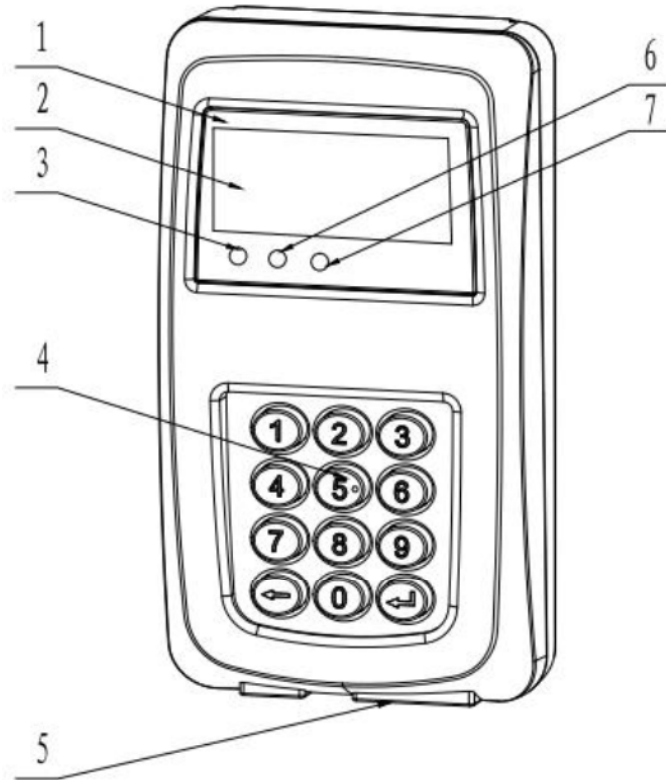


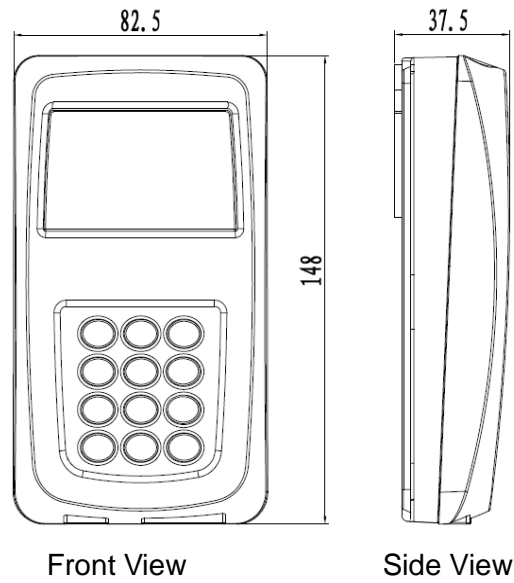
7. UIU Overview, Connections and Dimensions

7.1 UIU Overview

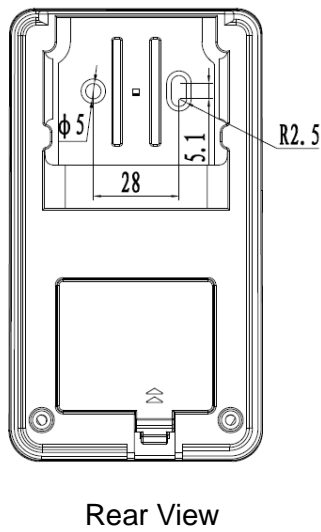


1. Nameplate
2. LCD
3. Remaining credit LED indicator
4. Keyboard
5. Power cable socket
6. Communication indicator LED
7. Event indicator LED

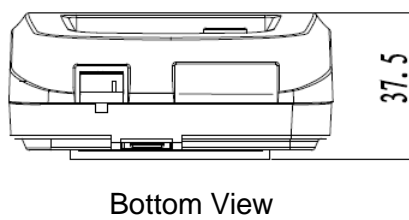
7.2 UIU Dimension



7.3 UIU Mounting Dimensions



7.4 UIU Connection





8. UIU Specifications

Item	Sub-item	Parameter
UIU	LED display	1 LED remaining credit indicator(bi-color) 1 communication LED(red) 1 event indicator LED(red)
	Communication with MCU	PLC
	Protection level	IP51
	Material	Meter cover: Polycarbonate
	Dimensions (LxWxH)	148mm*82.5mm*37.5mm
	Weight	Approx.0.5kg


8.1 UIU Function Summary

The UIU is the user prepayment user interface, and provides a LCD to view information, and keypad to enter or request information, LED and buzzer alarm indication.


The numeric keypad has 12 keys:

- 0~9 numeric key
-  back space key
-  enter key

i) Pairing UIU with the MCU (meter)

1. Insert 4 AAA 1.5V batteries into the battery compartment at the rear of the UIU to ensure operation while the load is disconnected.
2. If the display is off, depress any button to wake the UIU display
3. Key in **337597072666** on the UIU and press  to reset the pairing.

SUCCESS will be displayed (The **ALT** annunciator on the LCD will also be displayed)

4. Key in 11 digit meter number and press 

The UIU will send the pairing command. If UIU and meter pairs successfully, **UIU-good** will be displayed, else **Failed** will be displayed.

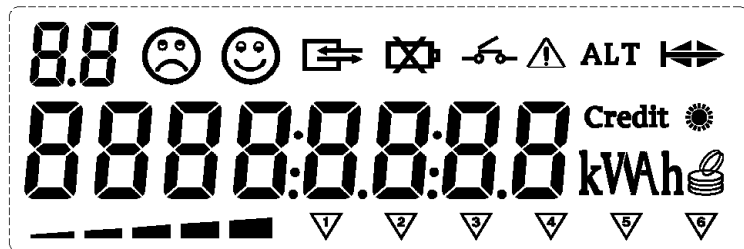
Note:

- The UIU will exit the pairing process automatically if the meter number is not entered within 30min after pairing is reset.
- The UIU will exit the pairing process immediately after entering the meter number, irrespective of successful pairing or not.
- During the pairing process, short codes, recharge tokens or test tokens cannot be used.
- The pairing process will be exited in the event of a power failure

ii) Commissioning the MCU (meter) with UIU

1. Short code 865 is the commissioning code which enables tamper detection.
2. Following installation and pairing, MCU must be commissioned. When entering 865, UIU displays *SUCCEED* if it's the first entry of the commission token and tamper detection is enabled
3. If "rEJECT is displayed on the UIU after entering 865, the meter has previously been commissioned

iii) Display



Segment/symbol on LCD	Description
	Main display for energy, tokens and instantaneous values
	OBIS code
	Remaining credit indicator
	UIU battery under voltage indicator
	Composite unit
	Tamper event alarm indicator
	Relay open/closed indicator
ALT	UIU in the paring process

iv) Display Mode

In the prepayment mode: **03** refers to remaining credit

Overload event: **LoAdovEr** is displayed

v) LED functionality

LED Display	Indicator status
Remaining Credit Status (bi-colour LED)	<p>GREEN: Remaining credit exceed the upper credit threshold</p> <p>RED: Remaining credit below the upper credit threshold</p> <p>FLASHING RED: Remaining credit below the low credit threshold</p> <p>FLASHING RED with BUZZER: Remaining credit below the critical credit threshold</p> <p><u>Note</u>: when the meter in the postpaid mode, LED is GREEN</p>
Communication indicator (RED LED)	Indicates MCU and UIU communicating
Alarm indicator (RED LED)	FLASHING RED: indicates occurrence of an event

vi) Short Code Query

Key in relevant short code, the UIU will display the relevant meter information of this short code. The Short code query list:

Short code	Function
000	STS all test
003	Relay test
002	Full screen test
001	Display total energy

005	Display KRN
006	Display TI
007	Display Max. Power limit
008	Display tamper status
009	Query remaining energy
030	Query SGC number
050	Query instantaneous power
100	Query the matched meter number
101	Query firmware version number
106	Security Key limit
200	Query last 1 st recharging energy
202	Query last 2nd recharging energy
204	Query last 3rd recharging energy
206	Query last 4th recharging energy
208	Query last 5th recharging energy
802	Query current date
803	Query current time
806	Query relay disconnect reason: 01: overload 02: EEPROM hardware error 03: terminal cover open 04: STS test disconnect 05: local communication disconnect 06: Credit is exhausted

	<p>07: Credit overdraft is exhausted</p> <p>08: Over voltage</p> <p>09: Under voltage</p> <p>10: Magnetic influence</p> <p>11: Meter cover open</p> <p>13: Reverse power flow</p> <p>14: Over current</p> <p>15: Over frequency</p> <p>16: Relay connect</p> <p>17: High temperature</p> <p>19: Battery under voltage</p> <p>20: Power factor lower the limit value</p>
807	Query event status
808	Query impulse constant
809	Query power failure time
810	Query recharging limit
811	Emergency overdraft
813	Query last time energy consumption
814	Query current month energy consumption
815	Query last recharging date
818	Query last recharging TOKEN
821	Query last month energy consumption
822	Query last 2 months energy consumption
823	Query last 3 months energy consumption
824	Query last 4 months energy consumption
825	Query last 5 months energy consumption

831	Query last month recharging energy
832	Query last 2 months recharging energy
833	Query last 3 months recharging energy
834	Query last 4 months recharging energy
835	Query last 5 months recharging energy
841	Query instantaneous voltage
844	Query instantaneous current
851	Query total recharging credit
852	Query last 2nd recharging TOKEN
865	Commissioning token, Can be used once after the installation After first entry, SUCCEED will be displayed, there after REJECT .
870	Query prepaid/postpaid mode
878	Query over current threshold

Note:

1. If correct short code successful entered, the corresponding information displayed or the consequence of short command will be executed along

with the 😊

2. If the short code does not exist the following will be displayed:.,

<p style="text-align: center;">Cd</p> <p style="text-align: center;">inEHlSt</p>

3. When using **008** to query the meter status

1000000 magnetic influence

01000000bypass

0010000 reverse power flow

0001000 under voltage


0000100 over voltage

0000010 terminal cover open

0000001 meter cover open

Or any combination of the above

8.2 Communication

- When the user inputs a TOKEN or a short code (query code) on the UIU, and then presses , the LCD will display **connect**
- If the communication is successful, meter will return relevant information to UIU.
- If the communication has failed, the LCD will display **FAILED** and buzzer will send out continuous alarms.
- When the meter and UIU are paired, the UIU and meter will be synchronized and thus the UIU displayed data will correspond to that of the MCU.

8.3 Alarm

Three credit limit thresholds are configurable in the meter:

Credit balance condition	Credit balance LED	Credit balance bar display
Remaining credit > high credit level	GREEN	5 segments shown
Remaining credit < high credit level, Remaining credit > low credit level	RED	3 segments shown
Remaining credit < low credit level,	FLASHING RED	1 segments shown

Remaining credit > critical credit level		
Remaining credit < critical credit level (pressing any button silences Buzzer)	FLASHING RED with BUZZER	0 segments (bar display disappears)