



Trivector Meter

ER300P

Introduction

Electronic Trivector meter, ER300P - PRIDE is a multi-purpose unit which integrates several functions and replaces various equipment for metering energy parameter. It is light, compact and highly reliable.

L&T has indigenously designed and developed the same at its state-of-the-art manufacturing facility in Mysore. It is well suited for Indian transmission and distribution network and can be used for uni directional or bi-directional metering, TOD metering, and for energy management. It is available for both HT and LT applications.

Display Parameters

Meter can be programmed to display maximum 350 parameters that include PF, per phase RMS voltages and currents, Frequency, Phase sequence, real time clock, kW, kVA, kVA_r, kWh, kVAh, kVA_rh⁺, kVA_rh⁻, MDs', Rising demand with elapsed time, high resolution energies, tamper details, etc.

Display Modes

Three display modes Mode1, Mode2 and Mode3 are available.

kVAh / MD kVA Calculation Methods

Method of kVAh / MD kVA calculation can be configured for lead to be treated as upf or lead to be treated as lead itself.

Billing Registers

Eight billing registers are available for recording 8 types of energies - kWh, kVAh, kVA_rh⁺, kVA_rh⁻ (both forward / reverse). The last 12 readings are for record & analysis. Average PF for each reset is available.

Maximum Demand (MD) Registers

Three MDs out of 8 energy types can be selected and programmed for separate integration period ranging from 1 minute to 60 minutes. MD1 can be configured for Block / Sliding window method. Reset MD (12 readings) and cumulative MDs are also available.

Load Survey Recorders

Registers for load survey data records upto 4 energy parameters. The integration period and number of days are programmable.

Tamper / Failure Recording

Meter detects and records various tamper / failure conditions such as voltage failure, current failure, voltage unbalance, current unbalance, current bypass, current reversal and power failure. For above conditions, Tamper count, Duration, Occurrence date / time and present status is recorded by sequence storage or Block storage method.

Reset

Meter can be configured for one of the reset modes such as Manual reset, Auto monthly reset, Auto daily reset, Auto monthly & manual reset. 12 reset backups are provided.

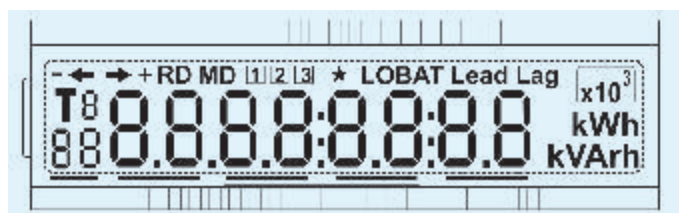
Time-of-day (TOD)

The meter offers a flexible tariff structure. During different times of the day for different seasons, different tariff structure can be programmed. A real time clock with a lithium battery has a built-in 100 years calendar. It is used for time keeping. A day can be divided into 10 defined slots (11 undefined slots). Upto 8 tariffs registers programmable. Supports upto 4 profiles, 4 seasons and 4 special days.

Control Keys

Two control keys are located on the front panel of the meter for manual scrolling mode, various display parameters can be displayed using the same. Manual reset can be performed from key on front panel.

Display



LED Pulse Output

ER300P incorporates two LEDs on the front panel of the meter for accuracy check of kWh and kVA_rh.

Battery Operation

A Push button on the front panel enables data collection, viewing data on LCD and resetting data during power failure.

Communication Interface

ER300P incorporates an infrared optical port 6 interface on the front panel as per IEC 1107 standard. An optical port and a standard RS232C port on the PC/MRI side.

Features

- 0.2S / 0.5S / 1.0 Class accuracy
- Multi Tariff capability with programmable TOD
- Three Programmable Maximum Demand (MD) registers
- Tamper / failure detection and record capability
- Communication interface via optical port conforming to IEC 1107 protocol
- Configurable load survey recorders
- Backlit LCD display
- Three Display modes for easy data access
- Support of Phaser viewing on MRI
- Battery back-up for data collection
- Periodic self diagnostic checks

Technical Specifications

Accuracy	Class 1.0 for active energy - As per IEC 1036 / IS 13779 Class 2.0 for reactive energy Class 0.5 for active energy - As per IEC 687 / IS 14697 Class 1.0 for reactive energy Class 0.2 for active energy - As per IEC 687 / IS 14697 Class 0.5 for reactive energy
Voltage (Vn)	3Ph 4W - 415 V AC (-40% to +20%) 110 V AC (-40% to +20%) 3Ph 3W - 110 V AC (-40% to +20%)
Current (In)	5 A or 1 A (to 200%)
Starting current	0.2% In (Class 1.0) 0.1% In (Class 0.5S / 0.2S)
Power factor	Four quadrant operation
Frequency	50 Hz \pm 10%
Load characteristics	< 5 VA in potential circuit < 0.5 VA in current circuit
Field configurable features	Meter configuration - Uni or Bi-directional Method of kVAh calculation - Lead as lead - or Lead as UPF External CT / PT ratios MD settings - Max. 3 out of 8 parameters TOD settings Reset modes - Auto daily, Auto monthly and manual Load survey settings - No. of days and parameters Real Time Clock setting Three Display modes Mode 1 / 2 / 3
Electromagnetic compatibility	IEC 1036 / IS 13779 (Class 1.0) IEC 687 / IS 14697 / CBIP - 88 (Class 0.5S / 0.2S)
Case material	Plastic moulded with transparent cover protection IP 51 - IEC 1036 / IS 13779 (Class 1.0) IP 51 - IEC 687 / CBIP - 88 (Class 0.5S / 0.2S)
Insulation properties & HV insulation resistance	IEC 1036 / IS 13779 (Class 1.0) IEC 687 / CBIP - 88 (Class 0.5S / 0.2S)
Temperature	-5°C to 60°C for operation -20°C to 70°C for storage
Humidity	95% RH Condensing
Dimension	327 x 179 B x 104 D (base mounting) \pm 1mm
	247 x 180 B x 108 D (flush mounting) \pm 1mm
Weight	< 2.5kg

Dimensional Details of Trivector Meter (Base Mounting)

