# Single Phase
# STS Keypad Prepaid Electricity Meter

## GPRS /LORA Wireless

# User  Manual

## Structure & Main Components:
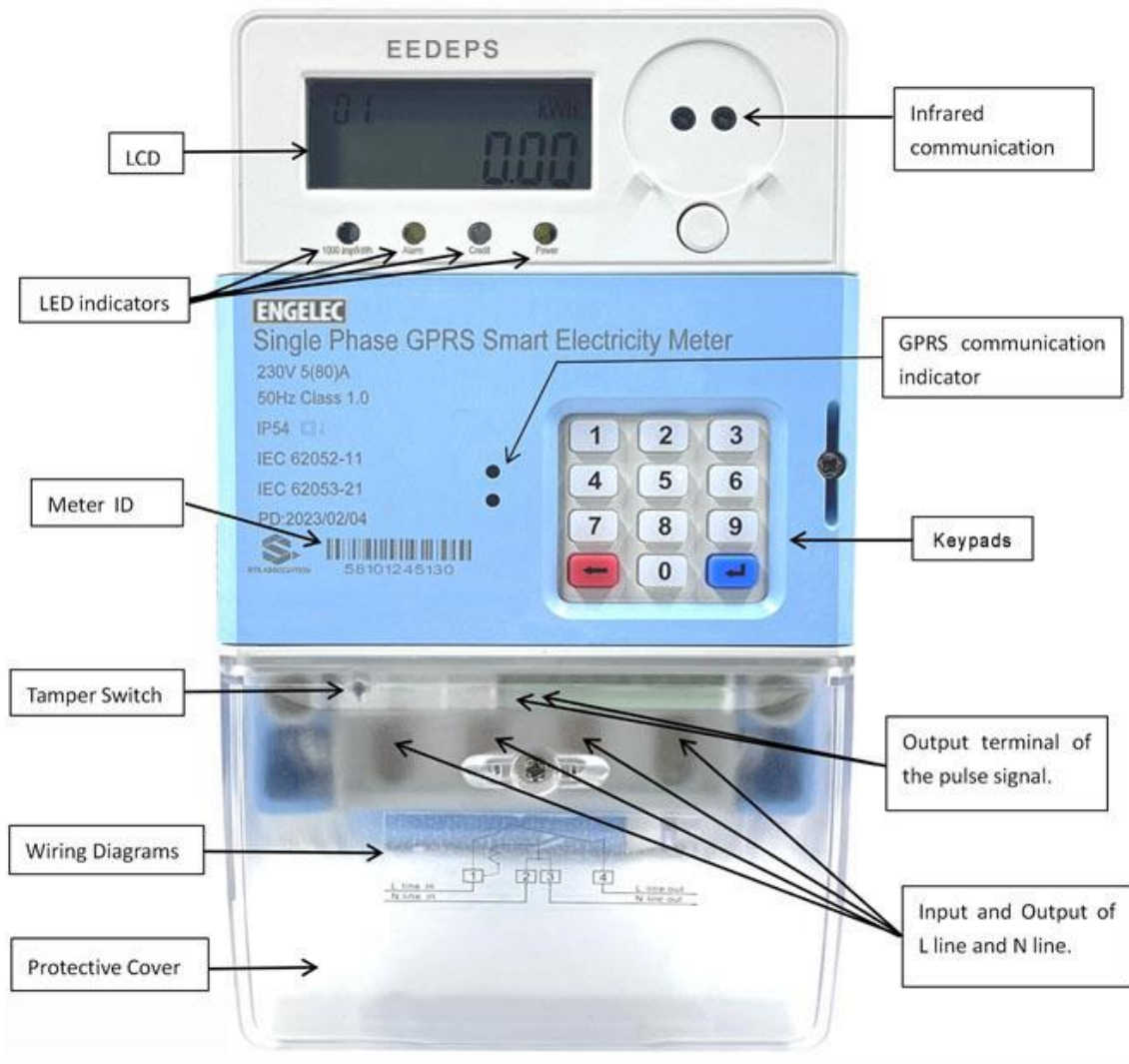


- ➢ **LED indicators：**
  - ◆ "1000imp/kWh": Pulse light, when the meter works normally after being connected to the load, it shows blue light, and every 1000 flashes is 1 kWh.
  - ◆ "Alarm": Warning light, when the meter in the tamper state or the balance is zero, it shows yellow light.
  - ◆ "Credit": When the credit balance is sufficient, it shows green light; when the balance is 0, it shows red light.
  - ◆ "Power": It lights up when the meter is powered on. The green light means the sufficient credit, the red light means the credit is 0.
- ➢ **Tamper Switch:** Tamper protection function. When the cover is opened, the meter is in the tamper state, it shows yellow light.
- ➢ **Meter ID** (Serial Number): It's a solo serial number/ ID to each meter.
- ➢ **Keypads**: Checking data from meter by pressing the button, and inputting the tokens (Recharge, Clear Credit and Clear Tamper Token).
- ➢ **SIM card slot**: Insert sim card for GSM wireless control and monitor.

## Technical Parameters

| Description | | Technical data |
|---|---|---|
| Model | | EEDEPS |
| Nominal Voltage | | 240V |
| Working Voltage Range | | 70%~120%Un |
| Frequency | | 50Hz |
| Basic Current (Ib) | | 5A |
| Maximum Current (Imax) | | 60A |
| Starting Current(Ist) | | 20mA |
| Active Energy Constant | | 1000imp/kWh |
| Power Accuracy | | Class 1.0 |
| Power Consumption in Voltage Circuit | | <2W   <8VA |
| Power Consumption of in Current Circuit | | <1VA |
| Operation Temperature Range | | -25℃-70℃ |
| Storage Temperature Range | | -40℃-85℃ |
| Communication | | 433RF, GPRS |
| Dimension | | 180.2mm×120mm×55.7mm |
| Weight | | 464.5g |
| Waterproof Level | | IP54 |
| Battery Voltage | | 3.3V |
| Sleep Current | | 0.2mA |
| AC Insulation Strength | | 4kV / 50Hz during 1min |
| Impulse voltage1.2/50 us mains connection | | 8kV |
| Electrostatic Discharge | Contact Discharge | 8kV |
| | Air discharge | 16kV |
| Insulation Electromagnetic RF Field | 27MHz~500MHz | 10V/m |
| | 100kHz-1GHz | 30V/m |
| Fast Transient Burst Test | | 4kV |
| Protection level | | Class II |

## Functions

➢ **Keypad Control :**

Input digit token to check the data, recharge, clear tamper and clear credit operations of the STS prepaid meter.

➢ **Remote Communication**:

The single phase prepaid electricity meter has built-in SIM card slot, the user can insert SIM card to the meter directly to use GSM remote communication. Or choose our Lora-RF data collector to connect 300 pcs meter for remote communication. The user can monitor and recharge on the ENGELEC vending system web.

➢ **Anti-Tamper：**

When the transparent protective cover opened, the tamper switch is triggered, the valve will be closed and the "Warning" indicator will show yellow light. It can prevent electricity theft.

➢ **Credit Alarming：**

The "Credit" indicator flashes red light when the meter has insufficient credit. The "Alarm" indicator shows yellow light when the credit is zero.

## Display Codes

| S/N | Description | LCD Display |
|---|---|---|
| 1 | "ACCEPT" means the Token could be accepted by the energy meter. | ACCEPT |
| 2 | "REJECT" means the Token is wrong ,it's refused by the energy meter. | rEJECT |
| 3 | "USED" means the input Token has been used before and cannot be reused. | USEd |
| 4 | "OLD" means the input Token is expired and need a new token. | OLd |
| 5 | "NULL" means the input command is not defined. | NULL |
| 6 | "Err_06" means the entered token is wrong | Err_06 |
| 7 | "OVER PO" means the consumption exceeds the overdraft, the power will be cut off within the specified time. | OuEr Po |

## Operation Codes

| Display number | Description | Display number | Description |
|---|---|---|---|
| 01 | Cumulative kWh consumption | 02 | Cumulative total reverse kWh |
| 03 | Voltage | 04 | Current |
| 05 | NULL | 06 | Cumulative purchased amount |
| 07 | Residual amount | 08 | TOU residual credit |
| 09 | Date (year/month/day) | 10 | Time (hour/minute/second) |
| 11 | The alarm threshold 1 | 12 | The alarm threshold 2 |
| 13 | Load threshold | 14 | NULL |
| 15 | Daily cumulative kWh Consumption | 16 | Overload trip delay time |
| 19 | Power consumption of last month | 20 | Power consumption of last 2nd |
| 21 | Power consumption of last 3rd | 22 | Power consumption of last 4th month |
| 23 | Power consumption of last 5th | 24 | Power consumption of last 6th month |

| 25 | Power consumption of last7th | 26 | Power consumption of last 8th month |
|----|------------------------------|----|--------------------------------------|
| 27 | Power consumption of last 9th | 28 | Power consumption of last 10th |
| 29 | Power consumption of last 11th | 30 | Power consumption of last 12th |
| 31 | Real time power | 32 | Phase A power(kWh) |
| 33 | Phase B power(kWh) | 34 | Phase C power(kWh) |
| 39 | NULL | 40 | The number of cover meter open |
| 41 | The last cover open time | 42 | The last 2nd cover open time |
| 43 | The last 3rd cover open time | 44 | The last 4th cover open time |
| 45 | The last 5th cover open time | 46 | The number of overload break power |
| 47 | The last overload time | 48 | The last 2nd overload time |
| 49 | The last 3rd overload time | 50 | The last 4th overload time |
| 51 | The last 5th overload time | 52 | The number of power down |
| 53 | The last power downtime | 54 | The last 2nd power down time |
| 55 | The last 3rd power down time | 56 | The last 4th power down time |
| 57 | The last 5th power down time | 64 | Monthly Consumption |
| 65 | Meter ID High Bit | 66 | Meter ID Low Bit |
| 69 | NULL | 76 | The last 1 power purchase TOKEN |
| 77 | The last 2 power purchase TOKEN | 78 | The last 3 power purchase TOKEN |
| 79 | The last 4 power purchase TOKEN | 80 | The last 5 power purchase TOKEN |
| 81 | Last 1th credit kWh | 82 | Last 2nd credit kWh |
| 83 | Last 3rd credit kWh | 84 | Last 4th credit kWh |
| 85 | Last 5th credit kWh | 86 | Total number of token accepted |

## Installation Notices

➢ Generating a recharge token on vending software, then input the token by the meter keypad or remote charging. The LCD screen shows " ACCEPT ", it means credit is charged to the meter successfully. The user can check it by input "07+Enter" to check the residual credit on keypad.

➢ Now the meter starts to work normally.