

# Electronic Static Energy Meters

Accurate, reliable & efficient metering solutions



**Decibels**  
INFINITE POSSIBILITIES

## ABOUT US:

Decibels Electronics Private Limited started its operations in the year 1995 in the India Market.

Decibels diversified into electronic component sourcing, manufacturing of sub-assemblies and embedded designs. The present business generated by the associated Group companies exceed 40 million US\$. All the associate companies operate with Profit centre approach & specific business goal.

Decibels have an advanced team of highly dedicated R & D professionals specializing in embedded designs. Our designs of Energy meters have been successfully adopted by leading manufacturers and are performing well in the field. We have plans to develop solutions for special applications for Meteorology, Space, Defence & Railways. We will be expanding our R & D base by more than 100 engineers specifically working on the target business lines within next two years.

We have done investments of over 3 M US\$ for plant & machinery which will be ready in phases within next 3 to 6 months with an ultra modern factory facility of 45,000 sq ft at Cherlapally, Hyderabad on the land allotted by APILC. Electronic Energy Meters & Passenger Information Systems for Railways are manufactured with production & assembly lines under controlled atmospheric conditions. Highest standards of quality in the products are achieved by utilizing sophisticated test equipment, in-process stringent quality control measures & proper control of incoming raw-materials. The inherent strength of optimal designs, sourcing of reliable components from world over results in trouble free & cost effective solutions/ products to the ever demanding customers.

### Single Phase & Three Phase Electronic Static Energy Meters

Decibels have developed efficient & reliable Energy Meters both for Single & Three Phase Supply conditions. The meters developed are backed by over two decades of experience in providing metering design solutions to National & International manufacturers & in sourcing of electronic components from world renowned suppliers.

Decibels range of compact Electronic Energy Meters are all round answers for:

- Accurate energy measurement thereby conserving depleting natural resources
- Needs of privatization & deregulation of electricity distribution markets by providing reliable & tamper proof measurement, Multi-Tariff & TOD features.
- Ever demanding consumers & Industry by providing compact, light weight, easy-to-use, and error free measurement.

### Salient Features:

- Conforms to National & International standards- class 1 accuracy
- Compact, light weight, easy to install & use
- Designed on advanced CAD systems for ease of installation & maintenance
- Quality is ensured at all levels of manufacturing in controlled atmospheres on SMT machines
- Meters are robustly designed to withstand harsh environmental conditions of temperature, humidity and tropical climate.
- Meters are designed to operate satisfactorily under extended supply conditions of Voltage, frequency and power factor
- Registers energy consumption accurately under more than 20 different Tamper conditions
- Large size backlit LCD for clear display from large distance with clear parameter identification
- Low power consumption in voltage & current circuits, saving precious energy
- Enclosure of the meter is molded from unbreakable, undeformable, UV resistant, Flame retardant engineering plastics like Polycarbonate reinforced with glass filled ensuring long life Factory calibrated using high accuracy reference meters and sealed ensuring no recalibration in the field.
- Protected from external influences like strong magnetic fields, waveform distortion, electromagnetic interference etc.
- External high intensity pulse red LED for calibration & testing at site.
- Battery back up to view the parameters in the absence of Mains supply

## SINGLE PHASE STATIC ENERGY METER

### Technical Specifications:

**TYPE :** 1 Phase 2 wire Whole Current  
**ACCURACY :** Class 1.0

### ELECTRICAL

- Voltage : 240 V AC (P-N) Nominal  
Operating Range: (+20%, - 40%)  
Optional: 220V or 230V Nominal
- Current (Ib) : 2.5A, 5A, 10 A  
Max. Current (Imax) : 600% of Ib  
(up to max. of 1000% of Ib, optionally)  
Starting Current : 0.2% of Ib at UPF
- Frequency : 50+/-5% Hz
- PF Range : Zero lag - Unity - Zero lead

### POWER CONSUMPTION

- Voltage Circuit : < 1 W and 4VA
- Current Circuit : = 1 VA

### WITHSTAND

- Dielectric Test : 4 kV, 50 Hz
- Impulse Test : 10 kV, 1.2/ 50  $\mu$ s
- Insulation Resistance : >5M $\Omega$  at 500V DC

### DISPLAY

- **LED Display:**  
Power On  
Current reversal (optional)  
Earth Load Tamper (optional)  
Neutral Missing  
Pulse output for metrology indication
- **LCD Display:**  
Large backlit LCD with parameter identification  
Seven segment LCD with six digits + 2 decimal digits
- **Parameters Display:**  
Automatic Scroll  
Manual scroll with push button switch  
Programmable data set & sequence  
High resolution kWh display with Push Button for calibration purpose

### TIME KEEPING

- Battery back-up for time keeping
- Quartz Crystal with accuracy better than +/- 3 mins./ year  
Minimum 10 years without power

### BATTERY BACK-UP

- Meter reading in the event of power outage
- 10 years battery life

**METER CONSTANT :** 3200 pulses/ kWh  
As per IS:13779 with latest amendments

### DATA STORAGE

- 12 months history of billing parameters
- 30 days of load profile
- Tamper Event Storage

### TOD & Load Survey Feature

- 8 configurable TOD slots
- Survey of MD and recording possible

### COMMUNICATION

- Optical Port (IEC 62056 – 21) for local data uploading to CMRI
- Infrared Port (optional)
- RS 232 feature (optional)

### TAMPER & ANAMOLY DETECTION

- Current reversal tamper
- Neutral Missing
- Top Cover Open
- Earth Load Tamper
- Magnetic Tamper Detection

### MECHANICAL

- Material: Polycarbonate
- Degree of Protection : IP 51
- Terminals : Brass with nickel plating

### ENVIRONMENTAL

- Temperature range: Operating 0 to 55 deg C. Storage -10 to 70 deg C
- Relative Humidity : up to 95% non-condensing

## THREE PHASE STATIC ENERGY METER

### Technical Specifications:

**TYPE :** 3 Phase 4 wire Whole Current  
**ACCURACY :** Class 1.0

### ELECTRICAL

- Voltage : 3 x 240 V AC (P-N) Nominal  
Operating Range: (+20%, - 40%)
- a. Current (Ib) : 2.5A, 5A, 10 A  
Max. Current (Imax) : 600% of Ib  
(up to max. of 1000% of Ib, optionally)  
Starting Current : 0.2% of Ib at UPF
- b. Ib=20A (Imax=100A, optionally)
- Frequency : 50+/-5% Hz
- PF Range : Zero lag - Unity - Zero lead

### BURDEN

- Voltage Circuit : < 1 W and 4VA / phase
- Current Circuit : < 1 VA / phase

### WITHSTAND

- Dielectric Test : 4 kV, 50 Hz
- Impulse Test : 10 kV, 1.2/ 50  $\mu$ s
- Insulation Resistance : >5M $\Omega$  at 500V DC

### DISPLAY

- **LED Display:**  
Current reversal, Presence of phase voltage (R Y B)  
Pulse output for metrology indication, Earth (Optional)
- **LCD Display :**  
Large backlit LCD with parameter identification  
Seven segment LCD with six digits + two decimal digits
- **Parameters Display:**  
Automatic Scroll  
Manual scroll with push button switch  
Programmable data set & sequence

### TIME KEEPING

- Battery back-up for time keeping
- Quartz Crystal with accuracy better than +/- 3 mins./ year
- Minimum 10 years without power

### BATTERY BACK-UP

- Meter reading in the event of power outage
- 10 years battery life
- Inductive coupling arrangement for external power-up (optional)

**METER CONSTANT :** 1600 pulses/ kWh  
As per IS: 13779 with latest amendments

### DATA STORAGE

- 12 months history of billing parameters
- 30 days of load profile
- Tamper Event Storage

### TOD & Load Survey Feature

- 12 configurable TOD slots
- Survey of MD and recording possible

### COMMUNICATION

- Optical Port ( IEC 62056 – 21) for local data uploading
- Infrared Port (optional)
- RS 232 feature (optional)

### TAMPER & ANAMOLY DETECTION

- Current reversal tamper
- Current unbalance
- Top cover open
- Abnormal magnetic influence
- Phase sequence reversal
- Power ON OFF
- Magnetic Tamper
- Magnetic influence- records energy
- Record imbalance of Load condition
- Current – By pass, open, short detection
- Voltage unbalance
- Missing Potential
- Neutral disconnection
- Earth loading
- DC Immunity
- High Neutral current

### MECHANICAL

- Material: Polycarbonate
- Degree of Protection : IP 51
- Terminals : Brass with nickel plating

### ENVIRONMENTAL

- Temperature range: Operating 0 to 55 deg C.  
Storage -10 to 70 deg C
- Relative Humidity : up to 95% non-condensing





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