



Autometers Alliance Ltd

TELPRO-EL

**MICROPROCESSOR BASED
ENERGY CUM SPEED MONITORING
AND RECORDING SYSTEM**



Autometers Alliance Ltd has indigenously developed Microprocessor based Energy cum Speed Monitoring and Recording System TELPRO, exclusively for Electric Locomotives/Electrical Multiple Units (EMUs). The product integrates the latest technology and can be customised for all types of traction vehicles, like metro train, LRVs, rail cars, inspection cars and the like. The product has been approved as per IEC 60571, IEC 61000-4-3, IEC 61000-4-4, IEC 61000-4-6 and IEC 61000-4-8 requirements.

Salient Features

- Adequate journey data recording capacity
- Data transfer through Pen-drive
- Both analog and digital displays for speed
- Both internal and external memories for data storage
- Memory freeze facility
- Stepless wheel wear compensation
- Dual sensor opto electronic pulse generator for speed sensing
- Measurement of OHE voltage
- Measurement of OHE current
- Measurement of power factor
- Measurement of energy consumption
- Specific energy consumption analysis
- Over speed audio visual alarm
- 7-digit odometer
- User friendly Windows-based data extraction and analysis software
- Graphical and Tabular reports generation for analysis of recorded data
- Cumulative, Trip-wise, Train-wise, Driver-wise and Date-wise report generation
- Master-Slave configuration

Applications

- Speed, Time, Distance, Energy Indicator for driver
- Administrative control of traction vehicle for traffic scheduling
- Vehicle trend analysis in case of derailment/accident
- Analysis of driver's operational performance to provide training, if required
- Analysis of locomotive efficiency

Technical Specifications

A. Operating Conditions

Conditions	Values
Temperature	-5°C to +70°C
Relative humidity	95% (max)
Accuracy of Master & Slave	±1.0%

B. Analogue Indication

Factors	Values
Scale spread over	240°
Illumination	Uniform backlit dial (Green colour, can be customized)
Brightness control	0-100% in 10 steps
Dial size	120mm
Dial colour	White with black pointer & numerals (can be customized)
Max speed range	0-150, 0-160 & 0-180 kmph (can be made as per customer's request)

C. Digital indication

Features	Values
LCD display	Graphical LCD with backlit control
Time display	HH:MM:SS on 24-hour scale



D. General

Factors	Values
Size	145×215×165mm (typical)
Weight: Master & Slave	3.5 kg (Master) 3.15 kg (Slave)
Odometer	7 digit with 1km resolution display
Input speed sensing	2 inputs for opto-electronic pulse generator 200 or 100 pulses/rev (configurable)
Voltage measurement	Through a potential transformer (PT)
Current measurement	Through a current transform (CT)
Energy measurement	A well proven software algorithm to calculate energy consumption with consideration of phase angle between voltage & current waveform
Digital I/P	Upto 8 No.
Digital O/P	Upto 5 Relay O/P & 2 Transistor O/P
Digital Storage	Compact flash card as external memory. Flash memory as Internal memory.



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