Modbus Protocol for BWG UPS

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Protocol in P35

1. Version Information

NO.	Date	Content	Author
V00	2014-6-11	初稿	Bluefish
V01	2014-10-23	1.新增版本信息说明。 2.启用第 3 项 Capability setting 中地址 15 的 Bit13.该位为 Enable/disable battery deep discharge protect。但是没有单独的标志位，而是在 sSetEEPBatteryWorkTime（）中存 0，代表 disable，Enable 设置的时候 RS232 和 Modbus 均发送 1，若已经是 Enable 状态，则不改变 EEPROM 的值，若是 Disable 状态则 EEPROM 中存入 999。 3.第 4 项 Support Capability list 中地址 17 的 Bit13 去掉阴影，即支持此标志位。	Bert
V02	2015-1-29	控制结果位 500Register 增加市电电压 High,Low,市电频率 High low Loss 设置是否成功的标记位。 2. 增加 436,437,438,439Registers for Line vol/freq high/low loss setting 3. Change Note1. bat silent to Bzon/Bzoff	

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2. Warning item

Hex	Dec	Size	Content	Bit value	type
0x0001	1	bit15	Battery open	0:FALSE/1:TRUE	Read only
		bit14	Input N loss	0:FALSE/1:TRUE	Read only
		bit13	Line phase error	0:FALSE/1:TRUE	Read only
		bit12	Bypass phase error	0:FALSE/1:TRUE	Read only
		bit11	Battery over charged	0:FALSE/1:TRUE	Read only
		bit10	Battery low	0:FALSE/1:TRUE	Read only
		bit9	Over load	0:FALSE/1:TRUE	Read only
		bit8	EOP Active	0:FALSE/1:TRUE	Read only
		Bit7	Over temperature	0:FALSE/1:TRUE	Read only
		Bit6	Battery unbalance	0:FALSE/1:TRUE	Read only
		Bit5	Reserved	0:FALSE/1:TRUE	Read only
		Bit4-0	Reserved		
0x0002	2	Bit15	CAN communication error		
		Bit14	Synchronization line error		
		Bit13	Synchronization pulse error		
		Bit12	Host line error		
		Bit11	Male connection error		
		Bit10	Female connection error		
		Bit9	Parallel line connection error		
		Bit8	Battery connect different		
		Bit7	Line connect different		
		Bit6	Bypass connect different		
		Bit5	Mode type different		
		Bit4	Parallel inverter voltage setting different		
		Bit3	Parallel output frequency setting different		
		Bit2	Parallel output parallel setting different		
		Bit1	Parallel output phase setting different		
		Bit0	Parallel Bypass Forbidden setting different		
0x0003	3	Bit15	Parallel Converter Enable setting different		
		Bit14	Parallel Bypass Freq High loss setting different		
		Bit13	Parallel Bypass Freq Low loss setting different	0:FALSE/1:TRUE	Read only

		Bit12	Parallel Bypass Volt High loss setting different		
		Bit11	Parallel Bypass Volt Low Loss setting different		
		Bit10	Parallel Line Freq High Loss setting different		
		Bit9	Parallel Line Freq Low Loss setting different		
		Bit8	Parallel Line Volt High Loss setting different	0:FALSE/1:TRUE	Read only
		Bit7	Parallel Line Volt Low Loss setting different	0:FALSE/1:TRUE	Read only
		Bit6	Parallel protect warning	0:FALSE/1:TRUE	Read only
		Bit5-0	Reserved		
0x0004	4	bit15	Keep in bypass after overload 3 times in 30min	0:FALSE/1:TRUE	Read only
		bit14	Three-phase AC input current unbalance	0:FALSE/1:TRUE	Read only
		bit13	Warning for Battery replace	0:FALSE/1:TRUE	Read only
		bit12	Cover of maintain switch is open	0:FALSE/1:TRUE	Read only
		bit11	EEPROM operation error	0:FALSE/1:TRUE	Read only
		bit10	Battery over temperature	0:FALSE/1:TRUE	Read only
		bit9	End of battery backup time		
		bit8	Battery switch open	0:FALSE/1:TRUE	Read only
		bit7	Battery test failed	0:FALSE/1:TRUE	Read only
		bit6	Inverter DC voltage too high	0:FALSE/1:TRUE	Read only
		Bit5	Phase lock failed		
		Bit4	Reserved		
		Bit3	Reserved		
		Bit2	Reserved		
		Bit1	Reserved		
		Bit0	Reserved		
0x0005	5	Bit15-8	Reserved		
		Bit7	MCU EEPROM Error		
		Bit6-0	Reserved		

3. Capability setting（look for Application example 1）

Hex	Dec	Size	Content	Bit value	Register value	type

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0x0 00E	14	bit15	Enable/disable audible alarm	0:FALSE/1:TRUE	E:8000/D:7FFF	Read/Write
		bit14	Enable/disable battery mode audible warning	0:FALSE/1:TRUE	E:4000/D:BFFF	Read/Write
		bit13	Enable/disable code start	0:FALSE/1:TRUE	E:2000/D:DFFF	Read/Write
		bit12	Enable/disable battery open status check	0:FALSE/1:TRUE	E:1000/D:EFFF	Read/Write
		bit11	Enable/disable high efficiency mode (ECO mode)	0:FALSE/1:TRUE	E:800/D:F7FF	Read/Write
		bit10	Enable/disable bypass forbidden	0:FALSE/1:TRUE	E:400/D:FBFF	Read/Write
		bit9	Enable/disable energy saving	0:FALSE/1:TRUE	E:200/D:FDFF	Read/Write
		bit8	Enable/disable short restart 3 times	0:FALSE/1:TRUE	E:100/D:FEFF	Read/Write
		bit7	Enable/disable inverter short clear function	0:FALSE/1:TRUE	E:80/D:FF7F	Read/Write
		bit6	Enable/disable Output socket1 when the delay release time is over in battery mode	0:FALSE/1:TRUE	E:40/D:FFBF	Read/Write
		bit5	Enable/disable Output socket2 when the delay release time is over in battery mode.	0:FALSE/1:TRUE	E:20/D:FFDF	Read/Write
		bit4	Enable/disable Site fault detect	0:FALSE/1:TRUE	E:10/D:FFEF	Read/Write
		bit3	Enable/disable hot standby function	0:FALSE/1:TRUE	E:8/D:FFF7	Read/Write
		bit2	Enable/disable deep high efficiency mode	0:FALSE/1:TRUE	E:4/D:FFFB	Read/Write
		bit1	Enable/disable bypass when UPS turn off.	0:FALSE/1:TRUE	E:2/D:FFFD	Read/Write
		bit0	Enable/disable bypass audible warning	0:FALSE/1:TRUE	E:1/D:FFFE	Read/Write
0x0 00F	15	bit15	Enable/disable Constant Phase Angle function	0:FALSE/1:TRUE	E:8000/D:7FFF	Read/Write
		bit14	Enable/disable auto-restart enable	0:FALSE/1:TRUE	E:4000/D:BFFF	Read/Write
		bit13	Enable/disable battery deep discharge protect	0:FALSE/1:TRUE	E:2000/D:DFFF	Read/Write
		bit12	Enable/disable battery low protect (if disable, the battery will discharge to 6V)	0:FALSE/1:TRUE	E:1000/D:EFFF	Read/Write
		bit11	Enable/disable Free run function	0:FALSE/1:TRUE	E:800/D:F7FF	Read/Write
		Bit10	Enable/disable converter mode	0:FALSE/1:TRUE	E:400/D:FBFF	Read/Write
		Bit9	Enable/disable limited runtime on battery mode	0:FALSE/1:TRUE	E:200/D:FDFF	Read/Write
		Bit8	Enable/disable output parallel function in phase angle 0	0:FALSE/1:TRUE	E:100/D:FEFF	Read/Write
		Bit7	Enable/disable phase auto adapt	0:FALSE/1:TRUE	E:80/D:FF7F	Read/Write
		Bit6	Enable/disable period battery test	0:FALSE/1:TRUE	E:40/D:FFBF	Read/Write

		Bit5	Enable/disable power walk in delay function	0:FALSE/1:TRUE	E:20/D:FFDF	Read/Write
		Bit4	Enable/disable battery test stop by time	0:FALSE/1:TRUE	E:10/D:FFEF	Read/Write
		Bit3	Enable/disable battery test stop by voltage	0:FALSE/1:TRUE	E:8/D:FFF7	Read/Write
		Bit2	Enable/disable work without battery	0:FALSE/1:TRUE	E:4/D:FFFB	Read/Write
		Bit1	Enable/disable frequency auto detection	0:FALSE/1:TRUE	E:2/D:FFFD	Read/Write
		Bit0	Reserved			

4. Support Capability list

Hex	Dec	Size	Content	Bit value	type
0x0010	16	bit15	Enable/disable audible alarm	0:FALSE/1:TRUE	Read Only
		bit14	Enable/disable battery mode audible warning	0:FALSE/1:TRUE	Read Only
		bit13	Enable/disable code start	0:FALSE/1:TRUE	Read Only
		bit12	Enable/disable battery open status check	0:FALSE/1:TRUE	Read Only
		bit11	Enable/disable high efficiency mode (ECO mode)	0:FALSE/1:TRUE	Read Only
		bit10	Enable/disable bypass forbidden	0:FALSE/1:TRUE	Read Only
		bit9	Enable/disable energy saving	0:FALSE/1:TRUE	Read Only
		bit8	Enable/disable short restart 3 times	0:FALSE/1:TRUE	Read Only
		bit7	Enable/disable inverter short clear function	0:FALSE/1:TRUE	Read Only
		bit6	Enable/disable Output socket1 when the delay release time is over in battery mode	0:FALSE/1:TRUE	Read Only
		bit5	Enable/disable Output socket2 when the delay release time is over in battery mode.	0:FALSE/1:TRUE	Read Only
		bit4	Enable/disable Site fault detect	0:FALSE/1:TRUE	Read Only
		bit3	Enable/disable hot standby function	0:FALSE/1:TRUE	Read Only
		bit2	Enable/disable deep high efficiency mode	0:FALSE/1:TRUE	Read Only
		bit1	Enable/disable bypass when UPS turn off.	0:FALSE/1:TRUE	Read Only
		bit0	Enable/disable bypass audible warning	0:FALSE/1:TRUE	Read Only
0x0011	17	bit15	Enable/disable Constant Phase Angle function	0:FALSE/1:TRUE	Read Only
		bit14	Enable/disable auto-restart enable	0:FALSE/1:TRUE	Read Only
		bit13	Enable/disable battery deep discharge protect	0:FALSE/1:TRUE	Read Only
		bit12	Enable/disable battery low protect (if	0:FALSE/1:TRUE	Read Only

			disable, the battery will discharge to 6V)		
		bit11	Enable/disable Free run function	0:FALSE/1:TRUE	Read Only
		Bit10	Enable/disable converter mode	0:FALSE/1:TRUE	Read Only
		Bit9	Enable/disable limited runtime on battery mode	0:FALSE/1:TRUE	Read Only
		Bit8	Enable/disable output parallel function in phase angle 0	0:FALSE/1:TRUE	Read Only
		Bit7	Enable/disable phase auto adapt	0:FALSE/1:TRUE	Read Only
		Bit6	Enable/disable period battery test	0:FALSE/1:TRUE	Read Only
		Bit5	Enable/disable power walk in delay function	0:FALSE/1:TRUE	Read Only
		Bit4	Enable/disable battery test stop by time	0:FALSE/1:TRUE	Read Only
		Bit3	Enable/disable battery test stop by voltage	0:FALSE/1:TRUE	Read Only
		Bit2	Enable/disable work without battery	0:FALSE/1:TRUE	Read Only
		Bit1	Enable/disable frequency auto detection	0:FALSE/1:TRUE	Read Only
		Bit0	Reserved		

14. Control parameter and Control action

Hex	Dec	Size	Content	Units/Bit value	Type
	30	1	Test for specified time	Seconds(Hex)	Read/Write
	31	1	Shutdown delay time	Seconds(Hex)	Read/Write
	32	2	Restore delay time	Minutes(Hex)	Read/Write
	50	bit15	Buzzer off	0x8000	Write only
		bit14	Buzzer on	0x4000	Write only
		bit13-b0	Reserved		
	51	Bit15	Shutdown ups immediately and not restore	0x8000	Write only
		Bit14	Restore immediately	0x4000	Write only
		Bit13	Shutdown after <shutdown delay time> and restore when utility come back	0x2000	Write only
		Bit12	Shutdown after <shutdown delay time> and restore after <restore delay time>	0x1000	Write only
		Bit11	Cancel shutdown	0x800	Write only
		Bit10-b0	Reserved		
	52	bit15	Battery test 10 seconds	0x8000	Write only
		bit14	Battery test for specified time	0x4000	Write only
		bit13	Test battery to battery low	0x2000	Write only
		Bit12	Cancel battery test	0x1000	Write only

		Bit11-bit0	Reserved		
	60	Bit15	Result of buzzer off, register 50(bit 15)	0:failure/1:success	Read only
		Bit14	Result of buzzer on, register 50(bit 14)	0:failure/1:success	Read only
		Bit13-0	Reserved		
	61	Bit15	Result of < Shutdown ups immediately and not restore> register 51(bit 15)	0:failure/1:success	Read only
		Bit14	Result of < Restore immediately> register 51(bit 14)		
		Bit13	Result of <Shutdown after <shutdown delay time> and restore when utility come back> register 51 (bit 13)		
		Bit12	Result of <Shutdown after <shutdown delay time> and restore after <restore delay time> > register 51 (bit 12)		
		Bit11	Result of < Cancel shutdown > register 51 (bit 11)		
		Bit10-0	Reserved		
	62	Bit15	Result of <Battery test 10 seconds> Register 52 (bit 15)		
		Bit14	Result of< Battery test for specified time> Register 52(bit 14)		
		Bit13	Result of < Test battery to battery low> Register 52 (bit 13)		
		Bit12	Result of< Cancel battery test> Register 52 (bit 12)		
		Bit11-0	Reserved		

6. Setting Parameter to default value

Hex	Dec	Size	Content	Bit value	Type
0x0030	70	bit15	bit15=Setting control parameter to default value	0x8000	Write Only
			b14-b0 = Reservation		
0x003B	71	bit15	bit15=Flag: Setting control parameter to default value	0:FAIL/1:SUCCES	Read Only

				S	
			b14-b0 = Reservation		

7. UPS working status

Hex	Dec	Size	Content	Units	Type
0x00AA	170	1	UPS Mode inquiry	Note2	ReadOnly
0x00AB	171	1	The input R voltage	0.1V	ReadOnly
0x00AC	172	1	The input S voltage	0.1V	ReadOnly
	173	1	The input T voltage	0.1V	ReadOnly
	174	1	The input frequency	0.1Hz	ReadOnly
	175	1	The output R voltage	0.1V	ReadOnly
	176	1	The output S voltage	0.1V	ReadOnly
	177	1	The output T voltage	0.1V	ReadOnly
	178	1	The output frequency	0.1V	ReadOnly
	179	1	The output R current	0.1A	ReadOnly
	180	1	The output S current	0.1A	ReadOnly
	181	1	The output T current	0.1A	ReadOnly
	182	1	The output load R percent	0.1%	ReadOnly
	183	1	The output load S percent	0.1%	ReadOnly
	184	1	The output load T percent	0.1%	ReadOnly
	185	1	The output load total percent	0.1%	ReadOnly
	186	1	The max temperature	0.1 ℃	ReadOnly
	187	1	Ups status	Note1	ReadOnly
	188	1	The bypass R voltage	0.1V	ReadOnly
	189	1	The bypass S voltage	0.1V	ReadOnly
	190	1	The bypass T voltage	0.1V	ReadOnly
	191	1	The bypass R current	0.1A	ReadOnly
	192	1	The bypass S current	0.1A	ReadOnly
	193	1	The bypass T current	0.1A	ReadOnly
	194	1	The bypass frequency	0.1HZ	ReadOnly
	195	1	The P bus voltage	0.1V	ReadOnly
	196	1	The N bus voltage	0.1V	ReadOnly
	197	1	Temperature of heat sinks 1	1 ℃	ReadOnly
	198	1	Temperature of heat sinks 2	1 ℃	ReadOnly

	199	1	Temperature of heat cabinet	1 ℃	ReadOnly
	200	1	Temperature of battery	1 ℃	ReadOnly

8. System ,battery install date and maintain date, real datetime

	300	4	System install date (YYYYMMDD)	ASC	Read/Write
	304	4	System last maintain date(YYYYMMDD)	ASC	Read/Write
	308	4	Battery install date(YYYYMMDD)	ASC	Read/Write
	312	4	Battery last maintain date(YYYYMMDD)	ASC	Read/Write
	316	7	System date time (YYYYMMDDHHMMSS)	ASC	Read/Write
	323	23	Reserved		
	346	Bit15	The result of setting <System install date>	0:FAIL/1:SUCCESS	ReadOnly
		Bit14	The result of setting <System last maintain date>	0:FAIL/1:SUCCESS	ReadOnly
		Bit13	The result of setting <battery install date>	0:FAIL/1:SUCCESS	ReadOnly
		Bit12	The result of setting <battery last maintain date>	0:FAIL/1:SUCCESS	ReadOnly
		Bit11	The result of setting <system date time>	0:FAIL/1:SUCCESS	ReadOnly
		Bit10-0	Reserved		

8. UPS battery information

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	350	1	Battery voltage P	0.1V	ReadOnly
	351	1	Battery voltage N	0.1V	ReadOnly
	352	1	Battery charging current P	0.1A	ReadOnly
	353	1	Battery charging current N	0.1A	ReadOnly
	354	1	Battery discharging current P	0.1A	ReadOnly
	355	1	Battery discharging current N	0.1A	ReadOnly
	356	1	Battery capacity	1%	ReadOnly
	357	1	Battery remain time	Min.	ReadOnly

13. Setting Parameter item

Hex	Dec	Size	Content	Units	Type
	436	1	The line voltage high loss point	0.1V	Read/Write
	437	1	The line voltage low loss point	0.1V	Read/Write
	438	1	The line frequency high loss point	0.1Hz	Read/Write
	439	1	The line frequency low loss point	0.1Hz	Read/Write
	440	1	The bypass Voltage high loss point	0.1V	Read/Write
	441	1	The bypass Voltage low loss point	0.1V	Read/Write
	442	1	The bypass Freq high loss point	0.1Hz	Read/Write
	443	1	The bypass Freq low loss point	0.1Hz	Read/Write
	444	1	High efficiency mode Voltage high loss point	0.1V	Read/Write
	445	1	High efficiency mode Voltage low loss point	0.1V	Read/Write
	446	1	High efficiency mode frequency high loss point	0.1V	Read/Write
	447	1	High efficiency mode frequency low loss point	0.1V	Read/Write
	448	1	Battery shutdown voltage	0.1V	Read/Write
	449	1	Battery low voltage	0.1V	Read/Write
	450	1	The AH Number of battery	AH	Read/Write
	451	1	Battery max charging current	0.1A	Read/Write

12. Setting Parameter succeed or fail

Hex	Dec	Size	Content	Bit Value	type
	500	bit15	The result of setting<line voltage high loss>	0:FALSE/1:TRUE	Read only
		bit14	The result of setting<line voltage low loss>	0:FALSE/1:TRUE	Read only
		bit13	The result of setting<line frequency high loss>	0:FALSE/1:TRUE	Read only
		bit12	The result of setting<line frequency low loss>	0:FALSE/1:TRUE	Read only

		bit11	The result of setting< bypass Voltage high loss >	0:FALSE/1:TRUE	Read only
		bit10	The result of setting< The bypass Voltage low loss >	0:FALSE/1:TRUE	Read only
		bit9	The result of setting< bypass Freq high loss >		
		bit8	The result of setting< bypass Freq low loss >		
		bit7	The result of setting< High efficiency mode voltage high loss >	0:FALSE/1:TRUE	Read only
		Bit6	The result of setting< High efficiency mode Voltage low loss >	0:FALSE/1:TRUE	Read only
		Bit5	The result of setting< High efficiency mode frequency high loss >	0:FALSE/1:TRUE	Read only
		bit4	The result of setting< High efficiency mode frequency low loss >	0:FALSE/1:TRUE	Read only
		bit3	The result of setting <Battery shutdown voltage>	0:FALSE/1:TRUE	Read only
		bit2	The result of setting <Battery low voltage>	0:FALSE/1:TRUE	Read only
		bit1	The result of setting <AH Number of battery>	0:FALSE/1:TRUE	Read only
		bit0	The result of setting <Battery max charging current>	0:FALSE/1:TRUE	Read only

10. UPS fault information

	600	1	Current fault code		ReadOnly
	601	1	Last fault id store in flash		ReadOnly
	602	1	Fault id that you want to read from flash		WriteOnly
	603	1	The result of read fault id from flash		Note3
	604	40	Fault block that store in flash	(ASCII)	Note4
	644	48			
	692	200			
	892	100			

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15. . UPS model and rating information

Hex	Dec	Size	Content	Units	Type
	992	1	Protocol ID Inquiry	ASCII	Read only
	993	4	DSP Firmware version	ASCII	Read only
	997	4	MCU Firmware version	ASCII	Read only
	1001	9	Module Name	ASCII	Read only
	1010	9	Serial No	ASCII	Read only
	1019	2	Rating VA	VA	Read only
	1021	1	Input phase number	Number	Read only
	1022	1	Output phase number	Number	Read only
	1023	1	Output factor	1%	Read only
	1024	1	Rating input voltage	0.1V	Read only
	1025	1	Rating output voltage	0.1V	Read only
	1026	1	Rating output frequency	0.1Hz	Read only
	1027	1	Battery cell number	Number	Read only
	1028	1	Battery cell voltage	0.1V	Read only
	1029	1	Battery rating voltage	0.1V	Read only
	1030	1	Battery rating AH Number	AH	Read only

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Note

1. Note1

Note 1:			
	Bit15	1	Online UPS(fixed)
	Bit14	0	
	Bit13	Utility Fail	0:FALSE/1:TRUE
	Bit12	Battery Low	0:FALSE/1:TRUE
	Bit11	Bypass Active	0:FALSE/1:TRUE
	Bit10	UPS Failed	0:FALSE/1:TRUE
	Bit09	EPO active	0:FALSE/1:TRUE
	Bit08	Test in Progress	0:FALSE/1:TRUE
	Bit07	Shutdown Active	0:FALSE/1:TRUE
	Bit06	Bzon /Bzoff	0:FALSE/1:TRUE
	Bit05	Bat test OK	0:FALSE/1:TRUE

2. Note2

Note 2:		
0x00D0H	MODE_POWERON	1
	MODE_STANDBY	2
	MODE_BYPSS	3
	MODE_LINE	4
	MODE_BATTERY	5
	MODE_BATTEST	6
	MODE_FAULT	7
	MODE_CONVERT	8
	MODE_ECO	9
	MODE_SHUTDOWN	10

3. Note3

Fault Kind	Fault Number	Fault Name
Bus fault	0x01	Bus start fail
	0x02	Bus volt over
	0x03	Bus volt under
	0x04	Bus volt unbalance
	0x05	Bus short
	0x06	PFC over current
Inverter fault	0x11	Inverter soft fail
	0x12	Inverter volt high
	0x13	Inverter volt low
	0x14	L1 inverter short
	0x15	L2 inverter short
	0x16	L3 inverter short
	0x17	L1L2 inverter short
	0x18	L2L3 inverter short
	0x19	L3L1 inverter short
	0x1A	L1 inverter negative power
	0x1B	L2 inverter negative power
	0x1C	L3 inverter negative power
Electric link fault	0x21	Bat SCR short fault
	0x22	Line SCR short fault
	0x23	Inverter relay open fault
	0x24	Inverter relay short fault
	0x25	Wiring fault
	0x26	Battery reverse fault
	0x27	Battery too high
	0x28	Battery too low
	0x29	Battery Fuse
	0x30	Open-Circuit Fault
Parallel system fault	0x31	CAN communication fault
	0x32	Host line fault
	0x33	Synchronization line fault
	0x34	Synchronization pulse line fault
	0x35	Parallel communication line loss
	0x36	Output circuit fault
Others	0x41	Over temperature
	0x42	CPU communication fault

	0x43	Overload fault
	0x44	Fan fault
	0x45	Charger fault

4. Note4

	Bit	Remarks
0x02AEH	7	1:DCTODC on
	6	1:PFC on
	5	1: INVERTER on
	4	Reserved(always 0)
	3	1:input relay on
	2	1:O/P relay on
	1	Reserved(always 0)
	0	Reserved(always 0)

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Application example

1. Audible alarm Enable or Disable

Look for Enable audible alarm, It in table address 0x000E bit15.Then you may write 0x8000 to 0x000E to Enable audible alarm or write 0xEFFF to 0x0E to disable audible alarm.

For example:

[XX 10 00 0E 00 01 02 80 00 CRCL CRCH]Mean: Enable audible alarm.

[XX 10 00 0E 00 01 02 7F FF CRCL CRCH]Mean: Disable audible alarm.

Inquire the result of execute, you may read the follow address 0x10 bit15.

For example:

[XX 03 00 10 00 01 CRCL CRCH]

[XX 03 02 80 00 CRCL CRCH]Mean: Execute success

[XX 03 02 00 00 CRCL CRCH]Mean: Execute fail

2. Setting buzzer beeps Silent.

Look for silence buzzer beep in address 0x001A bit 15 。Then you may write 0x8000 to 0x001A.

For example:

[XX 10 00 1A 00 01 02 80 00 CRCL CRCH]Silence buzzer beep.

Inquire the execution result. You may read 0x0025

[XX 03 00 25 00 01 CRCL CRCH] to inquire the results of command.

3. Setting control parameter to default value

Look for setting control parameter to default value it ,then write 0x8000 to 0x0030.If execute success then set 0x003B bit15 to 1;

For example:

[XX 10 00 30 00 01 02 80 00 CRCL CRCH]Setting control parameter to default value.

[XX 03 00 3B 00 01 CRCL CRCH]to inquire the results of command.

4. Get input voltage

Look for input voltage in address 0x00AA, when read 0x00AA to get input voltage and it units is 0.1V

For example:

PC:[XX 03 00 AA 00 01 CRCL CRH]

DEVICE:[XX 03 02 08 89 CRCL CRCH]

Mean: HEX [0x0889] to DEC[2185] .Input voltage:218.5V.

5. Remote shut down the UPS

Remote shut down the UPS, then write is a number ranging from (.2, .3, ..., 01, 02,..., to 10)to the 0x3AB.If execute success then 0x003DA bit0 was set to 1.

For example:

PC:[XX 10 03 AB 00 01 02 2E 32]Mean: Shut down the UPS in 0.2 minutes

6. Shut down UPS and auto restart later

Cut UPS output off in <n> minutes and waiting for <m> minutes and then turn on UPS output again. Then write n to 0x03AD and write m to 0x003AE.

For example:

PC:[XX 10 03 AD 00 03 06 2E 32 30 30 30 32 CRCL CRCH]Mean: Shut down the UPS in 0.2 minutes and waiting
for 0002 minutes turn on the UPS.

7. Setting Parameter item

Set The bypass Voltage high loss point of UPS ,You want to Set the value 286V . Then write 0x011E to 0x0350 .

For example:

PC:[XX 10 03 50 00 01 02 01 1E CRCL CRCH]Mean: Set The bypass Voltage high loss point of UPS for 286V.