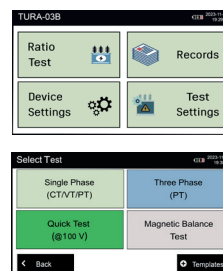


# TURA-03 SERIES 250V 3 $\phi$ TURNS RATIO TESTER



TURA-03 is designed to accurately measure the turns ratio of single-phase and three-phase transformers.

TURA-03 performs fast and accurate turns ratio measurements on current, potential and power transformers via its user-friendly interface.

With market-leading accuracy, the TURA-03 has a very wide ratio measurement capability with a precision of 0.08 %.

TURA-03 is able to measure the core excitation current, phase angle, polarity, ratio error and magnetic balance. TURA-03 can detect vector groups automatically. The instrument also contains a helpful list of connection diagrams for the various transformer configurations. The operator simply selects the one they need to display. Therefore, there is no need for an additional manual or diagrams to understand the cable connections for each vector groups. Selecting the right vector group is enough and device shows how to connect the cables to the transformer.

The instrument has a wide operating range for use on equipment such as high excitation value current transformers and high voltage power transformers in substations.

The instrument can generate 1V, 4V, 10V, 40V, 100V and 250V AC test voltages.

A 7-inch TFT touch display allows TURA-03 to show all measurement results on a single screen. USB, Bluetooth (Option), and Flash Memory features allow TURA-03 to control, record and store measurement results, (up to 100 Test Records).

Using the HighTest Data Management Platform or a.k.a. (DMP Software), users can control TURA-03 and analyse measured results and records. If an immediate hard copy of the results is required the TURA-03 also allows for this via an embedded 2.28-inch printer.

Multi-language capability and user-friendly menus make it easy to control the TURA-03 instrument, even by less experienced staff. TURA-03 can also control the tap changer, (i.e. raise and lower) via its tap changer outputs.

TURA-03 is a light, compact and rugged device with an IP protection class of IP67, (case lid closed).

In addition to ratio tests, TURA-03 can also be used to perform Magnetic Balance Test.



## DEVICE HIGHLIGHTS



### Single-phase & three-phase ratio measurement

With TURA-03's three-phase cable configuration, users can measure turns ratio of both three-phase and single-phase transformers.



### Optional Rechargeable Li-Ion Smart Battery

TURA-03 comes with a 14.4V Li-Ion smart battery which enables you to make tests while on field. TURA-03 works on both main power and consuming battery power.



### 7-inch TFT Colour Touch Screen

TURA-03 is built-in with a 7-inch TFT Colour Touch Screen which is visible under both bright sunlight and dim lit environment.



### 2.28-inch Built-in Thermal printer

TURA-03's built-in thermal printer let you print the results immediately during field test.

## FEATURES

- Turns Ratio Measurement (Single-phase and three-phase measurement)
- Ranges from 0.8 to 50,000 ratio measurement
- High Accuracy (0.08 %)
- 1V, 4V, 10V, 40V, 100V and 250V AC test voltages
- Ratio Error Measurement, Excitation Current, Phase Angle, Polarity Measurement, Magnetic Balance
- Built-in Printer
- Automatic vector group detection
- Internal memory, USB Flash Drive
- PC control via USB cable
- Optional Bluetooth control and communication
- 7-inch colour touch display

## TECHNICAL SPECIFICATIONS

|                             |                                                                                                                                                                                                                                                                                                                                                                                                |                           |          |
|-----------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------|----------|
| Measurement Parameters      | Turns Ratio Measurement, Excitation Current, Phase Angle, Polarity, Ratio Error (%), Magnetic Balance, Vector group detection                                                                                                                                                                                                                                                                  |                           |          |
| Ratio Measurement Modes     | CT Mode, PT Mode, Power Transformer (Single-Phase and Three-Phase)                                                                                                                                                                                                                                                                                                                             |                           |          |
| Measurement Method          | ANSI/IEEE C57.12                                                                                                                                                                                                                                                                                                                                                                               |                           |          |
| Test Voltages               | CT Mode: 1 V and 4 V ;<br>PT Mode: 1, 4, 10, 40, 100 & 250 V                                                                                                                                                                                                                                                                                                                                   |                           |          |
| Ratio Range                 | 0.8 – 50,000                                                                                                                                                                                                                                                                                                                                                                                   |                           |          |
| Accuracy                    | Mode                                                                                                                                                                                                                                                                                                                                                                                           | Ratio                     | Accuracy |
|                             | CT Mode (1V -4 V)                                                                                                                                                                                                                                                                                                                                                                              | 0.8-399                   | 0.08 %   |
|                             |                                                                                                                                                                                                                                                                                                                                                                                                | 400-4000                  | 0.1 %    |
|                             | PT Mode(10 V- 250 V)                                                                                                                                                                                                                                                                                                                                                                           | 0.8-5000                  | 0.08 %   |
|                             |                                                                                                                                                                                                                                                                                                                                                                                                | 5001-12000                | 0.15 %   |
|                             |                                                                                                                                                                                                                                                                                                                                                                                                | 12001-50000               | 0.5 %    |
| Phase Angle Measurement     | 0-360 degrees , Typical: ±0.05 degrees, Guaranteed: ±0.06 degrees                                                                                                                                                                                                                                                                                                                              |                           |          |
| Excitation Current          | 0 to 2 A                                                                                                                                                                                                                                                                                                                                                                                       |                           |          |
| Excitation Current Accuracy | ±0.1 mA                                                                                                                                                                                                                                                                                                                                                                                        |                           |          |
| Power Supply                | 100-240 V, 47/63 Hz,                                                                                                                                                                                                                                                                                                                                                                           |                           |          |
| Battery                     | Yes, 14.4 V / 3.4 Ah<br>Optional on Models: TURA-03B, TURA-03B BLUE.                                                                                                                                                                                                                                                                                                                           |                           |          |
| Memory                      | Up to 102 records (include up to 25 tap results)<br>Unlimited Storage using an external USB                                                                                                                                                                                                                                                                                                    |                           |          |
| Printer                     | 2.28-inch Built-in Printer                                                                                                                                                                                                                                                                                                                                                                     |                           |          |
| Communication               | USB 2.0/1.1 Standard-A, USB 2.0/1.1 Standard-B,<br>Bluetooth(Models: TURA-03 BLUE & TURA-03B BLUE)                                                                                                                                                                                                                                                                                             |                           |          |
| PC Software                 | DMP Software                                                                                                                                                                                                                                                                                                                                                                                   |                           |          |
| Display                     | 7-inch colour touch display                                                                                                                                                                                                                                                                                                                                                                    |                           |          |
| Dimensions                  | 16.7” x 13.4” x 6.8” (424 mm x 340 mm x 173 mm)                                                                                                                                                                                                                                                                                                                                                |                           |          |
| Weight                      | 7.1 kg (models with battery)                                                                                                                                                                                                                                                                                                                                                                   |                           |          |
| Temperature                 | Working: -10 °C to +60 °C                                                                                                                                                                                                                                                                                                                                                                      | Storage: -30 °C to +70 °C |          |
| Humidity                    | 95% RH Non-condensing                                                                                                                                                                                                                                                                                                                                                                          |                           |          |
| Protection Class            | IP67 (case lid closed)                                                                                                                                                                                                                                                                                                                                                                         |                           |          |
| Included in the package     | 5m Measurement Cable Set for H Side, 5m Measurement Cable Set for X Side, 10m Extension Cable Set for H Side, 10m Extension Cable Set for X Side, 1.8m Power Cord (UK/EU/US), 2.5m Standard Ground Cable, 1.5m USB Cable, USB Flash drive (DMP, Manual, Brochure), 1m Tap changer Cable Set, 4m Extension Cable for Tap Changer Cable Set, 2x Thermal Printer Paper, Soft Carry Bag for Cables |                           |          |
| Options                     | Hard Carry Case, Bluetooth (factory install option), Battery (factory install option)                                                                                                                                                                                                                                                                                                          |                           |          |

Specifications are valid at/under 25 °C temperature. \*Content subject to change without notice.

## ORDERING INFORMATION

**TURA-03** 

250V Transformer Turns Ratio Tester with Built-in Printer

**TURA-03 BLUE**  

250V Transformer Turns Ratio Tester with Built-in Printer & Bluetooth

**TURA-03B**  

250V Transformer Turns Ratio Tester with Built-in Printer & Battery

**TURA-03B BLUE**   

250V Transformer Turns Ratio Tester with Built-in Printer, Battery & Bluetooth