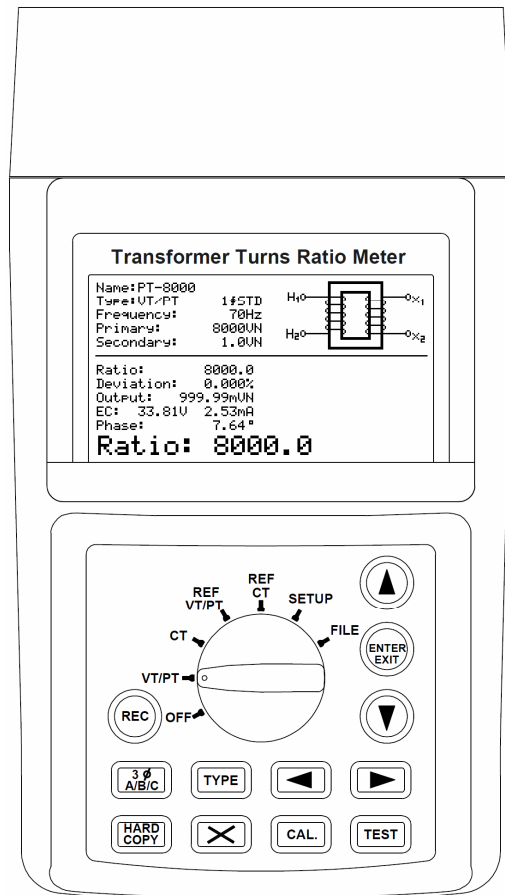


Transformer Turns Ratio Meter

Software Manual



April 2015

Version: 201500416

Specifications are subject to change without notice.

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1. Introduction

1.1 Operating Environment

- * The Software (Application program) should be installed in the operation system of Microsoft Windows 8 / 7 / Vista / XP.
- * “NI-VISA Runtime Engine” should be installed (the Software will install it automatically).
- * “Bluetooth driver program” should be installed.


1.2 Hardware

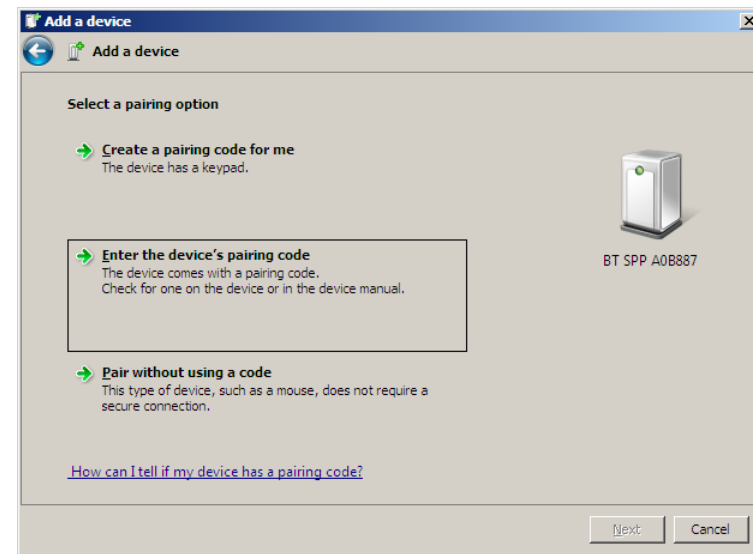
- * Personal Computer (PC): we recommend the processor of Pentium 4 Celeron 1.2GHz or above.
- * RAM: we recommend 512MB or above.
- * Screen resolution: requires 1024 x 768 pixels.
- * Transformer Turns Ratio Meter. (“Meter” for short in this manual)
- * PC should be installed with “USB Bluetooth Dongle” or “Bluetooth Module”.

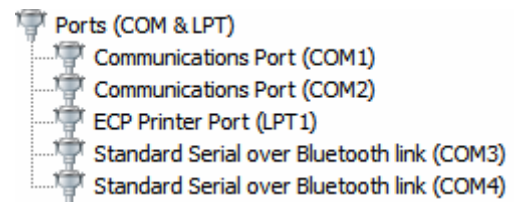
Note:

1. The spec. of “USB Bluetooth Dongle” or “Bluetooth Module” should be Bluetooth 2.0 + EDR or Bluetooth 2.0 + EDR – compatible, and supports SPP (Serial Port Profile).
2. The spec. of “USB Bluetooth Dongle” or “Bluetooth Module” can be Class I or Class II. With Class I the wireless communication distance is longer.

1.3 Bluetooth Paring

First make sure the Bluetooth Driver is installed in the operation system of PC. Turn on the Meter, click  to enter the program and then click “Add a Device”. After searching the device, select “BT SPP xxxxxx” to pair. Type in 1234 when asked to enter pairing code. Some Bluetooth Dongles can pair automatically, no need to enter paring codes. After paring, the Device Manager will show “Bluetooth COM Ports”.





2. Software Installation

2.1 Install Software

Execute setup.exe (which is in the software disc) to enter installation menu. Click Transformer Turns Ratio Meter Software, then press **Next** button to enter the procedures of Software installation. Please follow the instructions to install the Software.

Remark:

1. After putting the software disc into CD-ROM drive, the installation menu will display.
2. If the installation menu does not display, please manually choose setup.exe (which is in the software disc) to perform installation menu.
3. After the Software has been installed, please restart the system.

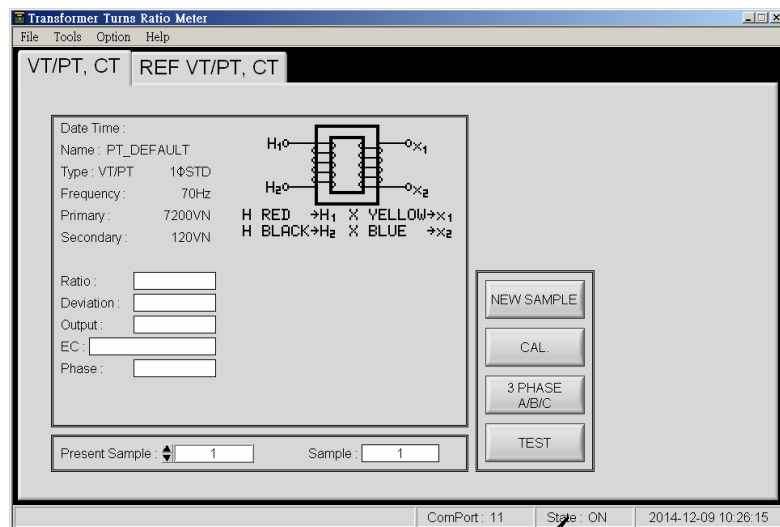
2.2 Connecting Procedures

1. Turn on PC and the Meter.
2. Start the Software of Transformer Turns Ratio Meter.

3. Software Operation

3.1 Start Executing Software

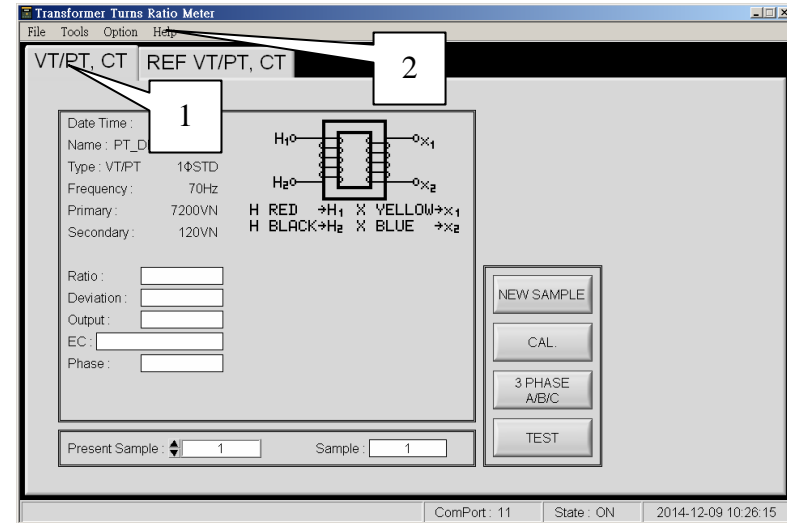
Click Start -> All Programs -> Transformer Turns Ratio Meter, choose “Transformer Turns Ratio Meter” or click the shortcut to start executing the Software. (the initial screen is as below)



Remark:

1. If the communication State is ON, it means the Software can communicate with the Meter correctly.

3.2 Functions of Main Screen



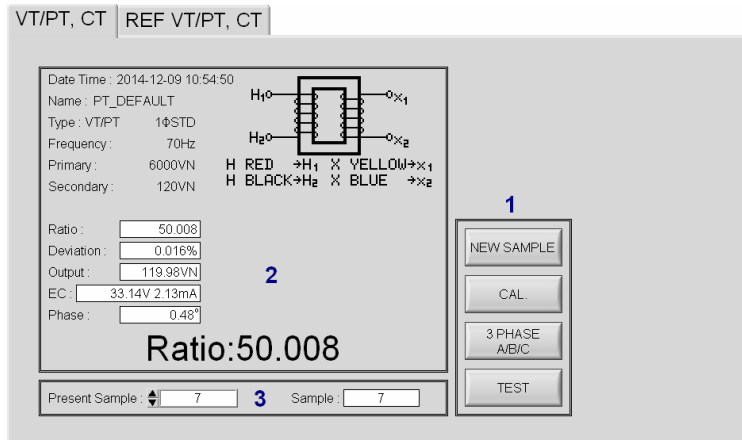
Remark:

1. **VT/PT, CT** measurements and parameter setting: there are 2 pages - one is **VT/PT, CT** and the other is **REF VT/PT, CT**.
2. **Tool bar**: including File, Tools, Option, Help functions.

3.3 VT/PT, CT Measurements & Parameter Setting

There are 2 pages - one is **VT/PT, CT** and the other is **REF VT/PT, CT**.

A. VT/PT, CT Measurements



First turn the switch of the Meter to VT/PT or CT range.

A.1 NEW SAMPLE, CAL., 3 PHASE A/B/C, TEST buttons

TEST: Press this button to make the Meter perform TEST function. Then the measurement values from the Meter will be saved in the Sample records in the software.

NEW SAMPLE: Press this button to create a new blank sample, then perform TEST function to get new measurement values.

CAL.: press this button to make the Meter perform CAL. (Phase Angle Calibration) function.

3 PHASE A/B/C: when measuring 3-phase transformer, press this button to switch among A phase, B phase and C phase.

A.2 Sample Time, Parameters, Measurement Values

Date Time: Sample recording time.

Name, Type, Frequency, Primary, Secondary: These are transformer parameters and winding connection type.

Ratio, Deviation, Output, EC, Phase: These are transformer measurement values.

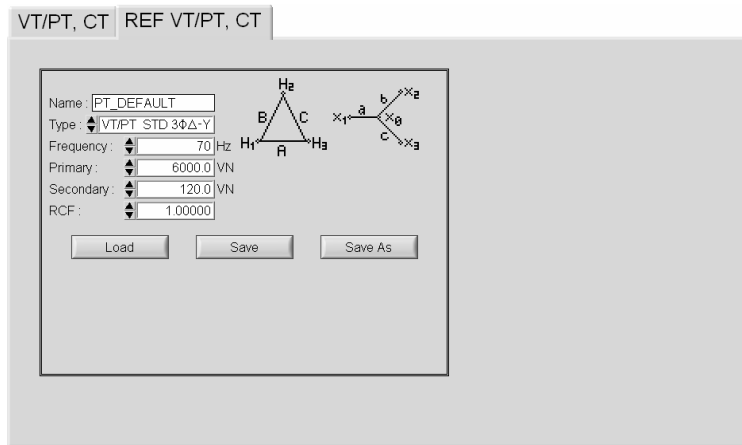
Please refer to the operation manual of “Transformer Turns Ratio Meter” for the definitions of the above-mentioned Parameters and measurement Values.

A.3 Sample Status

Present Sample: select the sample number which is being viewed.

Sample: the total sample numbers till now.

B. REF VT/PT, CT Parameter Setting



First turn the switch of the Meter to REF VT/PT or REF CT range.

After type in the parameter values on the software, press **Save** button to replace the parameters of the Meter by these values.

Press **Save As** button to save these values as a new file in the Meter.

Press **Load** button to re-download the present parameters of the Meter.

Please refer to the operation manual of “Transformer Turns Ratio Meter” for more details about the Parameters.

If users do not save the newly typed-in values, the parameters will retrieve the original values.

When there is no communication between the Meter and the software, the functions of this page will not be available.

3.4 Tool Bar

A. File

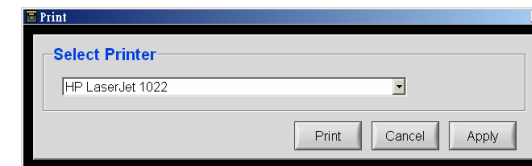
New: Clear all the data in the Software (application program).

Open: Open a *.trm file which was previously saved.

Save As: Save all the data in the Software as a *.trm file.

Export: Export the data to a file which can be read by EXCEL. There are two formats: CSV (*.csv) and Text (*.txt).

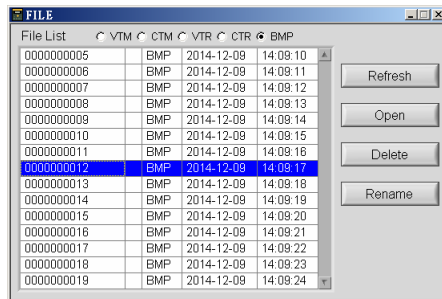
Print: Print out the current software screen to a printer. Press Apply button then the selected printer will be the default printer for the Software.



Exit: exit the Software (application program).

B. Tools

B.1 FILE: display FILE window. Users can select a file format (among VTM, CTM, VTR, CTR, BMP) for the File List. Click a file in the File List to select it.



Refresh: Refresh File List.

Delete: Delete a selected file.

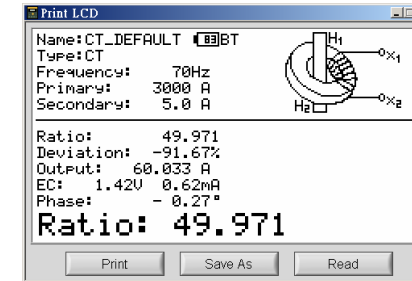
Rename: Rename a selected file.

Open: (1) Press Open button to open a selected file.

(2) Or double click a file in the File list to open it.

(3) Or click a file to select it; use the ↑ & ↓ buttons on the keyboard to move to a file, then press Enter button on the keyboard to open the file.

B.2 Print LCD: Display Print LCD Window.



Read: Read the data displayed on the Meter LCD.

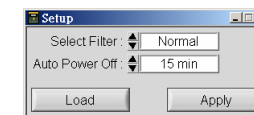
Save As: Save the data of the current software screen as a BMP file.

Print: Print out the current software screen to a printer.

B.3 Time Setting: Calibrate the Meter time by the current PC time.

B.4 Clear Memory: Clear the files (memory) of the Meter. When performing this function, the Meter should be switched to REF VT/PT or REF CT range.

B.5 Setup: Display Setup window.



Press Apply button to modify the parameters of the Meter.

Press Load button to reload the current parameters of the Meter.

The parameter details please refer to the operation manual.

B.6 Keyboard: Display Keyboard window. The buttons on the Keyboard window can work exactly like the buttons on the Meter.



C. Option

On Line: If selected, when turning on the Software it will communicate with the Meter. If not selected, when turning on the Software it will not communicate with the Meter.

D. Help

About: Display the Software (version) information

3.5 Turn Off the Software

The correct procedures for turning off the Software are:

- (1) Turn off the Software first.
- (2) Then turn off the power of the Meter.

If the procedures are wrong, it will take about 20 sec. to turn off the Software.