Communication Protocol of Residential Hybrid Inverter

V1.0.23

Version number	Date	Note
1.0.12	2016/02/22	Initial released version.
1.0.13	2016/10/13	Modify content for register: 5003-5005,13036-13038,13055.
1.0.14	2017/12/05	Add register: 2582-2626 (Firmware Version).
1.0.15	2018/03/12	1.Modify register 13008-13009 data type from U32 to S32. 2.Add Appendix 1.3 fault code instructions.
1.0.16	2018/06/13	1.Add description for valid device types. 2. Add device code definition to register 5000. 3.Modify register 13061 data range from 30.0-48.0V to 32.0-48.0V.
1.0.17	2018/07/17	Delete content for register 13076-13079 and 13081-13082.
1.0.18	2019/01/05	1.Add register 13086 (Meter Comm. Detection).

		2. Delete content for register 2582-2626.
1.0.19	2019/05/28	Add new valid device types: SH5K-30/SH3K6-30/SH4K6-30, SH3.6RS/SH5.0RS/SH6.0RS, SH5.0RT/SH6.0RT/SH8.0RT/SH10RT.
1.0.20	2020/04/07	1.Add register 4954 (ARM software version) and register 4969 (DSP software version). 2.Modify register 13087 (Export Power Limitation) to include: SH5.0RT/SH6.0RT/SH8.0RT/SH10RT. 3.Add Running in External EMS mode 0x4000 in Appendix 1.1 system state for SH5.0RT/SH6.0RT/SH8.0RT/SH10RT.
1.0.21	2020/05/08	1.Modify register 13055 to include Li-ion TAWAKI. 2.Modify register 13062 data range from 20.0-60.0℃ to 20.0-70.0℃. 3.Modify register 13068 data range from 40.00-60.00V to 40.00-63.00V.

		4.Modify register 13069 data range from 30.000-50.000V to 30.000-53.000V. 5.Modify register 13080 data range from 0-20s to 1-1000s.
1.0.22	2020/11/13	1. Add register 5622 (Export limit min), register 5623 (Export limit max), register 5628 (BDC rated power), register 5635 (Max. Charging Current (BMS)), register 5636 (Max. Discharging Current (BMS)). 2. Modify register 13052 Charge/discharge power data range to 0-100 times of BDC rated Power (RO register 5628) for SH5.0RT/SH6.0RT/SH8.0RT/SH10RT. 3. Modify register 13074 Export power limitation to 10 times of Export limit min (RO register 5622) -10 times of Export limit max (RO register 5623).
1.0.23	2021/12/22	1.Modify notes about SH3.0RS/SH3.6RS/SH4.0RS/SH5.0RS/

		SH6.0RS for register 5000,5622,5623,5628,5635,5636,13087. 2.Add new valid device types: SH3.0RS/SH4.0RS

Valid device types:

SH3K6.SH4K6.SH5K-20.SH5K-V13

SH3K6-30.SH4K6-30.SH5K-30

SH3.0RS .SH3.6RS.SH4.0RS.SH5.0RS.SH6.0RS

SH5.0RT .SH6.0RT.SH8.0RT.SH10RT

1.Introduction

This communication protocol, complies ModBus, applies to the communication between Sungrow grid-connected hybrid inverters (SH-inverter) and monitoring system.

2.Communication Interface

1.1 RS485

Item	Default setting
Address	Inverter: 1 – 247 settable PC: 1 – 247 settable
Broadcast	Yes

Baud rate	9600 bit/s
Check bit	Null or settable
Data bit	8
Stop bit	1
Mode	RTU
Appliance interface	RS485-2W cable connection

1.2 Ethernet (optional)

Default:

- DHCP: ON
- Port: 502

3. Address Definition

- Read-only register type supports the command code of 0x04.

- Holding register type supports the command codes of 0x03, 0x10 and 0x06.

3.1 Running information variable address definition (read-only register)

No.	Name	Address	Data type	Data range	Unit	Note
1	Protocol No.	4950 - 4951	U32			
2	Protocol ver.	4952 - 4953	U32			
3	ARM software version	4954 - 4968	U16*15			

4	DSP software version	4969 - 4983	U16*15			
5	Reserved	4984-4989				
6	SN	4990 - 4999	U16*10			UTF-8
7	Device type code	5000	U16			SH3K6 0xD06 SH4K6 0xD07 SH5K-20 0xD09 SH5K-V13 0xD03 SH3K6-30 0xD0A SH4K6-30 0xD0B SH5K-30 0xD0C SH3.0RS 0xD17 SH3.6RS 0xD0D SH4.0RS 0xD18 SH5.0RS 0xD0F SH6.0RS 0xD10 SH5.0RT 0xE00 SH6.0RT 0xE01 SH8.0RT 0xE02 SH10RT 0xE03
8	Nominal output power	5001	U16		0.1kW	

9	Output type	5002	U16	0-Single phase; 1-3P4L; 2-3P3L		
10	Daily Output Energy	5003	U16		0.1kWh	Hybrid active power accumulation (Include PV generation and battery discharge energy)
11	Total Output Energy	5004 - 5005	U32		0.1kWh	
12	Reserved	5006 - 5007				
13	Inside Temperature	5008	S16		0.1℃	
14	Reserved	5009~5010				
15	MPPT 1 Voltage	5011	U16		0.1V	
16	MPPT 1 Current	5012	U16		0.1A	
17	MPPT 2 Voltage	5013	U16		0.1V	
18	MPPT 2 Current	5014	U16		0.1A	
19	Reserved	5015 - 5016				
20	Total DC power	5017 - 5018	U32		W	PV Power
21	A-B line voltage/phase A voltage	5019	U16		0.1V	Refer to Output type (address: 5002) 0: phase voltage;

						1: phase voltage; 2: line voltage
22	B-C line voltage/phase B voltage	5020	U16		0.1V	Refer to Output type (address: 5002) 0: phase voltage; 1: phase voltage; 2: line voltage
23	C-A line voltage/phase voltage	5021	U16		0.1V	Refer to Output type (address: 5002) 0: phase voltage; 1: phase voltage; 2: line voltage
24	Reserved	5022~5032				
25	Reactive power	5033~5034	S32		var	
26	Power factor	5035	S16		0.001	
27	Grid frequency	5036	U16		0.1Hz	
28	Export limit min	5622	U16		10W	SH5.0RT SH6.0RT SH8.0RT SH10.0RT SH3.0RS SH3.6RS
29	Export limit max	5623	U16		10W	
30	BDC rated power	5628	U16		100W	
31	Max. Charging	5635	U16		1A	

	Current (BMS)					SH4.0RS SH5.0RS SH6.0RS
32	Max. Discharging Current (BMS)	5636	U16		1A	
33	PV Power of today	6100 - 6195	U16		1W	
34	Daily PV energy yields	6196 - 6226	U16		0.1KWh	
35	Monthly PV energy yields	6227 - 6238	U16		1KWh	
36	Reserved	6239 - 6249				
37	Yearly PV energy yields	6250 - 6289	U32*20		0.1kWh	
38	Direct power consumption of today from PV	6290 - 6385	U16*96		1W	
39	Daily direct energy consumption from PV	6386 - 6416	U16*31		0.1kWh	
40	Monthly direct energy	6417 - 6428	U16*12		0.1kWh	

	consumption from PV					
41	Yearly direct energy consumption from PV	6429 - 6468	U32*20		0.1kWh	
42	Export power from PV of today	6469 - 6564	U16*96		1W	
43	Daily export energy from PV	6565 - 6595	U16*31		0.1kWh	
44	Monthly export energy from PV	6596 - 6607	U16*12		0.1kWh	
45	Yearly export energy from PV	6608 - 6647	U32*20		0.1kWh	
46	Battery charge power of today	6648 - 6743	U16*96		1W	
47	Daily battery charge energy from PV	6744 - 6774	U16*31		0.1kWh	
48	Monthly battery charge energy	6775 - 6786	U16*12		0.1kWh	

	from PV					
49	Yearly battery charge energy from PV	6787 - 6826	U32*20		0.1kWh	
50	Reserved	6827-12999				
51	System state	13000	U16			Refer to Appendix 1.1
52	Running state	13001	U16		0.1kWh	Refer to Appendix 1.2
53	Daily PV Generation	13002	U16		0.1kWh	
54	Total PV Generation	13003 - 13004	U32		0.1kWh	
55	Daily export power from PV	13005	U16		0.1kW	
56	Total export energy from PV	13006 - 13007	U32		0.1kWh	
57	Load power	13008 - 13009	S32		1W	
58	Export power	13010 - 13011	S32		1W	
59	Daily battery charge energy from PV	13012	U16		0.1kWh	

60	Total battery charge energy from PV	13013 - 13014	U32		0.1kWh	
61	CO_2-reduction	13015 - 13016	U32		0.1kg	
62	Daily direct energy consumption	13017	U16		0.1kWh	
63	Total direct energy consumption	13018 - 13019	U32		0.1kWh	
64	Battery voltage	13020	U16		0.1V	
65	Battery current	13021	U16		0.1A	
66	Battery power	13022	U16		1W	
67	Battery level	13023	U16		0.1%	
68	Battery state of healthy	13024	U16		0.1%	
69	Battery temperature	13025	S16		0.1℃	
70	Daily battery discharge energy	13026	U16		0.1kWh	

71	Total battery discharge energy	13027 - 13028	U32		0.1kWh	
72	Self-consumption of today	13029	U16		0.1%	
73	Grid state	13030	U16		-	0xAA: Off grid; 0x55: On Grid
74	Phase A current	13031	S16		0.1A	
75	Phase B current	13032	S16		0.1A	Refer to Output type (address: 5002) 0: Invalid; 1/2: Valid
76	Phase C current	13033	S16		0.1A	Refer to Output type (address: 5002) 0: Invalid; 1/2: Valid
77	Total active power	13034 - 13035	S32		W	
78	Daily Import Energy	13036	U16		0.1kWh	

79	Total Import Energy	13037~13038	U32		0.1kWh	
80	Battery Capacity	13039	U16		0.1kwh /Ah	Li-ion：kwh Lead-acid：Ah Applicable types: SH5K-20 SH3K6 SH4K6 SH5K-V13 SH5K-30 SH3K6-30 SH4K6-30
81	Daily Charge Energy	13040	U16		0.1kWh	
82	Total Charge Energy	13041~13042	U32		0.1kWh	
83	DRM State	13043	U16	1~9: DRM0~DRM8 Other Value: Invalid		

84	Reserved	13044				
85	Daily export energy	13045	U16		0.1kWh	
86	Total export energy	13046~13047	U32		0.1kWh	
87	Reserved	13048~13049				
88	Inverter alarm	13050 - 13051	U32			Refer to Appendix 1.3
89	Grid-side fault	13052 - 13053	U32			
90	System fault 1	13054 - 13055	U32			
91	System fault 2	13056 - 13057	U32			
92	DC-side fault	13058 - 13059	U32			
93	Permanent fault	13060 - 13061	U32			
94	BDC-side fault	13062 - 13063	U32			
95	BDC-side	13064 -	U32			

	permanent fault	13065				
96	Battery fault	13066 - 13067	U32			
97	Battery alarm	13068 - 13069	U32			
98	BMS alarm	13070 - 13071	U32			
99	BMS protection	13072 - 13073	U32			
100	BMS fault 1	13074 - 13075	U32			
101	BMS fault 2	13076 - 13077	U32			
102	BMS alarm 2	13078~13079	U32			
103	Reserved	13080 - 13099				
104	BMS Status	13100	U16			BMS info. Applicable types: SH5K-20 SH3K6 SH4K6
105	Max. charging current	13101	U16		A	
106	Max. discharging	13102	U16		A	

	current					SH5K-V13
107	Warning	13103	U16			SH5K-30
108	Protection	13104	U16			SH3K6-30
109	Fault 1	13105	U16			SH4K6-30
110	Fault 2	13106	U16			
111	SOC	13107	U16		1%	
112	SOH	13108	U16		1%	
113	Battery Current	13109	U16		0.1A	
114	Battery Voltage	13110	U16		0.01V	
115	Cycle Count	13111	U16			
116	Average cell voltage	13112	U16			
117	Max cell voltage	13113	U16			
118	Min cell voltage	13114	U16			
119	Battery Pack voltage	13115	U16			
120	Average cell temp.	13116	S16			
121	Max cell temp.	13117	S16			
122	Min cell temp.	13118	S16			

Note: please refer to the troubleshooting chapter in SH-inverter manuals for fault code

explanations.

3.2 Parameter setting address definition (holding register)

No.	Name	Address	Data type	Data range	Unit	Note
1	System clock: Year	5000	U16			
2	System clock: Month	5001	U16			
3	System clock: Day	5002	U16			
4	System clock: Hour	5003	U16			
5	System clock: Minute	5004	U16			
6	System clock: Second	5005	U16			
7	Reserved	5006-12999				

8	Start/Stop	13000	U16	0xCF (Start) 0xCE (Stop) Others (no operation)		
9	Battery maintenance	13001	U16	0xAA (Maintenance) Others (no operation)		Applicable types: SH5K-20 SH3K6 SH4K6 SH5K-V13 SH5K-30 SH3K6-30 SH4K6-30
10	Load 1 adjustment mode	13002	U16	0: Timing mode; 1: ON/OFF mode; 2: Power optimized mode		

				3：Disable		
11	Load 1 timing period 1: Start hour	13003	U16	0 - 23	1h	
12	Load 1 timing period 1: Start minute	13004	U16*10	0 - 59	1min	
13	Load 1 timing period 1: End hour	13005	U16	0 - 23	1h	
14	Load 1 timing period 1: End minute	13006	U16	0 - 59	1min	
15	Load 1 timing period 2:	13007	U16	0 - 23	1h	

	Start hour					
16	Load 1 timing period 2: Start minute	13008	U16* 10	0 - 59	1min	
17	Load 1 timing period 2: End hour	13009	U16	0 - 23	1h	
18	Load 1 timing period 2: End minute	13010	U16	0 - 59	1min	
19	Load 1 ON/OFF mode	13011	U16	0xAA (ON) 0x55 (OFF)		
20	Load 1 power optimized mode:	13012	U16	0 - 23	1h	

	Start hour					
21	Load 1 power optimized mode: Start minute	13013	U16	0 - 59	1min	
22	Load 1 power optimized mode: End hour	13014	U16	0 - 23	1h	
23	Load 1 power optimized mode: End minute	13015	U16	0 - 59	1min	
24	Optimized power of load 1	13016	U16	0 - 5000	1W	
25	Reserved	13017-				

		13049				
26	EMS mode selection	13050	U16	0: Self-consumption mode (Default); 2: Forced mode (charge/discharge/stop); 3: External EMS mode		
27	Charge/discharge command	13051	U16	0xAA: Charge; 0xBB: Discharge; 0xCC: Stop (Default);		
28	Charge/discharge power	13052	U16	(1)0-5000W Default:1000W (SH5K-20/SH3K6/SH4K6/SH5K-30/SH3K6-30/SH4K6-30/SH3.0RS/SH3.6RS/SH4.0RS /SH5.0RS /SH6.0RS) (2) 0-100% of BDC rated power (RO register 5628). Pay attention to Unit Coeff difference (SH5.0RT/SH6.0RT/SH8.0RT/SH10.0RT)	1W	
29	Reserved	13053~13054				
30	Battery type	13055	U16	0 Lead-acid Narada 1 Li-ion Samsung 2 No battery 3 Other Lead-acid 4 Li-ion US2000A		Applicable types:

				5 Li-ion LG 6 Li-ion US2000B 7 Li-ion GCL 8 Li-ion BSG 9 Li-ion Sungrow 10 Li-ion BYD 11 Li-ion TAWAKI		SH5K-20 SH3K6 SH4K6 SH5K-V13 SH5K-30 SH3K6-30 SH4K6-30
31	Battery nominal voltage	13056	U16	30.0 - 60.0V	0.1V	
32	Battery capacity	13057	U16	10 - 1000Ah	1Ah	
33	Max. SOC	13058	U16	50．0 - 100.0%	0.1%	
34	Min. SOC	13059	U16	0.0 - 50.0%	0.1%	
35	Battery overvoltage threshold	13060	U16	48.0 - 70.0V	0.1V	Applicable types: SH5K-20 SH3K6 SH4K6
36	Battery under voltage threshold	13061	U16	32.0 - 48.0V	0.1V	

37	Battery over-temperature threshold	13062	S16	20.0 - 70.0℃	0.1℃	SH5K-V13 SH5K-30 SH3K6-30 SH4K6-30
38	Battery under-temperature threshold	13063	S16	-30.0 - 10.0℃	0.1℃	
39	Reserved	13064				
40	Terminated current of constant voltage charging	13065	U16	0.005 - 0.050C	0.001C	Applicable types: SH5K-20 SH3K6 SH4K6 SH5K-V13 SH5K-
41	Max. discharge current	13066	U16	0.100 - 2.000C	0.001C	
42	Max. charge	13067	U16	0.050 - 2.000C	0.001C	

	current					30
43	Constant charge voltage	13068	U16	40.00 - 63.00V	0.01V	SH3K6-30 SH4K6-30
44	Terminated voltage of discharging.	13069	U16	30.000 - 53.000V	0.001V	
45	Emergency charge current	13070	U16	0.025 - 2.000C	0.001C	
46	Time for fully charge	13071	U16	3s - 10800s	1s	
47	Terminated current for fully charge	13072	U16	0.005 - 0.050C	0.001C	
48	Time for constant voltage	13073	U16	3s - 10000s	1s	

	charge					
49	Export power limitation	13074	U16	(1)0 -Nominal output power (SH5K-20/SH3K6/SH4K6/SH5K-30/SH3K6-30/SH4K6-30) (2) Export limit min（RO register 5622）- Export limit max（RO register 5623）. Pay attention to Unit Coeff difference (suitable for SH5.0RT/SH6.0RT/SH8.0RT/SH10.0RT/ SH3.0RS/SH3.6RS/SH4.0RS/SH5.0RS /SH6.0RS)	1W	
50	Off-grid option	13075	U16	0xAA: Enable 0x55: Disable		
51	Reserved	13076~13079				
52	External EMS heartbeat	13080	U16	1 - 1000 If no heartbeat update when timeout, PCS will stop running	1s	Loss if power down
53	Reserved	13081~13082				
54	External Signal of	13083	U16	0：External Signal 0 1：External Signal 1		Applicable

	Italy			Other：No External Signal		types
55	Start Charging Power	13084	U16	70~10000	W	: SH5K-20
56	Start Dischargi ng Power	13085	U16	70~3000	W	SH3K6 SH4K6 SH5K-V13 SH5K-30 SH3K6-30 SH4K6-30
57	Meter Comm. Detectio n	13086	U16	0xAA: Enable 0x55: Disable		
58	Export Power Limitatio n	13087	U16	0xAA: Enable 0x55: Disable		Applic able types :

						SH5.0 RT SH6.0 RT SH8.0 RT SH10RT SH3.0RS SH3.6RS SH4.0RS SH5.0RS SH6.0RS
59	Reserved	13088~13099				
60	Reserved SOC for backup	13100	U16	0~100	%	

Note:

Communication address = protocol address – 1. If data of address 5000 is to be inquired, the corresponding sending address data is 4999 (0x1387);

U16: 16-bit unsigned integer, big-endian;

U32: 32-bit unsigned integer; little-endian for double-word data. Big-endian for byte data;

S16: 16-bit signed integer, big-endian;

S32: 32-bit signed integer; little-endian for double-word data. Big-endian for byte data

Power factor: + means leading; - means lagging, 1000 means power factor 1.000, 950 means power factor 0.95.

4.Appendix

Appendix 1.1 System state

Stop	0x0002
Standby	0x0008
Initial standby	0x0010
Startup	0x0020
Running	0x0040
Fault	0x0100
Running in maintain mode	0x0400
Running in forced mode	0x0800
Running in off-grid mode	0x1000
Restarting	0x2501
Running in External EMS mode	0x4000

Appendix 1.2 Running state

Running state (Power flow)			
Bit0	PV power	Bit0 == 0	No power generated from PV
		Bit0 == 1	Power generated from PV
Bit1	Battery charging	Bit1 == 0	Not charging
		Bit1 == 1	Charging
Bit2	Battery discharging	Bit2 == 0	Not discharging
		Bit2 == 1	Discharging
Bit3	Positive load power	Bit3 == 0	Load is reactive
		Bit3 == 1	Load is active
Bit4	Feed-in power	Bit4 == 0	No power feed-in the grid
		Bit4 == 1	Power feed-in the grid
Bit5	Import Power from grid	Bit5 == 0	No power imported from the grid
		Bit5 == 1	Importing power from grid
Bit6	Reserved	Bit6	
Bit7 (Refitting System)	Negative load power	Bit7 == 0	No power generated from "Load"
		Bit7== 1	Power generated from "Load"

Appendix 1.3 Fault code instructions

Inverter fault analysis by bit:

For example:

Inverter alarm: 0x00102000 (0001 0000 0010 0000 0000 0000b)

bit13 & bit20 is set.

According the following table, the low word base code of the inverter alarm is 70 and the high word base code is 500. So the bit13 represents a fault code of 083 (i.e. 70+13), and the bit 20 represents a fault code of 504 [i.e. 500+(20-16)].

Inverter alarm 13050 - 13051	Low word base code: 70	**DC-side fault** 13058 - 13059	Low byte base code: 19	**Battery fault** 13066 - 13067	Low byte base code: 700	**BMS fault 1** 13074 - 13075	Low byte base code: 832
	High word base code : 500		High word base code: 200		High word base code: 716		High word base code: 848
Grid-side fault 13052 - 13053	Low word base code: 2	**Permanent fault** 13060 - 13061	Low word base code: 401	**Battery alarm** 13068 - 13069	Low word base code: 900	**BMS fault 2** 13076 - 13077	Low word base code: 864
	High		High word		High word		High word

	word base code : 100		base code: 417		base code: 916		base code: 880
System fault 1 13054 - 13055	Low word base code : 300	**BDC-side fault** 13062 - 13063	Low word base code: 600	**BMS alarm** 13070 - 13071	Low word base code: 932	**BMS alarm 2** 13078 - 13079	Low word base code: 964
	High word base code : 316		High word base code: 616		High word base code: 948		High word base code: 980
System fault 2 13056 - 13057	Low word base code: 36	**BDC-side permanent fault** 13064 - 13065	Low word base code: 800	**BMS protection** 13072 - 13073	Low word base code: 732		
	High word base code: 52		High word base code: 816		High word base code: 748		

Appendix 1.4 Examples

Take ComTest for example.

1.1 Acquire one piece of running information

Supposed that the inverter address is 1, it needs to acquire data from address 5000 of 3x address type.

The PC sends (HEX):

01 04 13 87 00 01 85 67

The inverter replies (HEX):

01 04 02 00 22 39 29

Note: The type code of inverter SG4KTL is 0x0022.

1.2 Acquire multiple running information

Supposed that the inverter address is 1, it needs to acquire 10 data from address starting from 5000 of 3x address type

The PC sends (HEX):

01 04 13 87 00 0A C4 A0

The inverter replies (HEX):

01 04 14 00 22 00 28 00 00 00 00 00 05 00 00 00 26 00 00 00 00 00 00 AF F8

Note: The type code of inverter SG4KTL is 0x0022. The nominal output power is 4.0 kW, two-phase. Daily power generation is 0. The total power generation is 5 kWh. The total running time is 38 h. The internal temperature is 0℃. The internal transformer temperature is 0℃.

1.3 Acquire SN

Supposed that the inverter address is 1, it needs to acquire 10 data from address starting from 4990 of 3x address type

The PC sends (HEX):

01 04 13 7D 00 0A E4 91

The inverter replies (HEX):

01 04 14 31 32 31 32 31 32 30 30 31 00 00 00 00 00 00 00 00 00 00 9B 56

Note:

1. SN data type is UTF-8;

2. Serial number is: 121212001

1.4 Read one setting datum

Supposed that the inverter address is 1, it needs to read data from address 5000 of 4x address type.

The PC sends (HEX):

01 03 13 87 00 01 30 A7

The inverter replies (HEX):

01 03 02 07 D8 BA 2E

Note: the data read out is year 2008.

1.5 Read multiple setting data

Supposed that the inverter address is 1, it needs to read 10 data from address starting from 5000 of 4x address type.

The PC sends (HEX):

01 03 13 87 00 0A 71 60

The inverter replies (HEX):

01 03 14 07 DA 00 0A 00 1E 00 09 00 28 00 25 00 CE 00 AA 01 F4 00 00 80 53

Note: The data are October 30th, 2010, 09:40:37; Stop; power limitation enabled, power limitation value is 50%.

1.6 Set one datum

Supposed that the inverter address is 1, it needs to set data from address 5000 of 4x address type.

The PC sends (HEX):

01 10 13 87 00 01 02 07 DA 19 4D

The inverter replies (HEX):

01 10 13 87 00 01 B5 64

Or

The PC sends (HEX):

01 06 13 87 07 DA BE CC

The inverter replies (HEX):

01 06 13 87 07 DA BE CC

Note: The setting data is year 2010

1.7 Set multiple data

Supposed that the inverter address is 1, it needs to set 10 data to address starting from 5000 of 4x address type.

The PC sends (HEX):

01 10 13 87 00 0A 14 07 D9 00 0A 00 1E 00 09 00 10 00 00 00 CE 00 AA 01 F4 00 00 3E 65

The inverter replies (HEX):

01 10 13 87 00 0A F4 A3

Note: The data are October 30th, 2009, 09:16:00, stop, power limitation enabled, power limitation value is 50%.