 counter inputs, 12 low-level outputs
- Adjustable threshold for binary inputs
- Auxiliary DC (0-300V)
- DC measuring inputs
- In-built output monitoring and recording function
- IEC61850 test optional

**S40A Universal Test System**
- 6×20A, 6×150V
- 8 binary inputs and 4 binary outputs
- Adjustable threshold for binary inputs
- Auxiliary DC (0-300V)
- In-built output monitoring and recording function
- IEC61850 test optional

**PW336i Universal Test System**
- 6×15A, 4×150V
- 8 binary inputs and 4 binary outputs
- Adjustable threshold for binary inputs
- Auxiliary DC (0-300V)
- In-built output monitoring and recording function
- IEC61850 test optional

**PW466i Universal Test System**
- 6×20A, 6×150V
- 8 binary inputs and 4 binary outputs
- Adjustable threshold for binary inputs
- Auxiliary DC (0-300V)
- In-built output monitoring and recording function
- IEC61850 test optional

**PW41i Universal Test System**
- 3×40A, 4×300V
- 4 binary inputs and 1 binary outputs
- Local control with LCD
- Can Import Test Templates

**T200A Universal Tester**
- 1×250Aac, 1×20Aac/dc, 1×200mAac/dc
- 1×600Vac, 1×120Vac/dc, 1×300Vdc
- Auxiliary DC (0-240V)
- 2 binary inputs and 1 binary outputs
- Long output time: 120s at 250A

**L336i Universal Test System**
- 6×15A, 4×300V / 3×20A, 4×300V*
- 8 binary inputs and 4 binary outputs
- IEC61850 test optional
- Weight: 8.8kg
- Size: 256×110×395mm
- *Economic Version

**Economic Version**
- L336i Universal Test System
- 6×15A, 4×300V / 3×20A, 4×300V*
- 8 binary inputs and 4 binary outputs
- IEC61850 test optional
- Weight: 8.8kg
- Size: 256×110×395mm

**PW41i Universal Test System**
- 3×40A, 3×300V
- 4 binary inputs and 4 binary outputs
- Local control with LCD
- Can Import Test Templates

**S40A Universal Test System**
- 3×40A, 3×300V
- 4 binary inputs and 1 binary outputs
- Local control with LCD display

**T200A Universal Tester**
- 1×250Aac, 1×20Aac/dc, 1×200mAac/dc
- 1×600Vac, 1×120Vac/dc, 1×300Vdc
- Auxiliary DC (0-240V)
- 2 binary inputs and 1 binary outputs
- Long output time: 120s at 250A

**Independent Amplifier Interface for External Simulation System**
POM2-6143 Universal Test System
- 6×15A, 4×300V
- 8 binary inputs and 8 binary outputs,
- 12 low level outputs
- Adjustable threshold for binary inputs
- Auxiliary DC (0-300V)
- DC measuring inputs
- IEC61850 test optional

NF802 Intelligent Relay Tester
- 8 Fiber Optical Ports
- Receiving and sending IEC61850-9-1/2 and IEC60044-7/8
- Measuring received fiber optical power
- IEEE 1588 synchronization
- GPS Synchronization interface
- IRIG-B code interface
- 12 independent Low level output

POM2-3243 Universal Test System
- 3×20A, 4×300V
- 8 binary inputs and 8 binary outputs,
- 12 low level outputs
- Adjustable threshold for binary inputs
- Auxiliary DC (0-300V)
- DC measuring inputs
- IEC61850 test optional

PNS610 Portable Analyzer
- Signal Probe and Value Analysis Specifications:
  - IEC61850 - 9 - 2 / LE signal samples
  - IEC61818 - 8 - 1 GOOSE signal
  - IEC60044 - 7 / 8 optical serial signal
- Support IRIG-B, IEC61588/IEEE1588

PCT 200 Series CT/PT Test System
- Test standard: IEC60044-1/6 and ANSI/IEEE C57.13
- All kinds of CT
- One test can get all CT parameters
- Fast test for excitation check
- Also can do the PT test
- PCT series: PCT 200Ai PCT 200i
- Weight: 12 kg

FT 3000 Power Filter Characteristic Tester
- Precisely and automatically complete power filter amplitude frequency and phase frequency characteristic measurement
- Automatically measure power filter by parameters of reactor, capacitor and resistor
- Compensate and measure capacitor group unbalanced current 0.01 mA—10 mA

T1000 Primary Injection and Test Equipment
- 1×1000Aac/7000VA
- 1×250Vac/250VA
- 1×300Vac/600W
- In-built ammeter function
- 120s continuous output time at 1000A
- Weight: 30kg

TD series DC Current Tester
- TD series testing equipment consists of control unit and DC high current output unit: It outputs 0-2000A/0-4000ADC with the accuracy of 0.1% high accuracy DC current used in HVDC converter station and testing DC current transformer characteristics.
Amplifier for Real Time Digital Simulator

Panel Mount Type
- PAC2000B: 1X200A RMS, 2400VA/phase
- PAC60Bi: 3X60A RMS, 800VA/phase
- PAC60Ci: 6X30A RMS, 450VA/phase
- PA30Bi: 3X30A RMS, 450VA/phase
- PA30Bi-H: 4X120V RMS, 60VA/phase
- PAV250Bi: 6X250V RMS, 75VA/phase
- PAV120Bi: 6X120V RMS, 60VA/phase
- PWF-2T: IEC31850 simulating device (Fiber/LL voltage/GOOSE)

Portable Type
- PAC60Ci: 6X30A RMS, 210VA/phase
- PAC60Bi: 3X60A RMS, 400VA/phase
- PA30Bi: 3X30A RMS, 210VA/phase
- PA30Bi-H: 4X120V RMS, 60VA/phase
- PAV250Bi: 6X250V RMS, 75VA/phase
- PAV120Bi: 6X120V RMS, 60VA/phase

PONOVO Template Service

PONOVO provides relay test templates based on relay model from different relay manufacturers. With the use of template the relay test work can be simplified greatly. Each relay test template is one independent file which can be opened in PowerTest relay test software. Registered users can download Basic Template for free use. Customers can contact us to get Customized Test Templates.

More Templates can be download from our website www.relaytest.com
PowerTest Relay Test Software

Start Page

Differential

Differential module is suitable for use the 6 output current channels' relay tester, which is applied on transformer, generator and bus bar etc. differential protection equipment test. Because of adopting the 6 currents output, it realizes the two sides three phases test between relay tester and relay equipment.

Inverse time overcurrent

This module realizes the directional over-current test and non-directional over-current test. This module also include: testing positive sequence, negative sequence and zero sequence instantaneous time over-current, over-heat protection inverse time over-current or the customized "Current/Time" operation characteristic.

Auto-reclosing

Auto-reclosing module is the specific module which is applied to test the reclose function. This module can realize that relay automatic reclosing with checking the difference between system and unit, checking the synchronization setting, reclose set time checking and automatic evaluating of testing results.

State Sequence

In the State-Sequence module, the relay tester can output multiple continuous state sequences. This module can help user to do customized test.

Power swing

Power swing module is applied to simulate the power system swing and test the generator losing synchronization and normal network splitting equipment.
Optional Accessories

- Current Booster (Phpc01)

Phpc01 current booster is designed to supply high compliance voltage even at small current range, suitable for testing high burden electromagnetic current relays.

- GPS synchronization (PGPS02/PGPS04i)

PGPS02: It provides GPS synchronization signal in PPS (pulse per second) or PPM (pulse per minute) for synchronized test. Trigger time can be set for end-to-end test application.

PGPS04i: The PGPS04i is a multi-functional time synchronization device that integrates with GPS time synchronization, IRIG-B(DC-TTL/DC-RS422/optical) outputs, IRIG-B(DC-TTL/DC-RS422/fiber) pulse input, 1PPS/1PPM(DC-TTL/DC-RS232/fiber) pulse output, timing set of whole trigger points, real-time clock auto-generating and other relevant functions.

- Circuit breaker simulator (PSS01)

Working together with PONOVO relay testing device, PSS01 is to be used to simulate the circuit breaker operation for checking the relay scheme performance. Complicated software settings can be avoided by using this simple accessory.

- Scanning Head (PACB108)

The passive optical scanning head PACB108 detects the status of an LED, that is either an optical pulse output from an energy meter or the binary status of a protective relay or other similar optical source.