

Zhejiang Yongtailong Electronics Co., Ltd.
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DEM1E Series

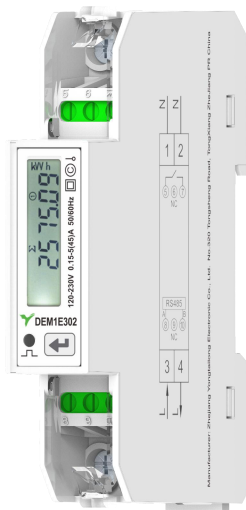
Single phase Direct-connected Smart Din Rail meter (MID certified)

DEM1E302: With RS485 communication, DLT/645 and MODBUS-RTU protocol compatible, RTC&TOU
Tariff and Switch Tariff, multiple metering modes

DEM1E202: With RS485 communication, DLT/645 and MODBUS-RTU protocol compatible, dual tariff, multiple metering modes

DEM1E001: With SO output, multiple metering modes

More options to meet different needs!



Single-Phase Smart DIN Rail Meter

DEM1E series energy meters with maximum load 45A

This meter has passed MID B+D certification
by UK SGS, proving its accuracy and quality.

This model can be used in any secondary billing application scenario.

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DEM1E Series

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1. Product Introduction

The DEMIE series is a single-phase direct-type energy meter that employs a high-speed processing chip solution, specifically designed for high-speed metering scenarios such as photovoltaic systems, energy storage systems, and factory energy monitoring. Simultaneously, its wide operating temperature range of -40°C to 70°C meets the requirements for application in outdoor charging piles exposed directly to sunlight. Moreover, this series of energy meters adopts a rail-mount installation method, featuring compact size and easy installation. The DEM1E302/DEM1E202 electricity meters support RS485 communication and are compatible with multiple protocols, achieving a communication response speed of up to 75 ms. The DEM1E001 model supports SO pulse signal output. With outstanding measurement accuracy and comprehensive features, these meters meet MID certification requirements and represent an ideal solution for high-precision, high-speed AC metering applications.

2. Main Features

- Measurement: Bidirectional active/reactive energy
- Accuracy Class: 0.5
- 75ms high refresh communication
- Flexible communication methods: Supports RS485 communication, compatible with Modbus and DL/T645-2007 protocols.
- LCD backlight display: Shows voltage, current, energy, power, and other information; features automatic sequential display with a default interval of 5 seconds.
- Self-diagnosis, alarm, and security protection functions.
- MID certified
- Provide an optional version DEM1E202: without battery, without TOU.
- Provide an optional version DEM1E001: with SO output

model	RS485 communication	battery	TOU tariff	two-tariff	SO pulse output	Multiple measurement methods
DEM1E302	√	√	√	√		√
DEM1E202	√			√		√
DEM1E001					√	√

3. Parameter Specifications

3.1. Electrical Parameters

Voltage Connection	Direct
Rated Voltage	120...230V
Voltage Tolerance	From 0.8 to 1.15 Un
Frequency	50/60Hz
Current Connection	Direct
Base Current (Ib)	5A
Minimum Current (Imin)	0.15A (MID) /0.25A (IEC)
Maximum Current (Imax)	45A

3.2. Measurement Accuracy

Voltage	±0.5%
Current	±0.5%
Frequency	±0.5%
Active Power	±0.5%
Reactive Power	±1%
Active Energy	Class 0.5
Reactive Energy	Class 1

3.3. Communication Parameters

Communication Method	RS485 (DEM1E302/DEM1E202)
Protocol	RS485 compatible with Modbus RTU, DLT/645-2007
Communication Type	Bidirectional
RS485 Configuration Parameters	Modbus Address (1 to 247) BaudTariff (9.6/19.2/38.4/57.6/76.8/115.2 kbps) Parity (None/Odd/Even)
Refresh Time	≤75ms

3.4. Functional Parameters

Metering Function	Monitor energy consumption, main electrical variables (including active/reactive power, power factor) and calculates current/voltage harmonic content, apparent energy
Metering Mode	1. Forward + Reverse (Absolute Value); 2. Forward - Reverse (Algebraic Sum); 3. Forward Metering; 4. Reverse Metering; 5. Calculate energy after Forward-Reverse offset
Tariff	RTC&TOU Tariff (default 4 tariffs, 8 time periods)*; Switch Tariff (default 2 tariffs)
SO pulse output	Supports 1-channel SO pulse output (only for DEM1E001)
Self-diagnosis	EEP detection
Event Alarm	Monitored variable alarms (kW, A, V L-N, V L-L, PF, kvar, kVA), etc., settable activation threshold and delay

Other Functions	Screen saver function Page filter Operating hour meter
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Note: DEM1E202 is the version without battery, without RTC&TOU Tariff, only has Switch Tariff. DEM1E001 SO pulse output version, without Tariff setting function

3.5. General Parameters

LCD Display	6+2 by default
LCD Refresh Time	500ms
LED	Red pulse light
Parameter	Specification
LCD Display	Default 6+2
LCD Refresh Time	500ms
LED	Red pulse light
Button	Page turn, Settings
IP Rating	IP20
OVC grade	III
Protection Class	Class II protection
Rated Impulse Voltage	6kV
Way to install	DIN rail mounted
Mode of connection	Direct connection; 1P2W

3.6. Wiring Parameters

Parameter	Wiring terminal 1、2、3、4	Wiring terminal 5、6、7、8、9、10
Conductor cross-sectional area	10mm ²	1.5mm ²
Strand length	11-13mm	5-6mm
Screwdriver size	Phillips screwdriver Φ 5/6mm	Phillips screwdriver Φ 3mm
Torque	1.5N. m	0.4N. m

3.7. Environmental Parameters

Operating Temperature	-40~+70°C
Storage/Transport Temperature	-40~+70°C
Reference Temperature	25 ± 2°C
Relative Humidity	≤95% non-condensing
Altitude	≤2000m

3.8. Standard Measurement Conditions

Ambient Temperature	25 ± 2°C
Frequency	50/60Hz ± 5%
Current	5A, 45A
Voltage	230V ±20%

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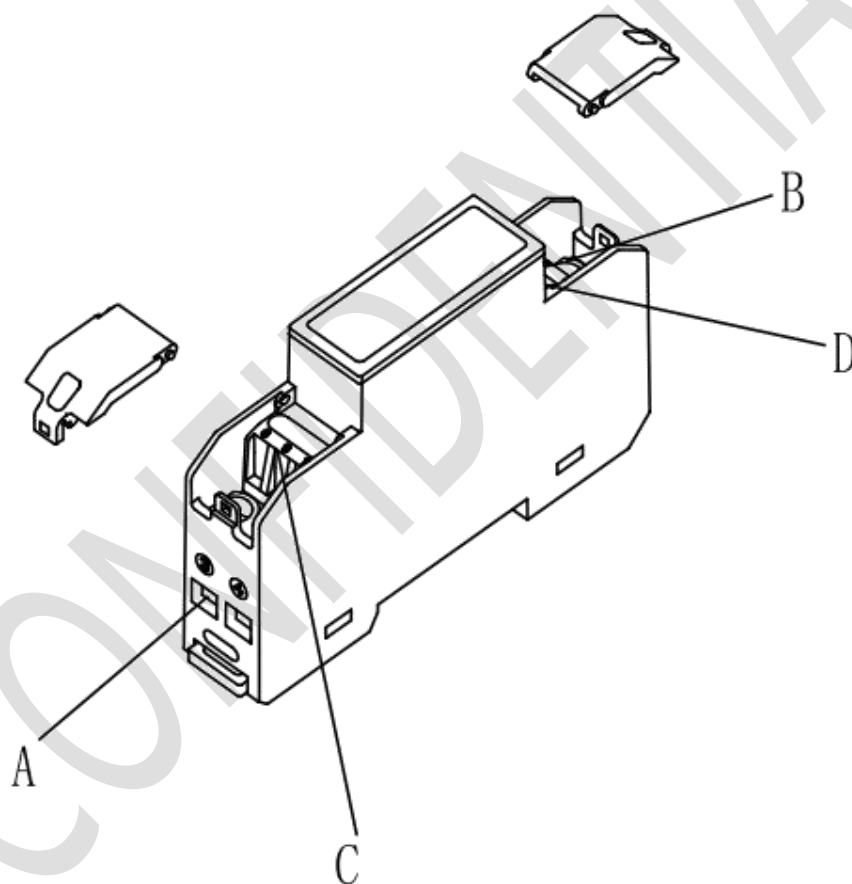
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Magnetic Field	Resists external magnetic field 400mT (constant field)
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3.9. Standards and Regulatory Certifications

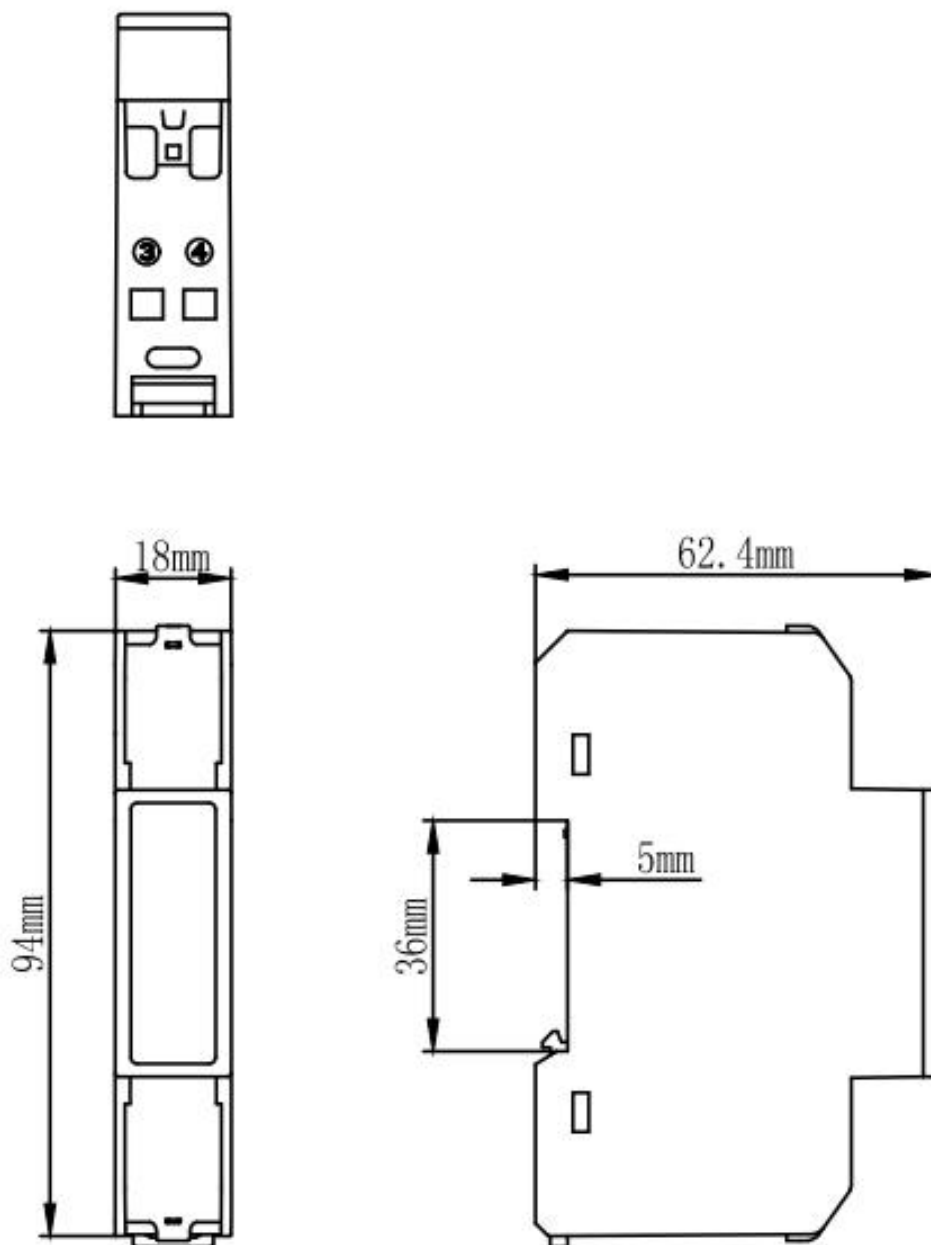
Compliant Standards	IEC 62052-11:2020 IEC 62053-21:2020 IEC 62053-23:2020 EN 50470-3:2022 IEC62052-31:2024
Certification	MID

4. Structure



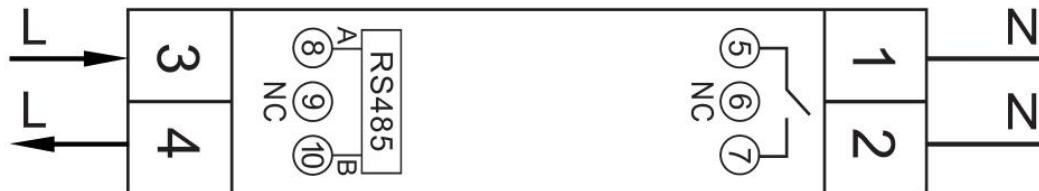
Number	Structure Description
A	L Input/Output
B	Neutral Line Interface
C	RS485 Interface
D	Tariff Switch

5. Dimension



Case Dimension	18mm×94mm×62.4mm
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6. Wiring



Note: When wiring terminals No. 5, 6, 7, 8, 9 and 10, the torque shall be controlled within **0.4N·m**; when wiring terminals No. 1, 2, 3 and 4, the torque shall be controlled within **1.5N·m**. Otherwise, thread slipping may occur.

- Terminals 1 and 2 are for N line connection.
- Terminals 3 and 4 are for L Input, L Output.
- Terminals 5 and 7 are for the Tariff Switch.
- Terminals 8 and 10 are one set of RS485 interfaces (Only DEM1E302/DEM1E202), or SO interface (Only DEM1E001).

7. Input Description

7.1. Digital Input

No.	Digital Input	Description	Remarks
1	Closed	Tariff 1	Tariff Management
	Open	Tariff 2	

When interfaces 5 and 7 are not connected, they are in a disconnected state; the feeTariff is set to 1. When interfaces 5 and 7 are connected with wires, they form a closed circuit; at this point, the feeTariff is set to 2.

8. Display and Operation

8.1. Overview

The DEM1E series display consists of five main pages:

Measurement Page: displays energy and other conventional electrical parameters

Tariff Page: displays tariff energy

Demand Page: displays maximum demand

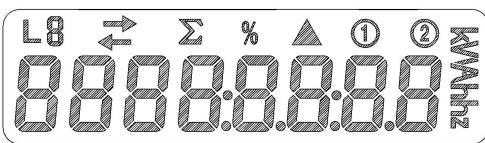
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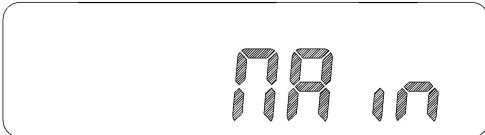
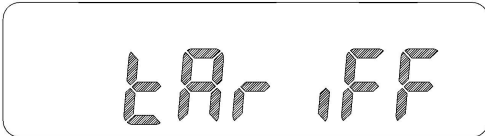
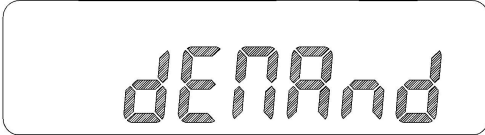
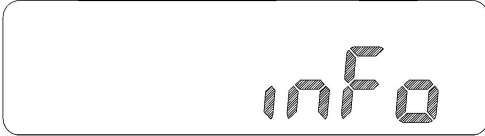
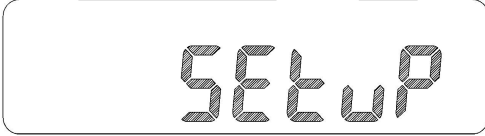
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Information Page: displays general information and current configuration parameters
Settings Page: sets meter function parameters

8.2. Full Display Page

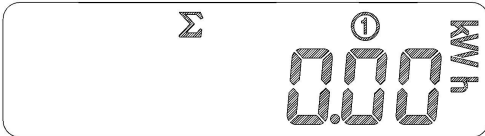
No.	Illustration	Content	Remarks
1		LCD Full Display	Displays full display page after power-on, then enters main interface

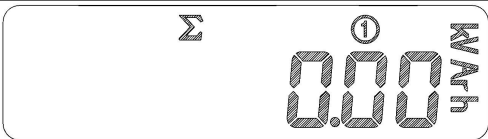
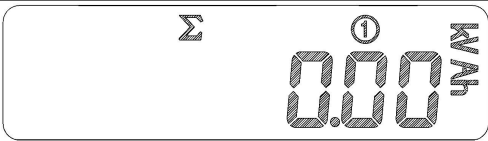
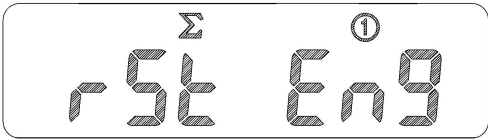
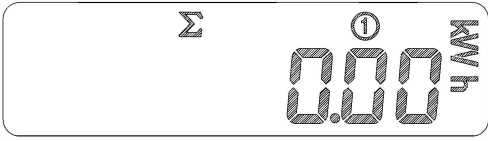
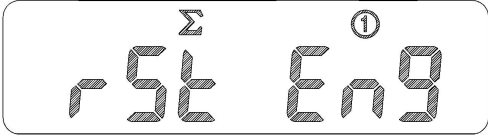
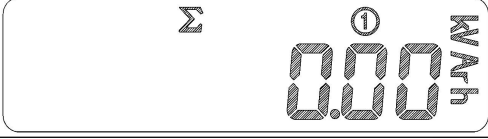
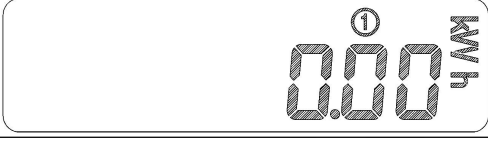
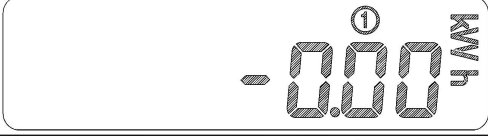
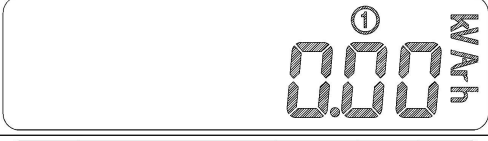
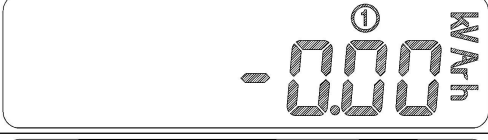
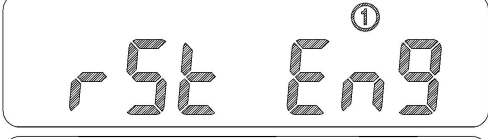
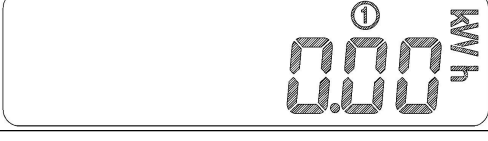
8.3. Switching Pages

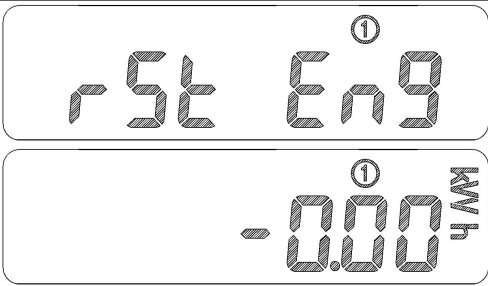
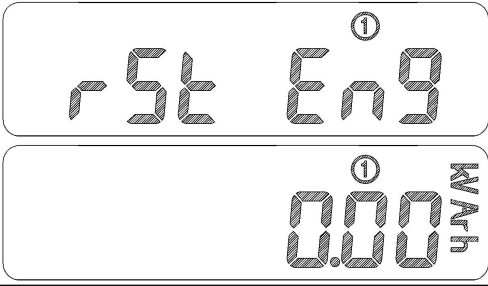
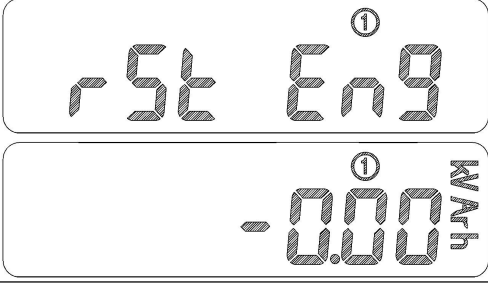
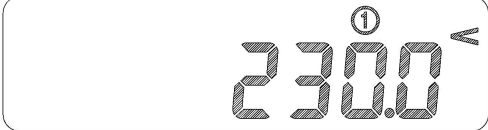
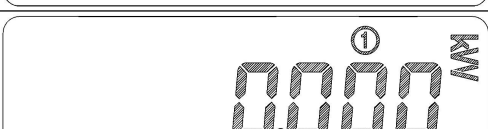
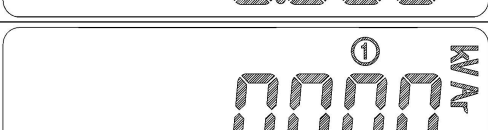
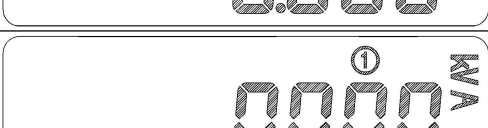
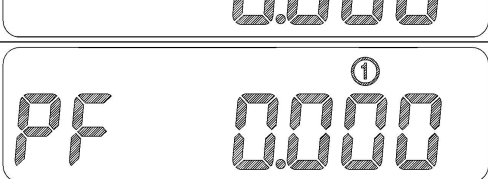
No.	Illustration	Content	Remarks
1		Measurement Page	
2		Tariff Page	DEM1E001 Without this page
3		Demand Page	
4		Information Page	
5		Settings Page	

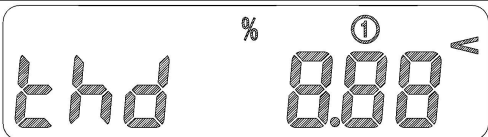
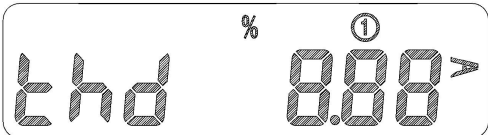
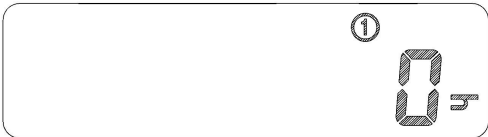
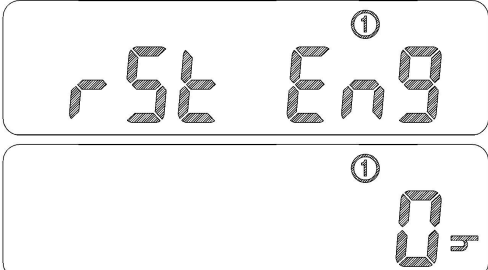
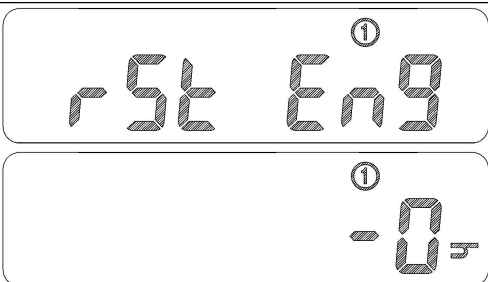
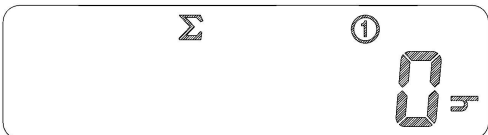
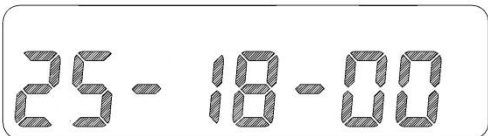
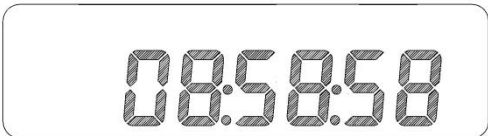
8.4. Measurement Page

(The figure below shows the DS tariff mode under Tariff 1. Since DEM1E001 has no tariff function, item ① is not displayed.)

No.	Illustration	Content	Remarks
1		Total Active Energy	

2		Total Reactive Energy	
3		Total Apparent Energy	
4	 	Total Active Energy (Clearable)	Clearable identifier and total active energy switch display alternately
5	 	Total Reactive Energy (Clearable)	Clearable identifier and total reactive energy switch display alternately
6		Total Forward Active Energy	
7		Total Reverse Active Energy	
8		Total Forward Reactive Energy	
9		Total Reverse Reactive Energy	
10	 	Forward Total Active Energy (Clearable)	Clearable identifier and forward total active energy switch display alternately

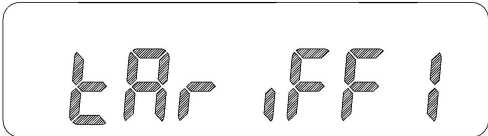
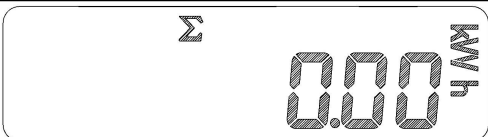
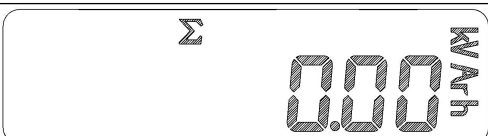
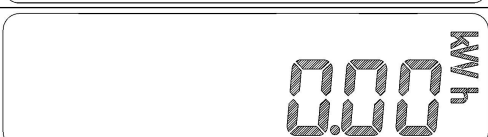
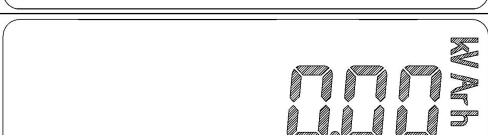
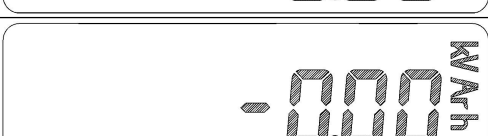
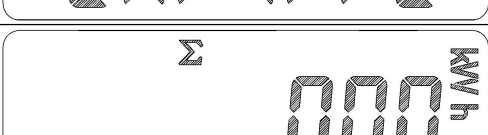
11		Reverse Total Active Energy (Clearable)	Clearable identifier and reverse total active energy switch display alternately
12		Forward Total Reactive Energy (Clearable)	Clearable identifier and forward total reactive energy switch display alternately
13		Reverse Total Reactive Energy (Clearable)	Clearable identifier and reverse total reactive energy switch display alternately
14		Voltage	
15		Current	
16		Active Power	
17		Reactive Power	
18		Apparent Power	
19		Power Factor	

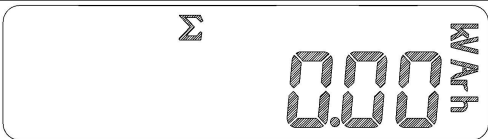
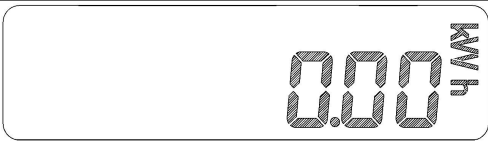
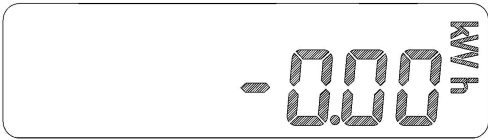
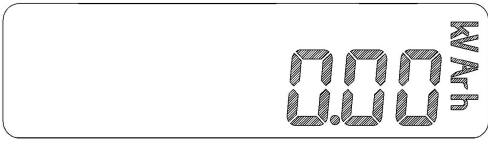
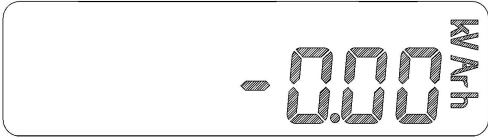
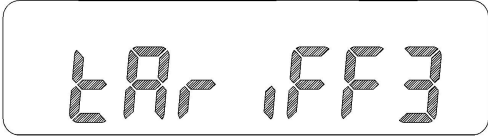
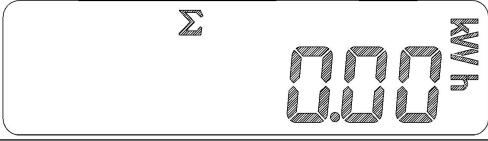
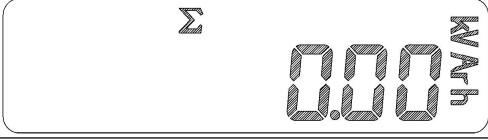
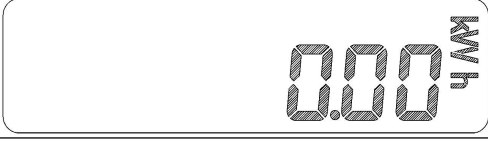
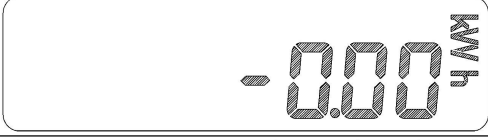
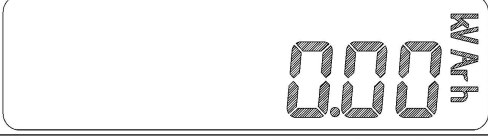
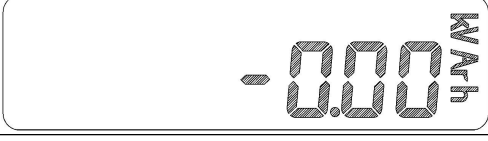
20		Frequency	
21		Voltage Harmonic Content	
22		Current Harmonic Content	
23		Operating Time (KW+)	
24		Operating Time (KW-)	
25		Operating Time (KW+) (Clearable)	
26		Operating Time (KW-) (Clearable)	
27		Total Operating Time	
28		Date	
29		Time	

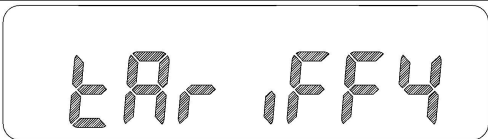
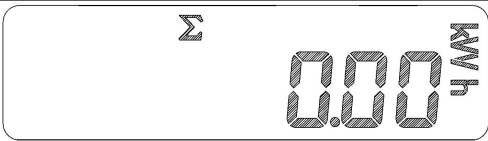
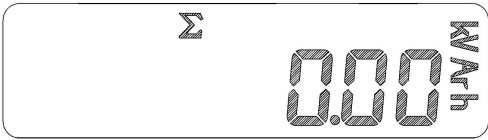
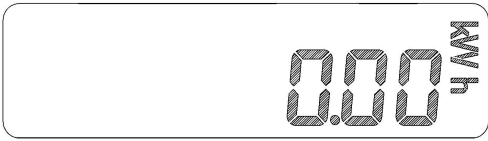
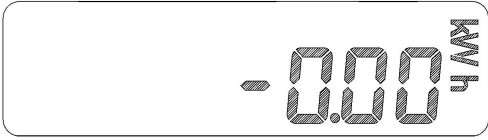
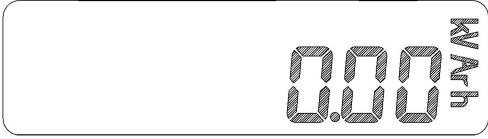
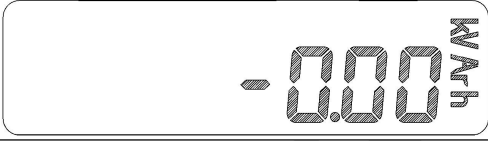
8.5. Tariff Page

RTC&TOU Tariff

(The following illustrations are for RTC Tariff mode. Since DEM1E001 does not have a Tariff function, the following page is not displayed.)

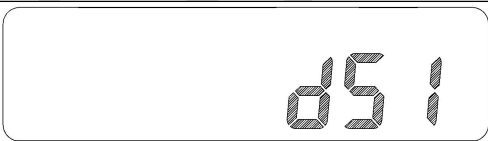
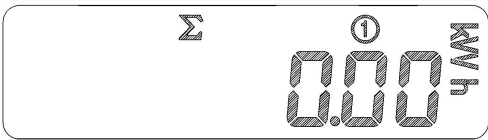
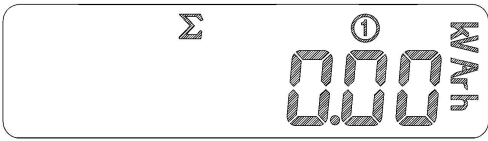
No.	Illustration	Content	Remarks
1		T1	
2		T1 Total Active Energy	
3		T1 Total Reactive Energy	
4		T1 Forward Total Active Energy	
5		T1 Reverse Total Active Energy	
6		T1 Forward Total Reactive Energy	
7		T1 Reverse Total Reactive Energy	
8		T2	
9		T2 Total Active Energy	

10		T2 Total Reactive Energy	
11		T2 Forward Total Active Energy	
12		T2 Reverse Total Active Energy	
13		T2 Forward Total Reactive Energy	
14		T2 Reverse Total Reactive Energy	
15		T3	
16		T3 Total Active Energy	
17		T3 Total Reactive Energy	
18		T3 Forward Total Active Energy	
19		T3 Reverse Total Active Energy	
20		T3 Forward Total Reactive Energy	
21		T3 Reverse Total Reactive Energy	

22		T4	
23		T4 Total Active Energy	
24		T4 Total Reactive Energy	
25		T4 Forward Total Active Energy	
26		T4 Reverse Total Active Energy	
27		T4 Forward Total Reactive Energy	
28		T4 Reverse Total Reactive Energy	

DS Tariff

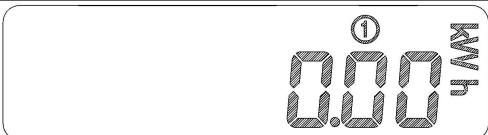
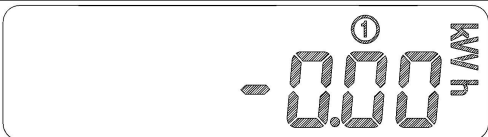
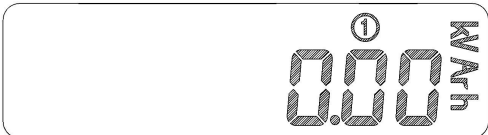
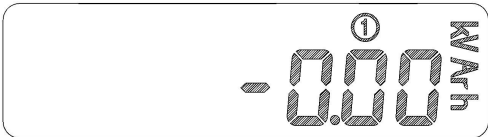
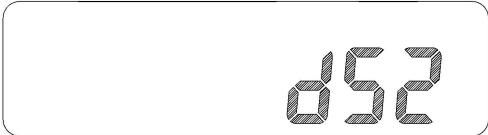
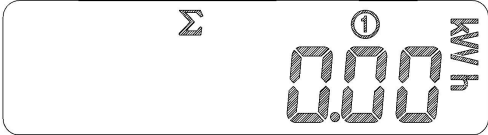
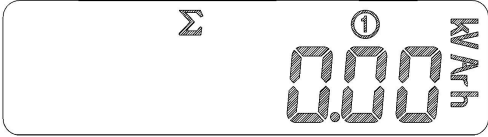
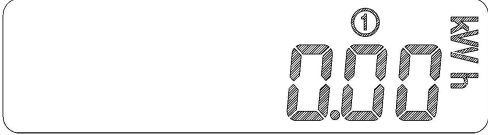
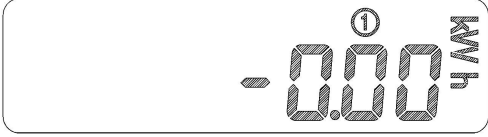
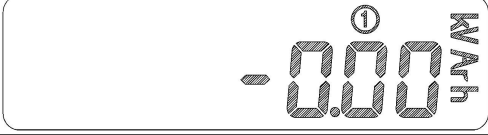
(The following illustrations are for DS Tariff mode, Tariff 1 situation, as DEM1E001 no tariff function, so the below content will not be displayed)

No.	Illustration	Content	Remarks
1		DS1	
2		DS1 Total Active Energy	
3		DS1 Total Reactive Energy	

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4		DS1 Forward Total Active Energy	
5		DS1 Reverse Total Active Energy	
6		DS1 Forward Total Reactive Energy	
7		DS1 Reverse Total Reactive Energy	
8		DS2	View DS2 info in DS1 mode
9		DS2 Total Active Energy	View DS2 info in DS1 mode
10		DS2 Total Reactive Energy	View DS2 info in DS1 mode
11		DS2 Forward Total Active Energy	View DS2 info in DS1 mode
12		DS2 Reverse Total Active Energy	View DS2 info in DS1 mode
13		DS2 Forward Total Reactive Energy	View DS2 info in DS1 mode
14		DS2 Reverse Total Reactive Energy	View DS2 info in DS1 mode

8.6. Demand Page

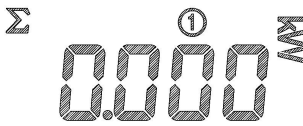
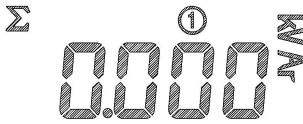
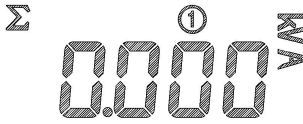
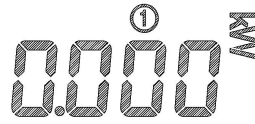
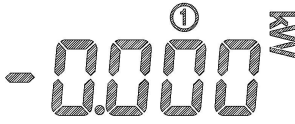
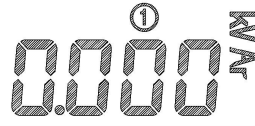
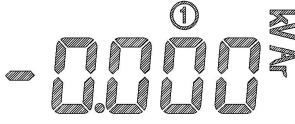
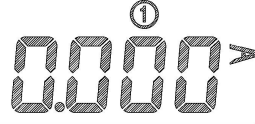
(The following illustrations are for No Tariff / DS Tariff mode, Tariff 1 situation. Since DEM1E001 without

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DEM1E Series

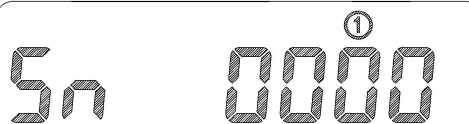
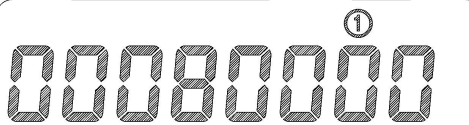
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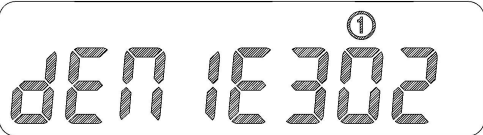
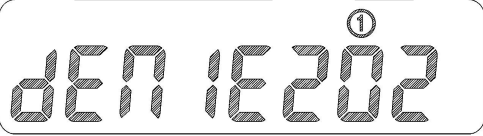
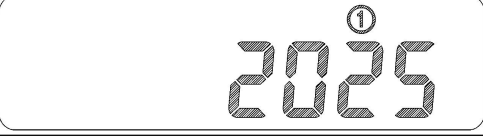
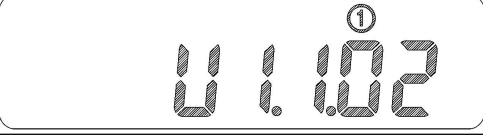
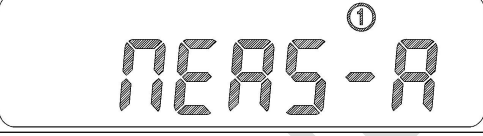
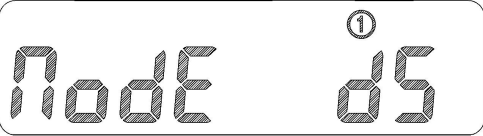
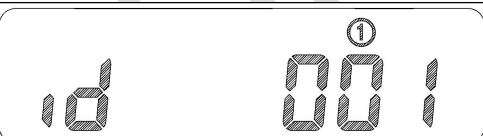
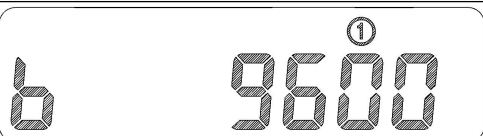
aTariff function, it does not display ①.)

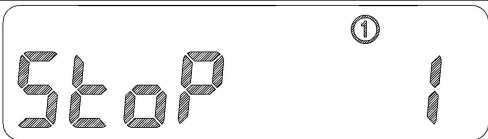
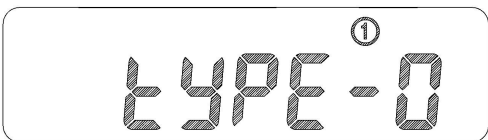
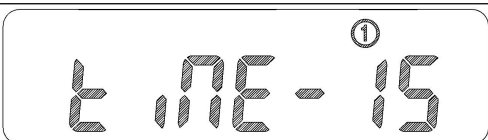
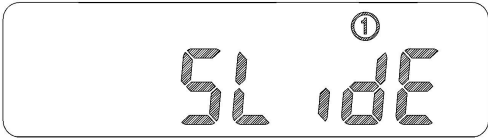
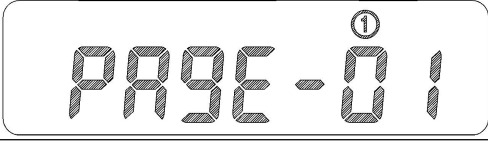
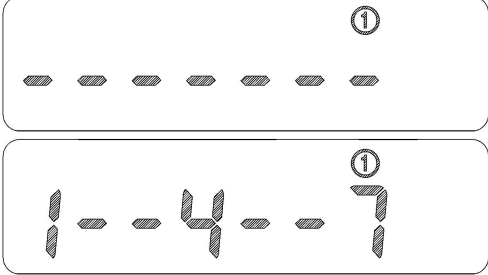
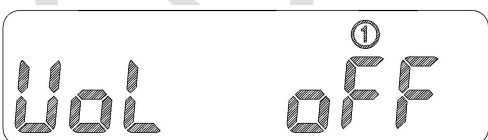
No.	Illustration	Content	Remarks
1		Total Active Maximum Demand	
2		Total Reactive Maximum Demand	
3		Total Apparent Maximum Demand	
4		Forward Total Active Maximum Demand	
5		Reverse Total Active Maximum Demand	
6		Forward Total Reactive Maximum Demand	
7		Reverse Total Reactive Maximum Demand	
8		Current Maximum Demand	

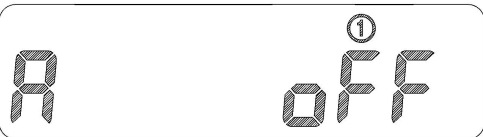
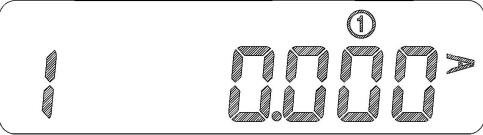
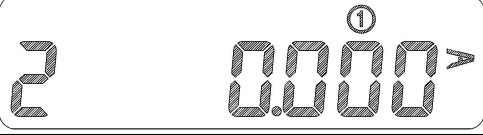
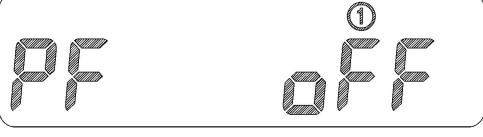
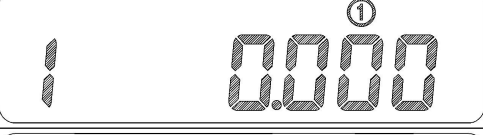
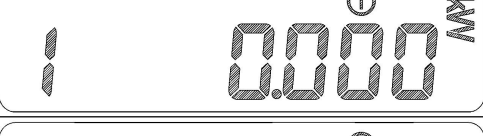
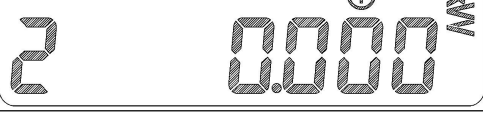
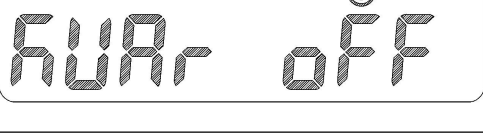
8.7. Information Page

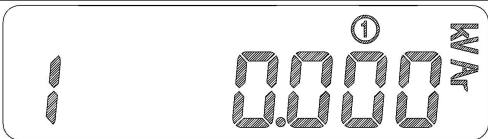
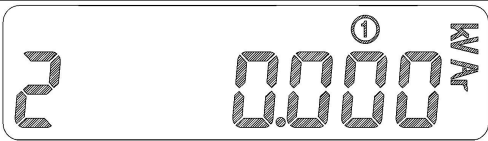
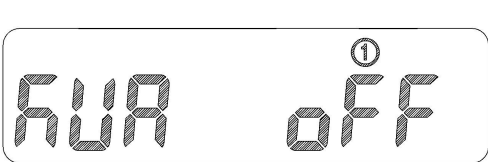
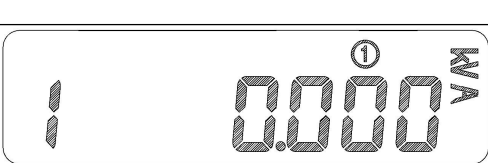
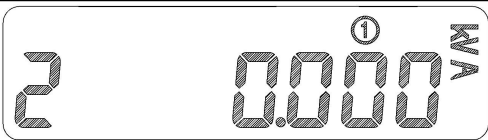
(Since DEM1E001 without Tariff function, it does not display ①.)

No.	Illustration	Content	Remarks
1	 	Serial Number	SN 0000000000 00

2		Model	
			
			
3		Manufacturing Year	
4		Version Number	
5		Checksum	
6		Metering Mode	
7		Tariff Mode	DS Mode or RTC Mode DEM1E001 With out this page
8		Communication ID	DEM1E001 With out this page
9		Communication BaudTariff	DEM1E001 With out this page
10		Communication Parity	DEM1E001 With out this page

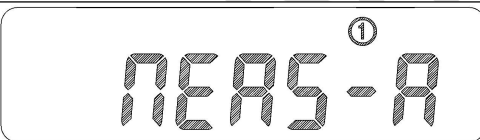
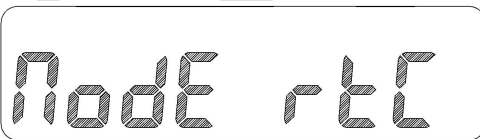
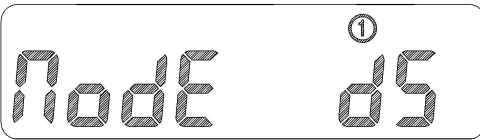
11		Communication Stop Bits	DEM1E001 With out this page
12		Demand Type	Default setting: 0 Settable: 1. Block Interval 2. Sliding Window
13		Demand Time	
14		Backlight Time	Unit: Minutes
15		Display Mode	Rotation Display
16		Home Mode Display Page	
17		Home Mode Display Page	Home Mode Display Page
18-1		Phase Voltage Threshold Switch	Default is off state; 18-1, 18-2, 18-3 switch display alternately.
18-2		Phase Voltage Threshold setH	
18-3		Phase Voltage Threshold setL	

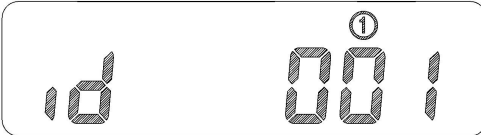
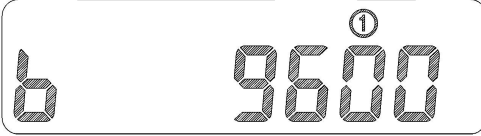
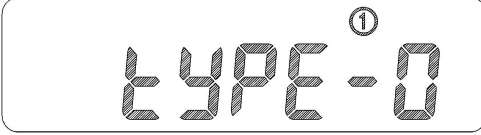
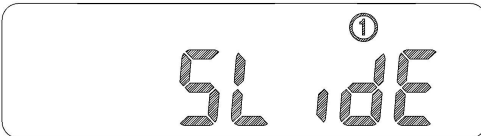
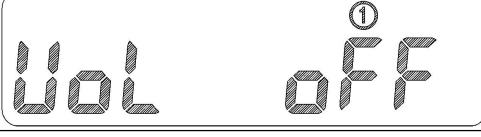
19-1		Current Threshold Switch	Default is off state; 19-1, 19-2, 19-3 switch display alternately.
19-2		Current Threshold setH	
19-3		Current Threshold setL	
20-1		Power Factor Threshold Switch	Default is off state; 20-1, 20-2, 20-3 switch display alternately.
20-2		Power Factor Threshold setH	
20-3		Power Factor Threshold setL	
21-1		Active Power Threshold Switch	Default is off state; 21-1, 21-2, 21-3 switch display alternately.
21-2		Active Power Threshold setH	
21-3		Active Power Threshold setL	
22-1		Reactive Power Threshold Switch	Default is off state; 22-1, 22-2, 22-3 switch display alternately.

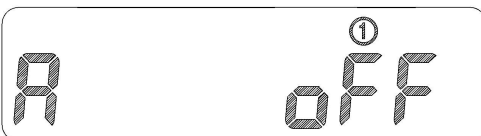
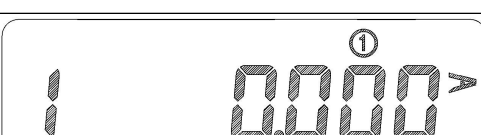
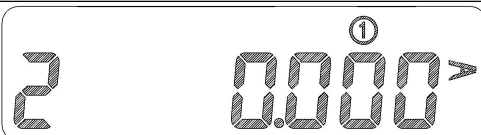
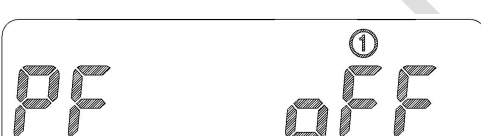
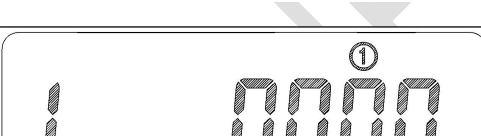
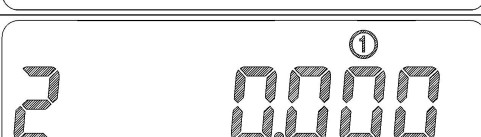
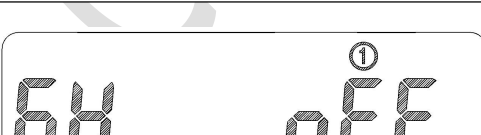
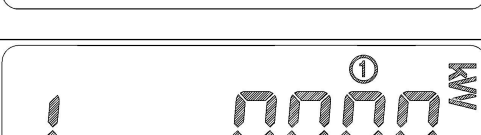
22-2		Reactive Power Threshold setH	
22-3		Reactive Power Threshold setL	
23-1		Apparent Power Threshold Switch	Default is off state; 23-1, 23-2, 23-3 switch display alternately.
23-2		Apparent Power Threshold setH	
23-3		Apparent Power Threshold setL	
24		Alarm Delay Time	Default setting 60; Unit (seconds)

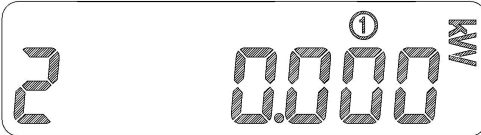
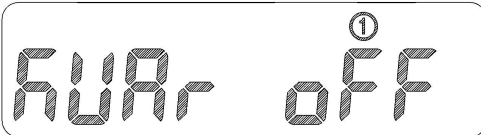
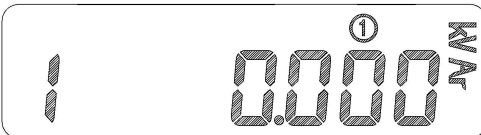
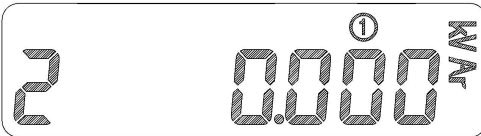
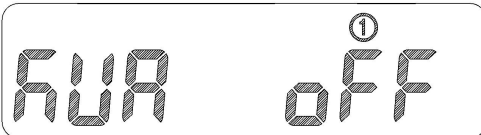
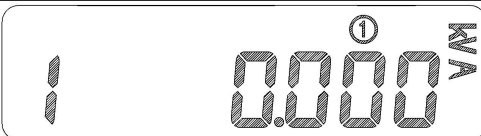
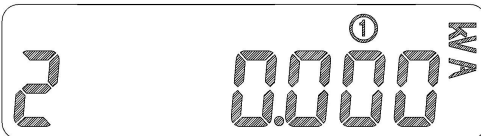
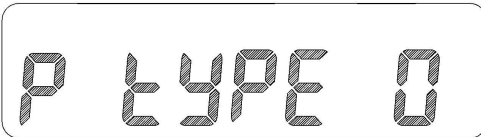
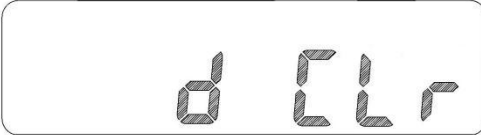
8.8. Settings Page

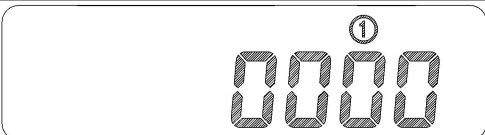
(Since DEM1E001 without Tariff function, it does not display ①.)

No.	Illustration	Content	Remarks
1		Metering Mode	
2	 	Tariff Mode	DEM1E302 supports switching between RTC Tariff and DS Tariff; DEM1E202 only has DS Tariff settable DEM1E001 With out this page

3		Communication ID	DEM1E001 With out this page
4		Communication BaudTariff	Default baudTariff 9600 Settable: 19200/38400 /57600/7680 0/115200 DEM1E001 With out this page
5		Communication Parity	Settable: none/even/o dd DEM1E001 With out this page
6		Demand Type	Default setting: 0 Settable: 1. Block Interval 2. Sliding type
7		Demand Time	
8		Backlight Time	Default setting: 1; Unit (minutes)
9		Display Mode	Default setting: SLIDE rotation mode; Settable: home home page mode
10		Home Mode Display Page	
11-1		Phase Voltage Threshold Switch	Default is off state; 11-1, 11-2, 11-3 switch

			display alternately.
11-2		Phase Voltage Threshold setH	
11-3		Phase Voltage Threshold setL	
12-1		Current Threshold Switch	Default is off state; 12-1, 12-2, 12-3 switch display alternately.
12-2		Current Threshold setH	
12-3		Current Threshold setL	
13-1		Power Factor Threshold Switch	Default is off state; 13-1, 13-2, 13-3 switch display alternately.
13-2		Power Factor Threshold setH	
13-3		Power Factor Threshold setL	
14-1		Active Power Threshold Switch	Default is off state; 14-1, 14-2, 14-3 switch display alternately.
14-2		Active Power Threshold setH	

14-3		Active Power Threshold setL	
15-1		Reactive Power Threshold Switch	Default is off state; 15-1, 15-2, 15-3 switch display alternately.
15-2		Reactive Power Threshold setH	
15-3		Reactive Power Threshold setL	
16-1		Apparent Power Threshold Switch	Default is off state; 16-1, 16-2, 16-3 switch display alternately.
16-2		Apparent Power Threshold setH	
16-3		Apparent Power Threshold setL	
17		Alarm Delay Time	Default setting 60; Unit (seconds)
18		SO Output Type	DEM1E302、DEM1E202 Without this page
19		Clear demand	Long press to enter the demand clearance page; the default setting is yes. Click the button to switch to no.

			In the yes state, long press to clear the current demand data recorded by the meter. After clearance, the page will display d clred.
20		Clear Energy	Long press to enter the demand clearance page; the default setting is yes. Click the button to switch to no. In the yes state, long press to clear the current demand data recorded by the meter. After clearance, the page displays E Clred.
21		Settings Password	

8.9. Button Operation

- Long press the button for more than 3 seconds to enter menu switching. Short press the button to switch menus. Long press for more than 3 seconds to enter the current menu page. Entering the settings page menu requires entering a password, default is all zeros.
- After entering the settings page menu, a 4-digit password needs to be entered. Short press to select the corresponding digit, long press for 3 seconds to switch to the next digit, long press for 5 seconds to confirm the password, long press for 8 seconds to exit.

- In the settings page, short press can switch setting information, long press for 3 seconds enters the setting. After entering the setting, short press switches the current setting parameter, long press for 3 seconds switches to the next parameter, long press for 5 seconds confirms and exits.
- In the settings page, long press for more than 8 seconds returns to the home page.

9. Alarm

9.1. Alarm Function

The DEM1E series meter can manage electrical parameter alarm functions. To set an alarm, the following parameters need to be defined:

- Monitored Variable
- Alarm Threshold (setH)
- Alarm Cancel Threshold (setL)
- Alarm Delay Time

Note: 1. The alarm threshold needs to be greater than the alarm cancel threshold (setH > setL).

After setup is completed, when the monitored value is greater than the alarm threshold and the duration exceeds the delay time, the meter enters the alarm state. It exits the alarm state when the monitored value falls below the cancel threshold.

The DEM1E series meter supports monitoring the following variables:

- Voltage (Phase Voltage / Line Voltage)
- Current
- Power Factor(The L value must be greater than the H value when setting this variable.)
- Power (Active Power / Reactive Power / Apparent Power)

Setup Example:

Monitored Variable	Voltage (V)
Alarm Threshold (setH)	250V
Alarm Cancel Threshold (setL)	240V
Alarm Delay Time	5s

9.2. Alarm Settings

- After turning on the device, long press the button to enter the menu switching mode,

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then short press to switch menus until the screen displays the settings menu page as shown below.

	Setting Page
---	--------------

- Long press the settings menu to enter the settings page. Enter a 4-digit password upon entry. Short press to select the corresponding digit, hold for 3 seconds to switch to the next digit, and hold for 5 seconds to confirm the password. The default password is 0000. After entering, the following page appears:

	Metering Mode
---	---------------

- Short press the button to switch between setting options. Continue switching until you reach the desired alarm parameter page, then hold down for 3 seconds to enter the settings.
- Taking phase voltage as an example, the phase voltage settings switch between three pages shown in the figure below. Holding the button for 3 seconds switches to the first page, where you can access the phase voltage settings. The alarm is initially disabled by default; a short press controls its state, switching between on and off modes, while a 5-second press saves the settings and navigates to the phase voltage threshold configuration page.
- On the threshold setting page, short press to change the number, long press for 3 seconds to switch to the next number, and long press for 5 seconds to save and return.

	Phase Voltage Threshold Switch
	Phase Voltage Threshold setH

	Phase Voltage Threshold setL
---	------------------------------

10. Tariff

10.1. Tariff Function

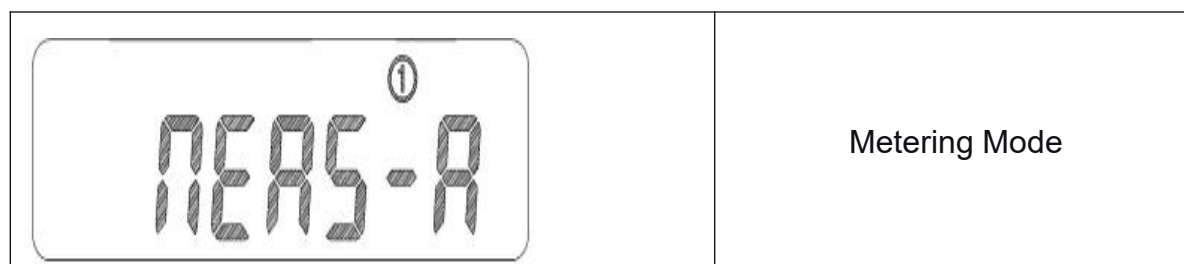
- The DEM1E302 product supports Time-of-Use Tariff (default 4 tariffs, 8 time periods) and digital input controlled dual tariff.
- The DEM1E202 product supports dual-rate digital input control.
- The DEM1E001 product has no fee-based functionality.
- Among these, the time periods are divided into Weekday time periods, Weekend (Saturday and Sunday) time periods, and Holiday time periods. Different period tables have different priorities, in order: Holiday, Weekend, Weekday. When the meter is running the tariff, it first checks if it is a holiday. If it is a holiday, it runs the holiday period table. If it is not a holiday but is a weekend, it runs the weekend period table. If it is neither a holiday nor a weekend, it runs the weekday period table.
- If no tariff is set, it follows RTC Tariff 1 or DS Tariff 1 according to the tariff mode.

10.2. Tariff Settings

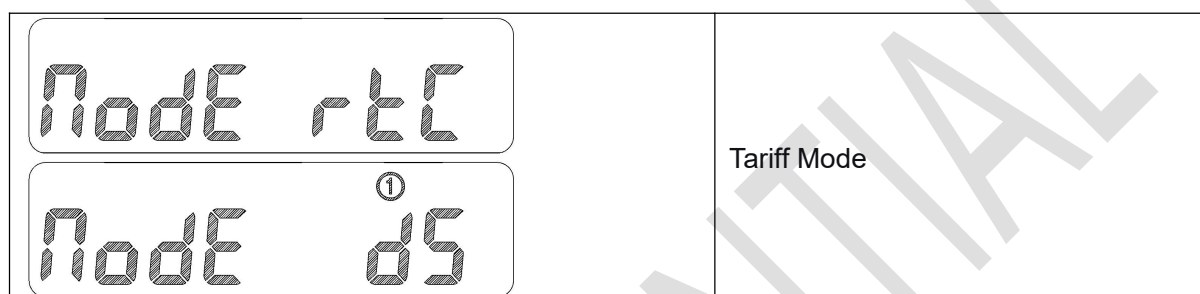
- After powering on, long press the button to enter the menu switching mode, then short press to switch menus until the screen displays the settings menu as shown below.

	Setting Page
---	--------------

- Long press the settings menu to enter the settings page. Enter a 4-digit password upon entry. Short press to select the corresponding digit, hold for 3 seconds to switch to the next digit, and hold for 5 seconds to confirm the password. The default password is 0000. After entering, the following page will appear:



- Short press the button to switch settings. Continue switching until you reach the Tariff switching page shown below, then hold down for 3 seconds to enter the settings.



- Short press to switch tariff or long press to save and return in the Tariff Setting page.

Weekday Tariff Table

Example:

Hour	Minute	Tariff
1	30	1
2	30	2
13	30	3
18	0	4
22	0	1
0	0	0
0	0	0
0	0	0

On non-weekend and non-holiday days:

01:30 to 02:30 runs Tariff 1, Tariff 1 energy increases.

02:30 to 13:30 runs Tariff 2, Tariff 2 energy increases.

13:30 to 18:00 runs Tariff 3, Tariff 3 energy increases.

18:00 to 22:00 runs Tariff 4, Tariff 4 energy increases.

22:00 to 01:30 runs Tariff 1, Tariff 1 energy increases.

The remaining 3 records are not enabled.

Weekend Tariff Table, set referring to the Weekday Tariff Table.

Holiday Tariff Table, set referring to the Weekday Tariff Table.

Holiday table

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Month	Day
1	5
1	6
3	15
3	16
...	
12	30
12	31

Upper limit 100 holiday records.

11.Demand

11.1. Average Value Calculation

Calculates the average value of the electrical variable within the set integration interval (default is 15 min).

11.2. Integration Interval

The integration interval starts from power-on or upon receiving a reset command. At the end of the first integration interval, the first value is displayed.

11.3. Example

Integration example as follows:

10:00:00 Reset

Set integration time: 15 min.

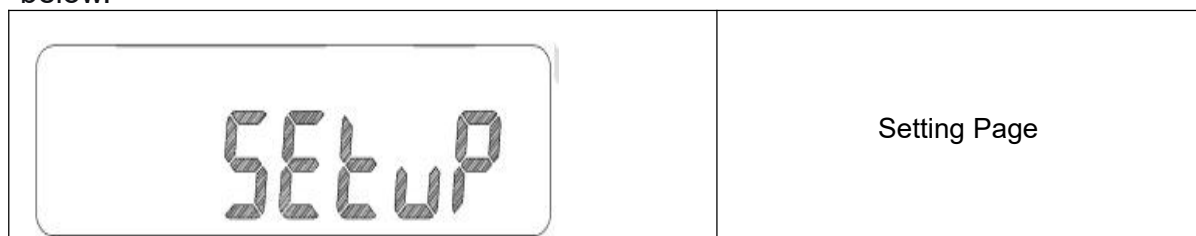
10:15:00 The first value displayed corresponds to the interval from 10:00:30 to 10:15:00.

Block Interval Type: Settles the average value within each 15-minute interval.

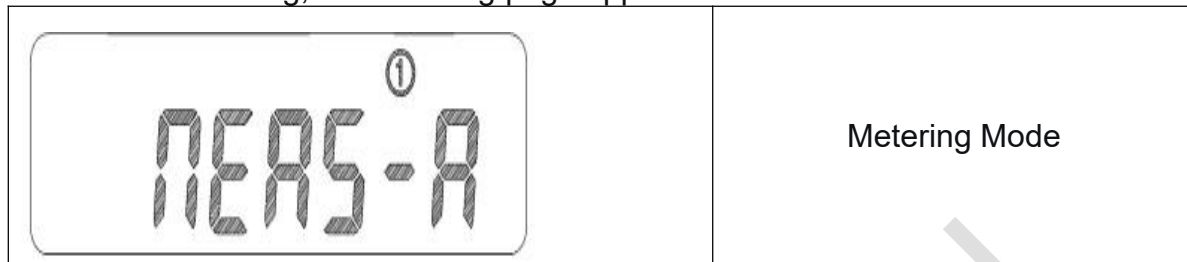
Sliding Type: Settles the average value of the previous interval every minute.

11.4. Demand setting

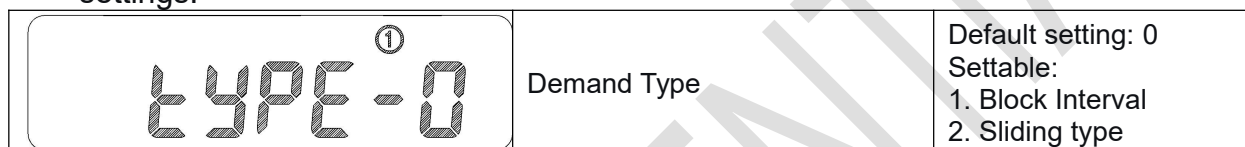
- After powering on, long press the button to enter the menu switching mode, then short press to switch menus until the screen displays the settings menu page as shown below.



- Long press the settings menu to enter the settings page. Enter a 4-digit password upon entry. Short press to select the corresponding digit, hold for 3 seconds to switch to the next digit, and hold for 5 seconds to confirm the password. The default password is 0000. After entering, the following page appears:



- Short-press the button to switch between settings. Continue switching until you reach the demand setting page shown below, then hold down for 3 seconds to enter the settings.



- Short press the button to switch between 0 and 1. After selecting the desired demand type, hold down for 3 seconds to save the settings.

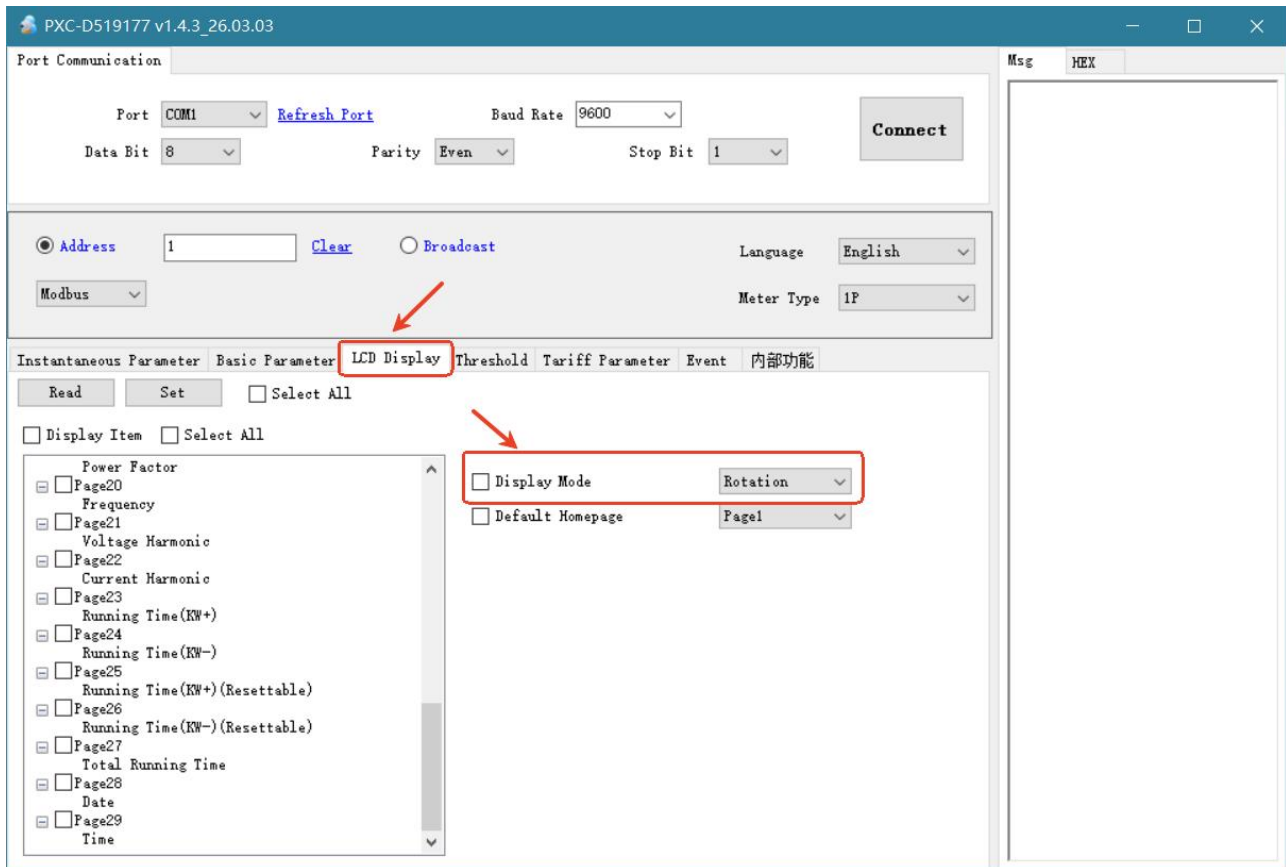
12. Auxiliary Functions

12.1. Screen Saver

If the screen saver function is enabled, after 5 minutes of no operation, the system will perform different operations according to the set screen saver program type:

- If it is "Homepage" mode, the home page is displayed.
- If it is "Slide" mode, the slideshow starts, cycling through the selected pages.

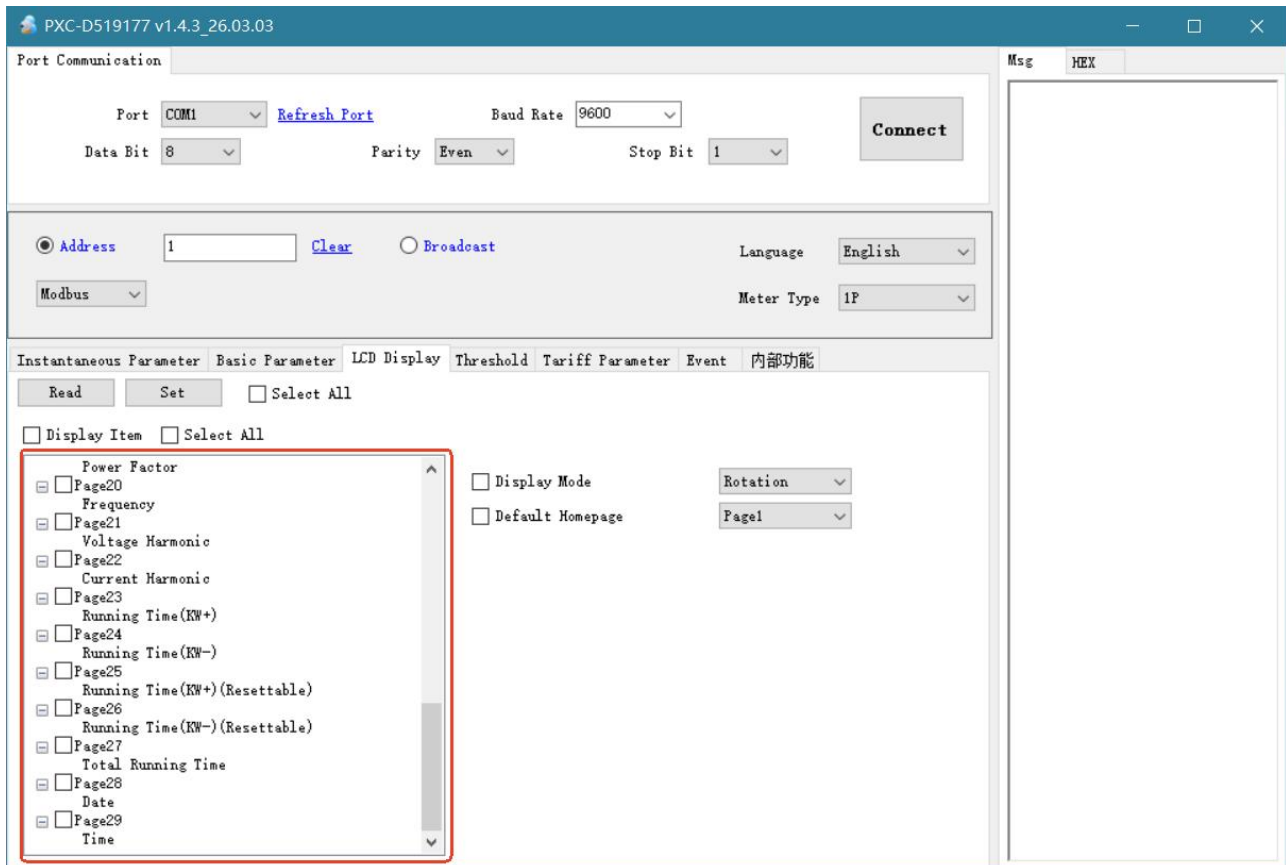
Open the PC software as shown in the figure below, navigate to the display page, and select the display mode to activate the screen saver. The dropdown menu below the display mode allows you to choose the screen saver style. If no action is taken for 5 minutes after activation, the system will automatically display the home page or a rotating task.



12.2. Page Filter

You can hide pages you don't need to see in the upper computer software, making the overall page display of the meter more concise. Hidden pages will not be displayed in page rotation or button page turning.

Open the PC software as shown in the figure below, then navigate to the display page. The list on the left side displays all viewable pages of the electricity meter. Select the desired pages by checking their boxes; unselected pages will not be displayed.

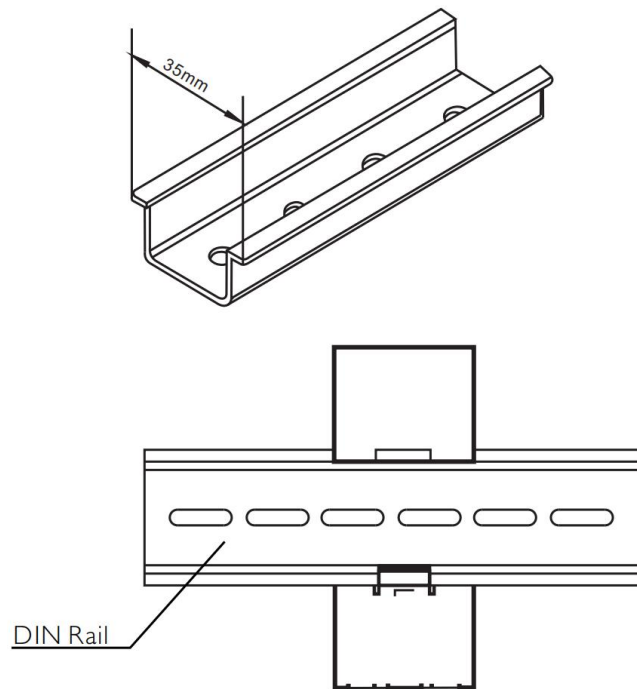


13. Installation Instructions

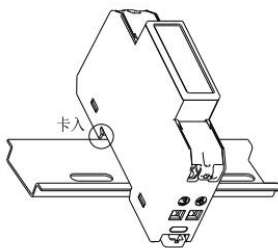
35mm standard rail installation. The meter should be installed indoors or outdoors in a meter box.

- During installation, first insert the upper buckle of the meter into the guide rail. Once it is securely in place, press the meter to fasten it to the guide rail. Note: Always insert the upper buckle into the guide rail before pressing; direct pressing may cause the buckle on the meter to break!
- During disassembly, first pull down the locking pin beneath the guide rail, then lift the lower section of the meter to detach it from the rail. After detaching the lower section, push the meter upward to release the upper latch from the rail, completing the disassembly. Note: Always detach the lower section of the meter from the rail before

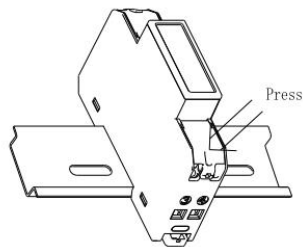
pushing it upward to finish the process. Forcing the disassembly directly may easily cause the upper latch to break!



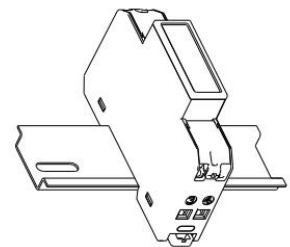
Installation



1. Hook the upper clip of the meter onto the DIN rail.

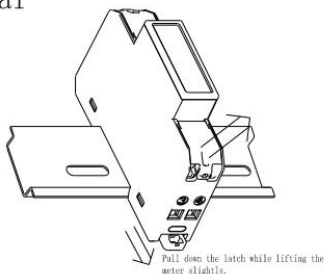


2. Press the lower part of the meter to snap it into the rail.

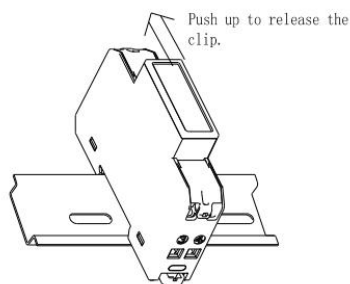


3. Installation complete.

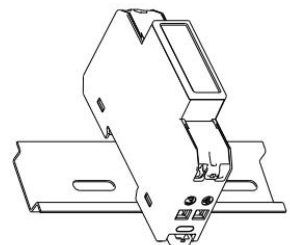
Removal



1. Pull down the lower latch of the meter, then gently lift the lower part to release it from the rail.



2. With the lower part lifted, push the meter upward to release the upper clip from the rail.



3. Removal complete.

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14. Safety Instructions

- According to the 2014/32/EU directive, the installation of this meter must comply with mechanical environment "M1", low impact, low vibration.
- According to the 2014/32/EU directive, the installation of this meter must comply with electromagnetic environment "E2".

14.1. Storage and Transportation

The energy meter should not be subjected to severe impacts during transportation and storage. It should be transported and stored according to the provisions of GB13384-2008 "General Technical Conditions for Packaging of Instruments and Meters"; the energy meter should be stored in its original packaging, the storage environment temperature range is 0---40°C, relative humidity does not exceed 85%, and the air contains no corrosive gases; when stored in a warehouse, the energy meter should be placed on a rack, stacking height not exceeding 10 boxes; after unpacking, the stacking height of single-packaged energy meters should not exceed 5 layers.

14.2. Personal Safety Information

This manual does not contain all safety measures for the operation of this equipment (module, device), as special operating conditions, local specifications or local regulations may require further measures. But it contains information that must be followed to protect personal safety and avoid damage to the equipment. According to the severity of the warning, it is highlighted with a warning triangle with an exclamation mark or lightning.



Means failure to comply with the instructions may result in death, serious injury, or significant damage

14.3. Precautions



Means risk of electric shock and failure to take necessary safety precautions will result in death, serious injury, or considerable material damage.

14.4. Qualified Personnel

The installation and operation of this equipment described in this manual may only be performed by qualified personnel.

Only persons authorized to install, connect, and use this equipment and who have appropriate knowledge of electrical equipment and grounding and circuits, and who can be considered qualified personnel according to safety and regulatory standards in the electronic manual.

14.5. Use

The equipment (device, module) may only be used for the application cases specified in the catalog and user manual, and only with YTL approved equipment and components.

14.6. Disclaimer

We have checked the content of this publication and have made every effort to ensure the descriptions are as accurate as possible. However, deviations from the description cannot be completely ruled out, and therefore no liability can be accepted for errors or omissions in the information provided.

The data in this manual is checked regularly, and necessary revisions will be made in subsequent versions. If you have any suggestions, please let us know.

Subject to technical modifications without notice.

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14.7. General Warnings

After unpacking, please ensure the integrity of the device. If in doubt, do not use the device and contact a technician. The installation of the electrical appliance must be carried out only by a skilled electrician. Generally applicable safety measures must be observed.

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If the device malfunctions and/or fails, switch it off immediately. Please be sure to contact a technician for repair. Failure to comply with the above may compromise the safety of the device.

15. Warranty

If the product is found not to comply with the technical specifications within 18 months, the manufacturer will repair and return the product provided the lead seal is intact.

15.1. Warranty Period Calculation Method

The warranty is handled according to the commercial invoice issued by our company, calculated from the date the meter leaves the warehouse, for a period of 18 months, deducting the time for spare parts-free repair and delivery time.

15.2. Warranty Scope

When the user fully follows the energy meter transportation, storage, installation, and application procedures, and under the condition of the company's seal integrity (the meter seal is not removed), if the energy meter does not meet quality requirements and valid evidence is provided (e.g., meter photo, certificate photo, customer local user feedback documents, relevant government department documents, etc.) should be provided by the customer.

10.2.2 We will repair, replace, or return the meter under the following circumstances:

- No demonstration and no prior explanation;
- Does not comply with the implementation standards indicated on the product or its packaging;
- (If the standard on the product/packaging is requested by the customer but does not comply with the company's product implementation standards, the customer shall make corresponding responsibility commitments);
- Does not comply with the quality status indicated by the product manual, physical samples, etc.

The non-conforming meter shall be determined through consultation with the user. Generally, we will return for repair or replenish the goods in the next order. Special circumstances shall be determined through consultation between both parties.

Note: The quality guarantee is not applicable if there is no valid invoice, cannot provide evidence corresponding to the quality problem of the order, and damage caused by force majeure or the warranty has expired, but it can be recovered for repair (transportation and other related costs need to be borne by the customer).

15.3. Technical Support

If you have any problems with our products, please contact:

Zhejiang YTL Electronics Co., Ltd.
No. 320 Tongsheng Road, Tongxiang City, Zhejiang Province
Postal Code: 314500

Email: ytl dz@ytl-e.com
Official Website: www.ytl-e.com
Tel: 0573-88105687 Fax: 0573-88100423



16. Version Update Notes

Version Number	Modification Date	Modification notes
V1.0	2026-04-28	Initial publish
V2.0	2026-07-02	Update the reactive power accuracy to 1% in chapter 3.2