

WON-H2-R

- WON-H2-R Multifunction Energy Meter with Rogowski Coil is an advanced device designed to measure and monitor various electrical parameters in an energy distribution system.
- It provides real-time data on the consumption and quality of electrical power, enabling businesses, industries, and households to better understand their energy usage, improve efficiency, and reduce operational costs.
- Multi-Functional Usage: Suitable for energy measurement in industrial, commercial, and residential applications, including power analysis, tariff metering, and maximum demand monitoring.



Product Features

- Fast installation
- Product size is standard 96 panel type Installation method is a snap-on type, without screws
- Support multiple current transformer connections 6 rate tariff energy and RTC switching or manual switching
- Maximum demand measurement
- Alarm setting
- Current transformer orientation modification
- Current channel modification
- The WON-H2-R & WON-H3-R series supports a new type of current transformer – Rogowski coil direct connection Three-phase Four wire, Three-phase three wire, Single phase three phase, and single-phase systems Available in 230VAC, 24VDC* and 12VDC* power supplies *Variants
- Voltage and current harmonic measurement 1-50TH Order
- THD, Voltage, current, fractional harmonics, 1-50TH Order

Key Function

- Fast installation with Rogowski CT, NO SHUT DOWN required
- 4 Line High Resolution LCD Display with Backlight
- Kw/h Energy value in all pages Always in Display
- Product size is standard 96x96 panel type
- Installation method is a snap-on type, without screws
- Three-phase four wire, Three-phase three wire and single-phase systems
- Voltage, current, fractional harmonics, up to 50 the order
- Voltage and current THD measurement
- 6 rate tariff energy, RTC switching or manual switching
- Maximum demand measurement
- Alarm setting and High precision measurement

Applications

- Energy Management System (Ems)
- Commercial and industrial sub-metering
- Building management and monitoring systems (BMS)
- Power control Centre (PCC) panels
- Motor control Centre (MCC) panels
- LV distribution panels
- Control and relay panels
- Automation and monitoring system
- Building management and monitoring systems (BMS)
- Power control Centre (PCC) panel.

Device Selection Table

WON-H1-H	Multifunction Energy meter +PQ Analyser	-1/, -/5A Traditional CT	Aux 95-265VAC
WON-H1-L	Multifunction Energy meter +PQ Analyser	-1/, -/5A Traditional CT	Aux 9-36 VDC
WON-H1-M	Multifunction Energy meter +PQ Analyser	-1/, -/5A Traditional CT	Aux 90-528VAC
WON-H2-R	Multifunction Energy meter +PQ Analyser	Rogowski Coil CT	Aux 95-265VAC
WON-H3-R	Multifunction Energy meter +PQ Analyser	Rogowski Coil CT	Aux 9-36 VDC
WON-H4-R	Multifunction Energy meter +PQ Analyser	Rogowski Coil CT	Aux 90-528VAC

Technical Features

Display	Digital LCD Display
Installation	Panel Mounting
Usage	Multi-Functional Energy Meter, Watt-Hour Meter, Power Analyzer, Maximum Demand Meter, Reactive Energy Meter, Multi-Rate Watt-Hour Meters
Measurements	External CTs and Rogowski Coil Rated current:10A,100A,500A,1000A,3000A,6000A (Widely adapted to a variety of Rogowski Rated coil ratio:50mV/kA, 85mV/kA or 333mV/kA (0-634mV AC
Certification	RoHS, ISO, CE
Input Type	External CTs, External Rogowski Coil
Power Supply	95~265VAC/DC
Wiring	3pH4w, 3pH3w, 1pH2w (L-N), 1pH2w (L-L), 1pH3w (L-L-N)
Sampling Rate	8K Samples Per Second
V&I Harmonic Analysis	Up to 50th Harmonic
Communication Baud Rate	2400 bps to 115200 bps
Accuracy	Class 0.5s
Communication	Modbus RTU, RS485 Port
Primary Current Range	Adjustable from 0.1A to 9999A
Voltage Range	0-600VAC
Frequency Range	50/60Hz
Dimensions	96 × 96 × 45mm

Instantaneous Value

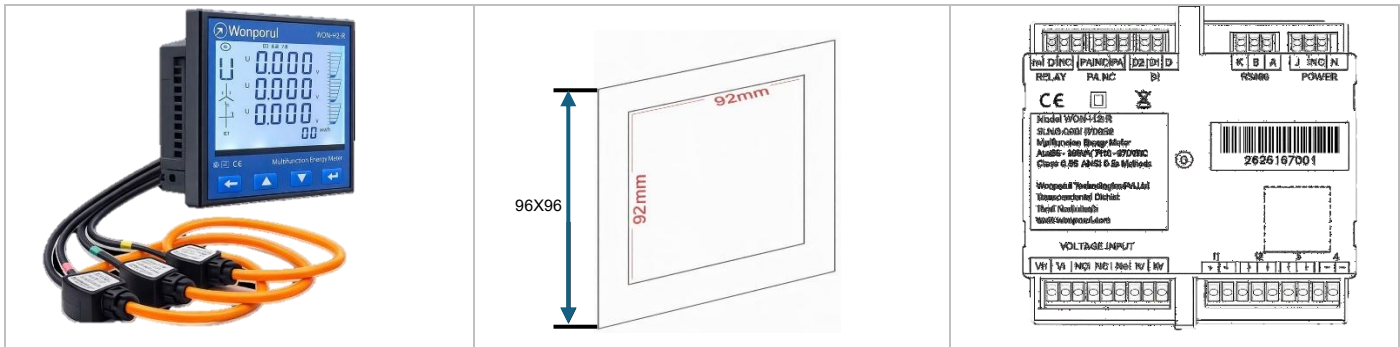
Phase voltage	U1, U2, U3, AVG
Line voltage	U12, U23, U31, AVG
Current	I1, I2, I3, AVG, In
Grid frequency	F1, F2, F3, Σ (Total)
Power factor PF	PF1, PF2, PF3, Σ (Total)
Displacement Power factor	DPF1, DPF2, DPF3, Σ (Total)
Active power	P1, P2, P3, Σ (Total)
Reactive power	Q1, Q2, Q3, Σ (Total)
Apparent power	S1, S2, S3, Σ (Total)

Energy

Active Energy Import	When the total Energy reaches 1.0×10^9 kWh, the energy of each phase will automatically clear to zero
Active Energy Export	EP1, EP2, EP3, Σ (Total) when the total energy reaches 1.0×10^9 kwh, the energy of each phase will automatically clear to zero.
Reactive Energy Import	EQ1, EQ2, EQ3, Σ (Total)When the total Energy reaches 1.0×10^9 kVarh, the energy of each phase will automatically clear to zero
Reactive energy Export	EQ1, EQ2, EQ3, Σ (Total)When the total Energy reaches 1.0×10^9 KVarh, the energy of each phase will automatically clear to zero
Apparent Energy	ES1, ES2, ES3, Σ (Total)When the total Energy reaches 1.0×10^9 Kah, the energy of each phase will automatically clear to zero
Tariff energy	ET1, ET2, ET3, ET4, ET5, ET6 When Energy reaches 1.0×10^9 kWh, Energy automatically clears to zero

Harmonics	
Voltage Harmonic Percentage	Total harmonics (U1, U2, U3), odd total harmonics (U1, U2, U3), even total harmonics (U1, U2, U3) Fractional harmonics of order 1-50 (U1, U2, U3)
Current harmonic percentage	Total harmonics (I1, I2, I3), odd total harmonics (I1, I2, I3), even total harmonics (I1, I2, I3), K factor (I1, I2, I3 Fractional harmonics of order 1-50 (I1, I2, I3)
Voltage harmonic value	Total harmonics (U1, U2, U3) Fractional harmonics of order 1-50 (U1, U2, U3)
Current harmonic value	Total harmonics (U1, U2, U3) Fractional harmonics of order 1-50 (U1, U2, U3)
Phase diagram	
Phase sequence	Voltage, current
Voltage angle	U1, U2, U3
Current angle	I1, I2, I3
Voltage and current angle	UI1, UI2, UI3
Max.Demand	
Total Active power	Maximum demand and time
total Reactive power	Maximum demand and time
Total apparent power	Maximum demand and time
Unbalance	
Voltage unbalance	Negative order, zero order
Current unbalance	Negative order, zero order
Max. & Min.	
Phase voltage	Each Phase and average
Line voltage	Each Phase and average
Current	Each Phase and average
Active power	Each Phase and average
Reactive power	Each Phase and average
Apparent power	Each Phase and average
Accuracy	
Current	0.1%+Accuracy of current sensor
Voltage	±0.2% (60V~600V AC)
Frequency	±0.01%(45~65Hz)
Power factor	±0.005
Active and Apparent power	IEC62053-22 level 0.5S
Reactive power	IEC62053-21 level 1S
Active energy	IEC62053-22 level 0.5S
Reactive energy	IEC62053-21 level 1S
Environmental Condition	
Operating temperature	-20°C~+70°C
Storage temperature	-40°C~+85°C
Humidity range	5~95% RH, 50°C(non-condensing)
Over voltage capability	CAT III 1000V, it is suitable for distribution system below 277 / 480VAC
Insulation strength	IEC61010-1
Altitude	3000m Max
Antipollution level	IP20(Meet the standard of IEC 60629)
Electromagnetic Compatibility (EMC) & Measurement Standards	
Electrostatic Discharge	Level IV (IEC 61000-4-2)
Radiated Immunity	Level III (IEC 61000-4-3)
EFT Electrical Fast Burst Immunity	Level IV (IEC 61000-4-4)
Surge Immunity	Level IV (IEC 61000-4-5)
conducted Disturbance Immunity	Level III (IEC 61000-4-6)
Power Frequency Magnetic Fiel	0.5mT (IEC 61000-4-8)
Conduction and Radiation	Class B (EN 55022)

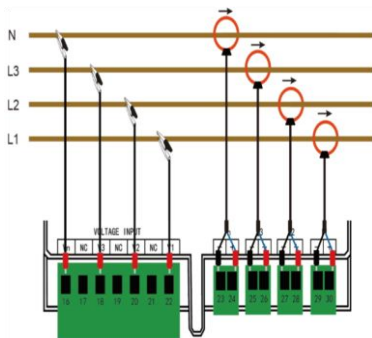
Dimensions



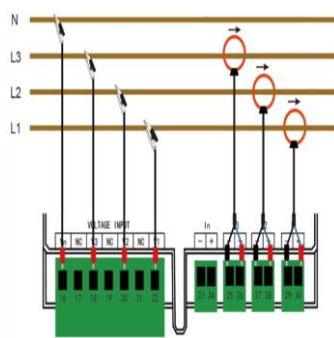
Wiring Diagram

- Meter support wiring type, three-phase four-wire 4CT (3P4W_4CT), three-phase four-wire 3CT (3P4W_3CT), three-phase three-wire.
- 3CT (3P3W_3CT), three-phase three-wire 2CT (3P3W_2CT), one-phase three-wire (1P3W), one-phase two-wire (1P2W)
- The actual wiring type of the meter must be consistent with the wiring method of the internal configuration of the meter
- Three-phase four-wire 4CT (3P4W_4CT) requires 4 current sensors, and the N-phase current is measured through the sensor
- Three-phase four-wire 3CT (3P4W_3CT) requires 3 current sensors, and the N-phase current is calculated by calculation
- Three-phase three-wire 3CT (3P3W_3CT) requires 3 current sensors, and the B-phase current is measured through the sensor
- Three-phase three-wire 2CT (3P3W_2CT) requires 2 current sensors, and the B phase current is calculated by calculation
- The phase sequence of voltage and current must be in accordance with the phase sequence of ABC, otherwise the meter will show that the voltage and current phase sequence is wrong
- When using a current sensor, pay attention to the current arrow pointing on the sensor must be consistent with the actual current flow direction, that is, the sensor current arrow points to the load end
- The voltage and current wiring type is as follows:

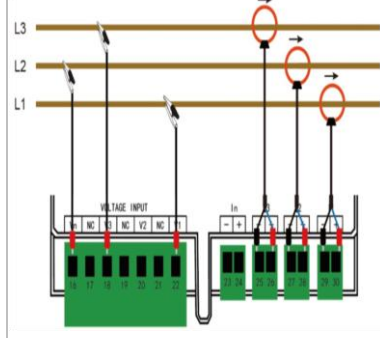
Three-phase four-wire 4CT



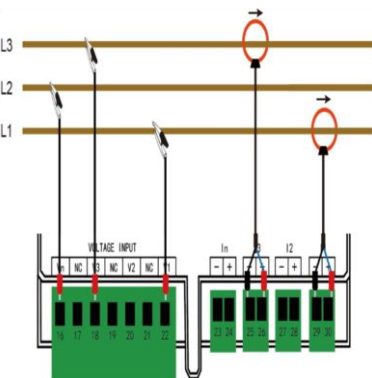
Three-phase four-wire 3CT



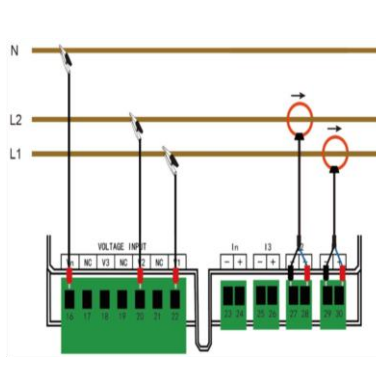
Three-phase three-wire 3CT



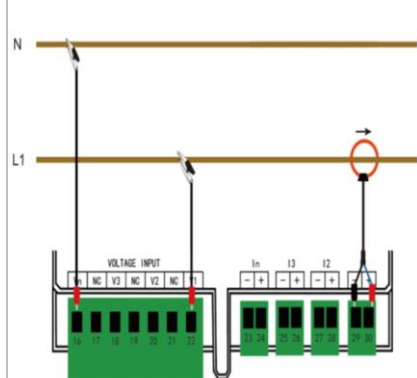
Three-phase three-wire 2CT



Single-phase three-wire

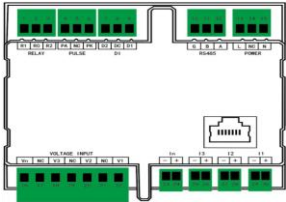


Single-phase two-wire



Display Interface

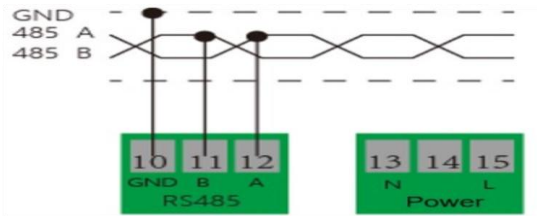
The meter is equipped with a wide range of interfaces to realize different functions.



S.No.	Name	Definition	Type	Remarks
1	R1	Relay normally open contacts	Relay output	It is a relay output with normally open and normally closed contacts
2	R0	Relay common contacts		
3	R2	Relay normally closed contacts		
4	PA	Pulse output positive terminal	Pulse output	Active Energy pulse output
5	NC	Empty terminal		
6	PK	Pulse output negative terminal		
7	D2	Digital input channel 2	Digital input	The two channels are dry contact inputs
8	DC	Digital channel common end		
9	D1	Digital input channel 1		
10	G	RS485 GND	RS485	RS485 Communication
11	B	RS485 B		
12	A	RS485 A		
13	L	Power supply (+)	Power supply	Power supply
14	NC	Empty terminal		
15	N	Power supply (-)		
16	Vn	N-phase voltage input	Voltage input	Voltage input channel
17	NC	Empty terminal		
18	V3	C-phase voltage input		
19	NC	Empty terminal		
20	V2	B-phase voltage input		
21	NC	Empty terminal		
22	V1	A-phase voltage input		
23	In-	N-phase current input negative	Current input	ME337XD series current channel
24	In+	N-phase current input positive		
25	I3-	C-phase current input negative		
26	I3+	C-phase current input positive		
27	I2-	B-phase current input negative		
28	I2+	B-phase current input positive		
29	I1-	A-phase current input negative		
30	I1+	A-phase current input Positive		
31	RJ45	ABC three-phase current input	Current input	ME337XR series current channel

RS-485

The electricity meter is equipped with an RS485 communication interface that supports the Mod Bus RTU protocol. The RS485 communication interface requires the use of shielded twisted pair connections, which are connected in the form of a daisy chain. In long-distance high-speed situations, a 120 Ω resistor needs to be connected in parallel at both ends of the daisy chain.

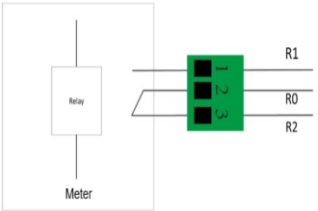


Relay Output

The meter is equipped with a relay output that is a normally open contact. The terminal markings are R1 and R0, where R0 is the common contact and R1 is the normally open contact. The maximum load capacity of the relay is 3A 30V DC and 3A 250V A. The closed state of the normally open contact of the relay is displayed on the meter display interface.

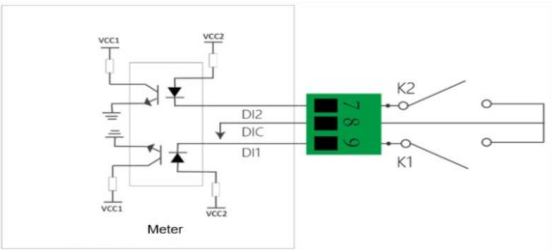
There are two types of relay output control modes, which can be modified through the meter operation interface or Modbus

Relay output control mode	Description
Manual	The relay output is controlled via the meter operator interface or Modbus
Alarm	The relay output is controlled by setting alarm parameters



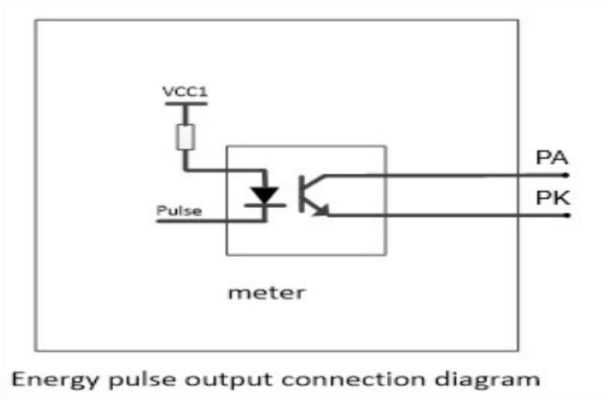
Digital Input

The meter is equipped with two digital switching inputs, which are connected by passive dry contact. The terminal blocks are identified as: DI1, DI2, DIC, where DIC is the common contact. The status of two digital switching inputs can be read through RS485/Modbus protocol, and the status of digital switching input is displayed on the meter display interface.



Energy Pulse Output

The meter is equipped with an active power pulse output, and the electric energy pulse constant EC can be viewed through the meter information interface. The internal optocoupler of the meter is isolated, the maximum allowable passing current is 80mA DC, and the working voltage range is 5V ~ 80V DC.



Functionality

Current Transformer Orientation Setting

WON-H2-R and WON-H3-R supports current transformer direction configuration, in case of current transformer orientation error, the current transformer direction can be configured through the setting interface or Modbus.

Current Transformer Channel Settings

WON-H2-R and WON-H3-R supports current transformer channel configuration, which can be configured through the setup interface or Modbus if the current transformer channel and voltage channel do not match.

Multi-Tariff

WON-H2-R and WON-H3-R provides a multi-tariff power accumulation function and supports up to 6 Tariffs. There are two tariff switching control modes, which can be modified through the meter interface or Modbus.

Tariff control Mode	Description
Manual	Switch Tariff via the meter interface or Modbus
RTC	Trigger the Tariff switch through the RTC time

Manual Control Mode

Switch Tariff through the meter setting interface
Switch Tariff through Modbus configuration command 1071

RTC Control Mode

In RTC control mode, the Tariff switch is triggered by the real-time clock.
The RTC control mode supports 6 time periods (Ta, Tb, Tc, Td, Te, Tf) and 6 Tariffs (T1, T2, T3, T4, T5, T6). The time period and target tariff can be modified through Modbus.
The time is set according to 24 hours, starting from the Ta start time, Tc start time cannot be located between Ta start time and Tb start, Td start time cannot be between Ta start time and Tc start time, and so on.

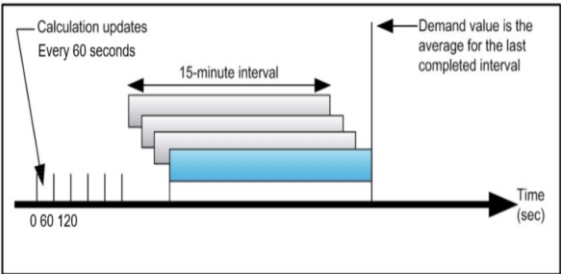
Demand

The meter provides Active power, Reactive power, Apparent power demand and maximum demand.
The demand calculation method and demand calculation interval can be configured through the meter operation interface or Modbus.

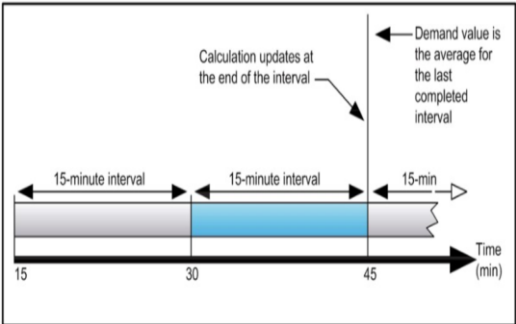
Demand Calculation Method

The meter supports two demand calculation methods: fixed and sliding.
The following figure introduces two methods of demand calculation, taking the demand interval of 15-minute example:

Demand Calculation	Description
Fixed	The meter calculates and updates demand at the end of each interval
Sliding	Demand is updated every 1 minute



Type sliding



Alarm

The meter provides a variety of alarm parameter settings and alarm outputs, and the alarm parameters can be Configured through Modbus.

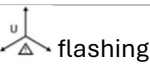
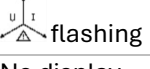
Alarm type	Description
Over current, each phase	If a phase value exceeds the alarm threshold, an alarm is generated. When all phases are less than the release threshold, the alarm is released
Under current, each phase	If a phase value exceeds the alarm threshold, an alarm is generated. When all phases are greater than the release threshold, the alarm is released
Over phase voltage, each phase	If a phase value exceeds the alarm threshold, an alarm is generated. When all phases are less than the release threshold, the alarm is released
Under phase voltage, each phase	If a phase value exceeds the alarm threshold, an alarm is generated. When all phases are greater than the release threshold, the alarm is released
Over line voltage, each phase	If a phase value exceeds the alarm threshold, an alarm is generated. When all phases are less than the release threshold, the alarm is released
Under line voltage, each phase	If a phase value exceeds the alarm threshold, an alarm is generated. When all phases are greater than the release threshold, the alarm is released
Overpower, Total Active Power (absolute)	
Overpower, Total Reactive Power (absolute)	
Overpower, Total Apparent Power	
Over demand, total Active power (absolute), current	
Over demand, total reactive power (absolute value), current	
Over demand, total apparent power, current	
Over THD-U, each phase	If a phase value exceeds the alarm threshold, an alarm is generated. When all phases are less than the release threshold, the alarm is released
Over THD-I, each phase	If a phase value exceeds the alarm threshold, an alarm is generated. When all phases are less than the release threshold, the alarm is released

Alarm output

The alarm output can be associated with the buzzer and relay output (relay control mode needs to be configured as alarm mode), and the corresponding will also be released when the alarm is released.

Phase sequence detection

This meter supports three-phase voltage and current phase sequence detection, and the phase sequence can be viewed on the meter interface or can be read through the phase sequence status Modbus.

Phase sequence status Marker	Description
 flashing	The voltage phase sequence is wrong
 flashing	The current phase sequence is wrong
 flashing	The voltage and current phase sequence is wrong
No display	The phase sequence is correct

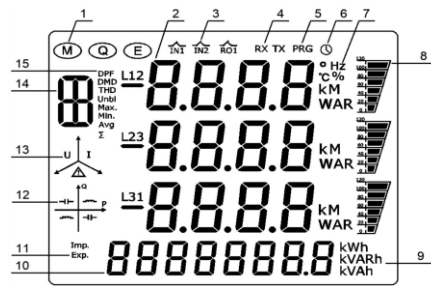
Note: The correct phase sequence of voltage and current can only ensure that the respective phase sequence is correct, and cannot guarantee the correspondence between voltage and current, so you need to pay attention to the wiring method.

Interface display and operation

This section describes the display of the interface and the operation of key combinations, as well as the configuration of the device

Display interface and buttons

The meter adopts LCD display and 4 control buttons, and all the display segments of the screen are shown in the figure below:



No.	Symbol	Description
1	(M) (Q) (E)	(M) : Indicates that the current interface is a real-time measurement data display (Q) : Indicates that the current interface is a power quality display (E) : Indicates that the current interface is an energy display
2	8	Used to display various data
3	IN1 IN2 RO1	IN1 : Status display for digital input channel 1 IN2 : Status display for digital input channel 2 RO1 : Status display of relay output channel
4	RX TX	The communication status is displayed, when there is data sent and will receive, RX TX be displayed, otherwise there will be no display
5	PRG	Device configuration mode displays, in which device parameters can be configured
6	⌚	Device information mode display, in which you can view device information
7	Measurement data units	Voltage: V, KV, MV Current: A, KA, MA Active power: W, KW, MW Reactive power: VAR, KVAR, MVAR Apparent power: VA, KVA, MVA Frequency Percentage: %
8	Percentage bar chart	Voltage, current, power as a percentage of nominal value is displayed
9	kWh kVARh kVAh	Energy unit display Active Energy: kWh Reactive Energy: kVARh Apparent Energy: Vah
10	E	Energy value display
11	Imp. Exp.	Energy positive and negative displays positive Energy: Imp.; negative Energy: Exp.
12	Power quadrant and load capacitance display	Power quadrant and load capacitance display
13	U I phase sequence display	Voltage and current phase sequence display. When the voltage phase sequence is incorrect, when the current phase sequence is incorrect, Flashes
14	8	Used to display data types: Voltage's, Current: I, Active power :P, Reactive power's, Apparent power: S, Energy: E
15	DPF DMD THD Unbl Max. Min. Avg Σ	Types of power quality parameters: Power factor, Displacement power factor: DPF, Demand: DMD, Total harmonics distortion: THD, Unbalance: Unal Maximum: Max. Minimum: Min., Minimum: Min, Average: Avg, Total's

Key Function Display Description

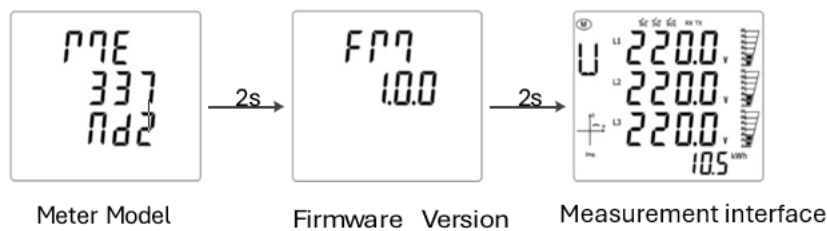
The four buttons of the meter are shown below



Key symbol	Description
	Back key: Used to exit the current operation interface
	Up key: Used to switch the interface display and change the value size during setting, long press to shift
	Down key: Used to switch the interface display and change the value size during setting, long press to shift
	Confirm key: Used to confirm the operation

Meter start-up interface

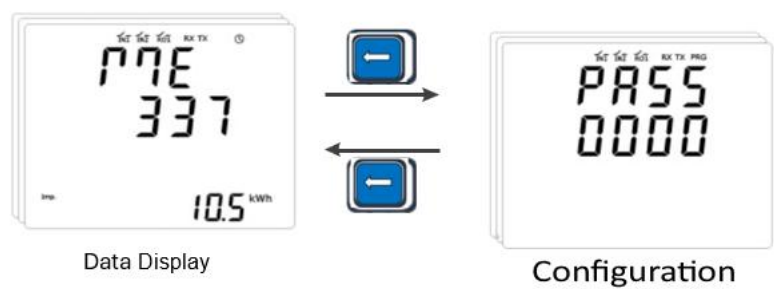
After the meter is powered on, the following screen is displayed:



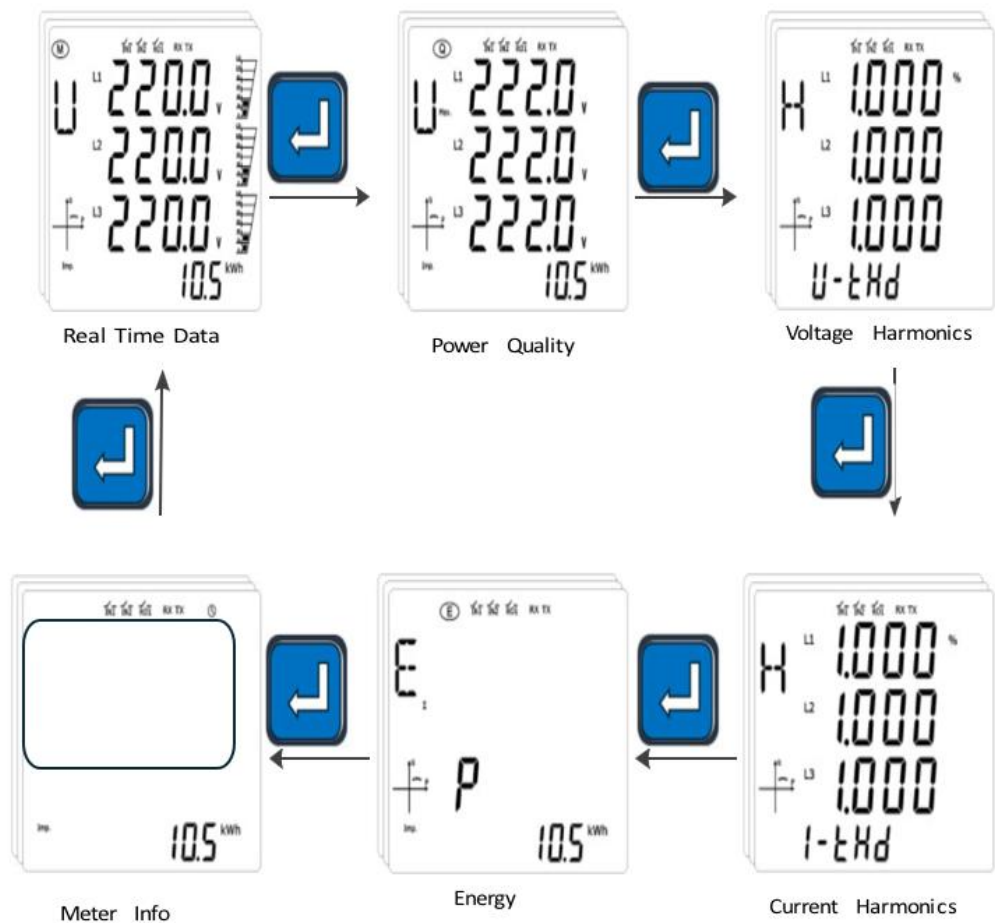
Meter display mode switching

The meter display mode is divided into data display mode and device configuration mode.

The data display mode and device configuration mode are switched by  Key.



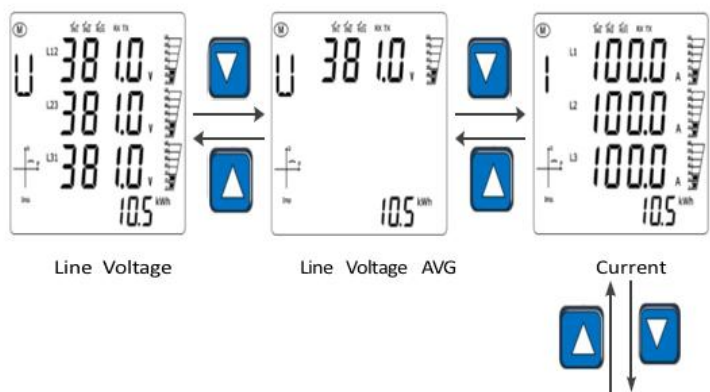
There is a total of 6 display modes in the data display mode: real-time measurement data display mode (M) power quality display mode (Q) energy display mode (E) information display mode and switch between each mode by  key as shown in the figure below.

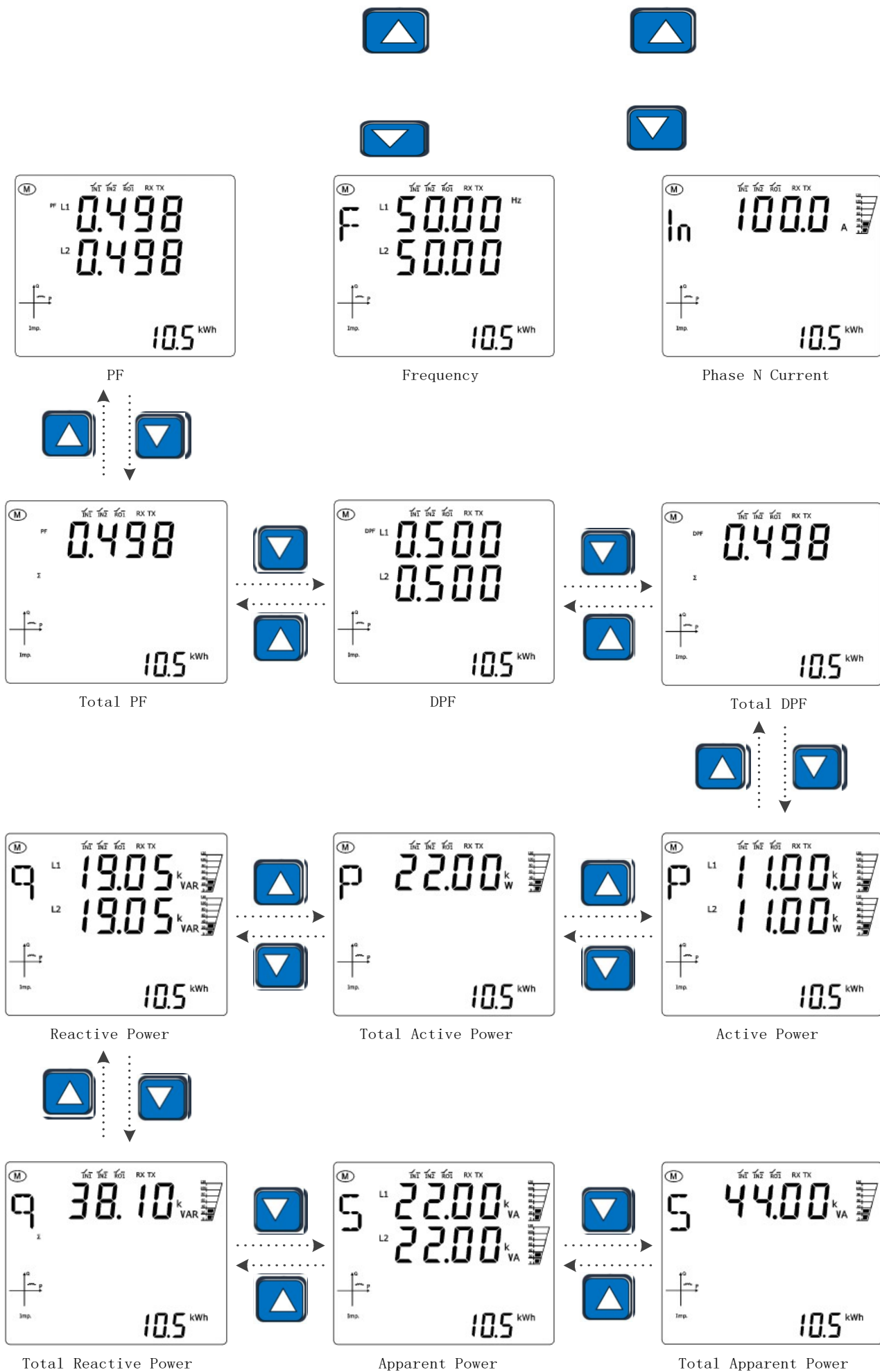


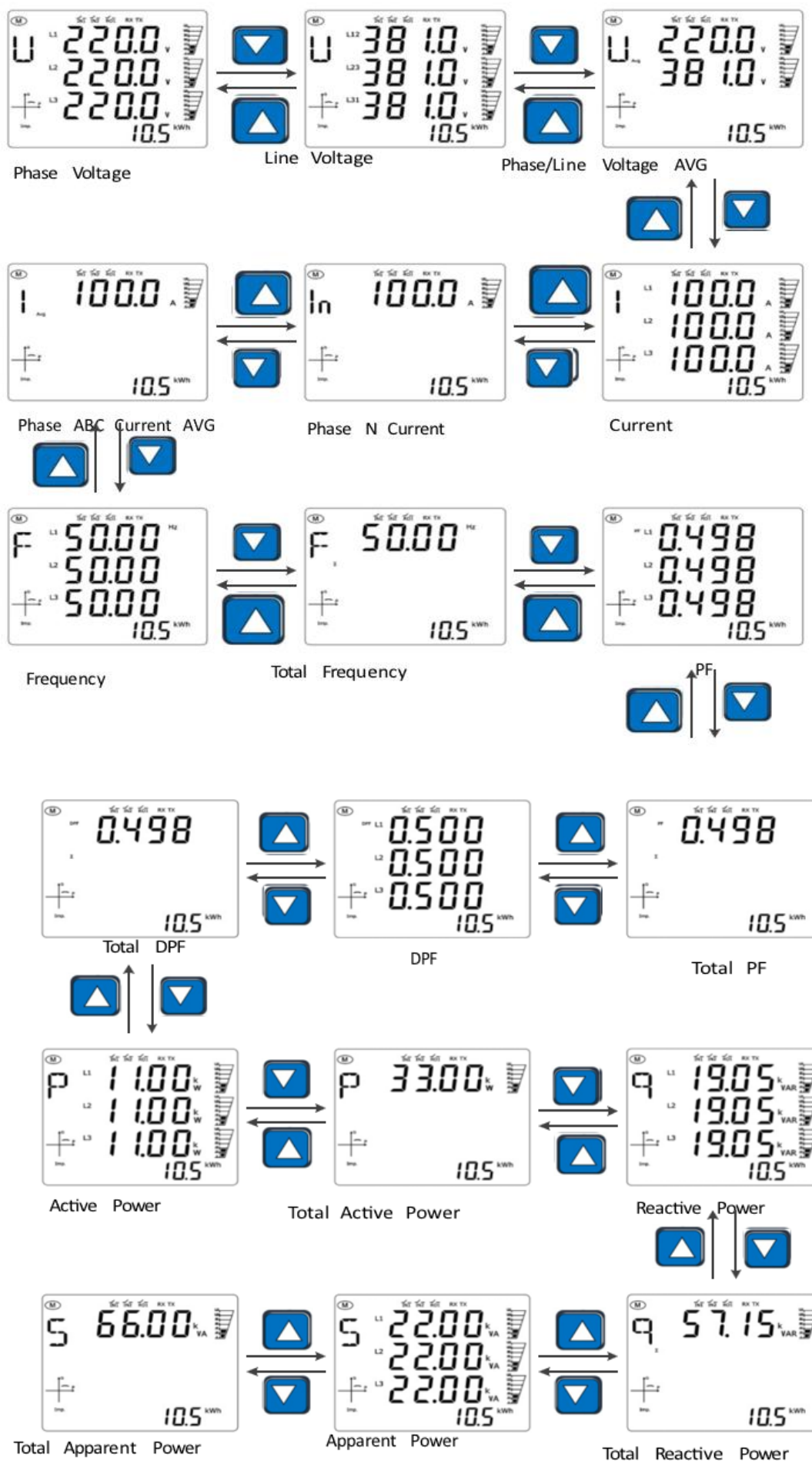
Real-time measurement data interface

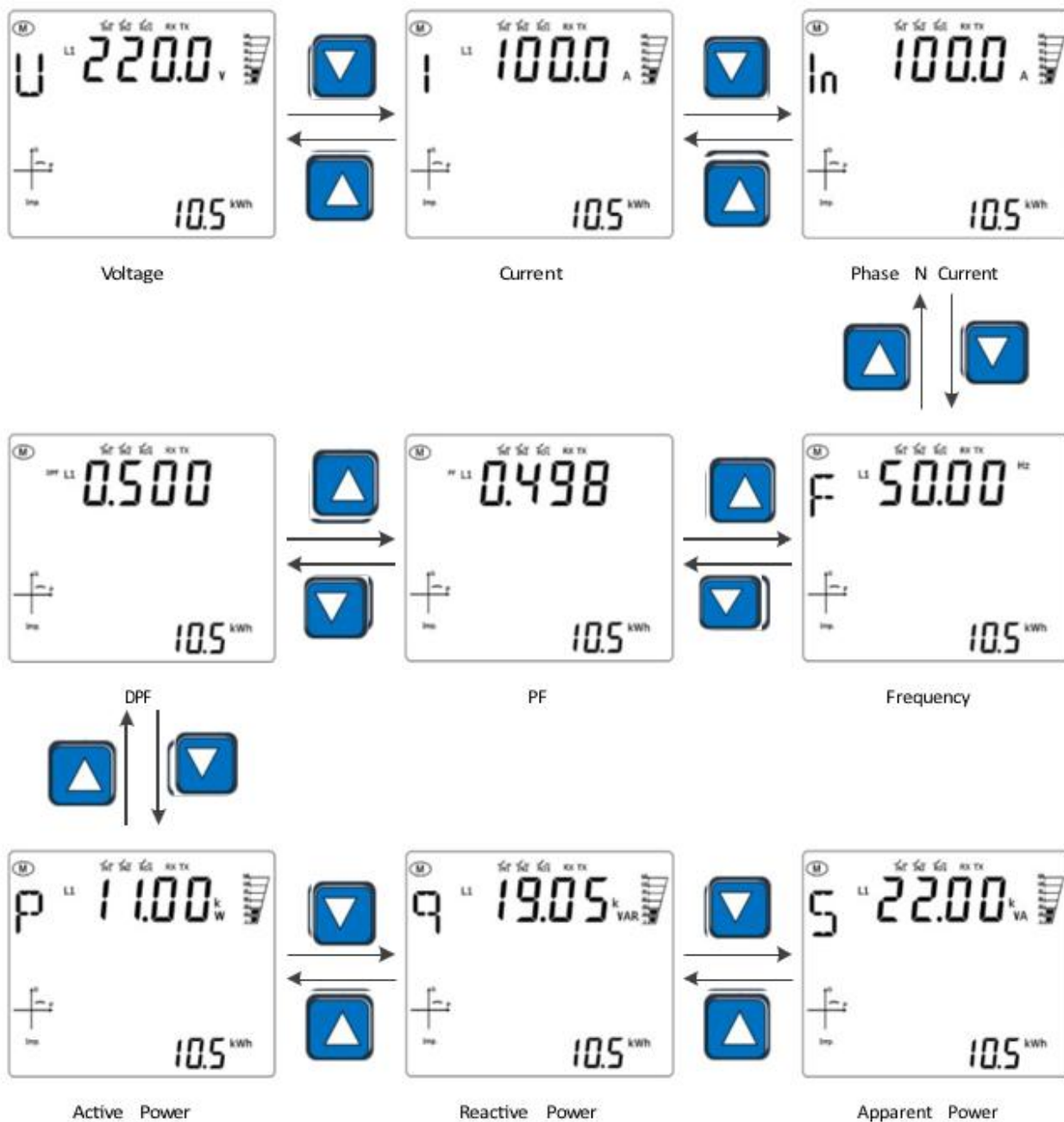
Figure (M) display, indicating that the current mode is real-time measurement data mode, real time  key  measurement data  key  interface to display voltage, current, power, power factor, frequency and other data. Use the key to toggle the display of the interface. The meter will have different display interfaces under different wiring types:

Real-Time Measurement Data Interface 3P3W





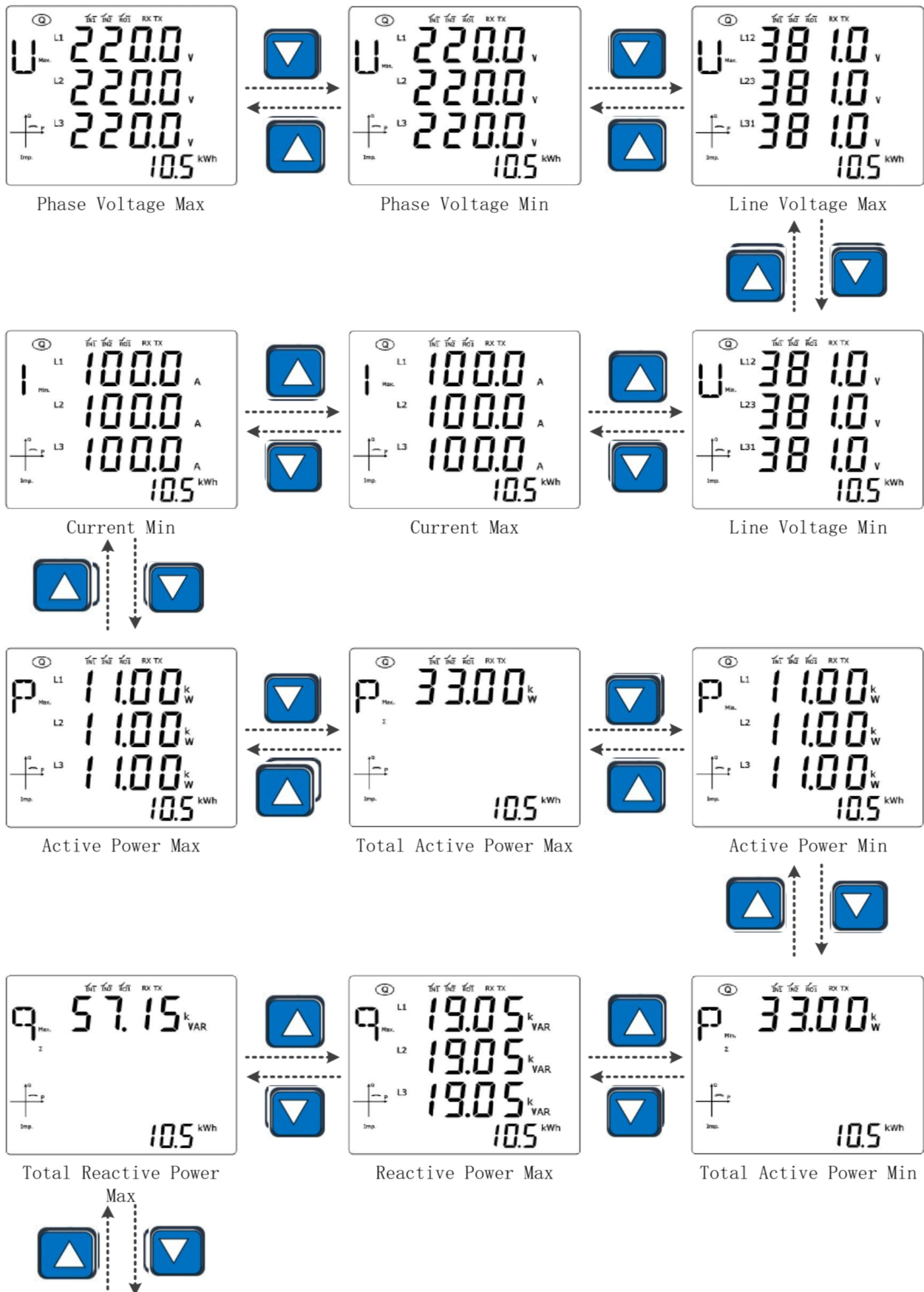


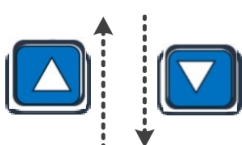
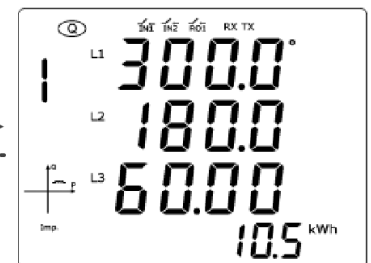
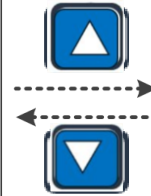
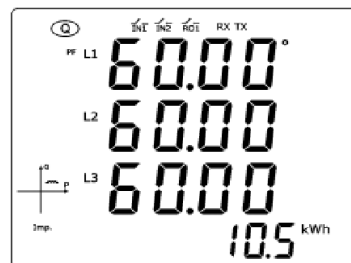
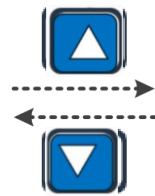
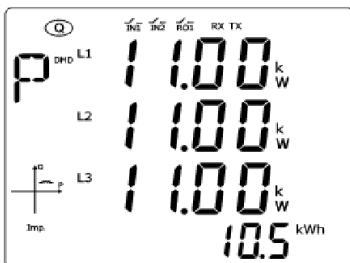
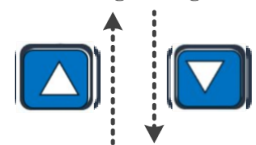
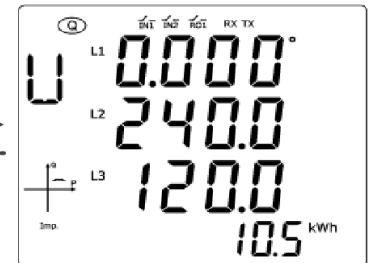
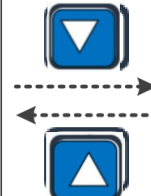
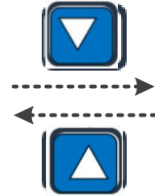
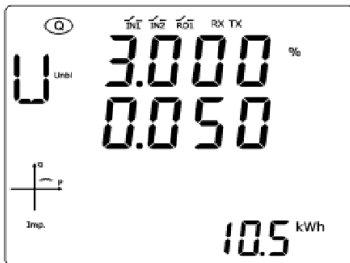
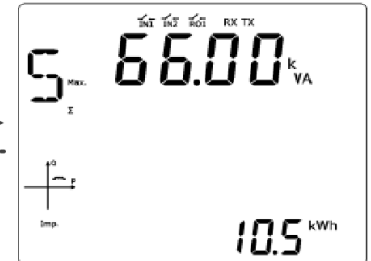
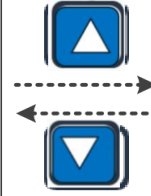
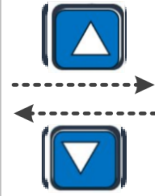
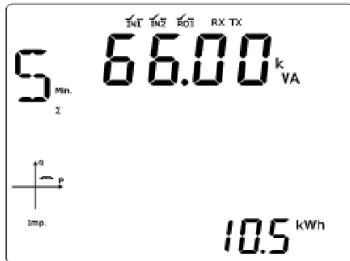
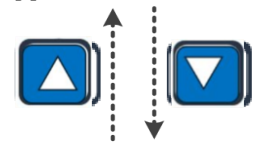
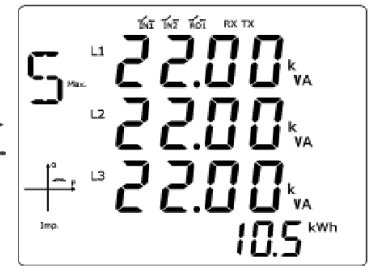
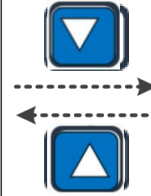
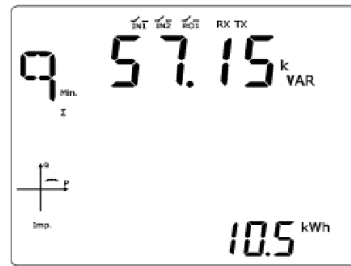
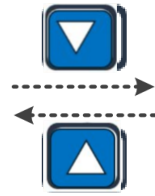
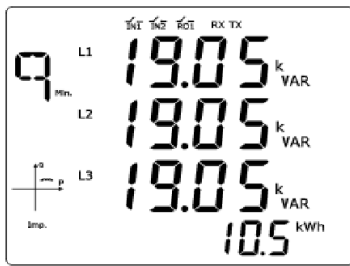


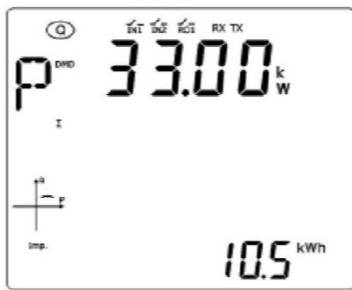
Power Quality Interface

Figure ① indicator display, indicating that the current mode is power quality mode, power quality display interface is used display: voltage and current power maximum and minimum value, voltage and current imbalance current power demand and other data. Use the  key or  key to toggle the display of the interface.

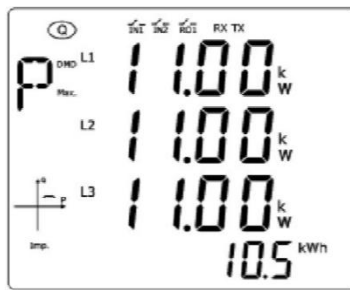
The power quality display interface will have different display interfaces under different wiring methods.



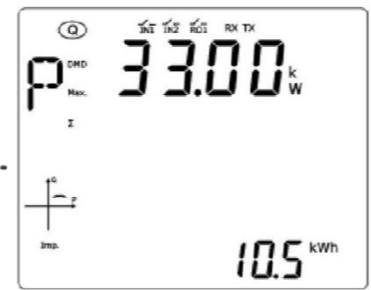




Total Active Power Demand



Active Power Demand Max



Total Active Power Demand Max



Reactive Power Demand Max



Total Reactive Power Demand



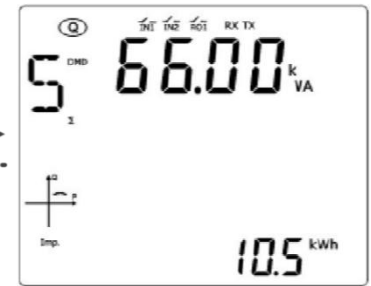
Reactive Power Demand



Total Reactive Power Demand Max



Apparent Power Demand



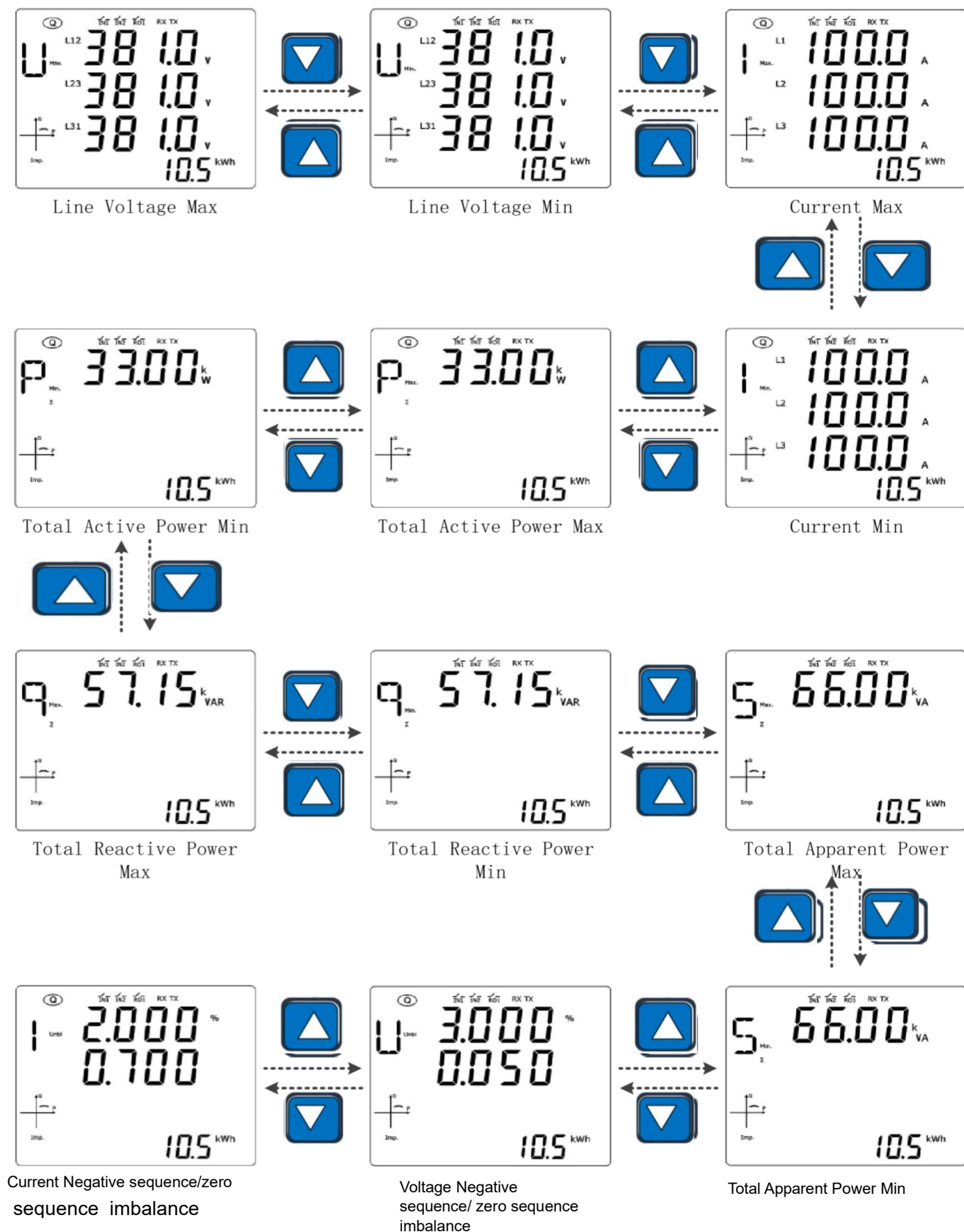
Total Apparent Power Demand

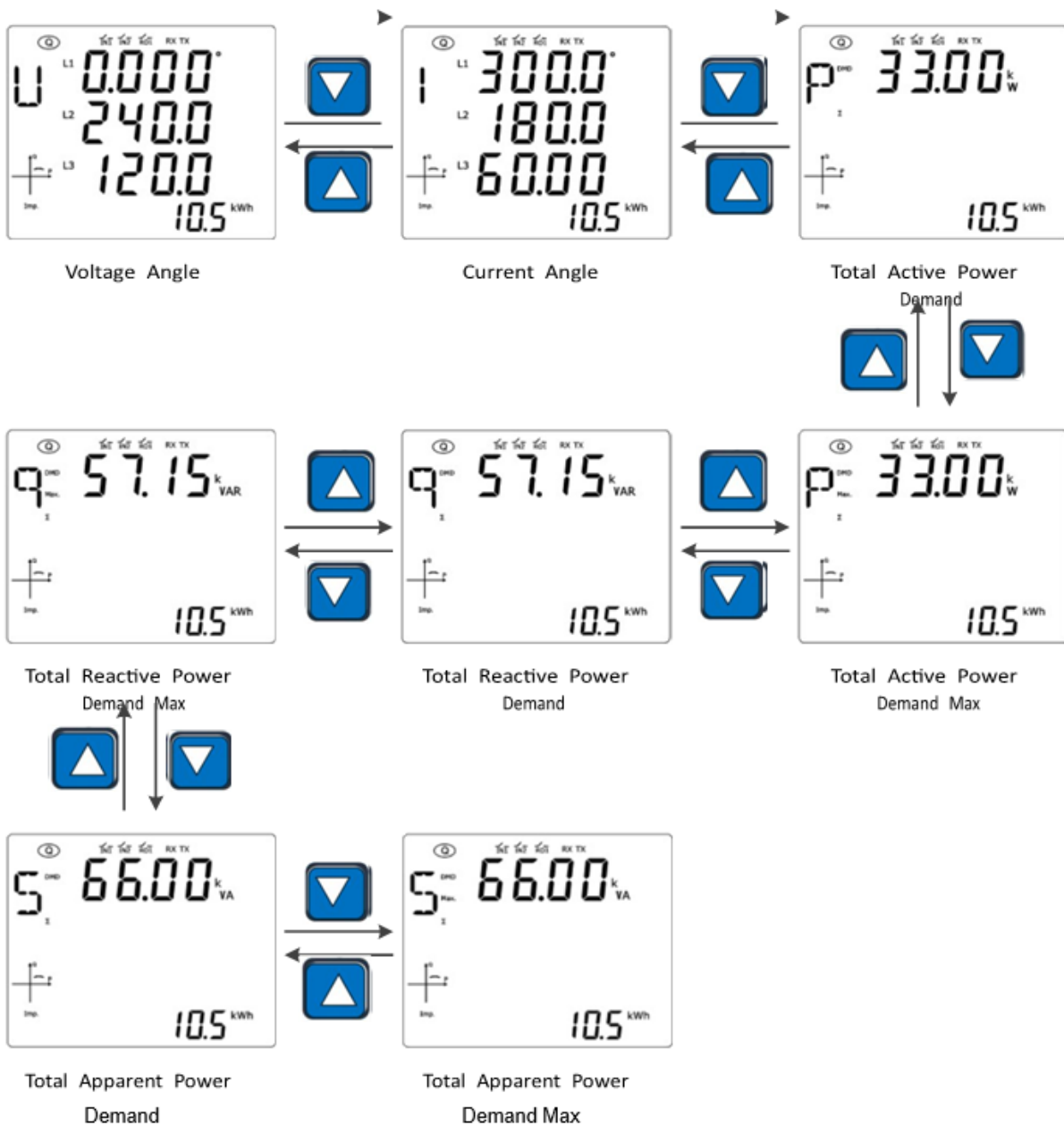


Total Apparent Power

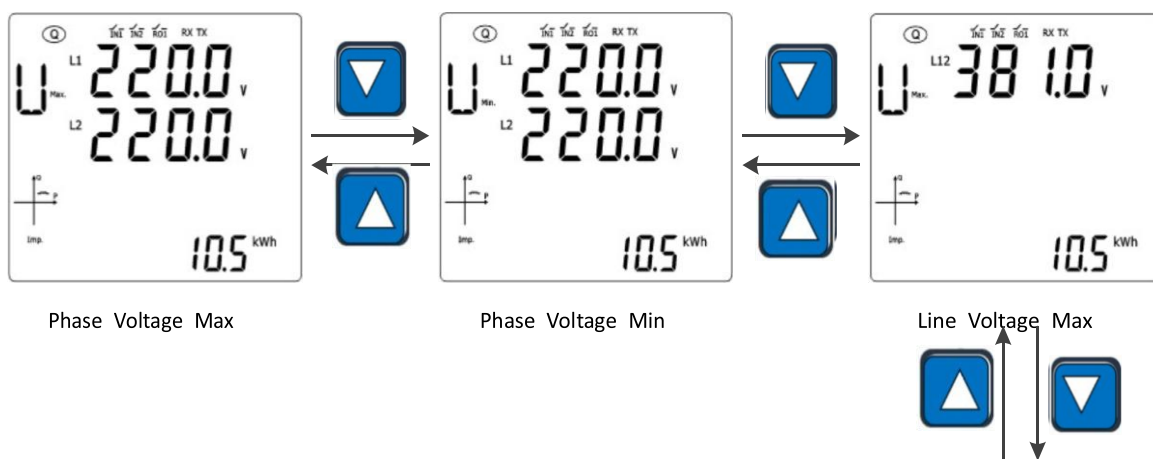


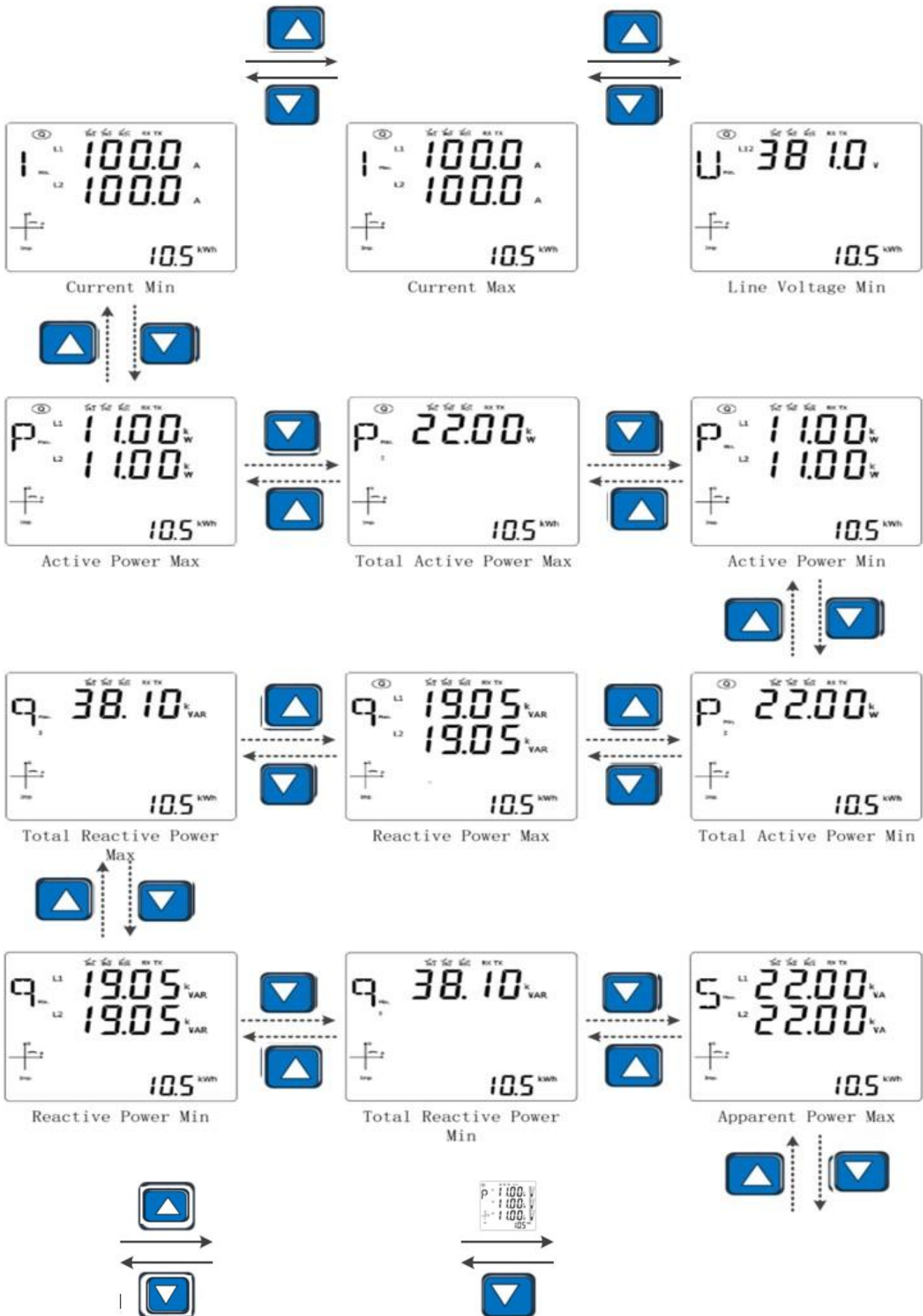
Apparent Power Demand





Power Quality Interface 1P3W







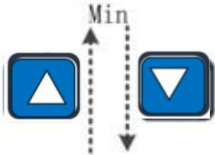
Total Apparent Power



Apparent Power Min



Total Apparent Power
Max



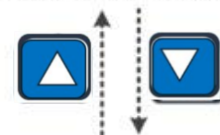
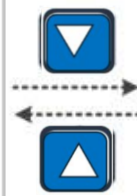
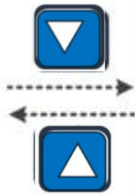
Voltage Angle



Current Angle



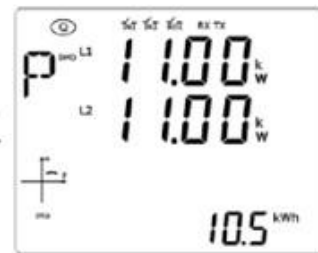
Power Factor Angle



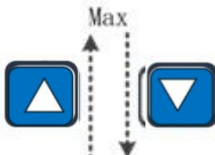
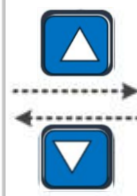
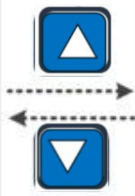
Active Power Demand



Total Active Power
Demand



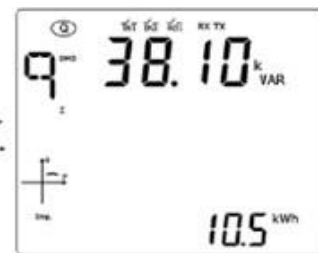
Active Power Demand



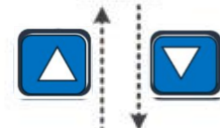
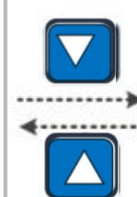
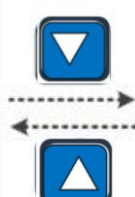
Total Active Power
Demand Max

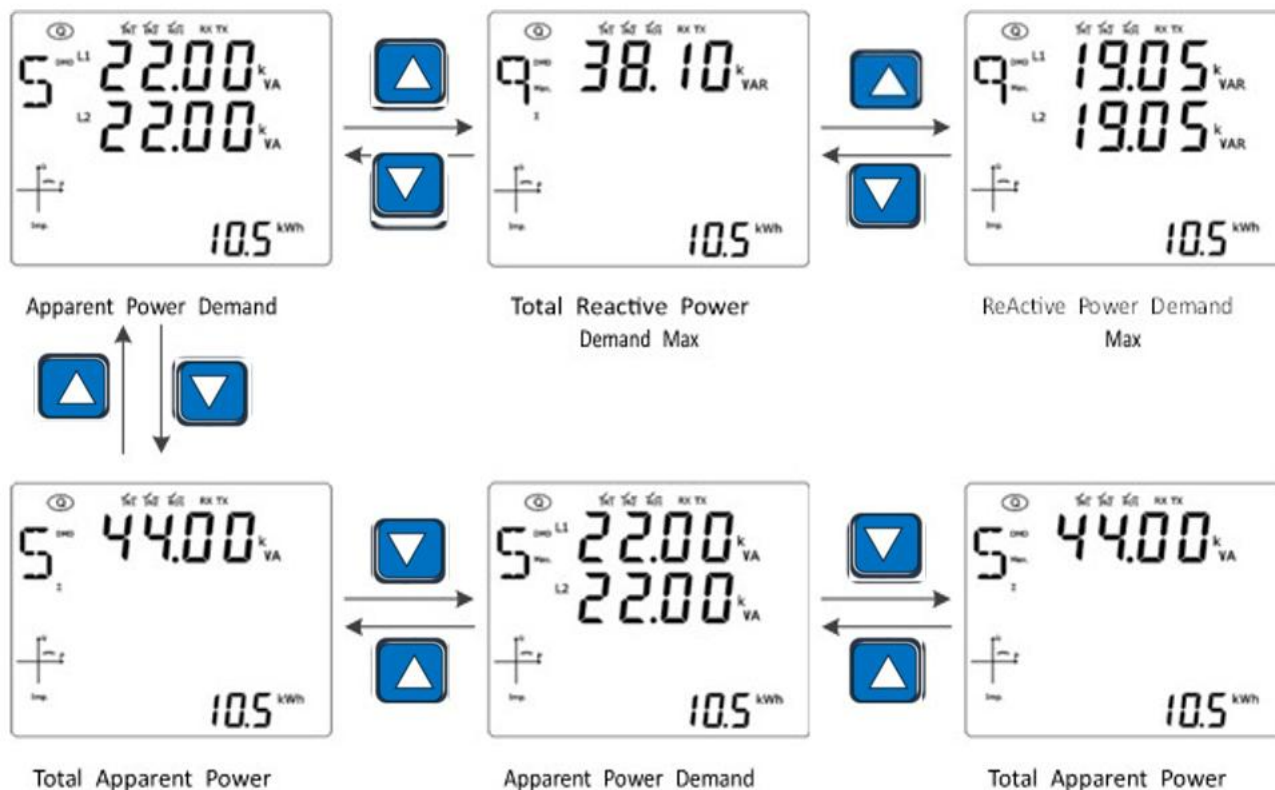


Reactive Power Demand

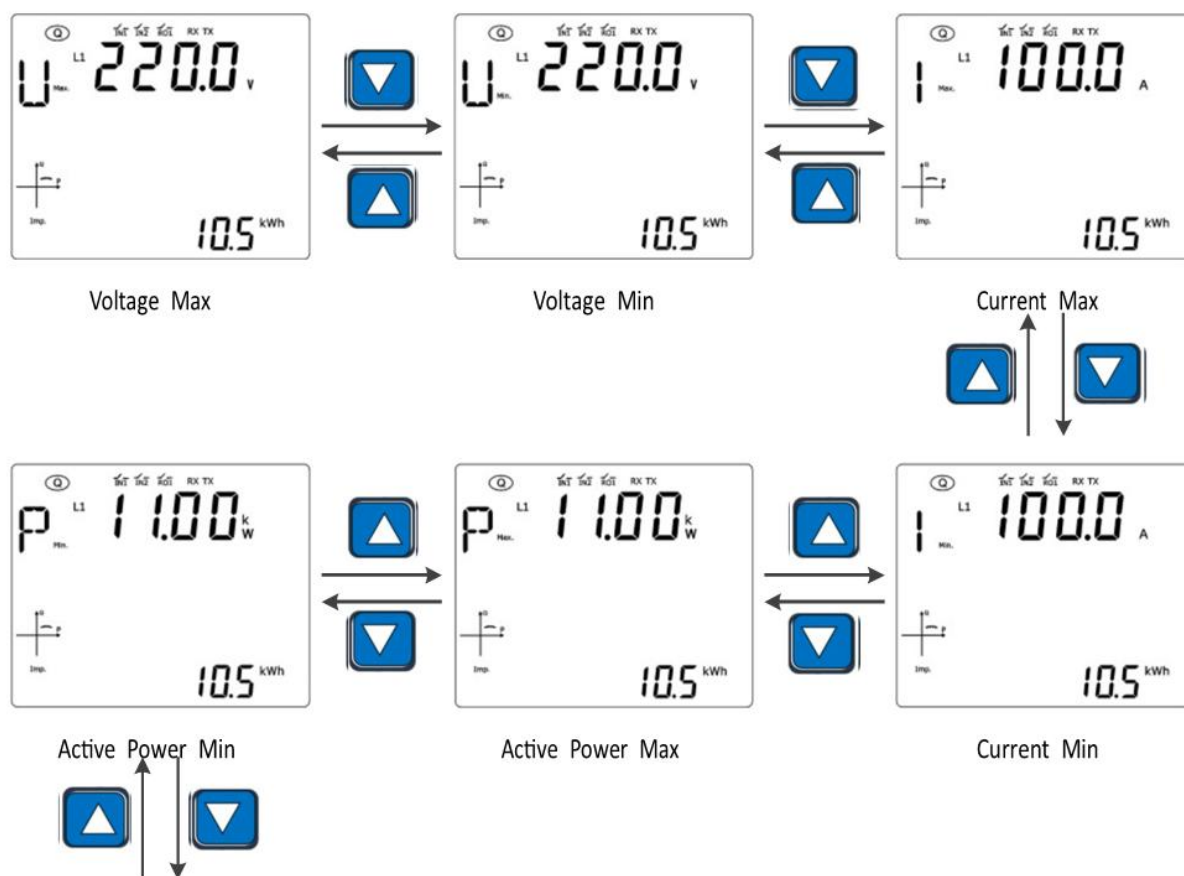


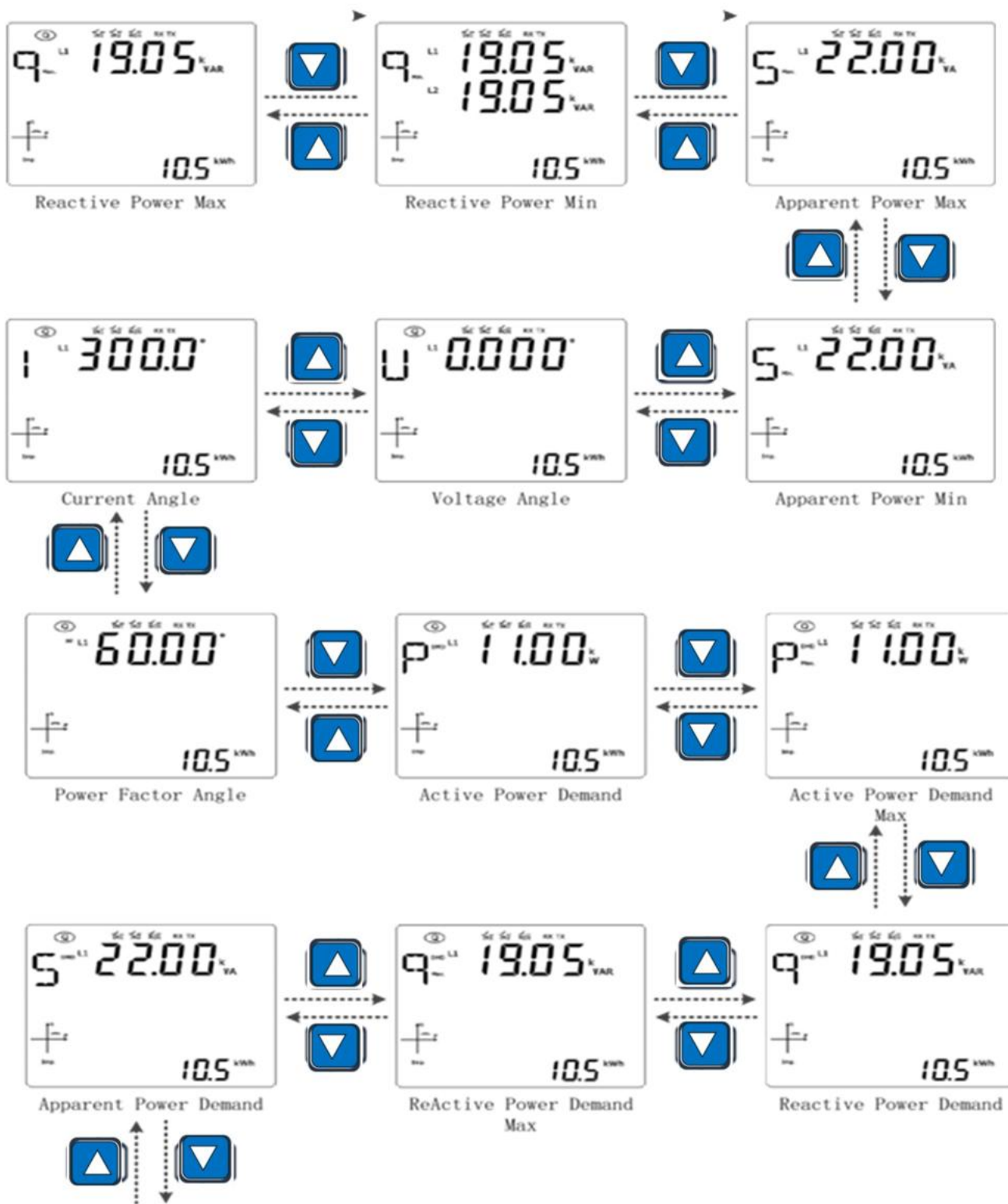
Total Reactive Power
Demand





Power quality interface 1P2W





Apparent Power Demand Max

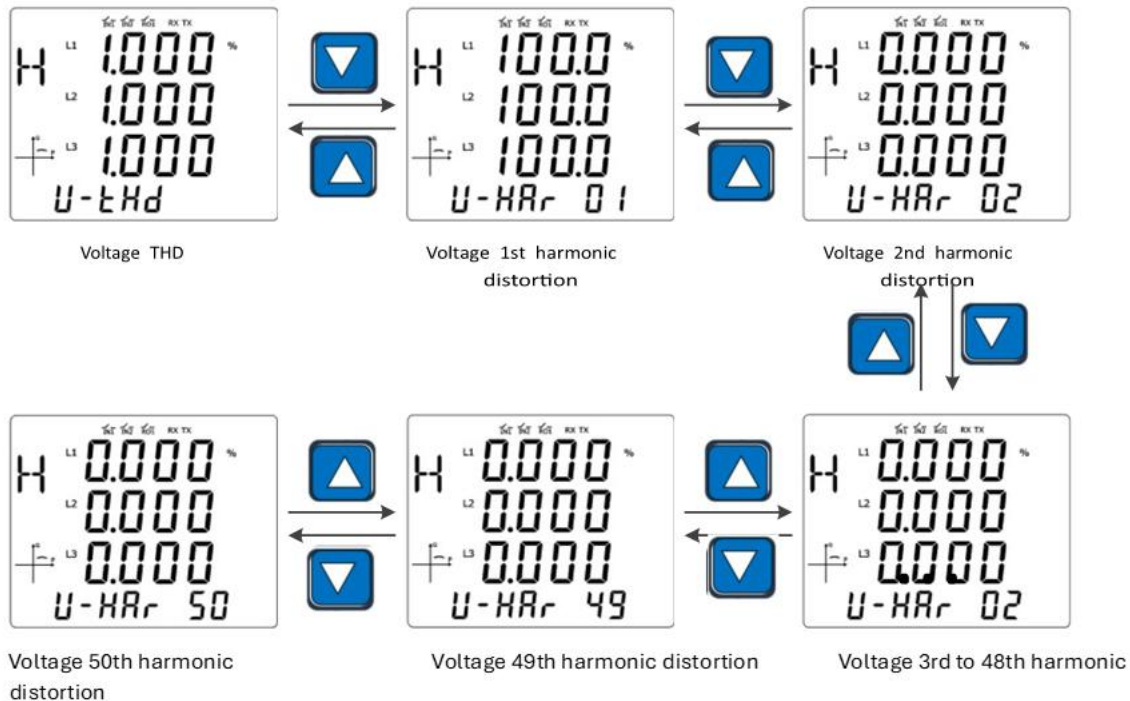


Voltage Harmonic Interface

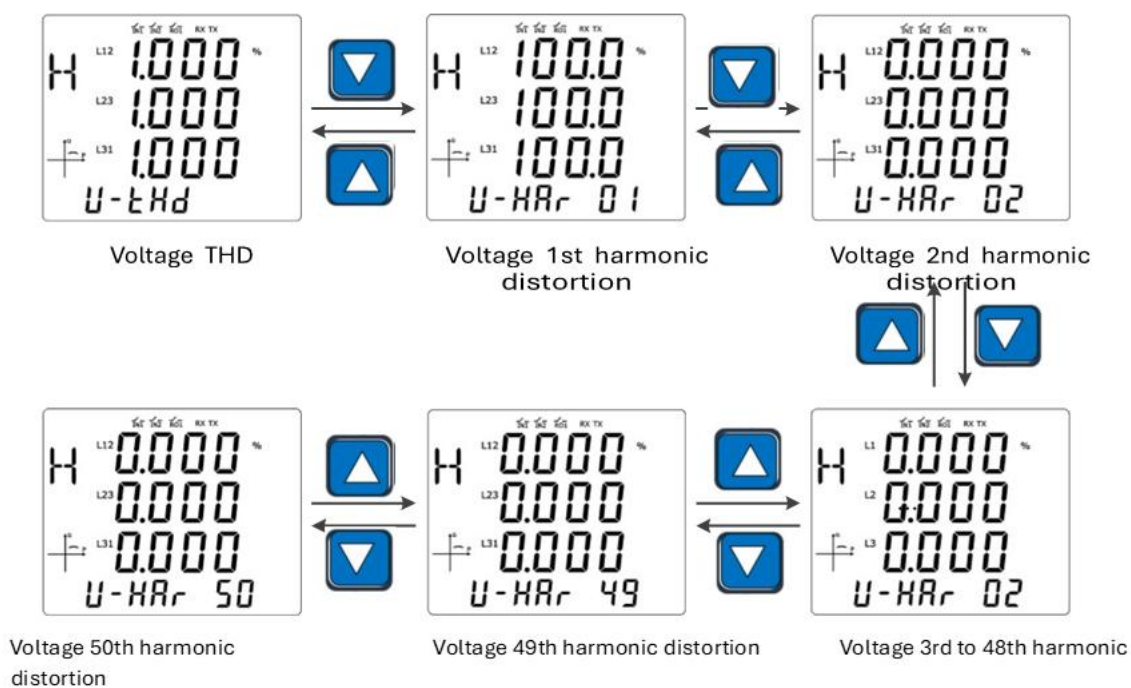
The voltage harmonic display interface is used to display total voltage harmonics and fractional voltage harmonics and other data. Use the  key or  key to toggle the display of the interface.

The voltage harmonic display interface will have different display interfaces under different wiring types.

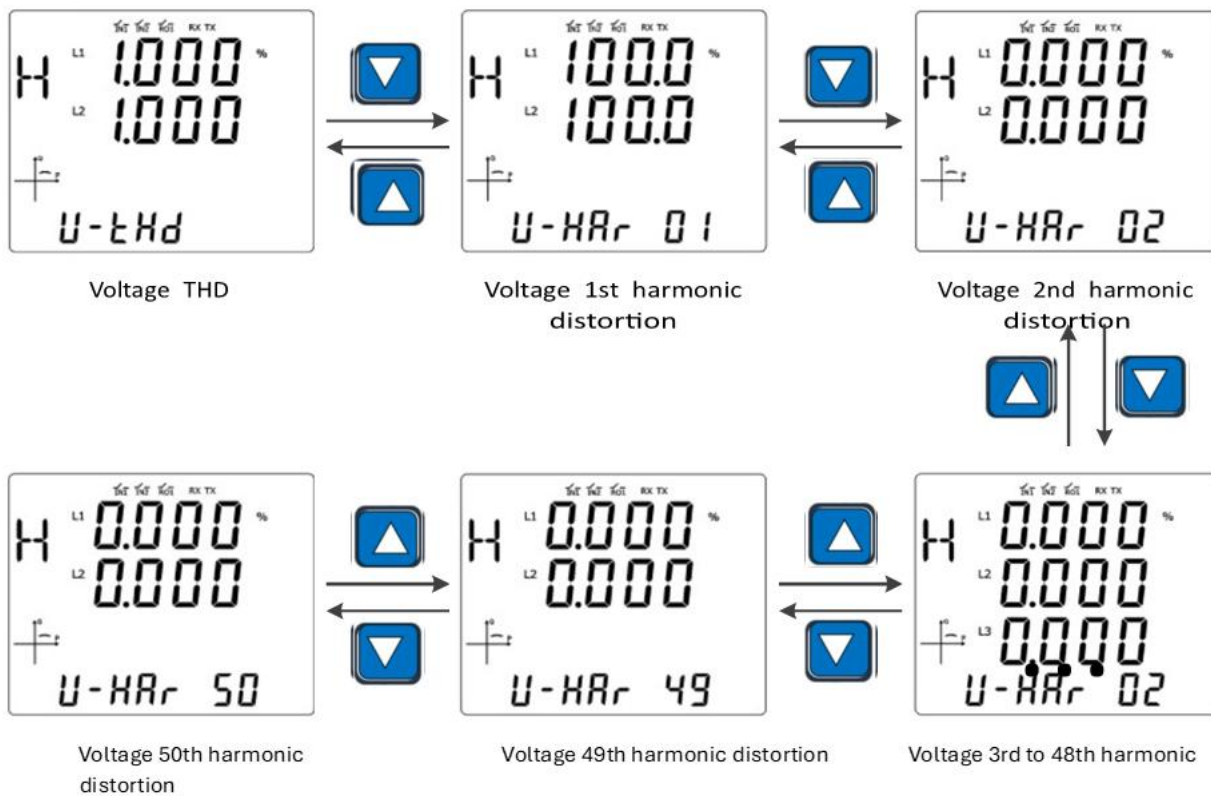
Voltage harmonic interface 3P4W



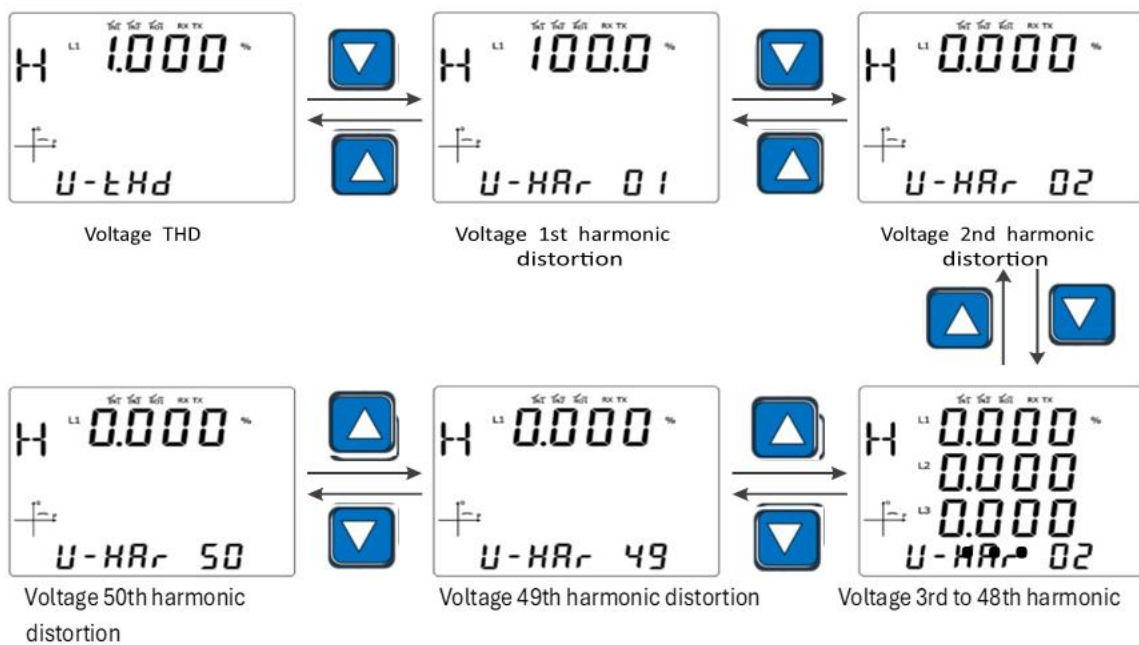
Voltage harmonic interface 3P3W



Voltage harmonic interface 1P3W



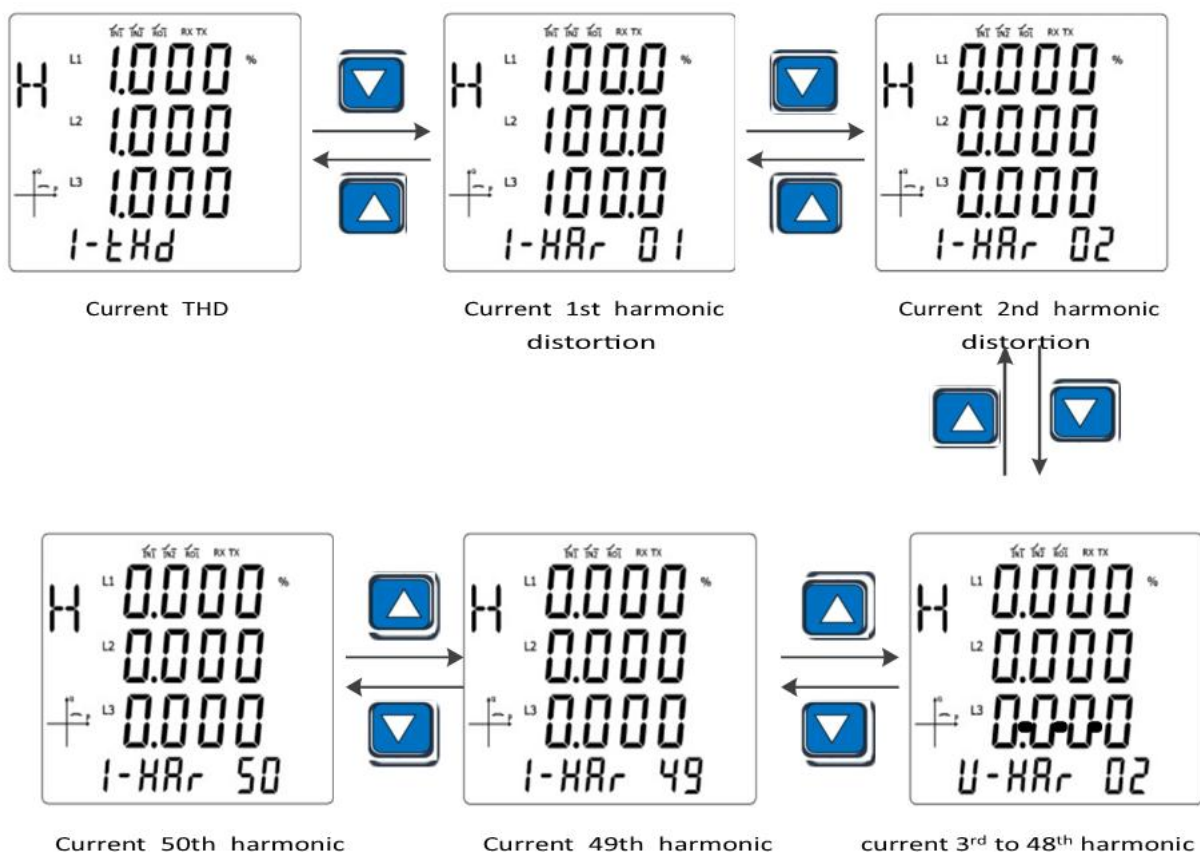
Voltage harmonic interface 1P2W



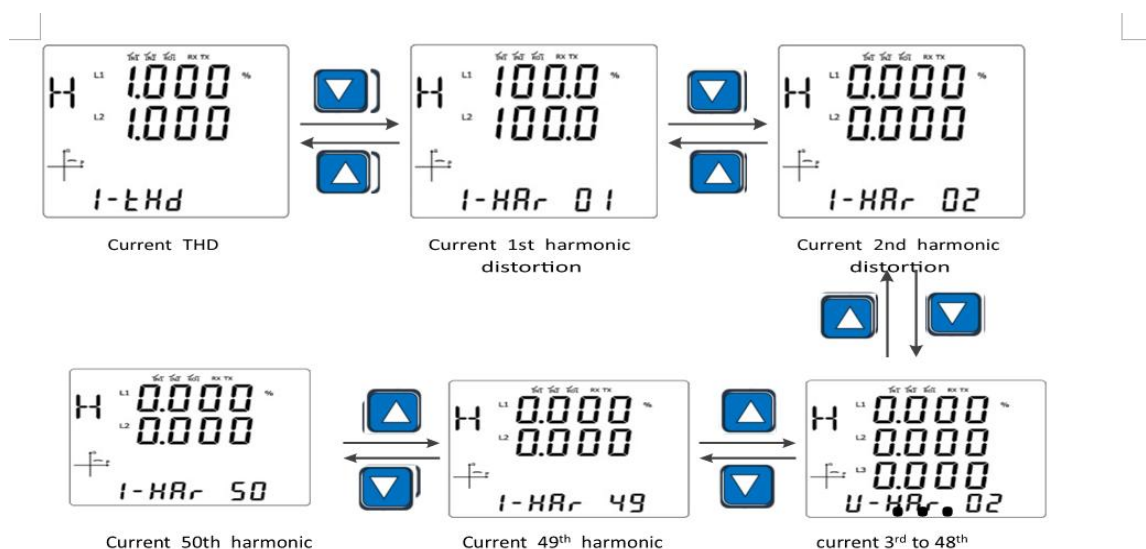
Current Harmonic Interface

The current harmonic display interface is used to display total current harmonic and fractional voltage harmonics and other data. Use the  key or  key to toggle the display of the interface. The current harmonic display interface will have different display interfaces under different wiring types.

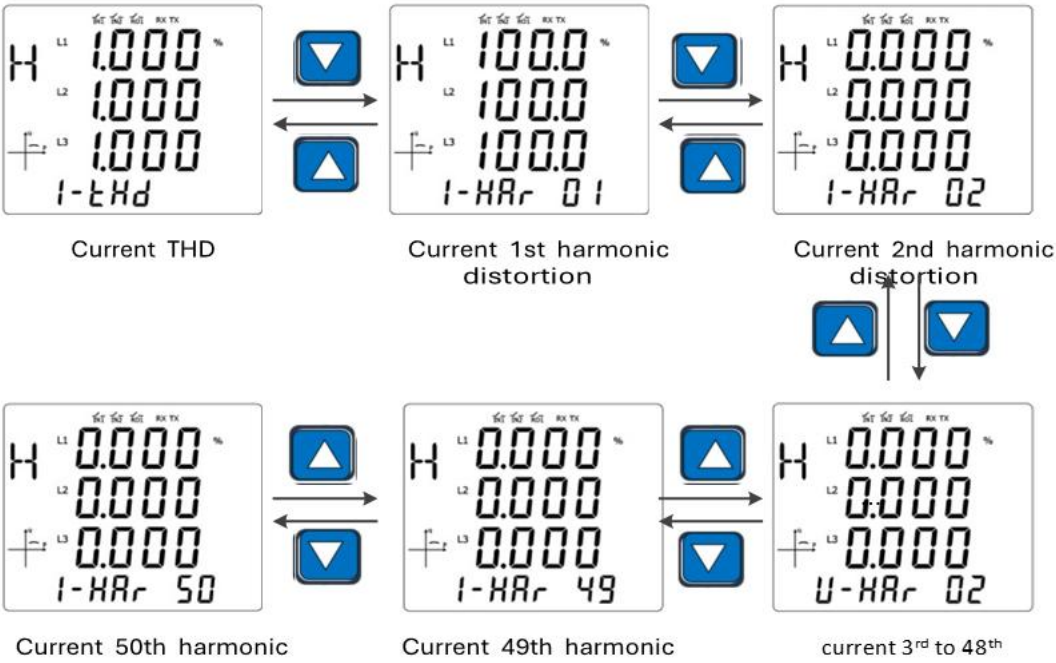
Current Harmonic Interface 3P4W



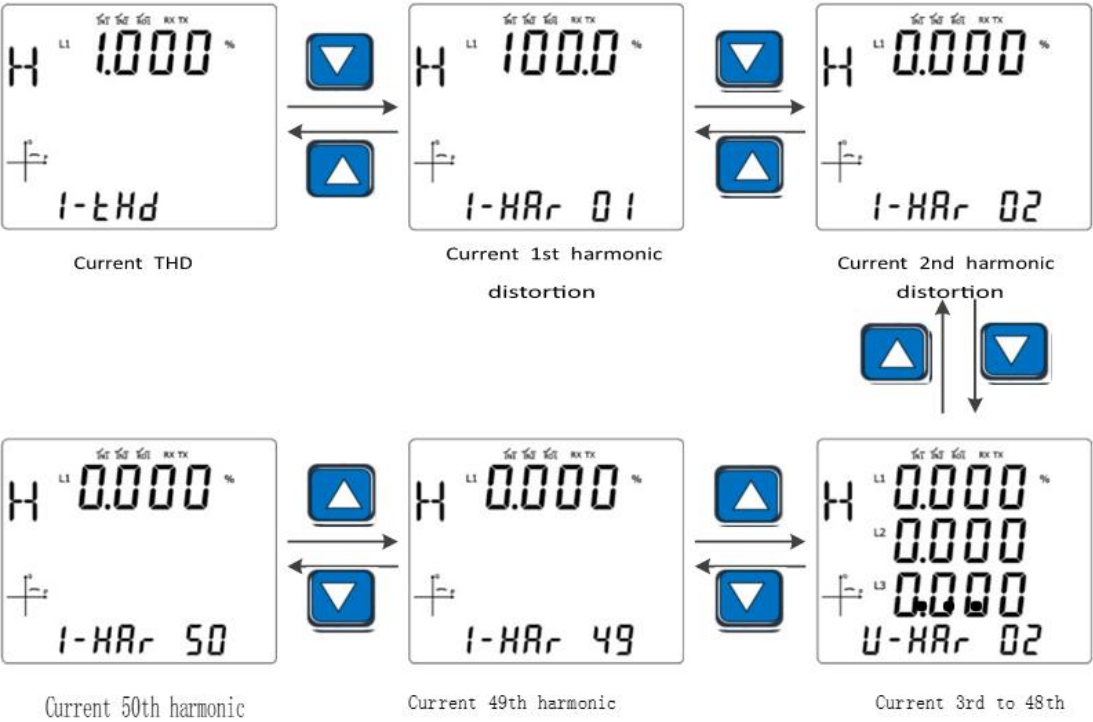
Current Harmonic Interface 1P3W



Current Harmonic Interface 3P3W



Current Harmonic Interface 1P2W

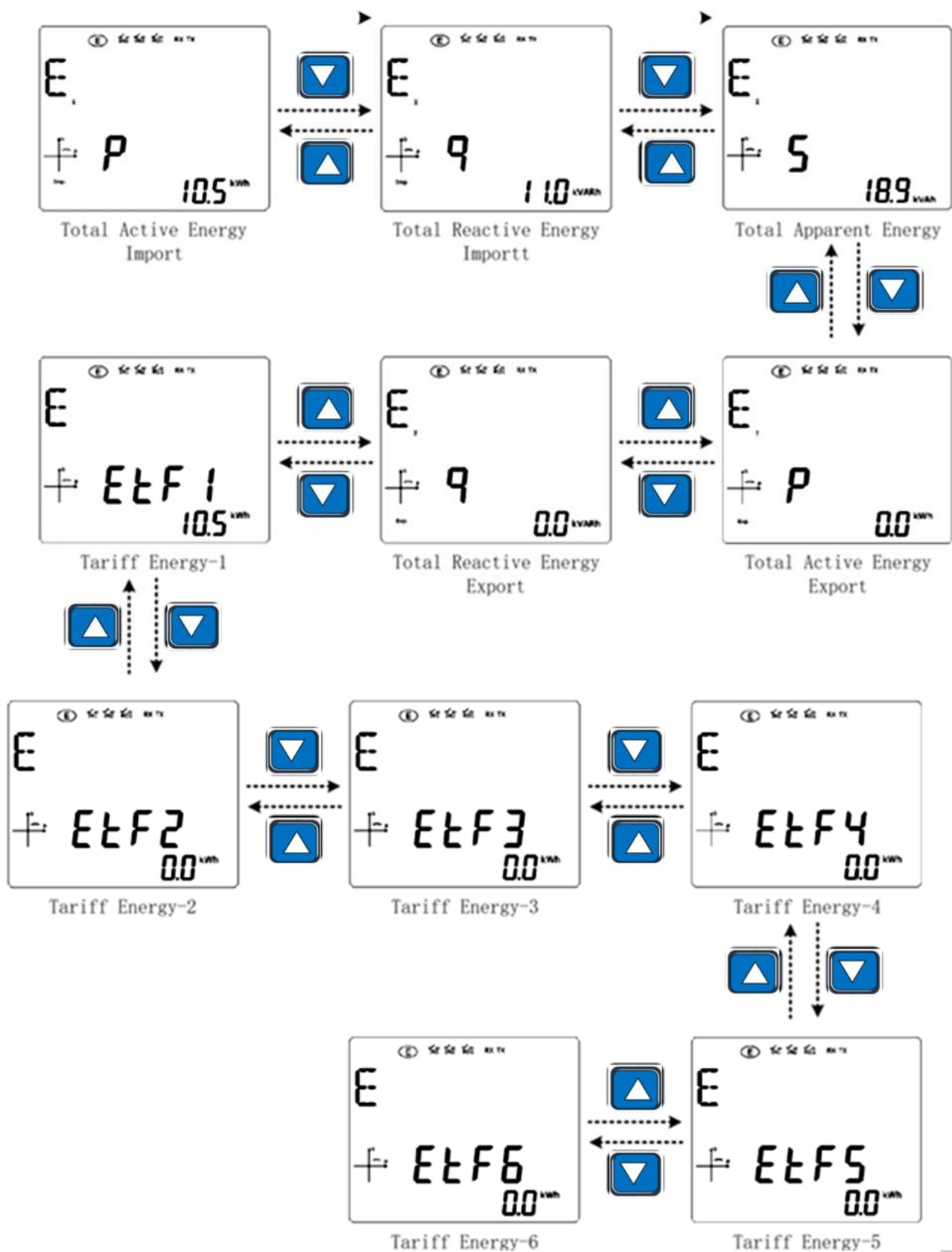


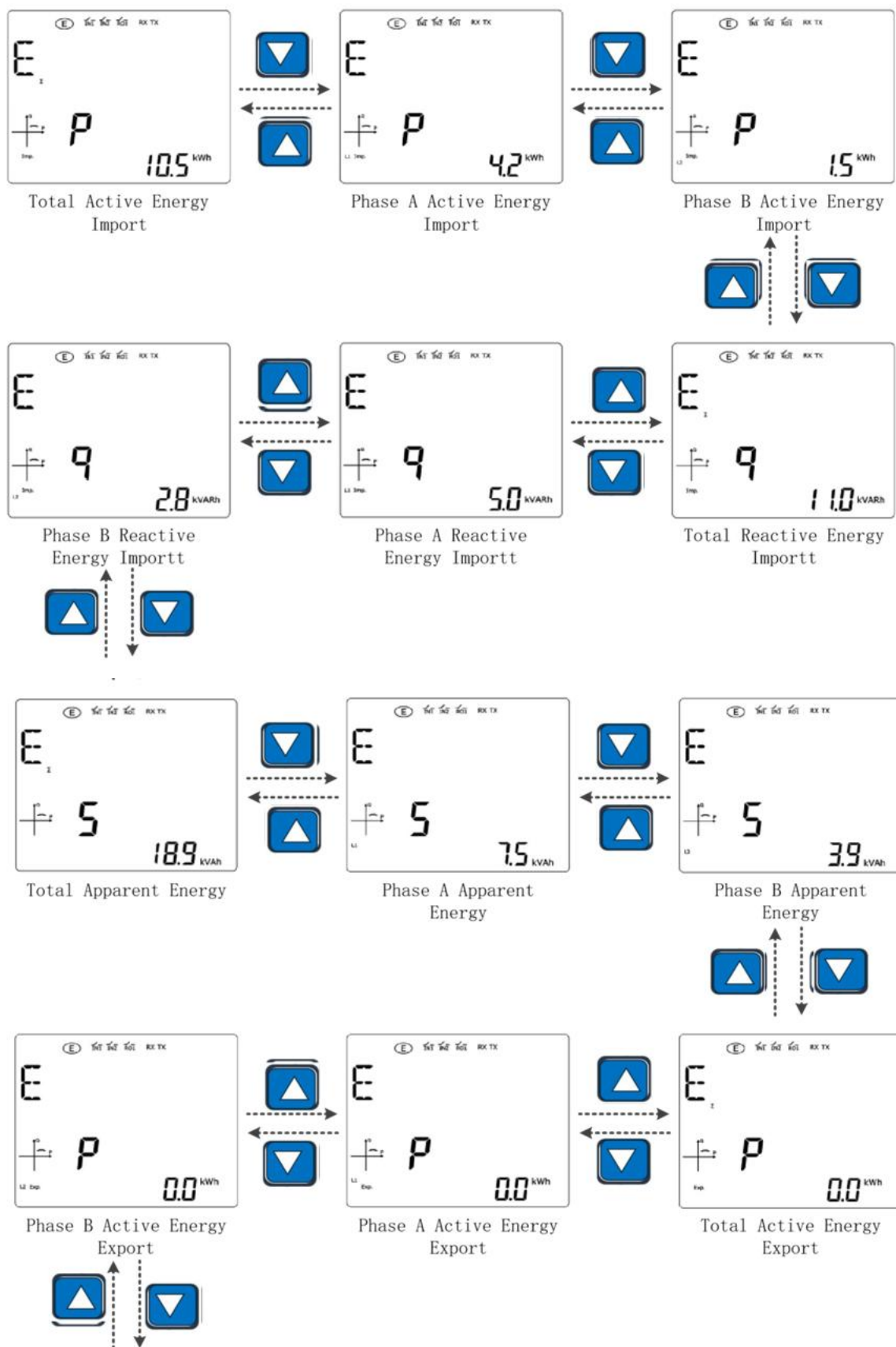
Energy Data Interface

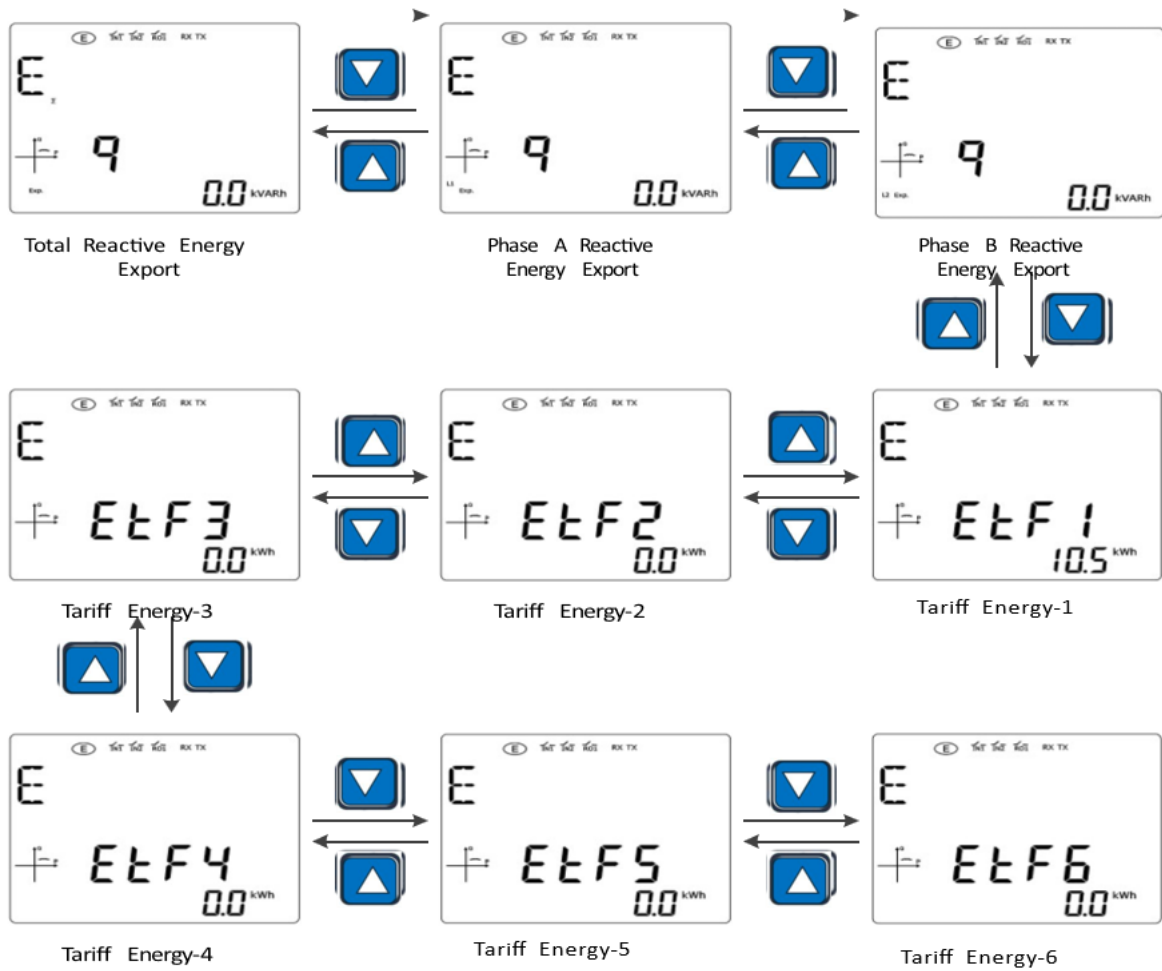
Figure (E) display, indicating that the current mode is Energy data display mode, Energy data display interface is used to display: Active Energy, Reactive Energy, Apparent Energy, Tariff Energy and other data. Use the  key or  key to toggle the display of the interface. The meter will have different display interfaces under different wiring methods.

Energy Data Interface 3P4W

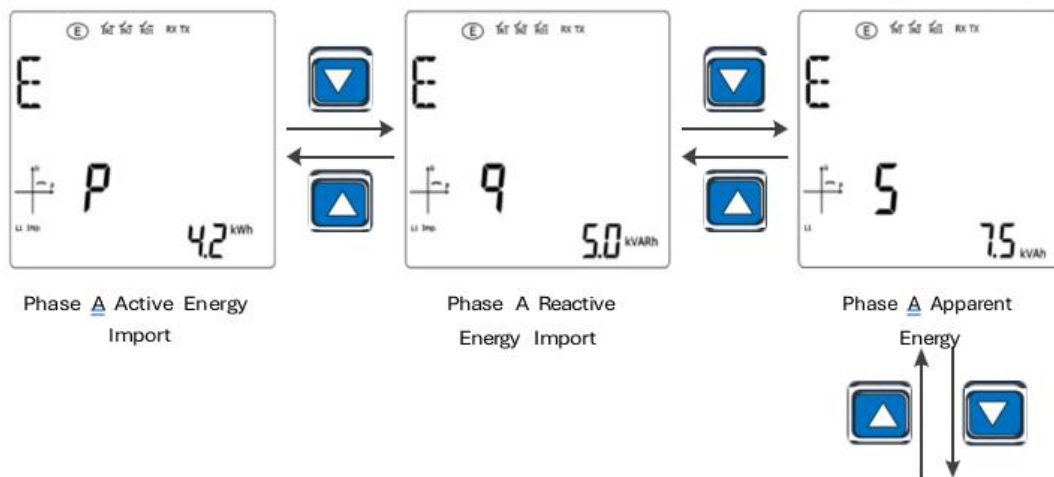


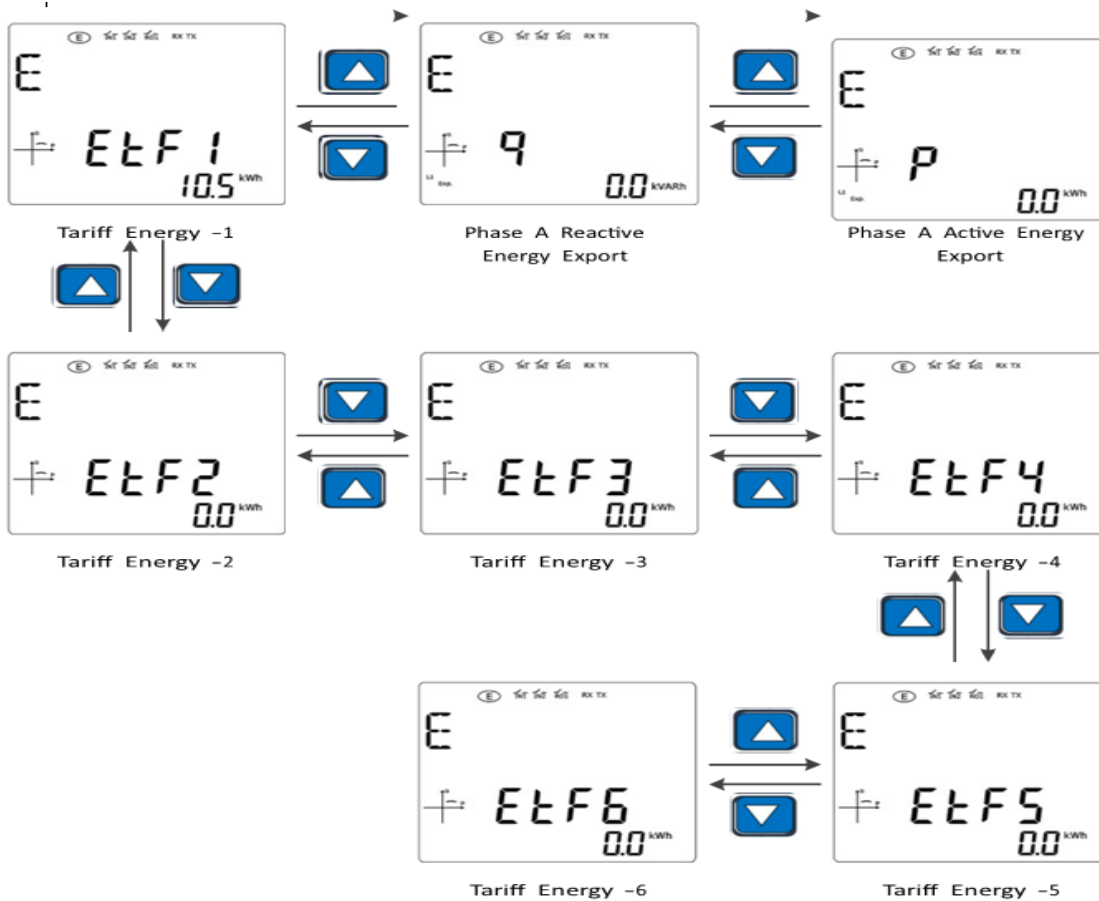






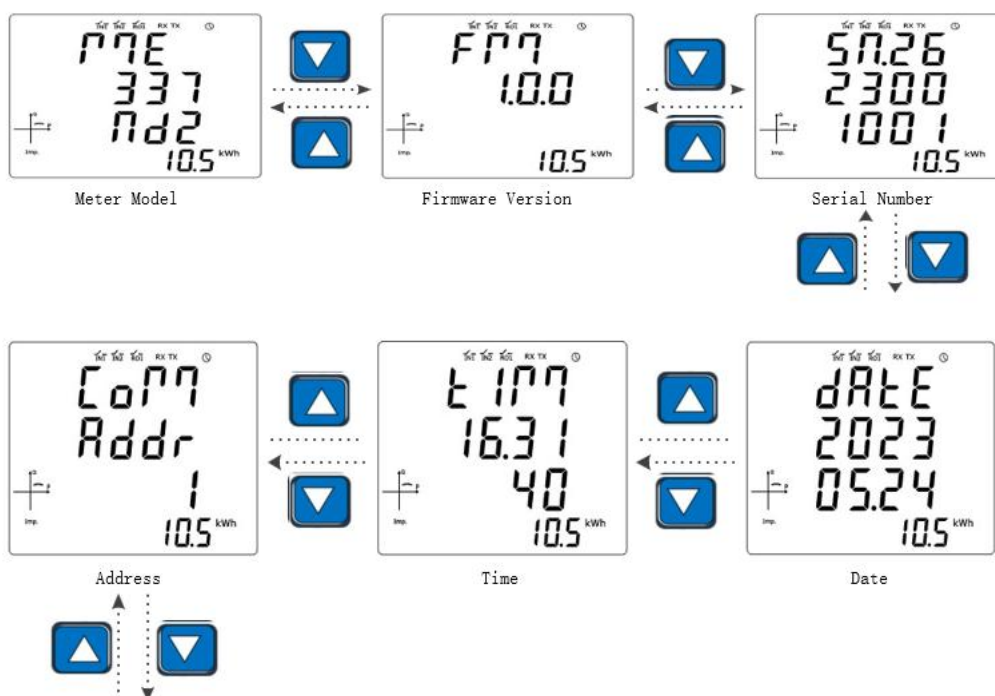
Energy Data Interface 1P2W

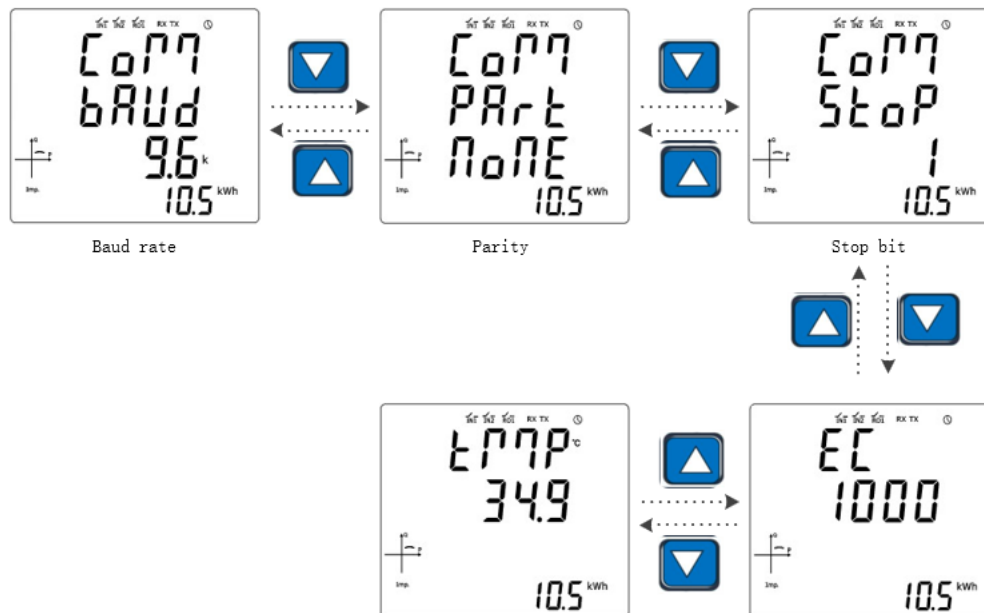




Device Information Interface

Figure display, indicating that the current mode is the device information display mode, the device information display interface is used to display: the current date, time, communication parameters, Energy pulse constant, equipment temperature and other data of the device. Use the key to toggle the display of the interface.



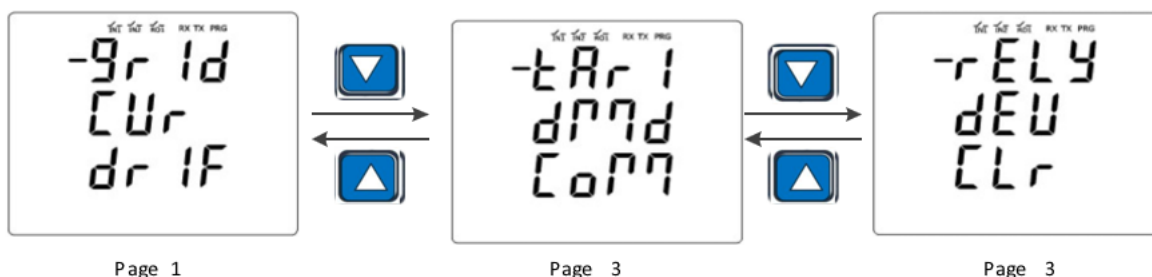


Device Configuration Interface

- Figure PRG display, indicating that the current mode is the configuration mode, the equipment configuration interface is used to configure grid parameters, current transformer parameters, zero drift suppression, Tartar, demand, communication, relay, equipment, zero clearing and other parameters.
- Before entering the configuration page, you need to enter the configuration password (default 1000).
- Press the key to enter the setting, the corresponding value will flash, short press the key or key to modify the value size, long press the key or key to switch the value to be modified (the corresponding value will flash).
- After the data modification is completed, press key to confirm the data, there will be a prompt whether to save, short press the key or key select Yes or No, press the key again to perform the operation.

Configuration Parameter Selection

To enter the Corresponding parameter configuration page



After entering the configuration page, there are 3 pages of configuration parameters to choose From ,short press the

Key or Key to select the parameter to configure ,press the Key.

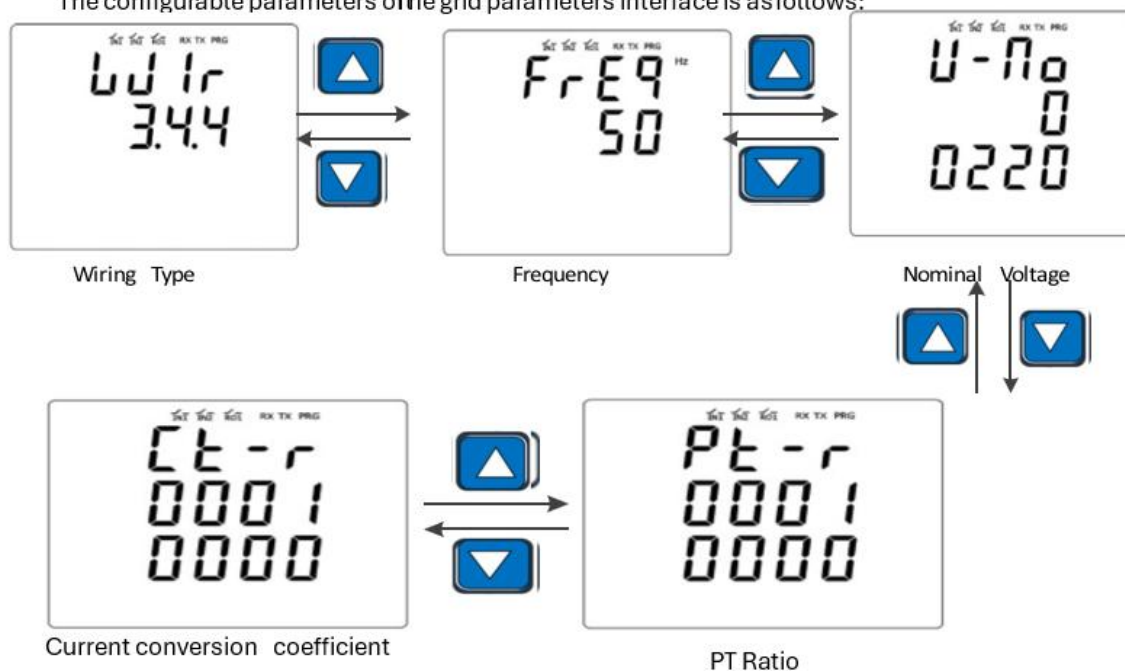
The meanings of each symbol are defined as follows:

Symbol	Meanings
9r 1d	Configure grid parameters
CUr	Configure current transformer parameters
dr 1F	Configure zero-drift suppression parameters
tAr 1	Configure Tariff parameter
dP7d	Configure demand parameters
CoP7	Configure communication parameters
rELy	Configure relay parameters
dEU	Configure device parameters
CLr	Clear

Configure Grid parameters

On the Configure parameters **9r 1d** To enter the grid parameter configuration interface.

The configurable parameters of the grid parameters interface is as follows:



Configure the Wiring Type

- This page is used to configure the wiring type of the device, which must be consistent with the actual wiring method of the meter.



- Press the key  to enter the setting, the corresponding value will flash, short press the  key or  key to modify the value size, long press the  key or  key to switch the value to be modified (the corresponding value will flash).
- After the data modification is completed, press the  key to confirm the data, there will be a prompt whether to save, short press the  key or  key select Yes or No, press the  key again to perform the operation.

The available wiring types:

Symbol	Meanings
3.4.4	Three-phase four-wire system 4CT, N-phase current is obtained by current transformer
3.4.3	The three-phase four-wire system 3CT, N-phase current is obtained by ABC three phase current vector sum calculation
3.3.3	Three-phase three-wire system 3CT, B-phase current is obtained through a current transformer
3.3.2	Three-phase three-wire system 2CT, B phase current is obtained by AC phase current vector sum calculation
1.3	Single-phase three-wire system
1.2	Single-phase two-wire system

Configure Grid Frequency

- This page is used to configure the nominal frequency of the grid, which must be consistent with the actual nominal frequency of the grid. Press the key  to enter the setting, the corresponding value will flash, short press the  key or  key to modify the value size, long press the  key or  key to switch the value to be modified (the corresponding value will flash).



- After the data modification is completed, press the  key to confirm the data, there will be a prompt whether to save, short press the  key or  key select Yes or No, press the  key again to perform the operation.

The available frequencies:

Symbol	Meanings
50	Select the nominal frequency of the grid 50Hz
60	Select the nominal frequency of the grid 60Hz

Configure PT Ratio

- This page is used to configure the voltage transformer transformation ratio = (primary voltage / secondary voltage value) * 10000.unit V/V when the device voltage transformer is connected.
- When there is no PT access, the value needs to be set to 10000
- Press the key  to enter the setting, the corresponding value will flash, short press the  key or  key to modify the value size, long press the  key or  key to switch the value to be modified (the corresponding value will flash).
- After the data modification is completed, press  key to confirm the data, there will be a prompt whether to save, short press the  key or  key select Yes or No, press the  key again to perform the operation.



Configure Current Conversion Factor

- This page is used to configure the current conversion coefficient of the device, value = (actual conversion factor value) * 10000.
- When the conversion current value is not required, the value needs to be set to 10000.
- The meter shows the current value = the measure current value * the conversion coefficient
- Press the key  to enter the setting, the corresponding value will flash, short press the  key or  key to modify the value size, long press the  key or  key to switch the value to be modified (the corresponding value will flash).
- After the data modification is completed, press the  key to confirm the data, there will be a prompt whether to save, short press the  key or  key select Yes or No, press the  key again to perform the operation.



Current conversion coefficient

The available frequencies:

Symbol	Meanings
50	Select the nominal frequency of the grid 50Hz
60	Select the nominal frequency of the grid 60Hz

Configure Nominal Voltage

- This page is used to configure the nominal voltage of the grid, which must be consistent with the actual nominal voltage of the grid. The nominal voltage is used for zero drift suppression reference value.
- Press the  key to enter the setting, the corresponding value will flash, short press the  key or  key to modify the value size, long press the key to switch the  key or  key value to be modified (the corresponding value will flash).

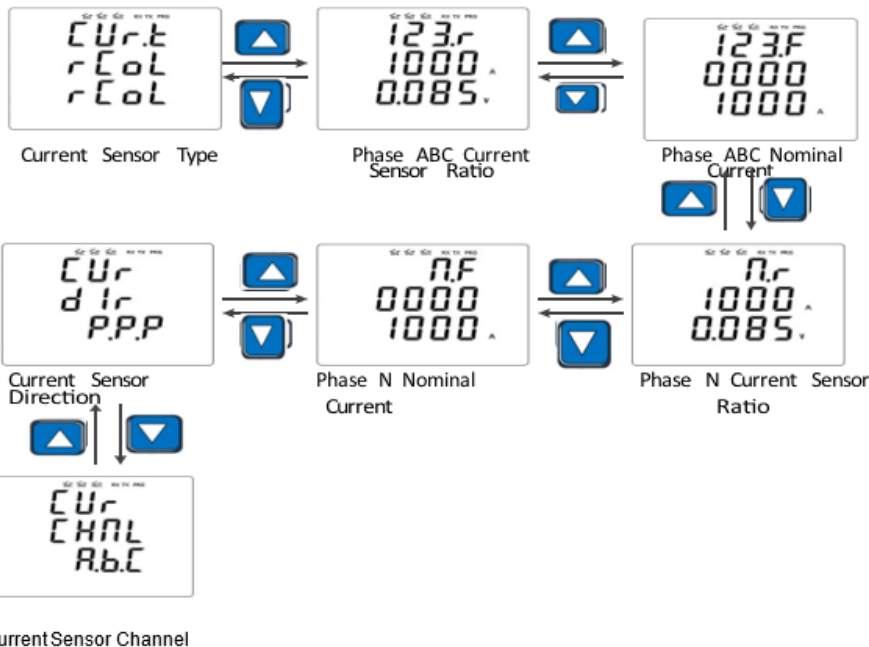


- After the data modification is completed, press the key to confirm the data, there will be a prompt whether to save, short press the  key or  key, to select Yes or No press the  key again to perform the operation.

Configuring Current Transformer Parameters

Select  on the configuration parameters page to enter the current transformer parameter configuration interface.

The configurable parameters of the current transformer parameter interface are as follows.



Configure the current Transformer type

- This page is used to configure the current transformer type.
- The second line of parameters shown is the ABC phase current transformer type
- The third line parameter shown is the N-phase current transformer type
- Press the  to enter the setting, the corresponding value will flash, short press  key or  key to modify the value size, long press the  key or  key to switch the value to be modified (the corresponding value will flash).
- After the data modification is completed, press the  key to confirm the data, there will be a prompt whether to save, short press the  key or  key select Yes or No, press the  key again to perform the operation.



The available current transformer types:

Symbol	Meanings
rCol	Configure the current transformer type to Rogowski coil
Uct	The current transformer type is configured to be a voltage output type CT

Configure Phase ABC Current Transformer Ratio

- This page is used to configure the ABC phase current transformer ratio.
- The second line of parameters displayed is the primary input current of current transformer
- The third line parameter displayed is the secondary output current of current transformer
- When the current transformer type is Rogowski coil, the output voltage value of the secondary terminal of the transformer needs to be set according to the nominal frequency.
- Press the key  to enter the setting, the corresponding value will flash, short press the  key or  key to modify the value size, long press the  key or  key to switch the value to be modified (the corresponding value will flash).
- After the data modification is completed, press the  key to confirm the data, there will be a prompt whether to save, short press the  key or  key select Yes or No, press the  key again to perform the operation.



Current Sensor Ratio

Configure phase ABC Nominal Current

- This page is used to configure the ABC phase nominal current, which needs to be set according to the maximum current measured.
- Press the key  to enter the setting, the corresponding value will flash, short press the  key or  key to modify the value size, long press the  key or  key to switch the value to be modified (the corresponding value will flash).
- After the data modification is completed, press the key to confirm the data there will be a prompt whether to save, short press the  key or  key select Yes or No, press the  key again to perform the operation.



Phase ABC Nominal Current

Configure the N-phase Current Transformer Ratio

- This page is used to configure the N-current transformer ratio.
- The second line of parameters displayed is the primary input current of current transformer
- The third line parameter displayed is the secondary output current of current transformer
- When the current transformer type is Rogowski coil, the output voltage value of the secondary terminal of the transformer needs to be set according to the nominal frequency.
- Press the key  to enter the setting, the corresponding value will flash, short press  key  key to modify the value size, long press the  key or  key to switch the value to be modified (the corresponding value will flash).
- After the data modification is completed, press the key to confirm the data there will be a prompt whether to save, short press the  key or  key select Yes or No, press the  key again to perform the operation.



Phase N t Ratio sensor current

Configure the N-phase Nominal Current

- This page is used to configure the N-phase nominal current, which is set according to the maximum current measured.
- Press the key  to enter the setting, the corresponding value will flash, short press  key or  key to modify the value size, long press the  key or  key to switch the value to be modified (the corresponding value will flash).
- After the data modification is completed, press the key to confirm the data there will be a prompt whether to save, short press the  key or  key select Yes or No, press the  key again to perform the operation.



Configure the ABC phase Current Transformer Direction

- This page is used to configure the ABC phase current transformer direction when the current transformer direction is wrong or the current terminal wiring is wrong, resulting in incorrect current direction, you can this parameter to correct the direction.
- The first parameter of the third row displayed is the current direction of phase A, the second parameter is the current direction of phase B, and the third parameter is the current direction of phase C.
- Press the key  to enter the setting, the corresponding value will flash, short press the  key or  key to modify the value size, long press the  key  key to switch the value to be modified (the corresponding value will flash).
- After the data modification is completed, press the  key to confirm the data, there will be a prompt whether to save, short press the  key or  key select Yes or No, press the  key again to perform the operation.



The available configuration current transformer direction types:

Symbol	Meanings
P	Keep the original orientation of the current transformer unchanged
n	Turn the current transformer inversely

Configure phase ABC current channel

- This page is used to configure the ABC phase current channel, when the current channel and the voltage channel do not correspond, it will cause power calculation errors, at this time it is necessary to correct the correspondence between current and voltage, and the current and voltage can be modified by modifying this parameter.

- The first parameter of the third line displayed is the phase corresponding to current channel 1, the second parameter is the phase corresponding to current channel 2, and the third parameter is the phase corresponding to current channel 3. When the wiring is correct, channel 1 corresponds to Current Sensor Channel Phase A, channel 2 corresponds to phase B, and channel 3 corresponds to phase C.



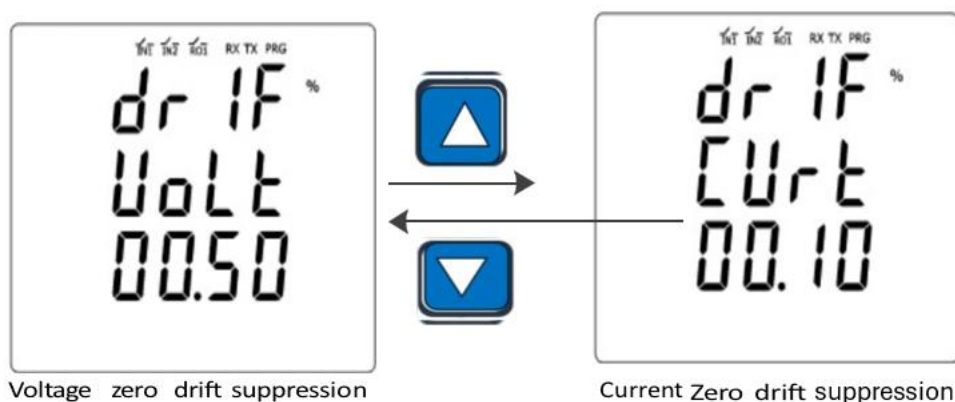
- Press the key to enter the setting, the corresponding value will flash. Short press the key or key to modify the value size, long press the key or key to switch the value to be modified (the corresponding value will flash).
- After the data modification is completed, press the key to confirm the data, there will be a prompt whether to save, short press the key or key select Yes or No, press the key again to perform the operation.

The available configuration current channel types:

Symbol	Meanings
A	Set the corresponding channel to phase A
b	Set the corresponding channel to phase B
C	Set the corresponding channel to phase C

Configuring Zero Drift Suppression Parameters

- On the Configure Parameters page, select *dr IF* to enter the zero-drift suppression parameter configuration interface.
- The zero-drift rejection parameter configuration interface value is used to suppress voltage and current runout when their voltage and current input.
- The parameters that can be configured on the zero-drift suppression parameter interface are as follows:



Configure Voltage Zero-Drift Suppression

- This page is used to configure voltage zero drift suppression. When the voltage is lower than the set value, it is displayed as 0.
- The reference value is the nominal voltage
- Press the key  to enter the setting, the corresponding value will flash. short press  key or  key to modify the value size, long press the  key or  key to switch the value to be modified (the corresponding value will flash).
- After the data modification is completed, press the  key to confirm the data, there will be a prompt whether to save, short press the  key or  key select Yes or No, press  the key again to perform the operation.



Configure Current Zero Drift Suppression

- This page is used to configure current zero drift suppression. When the current is below the set value, it is displayed as 0.
- The reference value is the nominal current
- Press the key  to enter the setting, the corresponding value will flash, short press the  key or  key to modify the value size, long press the  key or  key to switch the value to be modified (the corresponding value will flash).
- After the data modification is completed, press the  key to confirm the data, there will be a prompt whether to save, short press the  key or  key select Yes or No, press the  key again to perform the operation.



Configure Tariff Parameters

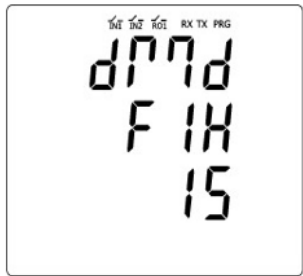
- This page is used to configure current zero drift suppression. When the current is below the set value, it is displayed as 0.
- The reference value is the nominal current
- Press the key  to enter the setting, the corresponding value will flash, short press the  key or  key to modify the value size, long press the  key or  key to switch the value to be modified (the corresponding value will flash).
- After the data modification is completed, press the  key to confirm the data, there will be a prompt whether to save, short press the  key or  key select Yes or No, press the  key again to perform the operation.



The available configuration Tariff Control Modes:

Symbol	Meanings
	The Tariff control mode is manual control mode, and Tariff can be selected through the interface or Modbus
	The Tariff control mode is the RTC control mode, and the Tariff is automatically switched through the set time. Tariff time settings refer to the Modbus directive.

Configure Demand Parameters

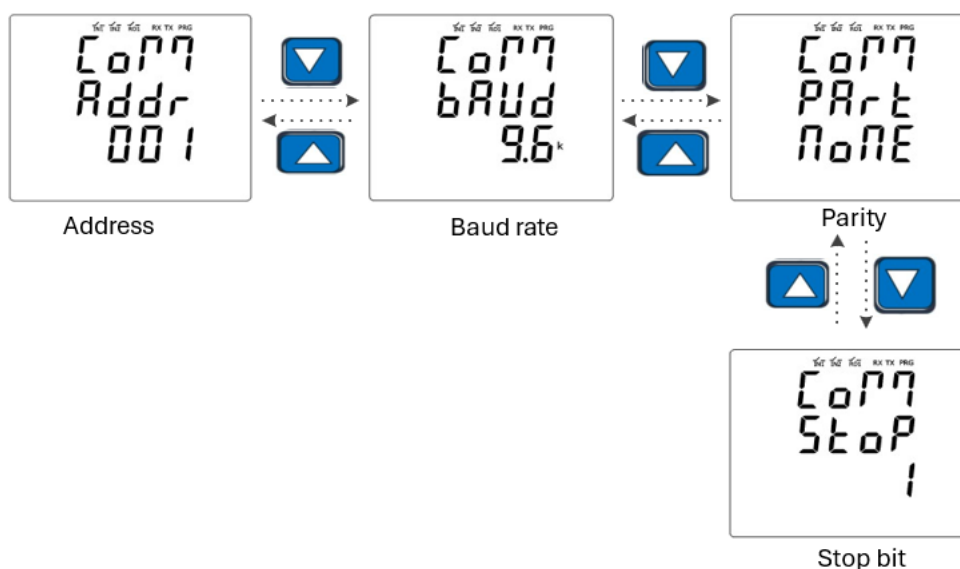
- On the Configure Parameters page, select **dPnD** to enter the Demand Parameter Configuration page.
 - The Demand parameter configuration interface value is used to set the demand calculation method and demand interval.
 - The parameters in the second row displayed are the demand calculation method, which can be fixed or sliding.
 - The parameters in line 3 shown are the demand calculation interval in minutes.
- 
- Press the  key to enter the setting, the corresponding value will flash, short press the  key or  key to modify the value size, long press the  key or  key to switch the value to be modified (the corresponding value will flash).
 - After the data modification is completed, press the  key to confirm the data, there will be a prompt whether to save, short press the  key or  key select Yes or No, press the  key again to perform the operation.

The available demand calculation method:

Symbol	Meanings
F 1H	The demand calculation method is fixed
SL 1d	The demand calculation method is sliding

Configuring Communication Parameters

- On the Configure Parameters page, select **CoPn** to enter the communication parameter configuration interface.
- The configurable parameters of the Communication Parameters interface are as following.



Configure the Communication Address

- This page is used to configure communication addresses. ➤ Configurable range: 1-247
- Press the key  to enter the setting, the corresponding value will flash, short press the  key or  key to modify the value size, long press the  key or  key to switch the value to be modified (the corresponding value will flash).
- After the data modification is completed, press the  key to confirm the data, there will be a prompt whether to save, short press the  key or  key select Yes or No, press the  key again to perform the operation.



Configure Communication Baud

- This page is used to configure the communication baud.
- Press the key  to enter the setting, the corresponding value will flash, short press the  key or  key to modify the value size, long press the  key or  key to switch the value to be modified (the corresponding value will flash).
- After the data modification is completed, press the  key to confirm the data, there will be a prompt whether to save, short press the  key or  key, to select Yes or No, press the  key again to perform the operation.



The available configured communication Baud types:

Symbol	Meanings
2.4 ^k	Set the communication baud to 2400bps
4.8 ^k	Set the communication baud to 4800bps
9.6 ^k	Set the communication baud to 9600bps
19.2 ^k	Set the communication baud to 19200bps
38.4 ^k	Set the communication baud to 38400bps
57.6 ^k	Set the communication baud to 57600bps
115.2 ^k	Set the communication baud to 115200bps

Configure Communication Parity

- This page is used to configure communication parity.
- Press the key  to enter the setting, the corresponding value will flash, short press the  key or  key to modify the value size, long press the  key or  key to switch the value to be modified (the corresponding value will flash).
- After the data modification is completed, press the  key to confirm the data, there will be a prompt whether to save, short press the  key or  key, to select Yes or No, press the  key again to perform the operation.



The available configuration parity types:

Symbol	Meanings
NoNE	Set communication parity to NONE
odd	Set communication parity to ODD
EVEN	Set communication parity to EVEN

Configure Communication Stop Bits

- This page is used to configure communication stop bit.
- Configurable values are: 1 or 2
- Press the key  to enter the setting, the corresponding value will flash, short press the  key or  key to modify the value size, long press the  key or  key to switch the value to be modified (the corresponding value will flash).
- After the data modification is completed, press the  key to confirm the data, there will be a prompt whether to save, short press the  key or  key, to select Yes or No, press the  key again to perform the operation.



Configure Relay Parameters

- Select **REL** on the configuration parameter page to enter the parameter configuration interface.
- The relay parameter configuration interface values are used to set control mode and output of the relay.
- The second line parameter displayed is the relay control mode, can be manually controlled or alarm output controlled.
- The third line parameter displayed is the current relay output for manual control. When the relay control mode is alarm output control mode, this line is not displayed.
- Press the key  to enter the setting, the corresponding value will flash, short press the  key or  key to modify the value size, long press the  key or  key to switch the value to be modified (the corresponding value will flash).
- After the data modification is completed, press the  key to confirm the data, there will be a prompt whether to save, short press the  key or  key, to select Yes or No, press the  key again to perform the operation.



The available relay control methods:

Symbol	Meanings
MAN	The relay control method is manual control, and the relay output can be controlled through the operation interface or Modbus

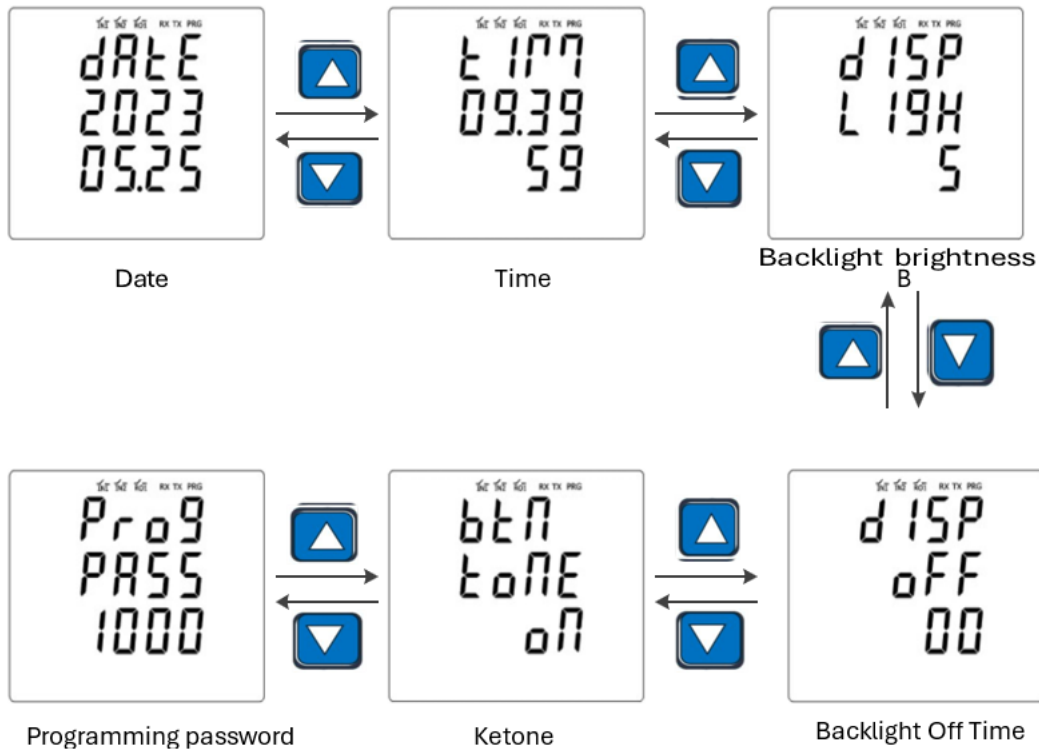
The available manual control relay output values:

Symbol	Meanings
OPEN	Relay output open
CLOS	Relay output closed

Configuring Device Parameters

Select **DEU** on the configuration parameter page to enter the device parameter configuration interface.

The configurable parameters of the device parameter interface areas follows.



Configure Device Date

- This page is used to configure device time.
- Press the key  to enter the setting, the corresponding value will flash, short press the  key or  key to modify the value size, long press the  key or  key to switch the value to be modified (the corresponding value will flash).
- After the data modification is completed, press the  key to confirm the data, there will be a prompt whether to save, short press the  key or  key, to select Yes or No, press the  key again to perform the operation.



Configure Device Time

- This page is used to configure device time.
- Press the key  to enter the setting, the corresponding value will flash, short press the  key or  key to modify the value size, long press the  key or  key to switch the value to be modified (the corresponding value will flash).
- After the data modification is completed, press the  key to confirm the data, there will be a prompt whether to save, short press the  key or  key, to select Yes or No, press the  key again to perform the operation.



Configure Device Backlight Brightness

- This page is used to configure the device backlight brightness.
- Configurable range: 1-5
- Press the key  to enter the setting, the corresponding value will flash, short press the  key or  key to modify the value size, long press the  key or  key to switch the value to be modified (the corresponding value will flash).
- After the data modification is completed, press the key to confirm the data, there will be a prompt whether to save, short press the  key or  key, to select Yes or No, press the  key again to perform the operation.



Configure the Device Backlight Off Time

- This page is used to configure the device backlight off time. If no keys are detected within the set time, the backlight turns off.
- Configurable range: 0-99 minute
- When the backlight off time is 0, it means that the backlight is always on.
- Press the key  to enter the setting, the corresponding value will flash, short press the  key or  key to modify the value size, long press the  key or  key to switch the value to be modified (the corresponding value will flash).
- After the data modification is completed, press the key to confirm the data, there will be a prompt whether to save, short press the  key or  select Yes or No, press the  key again to perform the operation.



The available key tone control methods:

Symbol	Meanings
on	The key tone is turned on, press the key, and the buzzer will sound
off	The key tone is off, press the key, and the buzzer will not sound

Configure the Device Programming Password

- This page is used to configure the device programming password.
- Default programming password: 1000
- Press the key  to enter the setting, the corresponding value will flash, short press the  key or  key to modify the value size, long press the  key or  key to switch the value to be modified (the corresponding value will flash).
- After the data modification is completed, press the key to confirm the data, there will be a prompt whether to save, short press the  key or  key, to select Yes or No, press the  key again to perform the operation.



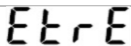
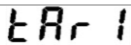
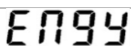
Configure the Clear Parameter

- On the Configure Parameters page, select  to enter the zeroing parameter configuration interface.
- The clear parameter configuration interface is used to clear parameters such as zero maximum value, demand, Tariff Energy, and Energy
- Press the key  to enter the setting, the corresponding value will flash, short press the  key or  key to modify the value size, long press the  key or  key to switch the value to be modified (the corresponding value will flash).
- After the data modification is completed, press the  key to confirm the data, there be a prompt whether to save, short press the  key or  key, to select Yes or No, press the  key again to perform the operation.



Clear Parameter

The available configuration clear types:

Symbol	Meanings
	Clear the maximum and minimum values
	Clear demand
	Clear Tariff Energy
	Clear Energy
	Clear the maximum and minimum values, demand, Tariff Energy, Energy

Address

Wonporul Technologies(P) Limited

44, Selva Vinayagar Koil Street, Ammayappattu-Vandavasi

Tiruvannamalai District, Tamil Nadu-604 408-India

Tel: +91 4183 225 006, Mob: +91 89256 95250, +91 90425 55250, +91 78454 55250

www.wonporul.com E-mail: wonporul@wonporul.com



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