

[illegible]

No.	Alarm output	Parameter description	Relay network	39kV range	39TV range
0	No output	No output	39kV	1.732V	—
1	1ub	AA line voltage	39kV	1.732V	—
2	1b6	B6 line voltage	39kV	1.732V	—
3	1c6	C6 line voltage	39kV	1.732V	—
4	1a	phase A voltage	39kV/39TV	1V	1V
5	1b	phase B voltage	39kV	1V	—
6	1c	phase C voltage	39kV/39TV	1V	Un
7	1v	Average voltage	39kV	1V	—
8	1a	phase A current	39kV/39TV	1A	1A
9	1b	phase B current	39kV	1A	—
10	1c	phase C current	39kV/39TV	1A	1A
11	1v	Average current	39kV	1A	—
12	Pa	phase A active power	39kV	10W	—
13	Pb	phase B active power	39kV	10W	—
14	Pc	phase C active power	39kV	10W	—
15	Pv	total active power	39kV/39TV	10W	1.732W
16	Qa	phase A reactive power	39kV	10W	—
17	Qb	phase B reactive power	39kV	10W	—
18	Qc	phase C reactive power	39kV	10W	—
19	Qv	total reactive power	39kV/39TV	10W	20W
20	Sp	phase A apparent power	39kV	10W	—
21	Sb	phase B apparent power	39kV	10W	—
22	Sc	phase C apparent power	39kV	10W	—
23	Sv	total apparent power	39kV/39TV	10W	20W
24	Freq	frequency	39kV/39TV	20	20
25	Pv1	phase A power factor	39kV	1	1
26	Pv2	phase B power factor	39kV	1	1
27	Pv3	phase C power factor	39kV	1	1
28	Pv1	Total power factor	39kV/39TV	1	1

Parameter name	Conversion formula	Parameter form
Voltage positive sequence component, Voltage negative sequence component, Voltage zero sequence component	$\text{Value-}X_{\text{p}}, 0.01$	UNpSc, UNNpSc, UNZSc
Current positive sequence component, Current negative sequence component, Current zero sequence component	$\text{Value-}X_{\text{p}}, 0.001$	INpSc, INNpSc, INZSc
Real harmonic distortion max. Voltage zero unbalance factor Voltage negative imbalance factor Current zero unbalance factor, Current negative imbalance factor	$\text{Value-}X_{\text{p}}, <0.0001$	THD _v , THD _i , THD _v -THD _i , THD _v -THD _i , HRI _v , HRI _i , HRI _v -HRI _i , HRI _v -HRI _i , HRI _v , I _U CA _v , I _U CA _i , I _U CA _v -I _U CA _i , I _{UN} CA _v , I _{UN} CA _i , I _{UN} CA _v -I _{UN} CA _i

For the present analysis of the communication in the secondary phase, the time to excluded. The detailed conversion method see the following table. RX is the communication parameter value

#RegAdd_1				
SOEPoolLen				
02AHH	the 1st SOE Program length	2	int	R

Parameter name	Conversion formula	Parameter item
Voltage positive sequence component	Value-KX-0.01	U _{SPK} , U _{SNK} , U _{ZNK}
Voltage negative sequence component	Value-KX-0.01	
Voltage zero sequence component	Value-KX-0.000	U _{SPK} , U _{SNK} , U _{ZNK}
Current positive sequence component	Value-KX-0.000	I _{SPK} , I _{SNK} , I _{ZNK}
Current negative sequence component		
Current zero sequence component		
Real time deviation rate(2.1) limit value deviation		THD _U , THD _I , THD _U -THD _I , THD _U -THD _I , THD _U -THD _I , THD _U -THD _I
Real time voltage harmonic deviation rate	Value-KX-0.0001	THD _U , THD _I , THD _U -THD _I , THD _U -THD _I , THD _U -THD _I , THD _U -THD _I
Voltage negative harmonic basic error rate		THD _U , THD _I , THD _U -THD _I , THD _U -THD _I , THD _U -THD _I , THD _U -THD _I
Voltage negative harmonic deviation rate		THD _U , THD _I , THD _U -THD _I , THD _U -THD _I , THD _U -THD _I , THD _U -THD _I
Current negative harmonic basic error rate		THD _U , THD _I , THD _U -THD _I , THD _U -THD _I , THD _U -THD _I , THD _U -THD _I
Current negative harmonic deviation rate		THD _U , THD _I , THD _U -THD _I , THD _U -THD _I , THD _U -THD _I , THD _U -THD _I

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	in_1			
Q256H	SQEDProg _d_1	the 1st SUE Date-year	2	int
Q257H	SQEDMon in_1	the 1st SUE Date-month	2	int
Q258H	SQEDDay _d_1	the 1st SUE Date-day	2	int
Q259H	SQEDHour _t_1	the 1st SUE Time-hour	2	int
Q25AH	SQEDMin in_1	the 1st SUE Time-minute	2	int
Q25BH	SQEDSec _d_1	the 1st SUE Time-second	2	int

Count the following records, a total of 10 records:

	Program SUE Total	
Q26AH	SQProgTot aSum	4
Q26BH	SQProgE _e_1	2
Q26CH	SQProgIn in_1	2
Q26DH	SQProgIn _y_1	2
Q26EH	SQProgIn _e_1	2
Q26FH	SQProgIn _t_1	2
Q26GH	SQProgIn _d_1	2
Q26HH	SQProgIn _s_1	2
Q26IH	SQProgIn _m_1	2
Q26JH	SQProgSec and 1	2
Q26KH	SQProgTy _p_1	2
Q26LH	SQProgAdd _r_1	2

	in_1				
025BH	SOFProg _{in} _1	the 1st SOE Date-year	2	int	R
0257H	SOFProgMon _{in} _1	the 1st SOE Date-month	2	int	R
0258H	SOFProgDay _{in} _1	the 1st SOE Date-day	2	int	R
0259H	SOFProgHour _{in} _1	the 1st SOE Time-hour	2	int	R
025AH	SOFProgMin _{in} _1	the 1st SOE Time-minute	2	int	R
025BH	SOFProgSec _{in} _1	the 1st SOE Time-second	2	int	R
On the following records, a total of 10 records					
026AH	SOFProgTot _{in} _1	Program SOE Total	4	along	R
026BH	SOFProgV _{in} _1	the 1st SOE Date-year	2	int	R
0267H	SOFProgMon _{in} _1	the 1st SOE Date-month	2	int	R
0268H	SOFProgDay _{in} _1	the 1st SOE Date-day	2	int	R
0269H	SOFProgHour _{in} _1	the 1st SOE Time-hour	2	int	R
026AH	SOFProgMin _{in} _1	the 1st SOE Time-minute	2	int	R
026BH	SOFProgSec _{in} _1	the 1st SOE Time-second	2	int	R
026CH	SOFProgT _{in} _1	the 1st SOE Program type	2	int	R
026DH	SOFProgSt _{in} _1	The 1 st SOE Program start address	2	int	R

Specification	
Voltage	220V
Current	5A
Wiring Mode	3P-4W
PT Ratio	0001
CT Ratio	0001

Figure 29 specification interface

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PT Ratio	0001
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Figure 30 specification interface

7 Precautions

7.1 The meter should be rechecked 15min for accurate measurement after power on.

7.2 The meter should not be shocked, impacted and have violent vibration, the operating environment should conform to the technical requirements.

For the original paper meter is not a measuring instrument, the energy measurement function is just for reference and comparison for the users, not for the metering bias.

8 Maintenance and repair

The meter should have a metering test every year, if the error of the meter is out of the

-32-

-33-

The instrument packaging should be used in line with environmental requirements of the material, the instrument and accessories in the packaging conditions should be stored in a ventilated place, to avoid moisture and corrosive gases, the limit of the ambient temperature of the storage -40 °C ~ +70 °C, relative humidity does not exceed 75%.

The packaging of the instrument meets the requirements of GB/T 13384-2008, and the ambient temperature requirement and transportation of conventional storage meet the requirements of GB/T 25480.

9 Package, transportation and storage

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complete. Appendix e

range, please send the meter back to the factory as the faulty meter.

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Figure 29 specification interface

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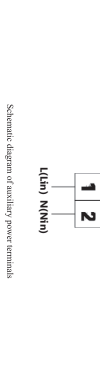
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-32-

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咬口 K 自翻4 024.01.06 PD7777-3H 使用说明书 ZTW0.464.0115

5.3.6 Auxiliary power supply



The meter can only work normally with external auxiliary power supply (please see the specification in the label of the meter). It has the common (AC/DC) power input terminal, limit working voltage is AC/DC35V~24V. In case the meter will be damaged accidentally, it's recommended to install 1A fuse wire on the live wire side when it is AC power supply, in the area where the power quality is poorer, it's recommended to install surge suppresser and fast impulse group suppresser in the power circuit.

5.4 diagnosis, analysis, exclusion of common fault

5.4.1 no display when the meter is power on

make sure the supplied power is suitable for this series of meter or not before power on, and check if the connection of the meter is correct or not carefully. If the connection diagram is different from that in the casing of the meter, please take according to the connection diagram in the casing. Turn the multi-meter gear to 1000V AC, and check if the auxiliary power supply has the required voltage for working.

5.4.2 No change of the measurement while the input signal changes

Check and ensure the connection of the signal input terminals is right, contact is reliable, can measure on-off condition of the corresponding signal input terminals through on-off gear of the multi-meter.

-21-

5.3.5 Auxiliary power supply



Schematic diagram of auxiliary power terminals

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-21-

-20-



The meter provide four-quadrant power measurement function, 2-way power impulse output function (P, active, Q, reactive). Power impulse adopts opes-collector optical coupling isolation output to realize the remote of the active and reactive energy. The accuracy of the energy can be tested by impulse output method.

Electrical parameters: impulse sampling interface circuit VecSSV, RS=50mA, Impulse constant: 1000imp/kwh(whr).

Schematic diagram of four-quadrant power measurement output terminals

5.3.5 Power impulse output

Electrical parameters: characteristic impedance is 120Ω, input resistance<24KΩ, Band rate: 1200bps, 2400bps, 4800bps, 9600bps, 19200bps optional.

Schematic diagram of RS-485 communication terminals

The meter provides 1-way 485 communication interface of industrial Modbus protocol, can realize network communication for max. 247 slave computers at the same time.

Schematic diagram of power impulse output terminals

Electrical parameters: RS-500Ω is on, RS<100Ω is off.

-20-



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5.3.4 RS-485 communication

display is on-state. When the external is off, sample off information through the switch input module of the meter, the interface display is off-state.

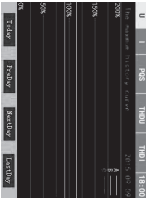


Figure 13 current minimum history curve

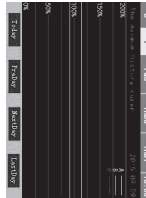


Figure 14 current maximum history curve



Figure 15 voltage maximum history curve

-20-

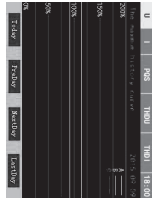


Figure 16 THD(95% maximum probability curve



Figure 17 THD(95% maximum probability curve



Figure 18 Control bar of history curve

-20-

-20-

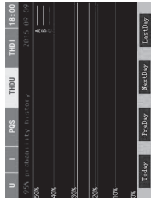


Figure 19 THD(95% maximum probability curve



-20-

6.2.5 Quality

In the main interface, select "Quality" menu and press "Menu" entering the energy quality menu interface, as shown in Figure 19, including "Harmonic", "Unbalance", Press "←", "→", "←", "→" to display corresponding submenus. Press "Menu" to enter next level interface, press "Esc" to turn to the main interface.

If select "Harmonic", press "←", "→", "←", "→" to change submenus of "harmonic", including "THD"(total harmonic distortion), "harmonic value", "harmonic bar", "voltage.com"

(voltage harmonic compare), "var.har.com" (current harmonic compare). Then press "Menu" to display corresponding interface.

Esc,"Quit" or cancel

"←", and "→", Left and right movement or flip up and down or add and subtract.

If no key operation for 10 minutes, backlight brightness will reach the darkest state. In this state, if press any key, backlight brightness will be recovered.

After the meter is power on, display the first interface, as shown in Figure 7. A few seconds later, display the main interface, as shown in Figure 7.

There is 8 function menu items in the main interface, including "Instant", "Energy", "Wave", "History", "Quality", "Module", "Soft", "Settings". Click on the "←" or "→" button to switch between the 8 menu items. Then, click "Menu", enter corresponding interface or its sub menu.



Figure 7 main interface

6.2.1 Instance

In the main interface, select "Instant" menu and press "Menu" entering all parameters display interface, as shown in Figure 8. Press "←", "→", "←", "→" will turn to "V(voltage)", "I(current)", "P(power)", "PF(power factor)" or "F(frequency)" interface. Press "Esc" to turn to the main interface.

-23-

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-23-

-20-

6.2 Menu introduction and operation

NOTE:"Menu"<OK> or confirm

The meter can measure all the electrical parameters in the power network, take 3 phase 4 wire input network as an example can measure Ua, Ub, Uc, Uphase voltage(Uab, Ubc, Uca, Uline voltage)Ua, Ib, Ic(current)Pa, Pb, Pc, Pactive power(Qa, Qb, Qc, Qreactive power)Sa, Sb, Sc, Sapparent power(frequency)Pfa, Pfb, Pfc, Ppfactor factor)voltage, current harmonic content(2nd-31st), voltage current total harmonic distortion, voltage unbalance factor, voltage positive-sequence component, negative-sequence component, zero sequence component,current unbalance factor, current positive sequence component, negative sequence component, zero sequence component active power energy and four-quadrant reactive power energy.

6.1 Function description

If the fault still cannot be solved with the above method, or other abnormal phenomenon occurs, please contact Zhejiang Chint IoT Technology Co., Ltd.

6 Programming instructions

NOTE:"Menu"<OK> or confirm

5.4.4 Communication failure

Check again the input voltage, current corresponding, phase and direction are consistent.

5.4.3 The symbol of power, power factor and power data is incorrect

-22-

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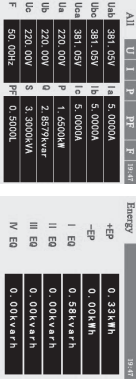


Figure 8 all parameters interface

6.2.2 Energy

In the main interface, select "Energy" menu and press "Menu" entering the energy interface, as shown in Figure 9. Press "Esc" to turn to the main interface.

6.2.3 Wave

In the main interface, select "Wave" menu and press "Menu" entering the voltage real-time wave interface, as shown in Figure 11.

Press "←", "→", "←", "→" will turn to "Current"(current real-time wave) or "Voltage"(voltage real-time wave) interface. Press "Esc" to turn to the main interface.

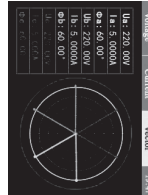


Figure 10 real-time voltage wave interface

-24-

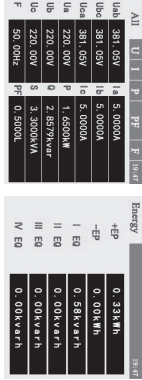


Figure 9 energy interface

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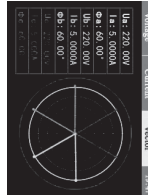


Figure 10 real-time voltage wave interface

-24-

-20-

Figure 12 history menu interface



Press "Menu" to enter control bar area, press "←", "→", "←", "→" to change buttons, as shown in Figure 18. Then press "Menu" to make the corresponding button function effectively. One page can display one-day history curve. Using this buttons, user can view the last30 days of history curve.

6.2.4 History

In the main interface, select "History" menu and press "Menu" entering the history menu interface, as shown in Figure 12, including "Maximum", "Minimum", "Average", "95%Max.Pro"(95% maximum probability). Press "←", "→", "←", "→" to display corresponding submenus. Press "Menu" to enter next level interface, press "Esc" to turn to the main interface.

Figure 11 vector interface

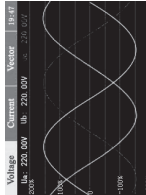


Figure 12 history menu interface

-25-



Figure 13 vector interface

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