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DEM3K Series

Three Phase CT Smart Din Rail meter (MID certified)

DEM3K302: RS485 communication, DLT/645 and MODBUS-RTU protocol compatible, RTC tariff and switch tariff, supports CT ratio

DEM3K202: RS485 communication, DLT/645 and MODBUS-RTU protocol compatible, RTC tariff and switch tariff, supports CT, PT ratio

DEM3K001: With SO output, supports CT and PT ratios

More options to meet different needs!



Three-Phase Smart Din Rail Meter

DEM3K Series electronic energy meters support CT/PT connection
Maximum CT ratio supports up to 2000:1. Maximum PT ratio supports 350:1.

Maximum CT:PT ratio is 350000:1.

UK SGS MID Module B+ D Certification ,
proving its accuracy and quality

This model can be used in wide secondary billing application

Also available in a VT model supporting maximum 35kV system connection

1. Product Introduction

DEM3K Series is a three-phase CT din rail 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℃ to 70℃ 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 entire series supports RS485 communication, compatible with various protocols; it boasts excellent metering accuracy and a rich set of functions, meeting MID certification requirements, making it an ideal choice for high-precision, high-speed AC metering applications.

2. Main Functions

- Rich in metering functions: forward and reverse electric energy metering;
- Accuracy Class: 0.5 s
- 75ms high refresh communication rate
- Multi-tariff, multi-period: the product has 4 tariffs and 8 periods by default for DEM3K302
- Flexible Communication methods: Support RS485 Communication, compatible with Modbus, DL/T645-2007 protocol
- LCD backlight display: Shows voltage, current, power, power and other information; features automatic sequential display with a default interval of 5 seconds.
- Self-diagnosis, alarm and security protection functions
- MID certification (In the process)
- CT ratio maximum support 2000:1; PT ratio maximum support 350:1; CT*PT ratio maximum 350000:1
- Provide an optional version DEM3K001: with SO output

Model	RS485	Battery	TOU tariff	Swith Tariff	SO output	Multiple measurement mode	CT、VT Ratio
DEM3K302	√	√	√	√		√	√
DEM3K202	√			√		√	√
DEM3K001					√	√	√

3. Parameter Specifications

3.1. Electrical parameters

Voltage Connection	Direct Connection/PT
Rated Voltage	3x57.7/ 100V-3x230/400V (3P4W) 、 3x100V-3x400V (3P3W)
Voltage Tolerance	From 0.8 to 1.15 Un
Frequency	50/60Hz
Current Connection	CT
Basic Current (Ib)	5A
Minimum Current (Imin)	0.05A
Maximum Current (Imax)	6A
Power Consumption	≤2W/10VA
Current Power consumption	1VA

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 1.0

3.3. Communication Parameters

Communication Mode	RS485 (For DEM3K302/DEM3K202)
Protocol	RS485 compatible with Modbus RTU, DLT/645-2007
Communication Type	Bidirectional
RS485 Configuration	Modbus Address (1 to 247) Baud Rate (9.6/19.2/38.4/57.6/76.8/115.2 kbps) Parity (None/Odd/Even)
Refresh time	≤75ms

3.4. Function Parameters

Metering Function	Monitors 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	TOU Tariff (Default 4 tariffs, 8 time periods)*; Switch Tariff (Default 2 tariffs)
SO output	Support 1 SO output (only DEM3K001)
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	Wiring Check Screen Saver Page Filter Operating Hour Metering

*Note: DEM3K202 is version without battery, no RTC &TOU tariff, only switch Tariff supported.; DEM3K001 is SO output version, no tariff function.

3.5. General Parameters

LCD display	5+3 by default, auto changes to 6+2, 7+1, 8+0 as value increases
LCD Refresh Time	500ms
LED	Red pulse LED
Button	Page turn, Settings
IP Rating*	IP30
OVC rating	III
Protection Class	Class II
Rated Impulse Voltage	6kV
Mounting Method	DIN Rail (3P)
Wiring Mode	With external CT connect ; 3P3W Aron / 3P4W

*Note: This series of products needs to be installed in an enclosure with IP54 protection rating (outdoor), or an enclosure with IP51 protection rating (indoor).

3.6. Wiring parameters

Parameters	Terminals :N, 1,2,3	Terminals:4,5,6,7,8,9, 10, 11, 12, 13, 14, 15
Conductor Cross-sectional Diameter	1.0~2.5mm ²	1. 5mm ²
Stripping Length	6-7mm ²	5-6mm ²
Screwdriver Size	Phillips head Φ3 mm	Phillips head Φ3mm
Torque	0. 5N. m	0. 4N. m

3.7. Environmental Parameters

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

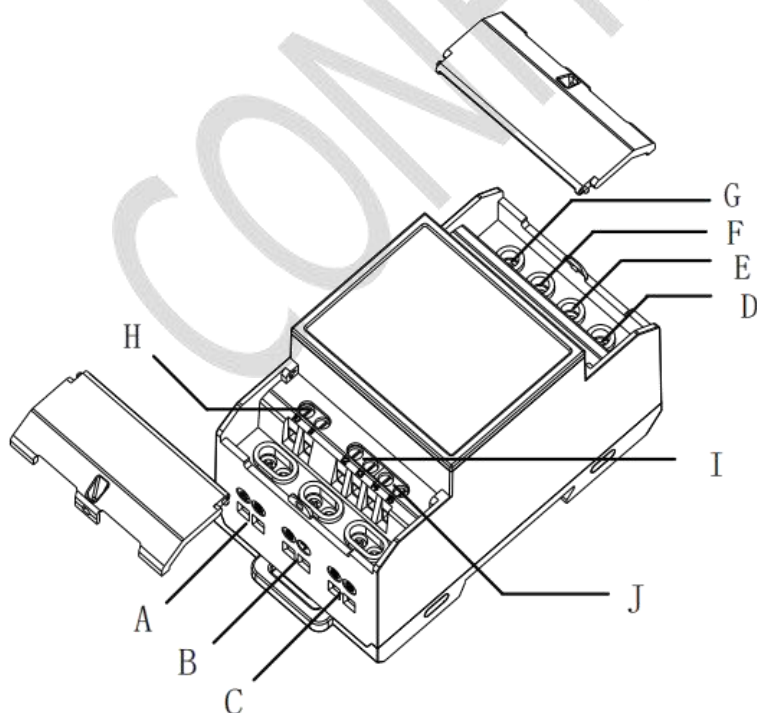
3.8. Standard Measurement Conditions

Ambient Temperature	25 ± 2℃
Frequency	50/60Hz ± 5%
Current	5A
Voltage	3x57.7/100V-3x230/400V ±20% (3P4W) 、 3x100V-400V ±20% (3P3W)
Magnetic Field	Resists external magnetic field 400mT (constant)

3.9. Standards and Certifications

Compliant Standards	IEC 62052-11:2020 IEC 62053-22:2020 EN 50470-3:2022 EN IEC62052-31:2024
Compliant Standards	MID

4. Structure



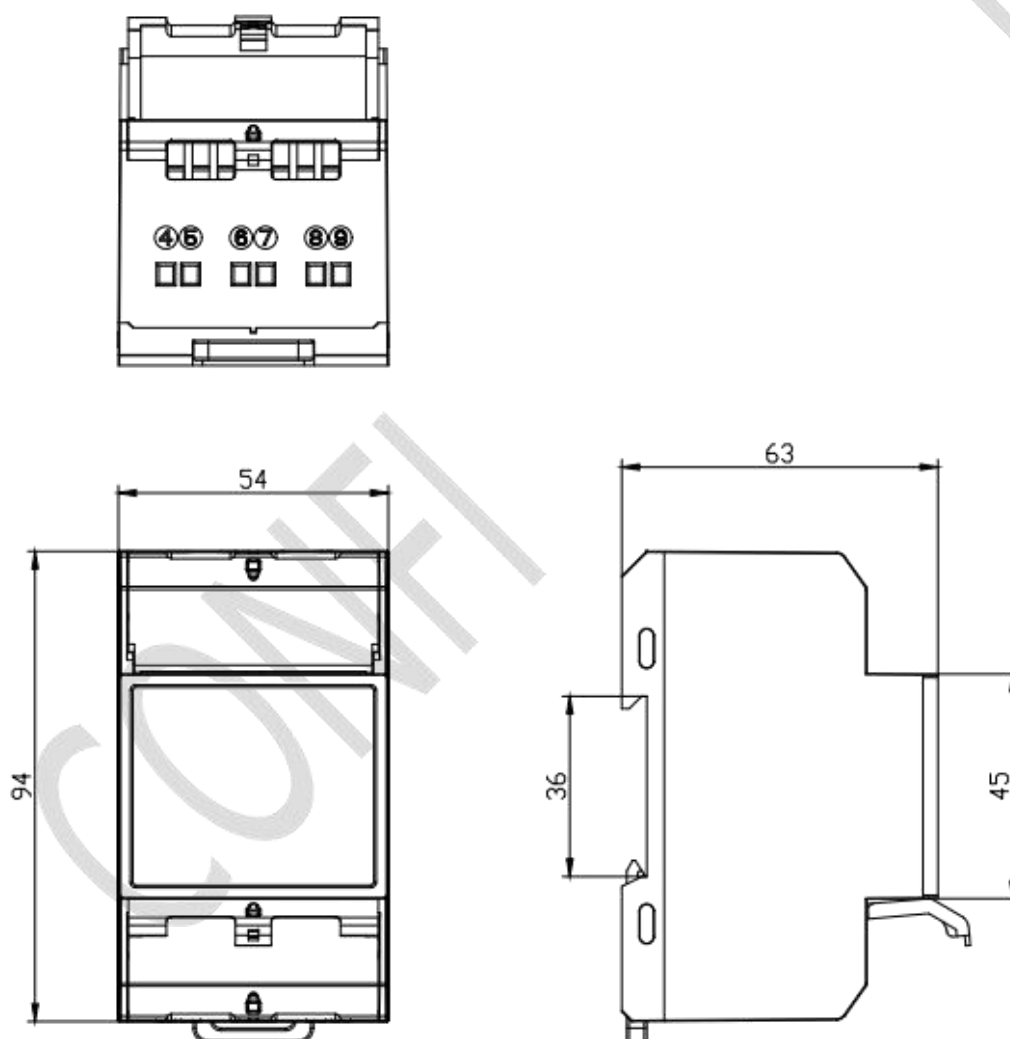
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DEM3K Series

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Number	Structure Description
A、B、C	IA、IB、IC Current Sampling Interface
D、E、F	UA、UB、UC Voltage Sampling Interface
G	Neutral Line Interface
H	Digital Output (DO)
I	Tariff Switch
J	RS485 interface

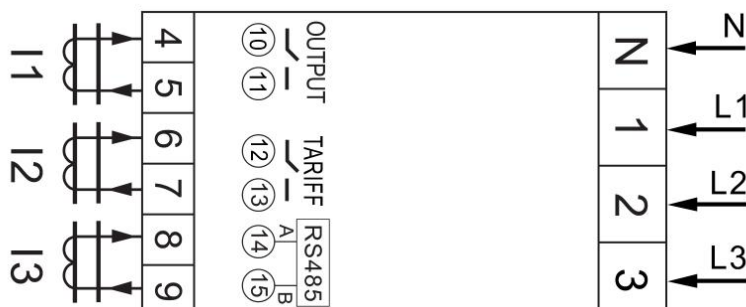
5. Dimension



Case Dimension	54mm×94mm×62.4mm
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6. Wiring

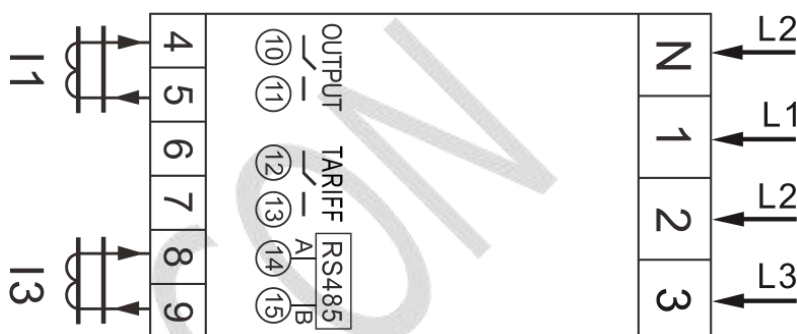
6.1. 3P4W Connection



Note: For terminals 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, and 15, the torque should be controlled within 0.4 N·m; for terminals 1, 2, and 3, the torque should be controlled within 0.5 N·m. Otherwise, wire slippage may occur.

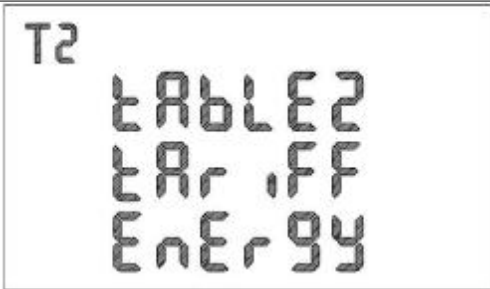
- Terminals 1, 2, 3 are for voltage sampling
- Terminals 4&5, 6&7, 8&9 are for current sampling (each pair is one phase)
- Terminals 10&11 are for digital output
- Terminals 12&13 are for the tariff switch interface(available for DEM3K202/DEM3K302)
- Terminals 14&15 are for the RS485 interface(available for DEM3K202/DEM3K302) ,or SO interface (available for DEM3K001)

6.2. 3P3W Aron Connection



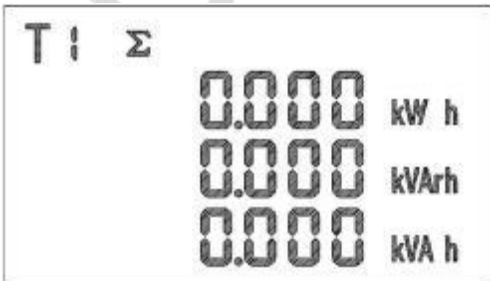
Note: For terminals 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, and 15, the torque should be controlled within 0.4 N·m; for terminals 1, 2, and 3, the torque should be controlled within 0.5 N·m. Otherwise, wire slippage may occur.

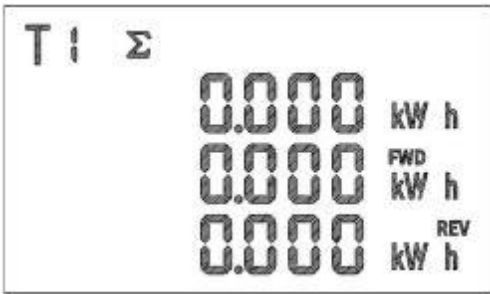
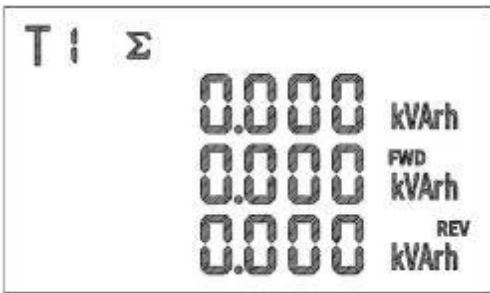
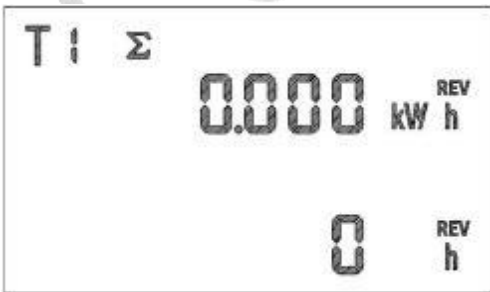
- Terminals 1, 2, 3 are for voltage sampling
- Terminals 4&5, 8&9 are for current sampling (each pair is one phase)
- Terminals 10&11 are for digital output
- Terminals 12&13 are for the tariff switch interface(available for DEM3K202/DEM3K302)
- Terminals 14&15 are for the RS485 interface(available for DEM3K202/DEM3K302) ,or SO interface (available for DEM3K001)

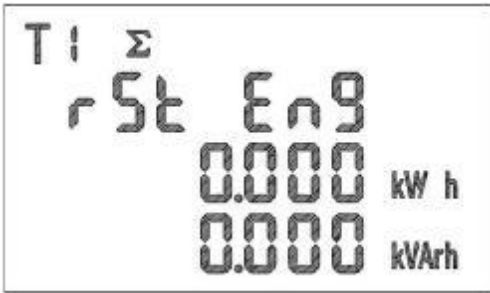
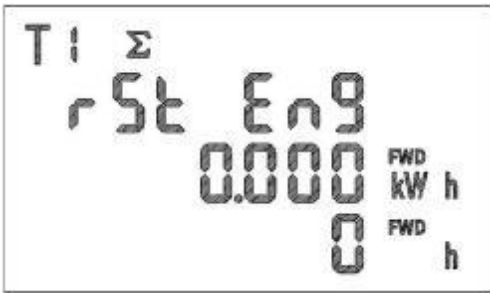
2		Tariff Page	DEM3K001 no tariff page
3		Demand Page	
4		Information Page	
5		Settings Page	

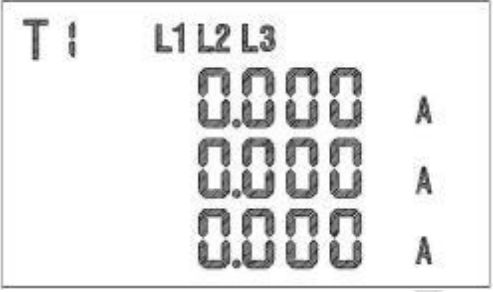
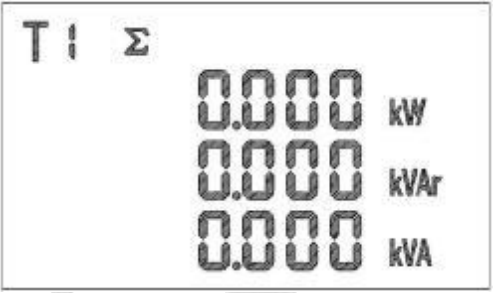
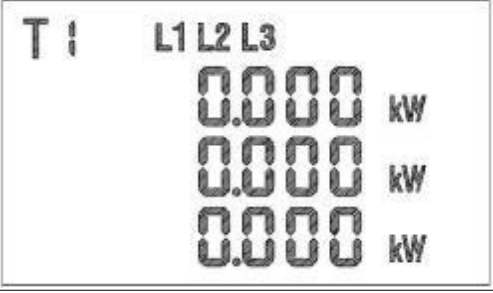
8.4. Measurement Pages

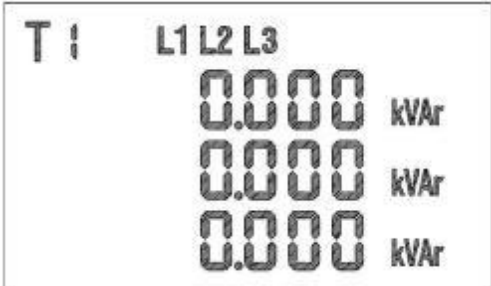
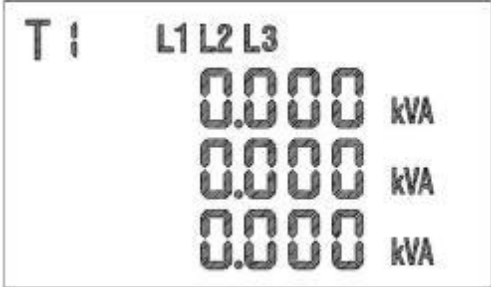
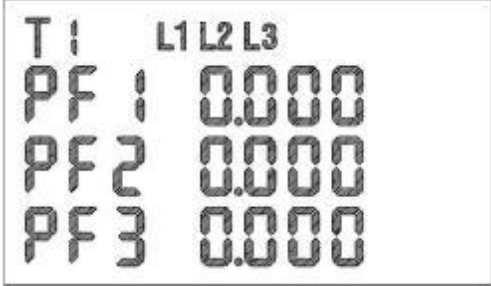
(The following illustrations are for DS Tariff mode, Tariff 1 situation)

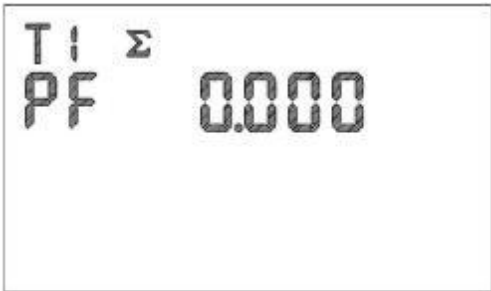
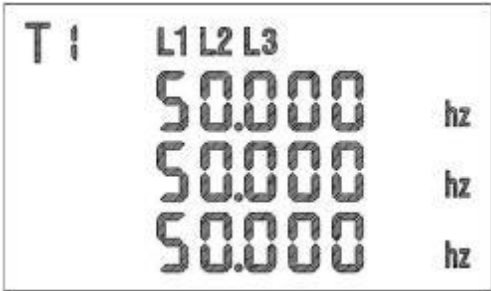
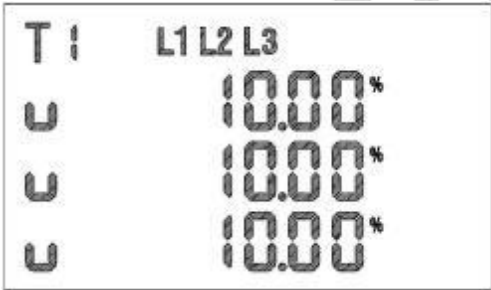
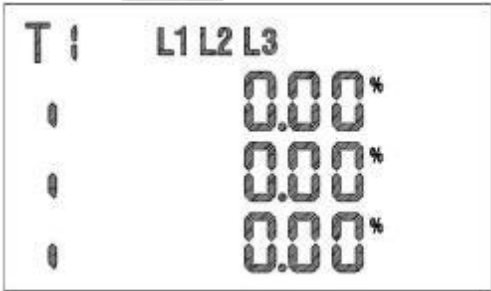
No.	Illustration	Content	Remarks
1		Total Active Energy	
		Total Reactive Energy	
		Total Apparent Energy	

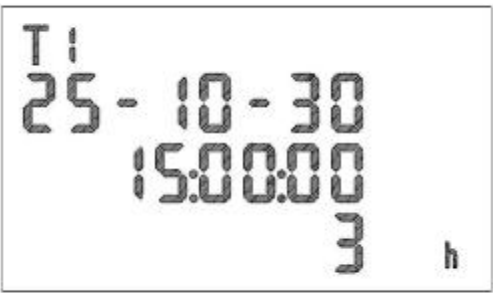
2		Total Active Energy	
		Total Forward Active Energy	
		Total Reverse Active Energy	
3		Total Reactive Energy	
		Total Forward Reactive Energy	
		Total Reverse Reactive Energy	
4		Total Forward Active Energy	
		Operating Time (KW+)	
5		Total Reverse Active Energy	
		/	
		Operating Time (KW-)	

6		/	
		Total Active Energy (Clearable)	
		Total Reactive Energy (Clearable)	
7		/	
		Total Active Energy (Clearable)	
		Total Reactive Energy (Clearable)	
8		/	
		Total Forward Active Energy (Clearable)	
		Operating Time (KW+) (Clearable)	
9		L1 Phase Voltage	
		L2 Phase Voltage	
		L3 Phase Voltage	

10		L1-2 Line Voltage	
		L2-3 Line Voltage	
		L3-1 Line Voltage	
11		L1 Current	
		L2 Current	
		L3 Current	
12		Total Active Power	
		Total Reactive Power	
		Total Apparent Power	
13		L1 Active Power	
		L2 Active Power	

		L3 Active Power	
14	 T I L1 L2 L3 0.0000 kVAr 0.0000 kVAr 0.0000 kVAr	L1 Reactive Power	
		L2 Reactive Power	
		L3 Reactive Power	
15	 T I L1 L2 L3 0.0000 kVA 0.0000 kVA 0.0000 kVA	L1 Apparent Power	
		L2 Apparent Power	
		L3 Apparent Power	
16	 T I L1 L2 L3 PF 1 0.0000 PF 2 0.0000 PF 3 0.0000	L1 Power Factor	
		L2 Power Factor	
		L3 Power Factor	

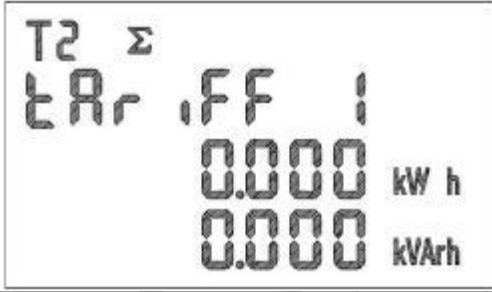
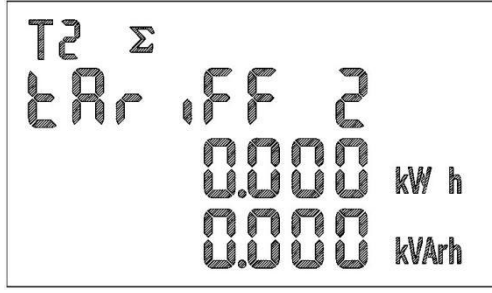
17		Total Power Factor	
18		L1 Frequency	
		L2 Frequency	
		L3 Frequency	
19		L1 Voltage THD	
		L2 Voltage THD	
		L3 Voltage THD	
20		L1 Current THD	
		L2 Voltage THD	
		L3 Voltage THD	

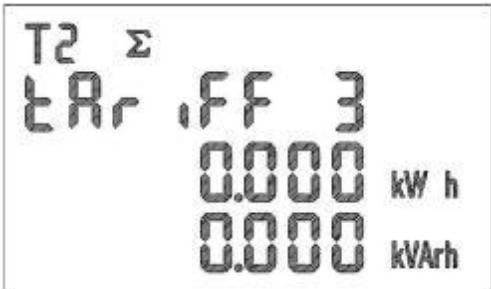
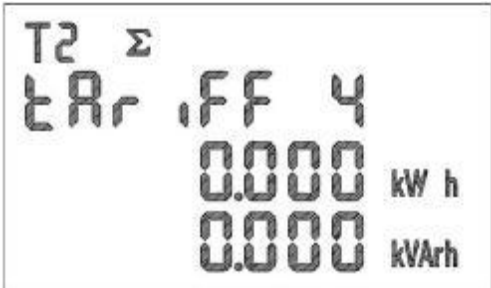
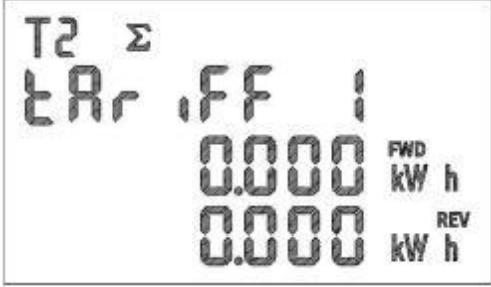
21		Date	Example: 2025-10-30
		Time	Example: 15:00:00
		Operating Time	

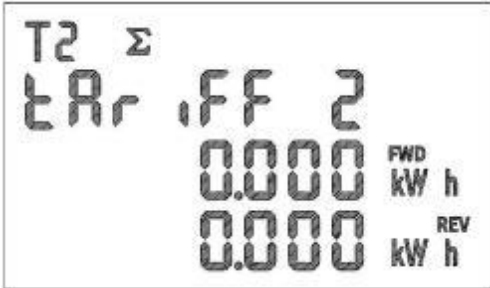
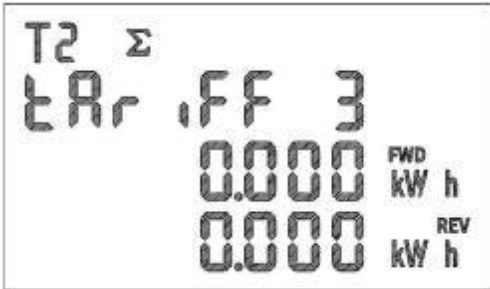
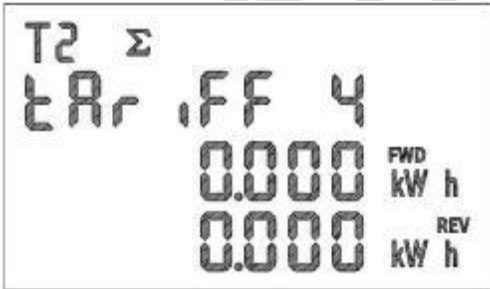
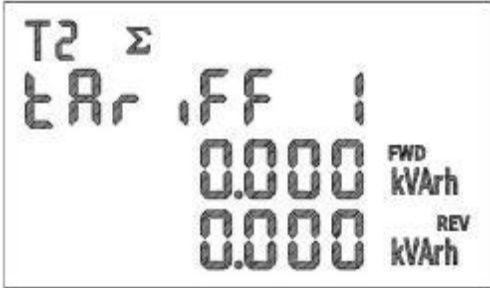
8.5. Tariff Pages (Note: This page does not exist for DEM3A001)

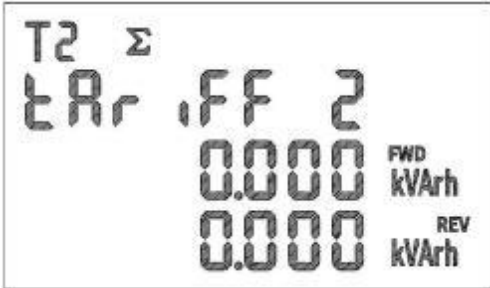
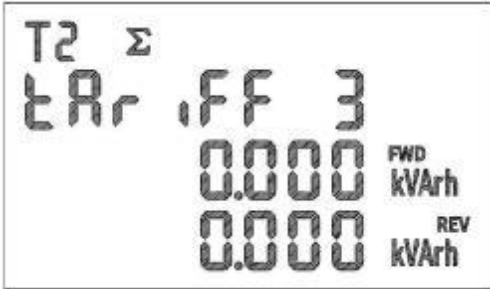
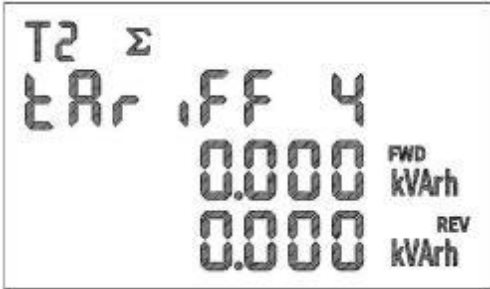
RTC & TOU Tariff

(The following illustrations are for RTC Tariff mode, DEM3K001 has no tariff, so without related pages)

No.	Illustration	Content	Remarks
1		T1 Total Active Energy	
		T1 Total Reactive Energy	
2		T2 Total Active Energy	
		T2 Total Reactive Energy	

3			
		T3 Total Active Energy	
		T3 Total Reactive Energy	
4			
		T4 Total Active Energy	
		T4 Total Reactive Energy	
5			
		T1 Total Forward Active Energy	

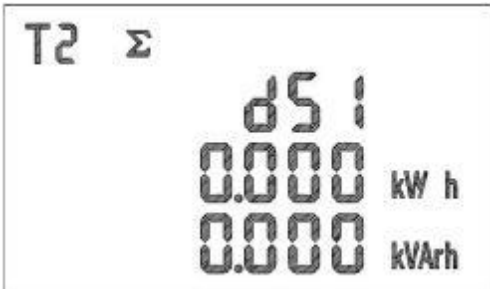
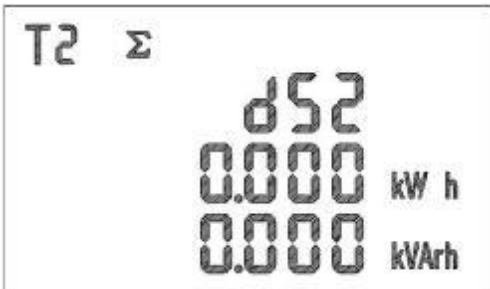
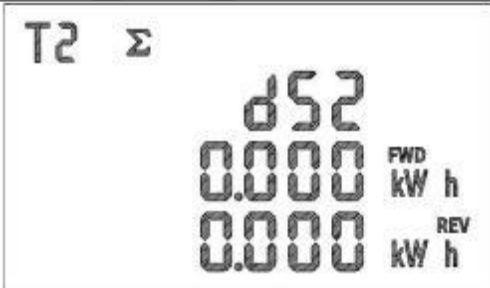
		T1 Total Reverse Active Energy	
6		T2 Total Forward Active Energy	
		T2 Total Reverse Active Energy	
7		T3 Total Forward Active Energy	
		T3 Total Reverse Active Energy	
8		T4 Total Forward Active Energy	
		T4 Total Reverse Active Energy	
9			
		T1 Total Forward Reactive Energy	

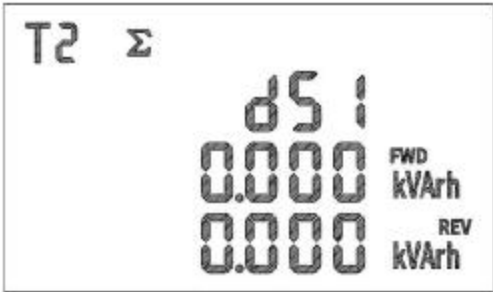
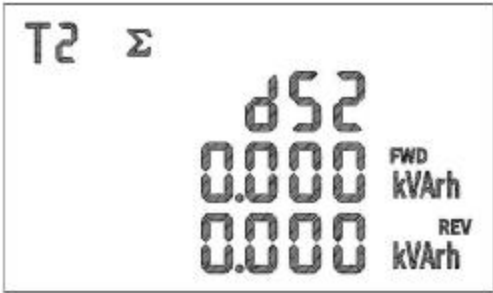
		T1 Total Reverse Reactive Energy	
10		T2 Total Forward Reactive Energy	
		T2 Total Reverse Reactive Energy	
11		T3 Total Forward Reactive Energy	
		T3 Total Reverse Reactive Energy	
12		T4 Total Forward Reactive Energy	
		T4 Total Reverse Reactive Energy	

DS Tariff

(The following illustrations are for DS Tariff mode, Tariff 1 situation. Since DEM3K001 doesn't have tariff function, the below pages don't display.)

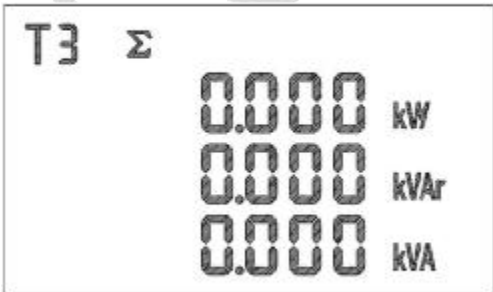
No.	Illustration	Content	Remarks
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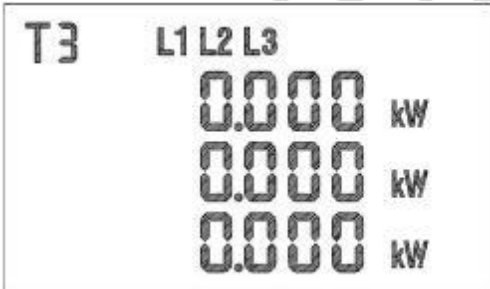
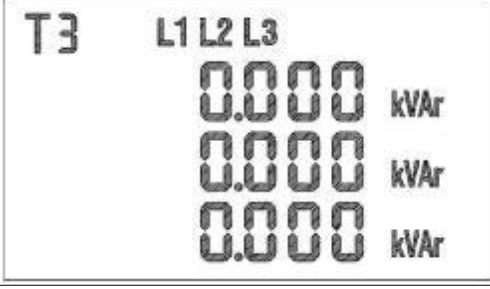
1			
		DS1 Total Active Energy	
		DS1 Total Reactive Energy	
2			
		DS2 Total Active Energy	
		DS2 Total Reactive Energy	
3			
		DS1 Total Forward Active Energy	
		DS1 Total Reverse Active Energy	
4			
		DS2 Total Forward Active Energy	

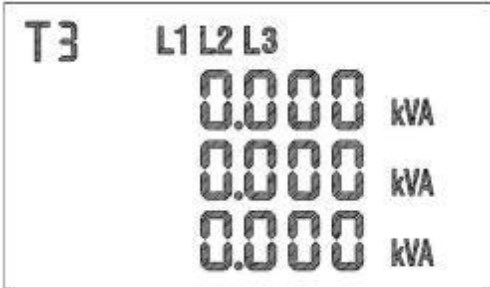
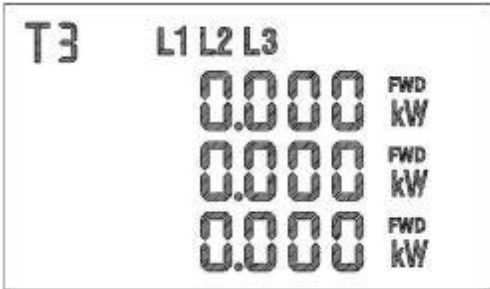
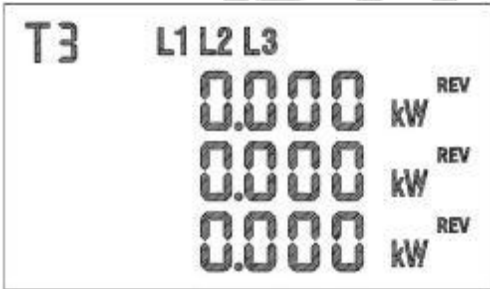
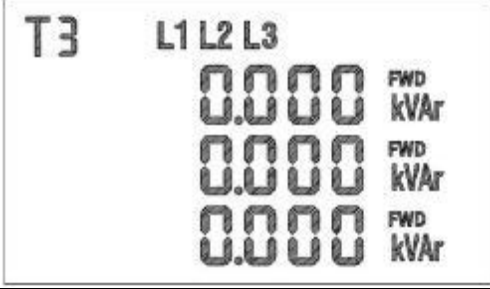
		DS2 Total Reverse Active Energy	
5		DS1 Total Forward Reactive Energy	
		DS1 Total Reverse Reactive Energy	
6		DS2 Total Forward Reactive Energy	
		DS2 Total Reverse Reactive Energy	

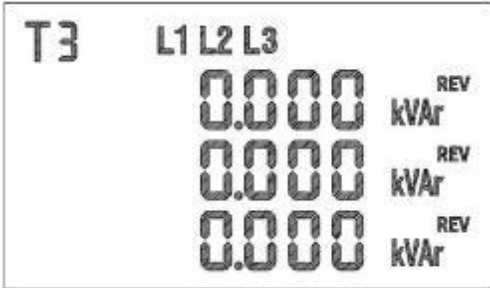
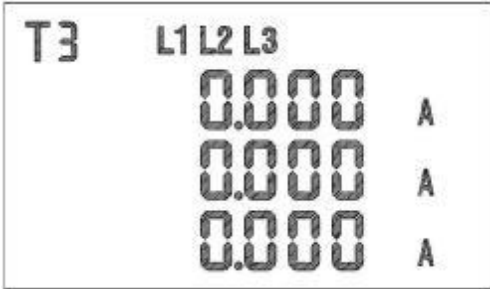
8.6. Demand Pages (Note: The top-left corner mark of DEM3A302/DEM3A202 is T3, and that of DEM3A001 is T2)

(The following illustrations are for No Tariff / DS Tariff mode, Tariff 1 situation)

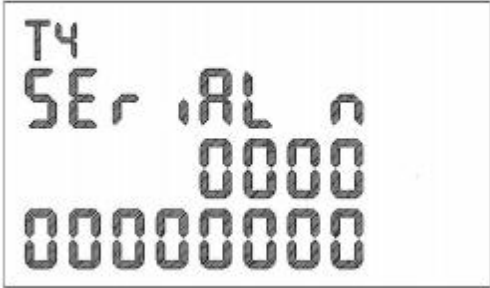
No.	Illustration	Content	Remarks
1		Total Active Maximum Demand	
		Total Reactive Maximum Demand	
		Total Apparent Maximum Demand	

2		Total Forward Active Maximum Demand	
		Total Reverse Active Maximum Demand	
3		Total Forward Reactive Maximum Demand	
		Total Reverse Reactive Maximum Demand	
4		L1 Active Maximum Demand	
		L2 Active Maximum Demand	
		L3 Active Maximum Demand	
5		L1 Reactive Maximum Demand	
		L2 Reactive Maximum Demand	

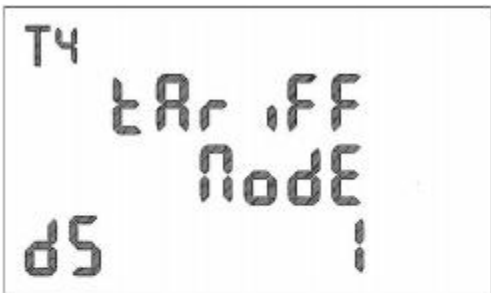
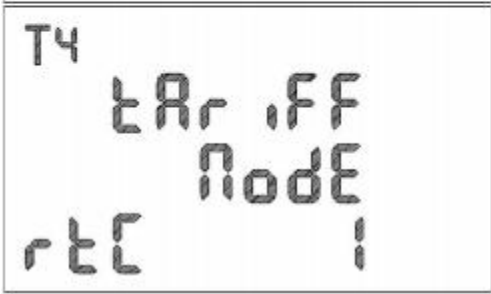
		L3 Reactive Maximum Demand	
6		L1 Apparent Maximum Demand	
		L2 Apparent Maximum Demand	
		L3 Apparent Maximum Demand	
7		L1 Forward Active Maximum Demand	
		L2 Forward Active Maximum Demand	
		L3 Forward Active Maximum Demand	
8		L1 Reverse Active Maximum Demand	
		L2 Reverse Active Maximum Demand	
		L3 Reverse Active Maximum Demand	
9		L1 Forward Reactive Maximum Demand	
		L2 Forward Reactive Maximum Demand	

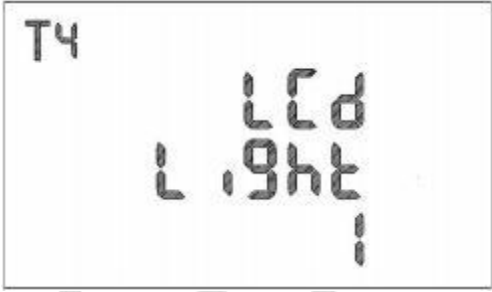
		L3 Forward Reactive Maximum Demand	
10		L1 Reverse Reactive Maximum Demand	
		L2 Reverse Reactive Maximum Demand	
		L3 Reverse Reactive Maximum Demand	
11		L1 Current Maximum Demand	
		L2 Current Maximum Demand	
		L3 Current Maximum Demand	

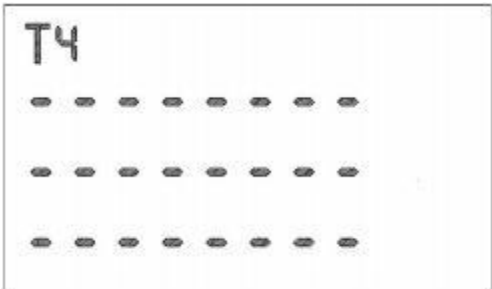
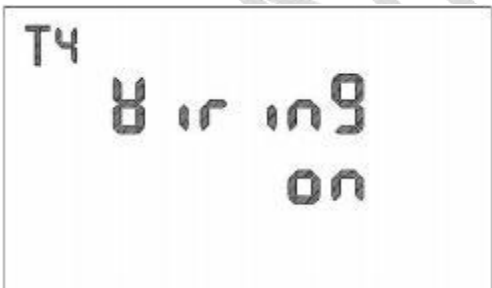
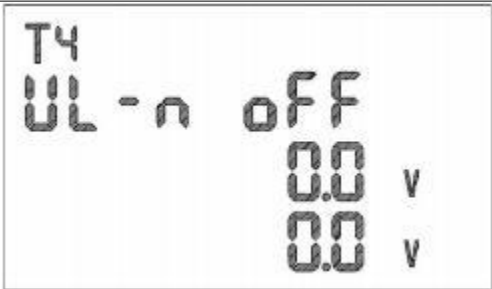
8.7. Information Pages (Note: DEM3A302/DEM3A202 are marked T4 at the top-left corner, while DEM3A001 is marked T3)

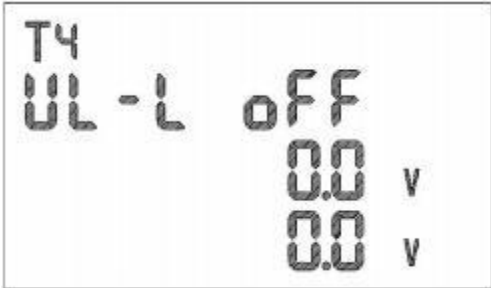
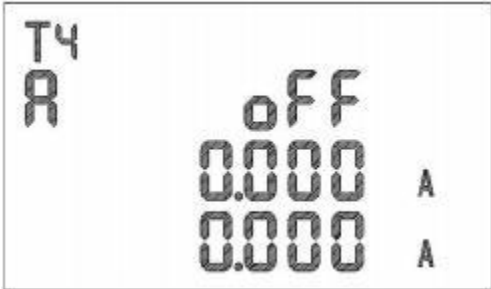
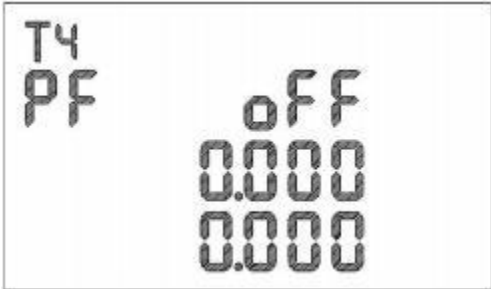
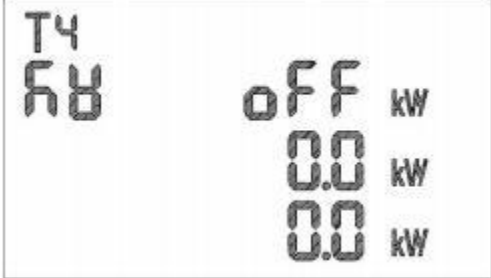
No.	Illustration	Content	Remarks
1		Serial number:000000000000	

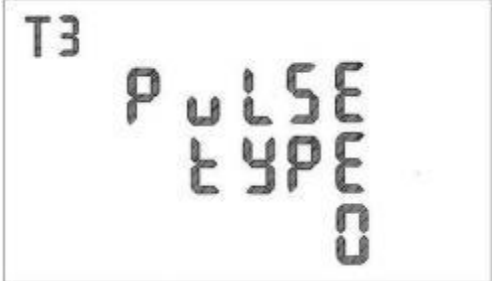
2		Model	
		Manufacturing Year	
3		Version Number	
		Checksum	
4		Wiring Mode	
5		Measurement Mode	

6		Tariff Mode	Switch tariff mode or RTC mode
			Only Switch tariff can be set on the DEM3K202.
			This page is not available on the DEM3K001.
7		CT/VT ratio	
			
			
8		Communication ID	This page is not available on the DEM3K001.
			
			

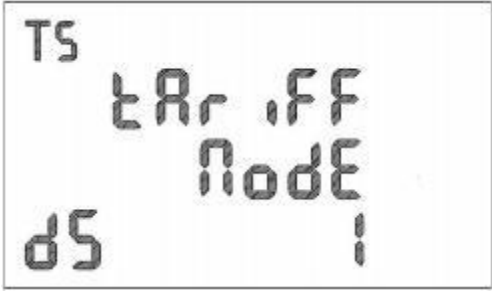
9		Communication Baud Rate	This page is not available on the DEM3K001.
		Communication Parity	
		Communication Stop Bit	
10		Demand Type	Default: 0 Settable: 0. Block Interval 1. Sliding type
		Demand time	
11		Backlight Time	Unit: Minutes
12		Display Mode	Cyclic Display Mode

13		Homepage Display Pages	
14		Alarm Information	
15		Wiring Error Switch	
16		Phase Voltage Threshold Switch	
		Phase Voltage Threshold setH	

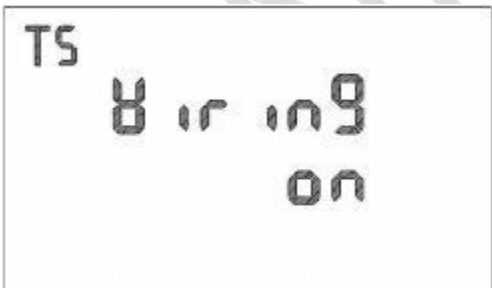
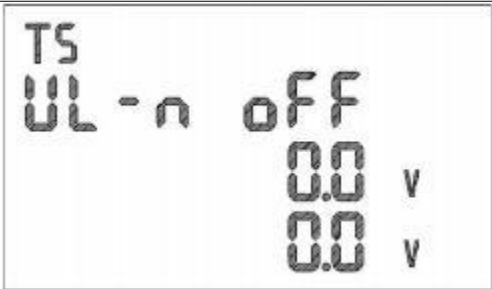
		Phase Voltage Threshold setL	
17		Line Voltage Threshold Switch	
		Line Voltage Threshold setH	
		Line Voltage Threshold setL	
18		Current Threshold Switch	
		Current Threshold setH	
		Current Threshold setL	
19		Power Factor Threshold Switch	
		Power Factor Threshold setH	
		Power Factor Threshold setL	
20		Active Power Threshold Switch	
		Active Power Threshold setH	

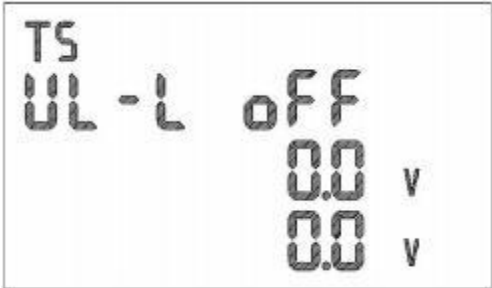
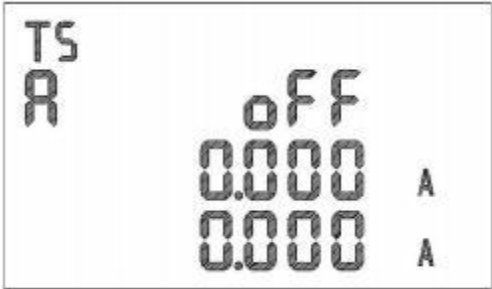
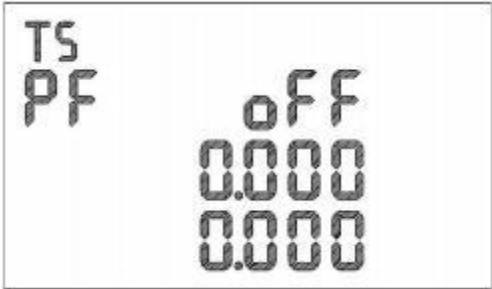
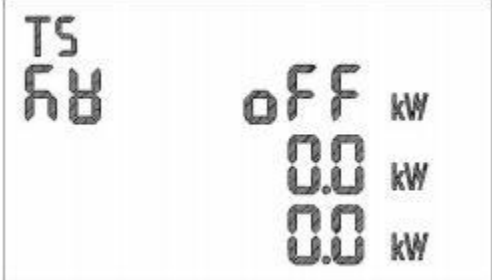
		Active Power Threshold setL	
21		Reactive Power Threshold Switch	
		Reactive Power Threshold setH	
		Reactive Power Threshold setL	
22		Apparent Power Threshold Switch	
		Apparent Power Threshold setH	
		Apparent Power Threshold setL	
23		Alarm Delay Time	Default Setting: 60; Unit (Seconds)
24		S0 output type	Only available for DEM3K001

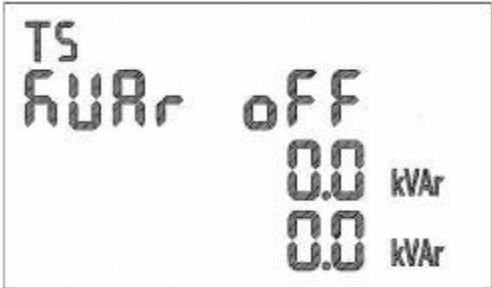
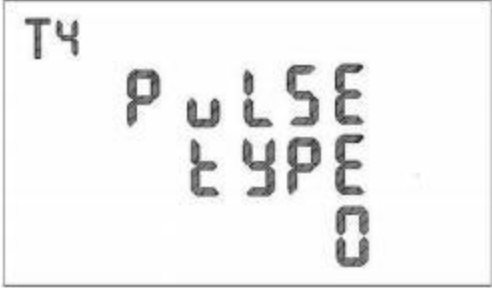
8.8. Setting pages (Note: DEM3A302 and DEM3A202 have a T5 mark at the top-left corner, while DEM3A001 is marked T4 there)

No.	Illustration	Content	Remarks
1		Wiring Mode	
2		Measurement Mode	
3		CT/VT Ratio	
3		Tariff Mode	The DEM3K202/DEM3K302 only allows setting the switch tariff. The DEM3K001 does not have this page.

4		Communication ID	The DEM3K001 does not have this page.
5		Communication Baud Rate	The DEM3K001 does not have this page.
		Communication Parity Bit	The DEM3K001 does not have this page.
		Communication Stop Bit	The DEM3K001 does not have this page.
6		Demand Type	
		Demand time	
7		Backlight Time	

8		Display Mode	
9		Homepage Mode Display Page	
10		Wiring Error Switch	
11		Phase Voltage Threshold Switch	
		Phase Voltage Threshold setH	

		Phase Voltage Threshold setL	
12		Line Voltage Threshold Switch	
		Line Voltage Threshold setH	
		Line Voltage Threshold setL	
13		Power Factor Threshold Switch	
		Power Factor Threshold setH	
		Power Factor Threshold setL	
14		Power Factor Threshold Switch	
		Power Factor Threshold setH	
		Power Factor Threshold setL	
15		Active Power Threshold Switch	
		Active Power Threshold setH	

		Active Power Threshold setL	
16		Apparent Power Threshold Switch	
		Apparent Power Threshold setH	
		Apparent Power Threshold setL	
17		Apparent Power Threshold Switch	
		Apparent Power Threshold setH	
		Apparent Power Threshold setL	
18		Alarm Delay Time	
19		SO output type	Only available for DEM3K001

20		Clear Demand	Click the middle button to enter the demand clearing page. The default is "yes". Click the left or right button to switch to "no". In the "yes" state, long-press the middle button to clear the currently recorded demand data from the meter.
21		Clear Energy	Click the middle button to enter the energy clearing page. The default is "yes". Click the left or right button to switch to "no". In the "yes" state, long-press the middle button to clear the currently recorded energy data from the meter.
22		Password setting	

8.9. Button Operation

- Long press the middle button to enter menu switching, short press the left/right buttons to switch menus, short press the middle button to enter the selected menu page. Entering the settings page menu requires entering a password, default is all 0.
- After entering the settings page menu, a 4-digit password must be entered. Short press left/right to select the corresponding digit, short press the middle button to switch digits, long press the middle button to confirm the password.
- In the settings page, short press left/right buttons to switch between setting information, short press the middle button to enter the setting. After entering the setting, short press the middle button to switch to the next setting parameter, long press the middle button to save and exit the current setting.
- Long press the left button to return to the home page.

9. Alarm

9.1. Alarming function

The DEM3K 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: The alarm threshold (setH) should be bigger than the alarm cancellation threshold (setL); the power factor alarm threshold (setH) should be smaller than the alarm cancellation threshold (setL).

After setup, when the monitored value exceeds 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 DEM3K series meter supports monitoring the following variables:

- Voltage (Phase Voltage / Line Voltage)
- Current
- Power Factor
- 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. Alarming Setting

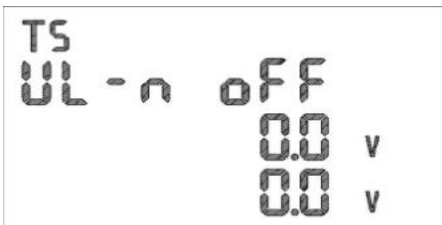
- After powering on, press and hold the middle button to enter the menu switching state, then press the left or right button to switch up and down the menu until the screen displays the settings menu page as shown in the figure below.

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

- In the settings menu, short press the middle button to enter the settings page, where you will be required to enter a 4-digit password. Short press the left or right button to select the corresponding numbers, and short press the middle button to change the number of digits. After entering the password, long press the middle button to confirm and enter the page shown in the image below. The default password is 0000.

	Wiring mode
--	-------------

- Short press the left or right button to switch settings information until you reach the desired alarm parameter page, then Short press the middle button to enter the settings.
- Taking phase voltage as an example, short press the left or right button to switch to the page shown in the image below, then short press the middle button to enter the phase voltage settings. The alarm is off by default. Short press the left or right button to control the on/off state, toggling between on and off. After switching, press and hold the middle button for 3 seconds to save.
- In the phase voltage settings, short press the middle button to switch settings. When you reach the third line of the LCD screen shown in the image below, you can set the voltage upper limit. Short press the left or right button to select a number, and press the middle button to switch the digits. After completing all settings, press and hold the middle button to save and exit the current settings.

	Phase Voltage Threshold Switch
	Phase Voltage Threshold setH
	Phase Voltage Threshold setL

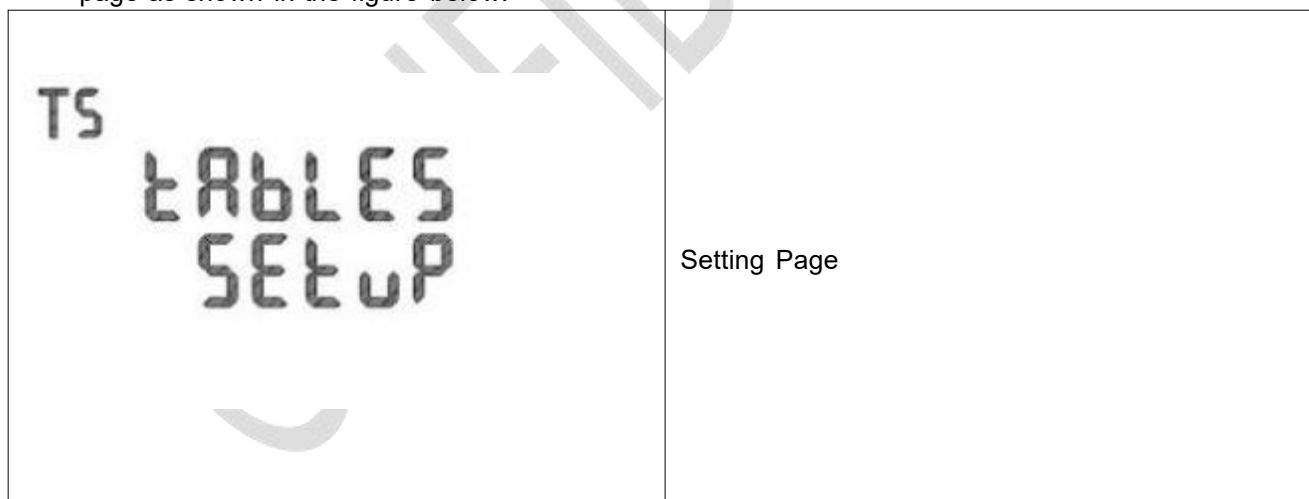
10. Tariff

10.1. Tariff Function

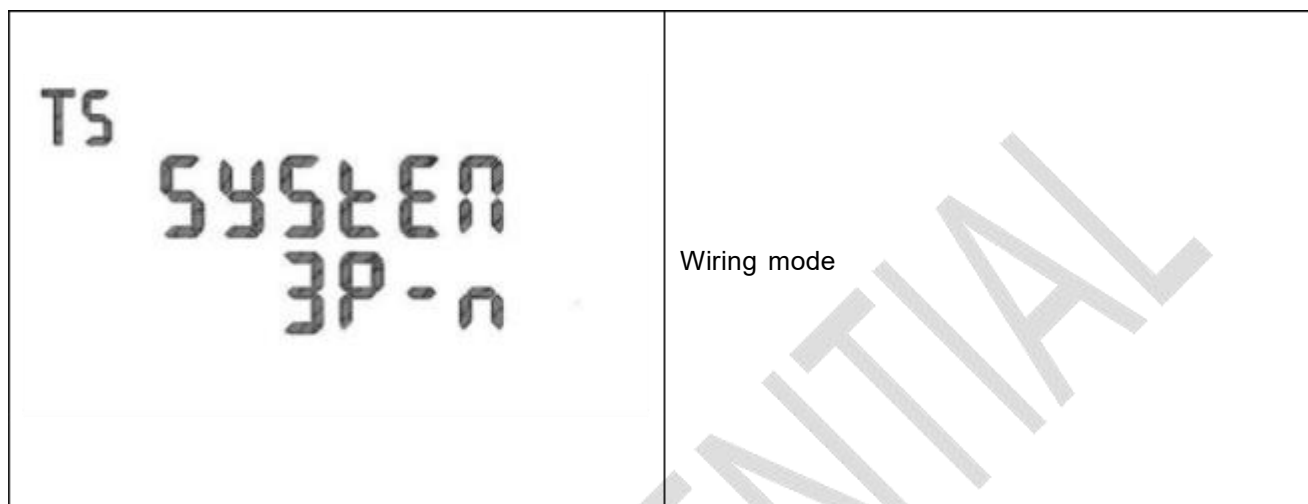
- The DEM3K302 product supports both time-of-use tariffs (default 4 rates, 8 time periods) and dual tariffs via digital input control named switch tariff .
- The DEM3K202 product supports dual tariffs via digital input control named switch tariff.
- The DEM3K001 product lacks tariff functionality.
- Time periods are divided into weekday periods, weekend (Saturday and Sunday) periods, and holiday periods. Different time period tables have different priorities, in the order of holiday, weekend, and weekday. When the meter is setting tariffs, it first determines whether it is a holiday. If it is a holiday, it runs the holiday time period table; if it is a weekend, it runs the weekend time period table; if it is neither a holiday nor a weekend, it runs the weekday time period table.
- If no tariff is set, it will use either RTC tariff 1 or Switch tariff 1.

10.2. Tariff Setting

- After powering on, press and hold the middle button to enter the menu switching state, then press the left or right button to switch up and down the menu until the screen displays the settings menu page as shown in the figure below.



- In the settings menu, short press the middle button to enter the settings page, where you will be required to enter a 4-digit password. Short press the left or right button to select the corresponding numbers, and short press the middle button to change the number of digits. After entering the password, long press the middle button to confirm and enter the page shown in the image below. The default password is 0000.



- Short press the left or right button to switch settings information. Once on the tariff switching page, short press the middle button to enter the settings.
- After entering the rate settings page, short press the left or right button to switch tariff modes. After switching, long press the middle button to save the settings.

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

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 reset command issuance. The first value is displayed at the end of the first integration interval.

11.3. Example

Integration example:

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.

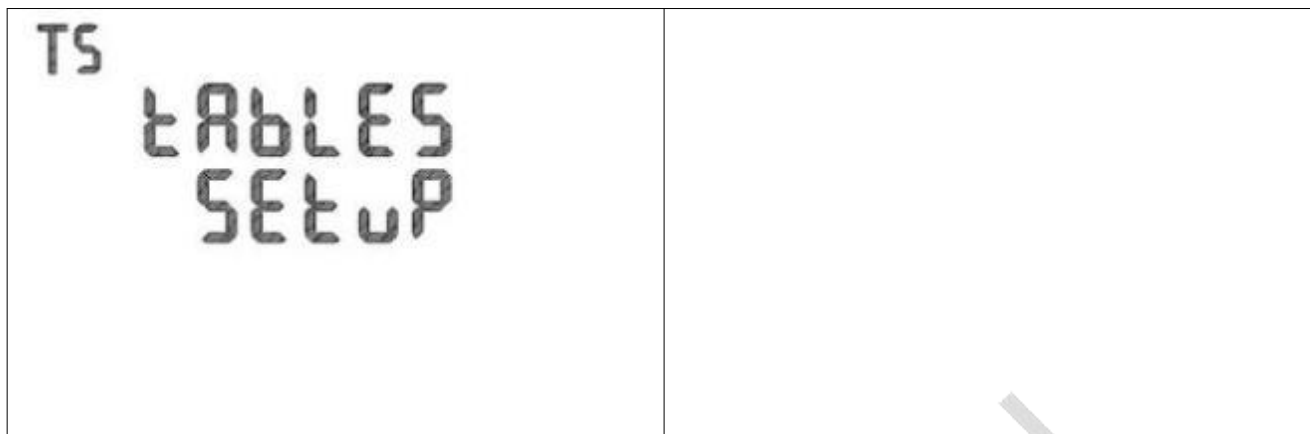
Block Interval Type: Settles the average value within each 15-minute block.

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

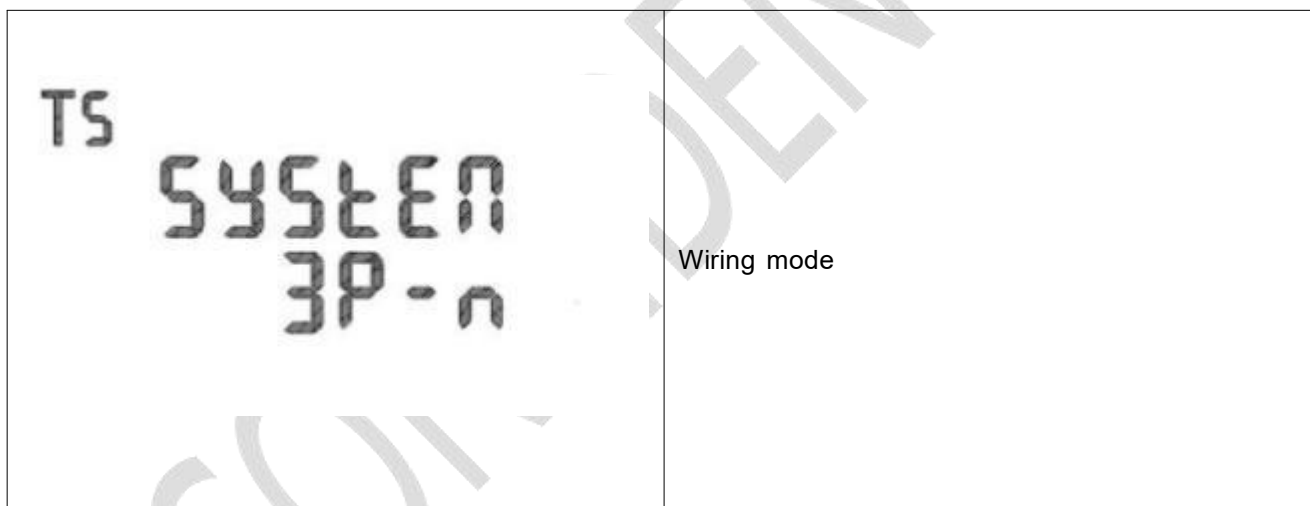
11.4. Demand Setting

- After powering on, press and hold the middle button to enter the menu switching state, then press the left or right button to switch up and down the menu until the screen displays the settings menu page as shown in the figure below.

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



- In the settings menu, short press the middle button to enter the settings page, where you will be required to enter a 4-digit password. Short press the left or right button to select the corresponding numbers, and short press the middle button to change the number of digits. After entering the password, long press the middle button to confirm and enter the page shown in the image below. The default password is 0000.



- Short press the left or right button to switch settings information. After switching to the page shown in the image below, Short press the middle button to enter the settings.
- Short press the left or right button to switch between 0 and 1. After switching to the desired demand type, press and hold the middle button for 3 seconds to save the settings.
- Short press the middle button to switch to demand time settings. Short press the left or right button to switch demand time. After switching to the desired demand time, press and hold the middle button for 3 seconds to save the settings.

	Demand Type
	Demand time

12. Auxiliary Functions

12.1. Wiring Check

The wiring check function can automatically detect and correct wiring errors.

Before enabling this function, the following three conditions must be met simultaneously:

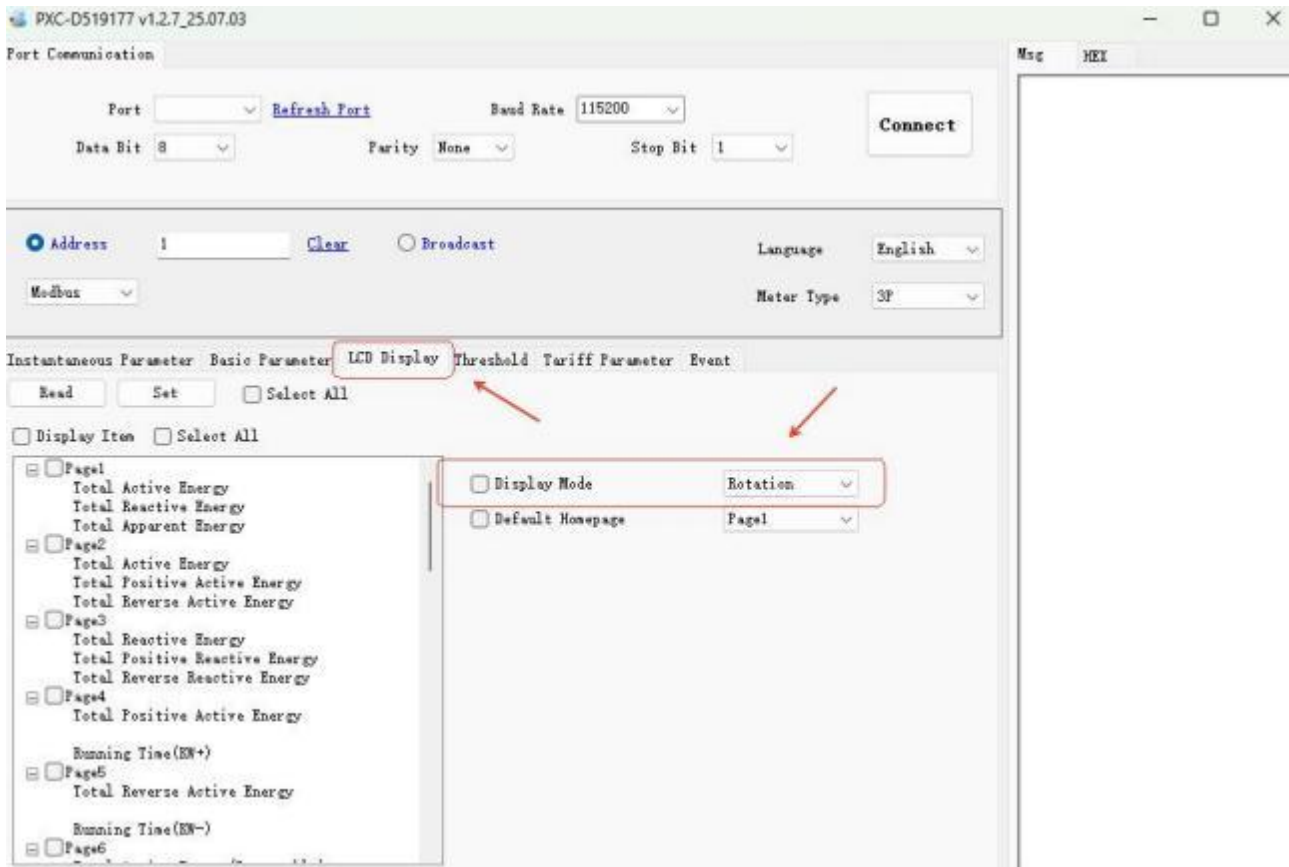
- System Type: Must be set to "3P+N" system.
- Voltage Connection: All voltage lines must be correctly connected.
- Current Status: All phase currents must be greater than zero, and the phase offset range must be between lagging 45° and leading 15° (i.e., inductive power factor > 0.7, capacitive power factor > 0.96).

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

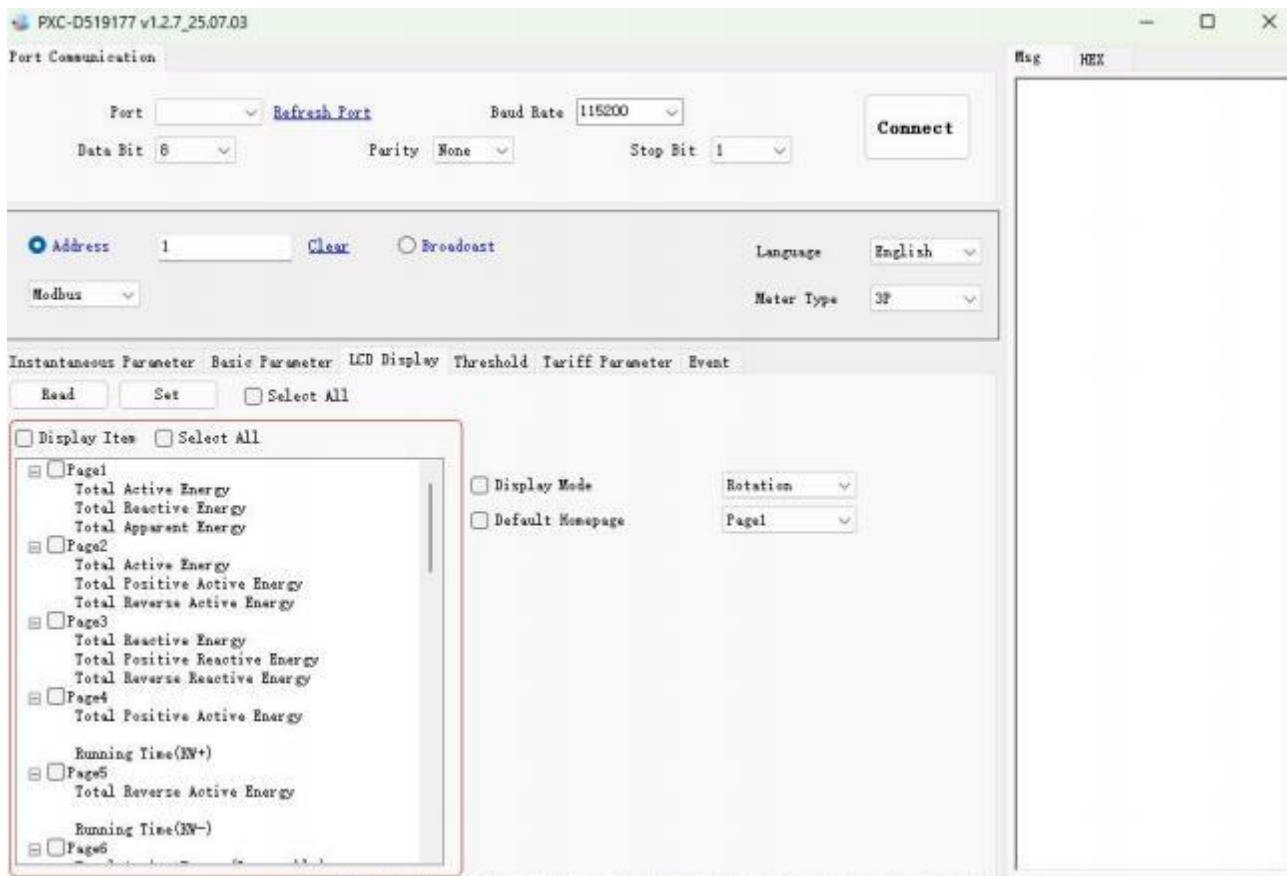
Open the PC software as shown in the image below, go to the display page, and check the display mode to enable the screen saver. The drop-down menu next to display mode allows you to select the screen saver mode. Once enabled, if there is no activity for 5 minutes, it will automatically display the home page or a rotating display task.



12.3. 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.

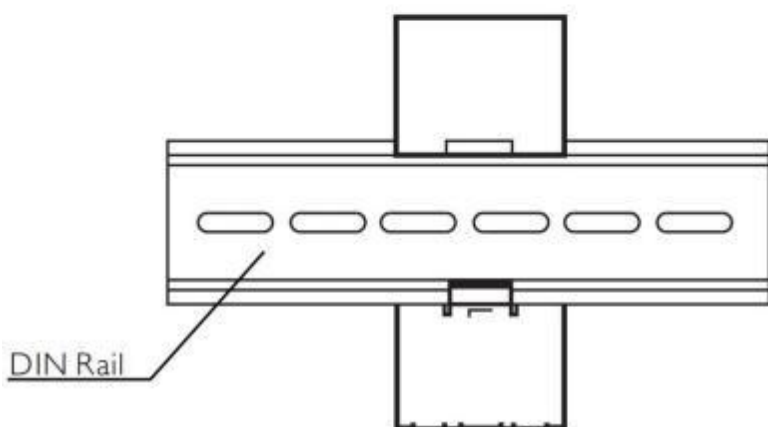
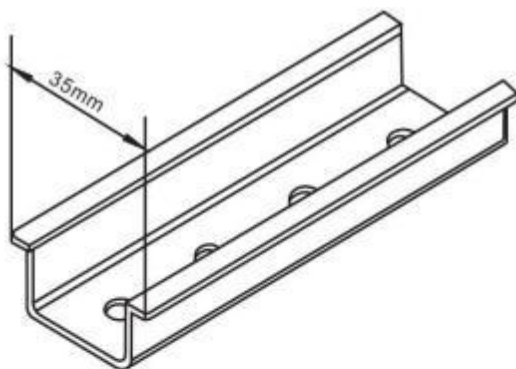
Open the PC software shown in the image below and enter the display page. The list on the left side of the page will display all the pages of the meter that can be displayed. Select the pages that are checked and they will be displayed; those that are not checked will not be displayed.



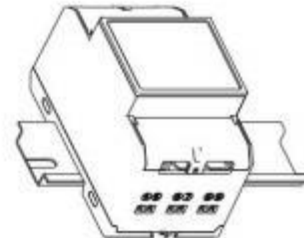
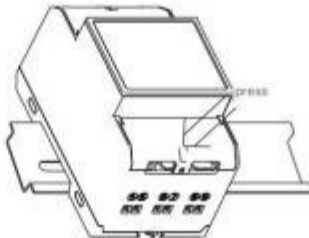
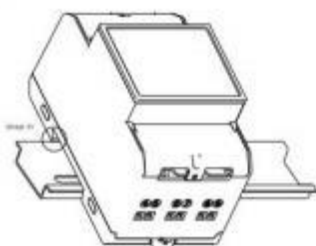
13. Installation Instructions

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

- During installation, first snap the clip on top of the meter into the guide rail, ensuring it's securely in place. Then press the meter down to lock it into place. Note: Always snap the clip into place before pressing down; pressing directly may break the clip!
- During disassembly, first pull down the latch at the bottom of the guide rail. Then lift the lower half of the meter off the rail. Once the lower half is off, push the meter upwards to disengage the clip on top. This completes the disassembly. Note: Always disengage the lower half of the meter off the rail before pushing it upwards. Forcing it off directly may break the clip on top!



Install



Disassembly



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. External Overcurrent Protection Requirements

This meter does not incorporate internal overcurrent protection. The user or installer is responsible for providing suitable external overcurrent protection devices on the supply side. The selection and installation of such protective devices shall comply with applicable local electrical installation regulations and the prospective short-circuit current at the installation location.

14.7 Disclaimer

Every effort has been made to ensure that the information contained in this publication is accurate and complete. However, deviations from the descriptions cannot be entirely excluded, and therefore no liability can be accepted for any errors, omissions, or consequences arising from the use of the information contained herein.

The contents of this manual are reviewed regularly and corrections or revisions will be included in subsequent editions where necessary. We welcome any suggestions for improvement.

The right is reserved to make technical modifications without prior notice.

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14.8 General Warnings

After unpacking, please verify that the device is complete and undamaged. If there is any doubt regarding its condition, do not use the device and contact qualified technical personnel.

Installation of electrical equipment must be carried out only by qualified electricians. All applicable safety regulations and installation practices must be strictly observed.

In the event of malfunction or failure, disconnect the device immediately from the power supply. Repairs and servicing must be performed only by qualified technical personnel.

Failure to comply with these instructions may compromise the safety and proper operation of the equipment.

14.9 Additional Safety Installation Instructions

- . Ensure that all terminal screws are properly tightened and that conductors are correctly inserted into the corresponding terminals during installation.
- . Conductors with an insufficient cross-sectional area may result in poor electrical contact, causing overheating or arcing, which could damage the meter and surrounding equipment.

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DEM3K Series

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- . Verify that the conductors used are suitably rated for the maximum current of the meter.
- . Before energizing the meter, ensure that all AC wiring connections have been correctly installed.
- . In addition to the requirements specified in this manual, all other applicable regulations and standards necessary for the safe and reliable operation of the meter shall be observed.
- . To prevent hazards and ensure proper installation, the meter should be installed only by qualified technical personnel.

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.

15.2.1 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 Yongtailong Electronic Co., Ltd.
No. 320 Tongsheng Road, Tongxiang City, Zhejiang, China
Postal Code: 314500
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	2026-05-08	1. Updated the table content in Section 3.6 (Wiring Parameters). 2. Updated the torque specification note below the wiring diagrams in Section 6. 3. Added the Product Manual Revision History table.
V3.0	2026-05-13	Corrected an LCD display error by changing the misspelled word "tpye" to "type" in the illustration.
V4.0	2026-05-18	Changed the wiring configuration description from 3P3W (Delta Mode) to 3P3W (Aron Mode).
V5.0	2026-05-25	1. Added Current Circuit Power Consumption to Section 3.1. 2. Removed 1P2W from the wiring configurations in Section 3.5. 3. Revised the conductor size range for terminals N/1/2/3 in Section 3.6 from 2.5 mm ² to 1.0–2.5 mm ² . 4. Revised the nominal voltage range in Section 3.8 from 120–230 V to 57.7–230 V. 5. Removed the reactive energy standard from Section 3.9. 6. Added a description of external protective devices in Section 14.6.

V6.0	2026-5-27	Change the homepage image; and adjust the homepage overlay to light gray. 3.1 Rated voltage modified to 3x57.7/100V-3x230/400V (3P4W), 3x100V-3x400V (3P3W); 3.8 Voltage range modified to: 3x57.7/100V-3x230/400V ± 20% (3P4W), 3x100V-400V ±20% (3P3W) Add notes after subheadings 8.5/8.6/8.7/8.8
V7.0	2026-07-02	Update the reactive power accuracy to 1% in chapter 3.2

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