



User manual

DZT 6299

Version 1.03 | Jan-2025

Congratulations on choosing our DZT Meter series. We want to help you get the best results from your DZT Meter. This manual contains information on how to do that; please read it carefully.

Due to continuous product improvements, this manual is subject to change without notice.

Your DZT dealer is committed to your customer satisfaction and will be happy to answer your questions.

Kind regards,

inepro Metering

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1. Specifications

Three Phase Multifunctional Meter

The DZT Series Digital Power Meter works directly connected to a maximum load 100AAC circuit.

This meter is MID B&D certified by SGS, confirming both accuracy and quality. This certification allows this model to be used for any sub-billing application.

Technical Parameters Technische Parameter

Standard:	EN50470-1/3
Rated Voltage:	3*230(400)V
Rated Current:	0.25-5(100)A
Impulse Constant:	1000imp/kWh(LED) 1000imp/kvarh(LED)
Frequency:	50Hz
Accuracy Class:	B
LCD Display:	LCD 6+2
Working Temperature:	-40~70°C
Storage Temperature:	-40~70°C
Power Consumption:	<12VA<1W (001-005) <10VA<1W (006-009)
Average Humidity:	≤75%(Non-Condensing)
Maximum Humidity:	≤95%
Starting Current:	0.004Ib
Case Protection:	IP51 indoor

2. Meter series details

Model	6299-001	6299-002	6299-002-01	6299-003	6299-004	6299-005
Software Version	V301	V301	V301	V301	V301	V301
CRC	708A	5B61	6D95	2B60	5B61	2B60
Impulse Constant	1000imp/kWh 1000imp/kvarh	1000imp/kWh 1000imp/kvarh	1000imp/kWh 1000imp/kvarh	1000imp/kWh 1000imp/kvarh	1000imp/kWh 1000imp/kvarh	1000imp/kWh 1000imp/kvarh
Communication	IR	IR, RS485	IR, RS485	IR, RS485	IR, RS485	IR, RS485
Baud rate	N/A	9600\19200\ 38400\115200	9600\19200\ 38400\115200	9600\19200\ 38400\115200	9600\19200\ 38400\115200	9600\19200\ 38400\115200
S0 output	S01 is S0 output for kWh (default) or Active/reactive forward kWh optional with variable constant	S01 is S0 output for kWh (default) or Active/reactive forward kWh optional with variable constant	S01 is S0 output for kWh (default) or Active/reactive forward kWh optional with variable constant	S01 is S0 output for kWh (default) or Active/reactive forward kWh optional with variable constant	S0 output for Active kWh with variable constant	S0 output for Active kWh with variable constant
	S02 is S0 output for kvarh (default) or Active/reactive reverse kWh optional with variable constant	S02 is S0 output for kvarh (default) or Active/reactive reverse kWh optional with variable constant	S02 is S0 output for kvarh (default) or Active/reactive reverse kWh optional with variable constant	S02 is S0 output for kvarh (default) or Active/reactive reverse kWh optional with variable constant	External Signal input port	External Signal input port
Pulse width	Changeable pulse width according to current, the bigger the current the shorter the pulse width					
Backlight	Blue	Blue	Blue	Blue	Blue	Blue
Li-Battery	N/A	N/A	N/A	Yes	N/A	Yes
Multi-tariff	N/A	N/A	N/A	Yes	N/A	Yes
Measurement Mode	1.Total = forward 2.Total = reverse 3.Total = forward + reverse (default) 4.Total = Forward - Reverse					
Button	Touch button	Touch button	Touch button	Touch button	Touch button	Touch button
Button function	Left button: scroll left or enter other pages Right button: scroll right or enter LCD setting pages					
Default setting	/	9600/NONE /8/1	9600/NONE /8/1	9600/NONE /8/1	9600/NONE /8/1	9600/NONE /8/1
Measurement Mode setting	Button	RS485 or Button	RS485 or Button	RS485 or Button	RS485 or Button	RS485 or Button

Model	6299-006	6299-007	6299-008	6299-009
Software Version	V301	V301	V301	V301
CRC	710C	3A70	710C	3A70
Impulse Constant	1000imp/kWh 1000imp/kvarh	1000imp/kWh 1000imp/kvarh	1000imp/kWh 1000imp/kvarh	1000imp/kWh 1000imp/kvarh
Communication	IR/ Mbus	IR/ Mbus	IR/,Mbus	IR/ Mbus
Baud rate	300/600/1200/2400/4800/9600	300/600/1200/2400/4800/9600	300/600/1200/2400/4800/9600	300/600/1200/2400/4800/9600
S0 output	S01 is S0 output for kWh (de-fault) or Active/ reactive forward kWh optional with variable constant	S01 is S0 output for kWh (de-fault) or Active/ reactive forward kWh optional with variable constant	S0 output for Active kWh with variable constant	S0 output for Active kWh with variable constant
	S02 is S0 output for kvarh (de-fault) or Active/ reactive reverse kWh optional with variable constant	S02 is S0 output for kvarh (de-fault) or Active/ reactive reverse kWh optional with variable constant	External Signal input port	External Signal input port
Pulse width	Changeable pulse width according to current, the bigger the current the shorter the pulse width			
Backlight	Blue	Blue	Blue	Blue
Li-Battery	N/A	YES	N/A	Yes
Multi-tariff	N/A	YES	N/A	YES
Measurement Mode	1.Total = forward 2.Total = reverse 3.Total = forward + reverse (default) 4.Total = Forward - Reverse			
Button	Touch button	Touch button	Touch button	Touch button
Button function	Left button: Page turning, check LCD phase energy display page of phase L1/L2/L3, LCD information page Right button: Page turning, LCD setting display page			
Default setting	9600/EVEN /8/1	9600/EVEN /8/1	9600/EVEN /8/1	9600/EVEN /8/1
Measurement Mode setting	Mbus or Button	Mbus or Button	Mbus or Button	Mbus or Button

3. LCD Display Layout

Different values with different indicators



3.1 Main display of the meter

The below picture is a multifunctional display, it shows voltage, current, energy, power, date, and time etc.



3.2 Total value indication

The display will show "T" in the top left corner to indicate the meter is measuring total value. Like total energy, total power, total frequency or total power factor and so on, the display will show "T" symbol.



3.3 Page number indication

The red area of the display will show the current page number, start from "01", for example the meter of 6299-003, the scroll page can set maximum quantity is 75 pages, when we add in scroll page, the number will show from "01" to "75", according to the LCD scrolling display pages table. (see the below table of LCD scrolling display page for detail).



3.4 other symbol on the meter's LCD

- The symbol of "PREV" in the meter's LCD display, it is a reserve place and don't display.
- If the display will show the battery symbol to indicate the meter has a battery (see the appendix 2).
- If the display will show the unlocking symbol to indicate the meter is on the setting page.
- If the display will show the call symbol to indicate the meter is in communicating.
- The symbol of T1, T2, T3 and T4 are tariff mode (depending on the setting, see the appendix 1).
- If the meter is in the A phase energy page, the left triangle is display; if the meter is in the B phase energy page, the right triangle is display; If the meter is in the C phase energy page, the 2 triangles are all display.
- When the main display shows the value, the right bottom corner shows the units, depending on the value type. For example kWh, kW, kvarh, kVA, V, A, and Hz etc.

3.5 Setting menu

The 6299 series has a maximum 75 scrolling display pages that can be set via Modbus/Mbus or IR software.

1) Button setting :

Each model meter has 2 touch buttons, see the below picture. When you power on the meter, it will enter the scroll page after full display.

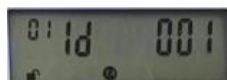
Automatic scroll: depending on the setting, can set 0 seconds and 5~99 seconds, 0 disables scroll display.

Button scroll: press the buttons for less than 3 seconds to scroll. After 60 seconds of no interaction the meter goes back to automatic scroll mode.

Except for the 6299-003/005/007/009 setup page, which has 16 pages, the others are 14 pages



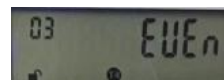
- Under anyone scrolling page, hold the right button for more than 3 seconds and enter 4 digits correct password to enter setting page. Hold the right for more than 3 seconds in each page, the corresponding value will blink, then can select each value, confirm each value by holding right button for 3 seconds.



Modbus/Mbus ID, scroll with button to select 1~247/0-250



Baud rate, scroll with button to select 9600-115200/300-9600

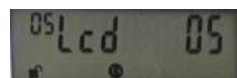


Parity, scroll with button to select even/none/odd.

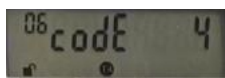


Stop bit, scroll with button to select 1/2 bit.

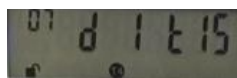
There is no above 4 pages in 6299-001.



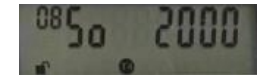
LCD cycle time, scroll with button to select 0s or 5~99 s
0 disable scroll display



Combine code, Scroll with button to select 1(F)/2(R) / 3(F+R)/4(F-R).



Demand type and period
Type: 0 or 1; period:1-30min.
(detail in appendix 3)



SO constant.
default 1000
can write programmable.

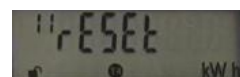


Meter date,

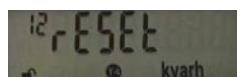


Meter time

Meter date and meter time are present date and time. How to reset see Appendix 2.
Only the meter of 6299-003/6299-005 have these 2 pages(detail in Appendix 2).



Reset the active resettable energy
After long press right button, the total (total, forward and reverse) and each phase (total, forward and reverse) can be reset, and the corresponding data can be selected to reset.



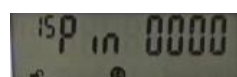
Reset the reactive resettable energy



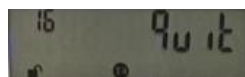
Reset the active maximum demand



Reset the reactive maximum demand

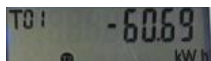
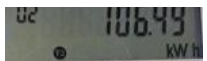
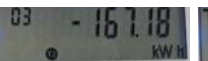
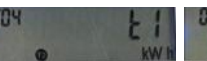
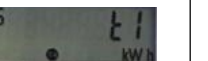
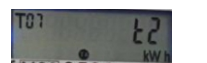
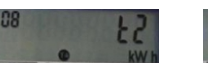
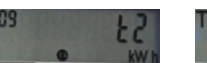
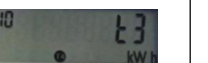
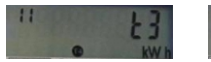
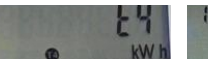
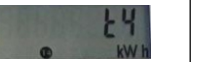
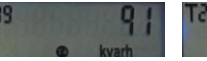
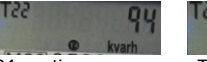
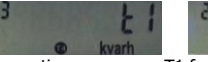
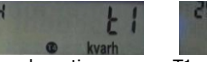
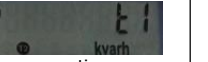
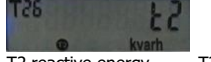
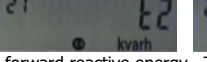
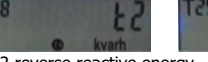
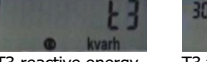
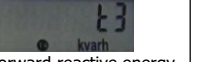
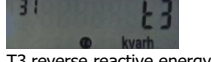
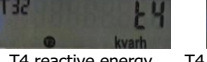
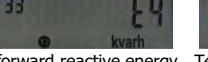
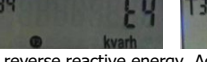
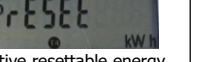
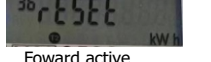
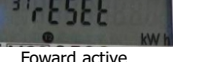
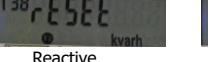
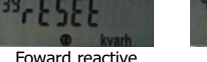
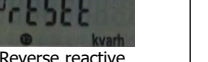
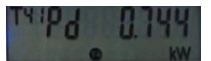
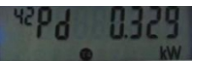
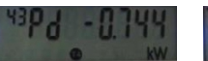
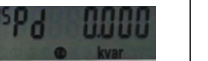
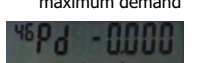
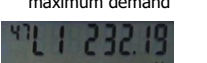
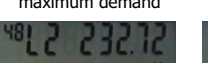
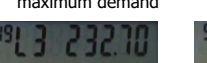
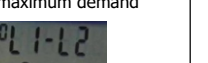
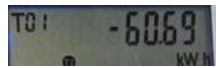
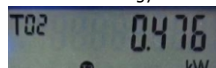
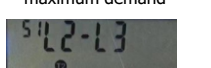
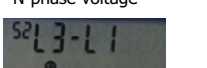
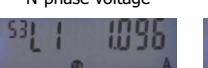
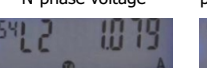
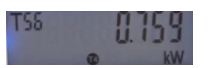
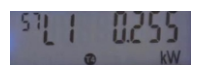
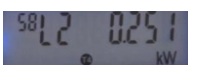
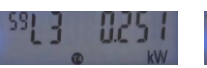
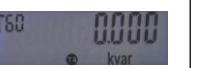
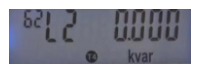
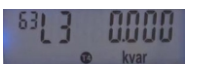
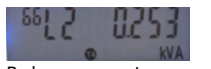
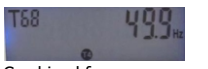
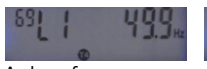
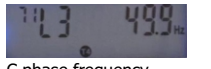
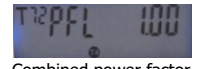
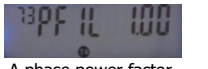
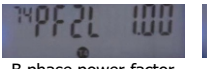
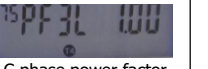
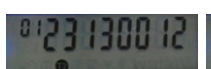
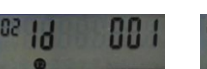
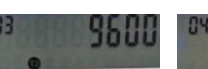
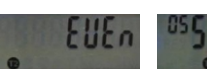
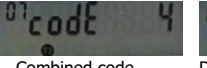
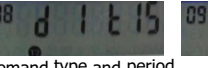
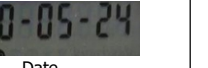
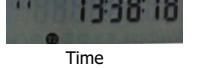
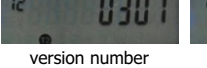
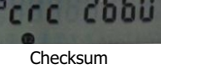


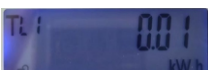
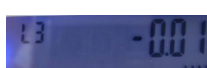
Password
0000-9999 can be set (default"0000").

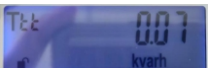
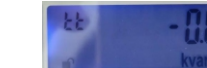
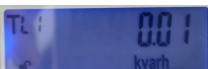
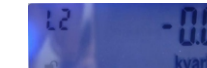
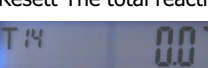


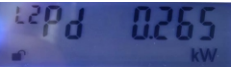
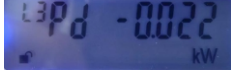
exit settings.

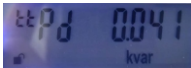
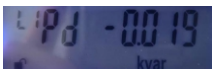
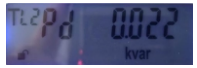
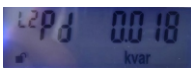
- b. Hold the left button >3 seconds to enter L1 phase energy page,
 Hold the left button >3 seconds in the L1 phase energy page to enter L2 phase energy page,
 Hold the left button >3 seconds in the L2 phase energy page to enter L3 phase energy page,
 Hold the left button >3 seconds in the L3 phase energy page to enter LCD information page,
 Hold the left button >3 seconds in the LCD information page to enter scroll page again.

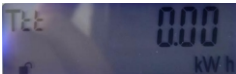
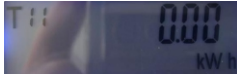
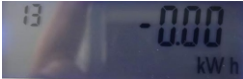
Pages	Take 6299-003 as an example
Scroll page. 1.Only 6299-003 /005/007/009 can set the maximum scroll page number is 75 pages (depending on the setting). 2.Other meters of 6299 can set the maximum scroll page is 51 pages. 3.By default we have the following registers in the LCD scroll.	 Total active energy  Forward active energy  Reverse active energy  T1 active energy  T1 forward active energy
	 T1 reverse active energy  T2 active energy  T2 forward active energy  T2 reverse active energy  T3 active energy
	 T3 forward active energy  T3 reverse active energy  T4 active energy  T4 forward active energy  T4 reverse active energy
	 Total reactive energy  Forward reactive energy  Reverse reactive energy  Q1 reactive energy  Q2 reactive energy
	 Q3 reactive energy  Q4 reactive energy  T1 reactive energy  T1 forward reactive energy  T1 reverse reactive energy
	 T2 reactive energy  T2 forward reactive energy  T2 reverse reactive energy  T3 reactive energy  T3 forward reactive energy
	 T3 reverse reactive energy  T4 reactive energy  T4 forward reactive energy  T4 reverse reactive energy  Active resettable energy
	 Forward active resettable energy  Forward active resettable energy  Reactive resettable energy  Forward reactive resettable energy  Reverse reactive resettable energy
	 Active maximum demand  Forward active maximum demand  Reverse active maximum demand  Reactive maximum demand  Forward reactive maximum demand
	 Reverse reactive maximum demand  A phase and N-phase voltage  B phase and N-phase voltage  C phase and N-phase voltage  A phase and B phase line voltage
 Total active energy  Combined active power	 B Phase and C phase line voltage  C phase and A phase line voltage  Current of A-phase  Current of B-phase  Current of C-phase
	 Combined active power  A phase active power  B phase active power  C phase active power  Combined reactive power
	 A phase active power  B phase active power  C phase active power  Combined apparent power  A phase apparent power
	 B phase apparent power  C phase apparent power  Combined frequency  A phase frequency  B phase frequency
	 C phase frequency  Combined power factor  A phase power factor  B phase power factor  C phase power factor
Phase energy page Only 6299-003/005/007/009 is 46 pages, and the others are 22 pages	Including A phase energy page, B phase energy page and C phase energy page. Each phase energy page has 46 pieces of content, you can use the left or right button to turn the page to see the relevant content.
Information page Only provide check, can't change Except for the 6299-003/005/007/009 information page, which has 13 pages, the rest are 11 pages	 Serial number(12digit)  Modbus ID  Baud rate  Parity  stop bit
	 Scroll time  Combined code  Demand type and period  SO output  Date
	 Time  version number  Checksum

Resettable energy And demand	Take 6299-001 as an example
resettable active energy First enter the settings page, select page 5/6/7/8, long press the right button for three seconds to enter, select the battery level to be cleared, and then long press the right button for three seconds to clear the data	Page 5  total active energy  total forward active energy  total reverse active energy  L1 total active energy  L1 forward active energy  L1 reverse active energy  L2 total active energy  L2 forward active energy  L2 reverse active energy  L3 total active energy  L3 forward active energy  L3 reverse active energy Reset The total active energy corresponds to page 11 of the Scrolling page  Reset The total forward active energy corresponds to page 12 of the Scrolling page  Reset The total reverse active energy corresponds to page 13 of the Scrolling page 

Resettable energy And demand	Take 6299-001 as an example
resettable reactive energy	Page 6  total reactive energy  total forward reactive energy  total reverse reactive energy  L1 total reactive energy  L1 forward reactive energy  L1 reverse reactive energy  L2 total reactive energy  L2 forward reactive energy  L2 reverse reactive energy  L3 total reactive energy  L3 forward reactive energy  L3 reverse reactive energy Reset The total reactive energy corresponds to page 14 of the Scrolling page 

Resettable energy And demand	Take 6299-001 as an example
resettable active demand	Page 7    total active demand total forward active demand total reverse active demand    L1 total active demand L1 forward active demand L1 reverse active demand    L2 total active demand L2 forward active demand L2 reverse active demand    L3 total active demand L3 forward active demand L3 reverse active demand Resett The total active demand corresponds to page 17 of the Scrolling page  Resett The total forward active demand corresponds to page 18 of the Scrolling page  Resett The total reverse active demand corresponds to page 19 of the Scrolling page 

Resettable energy And demand	Take 6299-001 as an example
resettable reactive demand	Page 8    total reactive demand total forward reactive demand total reverse reactive demand    L1 total reactive demand L1 forward reactive demand L1 reverse reactive demand    L2 total reactive demand L2 forward reactive demand L2 reverse reactive demand    L3 total reactive demand L3 forward reactive demand L3 reverse reactive demand Resett The total reactive demand corresponds to page 20 of the Scrolling page  Resett The total forward reactive demand corresponds to page 21 of the Scrolling page  Resett The total reverse reactive demand corresponds to page 22 of the Scrolling page 

Resettable energy And demand	Take 6299-001 as an example
Taking resettable active energy as an example	   After entering the settings page, select "Reset active energy" on page 5, choose "Total active energy", and long press the right button for three seconds to reset to 0. Return to page 11 of the Scrolling page, with a total active energy of 0.    After entering the settings page, select "Reset active energy" on page 5, choose "Total forward active energy", and long press the right button for three seconds to reset to 0. Return to page 12 of the Scrolling page, with a total forward active energy of 0.    After entering the settings page, select "Reset active energy" on page 5, choose "Total reverse active energy", and long press the right button for three seconds to reset to 0. Return to page 13 of the Scrolling page, with a total reverse active energy of 0.

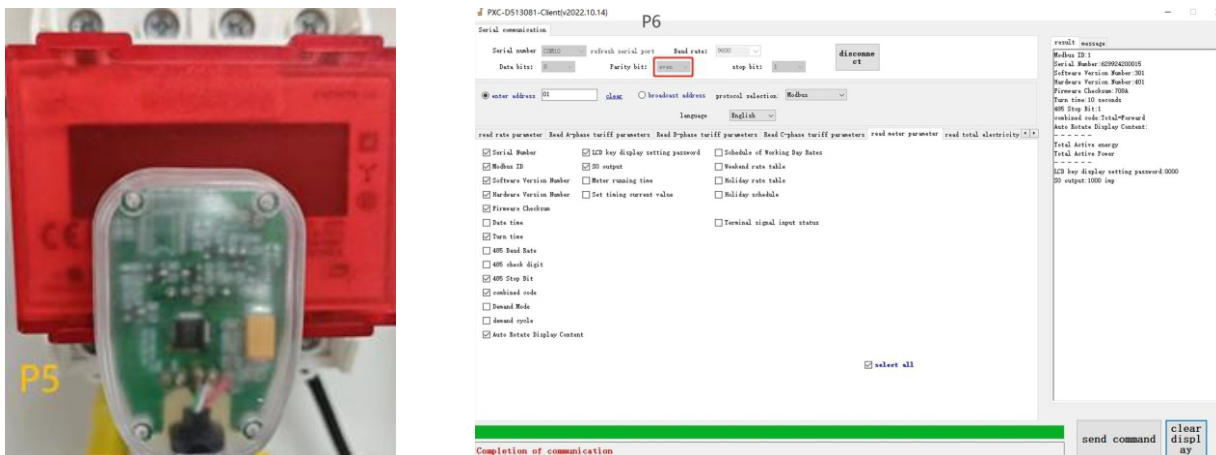
2) Infra-red setting :

Use the meter of 6299-001 as an example, the tools of we need to use are "USB/IR eye" and "IR eye adapter".

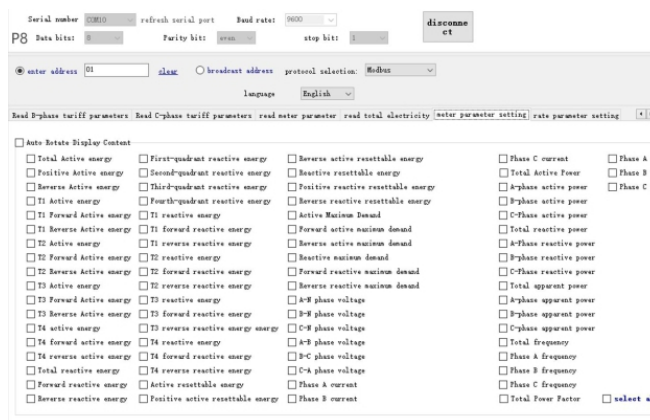
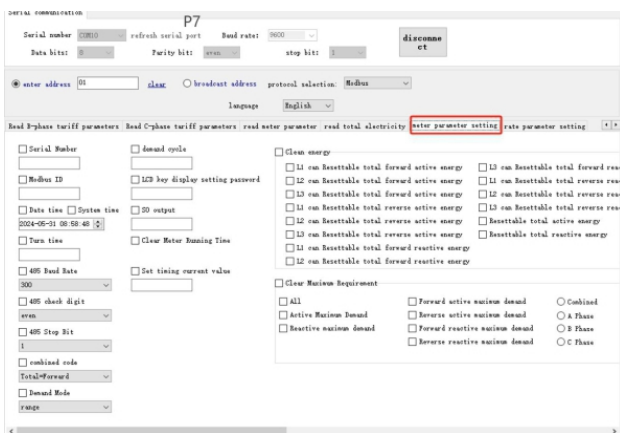
- (1) See the "P1", you will find the infrared auxiliary tools, then connect the meter in the box and the IR eye adapter covers the front of the meter, we can see 2 infrared signal lights via the adapter hole, see the "P3".



- (2) Put the IR eye on communication position of the adapter, see "P5", then, the USB of IR eye other side connect to computer.
- (3) Open the IR software in the computer, see the picture 6, configure the same parameters as the meter in the serial communication, there is Serial port, Baud rate, Data bits Parity and Stop bit. Due to no Modbus in the meter of 6299-001, only use the parity of even can reading and setting (the red area of picture 6 must be set even in the meter of 6299-001).
- (4) The enter address is same the meter Modbus address, the protocol selection is Modbus, then click "read meter value parameter" and select the parameters to be read, and then click "send command", the resulting item will display the which you selected.

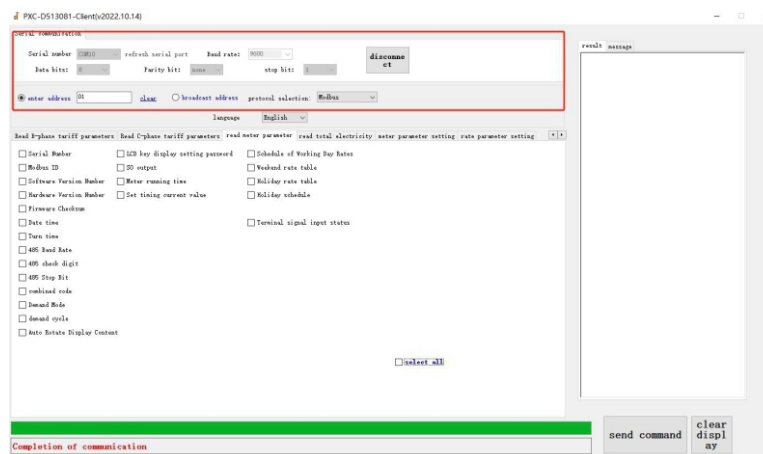
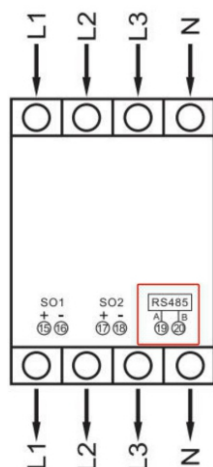


Notice: If you need to set the meter parameter, click the red area of picture 7, select each option which we need, then click "send command", the resulting item will display success. We can also set the scrolling display or other parameters in the same way.



3) Modbus setting :

- (1) The meter can communicate with your PC. In order to read out the meter registers first install and configure the PC software. Use an RS485 level converter to connect the PC and the meter. The cable should be connected to terminals 19 and 20. The default communication address of the meter is 01.



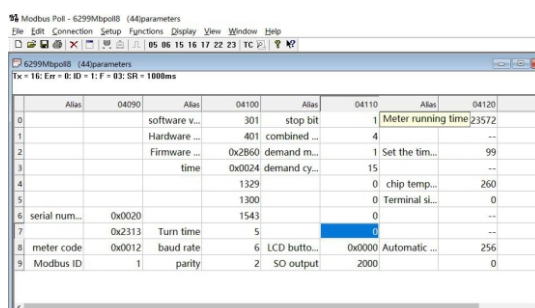
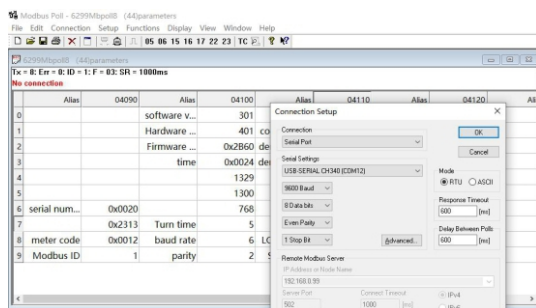
Open the Modbus software, the connection parameters of red area are all same the meter, we can select each item to read or set. Due to use the software same as Infrared, the method of operating is the same.

The meter can be connected for Modbus communication. The Modbus implementation used is Modbus basic (standard). This means the following:

- ☐ Baud rate 9600
- ☐ 8data bits
- ☐ Even pairty
- ☐ 1stop bit

The baud rate can be set to values 19200, 38400, 115200. The pairty can be set to none and odd. Data and stop bit cannot be change.

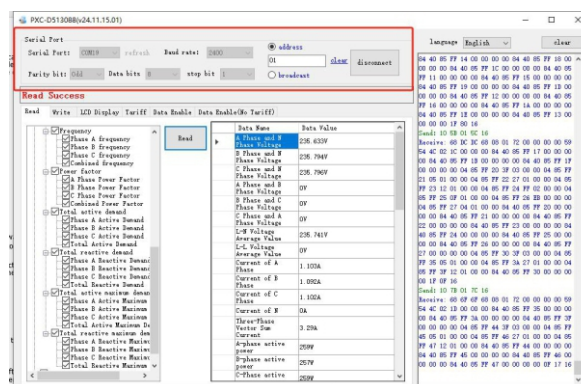
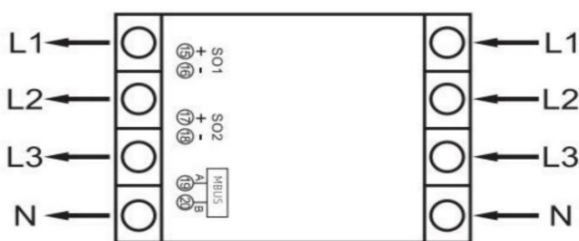
- (2) we can also use other software of the Modbus Poll to connect with the meter, only set the same connection parameters with the meter, also can reading data and set any parameters.



(3) The detail Modbus register address in appendix 3.

4) Mbus setting :

The meter can communicate with your PC. In order to read out the meter registers first install and configure the PC software. Use an Mbus level converter to connect the PC and the meter. The cable should be connected to terminals 19 and 20. The default communication address of the meter is 01.



Open the Mbus software, the connection parameters of red area are all same the meter, we can select each item to read or set. Due to use the software same as Infrared, the method of operating is the same.

The meter can be connected for Mbus communication. The Mbus implementation used is Mbus basic (standard).

This means the following:

- ☐ Baud rate 9600
- ☐ 8data bits
- ☐ Even parity
- ☐ 1stop bit

The baud rate can be set to values 300/600/1200/2400/4800. The parity can be set to none and odd.

3.6 Page instruction

LCD Scrolling Display Page				
Page	Content	Unit	Format	Remark
1	Total active energy	kWh	6+2 000000.00	
2	Forward active energy	kWh	6+2 000000.00	
3	Reverse active energy	kWh	5+2 00000.00	With indicator of “-”
4	T1 Total active energy	kWh	6+2 000000.00	
5	T1 Forward active energy	kWh	6+2 000000.00	
6	T1 Reverse active energy	kWh	5+2 00000.00	With indicator of “-”
7	T2 Total active energy	kWh	6+2 000000.00	
8	T2 Forward active energy	kWh	6+2 000000.00	
9	T2 Reverse active energy	kWh	5+2 00000.00	With indicator of “-”
10	T3 Total active energy	kWh	6+2 000000.00	
11	T3 Forward active energy	kWh	6+2 000000.00	
12	T3 Reverse active energy	kWh	5+2 00000.00	With indicator of “-”
13	T4 Total active energy	kWh	6+2 000000.00	
14	T4 Forward active energy	kWh	6+2 000000.00	
15	T4 Reverse active energy	kWh	5+2 00000.00	With indicator of “-”
16	Total reactive energy	kvarh	6+2 000000.00	
17	Forward reactive energy	kvarh	6+2 000000.00	
18	Reverse reactive energy	kvarh	5+2 00000.00	With indicator of “-”
19	The first quadrant reactive power	kvarh	6+2 000000.00	
20	The second quadrant reactive power	kvarh	6+2 000000.00	
21	The third quadrant reactive power	kvarh	6+2 000000.00	
22	The fourth quadrant reactive power	kvarh	6+2 000000.00	
23	T1 Total reactive energy	kvarh	6+2 000000.00	
24	T1 Forward reactive energy	kvarh	6+2 000000.00	
25	T1 Reverse reactive energy	kvarh	5+2 00000.00	With indicator of “-”
26	T2 Total reactive energy	kvarh	6+2 000000.00	
27	T2 Forward reactive energy	kvarh	6+2 000000.00	
28	T2 Reverse reactive energy	kvarh	5+2 00000.00	With indicator of “-”
29	T3 Total reactive energy	kvarh	6+2 000000.00	
30	T3 Forward reactive energy	kvarh	6+2 000000.00	
31	T3 Reverse reactive energy	kvarh	5+2 00000.00	With indicator of “-”
32	T4 Total reactive energy	kvarh	6+2 000000.00	
33	T4 Forward reactive energy	kvarh	6+2 000000.00	
34	T4 Reverse reactive energy	kvarh	5+2 00000.00	With indicator of “-”
35	Re-settable Active energy	kWh	6+2 000000.00	
36	Forward active energy can be cleared	kWh	6+2 000000.00	
37	Reverse active energy can be cleared	kWh	5+2 00000.00	With indicator of “-”

38	Re-settable Reactive energy	kvarh	6+2 000000.00	
39	Forward reactive energy can be cleared	kvarh	6+2 000000.00	
40	Reverse reactive energy can be cleared	kvarh	5+2 00000.00	With indicator of “-”
41	Maximum active power demand	kW	2+3 00.000	
42	Forward maximum active power demand	kW	2+3 00.000	
43	Reverse maximum active power demand	kW	2+3 00.000	With indicator of “-”
44	Maximum reactive power demand	kvar	2+3 00.000	
45	Forward maximum reactive power demand	kvar	2+3 00.000	
46	Reverse maximum reactive power demand	kvar	2+3 00.000	With indicator of “-”
47	L1-N voltage	V	3+2 000.00	
48	L2-N voltage	V	3+2 000.00	
49	L3-N voltage	V	3+2 000.00	
50	L1-L2 voltage	V	3+2 000.00	
51	L2- L3 voltage	V	3+2 000.00	
52	L3- L1 voltage	V	3+2 000.00	
53	L1 Phase current	A	3+3 000.000	“-” sign when reverse
54	L2 Phase current	A	3+3 000.000	“-” sign when reverse
55	L3 Phase current	A	3+3 000.000	“-” sign when reverse
56	Total active power	kw	3+3 000.000	“-” sign when reverse
57	L1 Phase active power	kw	2+3 00.000	“-” sign when reverse
58	L2 Phase active power	kw	2+3 00.000	“-” sign when reverse
59	L3 Phase active power	kw	2+3 00.000	“-” sign when reverse
60	Total reactive power	kvar	2+3 00.000	“-” sign when reverse
61	L1 Phase reactive power	kvar	2+3 00.000	“-” sign when reverse
62	L2 Phase reactive power	kvar	2+3 00.000	“-” sign when reverse
63	L3 Phase reactive power	kvar	2+3 00.000	“-” sign when reverse
64	Total apparent power	kva	2+3 00.000	
65	L1 Phase apparent power	kva	2+3 00.000	
66	L2 Phase apparent power	kva	2+3 00.000	
67	L3 Phase apparent power	kva	2+3 00.000	
68	Total frequency	Hz	2+1 00.0	
69	L1 Phase frequency	Hz	2+1 00.0	
70	L2 Phase frequency	Hz	2+1 00.0	
71	L3 Phase frequency	Hz	2+1 00.0	
72	Total power factor		1+3 0.000	With capacitive ‘C’ and inductive ‘L’, with ‘-’ (based on active power)
73	L1 Phase power factor		1+3 0.000	With capacitive ‘C’ and inductive ‘L’, with ‘-’ (based on active power)
74	L2 Phase power factor		1+3 0.000	With capacitive ‘C’ and inductive ‘L’, with ‘-’ (based on active power)
75	L3 Phase power factor		1+3 0.000	With capacitive ‘C’ and inductive ‘L’, with ‘-’ (based on active power)

Phase energy page				
Page	Content	Unit	Format	Remark
1	Total active energy	kWh	6+2 000000.00	
2	Forward active energy	kWh	6+2 000000.00	
3	Reverse active energy	kWh	5+2 00000.00	With indicator of "-"
4	T1 Total active energy	kWh	6+2 000000.00	
5	T1 Forward active energy	kWh	6+2 000000.00	
6	T1 Reverse active energy	kWh	5+2 00000.00	With indicator of "-"
7	T2 Total active energy	kWh	6+2 000000.00	
8	T2 Forward active energy	kWh	6+2 000000.00	
9	T2 Reverse active energy	kWh	5+2 00000.00	With indicator of "-"
10	T3 Total active energy	kWh	6+2 000000.00	
11	T3 Forward active energy	kWh	6+2 000000.00	
12	T3 Reverse active energy	kWh	5+2 00000.00	With indicator of "-"
13	T4 Total active energy	kWh	6+2 000000.00	
14	T4 Forward active energy	kWh	6+2 000000.00	
15	T4 Reverse active energy	kWh	5+2 00000.00	With indicator of "-"
16	Total reactive energy	kvarh	6+2 000000.00	
17	Forward reactive energy	kvarh	6+2 000000.00	
18	Reverse reactive energy	kvarh	5+2 00000.00	With indicator of "-"
19	The first quadrant reactive power	kvarh	6+2 000000.00	
20	The second quadrant reactive power	kvarh	6+2 000000.00	
21	The third quadrant reactive power	kvarh	6+2 000000.00	
22	The forth quadrant reactive power	kvarh	6+2 000000.00	
23	T1 Total reactive energy	kvarh	6+2 000000.00	
24	T1 Forward reactive energy	kvarh	6+2 000000.00	
25	T1 Reverse reactive energy	kvarh	5+2 00000.00	With indicator of "-"
26	T2 Total reactive energy	kvarh	6+2 000000.00	
27	T2 Forward reactive energy	kvarh	6+2 000000.00	
28	T2 Reverse reactive energy	kvarh	5+2 00000.00	With indicator of "-"
29	T3 Total reactive energy	kvarh	6+2 000000.00	
30	T3 Forward reactive energy	kvarh	6+2 000000.00	
31	T3 Reverse reactive energy	kvarh	5+2 00000.00	With indicator of "-"
32	T4 Total reactive energy	kvarh	6+2 000000.00	
33	T4 Forward reactive energy	kvarh	6+2 000000.00	
34	T4 Reverse reactive energy	kvarh	5+2 00000.00	With indicator of "-"
35	Active energy can be cleared	kWh	6+2 000000.00	

36	Forward active energy can be cleared	kWh	6+2 000000.00	
37	Reverse active energy can be cleared	kWh	5+2 00000.00	With indicator of “-”
38	Reactive energy can be cleared	kvarh	6+2 000000.00	
39	Forward reactive energy can be cleared	kvarh	6+2 000000.00	
40	Reverse reactive energy can be cleared	kvarh	5+2 00000.00	With indicator of “-”
41	Maximum active power demand	kW	2+3 00.000	
42	Forward maximum active power demand	kW	2+3 00.000	
43	Reverse maximum active power demand	kW	2+3 00.000	With indicator of “-”
44	Maximum reactive power demand	kvar	2+3 00.000	
45	Forward maximum reactive power demand	kvar	2+3 00.000	
46	Reverse maximum reactive power demand	kvar	2+3 00.000	With indicator of “-”

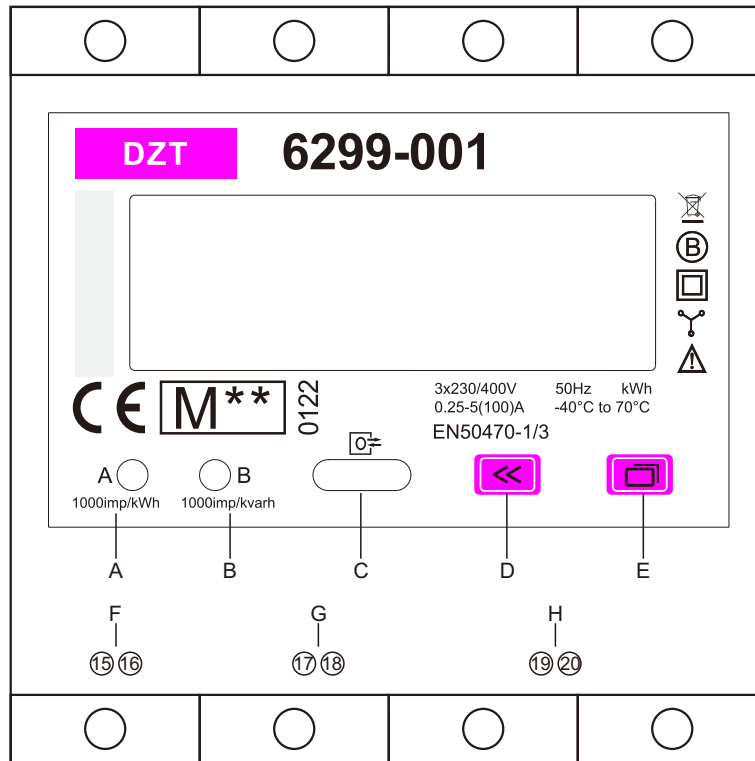
Long press the 3 seconds of left button switch the display page: Scroll display page -> A-phase energy page -> B-phase energy page -> C-phase energy page -> Information page -> scroll page

LCD information page

Page	Content	Unit	Description	Remark
1	Serial number		000000000000,12 digit	The same DLT 645 ID
2	Modbus/Mbus ID		1-247/0-250	
3	Baud rate		9600/19200/ 38400/115200	
4	Parity		Odd/Even/None	
5	Stop bit		1/2bit	
6	Scroll display time	S	5-99 seconds, 0 disables scroll display	
7	Combined code		1=Total=Forward 2=Total=Reverse 3=Total=Forward+Reverse 4=Total=Forward-Reverse	
8	DemandType and Period		0= interval 1= slip	Period, 1-30 minutes, default 15 minutes
9	SO output		Default 1000, Range:100~3200.	
10	Date		DDMMYY	
11	Time		HHMMSS	
12	Version number		U101	
13	Checksum		XXXX	

LCD setting page				
Page	Content	Unit	Description	Remark
1	Modbus/Mbus ID		1-247/0-250	Press the right button for more than 3 seconds to input the correct password
2	Baud rate		9600/19200/38400/115200	
3	Parity		Odd/Even/None	
4	Stop bit		1/2bit	
5	Scrolling time		5-99 seconds, 0 disables scroll display	
6	Combined code	S	1=Total=Forward 2=Total=Reverse 3=Total=Forward+Reverse 4=Total=Forward - Reverse	
7	DemandTypeand Period		type 0 interval 1 slip, period 1-30 minutes	
8	SO constant		Default 1000 Range:100~3200. Above 100(include100), Divisible by 96000	
9	Date		DDMMYY	
10	Time		HHMMSS	
11	Reset the active re-settable energy		After long press, the total (total, forward and reverse) and each phase (total, forward and reverse) can be reset, and the corresponding data can be selected to reset	
12	Reset the reactive re-settable energy		After long press, the total (total, forward and reverse) and split-phase (total, forward and reverse) can be reset, and the corresponding data can be selected to reset	
13	Reset the active maximum demand		After long press, the total (total, forward and reverse) and split-phase (total, forward and reverse) can be reset, and the corresponding data can be selected to reset	
14	Reset the reactive maximum demand		After long press, the total (total, forward and reverse) and split-phase (total, forward and reverse) can be reset, and the corresponding data can be selected to reset	
15	password		4 bits	
16	Quit		exit settings	

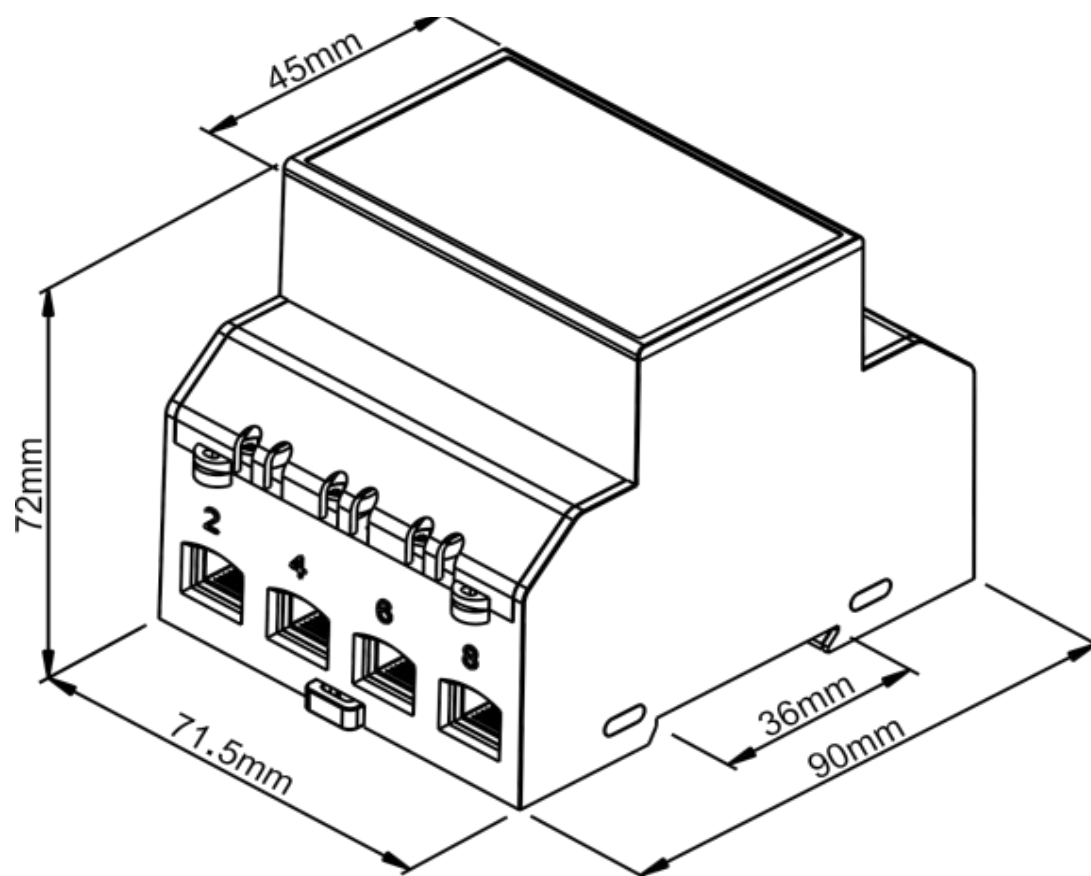
4. Description



	6299-001	6299-002 / 002-01 /003	6299-004/005
A	Impulse indication for active energy	Impulse indication for active energy	Impulse indication for active energy
B	Impulse indication for reactive energy	Impulse indication for reactive energy	Impulse indication for reactive energy
C	IR	IR	IR
D	Left Button for page scrolling	Left Button for page scrolling	Left Button for page scrolling
E	Right button for page setting and scrolling	Right Button for page setting and scrolling	Right Button for page setting and scrolling
15	S01 output for active energy (default) +	S01 output for active energy (default) +	S01 output for active energy (default) +
16	S01 output for active energy (default) -	S01 output for active energy (default) -	S01 output for active energy (default) -
17	S02 output for reactive energy (default) +	S02 output for reactive energy (default) +	DI input <5VDC, current<1.5mA Contact status closed: register 0x101D = 0 Contact status open: register 0x101D = 1
18	S02 output for reactive energy (default) -	S02 output for reactive energy (default) -	
19	N.a.	RS-485-A	RS-485-A
20	N.a.	RS-485-B	RS-485-B

	6299-006/007	6299-008/009
A	Impulse indication for active energy	Impulse indication for active energy
B	Impulse indication for reactive energy	Impulse indication for reactive energy
C	IR	IR
D	Left Button for page scrolling	Left Button for page scrolling
E	Right button for page setting and scrolling	Right Button for page setting and scrolling
15	S01 output for active energy (default) +	S01 output for active energy (default) +
16	S01 output for active energy (default) -	S01 output for active energy (default) -
17	S02 output for reactive energy (default) +	DI input <5VDC, current<1.5mA Contact status closed: register 0x101D = 0 Contact status open: register 0x101D = 1
18	S02 output for reactive energy (default) -	
19	Mbus-A	Mbus-A
20	Mbus-B	Mbus-B

5. Meter dimensions



Dimension description :

Length : 90 mm

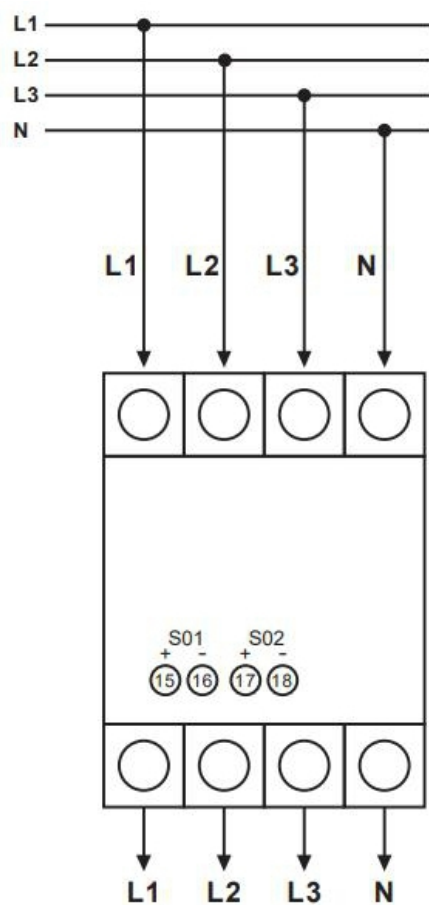
Width : 71.5 mm

Height : 72 mm

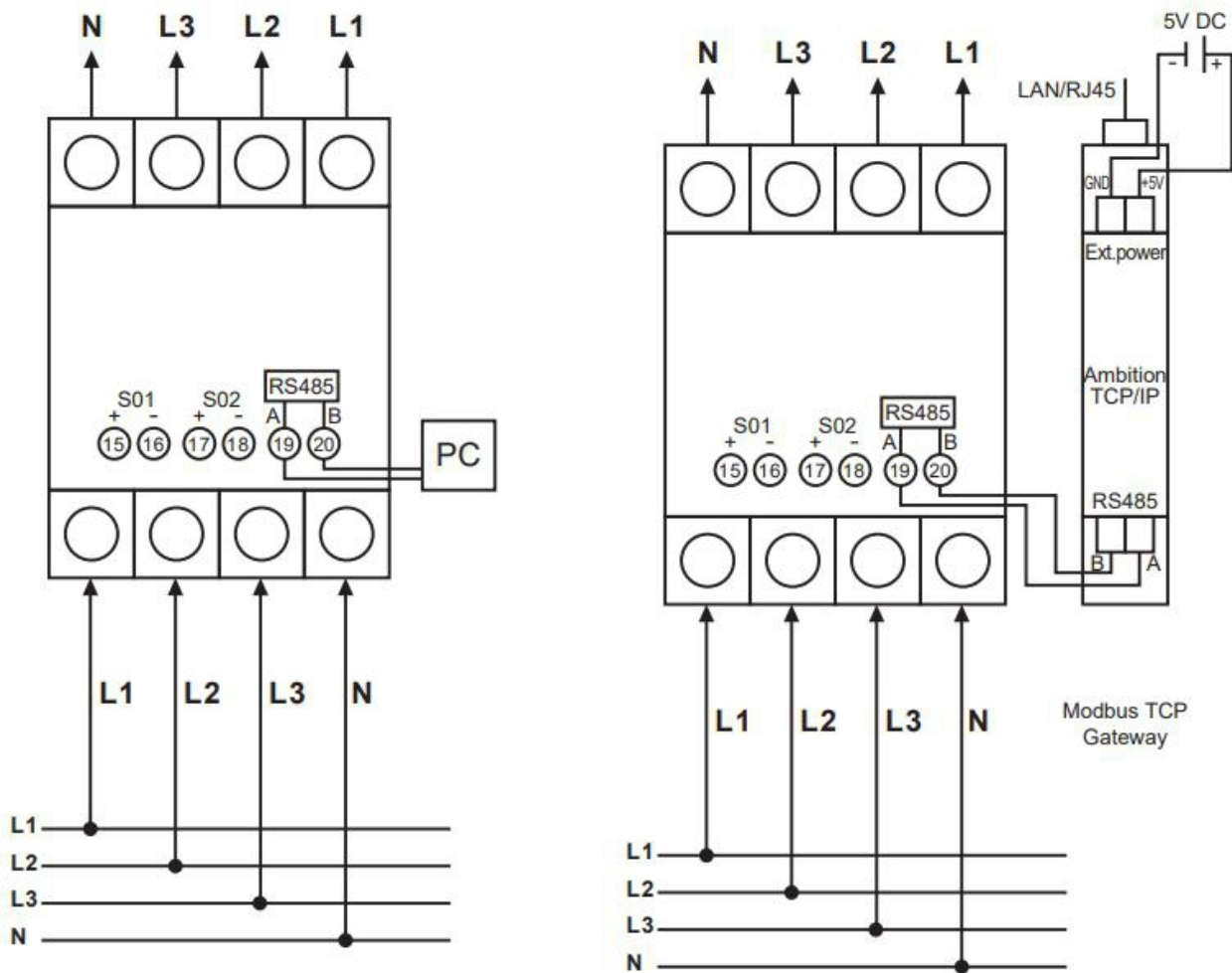
Weight : 0.314kg(net)

6. Wiring connection

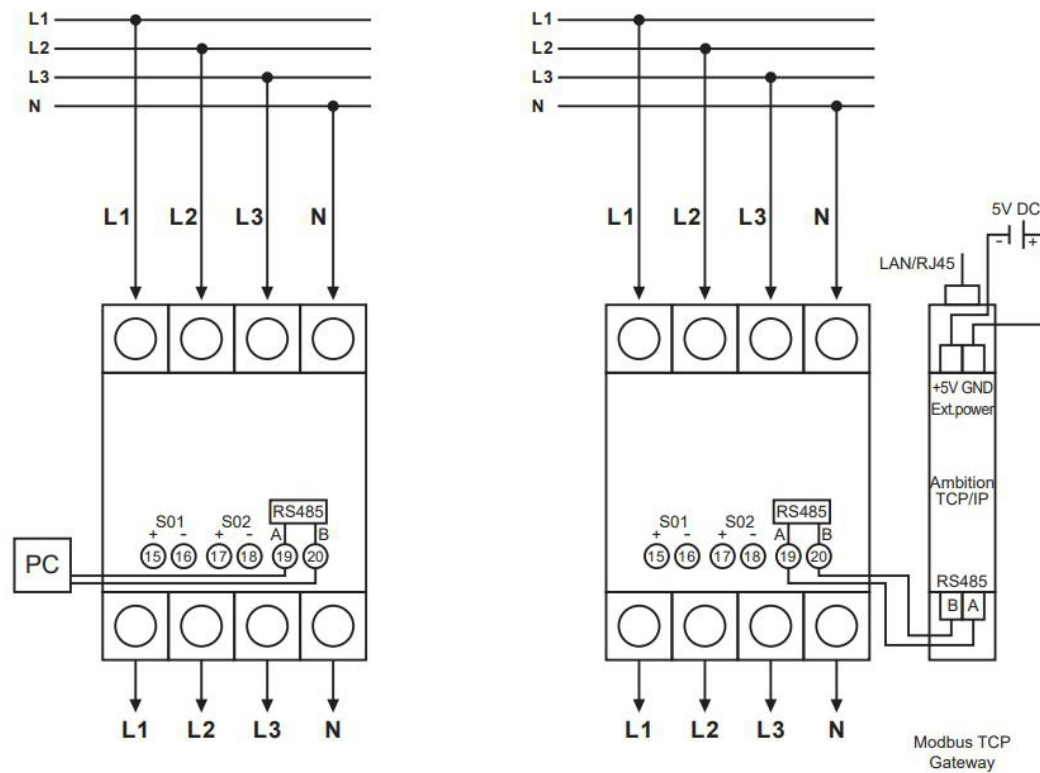
6299-001



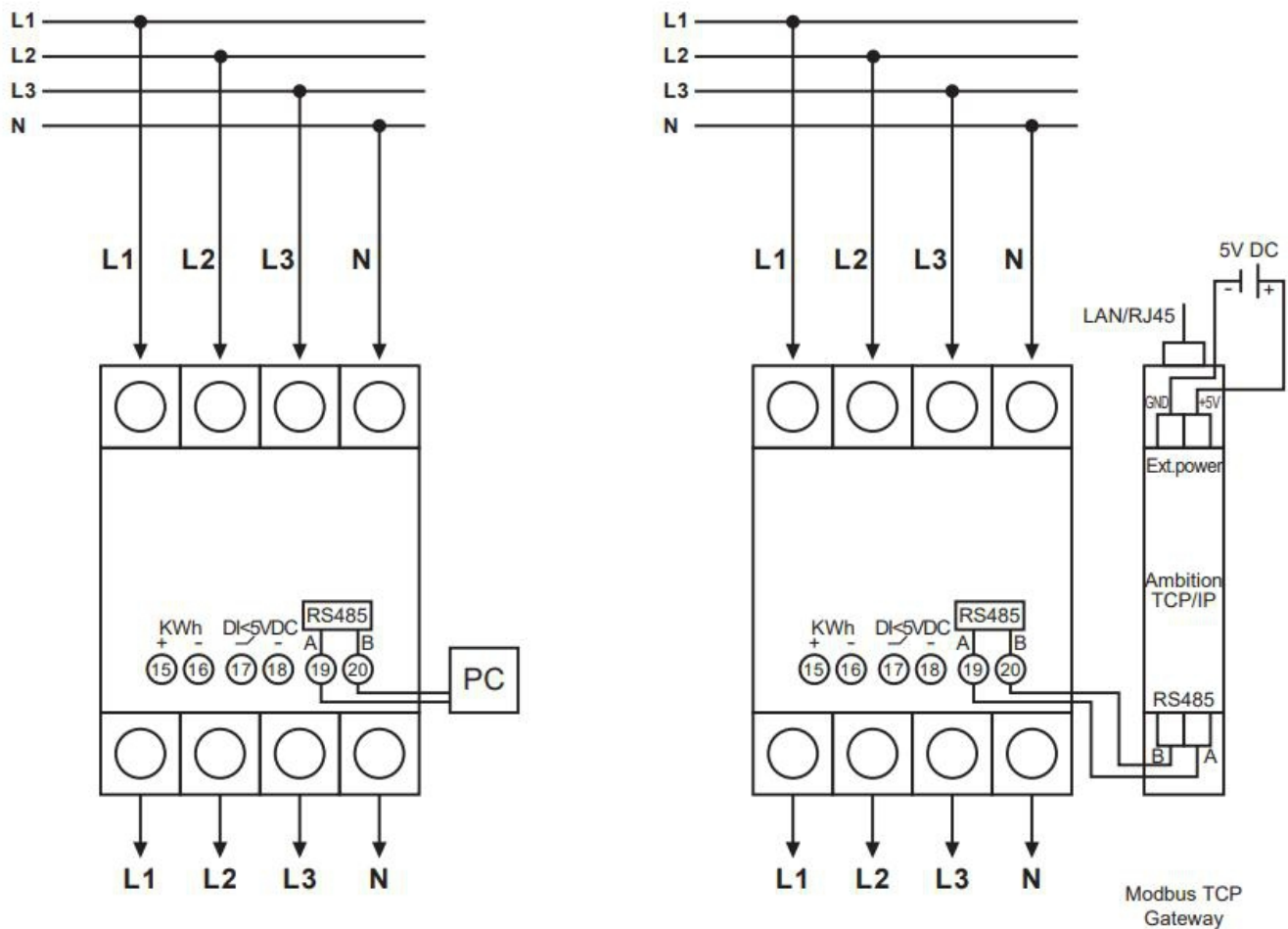
Note: S01 is S0 output for kWh or Active/reactive forward kWh optional
S02 is S0 output for kvarh or Active/reactive reverse kWh optional



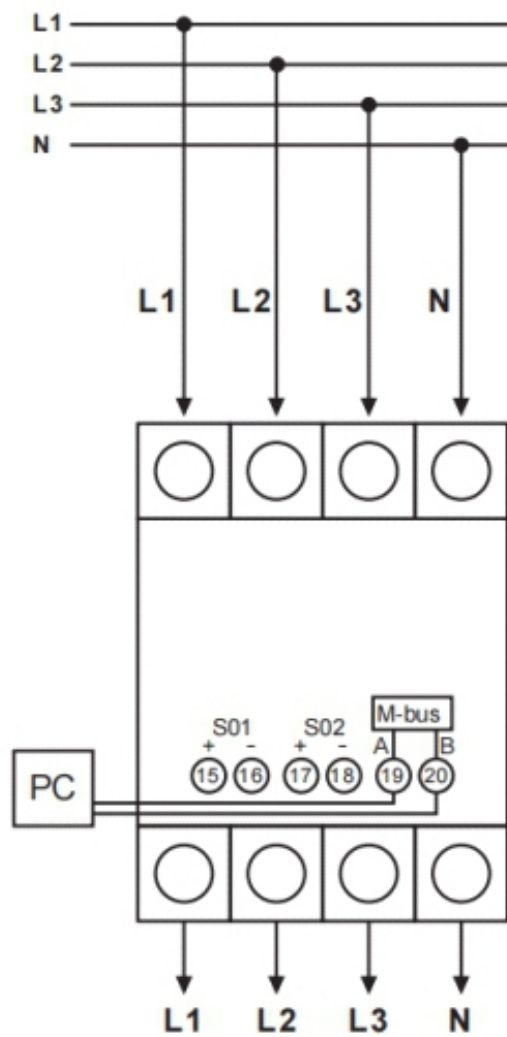
Note: S01 is S0 output for kWh or Active/reactive forward kWh optional
 S02 is S0 output for kvarh or Active/reactive reverse kWh optional
 RS485 Modbus: communicate with PC software or Modbus TCP Gateway



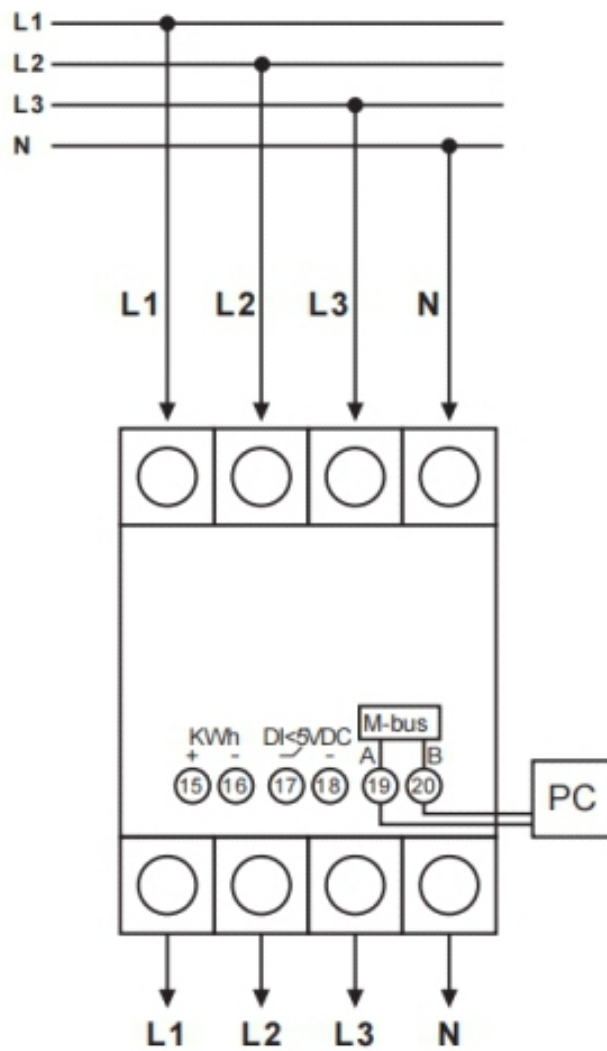
Note: S01 is S0 output for kWh or Active/reactive forward kWh optional
 S02 is S0 output for kvarh or Active/reactive reverse kWh optional
 RS485 Modbus: communicate with PC software or Modbus TCP Gateway



Note: S0 is S0 output for kWh
 DI input <5VDC, current<1.5mA
 Contact status closed: register 0x101D = 0 Contact status open: register 0x101D = 1
 RS485 Modbus: communicate with PC software or Modbus TCP Gateway



Note: S01 is S0 output for kWh or Active/reactive forward kWh optional
S02 is S0 output for kvarh or Active/reactive reverse kWh optional
M-bus communicate with PC software



Note: S0 is S0 output for kWh
 DI input <5VDC, current<1.5mA
 Contact status closed: register 0x101D = 0
 Contact status open: register 0x101D = 1
 M-bus communicate with PC software

7. Safety instructions

Information for your own Safety and Exclusion of liability

This short manual does not contain every applicable safety regulation for using this meter. Also it might be required because of company, local government regulations or (inter)national laws to take additional measures. However, it does contain information which must be adhered to for your own personal safety and to avoid damage to the equipment. This information is highlighted by a warning triangle with an exclamation mark or a lightning bolt depending on the severity of the warning.



Warning

Means that failure to observe the instruction can result in death, serious injury or considerable material damage.



Caution

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

We have checked the contents of this manual, and every effort has been made to ensure that the descriptions are as accurate as possible. However, deviations from the description cannot be completely ruled out, so that no liability can be accepted for any errors or omissions in the information given. The data in this manual is checked regularly and the necessary corrections will be included in subsequent editions. If you have any suggestions, please let us know.

Qualified personnel

Installation and operation of the device described in this manual may only be performed by qualified personnel. Only people that are authorized to install, connect and use this device, who have the proper knowledge about labeling and grounding electrical equipment and circuits and can do so in accordance with local (safety) regulations, are considered qualified personnel in this manual.

Use for the intend purpose
The device may only be used for the application cases specified in the catalog and the user manual and only in connection with devices and components recommended and approved by inepro Metering.
Exclusion of liability
We have checked the contents of this publication and every effort has been made to ensure that the descriptions are as accurate as possible. However, deviations from the description cannot be completely ruled out, so that no liability can be accepted for any errors or omissions in the information given. The data in this manual is checked regularly and the necessary corrections will be included in subsequent editions. If you have any suggestions, please let us know.
Attention
• Case is sealed, do not open the meter! No warranty if case is opened or warranty seal is removed. • The meter should be installed indoors or in the outdoor electric meter box. • The meter is intended to be installed in a Mechanical Environment 'M1', with Shock and Vibrations of low significance, as per 2014/32/ EU Directive. • The meter is intended to be installed in Electro - magnetic Environment 'E2' as per 201432/ EU Directive.

8. Copyright

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All rights reserved, particularly for pending or approved patents award or registered trademarks.

General Warning

After removing the packaging make sure the integrity of the unit. If in doubt don't use the equipment and contact technical staff.

Mounting of electric appliances must be carried out only by skilled electricians.

It is imperative to observe the generally applicable safety measures.

In case of failure and/or malfunctioning of the device, turn off it. For any repair only contact technical staff. Failure to comply with the above may compromise the device safety.

Warranty

The manufacturer will repair or exchange the products while the lead seal is still exited, within 18 months, when discovering the products not accordance with the technical specification.

9. Technical support

For any questions about our products please contact:

inepro Metering
Pondweg 7
2153 PK Nieuw Vennep
The Netherlands

Tel: +31 (0) 252744028

support@dztechnik.com

10 Trouble shooting:

If the meter happens the error in follow table, the only way is to replace the EEP.

Error Form	Error Code
The data in the main memory + the data error in the backup area	od
The data error in the main memory area	40
The data error in the backup area	20
The decimal data error	10
The decimal data + the data error in the backup area	30
The data in the main memory + the decimal data error	50
New EEP	1d

Note:

☐ When setting the tariff time period for one day, the end time is 23:59 and cannot be set to 24:00.

Appendix 1- Tariff function

1. For the meter of 6299-004 and 6299-005, there is a tariff switch in the meter. If you switch on, the tariff of the meter cannot use, and will use the customer's tariff via RS485 (DI input<5V DC).
2. For the meter of 6299-003 and 6299-005, there are 4 tariffs in the meter.
Now, introduce of how to set the Tariff, it is divided into 4 parts.

Part 1: General introduction

The Tariff are divided into 4 tariffs and 8-time periods.

The time periods are divided into workday time periods, weekend (Saturday and Sunday) time periods, and holiday time periods. The priority of different time periods is different, followed by holidays, weekends, and working days. When running the electricity meter, priority is given to determining whether it is a holiday. If it is a holiday, run the holiday timetable. If it is not a holiday, run the weekend timetable. If it is neither a holiday nor a weekend, run the working day timetable.

Part 2: General introduction

Set working day period (requires one-time writing of function code 10H).

For example:

send :01 10 81 00 00 10 20 01 1E 00 01 02 1E 00 02 03 1E 00 03 04 1E 00 04 05 1E 00 01 06 1E 00 02 07 1E 00 03 08 1E 00 04 8C DE

Data analysis:

01 // Communication ID

10 // Function code

81 00 // Starting register address

00 10 // Register length

20 // Data length

01 1E 00 01 // 01:30 Tariff 1 T1

02 1E 00 02 // 02:30 Tariff 2 T2

03 1E 00 03 // 03:30 Tariff 3 T3

04 1E 00 04 // 04:30 Tariff 4 T4

05 1E 00 01 // 05:30 Tariff 1 T1

06 1E 00 02 // 06:30 Tariff 2 T2

07 1E 00 03 // 07:30 Tariff 3 T3

08 1E 00 04 // 08:30 Tariff 4 T4

8C DE // checksum

When neither weekend nor holiday:

From 01:30 to 2:30 Operate tariff 1, T1 Energy increase,

From 02:30 to 3:30 Operate tariff 2, T2 Energy increase,

From 03:30 to 4:30 Operate tariff 3, T3 Energy increase,

From 04:30 to 5:30 Operate tariff 4, T4 Energy increase,

From 05:30 to 6:30 Operate tariff 1, T1 Energy increase,

From 06:30 to 7:30 Operate tariff 2, T2 Energy increase,

From 07:30 to 8:30 Operate tariff 3, T3 Energy increase,

From 08:30 to 1:30 Operate tariff 4, T1 Energy increase.

Data analysis:

```

01 // Communication ID
10 // Function code
81 40 // The starting register address
00 64 // The register length
C8 // The data length

01 01 // 1st January
01 02 // 2nd January
01 03 // 3rd January
01 04 // 4th January
0A 05 // 5th October
0A 06 // 6th October
0A 07 // 7th October
0A 08 // 8th October
0C 09 // 9th December
0C 0A // 10th December
0C 0B // 11th December
0C 0C // 12th December

```

[illegible]

Note: If we need any function of the meter via code, we'd better select the software of PXC-D513081 to change.

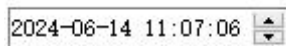
Appendix 2- Battery and RTC instruction

1. There are Li-battery and RTC (real time clock) inside the meters of 6299-003 and 6299-005.
2. The battery only supplies power to the clock all time, it is a non-removable and non-rechargeable battery. The lifetime of the battery is more than 10 years in the theoretical case (sustain work on 10 years).
3. There is no daylight-saving function in the clock of the meter, you need to set the new time if daylight saving changes is applicable in your country.

If you need to set a new time, you must be use 10 control code to write at one time, the control code can be found in appendix 3.

The meter can only remember the time, no data storage function if the meter is not connected to power. But the time data retention more than 10 years in the theoretical case.

4. Introduce of how to set the time of the meter:
For example: now, we set a time, see the picture:



When send the control code and receive code as below, indicate setting successful.

Send: 01 10 10 07 00 04 08 00 24 06 14 05 11 07 06 FB BD
Receive: 01 10 10 07 00 04 74 CB

Data analysis:

01 // Communication ID
10 // Function code
10 07 // The starting register address
00 04 // The register length
08 // The data length
00 24 06 14 // YYMMDD
05 // week
11 07 06 // HHMMSS
FB BD // checksum (note: When entering the code, the checksum code is not entered)

Then, the LCD screen of the meter will display the time which we send.



Appendix 3 – Demand type and period

Max Demand :

Max demand is not an actual max demand but an average of a time interval mode or slip mode. Each record can be set to a time range of 1 to 30 minutes. Every time range of the meter is recording the active power. If we set the time range to 20 minutes the first Max demand value is the average of this 20 minutes. If the next 20 minutes the max demand is higher, it will overwrite the previous value for a new value. If the 3rd max demand is lower than the present max demand, it will not overwrite the max demand.

1. There are two type of demand : interval (0) and slip (1).

a. Interval mode (the code is 0):

Every time range of the active power is temporarily stored in the meter.

The average max demand is calculated from the temporarily stored energy divided by the number of minutes of the programmed time range.

The next max demand value is calculated of the temporarily stored active power for a new time range.

Example, time range is 5 minutes, detail in below table:

Interval mode (time range is 5 min) The yellow part is the value involved in the calculation)	time(min)	1	2	3	4	5		value									
	power(W)	100	200	300	400	500		300									
	time(min)	1	2	3	4	5	6	7	8	9	10		value				
	power(W)	100	200	300	400	500	600	700	800	900	1000		800				
	time(min)	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	value
	power(W)	100	200	300	400	500	600	700	800	900	1000	1100	1200	1300	1400	1500	1300

b. Slip mode (the code is 1):

Every one minute the active power is temporarily stored in the meter.

The average max demand is calculated from the temporarily stored energy divided by the number of minutes of the programmed time range.

The next max demand value is calculated of the temporarily stored active power, plus 1-minute new date and minus the first minute recorded date.

Example time range is 5 minutes, detail in below table:

slip mode (time range is 5 min) The yellow part is the value involved in the calculation)	time(min)	1	2	3	4	5		value									
	power(W)	100	200	300	400	500		300									
	time(min)	1	2	3	4	5	6		value								
	power(W)	100	200	300	400	500	600		400								
	time(min)	1	2	3	4	5	6	7		value							
	power(W)	100	200	300	400	500	600	700		500							
	time(min)	1	2	3	4	5	6	7	8		value						
	power(W)	100	200	300	400	500	600	700	800		600						
	time(min)	1	2	3	4	5	6	7	8	9		value					
	power(W)	100	200	300	400	500	600	700	800	900		700					
	time(min)	1	2	3	4	5	6	7	8	9	10		value				
	power(W)	100	200	300	400	500	600	700	800	900	1000		800				

2. Demand period:

The demand period of the meter can set time range is 1~30 minutes via button, Modbus and Infrared.

The default demand period is 15 minutes.