

DZT

Deutsche Zähler Technik



User manual

DZT 6299

Version 1.00 | Aug-2024

Subject to change without prior notice

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

Meter of contents

1. Specifications	4
2. Meter series details	5
3. LCD Display Layout	6
4. Description	16
5. Meter dimensions	17
6. Wiring connection	18
7. Safety instructions	22
8. Copyright	24
9. Technical support	25
10. Trouble shooting	26
Appendix 1- Tariff function	27
Appendix 2- Battery and RTC instruction	30
Appendix 3- Demand type and period	31
Appendix 4- Modbus Register maps	32

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
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

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

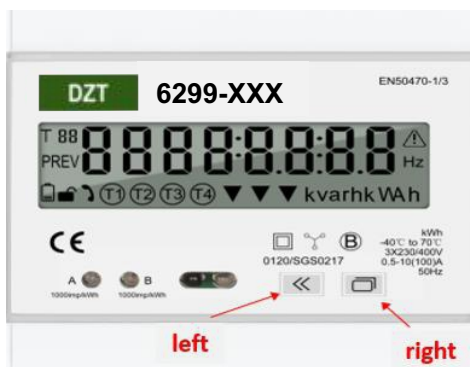
The 6299 series has a maximum 75 scrolling display pages that can be set via Modbus or IR software.

1) Button setting :

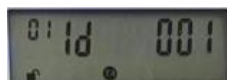
Each model meter has 2 touch buttons, see the below picture. When you power on the meter, it will enter the scroll page after full display.

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.



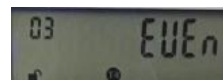
- Under anyone scrolling page, hold the right button for more than 3 seconds and enter 4 digits correct password to enter setting page. Hold the right for more than 3 seconds in each page, the corresponding value will blink, then can select each value, confirm each value by holding right button for 3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



Modbus ID, scroll with button to select 1~247



Baud rate, scroll with button to select 9600/19200/38400/115200

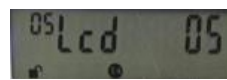


Parity, scroll with button to select even/none/odd.

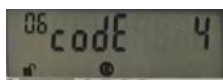


Stop bit, scroll with button to select 1/2 bit.

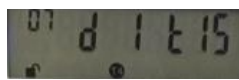
There is no above 4 pages in 6299-001.



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



Reset the reactive resettable energy

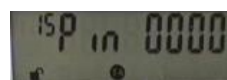


Reset the active maximum demand



Reset the reactive maximum demand

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.

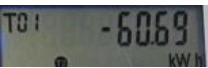
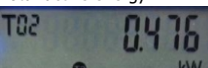
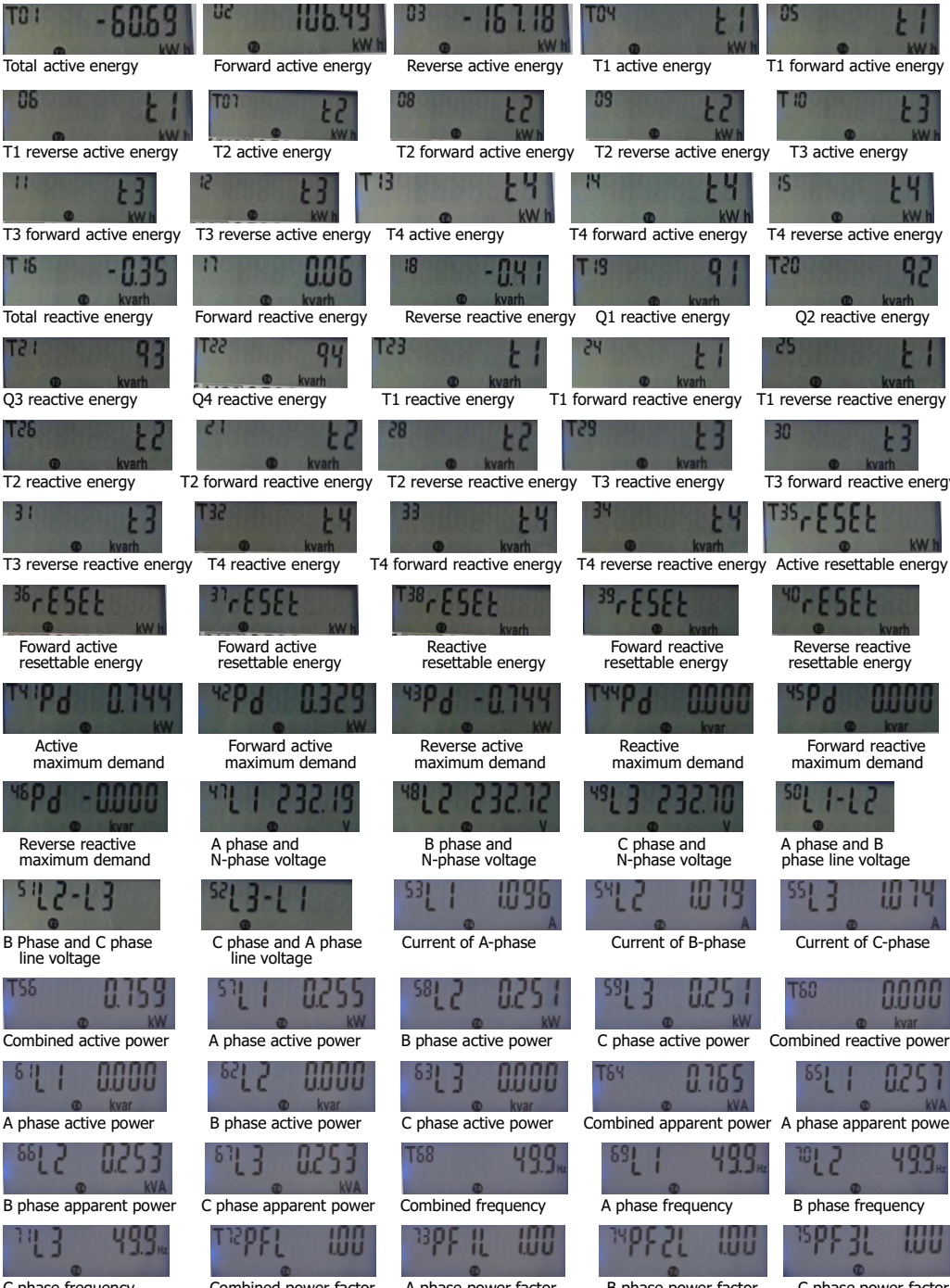
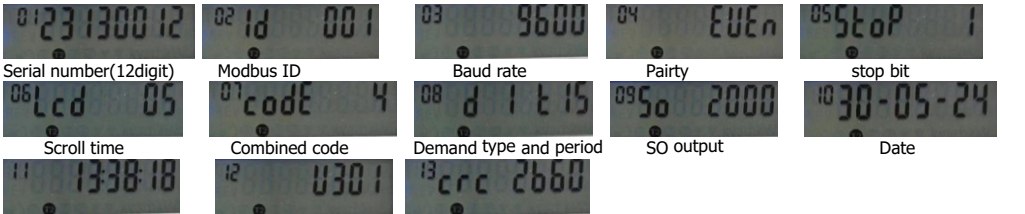


Password
0000-9999 can be set (default"0000").



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
<p>Scroll page.</p> <p>1. Only 6299-003 and 6299-005 can set the maximum scroll page number is 75 pages (depending on the setting).</p> <p>2. Other meters of 6299 can set the maximum scroll page is 51 pages.</p> <p>3. By default we have the following registers in the LCD scroll.</p>  <p>Total active energy</p>  <p>Combined active power</p>	 <p>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, 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</p>
<p>Phase energy page</p>	<p>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.</p>
<p>Information page</p> <p>Only provide check, can't change</p>	 <p>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</p>

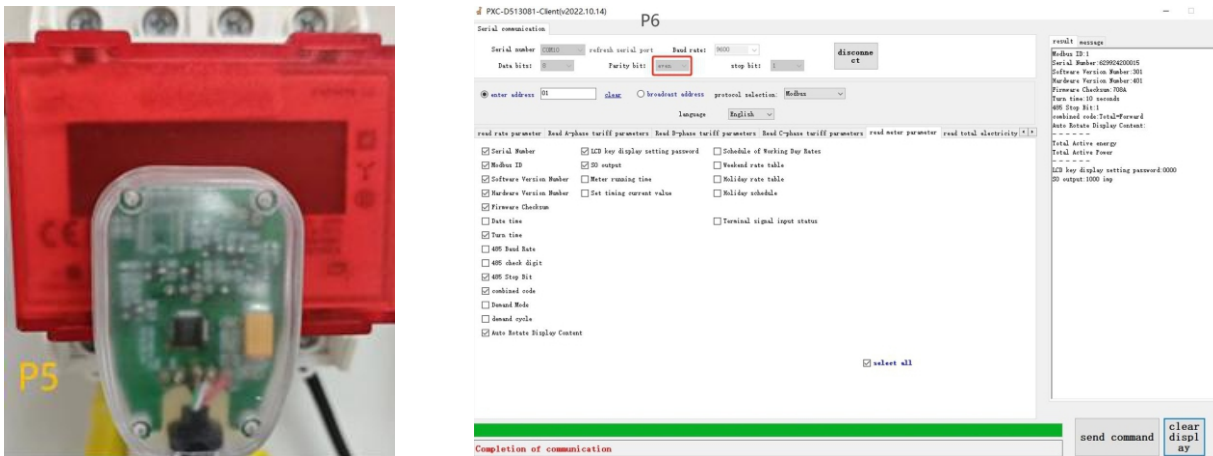
2) Infra-red setting :

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

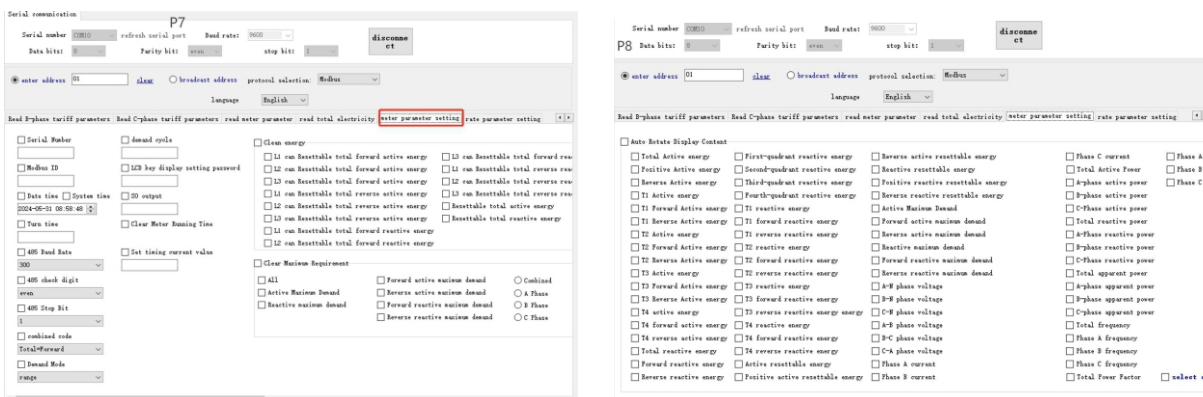
- (1) See the "P1", you will find the infrared auxiliary tools, then connect the meter in the box and the IR eye adapter covers the front of the meter, we can see 2 infrared signal lights via the adapter hole, see the "P3".



- (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.

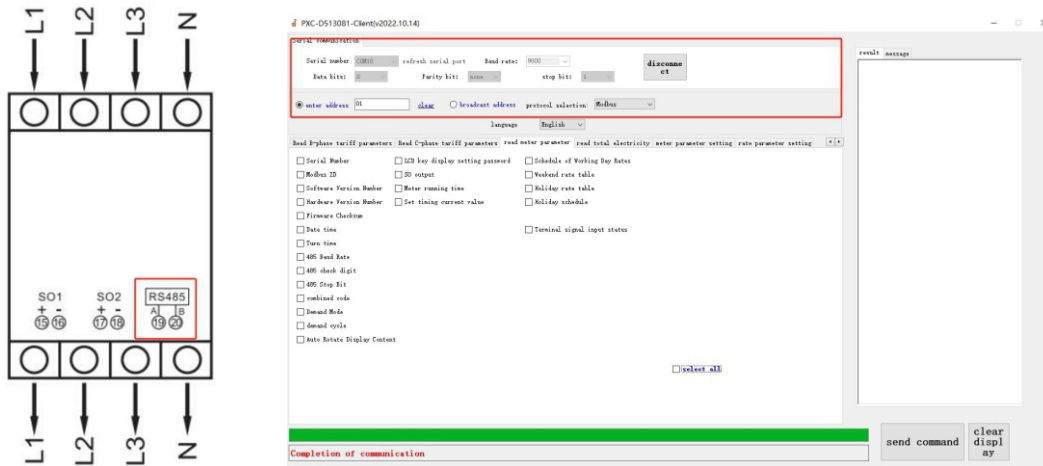


Notice: If you need to set the meter parameter, click the red area of picture 7, select each option which we need, then click "send command", the resulting item will display success. We can also set the scrolling display or other parameters in the same way.



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.



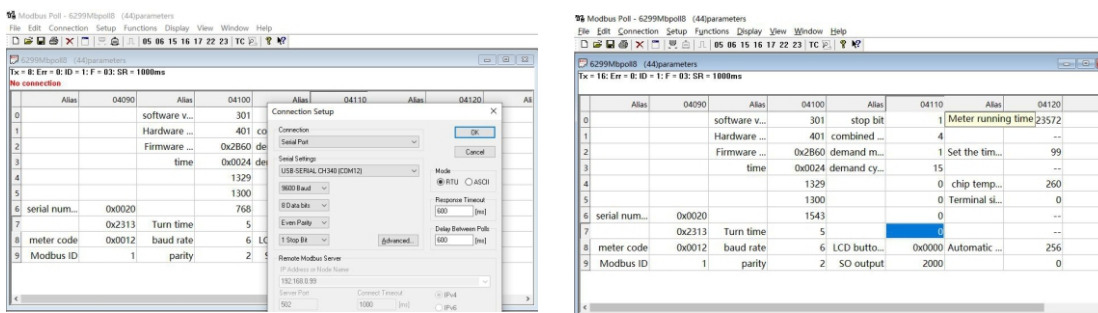
Open the Modbus software, the connection parameters of red area are all same the meter, we can select each item to read or set. Due to use the software same as Infrared, the method of operating is the same.

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 parity
- 1stop bit

The baud rate can be set to values 19200, 38400, 115200. The parity 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.

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 000000.00	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 000000.00	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 000000.00	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 000000.00	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 000000.00	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 000000.00	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 000000.00	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 000000.00	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 000000.00	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 000000.00	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

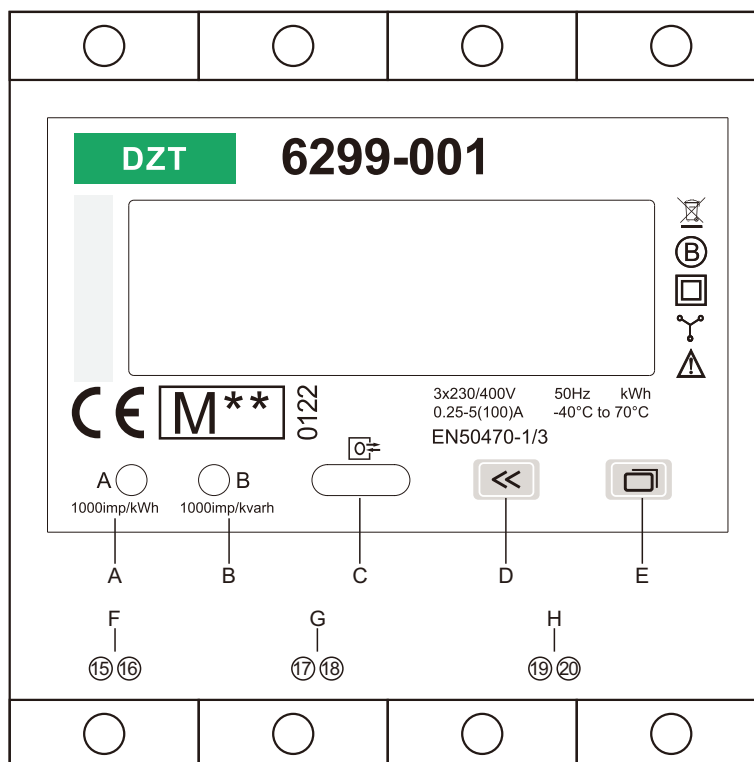
LCD information page

Page	Content	Unit	Description	Remark
1	Serial number		000000000000,12 digit	The same DLT 645 ID
2	Modbus ID		1-247	
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

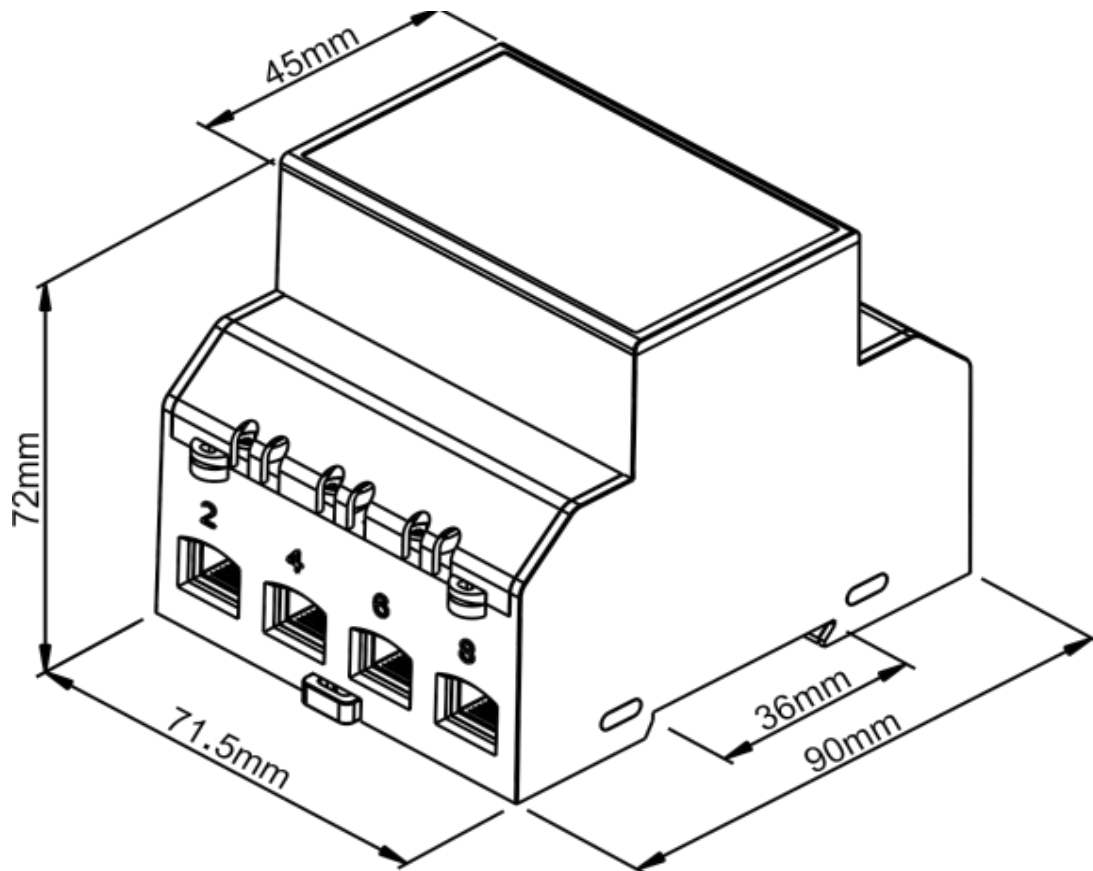
Page	Content	Unit	Description	Remark
1	Modbus ID		1-247	Press the right button for more than 3 seconds to input the correct password
2	Baud rate		9600/19200/38400/115200	
3	Parity		Odd/Even/None	
4	Stop bit		1/2bit	
5	Scrolling time		5-99 seconds, 0 disables scroll display	
6	Combined code	S	1=Total=Forward 2=Total=Reverse 3=Total=Forward+Reverse 4=Total=Forward - Reverse	
7	DemandType and 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

5. Meter dimensions

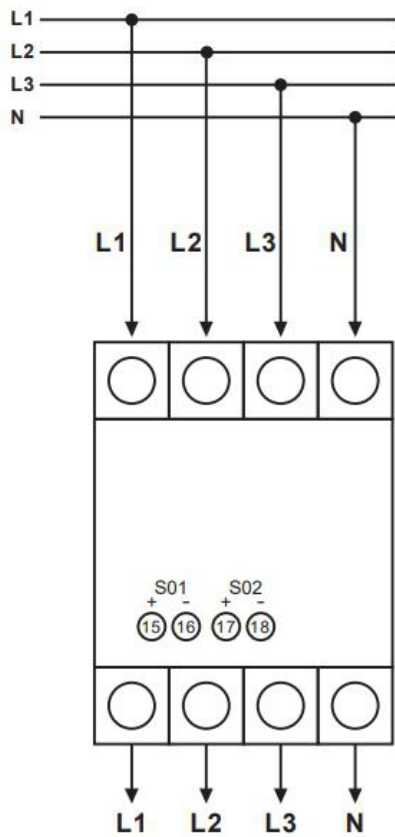


Dimensiondescription

Length : 90 mm
Width : 71.5 mm
Height : 72 mm
Weight: 0.314kg(net)

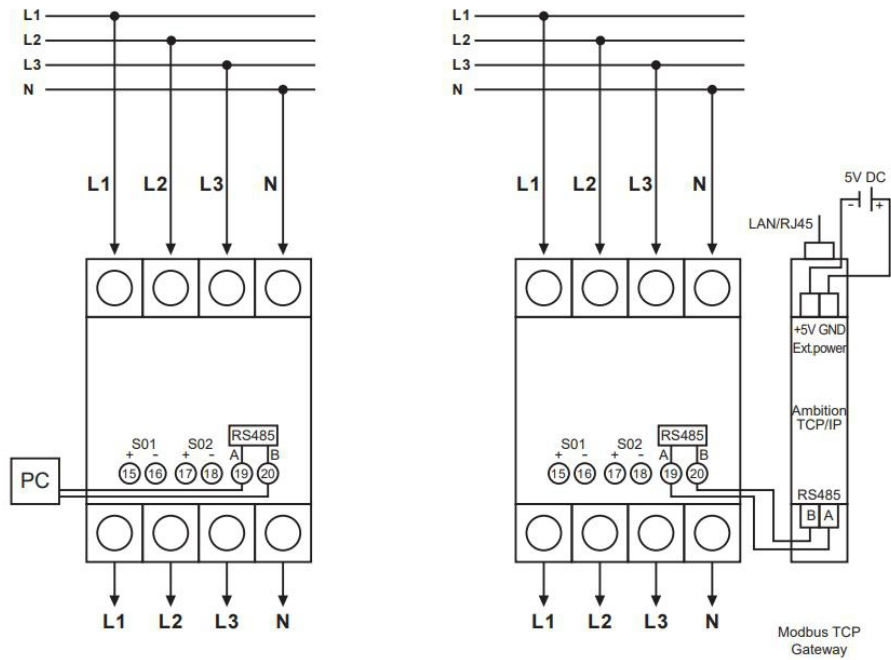
6. Wiring connection

6299-001



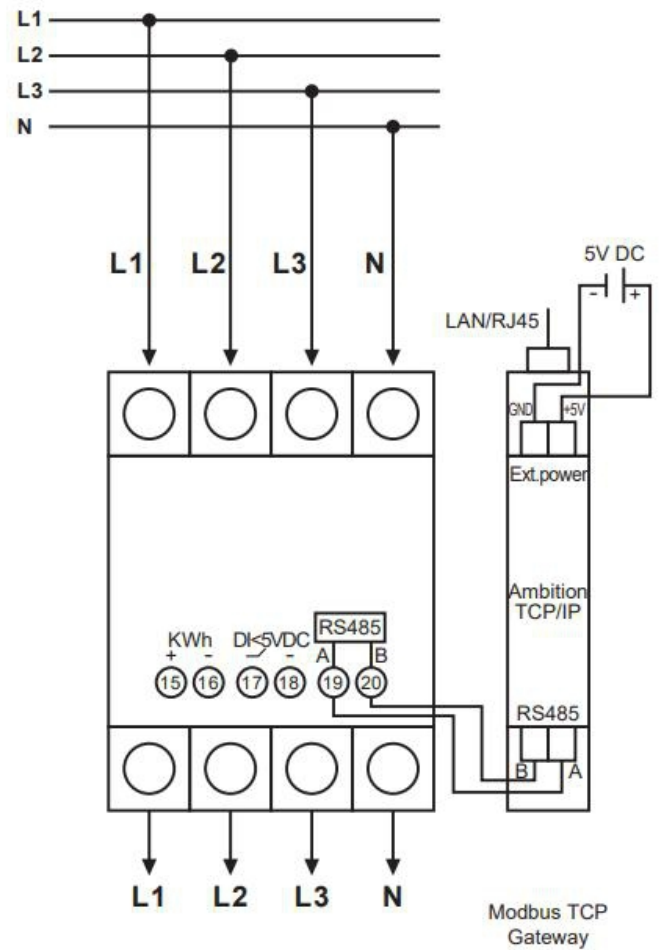
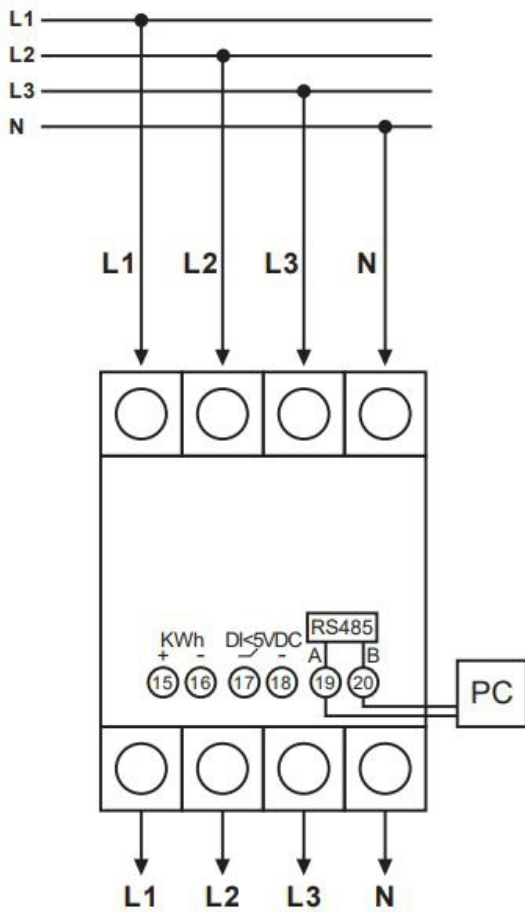
Note: S01 is S0 output for kWh or Active/reactive forward kWh optional
S02 is S0 output for kvarh or Active/reactive reverse kWh optional

6299-002 / 6299-003



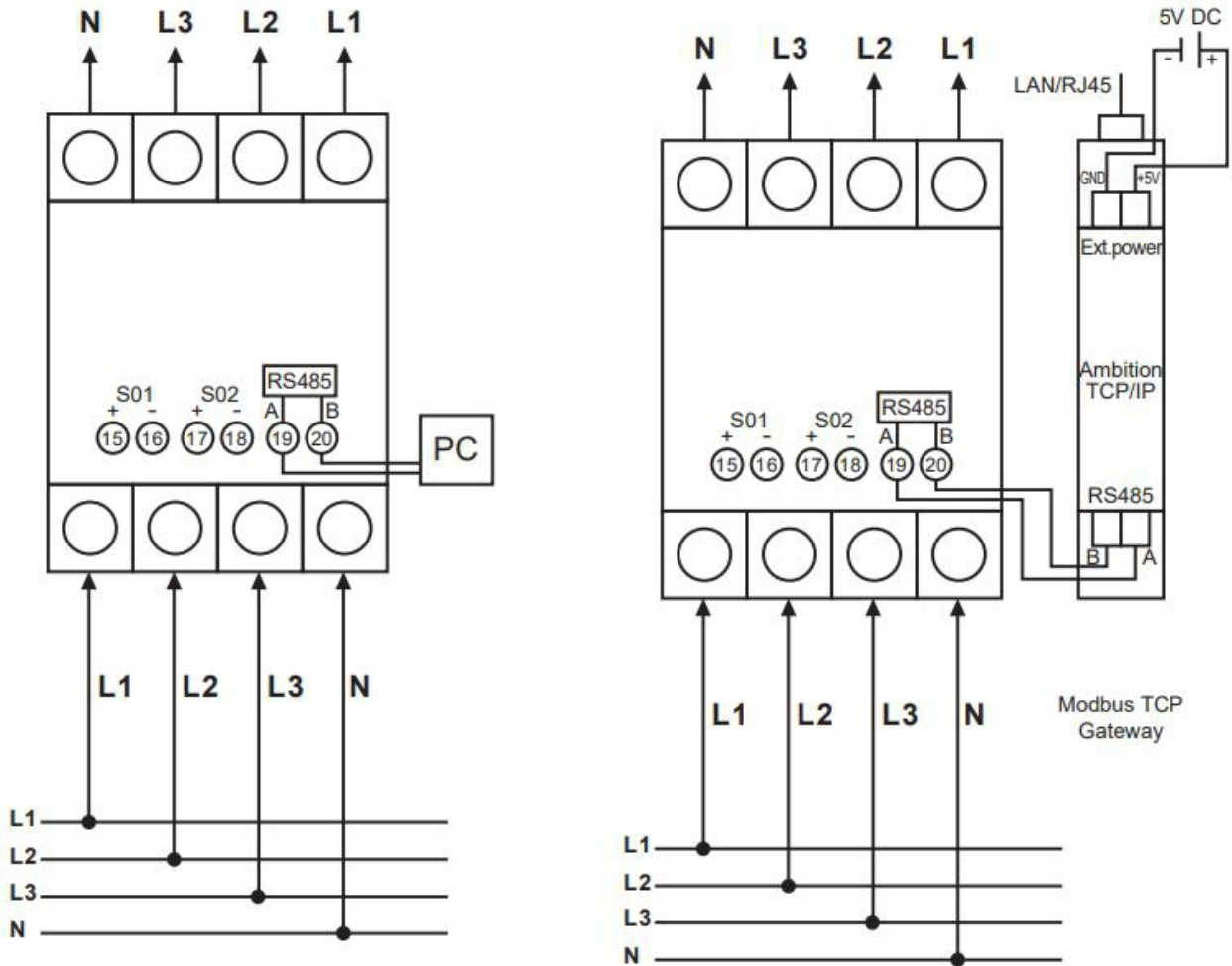
Note: S01 is S0 output for kWh or Active/reactive forward kWh optional
 S02 is S0 output for kvarh or Active/reactive reverse kWh optional
 RS485 Modbus: communicate with PC software or Modbus TCP Gateway

6299-004 / 6299-005



- 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

6299-002-01



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

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 indoor 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 2014/32/ EU Directive.

8. Copyright

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It is prohibited to pass on or copy this document or to use or disclose its contents without our express permission. Any duplication is a violation of the law and subject to criminal and civil penalties.

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.

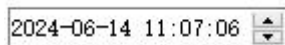
Appendix 2- Battery and RTC instruction

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 // YYYYMMDD
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.

Appendix 4 - Modbus Register maps

1. Instantaneous parameters

NO.	Modbus DZT register map						Remark
	Address	R/W	length	Data description	unit	content	
1	0400	R	2	INT32(3+3)	V	L1 phase and N-phase voltage	voltage
2	0402					L2 phase and N-phase voltage	
3	0404					L3 phase and N-phase voltage	
4	0406					L1 Phase and L2 Phase line voltage	
5	0408					L2 Phase and L3 Phase line voltage	
6	040A					L3 Phase and L1 Phase Line Voltage	
7	040C					L-N voltage average Value	
8	040E					L-L voltage average Value	
9	0410	R	2	INT32(2+3)	A	Current of L1-phase	current
10	0412					Current of L2-phase	
11	0414					Current of L3-phase	
12	0416					Current of N	
13	0418					Three-phase Vector Sum Current	
14	041A	R	2	INT32(5+0)	W	L1 phase active power	active power
15	041C					L2-phase active power	
16	041E					L3-phase active power	
17	0420					Combined active power	
18	0422	R	2	INT32(5+0)	VA	L1 phase apparent power	transparent power
19	0424					L2 phase apparent power	
20	0426					L3 phase apparent power	
21	0428					Combined Apparent Power	
22	042A	R	2	INT32(5+0)	var	L1 Phase reactive power	reactive power
23	042C					L2 phase reactive power	
24	042E					L3 phase reactive power	
25	0430					Combined reactive power	
26	0432	R	1	INT16(2+1)	Hz	L1 phase frequency	frequency
27	0433					L2 phase frequency	
28	0434					L3 phase frequency	
29	0435					Combined frequency	
30	0436	R	1	INT16(1+3)		L1 phase power factor	power factor
31	0437					L2 Phase power factor	
32	0438					L3 Phase power factor	
33	0439					Combined power factor	

NO.	Modbus DZT register map						Remark					
	Address	R/W	Length	Data description	Unit	Content						
34	043A	R	2	INT32(6+1)	W	L1 phase forward active demand	active demand					
35	043C					L2 phase forward active demand						
36	043E					L3 phase forward active demand						
37	0440					Combined Forward Active demand						
38	0442					L1 phase reverse active demand						
39	0444					L2 phase reverse active demand						
40	0446					L3 phase reverse active demand						
41	0448					Combined Reverse Active Demand						
42	044A					L1 phase total active demand						
43	044C					L2 Phase total active demand						
44	044E					L3 Phase total active demand						
45	0450					Combined Active Demand						
46	0452					R		2	INT32(6+1)	var	L1 phase forward reactive demand	reactive demand
47	0454										L2 phase forward reactive demand	
48	0456										L3 phase forward reactive demand	
49	0458	Combined forward reactive demand										
50	045A	L1 phase reverse reactive demand										
51	045C	L2 phase reverse reactive demand										
52	045E	L3 phase reverse reactive demand										
53	0460	Combined reverse reactive demand										
54	0462	L1 phase total reactive demand										
55	0464	L2 phase total reactive demand										
56	0466	L3 phase total reactive demand										
57	0468	Combined total reactive demand										
58	046A	R	2	INT32(6+1)	W		L1 phase forward active maximum demand				active maximum demand	
59	046C						L2 phase forward active maximum demand					
60	046E						L3 phase forward active maximum demand					
61	0470					Combined forward active maximum demand						
62	0472					L1 phase reverse active maximum demand						
63	0474					L2 phase reverse active maximum demand						
64	0476					L3 phase reverse active maximum demand						
65	0478					Combined reverse active maximum demand						
66	047A					L1 phase total active maximum demand						
67	047C					L2 phase total active maximum demand						
68	047E					L3 phase total active maximum demand						
69	0480					Combined total active maximum demand						
70	0482					R	2	INT32(6+1)	var	L1 phase forward reactive maximum demand		reactive maximum demand
71	0484									L2 phase forward reactive maximum demand		
72	0486									L3 phase forward reactive maximum demand		
73	0488	Combined forward reactive maximum demand										
74	048A	L1 phase reverse reactive maximum demand										
75	048C	L2 phase reverse reactive maximum demand										
76	048E	L3 phase reverse reactive maximum demand										
77	0490	Combined reverse reactive maximum demand										
78	0492	L1 phase total reactive maximum demand										
79	0494	L2 phase total reactive maximum demand										
80	0496	L3 phase total reactive maximum demand										
81	0498	Combined total reactive maximum demand										

2. Energy parameters

Modbus DZT register map

NO.	Modbus DZT register map					Remark	
	address	R/W	length	Data description	unit		
1	010E	R	2	INT32(6+2)	kWh	combined energy	
2	0110	R	2	INT32(6+2)			Forward total active energy
3	0112	R	2	INT32(6+2)			T1 total forward active energy
4	0114	R	2	INT32(6+2)			T2 total forward active energy
5	0116	R	2	INT32(6+2)			T3 total forward active energy
6	0118	R	2	INT32(6+2)			T4 total forward active energy
7	011A	R	2	INT32(6+2)			Total reverse active energy
8	011C	R	2	INT32(6+2)			T1 total reverse active energy
9	011E	R	2	INT32(6+2)			T2 total reverse active energy
10	0120	R	2	INT32(6+2)			T3 total reverse active energy
11	0122	R	2	INT32(6+2)			T4 total reverse active energy
12	0124	R	2	INT32(6+2)			Active total energy
13	0126	R	2	INT32(6+2)			T1 total active energy
14	0128	R	2	INT32(6+2)			T2 total active energy
15	012A	R	2	INT32(6+2)			T3 total active energy
16	012C	R	2	INT32(6+2)			T4 total active energy
17	012E	R	2	INT32(6+2)			Total forward reactive energy
18	0130	R	2	INT32(6+2)			T1 total forward reactive energy
19	0132	R	2	INT32(6+2)			T2 total forward reactive energy
20	0134	R	2	INT32(6+2)			T3 total forward reactive energy
21	0136	R	2	INT32(6+2)			T4 total forward reactive energy
22	0138	R	2	INT32(6+2)			Total reverse reactive energy
23	013A	R	2	INT32(6+2)			T1 total reverse reactive energy
24	013C	R	2	INT32(6+2)			T2 total reverse reactive energy
25	013E	R	2	INT32(6+2)			T3 total reverse reactive energy
26	0140	R	2	INT32(6+2)			T4 total reverse reactive energy
27	0142	R	2	INT32(6+2)			Total reactive energy
28	0144	R	2	INT32(6+2)			T1 total reactive energy
29	0146	R	2	INT32(6+2)			T2 total reactive energy
30	0148	R	2	INT32(6+2)			T3 total reactive energy
31	014A	R	2	INT32(6+2)			T4 total reactive energy
32	014C	R	2	INT32(6+2)	The first quadrant Total reactive energy		
33	014E	R	2	INT32(6+2)	T1 first quadrant total reactive energy		
34	0150	R	2	INT32(6+2)	T2 first quadrant total reactive energy		
35	0152	R	2	INT32(6+2)	T3 first quadrant total reactive energy		
36	0154	R	2	INT32(6+2)	T4 first quadrant total reactive energy		
37	0156	R	2	INT32(6+2)	The second quadrant total reactive energy		
38	0158	R	2	INT32(6+2)	T1 second quadrant total reactive energy		
39	015A	R	2	INT32(6+2)	T2 second quadrant total reactive energy		
40	015C	R	2	INT32(6+2)	T3 second quadrant total reactive energy		
41	015E	R	2	INT32(6+2)	T4 second quadrant total reactive energy		
42	0160	R	2	INT32(6+2)	The third quadrant total reactive energy		
43	0162	R	2	INT32(6+2)	T1 third quadrant total reactive energy		
44	0164	R	2	INT32(6+2)	T2 third quadrant total reactive energy		
45	0166	R	2	INT32(6+2)	T3 third quadrant total reactive energy		
46	0168	R	2	INT32(6+2)	T4 third quadrant total reactive energy		
47	016A	R	2	INT32(6+2)	The fourth quadrant total reactive energy		
48	016C	R	2	INT32(6+2)	T1 fourth quadrant total reactive energy		
49	016E	R	2	INT32(6+2)	T2 fourth quadrant total reactive energy		
50	0170	R	2	INT32(6+2)	T3 fourth quadrant total reactive energy		
					T4 fourth quadrant total reactive energy		

NO.	Modbus DZT register map						Remark
	Address	R/W	Length	Data description	Unit	Content	
51	0500	R	2	INT32(6+2)	kWh	L1 phase total active energy	
52	0502					L1 phase T1 total active energy	
53	0504					L1 phase T2 total active energy	
54	0506					L1 phase T3 total active energy	
55	0508					L1 phase T4 total active energy	
56	050A					L1 phase forward active energy	
57	050C					L1 phase T1 forward active energy	
58	050E					L1 phase T2 forward active energy	
59	0510					L1 phase T3 forward active energy	
60	0512					L1 phase T4 forward active energy	
61	0514					L1 phase reverse active energy	
62	0516					L1 phase T1 reverse active energy	
63	0518					L1 phase T2 reverse active energy	
64	051A					L1 phase T3 reverse active energy	
65	051C					L1 phase T4 reverse active energy	
66	051E	R	2	INT32(6+2)	kvarh	L1 phase total reactive energy	L1 phase energy
67	0520					L1 phase T1 total reactive energy	
68	0522					L1 phase T2 total reactive energy	
69	0524					L1 phase T3 total reactive energy	
70	0526					L1 phase T4 total reactive energy	
71	0528					L1 phase forward reactive energy	
72	052A					L1 phase T1 forward reactive energy	
73	052C					L1 phase T2 forward reactive energy	
74	052E					L1 phase T3 forward reactive energy	
75	0530					L1 phase T4 forward reactive energy	
76	0532					L1 phase reverse reactive energy	
77	0534					L1 phase T1 reverse reactive energy	
78	0536					L1 phase T2 reverse reactive energy	
79	0538					L1 phase T3 reverse reactive energy	
80	053A					L1 phase T4 reverse reactive energy	
81	053C					L1 phase first quadrant total reactive energy	
82	053E					L1 phase T1 first quadrant total reactive energy	
83	0540					L1 phase T2 first quadrant total reactive energy	
84	0542					L1 phase T3 first quadrant total reactive energy	
85	0544					L1 phase T4 first quadrant total reactive energy	
86	0546					L1 phase second quadrant total reactive energy	
87	0548					L1 phase T1 second quadrant total reactive energy	
88	054A					L1 phase T2 second quadrant total reactive energy	
89	054C					L1 phase T3 second quadrant total reactive energy	
90	054E					L1 phase T4 second quadrant total reactive energy	
91	0550					L1 phase third quadrant total reactive energy	
92	0552					L1 phase T1 third quadrant total reactive energy	
93	0554					L1 phase T2 third quadrant total reactive energy	
94	0556					L1 phase T3 third quadrant total reactive energy	
95	0558					L1 phase T4 third quadrant total reactive energy	
96	055A					L1 phase fourth quadrant total reactive energy	
97	055C					L1 phase T1 fourth quadrant total reactive energy	
98	055E					L1 phase T2 fourth quadrant total reactive energy	
99	0560					L1 phase T3 fourth quadrant total reactive energy	
100	0562	L1 phase T4 fourth quadrant total reactive energy					

NO.	Modbus DZT register map						Remark
	address	R/W	length	Data description	unit	Content	
101	0564	R	2	INT32(6+2)	kWh	L2 phase total active energy	
102	0566					L2 phase T1 total active energy	
103	0568					L2 phase T2 total active energy	
104	056A					L2 phase T3 total active energy	
105	056C					L2 phase T4 total active energy	
106	056E					L2 phase forward active energy	
107	0570					L2 phase T1 forward active energy	
108	0572					L2 phase T2 forward active energy	
109	0574					L2 phase T3 forward active energy	
110	0576					L2 phase T4 forward active energy	
111	0578					L2 phase reverse active energy	
112	057A					L2 phase T1 reverse active energy	
113	057C					L2 phase T2 reverse active energy	
114	057E					L2 phase T3 reverse active energy	
115	0580					L2 phase T4 reverse active energy	
116	0582	R	2	INT32(6+2)	kvarh	L2 phase total reactive energy	L2 phase energy
117	0584					L2 phase T1 Total reactive energy	
118	0586					L2 phase T2 Total reactive energy	
119	0588					L2 phase T3 total reactive energy	
120	058A					L2 phaseT4 Total reactive energy	
121	058C					L2 phase forward reactive energy	
122	058E					L2 phase T1 forward reactive energy	
123	0590					L2 phase T2 forward reactive energy	
124	0592					L2 phase T3 forward reactive energy	
125	0594					L2 phase T4 forward reactive energy	
126	0596					L2 phase Reverse reactive energy	
127	0598					L2 phase T1 reverse reactive energy	
128	059A					L2 phase T2 reverse reactive energy	
129	059C					L2 phase T3 reverse reactive energy	
130	059E					L2 phase T4 reverse reactive energy	
131	05A0					L2 phase first quadrant total reactive energy	
132	05A2					L2 phase T1 first quadrant total reactive energy	
133	05A4					L2 phase T2 first quadrant total reactive energy	
134	05A6					L2 phase T3 first quadrant total reactive energy	
135	05A8					L2 phase T4 first quadrant total reactive energy	
136	05AA					L2 phase second quadrant total reactive energy	
137	05AC					L2 phase T1 second quadrant total reactive energy	
138	05AE					L2 phase T2 second quadrant total reactive energy	
139	05B0					L2 phase T3 second quadrant total reactive energy	
140	05B2					L2 phase T4 second quadrant total reactive energy	
141	05B4					L2 phase third quadrant total reactive energy	
142	05B6					L2 phase T1 third quadrant total reactive energy	
143	05B8					L2 phase T2 third quadrant total reactive energy	
144	05BA					L2 phase T3 third quadrant total reactive energy	
145	05BC					L2 phase T4 third quadrant total reactive energy	
146	05BE					L2 phase fourth quadrant total reactive energy	
147	05C0					L2 phase T1 fourth quadrant total reactive energy	
148	05C2					L2 phase T2 fourth quadrant total reactive energy	
149	05C4					L2 phase T3 fourth quadrant total reactive energy	
150	05C6	L2 phase T4 fourth quadrant total reactive energy					

NO.	Modbus DZT register map						Remark
	address	R/W	length	Data description	unit	Content	
151	05C8	R	2	INT32(6+2)	kWh	L3 Phase total active energy	
152	05CA					L3-phase T1 total active energy	
153	05CC					L3-phase T2 total active energy	
154	05CE					L3-phase T3 total active energy	
155	05D0					L3-phase T4 total active energy	
156	05D2					L3-phase forward active energy	
157	05D4					L3-phase T1 forward active energy	
158	05D6					L3-phase T2 forward active energy	
159	05D8					L3-phase T3 forward active energy	
160	05DA					L3-phase T4 forward active energy	
161	05DC					L3 phase reverse active energy	
162	05DE					L3-phase T1 reverse active energy	
163	05E0					L3-phase T2 reverse active energy	
164	05E2					L3-phase T3 reverse active energy	
165	05E4					L3-phase T4 reverse active energy	
166	05E6	R	2	INT32(6+2)	kvarh	Total reactive energy of phase L3	L3 phase energy
167	05E8					L3-phase T1 total reactive energy	
168	05EA					L3-phase T2 total reactive energy	
169	05EC					L3-phase T3 total reactive energy	
170	05EE					L3-phase T4 total reactive energy	
171	05F0					L3-phase forward reactive energy	
172	05F2					L3-phase T1 forward reactive energy	
173	05F4					L3-phase T2 forward reactive energy	
174	05F6					L3-phase T3 forward reactive energy	
175	05F8					L3-phase T4 forward reactive energy	
176	05FA					L3 phase reverse reactive energy	
177	05FC					L3-phase T1 reverse reactive energy	
178	05FE					L3-phase T2 reverse reactive energy	
179	0600					L3-phase T3 reverse reactive energy	
180	0602					L3-phase T4 reverse reactive energy	
181	0604					L3 phase first quadrant total reactive energy	
182	0606					L3 phase T1 first quadrant total reactive energy	
183	0608					L3 phase T2 first quadrant total reactive energy	
184	060A					L3 phase T3 first quadrant total reactive energy	
185	060C					L3 phase T4 first quadrant total reactive energy	
186	060E					L3 phase second quadrant total reactive energy	
187	0610					L3 phase T1 second quadrant total reactive energy	
188	0612					L3 phase T2 second quadrant total reactive energy	
189	0614					L3 phase T3 second quadrant total reactive energy	
190	0616	L3 phase T4 second quadrant total reactive energy					
191	0618	L3 phase third quadrant total reactive energy					
192	061A	L3 phase T1 third quadrant total reactive energy					
193	061C	L3 phase T2 third quadrant total reactive energy					
194	061E	L3 phase T3 third quadrant total reactive energy					
195	0620	L3 phase T4 third quadrant total reactive energy					
196	0622	L3 phase fourth quadrant total reactive energy					
197	0624	L3 phase T1 fourth quadrant total reactive energy					
198	0626	L3 phase T2 fourth quadrant total reactive energy					
199	0628	L3 phase T3 fourth quadrant total reactive energy					
200	062A	L3 phase T4 fourth quadrant total reactive energy					

NO.	Modbus DZT register map						Remark
	address	R/W	length	Data description	unit	Content	
201	062C	R	2	INT32(6+2)	kWh	Active resettable energy	resettable energy
202	062E					forward active resettable energy	
203	0630					Reverse active resettable energy	
204	0632					L1-phase active resettable energy	
205	0634					L1-phase forward active resettable energy	
206	0636					L1 phase reverse active resettable energy	
207	0638					L2-phase active resettable energy	
208	063A					L2-phase forward active resettable energy	
209	063C					L2-phase reverse active resettable energy	
210	063E					L3-phase active energy resettable energy	
211	0640					L3-phase forward active resettable energy	
212	0642					L3-Phase reverse active resettable energy	
213	0644	R	2	INT32(6+2)	kvarh	Reactive resettable energy	resettable energy
214	0646					forward reactive resettable energy	
215	0648					Reverse reactive resettable energy	
216	064A					L1-phase reactive resettable energy	
217	064C					L1-phase forward reactive resettable energy	
218	064E					L1 phase reverse reactive resettable energy	
219	0650					L2-phase reactive resettable energy	
220	0652					L2-phase forward reactive resettable energy	
221	0654					L2 phase reverse reactive resettable energy	
222	0656					Phase L3 reactive energy resettable energy	
223	0658					L3-phase forward reactive resettable energy	
224	065A					L3 phase reverse reactive resettable energy	

3.Meter parameters

NO.	Modbus DZT register map						Remark
	Address	R/W	length	Data description	unit	content	
1	1000	R/W	6	12-bit serial number, the same as DLT645 address, need to use 10h together, hexadecimal, 012345678910H serial number is 012345678910		serial number	
2	1003	R/W	1	1-247		Modbus ID/ Mbus ID	
3	1004	R	1	101		software version number	
4	1005	R	1	101		Hardware version number	
5	1006	R	1	XXXX		Firmware Checksum	
6	1007	R/W	4	year, month, day, week, hour, minute, second, for example, result: 24 08 08 04 11 44 00 Meaning: year 2024, August 8th, Thursday,11:44:00		Time and date	
7							
8	100B	R/W	1	0-99 seconds (0 disables scroll display)		Turn time	
9	100C	R/W	1	1=300 2=600 3=1200 4=2400 5=4800 6=9600 7=19200 8=38400 9=115200		485 baud rate	
10	100D	R/W	1	0=none 1=odd 2=even		485 check digits	
11	100E	R/W	1	1=1 bit 2=2 bit		485 stop bit	
12	100F	R/W	1	1-Total=Forward 2-Total=Reverse 3-Total=Forward + Reverse 4-Total=Forward - Reverse		combined code	
13	1010		1	0=Interval 1=Slip		demand mode	
14	1011	R/W	1	The unit minute, can be set from 1-30, the default is 15 minutes		demand cycle	
16	1016	R/W	1	0000-9999 can be set		LCD button display setting password	
17	1017	R/W	1	800, 1000, 1600, etc.800, 1000, 1600, etc. above 100, divisible by 96000		SO output	
18	1018	R/W	2	Operation time of the meter since last reset Clear command: 01 10 10 18 00 02 04 00 00 00 00 3E C5		Meter operation time Unit: second	
19	101A	R/W	2	Startup current on which operation time start to count. It can be set between 20mA and 120A. Example command: Set startup current to 40 A: 01 10 10 1A 00 02 04 00 00 9C 40 BF 02		Set the current value of operation time, the unit is mA.	
20	101D	R	1	Terminal signal input status		0 or 1	
21	1020	R/W	5	Bit-wise mark, BIT0 represents total active energy, BIT1 represents positive active energy, see the three-phase display description scrolling display page for details. Total energy & instantaneous parameters		Automatic scroll display content (three-phase)	