No.	Variable name	Programming name	Addres	Access	Description	Unit	Times	Function code
					Nominal Parameter(Read only) 0x3400-34FF			
A1	Electricity Charging Nominal Input Voltage	UP-ElectricChrgNomInVolt	3400	0	AC-DC charging module--AC input nominal voltage	V	100	0x04
A2	Electricity Charging Nominal Input Current	UP-ElectricChrgNomInCur	3401	0	AC-DC charging module--AC input nominal current	A	100	0x04
A3	Electricity Charging Nominal Input Power L	UP-ElectricChrgNomInPowL	3402	0	AC-DC charging module--AC input nominal power	W	100	0x03
A4	Electricity Charging Nominal Input Power H	UP-ElectricChrgNomInPowH	3403	0				0x04
A5	Electricity Charging Nominal Output Voltage	UP-ElectricChrgNomOutVolt	3404	0	AC-DC charging module-- DC output nominal voltage	V	100	0x04
A6	Electricity Charging Nominal Output Current	UP-ElectricChrgNomOutCur	3405	0	AC-DC charging module-- DC output nominal current	A	100	0x04
A7	Electricity Charging Nominal Output Power L	UP-ElectricChrgNomOutPowL	3406	0	AC-DC charging module-- DC output nominal power	W	100	0x04
A8	Electricity Charging Nominal Output Power H	UP-ElectricChrgNomOutPowH	3407	0				0x04
A9	Electricity Charging Nominal Input Frequency	UP-ElectricChrgNomInFrq	3408	0	AC-DC charging module--AC input nominal power	HZ	100	0x04
A10	Electricity Charging Mode	UP-ElectricChrgMode	3409	0	AC-DC charging controller--0007H Constant voltage and current limiting mode 0008H Constant current and voltage limiting mode		1	0x04
A11	Load Nominal Input Voltage	UP-LoadNomInVolt	340A	0	DC-AC discharging module-- DC input nominal voltage	V	100	0x04
A12	Load Nominal Input Current	UP-LoadNomInCur	340B	0	DC-AC discharging module-- DC input nominal current	A	100	0x04
A13	Load Nominal Input Power L	UP-LoadNomInPowL	340C	0	DC-AC discharging module-- DC input nominal power	W	100	0x04
A14	Load Nominal Input Power H	UP-LoadNomInPowH	340D	0				0x04
A15	Load Nominal Output Voltage	UP-LoadNomOutVolt	340E	0	DC-AC discharging module--AC output nominal voltage	V	100	0x04
A16	Load Nominal Output Current	UP-LoadNomOutCur	340F	0	DC-AC discharging module--AC output nominal current	A	100	0x04
A17	Load Nominal Output Apparent Power L	UP-LoadNomOutApparentPowL	3410	0	DC-AC discharging module--AC output nominal apparent power	W	100	0x04
A18	Load Nominal Output Apparent Power H	UP-LoadNomOutApparentPowH	3411	0				0x04
A19	Load Nominal Output Active Power L	UP-LoadNomOutActivePowL	3412	0	DC-AC discharging module--AC output nominal active power	W	100	0x04
A20	Load Nominal Output Active Power H	UP-LoadNomOutActivePowH	3413	0				0x04
A21	Load Nominal Output Frequency	UP-LoadNomOutFrq	3414	0	DC-AC discharging module--AC output nominal frequency	HZ	100	0x04
A22	Load Nominal Output Waveform	UP-LoadNomOutWaveform	3415	0	DC-AC discharging module--AC output nominal waveform 0000H sine wave, 0001H fixed wave		1	0x04
A23	PV Nominal Input Voltage	UP-PvNomVolt	3416	0	PV input nominal voltage	V	100	0x04
A24	PV Nominal Input Current	UP-PvNomCur	3417	0	PV input nominal current	A	100	0x04
A25	PV Nominal Input Power L	UP-PvNomPowL	3418	0	PV input nominal power	W	100	0x04
A26	PV Nominal Input Power H	UP-PvNomPowH	3419	0				0x04
A27	PV Nominal Output Voltage	UP-PvNomVolt	341A	0	PV output nominal voltage	V	100	0x04
A28	PV Nominal Output Current	UP-PvNomCur	341B	0	PV output nominal current	A	100	0x04
A29	PV Nominal Output Power L	UP-PvNomPowL	341C	0	PV output nominal power	W	100	0x04
A30	PV Nominal Output Power H	UP-PvNomPowH	341D	0				0x04

A31	PV Charging Mode	UP-PVChrgMode	341E	0	Solar controller fan controller--0000H Switching(switch unloading),0001H PWM,0002H MPPT		1	0x04
A32	PV Discharging Device Input Nominal Voltage	UP-DiscDevInNomVolt	341F	0	DC-DC power--Nominal input voltage	V	100	0x04
A33	PV Discharging Device Input Nominal Current	UP-DiscDevInNomCur	3420	0	DC-DC power--Nominal input current	A	100	0x04
A34	PV Discharging Device Input Nominal Power L	UP-DiscDevInNomPowL	3421	0	PV discharging device nominal input power	W	100	0x04
A35	PV Discharging Device Input Nominal Power H	UP-DiscDevInNomPowH	3422	0				0x04
A36	PV Discharging Device Output Nominal	UP-DiscDevOutNomVolt	3423	0	DC-DC power--Nominal output voltage	V	100	0x04
A37	PV Discharging Device Output Nominal	UP-DiscDevOutNomCur	3424	0	DC-DC power--Nominal output current	A	100	0x04
A38	PV Discharging Device Output Nominal Power	UP-DiscDevOutNomPowL	3425	0	DC-DC power--Nominal output power	W	100	0x04
A39	PV Discharging Device Output Nominal Power	UP-DiscDevOutNomPowH	3426	0				0x04
A40	Charging Device Output Nominal Current2	UP-ChrgDevOutNomCur2	3427	0	It can display the second fixed charging current and has not specific control function. The fixed charging current is 2A for the current version, and it will be 3~10A in the future, which is convenient for usage.	A	100	0x04
A41	Reserved		3428	0				0x04
A42	Reserved		3429	0				0x04
A43	Reserved		342A	0				0x04
A44	Reserved		342B	0				0x04
A45	Reserved		342C	0				0x04
A46	Reserved		342D	0				0x04

No.	Variable name	Address	Description	Unit	Times	Function code
Real-time parameter(Read only) 0x3500-34FF					
B1	Electricity 1 Charging Input Voltage	3500	AC-DC charging module--AC input voltage	V	100	0x04
B2	Electricity 1 Charging Input Current	3501	AC-DC charging module--AC input current	A	100	0x04
B3	Electricity 1 Charging Input Power L	3502	AC-DC charging module--AC input current power	W	100	0x04
B4	Electricity 1 Charging Input Power H	3503				0x04
B5	Electricity 1 Charging Input	3504	AC-DC charging module--AC input current frequency	HZ	100	0x04
B16	Electricity 1 Total Cumulative Charge Energy L	350F	Clear after the total cumulative charge energy overflows	KWH	100	0x04
B17	Electricity 1 Total Cumulative Charge Energy H	3510				0x04
B18	Electricity 1 Charging Status	3511	D15~D14, 00 Normal input voltage, 01 Low input voltage, 02 High input voltage, 03 No connect to the input power, etc. D13~D12, Output power 00-Light load, 01-Medium load, 02-Nominal load, 03-Overload D5 Busbar over-voltage, D6 Busbar under-voltage, D7 Input over current, D8 abnormal output voltage, D9 Heat sink overheating, D10 Hardware over-voltage, D11 Short circuit, *D4* Low temperature, D3~2 Charging status 00 No charging, 01 Float charging, 02 Boost charging, 03 Equalizing charging D0. 1 Run, 0 Standby **D1.** 0 Normal, 1 Faults		1	0x04
B19	Electricity Charging Battery	3512	Battery temperature when the electricity charges	℃	100	0x04
B20	Electricity Charging Device	3513	Device temperature when the electricity charges	℃	100	0x04
B21	Electricity Charging Power-device Temperature	3514	Power-device temperature when the electricity charges	℃	100	0x04
B30	Load Input Voltage	351D	DC-AC discharging module-Current input voltage	V	100	0x04
B34	Load Output Voltage	3521	DC-AC discharging module-Current output voltage	V	100	0x04
B35	Load Output Current	3522	DC-AC discharging module-Current output current	A	100	0x04

B36	Load Output Status	3523	D15~D14, 00 Normal input voltage, 01 Low input voltage, 02 High input voltage, 03 No connect to the input power, etc. D13~D12, Output power 00-Light load, 01-Medium load, 02-Nominal load, 03-Overload D5 Output fail, D6 High voltage side short-circuit, D7 Input over-current, D8 Abnormal Output voltage, D9 Unable to stop discharge, D10 Unable to discharge, D11 short-circuit, *D4* Abnormal frequency, D3 High temperature, D2 Low temperature. **D0.** 1 Run, 0 Standby **D1.** 0 Normal, 1 Faults		1	0x04
B42	Load Output Frequency	3529	DC-AC module- Current output frequency	HZ	100	0x04
B49	Load Total Cumulative Energy Consumption L	3530	Clear after the total cumulative energy consumption overflows	KWH	100	0x04
B50	Load Total Cumulative Energy Consumption H	3531				0x04
B51	Load Heat Sink 1 Temperature	3532	Sampling temperature of the power device heat sink 1 in the DC-AC module	℃	100	0x04
B52	Load Heat Sink 2 Temperature	3533	Sampling temperature of the power device heat sink 2 in the DC-AC module	℃	100	0x04
B74	PV 1 Input Voltage	3549	PV array's voltage	V	100	0x04
B75	PV 1 Input Current	354A	PV array's current	A	100	0x04
B76	PV 1 Input Power L	354B	PV array's current generation power L	W	100	0x04
B77	PV 1 Input Power H	354C	PV array's current generation power H	W	100	0x04
B88	PV 1 Total Cumulative Charge	3557	Clear after the total cumulative charge energy overflows	KWH	100	0x04
B89	PV 1 Total Cumulative Charge	3558				0x04
B90	PV 1 Charging Device 1 Work Status	3559	D15~D14 Input voltage status. 00 Normal, 01 Without input power, 02H High input voltage, 03H Error input voltage. D13 Charging MOS tube short circuit, D12 Charging or anti-reverse MOS tube open circuit, D11Anti-reverse MOS tube short circuit, D10 Input over current, D9 Load over current when charges the device connected with load, D8 Load short-circuit, D7 Load MOS tube short-circuit D0. 1 Run, 0 Standby **D1.** 0 Normal, 1 Faults D3~2 Charging status 00 No charging, 01 Float charging, 02 Boost charging, 03 Equalizing charging D4. PV Input Short Circuit(Add in 9/16/2013) D5. LED Load Open Circuit(Add in 8/12/2013) D6. Three-way Circuit Imbalance(Add in 8/12/2013)		1	0x04
B128	Battery 1 Voltage	3580	Current system battery voltage	V	100	0x04

B129	Battery 1 Current L	3581	It equals the total charging current minus the total discharging current, which is the current charged into the battery. It is positive when charging and negative when discharging.	A	100	0x04
B130	Battery 1 Current H	3582		A	100	0x04
B134	Battery 1 State of Charge	3586	Percentage of the battery remaining power	%	1	0x04
B137	Battery 1 Status	3589	D3~D0, 01H Over voltage, 00H Normal, 02H Under voltage, 03H Over discharge, 04H Faults(BMS Protection) D7~D4, 00H Normal, 01H Over temperature (exceeds the high temperature alarm value), 02H Low temperature(lower than the low temperature alarm value), D8, Battery internal resistance abnormal 1, normal 0; *D9* Lithium battery charging protection; D10 Lithium battery discharging protection. D15, 1-Nominal voltage identification error(The relationship between electricity and PV charging for batteries)		1	0x04

No.	Variable name	Programming name	Address	Access	Description	Unit	Times	Function code
					Setting Parameter(Read only) 0x9600-96FF			
C1	System LCD backlight time	UP-SysBackLightDelaySec	9600	1	The LCD backlight turns off after lighting up for the setting seconds.	S	100	Read 0x03 Write 0x10
C2	System Buzzer Alarm	UP-SysBuzzerAlarmDelaySec	9601	1	Buzzer alarm times. 0 states no alarm, 1-300 states the actual alarm time.	S	1	Read 0x03 Write 0x10
C3	System Temperature Unit	UP-SysTempUnit	9602	1	0X01 Celsius, 0x00 Fahrenheit		1	Read 0x03 Write 0x10
C4	System Dry Contact ON Voltage	UP-SysDryOnVolt	9603	1	According to the battery voltage, the dry contact is connected below this value.	V	100	Read 0x03 Write 0x10
C5	System Dry Contact OFF Voltage	UP-SysDryOffVolt	9604	1	According to the battery voltage, the dry contact is disconnected when the battery voltage is higher than this value.	V	100	Read 0x03 Write 0x10
C6	System Stop Subsidiary Charge Module Voltage(Setting Value 2)	UP-SysStopSubChrgVolt	9605	1	When the battery voltage is higher than the UP-SysStopSubChrgVolt value, the subsidiary charge module stops charging. In utility priority, the solar subsidiary charging is OFF. In PV priority, the utility subsidiary charging is OFF.	V	100	Read 0x03 Write 0x10
C7	System Recover Subsidiary Charge Module Voltage(Setting Value 1)	UP-SysRecSubChrgVolt	9606	1	When the battery voltage is lower than the UP-SysRecSubChrgVolt value, the subsidiary charge module recovers charging. In utility priority, the solar subsidiary charging is ON. In PV priority, the utility subsidiary charging is ON.	V	100	Read 0x03 Write 0x10
C8	Charging Priority Mode	UP-ChrgPriorityMode	9607	1	Three charging modes 0001H Solar priority 0002H Utility & solar 0003H Solar		1	Read 0x03 Write 0x10
C9	Output Priority Mode	UP-OSP	9608	1	0 Inverter priority 1 Utility priority		1	Read 0x03 Write 0x10
C10	System Aggregate Charging Current	UP-SysAggChrgCur	9609	1	Utility charging current + solar charging current, this current is the sum of Utility and PV current. The actual charging current cannot exceed this value.	A	100	Read 0x03 Write 0x10
C11	Protocol Type		960A	1	Lithium battery corresponding protocol type: 1, 2, 3, 4, 5, 6, 7,		1	Read 0x03 Write 0x10
D0	Battery Mode	UP-BateMode	960E	1	0 Battery mode, 1 non-battery mode		1	Read 0x03 Write 0x10
D1	Battery type	UP-SysBattType	960F	1	0001H Sealed, 0002H GEL, 0003H FLD, 0004H LFP4S, 0005H LFP8S, 0006H LFP15S, 0007H LFP16S, 0008H LNCM3S, 0009H LNCM6S, 000AH LNCM7S, 000BH LNCM13S, 000CH LNCM14S, 0000H User		1	Read 0x03 Write 0x10
D2	System Battery Capacity	UP-SysBattCap	9610	1	The nominal capacity of the battery(group)used in the system, Unit: AH	AH	1	Read 0x03 Write 0x10
D3	Temperature compensate coefficient	*TempCmpCoe*	9611	1	A parameter that participates in calculating the equalize charging voltage, boost charging voltage, float charging voltage, and low voltage disconnect voltage. It ranges from 0 to 9 generally, unit: mV/℃/2V		1	Read 0x03 Write 0x10
D5	System Charge Equalization Hold Time	UP-SysChrgEqualHoldTime	9613	1	The accumulative minutes of the UP-SysChrgEqualHoldTime range from 60 to 120 minutes generally. For the accumulation process, the time length is set to 1.5 times the value.	Minutes	1	Read 0x03 Write 0x10

D6	System Charge Boost Hold Time	UP-SysChrgBoostHoldTime	9614	1	The accumulative minutes of the battery remains above the boost voltage without interruption. It ranges from 60 to 120 minutes generally. For the accumulation process, the time length is set to 1.5 times the value.	Minutes	1	Read 0x03 Write 0x10
D7	Over Voltage Disconnect Voltage	VCtrl_OVD	9615	1	When the battery voltage exceeds this value, it will shut down the system discharge and charge.	V	100	Read 0x03 Write 0x10
D8	Charging Limit Voltage	VCtrl_CLV	9616	1	This voltage is the highest full-charge voltage under any circumstances. After compensation and correction, when the equalize charging voltage, boost charging voltage, and float charging voltage are greater than the VCtrl_CLV value, the VCtrl_CLV is taken as the highest charging voltage.	V	100	Read 0x03 Write 0x10
D9	Over Voltage Reconnect Voltage	VCtrl_OVR	9617	1	It is calculated based on other quantities. When the battery voltage goes lower than this value, it will recover the system discharge and charge.	V	100	Read 0x03 Write 0x10
D10	Equalize Charging Voltage	VCtrl_ECV	9618	1	The charging target voltage of the equalize charging mode.	V	100	Read 0x03 Write 0x10
D11	Boost Charging Voltage	VCtrl_BCV	9619	1	When the battery (group) voltage is lower than the VCtrl_BVR value, a constant-voltage current-limiting voltage is adopted to ensure the battery (group) is fully charged. This constant-voltage current-limiting charging voltage is called boost charging voltage. The boost charging process generally lasts 1 to 3 hours, usually 2 hours. It should be transferred into the float charging process after the boost charging is completed.	V	100	Read 0x03 Write 0x10
D12	Float Charging Voltage	VCtrl_FCV	961A	1	When the battery (group) completes the equalize or boost charging process, it enters the float charging process. At this time, the target voltage of the battery (group) maintained by the controller is the float charging voltage, and the battery (group) is always maintained at this voltage.	V	100	Read 0x03 Write 0x10
D13	Boost Reconnect Charging Voltage	VCtrl_BVR	961B	1	It is calculated based on other quantities. When the battery (group) voltage is lower than the VCtrl_BVR value and higher than the low voltage disconnect voltage, this process lasts for at least 1 minute. To replenish power to the battery (group) quickly and enter the boost charging process, the voltage, called the boost reconnect charging voltage, is adopted.	V	100	Read 0x03 Write 0x10
D14	Low Voltage Reconnect Voltage	VCtrl_LVR	961C	1	When the battery (group) voltage is higher than the VCtrl_LVR value, the low voltage disconnect protection is eliminated, and the load output is restored. This voltage(VCtrl_LVR) is called low voltage reconnect voltage.	V	100	Read 0x03 Write 0x10
D15	Under Voltage Warning Reconnect Voltage	VCtrl_UVWR	961D	1	When the battery (group) voltage is higher than the VCtrl_UVWR value, the under voltage warning is eliminated. This voltage is generally used to turn off the auxiliary charging device.	V	100	Read 0x03 Write 0x10
D16	Under Voltage Warning Voltage	VCtrl_UVW	961E	1	When the battery (group) voltage is lower than the VCtrl_UVW value, the battery power is low and close to the low voltage disconnect voltage. This voltage(VCtrl_UVW) is called under voltage warning voltage. This voltage is generally used to start the auxiliary charging devices, such as diesel generators, city power, etc.	V	100	Read 0x03 Write 0x10

D17	Low Voltage Disconnect Voltage	VCtrl_LVD	961F	1	To prevent the battery (group) from over-discharging and ensure that it has a certain remaining capacity (usually 10-40%), you should take the 20% of the battery (group) remaining capacity as the VCtrl_LVD value. When the battery (group) voltage drops to the set value, the controller cuts off the load output.	V	100	Read 0x03 Write 0x10
D18	Discharging Limit Voltage	VCtrl_DLV	9620	1	It is calculated based on other quantities. This voltage is the lowest discharge voltage under any circumstances. When the low voltage disconnect voltage is lower than the VCtrl_DLV value after compensation and correction, the controller will take the discharging limit voltage as the low voltage disconnect voltage.	V	100	Read 0x03 Write 0x10
D19	Lithium battery Parameters Enable	UP-SysDevice_ParaReservel	9621	1	When the value is set to 768, the lithium battery works; when the value is set to 1024, the lithium battery does not work. For the Lithium battery, set the value to 768. For a Non-lithium battery, set the value to 1024.		1	Read 0x03 Write 0x10
D20	Lithium Battery Low-temperature Forbid Charging Temperature	UP-SysTOVERLOWC	9622	1	When the actual measured temperature is less than the UP-SysTOVERLOWC value, the system turns off charging or prohibits charging. This parameter definition ranges from +10℃ to -40℃, and the temperature difference is +2℃.	℃	100	Read 0x03 Write 0x10
D21	Lithium Battery Low-temperature Forbid Discharge Temperature	UP-SysTOVERLOWL	9623	1	When the actual measured temperature is less than the UP-SysTOVERLOWL value, the system turns off discharge or prohibits discharge. This parameter definition ranges from +10℃ to -40℃, and the temperature difference is +2℃.	℃	100	Read 0x03 Write 0x10
E1	DC-AC Output Voltage Class	UP-OUTVoltage	9631	1	Inverter output voltage class:110V 120V 220V 230V	V	100	Read 0x03 Write 0x10
E2	DC-AC Output Frequency	UP-OutFre	9632	1	Inverter output frequency: 50Hz 60Hz	HZ	100	Read 0x03 Write 0x10
E18	Load Current Limit	LDC	9642	1	Inverter AC output current limit value	A	100	Read 0x03 Write 0x10
F1	Electricity Charging	UP-ElectricChrgCurMax	9647	1	Maximum charging current for AC-DC charging module	A	100	Read 0x03 Write 0x10
F2	AC-DC Charging Voltage	UP-AcDc_Charge	9648	1	The UP-AcDc_Charge is the upper limit of the utility voltage. The utility is abnormal when it is higher than this setting value.	V	100	Read 0x03 Write 0x10
F3	AC-DC Bypass Voltage	UP-AcDc_Bypass	9649	1	The UP-AcDc_Bypass is the lower limit of the utility voltage. The utility is abnormal when it is lower than this setting value.	V	100	Read 0x03 Write 0x10

No.	Variable name	Address	Access	Description	Function code
	Discrete switch（0x0100-0x01FF)(Read and Write)				
H0	Clear the electricity statistics	0100	1	0-1(0-Disable,1-Enable)	0X01 Read 0x05 Write
H1	Clear fault	0101	1	0-1(0-OFF,1-ON)	0X01 Read 0x05 Write
H3	System switch. The Output default switch enable	0103	1	1: ON, 0: OFF 0	0X01 Read 0x05 Write
H6	Load ON/OFF	0106	1	1 Load ON 0 Load OFF	0X01 Read 0x05 Write
H8	Local/Remote Control	0108	1	1 Remote control 0 Local control(The local switch and energy-saving mode are enabled by default after power OFF.)	0X01 Read 0x05 Write
	Discrete switch Input （0x2100-0x21FF)(Read-only)				
I1	Inverter bypass	2100	0	1-Inverter bypass, 0-No inverter bypass	0x02
I2	Day/Night	2101	0	1-Night, 0-Day	0x02

No.	Variable name	Programming name	Address	Acces	Description	Unit	Note
Device Info.						
J1	Manufacturer	Company		0	EPEVER	Character string	Must
J2	Device Model	DeviceModel		0	**UPOWER**	Character string	Must
J3	Software&Hardware Version	SHVersion		0	V1.01+V2.01(Software version+Hardware version)	Character string	Must
J4	Serial Number	SerialNum		0	The product serial number is fixed as an ASCII string of 16 bytes. It contains product model 2 characters + 8 characters for the year, month, and day + 6 characters for serial number. It can be modified by automatically incremented and written into the last page of the Flash memory through the batch programming tool. Example: 1220130120000045 12-represents VS5048N 20130120 means January 20, 2013 000045-indicates that the serial number shipped today is 45	Character string	Must
J5	Dictionary Parameters	DictionaryPara.		0	The dictionary parameters are used to record the start bit and the number of each segment register address, for example, 3400H, 31,3500H, 120, 9600H, 83,100H, 17, 2100H, 10.	Character string	Must
J6	Password	Password		1	Read and write the password by specified command.	Character string	
J7	Communication ID	CommID		1	Read and write the communication ID by specified command.	Character string	Must