

# DZ81-DZS500 Smart Three Phase Meter User Manual (V2.0)



**Heyuan Intelligence Technology Co., Ltd**

## IMPORTANT DECLARATIONS

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Please read this manual carefully before the product is operated. And once you start operating the meter, you'll be considered to have read this manual and accept all our terms. Heyuan shall not be responsible or liable for any damages or injuries caused by improper meter installation and/or operation.

Attention: the following symbols in this manual refer to meanings as follows



**Electric Shock Symbol: Carries information about procedures which must be followed to reduce the risk of electric shock and danger to personal health**



**Safety Alert Symbol: Carries information about circumstances which if not considered may result in injury or death**

The meter must be installed and operated by one who has experience with high-voltage devices or has qualifications. Please connect the meter to correct voltage before operating the meter. Please install and use the meter according to the user manual. Heyuan shall not be responsible or liable for any damages or injuries caused without following the instructions in the user manual.

# Contents

<b>Chapter 1 Meter Overview</b> .....	1
<b>Chapter 2 Specifications</b> .....	1
2.1 Input Voltage .....	1
2.2 Input Current .....	1
2.3 Energy .....	1
2.4 Frequency Measurement .....	1
2.5 Measuring Accuracy .....	1
2.6 Communication .....	1
2.7 Power Supply .....	1
2.8 Working Condition .....	1
2.9 Pulse Output of Imported Active Energy .....	2
<b>Chapter 3 Installation and Typical Wiring</b> .....	2
3.1 Dimension (unit: mm) and Comparison Table of Digital Letters Displayed ....	2
3.2 Installation Method .....	2
<b>Chapter 4 Terminals</b> .....	2
<b>Chapter 5 Typical Wiring</b> .....	5
<b>Chapter 6 Meter Display and Operation</b> .....	6
<b>Chapter 7 After-sales Service</b> .....	20
<b>Chapter 12 Contact Us</b> .....	21

## Chapter 1 Meter Overview

DZ81-DZS500 is an advanced, smart networked electricity energy meter. It is widely used in power distribution sites, energy management systems and intelligent monitoring systems of different industries. It measures electric parameters i.e. three-phase/line voltage, three-phase current, zero-sequence voltage, zero-sequence current, voltage unbalance, current unbalance, active power, reactive power, power factor, frequency, load property, 2~31<sup>st</sup> harmonic analysis, active energy, reactive energy and multi-tariff energy etc.

Display: LED display.

## Chapter 2 Specifications

### 2.1 Input Voltage

Reference Voltage: 3×220V/380V                      Voltage Range: 0~1.2Un

### 2.2 Input Current

Measuring Range: 1‰In~1In                      Secondary Current of CT: 5A  
 Starting Current: 1‰In

### 2.3 Energy

Accuracy Class: Class 0.5                      Resolution: 0.1kWh

### 2.4 Frequency Measurement

Frequency Measuring Range: 45~65Hz

### 2.5 Measuring Accuracy

Voltage/Current: 0.2%                      Energy Accuracy: Class 0.5                      Power Factor: 1%

### 2.6 Communication

RS485/Modbus-RTU Communication Protocol                      Baud Rate: 2400~19200bps (programmable)

Communication Default Value				
Address	Baud Rate	Data Bits	Stop Bits	Parity
01	9600bps	8	1	No

### 2.7 Power Supply

Power Supply: AC85~265V(45 ~ 55HZ)/ DC85 ~ 300V                      Power Consumption: <3VA  
 Power-line Connection Terminals: L/+ and N/-

### 2.8 Pulse Output of Import Active Energy

Pulse Constant	Pulse Width	Max. Current	Working Voltage
2000imp/kWh	50±2ms	10mA(DC)	5V~24V

### 2.9 Working Condition

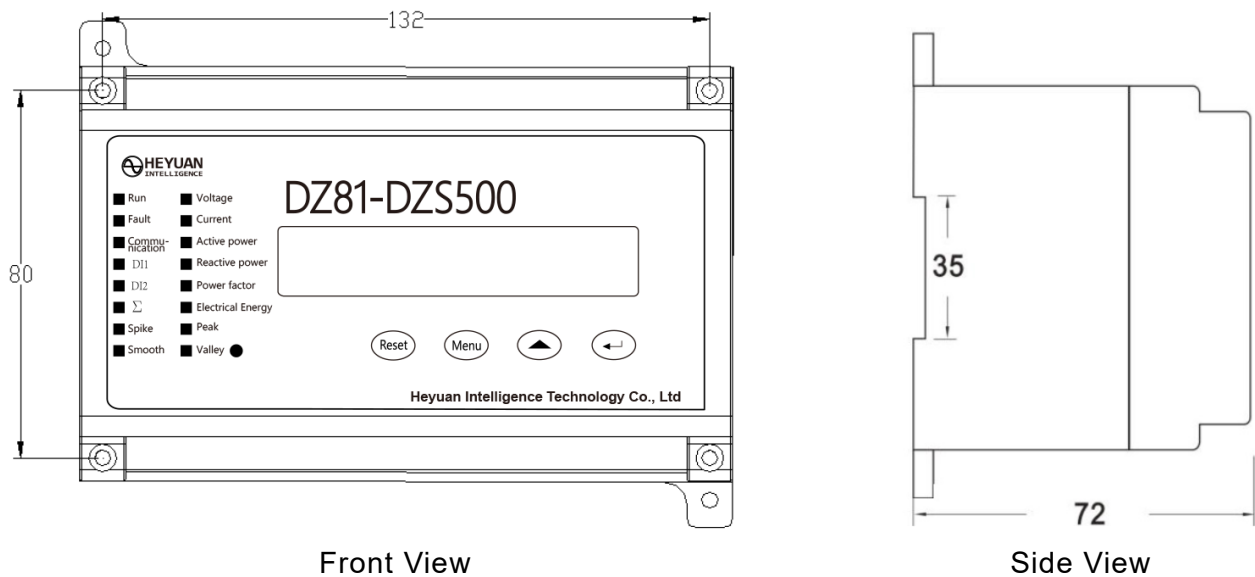
Operating Temperature: -20℃ ~ +65℃

Storage Temperature: -40℃ ~ +85℃

Relative Humidity: 20% ~ 90%(non-condensing)

## Chapter 3 Dimension and Installation

### 3.1 Dimension (unit: mm)



### 3.2 Installation Method

Installation Environment: DZS500 should be installed in a dry and dust free environment. Avoid exposing meter to excessive heat, radiation and high electrical noise sources.

Installation Method: DIN rail Mounted

## Chapter 4 Terminals

### 4.1 Digital Input Status

Terminal No.	Terminal Description	Remark
20	DI COM	passive dry contact, internal power supply (DC24V)
21	DI 1	
22	DI 2	
23	DI 3	

### 4.2 Digital Output Status

Terminal No.	Terminal Description	Remark
25	Protect Normally Closed DO NC1	contact capacity 10A/250VAC
26	COM K1	
27	Protect Normally Open NO1	
28	Normally Closed DO NC2	
29	COM K2	
30	Normally Open DO NO2	

#### 4.3 Energy Pulse Output Status

Terminal No.	Terminal Description	Remark
31	Active Energy Pulse Output P+	null
32	Active Energy Pulse Output P-	

#### 4.4 Upper Row of Terminals

20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35
COM	DI1	DI2	DI3		NC1	K1	NO1	NC2	K2	NO2	P+	P-	A+	B-	G
DI				Null	Protect DO			DO2			Pulse Output		Communication Interface		

#### 4.5 Lower Row of Terminals

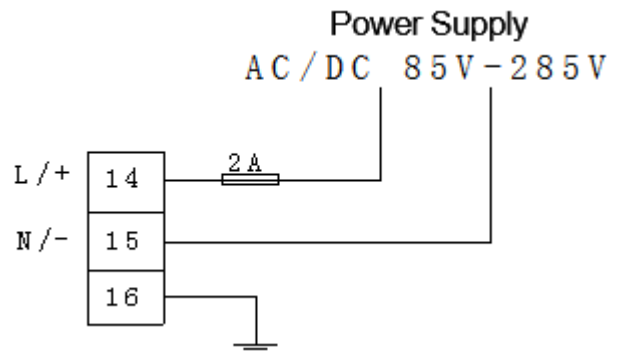
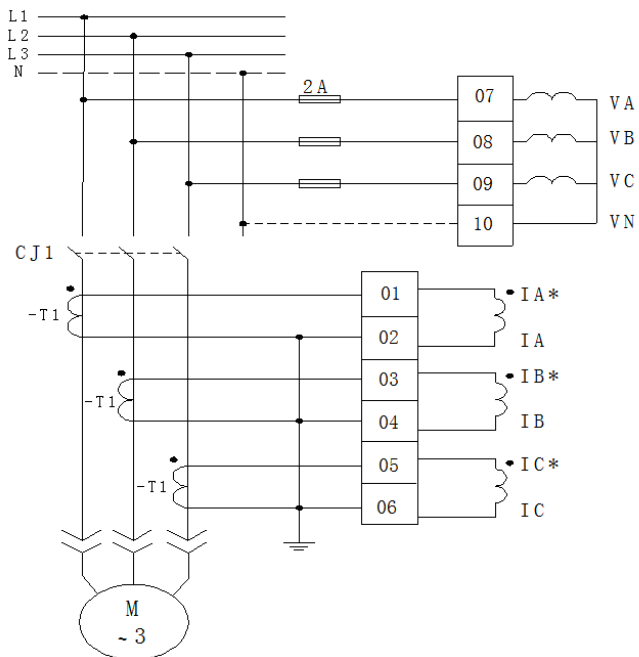
01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16
IA'	IA	IB'	IB	IC'	IC	VA	VB	VC	VN				L/+	N/-	⊥
Current Input					Voltage Input					Null			Power Supply		

#### 4.6 Standard Definition of Terminal Block

Terminal No.	Terminal Description	Original Status	Remark
01	Current Input IA *		AC 3×5(6)A
02	Current Input IA		
03	Current Input IB *		
04	Current Input IB		
05	Current Input IC *		
06	Current Input IC		
07	Voltage Input VA		AC 3×220V/380V
08	Voltage Input VB		

09	Voltage Input VC		power supply: AC 85V~265V / DC 85~300V
10	Neutral Line Input VN		
14	Meter Power Input L/+		
15	Meter Power Input N/-		
16	GND		

Terminal No.	Terminal Description	Original Status	Remark
20	DI COM		passive dry contact, internal power supply (DC24V)
21	DI 1		
22	DI 2		
23	DI 3		
24	Null		
25	Protect Normally Closed DO NC1	normally closed	contact capacity 10A/250VAC
26	COM K1		
27	Protect Normally Open DO NO1	normally open	
28	Normally Closed DO NC2	normally closed	
29	COM K2		
30	Normally Open DO NO2	normally open	
31	Active Energy Pulse Output P+		
32	Active Energy Pulse Output P-		
33	Communication RS485 A+		RS485 interfaces, Modbus RTU communication protocol
34	Communication RS485 B-		
35	G		







## Chapter 6 Meter Display and Operation

### 1<sup>st</sup> Interface, Start-up Interface



00001 9600 7323

This interface displays the present meter address, communication baud rate, software version number when power up and reset. It will enter next interface automatically 3 seconds later.

### 2<sup>nd</sup> Interface, Phase A Current IA Interface



IA 300.2

Press buttons “▲” or “Menu” to check other parameters. Press button “▲”, it will enter 3<sup>rd</sup> interface. Press button “Menu”, it will enter 8<sup>th</sup> interface.

### 3<sup>rd</sup> Interface, Phase B Current IB Interface



IB 300.2

Press buttons “▲” or “Menu” to check other parameters. Press button “▲”, it will enter 4<sup>th</sup> interface. Press button “Menu”, it will enter 8<sup>th</sup> interface.

### 4<sup>th</sup> Interface, Phase C Current IC Interface



IC 300.2

Press buttons “▲” or “Menu” to check other parameters. Press button “▲”, it will enter 5<sup>th</sup> interface. Press button “Menu”, it will enter 8<sup>th</sup> interface.

### 5<sup>th</sup> Interface, Zero-sequence Current Interface



3I0 000.2

Press buttons “▲” or “Menu” to check other parameters. Press button “▲”, it will enter 6<sup>th</sup> interface. Press button “Menu”, it will enter 8<sup>th</sup> interface.

### 6<sup>th</sup> Interface, Average Current Interface



AVEr 300.1

Press buttons “▲” or “Menu” to check other parameters. Press button “▲”, it will enter 7<sup>th</sup> interface. Press button “Menu”, it will enter 8<sup>th</sup> interface.

### 7<sup>th</sup> Interface, Current Imbalance Interface



Press buttons “▲” or “Menu” to check other parameters. Press button “▲”, it will enter 2<sup>nd</sup> interface. Press button “Menu”, it will enter 8<sup>th</sup> interface.

### 8<sup>th</sup> Interface, Phase Voltage Ua Interface



Press buttons “▲” or “Menu” to check other parameters. Press button “▲”, it will enter 9<sup>th</sup> interface. Press button “Menu”, it will enter 16<sup>th</sup> interface.

### 9<sup>th</sup> Interface, Phase Voltage Ub Interface



Press buttons “▲” or “Menu” to check other parameters. Press button “▲”, it will enter 10<sup>th</sup> interface. Press button “Menu”, it will enter 16<sup>th</sup> interface.

### 10<sup>th</sup> Interface, Phase Voltage Uc Interface



Press buttons “▲” or “Menu” to check other parameters. Press button “▲”, it will enter 11<sup>th</sup> interface. Press button “Menu”, it will enter 16<sup>th</sup> interface.

### 11<sup>th</sup> Interface, Line Voltage Uab Interface




Press buttons “▲” or “Menu” to check other parameters. Press button “▲”, it will enter 12<sup>th</sup> interface. Press button “Menu”, it will enter 16<sup>th</sup> interface.

### 12<sup>th</sup> Interface, Line Voltage Ubc Interface



Press buttons “▲” or “Menu” to check other parameters. Press button “▲”, it will enter 13<sup>th</sup> interface. Press button “Menu”, it will enter 16<sup>th</sup> interface.

### 13<sup>th</sup> Interface, Line Voltage Uca Interface

 UCA 402.5

Press buttons “▲” or “Menu” to check other parameters. Press button “▲”, it will enter 14<sup>th</sup> interface. Press button “Menu”, it will enter 16<sup>th</sup> interface.

### 14<sup>th</sup> Interface, Zero-sequence Voltage 3U0 Interface

 3U0 032.7

Press buttons “▲” or “Menu” to check other parameters. Press button “▲”, it will enter 15<sup>th</sup> interface. Press button “Menu”, it will enter 16<sup>th</sup> interface.

### 15<sup>th</sup> Interface, Frequency FREQ Interface

 FREQ 50.01

Press buttons “▲” or “Menu” to check other parameters. Press button “▲”, it will enter 8<sup>th</sup> interface. Press button “Menu”, it will enter 16<sup>th</sup> interface.

### 16<sup>th</sup> Interface, Phase A Active Power Interface

 PA 0000


Press buttons “▲” or “Menu” to check other parameters. Press button “▲”, it will enter 17<sup>th</sup> interface. Press button “Menu”, it will enter 28<sup>th</sup> interface.

### 17<sup>th</sup> Interface, Phase B Active Power Interface

 Pb 0000

Press buttons “▲” or “Menu” to check other parameters. Press button “▲”, it will enter 18<sup>th</sup> interface. Press button “Menu”, it will enter 28<sup>th</sup> interface.

### 18<sup>th</sup> Interface, Phase C Active Power Interface

 Pc 0000

Press buttons “▲” or “Menu” to check other parameters. Press button “▲”, it will enter 19<sup>th</sup> interface. Press button “Menu”, it will enter 28<sup>th</sup> interface.

### 19<sup>th</sup> Interface, Average Active Power Interface



The display shows the label  $P_n$  on the left and the numerical value 0.000 on the right, indicating average active power.

Press buttons “▲” or “Menu” to check other parameters. Press button “▲”, it will enter 20<sup>th</sup> interface. Press button “Menu”, it will enter 28<sup>th</sup> interface.

### 20<sup>th</sup> Interface, Phase A Reactive Power Interface



The display shows the label  $q_A$  on the left and the numerical value 0.000 on the right, indicating Phase A reactive power.

Press buttons “▲” or “Menu” to check other parameters. Press button “▲”, it will enter 22<sup>th</sup> interface. Press button “Menu”, it will enter 28<sup>th</sup> interface.

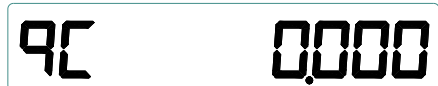
### 21<sup>st</sup> Interface, Phase B Reactive Power Interface



The display shows the label  $q_b$  on the left and the numerical value 0.000 on the right, indicating Phase B reactive power.

Press buttons “▲” or “Menu” to check other parameters. Press button “▲”, it will enter 22<sup>nd</sup> interface. Press button “Menu”, it will enter 28<sup>th</sup> interface.

### 22<sup>nd</sup> Interface, Phase C Reactive Power Interface



The display shows the label  $q_C$  on the left and the numerical value 0.000 on the right, indicating Phase C reactive power.

Press buttons “▲” or “Menu” to check other parameters. Press button “▲”, it will enter 23<sup>rd</sup> interface. Press button “Menu”, it will enter 28<sup>th</sup> interface.

### 23<sup>rd</sup> Interface, Average Reactive Power Interface



The display shows the label  $P_n$  on the left and the numerical value 0.000 on the right, indicating average reactive power.

Press buttons “▲” or “Menu” to check other parameters. Press button “▲”, it will enter 24<sup>th</sup> interface. Press button “Menu”, it will enter 28<sup>th</sup> interface.

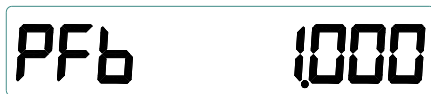
### 24<sup>th</sup> Interface, Phase A Power Factor Interface



The display shows the label  $PFA$  on the left and the numerical value 1.000 on the right, indicating Phase A power factor.

Press buttons “▲” or “Menu” to check other parameters. Press button “▲”, it will enter 25<sup>th</sup> interface. Press button “Menu”, it will enter 28<sup>th</sup> interface.

### 25<sup>th</sup> Interface, Phase B Power Factor Interface



Press buttons “▲” or “Menu” to check other parameters. Press button “▲”, it will enter 26<sup>th</sup> interface. Press button “Menu”, it will enter 28<sup>th</sup> interface.

### 26<sup>th</sup> Interface, Phase C Power Factor Interface



Press buttons “▲” or “Menu” to check other parameters. Press button “▲”, it will enter 27<sup>th</sup> interface. Press button “Menu”, it will enter 28<sup>th</sup> interface.

### 27<sup>th</sup> Interface, Average Power Factor Interface



Press buttons “▲” or “Menu” to check other parameters. Press button “▲”, it will switch back to 16<sup>th</sup> interface. Press button “Menu”, it will enter 28<sup>th</sup> interface.

### 28<sup>th</sup> Interface, Import Total Active Energy Interface



Press buttons “▲” or “Menu” to check other parameters. Press button “▲”, it will enter 29<sup>th</sup> interface. Press button “Menu”, it will enter 36<sup>th</sup> interface.

### 29<sup>th</sup> Interface, Interface of Import Active Energy in Sharp Period



The interface above shows P=5.3kWh. Press buttons “▲” or “Menu” to check other parameters. Press button “▲”, it will display import active energy in sharp, peak, off-peak and shoulder period in turn. Press button “Menu”, it will enter 30<sup>th</sup> interface.

### 30<sup>th</sup> Interface, Export Total Active Energy Interface



Press buttons “▲” or “Menu” to check other parameters. Press button “▲”, it will enter 31<sup>st</sup> interface. Press button “Menu”, it will enter 32<sup>nd</sup> interface.

### 31<sup>st</sup> Interface, Interface of Export Active Energy in Sharp Period

<input checked="" type="checkbox"/> 运行	<input type="checkbox"/> 电压
<input type="checkbox"/> 故障	<input type="checkbox"/> 电流
<input type="checkbox"/> 通讯	<input checked="" type="checkbox"/> 有功
<input type="checkbox"/> 011	<input type="checkbox"/> 无功
<input type="checkbox"/> 012	<input type="checkbox"/> 有功
<input type="checkbox"/> 013	<input type="checkbox"/> 无功
<input type="checkbox"/> 尖	<input type="checkbox"/> 峰
<input type="checkbox"/> 平	<input type="checkbox"/> 谷



Press buttons “▲” or “Menu” to check other parameters. Press button “▲”, it will display export active energy in sharp, peak, off-peak and shoulder period in turn. Press button “Menu”, it will enter 32<sup>nd</sup> interface.

### 32<sup>nd</sup> Interface, Import Total Reactive Energy Interface

<input checked="" type="checkbox"/> 运行	<input type="checkbox"/> 电压
<input type="checkbox"/> 故障	<input type="checkbox"/> 电流
<input type="checkbox"/> 通讯	<input checked="" type="checkbox"/> 有功
<input type="checkbox"/> 011	<input type="checkbox"/> 无功
<input type="checkbox"/> 012	<input type="checkbox"/> 有功
<input type="checkbox"/> 013	<input type="checkbox"/> 无功
<input type="checkbox"/> 尖	<input type="checkbox"/> 峰
<input type="checkbox"/> 平	<input type="checkbox"/> 谷



Press buttons “▲” or “Menu” to check other parameters. Press button “▲”, it will enter 33<sup>rd</sup> interface. Press button “Menu”, it will enter 34<sup>th</sup> interface.

### 33<sup>rd</sup> Interface, Interface of Import Reactive Energy in Sharp Period

<input checked="" type="checkbox"/> 运行	<input type="checkbox"/> 电压
<input type="checkbox"/> 故障	<input type="checkbox"/> 电流
<input type="checkbox"/> 通讯	<input checked="" type="checkbox"/> 有功
<input type="checkbox"/> 011	<input type="checkbox"/> 无功
<input type="checkbox"/> 012	<input type="checkbox"/> 有功
<input type="checkbox"/> 013	<input type="checkbox"/> 无功
<input type="checkbox"/> 尖	<input type="checkbox"/> 峰
<input type="checkbox"/> 平	<input type="checkbox"/> 谷



Press buttons “▲” or “Menu” to check other parameters. Press button “▲”, it will display import reactive energy in sharp, peak, off-peak and shoulder period in turn. Press button “Menu”, it will enter 34<sup>th</sup> interface.

### 34<sup>th</sup> Interface, Export Total Reactive Energy Interface


<input checked="" type="checkbox"/> 运行	<input type="checkbox"/> 电压
<input type="checkbox"/> 故障	<input type="checkbox"/> 电流
<input type="checkbox"/> 通讯	<input checked="" type="checkbox"/> 有功
<input type="checkbox"/> 011	<input type="checkbox"/> 无功
<input type="checkbox"/> 012	<input type="checkbox"/> 有功
<input type="checkbox"/> 013	<input type="checkbox"/> 无功
<input type="checkbox"/> 尖	<input type="checkbox"/> 峰
<input type="checkbox"/> 平	<input type="checkbox"/> 谷



Press buttons “▲” or “Menu” to check other parameters. Press button “▲”, it will enter 35<sup>th</sup> interface. Press button “Menu”, it will enter 36<sup>th</sup> interface.

### 35<sup>th</sup> Interface, Interface of Export Reactive Energy in Sharp Period

<input checked="" type="checkbox"/> 运行	<input type="checkbox"/> 电压
<input type="checkbox"/> 故障	<input type="checkbox"/> 电流
<input type="checkbox"/> 通讯	<input checked="" type="checkbox"/> 有功
<input type="checkbox"/> 011	<input type="checkbox"/> 无功
<input type="checkbox"/> 012	<input type="checkbox"/> 有功
<input type="checkbox"/> 013	<input type="checkbox"/> 无功
<input type="checkbox"/> 尖	<input type="checkbox"/> 峰
<input type="checkbox"/> 平	<input type="checkbox"/> 谷



Press buttons “▲” or “Menu” to check other parameters. Press button “▲”, it will display export reactive energy in sharp, peak, off-peak and shoulder period in turn. Press button

“Menu”, it will enter 36<sup>th</sup> interface.

### 36<sup>th</sup> Interface, Present Time Interface




The present interface displays hour, minute, second, year, month, day from left to right. Press buttons “▲” or “Menu” to check other parameters. Press button “▲”, it will switch time interface. Press button “Menu”, it will enter 2<sup>nd</sup> interface.

### 37<sup>th</sup> Interface, Password Authentication Interface



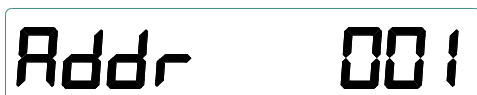
Hold down button “←” until it displays “PASS” on the left and “0000” on the right. At this time, the first-digit value can be modified. Press button “▲”, it will modify values. Each time press button “▲”, it will plus 1. After completing modification, press button “←” to shift next digit. Next digits can be modified as above. The default password is “5555”. After completing all modifications, press button “←” to pass password authentication and enter parameter setting interface. If password is wrong, press button “←” to enter 2<sup>nd</sup> interface. And hold down button “←” until it displays “PASS” on the left and “0000” on the right. Then correct password can be entered.

### 38<sup>th</sup> Interface, Parameter Group 1 Interface



Press button “←” to enter parameter group 1 and then enter 39<sup>th</sup> interface. Press button “Menu” to switch and enter parameter groups.

### 39<sup>th</sup> Interface, Meter Address Interface



Meter address is important for meter to communicate and there should not be repetitive addresses in same communication network segment because wrong meter address may lead to conflict. The present interface shows that the default meter address is “1”. After completing modification, press button “←” and it will enter 40<sup>th</sup> interface.

### 40<sup>th</sup> Interface, Communication Baud Rate Interface



Communication baud rate in same communication network segment should be the same. User should set communication baud rate according to conditions on sites and communication distance. Communication baud rates can be set as follows (unit: bps) by press button “▲”.

Interface Display	2400	4800	9600	19200	38400
----------------------	------	------	------	-------	-------

The present interface shows that the default baud rate is “9600”. After completing modification, press button “←” and it will enter 41<sup>st</sup> interface.

#### 41<sup>st</sup> Interface, Display Mode Interface



Press button “▲” to set the display mode as automatic cyclical display *AUto* or button operation display *PEYb*. The present interface displays button operation display. After completing modification, press button “←” and it will enter 42<sup>nd</sup> interface.

#### 42<sup>nd</sup> Interface, Wiring Mode Interface



Press button “▲” to choose the wiring mode from *3-4Y* (3-phase 4-wire Y wiring) or *3-3U* (3-phase 3-wire  $\Delta$  wiring). When choosing *3-4Y* (3-phase 3-wire  $\Delta$  wiring), it will display interfaces of three phase current, three phase line voltage, three phase total power etc. After completing modification, press button “←” and it will enter 43<sup>rd</sup> interface.

#### 43<sup>rd</sup> Interface, Energy Metering Direction Interface



Press button “▲” to choose the energy metering direction from *dir t* (bidirectional energy metering) or *no* (only metering import active energy). After completing modification, press button “←” and it will enter 44<sup>th</sup> interface.

#### 44<sup>th</sup> Interface, DO Mode Interface





Press button “▲” to set pulse output time of relay. When setting time as “0”, the default DO is level mode. After completing modification, press button “←” and it will enter 45<sup>th</sup> interface.

#### 45<sup>th</sup> Interface, Energy Pulse Interface



It displays energy pulse values which each active energy kWh and reactive energy kvarh corresponds to separately. After completing modification, press button “←” and it will enter 46<sup>th</sup> interface.

#### 46<sup>th</sup> Interface, Demand Cycle Interface




Demand refers to the maximum value of energy in a certain cycle. The demand cycle can be any one from 5 minutes, 10 minutes, 15 minutes, 30 minutes and 60 minutes, which can be set by pressing button “▲”. After completing modification, press button “←” and it will enter 47<sup>th</sup> interface.

#### 47<sup>th</sup> Interface, Start-up Diagram Interface



Press button “▲” to set start-up time and trigger mode. *P-5t* refers to self-judgement and *d13* refers to DI3 trigger mode. After completing modification, press button “←” and it will enter 48<sup>th</sup> interface.

#### 48<sup>th</sup> Interface, Start-up Hour Interface for Settlement



It displays the energy settlement hours for last 10 days. Press button “▲” to set settlement time. After completing modification, press button “←” and it will enter 49<sup>th</sup> interface.

#### 49<sup>th</sup> Interface, User's Password Interface



User can modify password. The present interface displays the default password. After

completing modification, press button “←” and it will enter 50<sup>th</sup> interface.

### 50<sup>th</sup> Interface, Pulse Output Mode Interface

PULSE 0

“0” refers to the energy pulse output mode as active energy. “1” refers to the energy pulse output mode as reactive energy. After completing modification, press button “←” and it will enter 51<sup>st</sup> interface.

### 51<sup>st</sup> Interface, Exit Parameter Group 1 Interface

1-E

Press button “←” to exit parameter group 1 and enter 2<sup>nd</sup> interface.

Press button “←” for long and enter password again. Press button “Menu” to display the interfaces as follows:

### 38<sup>th</sup> Interface, Parameter Group 2 Interface

545 2

Press button “←” to enter parameter group 2 and enter 52<sup>nd</sup> interface.

### 52<sup>nd</sup> Interface, CT Ratio Interface

ALPE 0150

The present interface displays the CT ratio as 15.000. After completing modification, press button “←” and it will enter 53<sup>rd</sup> interface.

### 53<sup>rd</sup> Interface, PT Ratio Interface

volt 1000

The present interface displays the PT ratio as 100.0. After completing modification, press button “←” and it will enter 54<sup>th</sup> interface.

### 54<sup>th</sup> Interface, Interface of Decimal Digits of Voltage

PontU 1

The present interface displays the decimal digits of voltage as 1. Press button “▲” to set decimal digits. After completing modification, press button “←” and it will enter 54<sup>th</sup>

interface.

#### 55<sup>th</sup> Interface, Interface of Decimal Digits of Current



The present interface displays the decimal digits of current as 1. Press button “▲” to set decimal digits. After completing modification, press button “←” and it will enter 56<sup>th</sup> interface.

#### 56<sup>th</sup> Interface, Power Range Interface



The present interface displays the unit of power as kW and maximum power is 9.999kW. After completing modification, press button “←” and it will enter 57<sup>th</sup> interface.

#### 57<sup>th</sup> Interface, Rated Voltage Interface



User can set rated voltage. The decimal position of rated voltage is the same with that of PT ratio. After completing modification, press button “←” and it will enter 58<sup>th</sup> interface.

#### 58<sup>th</sup> Interface, Rated Current Interface



User can set rated current. The decimal position of rated current is the same with that of CT ratio. After completing modification, press button “←” and it will enter 59<sup>th</sup> interface.

#### 59<sup>th</sup> Interface, Exit Parameter Group 2 Interface



Press button “←” to exit parameter group 2 and enter 2<sup>nd</sup> interface.

Press button “←” for long and enter password again. Press button “Menu” to display the interfaces as follows:

#### 38<sup>th</sup> Interface, Parameter Group 3 Interface



Press button “←” to enter parameter group 3 and enter 60<sup>th</sup> interface.

### 60<sup>th</sup> Interface, The Proportion of Starting Current to Rated Current Interface

1-STAR 25

The setting range for the proportion is 10%~50%. Press button “▲” to set the proportion. After completing modification, press button “←” and it will enter 61<sup>st</sup> interface.

### 61<sup>st</sup> Interface, Start-up Time Interface

t-STAR 010

The setting range is 1~250s. Press button“▲” to set the time. After completing modification, press button “←” and it will enter 62<sup>nd</sup> interface.

### 62<sup>nd</sup> Interface, Shut down time Interface

t-STOP 020

The setting range is 1~250s. Press button“▲” to set the downtime. After completing modification, press button “←” and it will enter 63<sup>rd</sup> interface.

### 63<sup>rd</sup> Interface, Harmonic Content Interface

tHdA 000

Press button“▲” to cyclical display harmonic content of IA, IB, IC, UA, UB and UC. Press button “←” and it will enter 64<sup>th</sup> interface.

### 64<sup>th</sup> Interface, Over-current Protection Interface

h1-1 CUT h1-1u 120 h1-1t 050

Press button“▲” to set *ALr* as alarm, *CUT* as tripping and *d15* as invalid. The setting value range is [105%~200%]Ie, action time 0.1s~25.0s and setting difference 0.1s. The present interface displays the over-current protection setting as tripping. When current of any phase is more than 120% of rated current, delay 5s to trip. After completing modification, press button “←” and it will enter 65<sup>th</sup> interface.

### 65<sup>th</sup> Interface, Over-voltage Protection Interface

h1-U CUT h1-Uu 130 h1-Ut 050

Press button “▲” to set *ALr* as alarm, *CUT* as tripping and *d15* as invalid. The setting value range is [105%~200%]U<sub>e</sub>, action time 0.1s~25.0s and setting difference 0.1s. The present interface displays the over-voltage protection setting as tripping. When voltage of any phase is more than 130% of rated voltage, delay 5s to trip. After completing modification, press button “←” and it will enter 66<sup>th</sup> interface.

#### 66<sup>th</sup> Interface, Under-voltage Protection Interface

Lo-U CUT Lo-Uu 080 Lo-Ut 050

Press button “▲” to set *ALr* as alarm, *CUT* as tripping and *d15* as invalid. The setting value range is [20%~100%]U<sub>e</sub>, action time 0.1s~25.0s and setting difference 0.1s. The present interface displays the under-voltage protection setting as tripping. When maximum phase voltage is less than 80% of rated voltage, delay 5s to trip. After completing modification, press button “←” and it will enter 67<sup>th</sup> interface.

#### 67<sup>th</sup> Interface, Short-phase Protection Interface

LoSt-1 CUT LoSt-1t050

Press button “▲” to set *ALr* as alarm, *CUT* as tripping and *d15* as invalid. The action time 0.1s~25.0s and setting difference 0.1s. The present interface displays the short-phase protection setting as tripping. When there is short-phase for any phase current, delay 5s to trip. After completing modification, press button “←” and it will enter 68<sup>th</sup> interface.

#### 68<sup>th</sup> Interface, Imbalance Protection Interface

brEd-1 CUT brEd-1u030 brEd-1t100

Press button “▲” to set *ALr* as alarm, *CUT* as tripping and *d15* as invalid. The setting value range is [10%~95%]I<sub>e</sub>, action time 0.1s~25.0s and setting difference 0.1s. The present interface displays the imbalance protection setting as tripping. When current imbalance is more than 30%, delay 10s to trip. After completing modification, press button “←” and it will enter 69<sup>th</sup> interface.

#### 69<sup>th</sup> Interface, Zero-sequence Over-Current Protection Interface

h1-10 CUT h1-10u 080 h1-10t 050

Press button “▲” to set *ALr* as alarm, *CUE* as tripping and *d15* as invalid. The setting value range is [30%~100%]Ie, action time 0.1s~25.0s and setting difference 0.1s. The present interface displays the over-current protection setting as tripping. When zero-sequence current is more than 80% of rated current, delay 5s to trip. After completing modification, press button “←” and it will enter 70<sup>th</sup> interface.

#### 70<sup>th</sup> Interface, Zero-sequence Over-voltage Protection Interface

*h1-U0 CUE h1-U0U 050 h1-U0E 050*

Press button “▲” to set *ALr* as alarm, *CUE* as tripping and *d15* as invalid. The setting value range is [30%~100%]Ue, action time 0.1s~25.0s and setting difference 0.1s. The present interface displays the zero-sequence over-voltage protection setting as tripping. When zero-sequence voltage is more than 50% of rated voltage, delay 5s to trip. After completing modification, press button “←” and it will enter 71<sup>st</sup> interface.

#### 71<sup>st</sup> Interface, Exit Parameter Group 3 Interface

*3-E*

Press button “←” to exit parameter group 3 and enter 2<sup>nd</sup> interface. Press button “←” for long and enter password again. Press button “Menu” to display the interfaces as follows:

#### 38<sup>th</sup> Interface, Parameter Group 4 Interface

*545 4*

Press button “←” to enter parameter group 4 and enter 72<sup>nd</sup> interface.

#### 72<sup>nd</sup> Interface, Time of Use Interface(10 TOU Settable)

*1 Star-01.00 1 End-07.00*

Press button “▲” to set the starting and ending time of TOU. Press button “←” to switch and set TOUs. After setting all 10 TOUs, press button “←” and it will enter 73<sup>rd</sup> interface.

#### 73<sup>rd</sup> Interface, Exit Parameter Group 4 Interface

*4-E*

Press button “←” to exit parameter group 4 and enter 2<sup>nd</sup> interface.

Press button “←” for long and enter password again. Press button “Menu” to display the interfaces as follows:

### 38<sup>th</sup> Interface, Parameter Group 5 Interface

545 5

Press button “←” to enter parameter group 5 and then enter 74<sup>th</sup> interface.

### 74<sup>th</sup> Interface, SOE Query Interface

LL 0 10337 hh20 17.103 1

The present interface displays causes and time of event-1. Press button “←” to query SOE and enter 75<sup>th</sup> interface.

The causes of SOE are remarked as follows

Over-Current	Over-Voltage	Under-Voltage	Short-Phase	Unbalance	Zero-Sequence Current	Zero-Sequence Over-Voltage
HI -I	HI -U	Lo-U	LoSt	BrERd	HI -I 0	HI -U0
DI1 Connected	DI1 Disconnected	DI2 Connected	DI2 Disconnected	Clear Energy	Parameter Modification	
dl 1-1	dl 1-0	dl 2-1	dl 2-0	cLrE	SEtS	

### 75<sup>th</sup> Interface, Exit Parameter Group 5 Interface

5-E

Press button “←” to exit parameter group 5 and enter 2<sup>nd</sup> interface.

## Chapter 7 After-sales Service

### Product Warranty

1. The product warranty period is one year.
2. The company is responsible for free maintenance or exchange within one-year warranty period.
3. The cost of the components and freight shall be charged for improper meter installation and/or operation.
4. Over the warranty period, part of the maintenance cost according to actual situation will be charged.

### Service Guarantee

1. Product technical consulting and quality complaints will be replied within 12 hours.
2. Solutions for quality complaints will be provided within 24 hours.

3. Except statutory holidays and force majeure.

## **Chapter 8 Contact Us**

Headquarter Add.: 7F No.1 Aosheng Building, 1166 Xinluo Street, High-tech Development Zone, Jinan, P.R. China 250101

Factory Add.: 2F Innovation Factory, Feiyue Road, High-tech Development Zone, Jinan, P.R. China 250101

Tel: +86 68621770-863

Code: 250101

E-mail: [info@heyuanintel.com](mailto:info@heyuanintel.com)