

EV METER

MODBUS MAP

1-PHASE

9AKK107992A5721

Default Modbus settings:

Baud rate = 9600 (settable)

Device Address = 1 (settable)

Parity = Even (settable)

1 Total energy

Name	Binary Address	Hexadecimal Address	Data Format
Active import energy	0101 0000 0000 0000	0x5000	(8 bytes, 4 decimal places, the unit: kWh) 0x00000000 0x00000000 112.2867kWh unsigned 00112233 00112233 =1122867

2 Instantaneous values

2.1 Voltage

Details	Binary Address	Hexadecimal Address	Data Format (4 bytes, 1 decimal place, the unit: V)			
L1-N	0101 1011 0000 0000	0x5B00	0x000008F3	0x000008F3	229.1V	unsigned
				= 2291		

2.2 Current

Details	Binary Address	Hexadecimal Address	Data Format (4 bytes, 2 decimal places, the unit: A)			
L1	0101 1011 0000 1100	0x5B0C	0x00000209	0x00000209	5.21A	unsigned
				=521		

2.3 Active power

Details	Binary Address	Hexadecimal Address	Data Format (4 bytes, 2 decimal places, the unit: W)			
Total active power	0101 1011 0001 0100	0x5B14	0x0001C14D	0x0001C14D	1150.21W	signed
				=115021		

2.4 Frequency

Details	Binary Address	Hexadecimal Address	Data Format (2 bytes, 2 decimal places, the unit: Hz)			
Frequency	0101 1011 0010 1100	0x5B2C	0x1388	0x1388	50.00Hz	unsigned
				=5000		

2.5 Power factor

Details	Binary Address	Hexadecimal Address	Data Format (2 bytes, 3 decimal places, range: 0 ~ +1.000)			
Total power factor	0101 1011 0011 1010	0x5B3A	0x03E6	0x03E6	0.998	unsigned
				=998		

3 Production data and identification

Name	Binary Address	Hexadecimal Address	Data size	Data Format	
Serial number	0000 0100 0000 0010	0x0402	6 Bytes	0x001122334455	“001122334455”
Meter firmware version	1000 1001 0000 1000	0x8908	16 Bytes	0x4142434445464 7484950515253545 556	“ABCDEFGHIJK LMNOP” ASCII string (up to 16 characters)
Type designation	1000 1001 0110 0000	0x8960	12 Bytes	0x4142434445464 74849505152	“ABCDEFGHFEF GH” ASCII string (up to 12 characters)
Checksum	1000 1001 0001 0010	0x8912	2 Bytes	0x6185	“6185”

4 Miscellaneous

Name	Binary Address	Hexadecimal Address	Data size	Description	Data type
Error flags	1000 1010 0001 0011	0x8A13	8 Bytes	64 flags	Bit string
					Bit0: EE_error
					Other: reserved

5 Display

Name	Binary Address	Hexadecimal Address	Data size	Data Format(unsigned)	Area	Attribute
Auto Mode Duration (sec)	0001 0000 0000 0000	0x1000	2 Bytes	0x000A=10	4~20, UNIT (s) default: 5s	RW
Auto Mode Write register (32 Item)	0001 0001 0000 0000	0x1100	64 Bytes	5B00 FFFF FFFF FFFF ... FFFF (32 Item * 2 = 64 bytes)		RW
Auto Display Item	0001 0000 0001 0000	0x1010	2 Bytes	0x000A=10		RW

6 Basic Information

Details	Binary Address	Hexadecimal Address	Data Format			Attribute	Data size
Rated Voltage	0000 0100 0000 1100	0x040C	0x000008F C	0x000008F C=2300	230.0V un- signed	R	4 Bytes
Rated Current	0000 0100 0000 1110	0x040E	0x000001F 4	0x000001F 4 =500	5.00A un- signed	R	4 Bytes
Maximum Current	0000 0100 0001 0001	0x0411	0x0000196 4	0x0000196 4 =6500	65.00A un- signed	R	4 Bytes
Rated Frequency	0000 0100 0001 0000	0x0410	0x1388	0x1388 =5000	50.00Hz un- signed	R	2 Bytes

Communication Address	1000 1001 0000 0000	0x8900	0x0074	0x0074	74	RW	2 Bytes
Baud rate	0000 0100 0000 1011	0x040B	0x0005 0x0006 0x0007	5 - 9600bps 6 - 19200bps 7 - 38400bps	Default: 5 - 9600 bps	RW	2 Bytes
Active pulse constant	0000 0100 0001 0011	0x0413	0x03E8	0x03E8 =1000	1000 imp/kWh	R	2 Bytes
Communication Parity	0000 0100 0001 0100	0x0414	0x0001 0x0002 0x0003	1 - 8N1 2 - 8E1 3 - 8O1	Default: 2 - 8E1	RW	2 Bytes

7 Descriptions of combination reading

Because EV1 does not define consecutive register addresses, combination reading is not commonly used for EV1.

If register addresses are read in combination, the data of undefined address will be return 0.

7.1 Read instantaneous data.

starting address: 5B00, quantity of registers: 59

Data analysis:

Send →◇01 03 5B 00 00 3B 17 3D

// 0x5B00: The register address of voltage. Starting address should be defined, use undefined address as starting address,

meter will return error code 02, mean address error

0x3B = 59[59 registers]

Receive ←◆01 03 76

00 00 08 FC //0x5B00: Voltage

00 //undefined address, data will be zero.

00 00 01 F4 //0x5B0C: Current

00 00 00 00 00 00 00 00 00 00 00 00 //undefined address, data will be zero.

00 01 C1 38 //0x5B14: Active power

