3. Register Mapping Table

1) Input Register

It is used to store the operational data of the energy storage inverter, which can only be read and not written, and supports function codes 0x04.

Input Addr	Item	Unit	Range	Note
0	State		0-65535	For more information,see the definition of the operation mode of off-grid-connected energy storage all-in-one file
1	Vpv1	0.1V	0-65535	PV1 voltage, the AC energy storage system does not have this variable
2	Vpv2	0.1V	0-65535	PV2 voltage, the AC energy storage system does not have this variable
3	Vpv3	0.1V	0-65536	PV3 voltage, the AC energy storage system does not have this variable
4	Vbat	0.1V	0-65535	Battery voltage
5	SOC	%	0-100	Battery capacity
	SOH	%	0-100	Battery State of health
6	Internal Fault		0-65535	For more information, see Internal Fault Code Definition file
7	Ppv1	W	0-65535	PV1 power/ AC energy storage Ppv
8	Ppv2	W	0-65535	PV2 power, the AC energy storage system does not have this variable
9	Ppv3	W	0-65536	PV3 power (total PV power, obtained by adding PV1, 2, 3), the AC energy storage system does not have this variable
10	Pcharge	W	0-65535	Charging power (power flowing into the battery)
11	Pdischarge	W	0-65535	Discharging power (power flowing out of battery power)
12	VacR	0.1V	0-65535	R-phase utility grid voltage
13	VacS	0.1V	0-65535	S-phase utility grid voltage
14	VacT	0.1V	0-65535	T-phase utility grid voltage
15	Fac	0.01Hz	0-65535	Utility grid frequency
16	Pinv	W	0-65535	**On-gird inverter power (For three phase: R phase)**
17	Prec	W	0-65535	**AC charging rectification power (For three phase: R phase)**
18	IinvRMS	0.01A	0-65535	**Inverter rms current output (For three phase: R phase)**
19	PF	0.001	0-2000	**Power factor xϵ(0,1000]->x/1000 xϵ(1000,2000)->(1000-x)/1000 (For three phase: R phase)**
20	VepsR	0.1V	0-65535	**R phase off-grid output voltage**
21	VepsS	0.1V	0-65535	**S phase off-grid output voltage**
22	VepsT	0.1V	0-65535	**T phase off-grid output voltage**

23	Feps	0.01Hz	0-65535	Off-grid output frequency
24	Peps	W	0-65535	**Off-grid inverter power (For three phase: R phase)**
25	Seps	VA	0-65535	**Off-grid apparent power (For three phase: R phase)**
26	Ptogrid	W	0-65535	**User on-grid power (For three phase: R phase)**
27	Ptouser	W	**0-65535**	**Grid power capacity (For three phase: R phase)**
28	Epv1_day	0.1kWh	0-65535	PV1 power generation today / AC Energy Storage Epv_day
29	Epv2_day	0.1kWh	0-65535	PV2 power generation today, the AC energy storage system does not have this variable
30	Epv3_day	0.1kWh	0-65535	PV3 power generation today (total PV=PV1+PV2+PV3), the AC energy storage system does not have this variable
31	Einv_day	0.1kWh	0-65535	Today's on-grid inverter output energy
32	Erec_day	0.1kWh	0-65535	Today's AC charging rectifier energy
33	Echg_day	0.1kWh	0-65535	Energy Charge today
34	Edischg_day	0.1kWh	0-65535	Energy Discharge today
35	Eeps_day	0.1kWh	0-65535	Today's off-grid output energy
36	Etogrid_day	0.1kWh	0-65535	Today's export to gird energy
37	Etouser_day	0.1kWh	0-65535	Electricity supplied to user from the grid today
38	Vbus1	0.1V	0-65535	Voltage of Bus 1
39	Vbus2	0.1V	0-65535	Voltage of Bus 2
40	Epv1_all L	0.1kWh	0-65535	PV1 cumulative power generation/AC energy storage Epv_all Low byte
41	Epv1_all H	0.1kWh	0-65535	PV1 cumulative power generation/AC energy storage Epv_all high byte
42	Epv2_all L	0.1kWh	0-65535	PV2 cumulative power generation low byte, AC energy storage does not have this variable
43	Epv2_all H	0.1kWh	0-65535	PV2 cumulative power generation high byte, AC energy storage does not have this variable
44	Epv3_all L	0.1kWh	0-65535	PV3 cumulative power generation low byte (total PV=PV1+PV2+PV3), AC energy storage does not have this variable.
45	Epv3_all H	0.1kWh	0-65535	PV3 cumulative power generation high byte (total PV=PV1+PV2+PV3), AC energy storage does not have this variable
46	Einv_all L	0.1kWh	0-65535	Inverter output accumulated power low byte

47	Einv_all H	0.1kWh	0-65535	Inverter output accumulates power high byte
48	Erec_all L	0.1kWh	0-65535	AC charging accumulates rectified power Low byte
49	Erec_all H	0.1kWh	0-65535	AC charging accumulates rectified power high byte
50	Echg_all L	0.1kWh	0-65535	Cumulative charge energy low byte
51	Echg_all H	0.1kWh	0-65535	Cumulative charge energy high byte
52	Edischg_all L	0.1kWh	0-65535	Cumulative discharge charge energy Low byte
53	Edischg_all H	0.1kWh	0-65535	Cumulative discharge charge energy High byte
54	Eeps_all L	0.1kWh	0-65535	Cumulative inverter off-grid output energy Low byte
55	Eeps_all H	0.1kWh	0-65535	Cumulative inverter off-grid output energy High byte
56	Etogrid_all L	0.1kWh	0-65535	Accumulate export energy Low byte
57	Etogrid_all H	0.1kWh	0-65535	Accumulate export energy High byte
58	Etouser_all L	0.1kWh	0-65535	Cumulative import energy Low byte
59	Etouser_all H	0.1kWh	0-65535	Cumulative import energy high byte
60	FaultCode L		0-65535	For more information, see Fault code definition file
61	FaultCode H		0-65535	For more information, see Fault code definition file
62	WarningCode L		0-65535	For more information, see Alarm code definition file
63	WarningCode H		0-65535	For more information, see Alarm code definition file
64	Tinner	celsius	0-65535	Internal temperature
65	Tradiator1	Celsius	0-65535	Radiator temperature 1
66	Tradiator2	celsius	0-65535	Radiator temperature 2
67	Tbat	celsius	0-65535	Battery temperature
69	RunningTime L	second		Runtime duration
70	RunningTime H	second		Runtime duration
71	AutoTestStart	Bit0-3		0 - not started ; 1 - started
	UbAutoTestStatus	Bit4-7		0-waiting 1-testing 2-test fail 3-V test OK 4-F test OK 5- test pass
	UbAutoTestStep	Bit8-11		1-V1L test 2-V1H 3-F1L test 4-F1H test

				5-V2L test 6-V2H test 7-F2L test 8-F2H test
72	wAutoTestLimit	0.1V/0.01Hz		When ubAuto Test Step=1,2,5,6, is the voltage limit; When ubAutoTest Step=3,4,7,8, it is the frequency limit
73	uwAutoTestDefaultTime	ms		
74	uwAutoTestTripValue	0.1V/0.01Hz		When ubAuto Test Step=1,2,5,6, is the voltage limit; When ubAutoTestStep=3,4,7,8, it is the frequency limit
75	uwAutoTestTripTime	ms		
77	ACInputType	Bit0	0 or 1	0-Grid 1-Generator for 12KHybrid
	ACCoupleInverterFlow	Bit1	0 or 1	0-no flow 1-show flow
	ACCoupleEn On	Bit2	0 or 1	0-Disable 1-Enable
	SmartLoadFlow	Bit3	0 or 1	0-no flow 1-show flow When Bit4 is 1 and smartload power>0, set it to 1; Used to monitor the power arrow displayed on the homepage;
	SmartLoadEnOn	Bit4	0 or 1	0-Disable 1-Enable Set to 1 when the user enables SmartLoad and the machine has reached the activation condition; Display power;
	EpsLoadPowerShow	Bit5	0 or 1	0-no power display 1-power display Temporarily set to 1 during initialization for compatibility with new and old software; Monitor whether the EPS side load power is displayed based on this flag
	GridLoadPowerShow	Bit6	0 or 1	0-no power display 1-power display Temporarily set to 1 during initialization for compatibility with new and old software; Monitor whether the Grid side load power is displayed based on this flag
	PloadPowerShow	Bit7	0 or 1	0-no power display 1-power display Temporarily set to 1 during initialization for compatibility with new and old software;Monitor whether to display the total load power based on the flag position
80	BatTypeAndBrand			For more information, see the model definition file
	BatComType		0 or 1	0-CAN 1-485
81	MaxChgCurr	0.01A		The maximum charging current of BMS limits
82	MaxDischgCurr	0.01A		The maximum discharging current of BMS limits
83	ChargeVoltRef	0.1V		Recommends charging voltage by BMS
84	DischgCutVolt	0.1V	**11** / **41**	Recommends a discharging cut-off voltage by BMS
85	BatStatus0_BMS			Status information of BMS
86	BatStatus1_BMS			Status information of BMS

87	BatStatus2_BMS			Status information of BMS
88	BatStatus3_BMS			Status information of BMS
89	BatStatus4_BMS			Status information of BMS
90	BatStatus5_BMS			Status information of BMS
91	BatStatus6_BMS			Status information of BMS
92	BatStatus7_BMS			Status information of BMS
93	BatStatus8_BMS			Status information of BMS
94	BatStatus9_BMS			Status information of BMS
95	BatStatus_INV			The inverter aggregates lithium battery status information
96	BatParallelNum			Number of batteries in parallel
97	BatCapacity	Ah		Battery capacity
98	BatCurrent_BMS	0.01A		Battery current , with signed number
99	FaultCode_BMS			

100	WarningCode_BMS			
101	MaxCellVolt_BMS	0.001V		Maximum voltage of cell
102	MinCellVolt_BMS	0.001V		Minimum voltage of cell
103	MaxCellTemp_BMS	0.1℃		Maximum temperature of cell, with signed number
104	MinCellTemp_BMS	0.1℃		Minimum temperature of cell, with signed number
105	BMSFWUpdateState	Bit0-2	1-3	1-Upgrade in process 2-Upgrade successful 3- Upgrade failed
	RSVD	Bit3	...	...
	GenDryContactState	Bit4	0 - 1	0 - Turn off 1 - Turn on Only For 12k
	RSVD	Bit5-15	...	...
106	CycleCnt_BMS			Number of charging/discharging cycles
107	BatVoltSample_INV	0.1V		Tnverter samples the battery voltage
108	T1	0.1℃		BT temperature for 12k
109	T2	0.1℃		Reserved
110	T3	0.1℃		Reserved
111	T4	0.1℃		Reserved
112	T5	0.1℃		Reserved
113	MasterOrSlave	Bit0~1	1,2	Master or Slave 1: Master 2: Slave
	SingleOrThreePhase	Bit2~3	1-3	Parallel phase 1:R 2:S 3:T
	Phases sequence	Bit4~5	0-1	0- Positive order 1- Negative order
	Rsvd	Bit6~7		Reserved
	ParallelNum	Bit8~16	1~255	Number of inverters in parallel
114	OnGridloadPower	W		Load power of the 12k inverter when it is not off-grid
115	SN[0]-Year		'0'-'9' 'A'-'Z'	The serial number is a ten-digit ASCII code For example: The serial number is AB12345678 SN[0]=0x41(A) ⋮
	SN[1]-week		'0'-'9' 'A'-'Z'	
116	SN[2]-week		'0'-'9' 'A'-'Z'	
	SN[3]-factory		'0'-'9' 'A'-'Z'	

117	SN[4]-product code		'0'-'9' 'A'-'Z'	: : SN[9]=0x38(8)
	SN[5] -product code		'0'-'9' 'A'-'Z'	

118	SN[6] -serial number		'0'-'9' 'A'-'Z'	
	SN[7]-serial number		'0'-'9' 'A'-'Z'	
119	SN[8] -serial number		'0'-'9' 'A'-'Z'	
	SN[9] -serial number		'0'-'9' 'A'-'Z'	
120	VBusP	0.1V		Half BUS voltage
121	GenVolt	0.1V		Generator voltage Voltage of generator for three phase: R phase
122	GenFreq	0.01Hz		Generator frequency
123	GenPower	W		Voltage of generator for three phase: R phase
124	Egen_day	0.1kWh		Energy of generator today
125	Egen_all L	0.1kWh		Low byte of total generator energy
126	Egen_all H	0.1kWh		High byte of total generator energy
127	EPSVoltL1N	0.1V		Voltage of EPS L1N Voltage of generator for three phase: S phase
128	EPSVoltL2N	0.1V		Voltage of EPS L2N Voltage of generator for three phase: T phase
129	Peps_L1N	W		Active power of EPS L1N Off-grid active power of three phase: S phase
130	Peps_L2N	W		Active power of EPS L2N Off-grid active power of three phase: T phase
131	Seps_L1N	VA		Apparent power of EPS L1N Off-grid apparent power of three phase: S phase
132	Seps_L2N	VA		Apparent power of EPS L2N Off-grid apparent power of three phase: T phase
133	EepsL1N_day	0.1kWh		Daily energy of EPSL1N Off-grid daily energy of three phase: S phase
134	EepsL2N_day	0.1kWh		Daily energy of EPSL2N Off-grid daily energy of three phase: T phase
135	EepsL1N_all L	0.1kWh		Low byte of total EPSL1N energy Total off-grid power of three phase: S phase
136	EepsL1N_all H	0.1kWh		High byte of total EPSL1N energy Total off-grid power of three cameras: S phase
137	EepsL2N_all L	0.1kWh		Low word of total EPSL2N energy Total off-grid power of three phase: T phase

138	EepsL2N_all H	0.1kWh		High byte of total EPSL2N energy Total off-grid power of three byte: T phase
139	Qinv	Var		Reactive power
140	AFCI_CurrCH1	mA		AFCI current
141	AFCI_CurrCH2	mA		AFCI current
142	AFCI_CurrCH3	mA		AFCI current
143	AFCI_CurrCH4	mA		AFCI current
144	AFCIFlag.ArcAlarmCH1	Bit0		Arc status of CH1 0-Normal 1-Alarm
	AFCIFlag.ArcAlarmCH2	Bit1		Arc status of CH2 0-Normal 1-Alarm
	AFCIFlag.ArcAlarmCH3	Bit2		Arc status of CH3 0-Normal 1-Alarm
	AFCIFlag.ArcAlarmCH4	Bit3		Arc status of CH4 0-Normal 1-Alarm
	AFCIFlag.SelfTestResult CH1	Bit4		Test result of CH1 0-Normal 1-fail
	AFCIFlag.SelfTestResult CH2	Bit5		Test result of CH2 0-Normal 1-fail
	AFCIFlag.SelfTestResult CH3	Bit6		Test result of CH3 0-Normal 1-fail
	AFCIFlag.SelfTestResult CH4	Bit7		Test result of CH4 0-Normal 1-fail
	AFCI_ArcAlarm.rsvd	Bit8-15		
145	AFCI_ArcCH1			Real time arc of CH1
146	AFCI_ArcCH2			Real time arc of CH2
147	AFCI_ArcCH3			Real time arc of CH3
148	AFCI_ArcCH4			Real time arc of CH4
149	AFCI_MaxArcCH1			Max arc of CH1
150	AFCI_MaxArcCH2			Max arc of CH2
151	AFCI_MaxArcCH3			Max arc of CH3
152	AFCI_MaxArcCH4			Max arc of CH4
153	ACCouplePower	W		AC Coupled inverter power
154	AutoTestTripValue[0]	0.1V/0.01Hz		
……				
161	AutoTestTripValue[7]	0.1V/0.01Hz		
162	AutoTestTripTime [0]	ms		
……				
169	AutoTestTripTime [7]	ms		
170	Pload	W		Load consumption when working in on-grid mode
171	Eload_day	0.1kWh		Load energy for today
172	Eload_allL	0.1kWh		Load energy for total High byte
173	Eload_allH	0.1kWh		Load energy for total Low byte
174	SwitchState.SafetySw	Bit0~4	0~0x1F	The status of the 5-digit safety DIP switch
	SwitchState.rsvd	Bit5-7	0	Reserved
	SwitchState.EpsSwOn	Bit8		Status of EPS switch
	SwitchState.DrySwOn	Bit9		Generator dry contact status
	SwitchState.GenQuick StartUsed	Bit10		generator quick start flag displayed
	SwitchState.rsvd	Bit11-14		Reserved
	SwitchState.SwRegUsed	Bit15		Determine whether the switch register is being used
175	EPS overload ctrl time	s		Connect in xx S after triggering the EPS overload issue

176	ExceptionReason1	Bit0~3		3phase:PVGridOn Exit Reason
		Bit4~7		3phase:PVChgGridOn Exit Reason
		Bit8~11		3phase:BatGridOn Exit Reason
		Bit12~15		3phase:PVBatGridOn Exit Reason
177	ExceptionReason2	Bit0~3		3phase:PVCharge Exit Reason
		Bit4~7		3phase:ACCharge Exit Reason
		Bit8~11		3phase:PVACCharge Exit Reason
		Bit12~15		3phase:EPS Exit Reason
178	ChgDischgDisableReason	Bit0~7		3phase:Charge Exit Reason
		Bit8~15		3phase:Discharge Exit Reason
……	**……**	**……**	**……**	**……**
180	Pinv_S	W	0-65535	On grid inverter power of three phase: S phase

181	Pinv_T	W	0-65535	On grid inverter power of three phase: T phase
182	Prec_S	W	0-65535	Charging rectification power of three phase: S phase
183	Prec_T	W	0-65535	Charging rectification power of three phase: T phase
184	Ptogrid_S	W	0-65535	User on-grid power of three phase: S phase
185	Ptogrid_T	W	0-65535	User on-grid power of three phase: T phase
186	Ptouser_S	W	0-65535	Grid supply power of three phase: S phase
187	Ptouser_T	W	0-65535	Grid supply power of three phase:T phase
188	GenPower_S	W	0-65535	Power of generator for three phase: S phase
189	GenPower_T	W	0-65535	Power of generator for three phase: T phase
190	IinvRMS_S	0.01	0-65535	Effective value of three phase inverter current: S phase
191	IinvRMS_T	0.01	0-65535	Effective value of three phase inverter current: T phase
192	PF_S	0.001	0-2000	Power factor of phase S in three-phase inverter xϵ(0,1000]->x/1000 xϵ(1000,2000)->(1000-x)/1000
193	GridVoltL1N	0.1V		Voltage of Grid L1N （for US model）
194	GridVoltL2N	0.1V		Voltage of Grid L2N（for US model）
195	GenVoltL1N	0.1V		Voltage of Gen L1N（for US model）
196	GenVoltL2N	0.1V		Voltage of Gen L2N（for US model）
197	PinvL1N	W	0-65535	Inverting power of phase L1N （for US model）
198	PinvL2N	W	0-65535	Inverting power of phase L2N （for US model）
199	PrecL1N	W	0-65535	Rectifying power of phase L1N （for US model）
200	PrecL2N	W	0-65535	Rectifying power of phase L2N （for US model）
201	Ptogrid_L1N	W	0-65535	Grid export power of phase L1N (for US model）
202	Ptogrid_L2N	W	0-65535	Grid export power of phase L2N (for US model）
203	Ptouser_L1N	W	0-65535	Grid import power of phase L1N (for US model）
204	Ptouser_L2N	W	0-65535	Grid import power of phase L2N (for US

				model）
205	PF_T	0.001	0-2000	Power factor of phase T in three-phase inverter xϵ(0,1000]->x/1000 xϵ(1000,2000)->(1000-x)/1000
206	ACCouplePower_S	W		AC Couple inverter power_S
207	ACCouplePower_T	W		AC Couple inverter power_T
208	OnGridloadPowerS	W		Load power of S-phase the Trip6-20k inverter when it is not off-grid
209	OnGridloadPowerT	W		Load power of T-phase the Trip6-20k inverter when it is not off-grid
210	Remaining seconds	S		Remaining seconds of one click charging process
...				
214	uwNTCForINDC	celsius	0-65535	Internal temperature
215	uwNTCForDCDCL	Celsius	0-65535	Radiator temperature 1
216	uwNTCForDCDCH	celsius	0-65535	Radiator temperature 2
217	Vpv4	0.1V	0-65535	PV4 voltage, the AC energy storage system does not have this variable
218	Vpv5	0.1V	0-65535	PV5 voltage, the AC energy storage system does not have this variable
219	Vpv6	0.1V	0-65536	PV6 voltage, the AC energy storage system does not have this variable
220	Ppv4	W	0-65535	PV4 power, the AC energy storage system does not have this variable
221	Ppv5	W	0-65535	PV5 power, the AC energy storage system does not have this variable
222	Ppv6	W	0-65535	PV6 power, the AC energy storage system does not have this variable
223	Epv4_day	0.1kWh	0-65535	PV4 power generation today, the AC energy storage system does not have this variable
224	Epv4_all L	0.1kWh	0-65535	PV4 cumulative power generation low byte, AC energy storage does not have this variable
225	Epv4_all H	0.1kWh	0-65535	PV4 cumulative power generation high byte, AC energy storage does not have this variable
226	Epv5_day	0.1kWh	0-65535	PV5 power generation today, the AC energy storage system does not have this variable
227	Epv5_all L	0.1kWh	0-65535	PV5 cumulative power generation low byte, AC energy storage does not have this variable
228	Epv5_all H	0.1kWh	0-65535	PV5 cumulative power generation high byte, AC energy storage does not have this variable
229	Epv6_day	0.1kWh	0-65535	PV6 power generation today, the AC energy storage system does not have this variable
230	Epv6_all L	0.1kWh	0-65535	PV6 cumulative power generation low byte, AC energy storage does not have this variable
231	Epv6_all H	0.1kWh	0-65535	PV6 cumulative power generation high byte, AC energy storage does not have this variable
232	Smart Load Power	W		Smart Load output power

Table 7 Input Register Mapping Table (Signed numbers indicated with a green background)