LIGHTHOUSE
IOT SOLUTIONS


# SINGLE PHASE PREPAY KEYPAD ENERGY METER

THE FUTURE OF RELIABLE AND ACCESSIBLE ENERGY MANAGEMENT

## Why choose?

**Empowers Energy Management**

- Helps you track and optimize your electricity consumption.

**Cost-Effective Solution**

- Only pay for the electricity you use, with no hidden charges or surprises.
- perfect for revenue of energy usage
- Advanced Technology. Superior Quality. Affordable Price.

**Reliable for Remote Areas**

Perfect for .

- Residential Use
- Construction Sites
- Remote Locations
- Rental Properties

**For More Information:**

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# SINGLE PHASE PREPAY KEYPAD ENERGY METER

**Empowering Energy, Anywhere – No Internet Needed!**


The Single Phase Two Wire Prepay Keypad Energy Meter is a revolutionary device designed to make energy management simple, secure, and efficient. Perfectly suited for areas with no internet connectivity, it empowers users with total control over their electricity consumption through a secure 20-digit recharge system.

## TECHNICAL SPECIFICATION

| Parameter | Specification |
|---|---|
| Conforms to | IS13779: 2020 with latest Amendment |
| Accuracy Class | Class 1.0 (No drift in tolerance for 10 years) |
| Reference Voltage | 240V AC (-40% to +20%) |
| Current Rating (Ib) | 5(30)A, 10(60)A |
| Frequency Range | 50Hz ± 5% |
| Power Factor Range | 0 (lag) - UPF - 0 (lead) |
| Starting Current | 0.2% Ib |
| Meter Constant | 3200 Pulses/kWh |
| Power Consumption | As per IS13779: 2020 |
| Display | Liquid Crystal Display – (6+1) with six full digit and 1 small digit. |

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## CONNECTION DIAGRAM

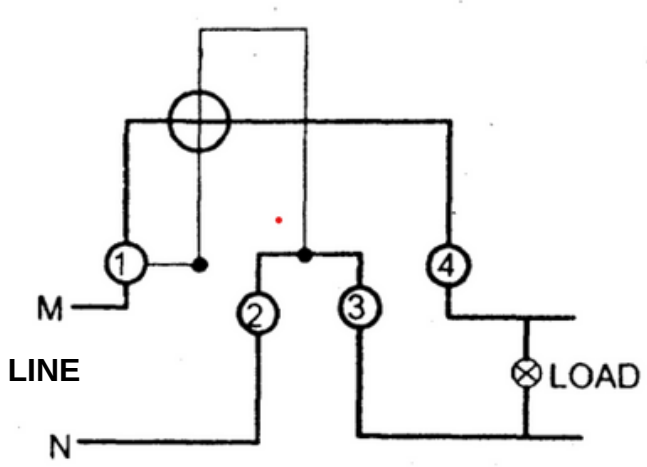


Fig. 1: Single Phase Two Wire Connections Diagram

# DISPLAY PARAMETERS

| Auto Scroll Mode | Push Button Mode |
|---|---|
| Firmware version,Meter Serial number, Current Date & Current Time, Meter Balance (R) , Voltage (V), Phase Current (P) Amp, Neutral Current (n) Amp ,Frequency (Hz), Power Factor (PF), Cumulative active energy (kWh) , Maximum Demand (KW), Maximum Demand Date (md), Maximum Demand Time (md), Last Recharge (Lr)<br><br>**Note**: Display parameter can be customized as per requirement | Firmware version,Meter Serial number, Current Date & Current Time, Meter Balance (R) , Voltage (V), Phase Current (P) Amp, Neutral Current (n) Amp ,Frequency (Hz), Power Factor (PF), Cumulative active energy (kWh) , Maximum Demand (KW), Maximum Demand Date (md), Maximum Demand Time (md), Last Recharge (Lr)<br><br>**Note**: Display parameter can be customized as per requirement |

| Tamper | Communication |
|---|---|
| Current reversal (↺), Earth loading (⏚), Magnet Tamper (⊃),Neutral missing(Ⓝ) | Optical communication as per IEC 62056-21 |

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# HOW IT WORKS

### How the 20-Digit Token Operates with Meter Firmware

The 20-digit token is a secure recharge mechanism designed to integrate seamlessly with the meter's firmware, ensuring accuracy, security, and efficiency. Here's how it works:

**Token Encryption and Generation:**

- The token is generated using advanced encryption algorithms and includes essential data for validation.
- This token is created through our application or website, ensuring it is unique and tamper-proof.

**Firmware Token Validation:**

- The meter firmware is programmed to recognize and decrypt the token using a secure decryption algorithm.
- It checks for key parameters, including meter serial number and checksum, to verify the token's authenticity.

**Balance Update Logic:**

- Once validated, the firmware updates the meter's balance according to the recharge amount specified in the token.
- The firmware also logs the recharge transaction for future reference and auditing.

**Error Handling:**

- If the token is invalid (e.g., mismatched meter serial number, expired token, or tampering detected,mismatched token digits.), the firmware rejects the token and displays an invalid message.

**Unathorized Access**

- The firmware is designed to prevent unauthorized modifications, ensuring the token process remains secure and reliable.

# KEY FEATURES

**01** **OFFLINE FUNCTIONALITY**
Operates seamlessly without the need for internet or mobile networks.

**02** **20-DIGIT RECHARGE CODE**
A secure and tamper-proof recharge mechanism that ensures reliable transactions.

**03** **USER-FRIENDLY INTERFACE**
Simple keypad input and clear display for easy operation.

**04** **TAMPER-PROOF DESIGN**
Advanced security features protect against unauthorized access and tampering.

**05** **DURABLE & WEATHERPROOF**
Engineered to function reliably in even the harshest environments.