



# Sivananda Electronics

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**AUTOMATIC TRANSFORMER RATIO METER**  
**ATRM-1M**

## Introduction

The Automatic Transformer Ratio Meter is highly precise ratio measuring equipment, allowing measurement for three phase Delta, Star connected objects and single-phase transformers. This instrument specially designed to work in 400 KV Yard applications; object like 400KV transformer, CT's can be tested from Ratio 0.8 - 10000.

The old method of measurement of ratio was to balance a bridge, which is tedious and time consuming requiring a skilled operator. With this method production speed as well as easiness to operate the instrument is more.

This Transformer Ratio Meter works on the principle using ratio metric circuit in which the ratio of test specimen is measured with respect to 'Primary' / HV winding and 'Secondary' / LV winding. The four terminal method is used for measurement, for 10mtr. Leads if there is any drop of voltage across the lead from instrument to 'Primary' / HV winding of transformer, the same will be cancelled by the four terminal measurement method. The 'Primary' of the instrument has eight terminals marked as 'U, V, W', and 'Neutral' in two sets, used to connect to the 'Primary' / HV winding.

The 'Secondary' of the instrument has four terminals marked as 'U, V, W', and 'Neutral' in one set, used to measure the voltage at the 'Secondary' / LV winding.

This instrument uses latest state of art technology and integrated circuits to measure the ratio of the test object.

Instrument provides 2 internally generated stable test voltages of 48V & 4.8 Volt which enable the testing transformers like Power Transformers Ct's.

## Specification

1. Power Supply : 230V  $\pm$  10% , 50 Hz, single phase

2. Test Voltage : 4.8V / 48V AC  $\pm$  5%

3. Ratio

Ratio Range	Display	Resolution	Accuracy
10	0.8-10	0.001	$\pm$ 0.010
100	10-100	0.01	$\pm$ 0.10
1000	100-1K	0.1	$\pm$ 1.0
10000	1K-10K	1	$\pm$ 10

4. Phase Angle Deviation : Range :  $\pm$  90 deg  
Resolution : 0.1deg  
Accuracy :  $\pm$  1deg

5. Excitation Current : Range : 2Amp  
Resolution : 0.1mA  
Accuracy :  $\pm$  1%  $\pm$  2digits

6. Trip Current : 2A @ 8V range

7. Display : 4 Line 20 character LCD display for Ratio, Excitation Current and Phase Angle Deviation.

8. Accuracy : 0.1% of the FSD  $\pm$  3 digits

9. Weight : Approximately 7 Kg

10. Dimension : 440 X 340 X 170 mm.

**Note : - Design subject to change for better improvement.**

## Features

- Automatic display of ratio, no balancing is required.
- 4Line 20Ch LCD display .
- True 4- terminal measurement.
- Resolutions of 0.001 in the range 10.
- Can be used to measure 3-phase Delta, Star connected transformer.
- No external switching required, once the object transformer is connected.
- Can be used even in Switch Yard under induction.
- Can be operated thru RS 232 Port with external PC / Laptop

## Warranty

Sivananda Electronics warrants its products against defects in material and workmanship for a period of one year from the date of installation or 15 months from the date of dispatch, whichever is earlier. This warranty excludes normal wear on finishes or damage that occurs due to abuse or misuse.

## Our Other Products

- ❖ **Instruments:** 200+ types of test equipment's for Power, Wire & Cable, Capacitor, Oil & Petroleum industries are developed by in-house R&D Lab. Surge Testers, Automatic C&Tan Delta Bridges, Transformer Windings Resistance Meters, Oil Insulation Test Kits, Oil Tan Delta, Volume Resistivity & Dielectric constant Meter, Insulation Resistance Tester, Contact Resistance Meter etc.
- ❖ **Security:** Turnstiles, Tripods, Barriers, Metal Detectors, Bollards etc.

**Disclaimer :** To Keep pace with the technology Sivananda Electronics reserves it's right to update the system without prior consent.

## About Us

- 50 years (in 2020) of service to India.
- 1<sup>st</sup> to develop metal detectors for security in India. Made in India.
- 1<sup>st</sup> to develop Turnstiles in India. Made in India.
- Eclina Awards (1995), Elecrama Awards (1996), NIMA Awards (1999)
- Leading manufacturers of Security Systems and Test & Measuring Instruments in India.
- Largest supplier of Turnstiles in India in the last 25 years
- 150 different types of Electronic Test & Measuring instruments are indigenously developed for many industries.
- Exporting to 70+ countries.