M90S Modbus Protocol

：unused

Protocol in M90S

1. Warning item

Hex	Dec	Size	Content	Bit value	type
0x0000	0	bit15	cBattLow	0:FALSE/1:TRUE	Read only
		bit14	cBatOpen	0:FALSE/1:TRUE	Read only
		bit13	cBatPhaseLoss	0:FALSE/1:TRUE	Read only
		bit12	cLineIpNLoss	0:FALSE/1:TRUE	Read only
		bit11	cLinePhaseErr	0:FALSE/1:TRUE	Read only
		bit10	cLineVoltAbnormal	0:FALSE/1:TRUE	Read only
		bit9	cLinePhaseAutoAdaptFailed	0:FALSE/1:TRUE	Read only
		bit8	cOverChg	0:FALSE/1:TRUE	Read only
		bit7	cChgrFail	0:FALSE/1:TRUE	Read only
		bit6	cOverTemp	0:FALSE/1:TRUE	Read only
		bit5	cPFCCurUnbalance	0:FALSE/1:TRUE	Read only
		bit4	cFanLock	0:FALSE/1:TRUE	Read only
		bit3	cLineFuseOpen	0:FALSE/1:TRUE	Read only
		bit2	cIICEepromFail	0:FALSE/1:TRUE	Read only
		bit1	cBypassIpNLoss	0:FALSE/1:TRUE	Read only
		bit0	cBpsPhaseErr	0:FALSE/1:TRUE	Read only
0x0001	1	bit15	cBypassVoltAbnormal	0:FALSE/1:TRUE	Read only
		bit14	cBypassPhaseAutoAdaptFailed	0:FALSE/1:TRUE	Read only
		bit13	cOverLoad	0:FALSE/1:TRUE	Read only
		bit12	cOverLoadLock	0:FALSE/1:TRUE	Read only
		Bit11	cEpoActive	0:FALSE/1:TRUE	Read only
		Bit10	cMaintainSwitchOpen	0:FALSE/1:TRUE	Read only
		Bit9	cLineDiff	0:FALSE/1:TRUE	Read only
		Bit8	cBypassDiff	0:FALSE/1:TRUE	Read only
		Bit7	cInvCurrUnbalance	0:FALSE/1:TRUE	Read only
		Bit6	cBypassUnstable	0:FALSE/1:TRUE	Read only
		Bit5	cRedundancyFail	0:FALSE/1:TRUE	Read only
		Bit4	cBatteryAgeAlert	0:FALSE/1:TRUE	Read only
		Bit3	cInputDryContactWarning1	0:FALSE/1:TRUE	Read only
		Bit2	cInputDryContactWarning2	0:FALSE/1:TRUE	Read only
		Bit1	cControllerSpsFail1	0:FALSE/1:TRUE	Read only
		Bit0	cControllerSpsFail2	0:FALSE/1:TRUE	Read only
0x0002	2	bit15	Battery open	0:FALSE/1:TRUE	Read only

		Bit14	IP N loss	0:FALSE/1:TRUE	Read only
		Bit13	IP site fail	0:FALSE/1:TRUE	Read only
		Bit12	Line phase error	0:FALSE/1:TRUE	Read only
		Bit11	Bypass phase error	0:FALSE/1:TRUE	Read only
		Bit10	Bypass frequency unstable	0:FALSE/1:TRUE	Read only
		Bit9	Battery over charge	0:FALSE/1:TRUE	Read only
		Bit8	Battery low	0:FALSE/1:TRUE	Read only
		Bit7	Overload warning	0:FALSE/1:TRUE	Read only
		bit6	Fan lock warning	0:FALSE/1:TRUE	Read only
		bit5	EPO active	0:FALSE/1:TRUE	Read only
		bit4	Turn on abnormal	0:FALSE/1:TRUE	Read only
		bit3	Over temperature	0:FALSE/1:TRUE	Read only
		bit2	Charger fail	0:FALSE/1:TRUE	Read only
		bit1	Remote shut down	0:FALSE/1:TRUE	Read only
		bit0	L1 IP fuse fail	0:FALSE/1:TRUE	Read only
0x0003	3	bit15	L2 IP fuse fail	0:FALSE/1:TRUE	Read only
		bit14	L3 IP fuse fail	0:FALSE/1:TRUE	Read only
		bit13	L1 PFC positive error	0:FALSE/1:TRUE	Read only
		bit12	L1 PFC negative error	0:FALSE/1:TRUE	Read only
		bit11	L2 PFC positive error	0:FALSE/1:TRUE	Read only
		bit10	L2 PFC negative error	0:FALSE/1:TRUE	Read only
		bit9	L3 PFC positive error	0:FALSE/1:TRUE	Read only
		bit8	L3 PFC negative error	0:FALSE/1:TRUE	Read only
		Bit7	CAN communication error	0:FALSE/1:TRUE	Read only
		Bit6	Synchronization line error	0:FALSE/1:TRUE	Read only
		Bit5	Synchronization pulse error	0:FALSE/1:TRUE	Read only
		Bit4	Host line error	0:FALSE/1:TRUE	Read only
		Bit3	Male connection error	0:FALSE/1:TRUE	Read only
		Bit2	Female connection error	0:FALSE/1:TRUE	Read only
		Bit1	Parallel line connection error	0:FALSE/1:TRUE	Read only
		Bit0	Battery connect different	0:FALSE/1:TRUE	Read only
0x0004	4	bit15	Line connect different	0:FALSE/1:TRUE	Read only
		Bit14	Bypass connect different	0:FALSE/1:TRUE	Read only
		Bit13	Mode type different	0:FALSE/1:TRUE	Read only
		Bit12	Parallel inverter voltage setting different	0:FALSE/1:TRUE	Read only
		Bit11	Parallel output frequency setting different	0:FALSE/1:TRUE	Read only
		Bit10	Battery cell over charge	0:FALSE/1:TRUE	Read only
		Bit9	Parallel output parallel setting different	0:FALSE/1:TRUE	Read only
		Bit8	Parallel output phase setting different	0:FALSE/1:TRUE	Read only
		Bit7	Parallel Bypass Forbidden setting different	0:FALSE/1:TRUE	Read only
		bit6	Parallel Converter Enable setting different	0:FALSE/1:TRUE	Read only
		bit5	Parallel Bypass Freq High loss setting different	0:FALSE/1:TRUE	Read only

		bit4	Parallel Bypass Freq Low loss setting different	0:FALSE/1:TRUE	Read only
		bit3	Parallel Bypass Volt High loss setting different	0:FALSE/1:TRUE	Read only
		bit2	Parallel Bypass Volt Low Loss setting different	0:FALSE/1:TRUE	Read only
		bit1	Parallel Line Freq High Loss setting different	0:FALSE/1:TRUE	Read only
		bit0	Parallel Line Freq Low Loss setting different	0:FALSE/1:TRUE	Read only
0x05	5	bit15	Parallel Line Volt High Loss setting different	0:FALSE/1:TRUE	Read only
		Bit14	Parallel Line Volt Low Loss setting different	0:FALSE/1:TRUE	Read only
		Bit13	Locked in bypass after overload 3 times in 30min	0:FALSE/1:TRUE	Read only
		Bit12	Warning for three-phase AC input current unbalance	0:FALSE/1:TRUE	Read only
		Bit11	Battery fuse broken	0:FALSE/1:TRUE	Read only
		Bit10	Inverter inter-current unbalance	0:FALSE/1:TRUE	Read only
		Bit9	P1 cut off pre-alarm	0:FALSE/1:TRUE	Read only
		Bit8	Warning for Battery replace	0:FALSE/1:TRUE	Read only
		Bit7	Warning for input phase error for LV 6-10K UPS	0:FALSE/1:TRUE	Read only
		bit6	Cover of maintain switch is open	0:FALSE/1:TRUE	Read only
		bit5	Phase Auto Adapt Failed	0:FALSE/1:TRUE	Read only
		bit4	Utility extremely unbalanced	0:FALSE/1:TRUE	Read only
		bit3	Bypass unstable	0:FALSE/1:TRUE	Read only
		bit2	EEPROM operation eeror	0:FALSE/1:TRUE	Read only
		bit1	Parallel protect warning	0:FALSE/1:TRUE	Read only
		bit0	Discharger overly	0:FALSE/1:TRUE	Read only
0x01F8	504	Bit15	QFSN,<ID><cr> not UPS module ID on line	0:FALSE/1:TRUE	Read only
		Bit14	Q3WSN,<ID><cr> not UPS module ID on line	0:FALSE/1:TRUE	Read only
		Bit13	QVFWN,<ID><cr> not UPS module ID on line	0:FALSE/1:TRUE	Read only
		Bit12	QVFW2N,<ID><cr> not UPS module ID on line	0:FALSE/1:TRUE	Read only
		Bit11	QVFW3N,<ID><cr> not UPS module ID on line	0:FALSE/1:TRUE	Read only
		Bit10	QIDN,<ID><cr> not UPS module ID on line	0:FALSE/1:TRUE	Read only
		Bit9	QYFN,<ID><cr>: not UPS module ID on line	0:FALSE/1:TRUE	Read only
			Bit8-bit0= reserved		

2. Capability setting（look for Application example 1）

Hex	Dec	Size	Content	Bit value	Register value	type
0x00 0E	14	bit15	bit15=Enable/disable audible alarm	0:FALSE/1:TRUE	E:8000/D:7FFF	Read/Write
		bit14	bit14=Enable/disable battery mode audible warning	0:FALSE/1:TRUE	E:4000/D:BFFF	Read/Write
		bit13	bit13=Enable/disable battery open status check	0:FALSE/1:TRUE	E:2000/D:DFFF	Read/Write
		bit12	bit12=Enable/disable N line recovery check	0:FALSE/1:TRUE	E:1000/D:EFFF	Read/Write

		bit11	bit11=Enable/disable hot standby master function	0:FALSE/1:TRUE	E:800/D:F7FF	Read/Write
		bit10	bit10= reserved	0:FALSE/1:TRUE	E:400/D:FBFF	Read/Write
		bit9	bit9=Enable/disable battery deep discharge protect(limited runtime on battery mode)	0:FALSE/1:TRUE	E:200/D:FDFF	Read/Write
		bit8	bit8=Enable/disable battery low protect(warning)	0:FALSE/1:TRUE	E:100/D:FEFF	Read/Write
		bit7	bit7=Enable/disable code start	0:FALSE/1:TRUE	E:80/D:FF7F	Read/Write
		bit6	bit6=Enable/disable bypass forbidding	0:FALSE/1:TRUE	E:40/D:FFBF	Read/Write
		bit5	bit5=Enable/disable bypass audible warning	0:FALSE/1:TRUE	E:20/D:FFDF	Read/Write
		bit4	bit4=Enable/disable inverter short clear function	0:FALSE/1:TRUE	E:10/D:FFEF	Read/Write
		bit3	bit3=Enable/disable bypass when device turn off.	0:FALSE/1:TRUE	E:8/D:FFF7	Read/Write
		bit2	bit2=reserved	0:FALSE/1:TRUE	E:4/D:FFFB	Read/Write
		bit1	bit1=Enable/disable high efficiency(ECO) mode	0:FALSE/1:TRUE	E:2/D:FFFD	Read/Write
		bit0	bit0=Enable/disable charger		E:1/D:FFFE	Read/Write
0x000F	15	bit15	bit15=Enable/disable fault audible warning	0:FALSE/1:TRUE	E:8000/D:7FFF	Read/Write
		bit14	bit14=reserved	0:FALSE/1:TRUE	E:4000/D:BFFF	Read/Write
		bit13	bit13=Enable/disable N line loss check	0:FALSE/1:TRUE	E:2000/D:DFFF	Read/Write
		bit12	bit12=Enable/disable converter mode	0:FALSE/1:TRUE	E:1000/D:EFFF	Read/Write
		Bit11	Bit11= Enable/disable Frequency auto detection	0:FALSE/1:TRUE	E:800/D:F7FF	Read/Write
0x000F	15	Bit10	bit10 = Reservation			
		Bit9	Bit9 = Reservation			
		Bit8	Enable/disable phase order auto detection	0:FALSE/1:TRUE	E:100/D:FEFF	Read/Write
		Bit7	Bit7 = Enable/disable battery period self-test	0:FALSE/1:TRUE	E:80/D:FF7F	Read/Write
		Bit6	Bit6 = Reservation	0:FALSE/1:TRUE	E:40/D:FFBF	Read/Write
			bit0 – b5 =Reservation			

3. Support Capability list

Hex	Dec	Size	Content	Bit value	Type
0x0010	16	bit15	bit15=Enable/disable audible alarm	0:FALSE/1:TRUE	Read Only
		bit14	bit14=Enable/disable battery mode audible warning	0:FALSE/1:TRUE	Read Only
		bit13	bit13=Enable/disable battery open status check	0:FALSE/1:TRUE	Read Only

		bit12	bit12=Enable/disable N line recovery check	0:FALSE/1:TRUE	Read Only
		bit11	bit11=Enable/disable hot standby master function	0:FALSE/1:TRUE	Read Only
		bit10	bit10= reserved	0:FALSE/1:TRUE	Read Only
		bit9	bit9=Enable/disable battery deep discharge protect(limited runtime on battery mode)	0:FALSE/1:TRUE	Read Only
		bit8	bit8=Enable/disable battery low protect(warning)	0:FALSE/1:TRUE	Read Only
		bit7	bit7=Enable/disable code start	0:FALSE/1:TRUE	Read Only
		bit6	bit6=Enable/disable bypass forbidding	0:FALSE/1:TRUE	Read Only
		bit5	bit5=Enable/disable bypass audible warning	0:FALSE/1:TRUE	Read Only
		bit4	bit4=Enable/disable inverter short clear function	0:FALSE/1:TRUE	Read Only
		bit3	bit3=Enable/disable bypass when device turn off.	0:FALSE/1:TRUE	Read Only
		bit2	bit2=reserved	0:FALSE/1:TRUE	Read Only
		bit1	bit1=Enable/disable high efficiency(ECO) mode	0:FALSE/1:TRUE	Read Only
		bit0	bit0=Enable/disable charger	0:FALSE/1:TRUE	Read Only
0x0011	17	bit15	bit15=Enable/disable fault audible warning	0:FALSE/1:TRUE	Read Only
		bit14	bit14=reserved	0:FALSE/1:TRUE	Read Only
		bit13	bit13=Enable/disable N line loss check	0:FALSE/1:TRUE	Read Only
		bit12	bit12=Enable/disable converter mode	0:FALSE/1:TRUE	Read Only
		Bit11	Bit11= Enable/disable Frequency auto detection	0:FALSE/1:TRUE	Read Only
		Bit10	bit10 = Reservation	0:FALSE/1:TRUE	Read Only
		Bit9	Bit9 = Reservation	0:FALSE/1:TRUE	Read Only
		Bit8	Enable/disable phase order auto detection	0:FALSE/1:TRUE	Read Only
		Bit7	Bit7 = Enable/disable battery period self-test	0:FALSE/1:TRUE	Read Only
		Bit6	Bit6 = Reservation		
			bit0 – b5 =Reservation		

4. Control item（look for Application example 2）

Hex	Dec	Size	Content	Bit value	Register value	Type
0x001A	26	bit15	bit15=Silence buzzer beep	0:FALSE/1:TRUE	Y:8000/N:7FFF	Read/Write
		bit14	bit14=buzzer beep open	0:FALSE/1:TRUE	Y:4000/N:BFFF	Read/Write
		bit13	bit13=Test until battery low	0:FALSE/1:TRUE	Y:2000/N:DFFF	Read/Write
		bit12	bit12=Remote turn off UPS	0:FALSE/1:TRUE	Y:1000/N:EFFF	Read/Write
		bit11	bit11=Remote turn on UPS	0:FALSE/1:TRUE	Y:800/N:F7FF	Read/Write
		bit10	bit10=Cancel shutdown	0:FALSE/1:TRUE	Y:400/N:FBFF	Read/Write
		bit9	bit9=Cancel test	0:FALSE/1:TRUE	Y:200/N:FDFF	Read/Write
		bit8	bit8=10 seconds test	0:FALSE/1:TRUE	Y:100/N:FEFF	Read/Write
		bit7	bit7= Reservation			
		bit6	bit6 = Reservation			
		bit5	bit5= Reservation			

		bit4	bit4 = Reservation			
			b3-b0 = Reservation			
0x001B	27		b15-b11 = Reservation			
		Bit10	UPS turn to bypass	0:FALSE/1:TRUE	Y:0400/N:FFFB	Read/Write
0x0422	1058	Bit15	EPO function close	0:FALSE/1:TRUE	Y:8000/N:7FFF	Read/Write
		Bit14	EPO function open	0:FALSE/1:TRUE	Y:4000/N:BFFF	Read/Write
		Bit13	modeoutputfrequency 50Hz	0:FALSE/1:TRUE	Y:2000/N:DFFF	Read/Write
		Bit12	mode output frequency 60Hz	0:FALSE/1:TRUE	Y:1000/N:EFFF	Read/Write
		Bit11	Reservation			
		Bit10	Reservation			
		Bit9	Reservation			
		Bit8	Reservation			
		Bit7	Reservation			
		Bit6	Reservation			
0x0522	1314	BIT12	Setting EEPROM to default except UPS ID	0:FALSE/1:TRUE		Read/Write

5. The result of control

Hex	Dec	Size	Content	Bit value	Type
0x0025	37	bit15	bit15=Flag:Silence buzzer beep	0:FAIL/1:SUCCESS	Read/Write
		bit14	bit14=Flag:buzzer beep open	0:FAIL/1:SUCCESS	Read/Write
		bit13	bit13=Flag:Test until battery low	0:FAIL/1:SUCCESS	Read/Write
		bit12	bit12=Flag:Remote turn off UPS	0:FAIL/1:SUCCESS	Read/Write
		bit11	bit11=Flag:Remote turn on UPS	0:FAIL/1:SUCCESS	Read/Write
		bit10	bit10=Flag:Cancel shutdown	0:FAIL/1:SUCCESS	Read/Write
		bit9	bit9=Flag:Cancel test	0:FAIL/1:SUCCESS	Read/Write
		bit8	bit8=Flag:10 seconds test	0:FAIL/1:SUCCESS	Read/Write
		bit7	bit7= Reservation	0:FAIL/1:SUCCESS	Read/Write
		bit6	bit6 = Reservation	0:FAIL/1:SUCCESS	Read/Write
		bit5	bit5= Reservation	0:FAIL/1:SUCCESS	Read/Write
		bit4	bit4 = Reservation	0:FAIL/1:SUCCESS	Read/Write
			b3-b0 = Reservation	0:FAIL/2:SUCCESS	Read/Write
Hex	Dec	Size	Content	Bit value	Type
0x0026	38		b15-b12 = Reservation	0:FAIL/1:SUCCESS	Read/Write
		Bit10	Bit10 = UPS turn to bypass	0:FAIL/1:SUCCESS	Read/Write
			B9-b0 = Reservation	0:FAIL/2:SUCCESS	Read/Write
0x0423	1059	Bit15	EPO function in normal open	0:FAIL/1:SUCCESS	Read/Write
		Bit14	EPO function in normal close.	0:FAIL/1:SUCCESS	Read/Write
		Bit13	mode output frequency 50	0:FAIL/1:SUCCESS	Read only
		Bit12	mode output frequency 60	0:FAIL/1:SUCCESS	Read only
		Bit11	charger On	0:FAIL/1:SUCCESS	Read only

		Bit10	charger Off	0:FAIL/1:SUCCESS	Read only
		Bit9	Reservation		
		Bit8	Reservation		
		Bit7	Reservation		
		Bit6	Reservation		
	1325	BIT12	Setting EEPROM to default except UPS ID	0:FALSE/1:TRUE	Read only

6. Setting Parameter to default value

Hex	Dec	Size	Content	Bit value	Type
0x0030	48	bit15	bit15=Seting control parameter to default value	0:FAIL/1:SUCCESS	Read/Write
			b14-b0 = Reservation		
0x003B	59	bit15	bit15=Flag:Seting control parameter to default value	0:FAIL/1:SUCCESS	Read/
			b14-b0 = Reservation		

7. UPS working status

Hex	Dec	Size	Content	units	Type
0x031E	798	1	R Input voltage	0.1V	ReadOnly
0x031F	799	1	S Input voltage	0.1V	ReadOnly
0x0320	800	1	T Input voltage	0.1V	ReadOnly
0x0321	801	1	Input frequency	0.1Hz	ReadOnly
0x0322	802	1	R Output voltage	0.1V	ReadOnly
0x0323	803	1	S Output voltage	0.1V	ReadOnly
0x0324	804	1	T Output voltage	0.1V	ReadOnly
0x0325	805	1	Output frequency	0.1Hz	ReadOnly
0x0326	806	1	R Output current	0.1A	ReadOnly
0x0327	807	1	S Output current	0.1A	ReadOnly
0x0328	808	1	T Output current	0.1A	ReadOnly
0x0329	809	1	R Output load percent	1%	ReadOnly
0x032A	810	1	S Output load percent	1%	ReadOnly
0x032B	811	1	T Output load percent	1%	ReadOnly
0x032C	812	1	P Battery voltage	0.1V	ReadOnly
0x032D	813	1	N Battery voltage	0.1V	ReadOnly
0x032E	814	1	Max Temperature of the detecting pointers	0.1C	ReadOnly
0x032F	815	1	Note1	Note1	ReadOnly
0x00AE	174	1	average Output current	0.1A	ReadOnly
0x00AF	175	1	average total Output load percent	1%	ReadOnly
0x0205	525	1	converter mode output frequency,the rang is :50 or		

			60, 0=NAK		
0x0215	533	1	Positive BUS voltage	V	ReadOnly
0x0216	534	1	Negative BUS voltage	V	ReadOnly
0x030C	780	1	count down time of shutdown	S	ReadOnly
0x030D	781	1	count down time of restore	S	ReadOnly

8. UPS battery information (sys or rack info inquiry addr)

0x00BC	188	1	P Battery voltage	0.1V	ReadOnly
0x00BD	189	1	P Battery piece number		Read/write
0x00BE	190	1	P Battery nominal capacity(Ah)	Ah	Read/Write
0x00BF	191	1	P Battery capacity	%	ReadOnly
0x00C0	192	1	P Battery remain time	minutes	ReadOnly
0x00C1	193	1	N Battery voltage	0.1V	ReadOnly
0x00C2	194	1	N Battery piece number		ReadOnly
0x00C3	195	1	N Battery nominal capacity(Ah)	Ah	Read/Write
0x00C4	196	1	N Battery capacity	%	ReadOnly
0x00C5	197	1	N Battery remain time	minutes	ReadOnly
0x0318	792	1	P Battery charge current	0.01A	ReadOnly
0x0319	793	1	N Battery charge current	0.01A	ReadOnly
0x0307	775	1	The battery Total AH information Inquiry	AH	ReadOnly
0x0308	776	1	EPO status QREPO	8000：open/ 7FFF：close	ReadOnly
0x0206	526	1	The battery time, ranging from 01, 02,..., to 99. 0=NAK	minute	ReadOnly
0x0207	527	1	The battery test option, N=0 means short time test(10 sec), N=1 means till battery low test, N=2 means long time test(time > 1 Minute), N=3 means long time test(time < 1 Minute)	minute	ReadOnly

9.The temperature inquiry

0x00CC	204	1	temperature1	℃	Read only
0x00CD	205	1	Temperature2	℃	Read only
0x00CE	206	1	Temperature3	℃	Read only
0x00CF	207	1	Temperature4	℃	Read only

10. The three phase load inquiry

0x00DD	221	1	R phase of load	0.1%	Read only
0x00FC	252	1	S phase of load	0.1%	Read only
0x00FD	253	1	T phase of load	0.1%	Read only
0x00FE	254	1	The whole load	0.1%	Read only

11. The bypass three phase info

0x011A	282	1	R voltage of bypass	0.1V	Read only
0x011B	283	1	S voltage of bypass	0.1V	Read only
0x011C	284	1	T voltage of bypass	0.1V	Read only
0x011D	285	1	R current of bypass	0.1A	Read only
0x011E	286	1	S current of bypass	0.1A	Read only
0x011F	287	1	T current of bypass	0.1A	Read only
0x0123	291	1	frequency of bypass	0.1Hz	Read only

12. The output power factor inquiry

0x030F	783	1	R output power factor		Read only
0x0310	784	1	S output power factor		Read only
0x0311	785	1	T output power factor		Read only

13. Load level inquiry

0x0312	786	1	R Watt percent	%	Read only
0x0313	787	1	S Watt percent	%	Read only
0x0314	788	1	T Watt percent	%	Read only
0x0315	789	1	R VA percent	%	Read only
0x0316	790	1	S VA percent	%	Read only
0x0317	791	1	T VA percent	%	Read only

14. UPS working Mode

0x00D0	208	1	UPS Mode inquiry	Note2	ReadOnly

15. UPS fault information

0x02A3	675	1	Fault kind ASC	Note3	ReadOnly

16. Loss point

Hex	Dec	Size	Content	Units	Type
0x034A	842	1	High efficiency modeVoltage high loss point	V	Read
0x034B	843	1	High efficiency modeVoltage low loss point	V	Read
0x034C	844	1	Free run mode frequency high loss point	Hz	Read
0x034D	845	1	Free run mode frequency low loss point	Hz	Read
0x034E	846	1	The bypass Freq high loss point	0.1Hz	Read
0x034F	847	1	The bypass Freq low loss point	0.1Hz	Read
0x0350	848	1	The bypass Voltage high loss point	V	Read

0x0351	849	1	The bypass Voltage low loss point	V	Read
0x01FA	506	1	The ECO frequency high loss point	Hz	Read
0x01FB	507	1	The ECO frequency low loss point	Hz	Read

17. Setting Parameter item

0x02ED	749	1	Setting the battery shut down delay time	second	Read/Write
0x02EE	750	1	Battery Cut-off minimum voltage per cell	0.01V	Read
0x02EF	751	1	Cut off voltage per PCS（！！！） BATCO(10.00~11.00)	0.01V	Read/Write
0x02f0	752	1	Battery low voltage per PCS	0.1V	Read/Write
0x02f1	753	1	Battery low capacity(%)	%	Read/Write
0x02f2	754	1	Battery shutdown capacity(%)	%	Read/Write
0x02f3	755	1	The Period of period Self test Inquiry	Day	Read/Write
0x034A	842	1	High efficiency mode Voltage high loss point	V	Read
0x034B	843	1	High efficiency mode Voltage low loss point	V	Read
0x034E	846	1	The bypass Freq high loss point	0.1Hz	Read
0x034F	847	1	The bypass Freq low loss point（1 2 or 4）	0.1Hz	Read/Write
0x0350	848	1	1.ranging from “output voltage setting + 6 “ ~ 155 for LV system. 2.ranging from “output voltage setting + 11 “ ~ 276 for HV system.	V	Read/Write
0x0351	849	1	1.ranging from 088~ “output voltage setting - 6 “for LV system. 2.ranging from 100 ~“output voltage setting + 11 “ for HV system.	V	Read/Write
0x0424	1060	1	Setting battery Total AH	AH	Write
0x05ED	1457	1	Setting Charging current	0.1A	Read/Write
0x0208	528	1	ECO voltage high loss point	11 to 24	Read/Write
0x0209	529	1	ECO voltage low loss point	06 to 13	Read/Write
0x020a	530	1	ECO frequency high loss point and low loss point In 50Hz system and 60Hz system, <m> is a 1 ~ 4, default -4Hz and +4Hz; the precision is 1Hz; Computer: ESF2<cr> UPS: (ACK<cr> Means: In 60Hz system, the ECO frequency low loss point has been set to 58Hz and the ECO frequency high loss point has been set to 62Hz		Read/Write
0x0201	521	1	battery group number, the range is from 01~12		Read/Write
0x0202	522	1	battery capacity factor, the range is from 05~20		Read/Write
0x020b	531	1	System total module number	01 to 10	Read/Write
0x020c	532	1	System Redundancy module number	00 to 99	Read/Write

0x0200	565	12	Note5	Note5	Read/Write
0x021F	543	8	Set System Real Time		Read/Write
0x0227	551	1	Set bypass frequency high loss point and low loss point		Read/Write

18. Setting Parameter succeed or fail

Hex	Dec	Size	Content	Bit value	type
0x0384	900	Bit15	The Period of period Self test Inquiry	0:FALSE/1:TRUE	Read only
		Bit14	Battery Cut-off minimum voltage per cell	0:FALSE/1:TRUE	Read only
		Bit13	Battery low voltage per PCS	0:FALSE/1:TRUE	Read only
		Bit12	Battery low capacity(%)	0:FALSE/1:TRUE	Read only
		Bit11	Battery shutdown capacity(%)	0:FALSE/1:TRUE	Read only
		Bit10	Bat test stop voltage	0:FALSE/1:TRUE	Read only
		Bit9	Bat test stop capacity	0:FALSE/1:TRUE	Read only
		Bit8	Bat test stop time	0:FALSE/1:TRUE	Read only
		Bit7	Setting the battery shut down delay time	0:FALSE/1:TRUE	Read only
		Bit6	Flag: Setting charging current of the charger	0:FALSE/1:TRUE	Read only
		Bit5	Flag: Setting battery Total AH	0:FALSE/1:TRUE	Read only
		Bit4	Flag: Setting the output dry contact function	0:FALSE/1:TRUE	Read only
		Bit3	Flag: Set System Real Time	0:FALSE/1:TRUE	Read only
		Bit2	Flag: Setting EEPROM to default except UPS ID	0:FALSE/1:TRUE	Read only
		Bit1	Flag: Set bypass frequency high loss point and low loss point	0:FALSE/1:TRUE	Read only
		Bit0	PE<X>/PD<X><cr>: setting some status enable/disable	0:FALSE/1:TRUE	Read only
0x0385	901	bit15	Flag: High efficiency mode Voltage high loss point	0:FALSE/1:TRUE	Read only
		bit14	Flag: High efficiency mode Voltage low loss point	0:FALSE/1:TRUE	Read only
		bit13	Flag: Reservation	0:FALSE/1:TRUE	Read only
		bit12	Flag: Reservation	0:FALSE/1:TRUE	Read only
		bit11	Flag: The bypass Freq high loss point	0:FALSE/1:TRUE	Read only
		bit10	Flag: The bypass Freq low loss point	0:FALSE/1:TRUE	Read only
		bit9	Flag: The bypass Voltage high loss point	0:FALSE/1:TRUE	Read only
		bit8	Flag: The bypass Voltage low loss point	0:FALSE/1:TRUE	Read only
		Bit7	Flag: The ECO voltage high loss point	0:FALSE/1:TRUE	Read only
		Bit6	Flag: The ECO voltage low loss point	0:FALSE/1:TRUE	Read only
		Bit5	Flag:ECO frequency high loss point and low loss point	0:FALSE/1:TRUE	Read only
		Bit4	Flag:battery group number	0:FALSE/1:TRUE	Read only
		Bit3	Flag:battery capacity factor	0:FALSE/1:TRUE	Read only
		Bit2	Flag:Setting the system total module number and redundancy number	0:FALSE/1:TRUE	Read only
		Bit1	Flag:Setting Module ID for system data	0:FALSE/1:TRUE	Read only
		bit0	Flag: Setting output rating voltage	0:FALSE/1:TRUE	Read only
	1517	Bit14	Setting Charging current	0:FALSE/1:TRUE	Read only

19. CPU information

Hex	Dec	Size	Content	Units	Type
0x03E0	992	1	Protocol ID Inquiry	ASCII	Read only
0x03E1	993	10	Main CPU Firmware version	ASCII	Read only
0x049C	1180	8	Master second CPU Firmware version	ASCII	Read only
0x01FC	508	4	System LCD Firmware version	ASCII	Read only

20. UPS model and rating information

0x0235	565	12	ID Length	ASCII	Read only
			Main Production type	ASCII	Read only
			Sub Production type	ASCII	Read only
			VA type	ASCII	Read only
			H/LV type	ASCII	Read only
			Year	ASCII	Read only
			Month	ASCII	Read only
			Manufacturer ID	ASCII	Read only
			Serial number	ASCII	Read only
0x03F2	1010	1	Battery Piece Number		Read only
0x03F3	1011	1	Battery standard voltage per unit	0.1V	Read only
0x03F4	1012	1	Input phase		Read only
0x03F5	1013	1	Output phase		Read only
0x03F6	1014	1	Nominal I/P Voltage	V	Read only
0x03F7	1015	1	Nominal O/P Voltage	V	Read only
0x03F8	1016	1	Output power factor		Read only
0x03F9	1017	2	Output rated VA	W	Read only
0x03FB	1019	8	Device model	ASCII	Read only
0x048A	1162	1	Battery Voltage	0.1V	Read only
0x048B	1163	1	Rating Output Current	0.1A	Read only
0x048C	1164	1	Rating Output Frequency	0.1Hz	Read only
0x048D	1165	1	Rating Output Voltage	0.1V	Read only
0x048E	1166	1	The parallel number.		Read only
0x031A	794	1	The setting redundant number		Read only
0x0228	552	13	The UPS manufacturer name		Read only

21.Date inquiry (sys or rack info inquiry addr)

0x03F3	759	2	BatMaintenYear	ASC	Read only

0x03F4	761	1	BatMaintenMonth	ASC	Read only
0x03F5	762	1	BatMaintenDay	ASC	Read only
0x03F6	763	2	BatInstalYear	ASC	Read only
0x03F7	765	1	BatInstalMonth	ASC	Read only
0x03F8	766	1	BatInstalDay	ASC	Read only
0x03F9	767	2	SysMaintenYear	ASC	Read only
0x03FB	769	1	SysMaintenMonth	ASC	Read only
0x048A	770	1	SysMaintenDay	ASC	Read only
0x048B	771	2	SysInstalYear	ASC	Read only
0x048C	773	1	SysInstalMonth	ASC	Read only
0x048D	774	1	SysInstalDay	ASC	Read only

22.Set date (sys or rack info set addr)

0x03F3	1061	4	Set SysInstalDate	ASC	Write only
0x03F4	1065	4	Set SysMaintenDate	ASC	Write only
0x03F5	1069	4	Set BatInstalDate	ASC	Write only
0x03F6	1073	4	Set BatMaintenDate	ASC	Write only

23.On line module ID number inquiry and select

0x02F6	758	1	One module inquiry over flag	0：over/other：fause	Read/Write
0x0330	816	1	Select on line module ID number	0xFFFF：sys Defau: 0xFFFF	Read/Write
0x0331	817	16	On line module ID number inquiry		Read only

24.Baud Rate

0x05C0	1472	1	The value is 24, 48, 96,192,384 or 1152. It means comport0,comport1 and comport2 baud rate is 2400, 4800, 9600, 19200,38400 or 115200. Note: When UPS respone 0000 theat indicates the comport port does not exist	bps	Read/Write

25.Output Dry Contact Function

0x0219	537	1	AA BB CC	Note6	Read/Write
0x021A	538	1			Read/Write
0x021B	539	1			Read/Write
0x021C	540	1	DD EE FF	Note6	Read/Write
0x021D	541	1			Read/Write

0x021E	542	1			Read/Write

26. Remote shutdown and test

Hex	Dec	Size	Content	Units/Bit value	Type
0x03AB	939	1	Shutdown	minutes(ASCII)	Read/Write
0x03AC	940	1	Test for specified time	minutes(ASCII)	Read/Write
0x03AD	941	1	Shutdown and restore(N)	minutes(ASCII)	Read/Write
0x03AE	942	2	Shutdown and restore(M)	minutes(ASCII)	Read/Write
0x03DA	986	bit15	B15=flag:Shutdown	0:FAIL/1:SUCCESS	Read only
		bit14	B14=flag:Test for specified time	0:FAIL/1:SUCCESS	Read only
		bit13	B13=flag:Shutdown and restore	0:FAIL/1:SUCCESS	Read only
			b12-b0=Reservation		
0x030C	780	1	Get shutdown time	Unit: second	Read only
0x030D	781	2	Get Restore time	Unit: second	Read only

Note

1. Note1

Note 1:	
815 （bit15-bit8）	B8b9 00: standy;　　bit15 bit14 01: line-interactive; 10: on-line.
	b7: Utility Fail b6: Battery Low b5: Bypass/Boost Active b4: UPS Failed b3: EPO b2: Test in Progress
815 （bit3-bit0）	b1: Shutdown Active b0: bat silence a1: Bat test fail a0: Bat test OK

2. Note2

Note 2:		
0x00D0H	P:	Power on mode
	S:	Standby mode
	Y:	Bypass mode
	L:	Line mode
	B:	Battery mode
	T:	Battery test mode
	F:	Fault mode
	E:	HE/ECO mode
	C:	Converter mode
	D:	Shutdown mode

3. Note3

Fault Code(FF)	Name
01	cBusSoftFault
02	cBusOver
03	cBusUnder
04	cBusUnbalance
05	cBusVoltVaryFault
06	cPFCOverCurr
07	cOverTempFault
08	cBatScrFault
17	cInvSoftFault
18	cInvVoltHigh
19	cInvVoltLow
20	cRInvVoltShort
21	cSInvVoltShort
22	cTInvVoltShort
23	cRSInvVoltShort
24	cSTInvVoltShort
25	cTRInvVoltShort
26	cInvRNegPow
27	cInvSNegPow
28	cInvTNegPow
33	cInvRlySTSOpen
34	cInvRlySTSShort
35	cOpRlySTSOpen
36	cOpRlySTSShort
37	cWiringFault

38	cBatFuseOpenFault
39	cChargerShort
49	cCommCANFault
50	cHostLineFault
51	cOPCircuitFault
52	cVerIncompatible
65	cDSPCommFault
66	cOverLoadFault
67	cChgrFault
68	cModelFault
69	cMcuCommFault
70	cCTSatiation
71	cFanFault

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)

5. Note5

		Data	Description	Notes
0x0200	a	LL	ID Length	10~20
	b	A	Main Production type	8: UPS,9: NONE UPS

	c	B	Sub Production type	
	d	C	VA type	
	e	D	H/LV type	
	f	EE	Year	
	g	FF	Month	
	h	G	Manufacturer ID	
	i	XXXXX	Serial number	

6. Note6

Data	Message	Description
01	Load on inverter	The UPS is working normally.
02	Load on bypass	The UPS is in Bypass mode.
03	Load on Battery	The UPS is in Battery mode.
04	Low battery	The battery voltage is low.
05	Bypass input abnormal	The bypass voltage or frequency is abnormal.
06	Battery test failure	Performs the battery test. The battery test fails.
07	Internal communication failure	DSP and MCU stop communication in power module.
08	External parallel communication failure	Communication error between power modules.
09	Output overload warning/shutdown	Connected load is over rated output of the UPS.
10	Power module fault shutdown	The module fails and the UPS shuts down.
11	Power module warning	The module has errors, but the UPS can still function normally.
12	EPO Active	Urgently power off the UPS.
13	Maintain Bypass	The UPS transfers to Maintain bypass mode.
14	Module over temperature warning/shutdown	The temperature is too high.
15	Battery replacement	Overdue for battery replacement (Compared with system setup.)
16	Bypass over temperature warning/shutdown	Bypass “static transfer switch” is over temperature.
17	Bypass static switch fault	The bypass “static transfer switch” is abnormal.
18	Line AC fail	Power failure
19	Bypass failure	Bypass source fails

20	Redundancy failure	Redundancy setting error.

Example:

Computer: DRY010203040506><cr>

UPS: (ACK<cr>

Means: Refer to below table.

Dry contact	Configuration
Output Port1	The UPS is working normally.
Output Port2	The UPS is in Bypass mode.
Output Port3	The UPS is in Battery mode.
Output Port4	The battery voltage is low.
Output Port5	The bypass voltage or frequency is abnormal.
Output Port6	Performs the battery test. The battery test fails.

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. Output socket status

Inquire output socket status, Write socket number to 0x0345,then read 0x0346 to inquire socket status.

For example:

PC:[XX 10 03 45 00 01 02 01 00 CRCL CRCH] 01:Means inquire socket 1 status.

PC:[XX 03 03 46 00 01 CRCL CRCH]

DEVICE:[XX 03 02 01 00 CRCL CRCH] 01:Means socket1 was on.

6. 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

7. 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.

8. 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.