1 PVkeeper V2.0 Installation

Open the PVkeeper32.exe or PVkeeper64.exe according to your Windows system. Install the program step by step.



2 Driver Installation

The user's computer should install the following driver to enable serial communication which is contained in the CD ROM.

CP210x_Windows_Drivers

3 GUI Introduction

3.1 Function Introduction

After installation of the program, there will be a shortcut icon called "PVkeeper v2.0" on your desktop. Refer to Diagram 3-1. Double click "PVkeeper v2.0" to start the software and the main screen will be displayed as Diagram 3-2.



N PVkeeper V2.0						a 🔀
Setting Observation Lar	nguage Help <mark>A</mark>					
	D B					
-Basic Configuration —		N.	Essential Information —			
	(- <u>-</u>	<u></u>))	Grid Voltage: 223.6		0	V
	(ji	<u> </u>	Grid Frequency: 49.96		0	A
Device ID:			AC Charge Current: 0.2		0	*
Read Intervals: (s)			Battery Voltage: 54.05		223.6	v
0.5 👻			Battery Capacity: 100		49.95	Hz
Becord Interval: (min)			Charge Current: 0.3		10	w
1			Discharge Current: 0		24	VA
					0.1	8
Apply	D		Error:	Warning:		
		<i>y</i>	State: AC charge and Bypass	Charge Priority: P	First	
	Troduct Information	Electricity statistics				
	Model: MHTP 5000		70017 70.			
	F		U KNA lota	L Energy:		
	Serial Number:		0 KWH Tota	1 Storang Production: 2.	K	
	Inverter CPU Version: 001.13		0 KWH Tota	l charged: 6	K	
	002.00		0.1 KWH Tota	1 Grid Consume: 6.1	K	
	MrFI CrU Version.		0.1 KWH Tota	Load Consumption: 2.	K	

Diagram 1-2

- A: Function Menu. To offer complete tool-set for navigating and setting the GUI.
- B: Shortcut Menu. To provide short cuts to more commonly used functions.
- C: Basic Configuration. To offer basic setting of PVkeeper.
- D: Status Diagram. To display inverter status including PV status and grid status.
- E: Essential Information. To show current data of the inverter.
- F: Product Information. To show software version and some other related information.
- **G: Electricity statistics** To show the energy consumption destination.

3.2 Working Mode

Standby. In this mode, there is no charging or output.

🔀 PVkeeper V2.0							
Setting Observation Language Help							
Basic Configuration -			Essential Informat				
Port:			Grid Voltage: 0	v		0	v
COM18			Grid Frequency: 0	Hz		0	A
			AC Charge Current: 0	A		0	¥ .
1 Read Intervals: (s)			Battery Voltage: 4	9.9 V		0	v
			Battery Capacity: 🏪	⁰⁰ %		0	Hz
Record Interval: (min)		(A)	Charge Current: 0	A		: 0	W
1 -			Discharge Current: 0	A		er: O	VA
						0.0	×
Apply			Error:		Warning:	_	
			State: Standby			PV First	
Product Information		Electricity statistics					
Model:	MH2 5000		0 КЖН			D	
Serial Number:	ASD7654321		0 KWH			2. 1	
Inverter CPU Version	001.13		0.1 KWH			5. 1	
	002.00		0.2 KWH			5. 7	
Mrri tru Version:			0.1 KWH			2. 7	

🔀 PVkeeper V2.0				
Setting Observation L	anguage Help			
	e			
Basic Configuration -			Essential Information	
Port:			Grid Voltage: 0 V	PV Voltage: 0 V
COM18 -			Grid Frequency: 0 Hz	PV Charge Current: 0 A
bevice ib.			AC Charge Current: 0 A	PV Power: 0 W
l Read Intervals: (s)			Battery Voltage: 49.93 V	Output Voltage: 208.2 V
0.5	(In the second s		Battery Capacity: 100 %	Output Frequency: 50.01 Hz
Record Interval: (min)			Charge Current: 0 A	Output Active Power: 0 W
1		^	Discharge Current: 0 A	Output Apparent Power: 22 VA
				Load Percent: 0.1 %
Apply			Error:	Warning:
			State: Discharge	Charge Priority: PV First
	Product Information			
	Model: MHP 5000	Today Energy:	0 KWH Total Energy:	О КУН
	ASD7654321	Today Storang Production:	0 KWH Total Storana	Production: 2.1 KWH
	001.12	Today showed		8.1 1001
	Inverter CPU Version: 007.13	Today charged.	0.1 KAN lotal charged	0.1 KNA
	MPPT CPU Version: 002.00	Today Grid Consume:	0.2 MAR Total Grid Co	nsume: 0.1 KWH
			0.1 KWH Total Load Co	nsumption: 2.7 KWH

Discharge. In this mode, the battery supplies power to the load.

PV Charge. In this mode, the PV power charges the battery.



AC Charge. In this mode, the utility grid charges the battery.

🔀 PVkeeper V2.0				
Setting Observation L	anguage Help			
① ① ① ① ① ① ①	e			
└ Basic Configuration —			Essential Information	
Port:			Grid Voltage: 221.3 y PV Voltage:	0 V
COM18 -			Grid Frequency: 49.97 Hz PV Charge Curr	ent: O A
			AC Charge Current: 0.5 A PV Power:	0 *
l Read Intervals: (s)			Battery Voltage: 53.99 V Output Voltage	s: 0 V
0.5 🗸			Battery Capacity: 100 % Output Frequer	acy: ⁰ Hz
Record Interval: (min)			Charge Current: 0 A Output Active	Power: O W
1 -			Discharge Current: 0 A Output Apparen	nt Power: 0 VA
				0.0 %
Apply			Error: Warning:	
			State: AC charge Charge Priorit	y: PV First
	Product Information			
	Model: MHP 5000	Today Energy:	0 KWH Total Energy:	о кун
	Serial Number: ASD7654321	Today Storang Production:	0 KWH Total Storang Production:	2.1 KWH
	001.13	Today charged:	0.1 KWH Total charged:	6.1 KWH
	Inverter CPU Version:	Today Grid Consume:	0.2 KWH Total Grid Consume:	6.7 KWH
	MPPT CPU Version: 002.00	Today Load Consumption:	0.1 KWH Total Load Consumption:	2.7 KWH

Combined Charge. In this mode, the PV power and the utility grid both charge the battery.



Combined Charge and Bypass. In this mode, the PV power and the utility grid both charge the battery, and the utility grid supplies power to the load.

PV Charge and Bypass. In this mode, the PV power charges the battery and the utility grid supplies power to the load.

🔀 PVkeeper V2.0						• 🕺
Setting Observation Language Help						
Basic Configuration -		Essential Information -				
Fort:		Grid Voltage: 220.2	v		108.7	۷
	<u>)</u>	Grid Frequency: 50.01	Hz		7	A
		AC Charge Current: 1.9	A		366	¥.
Read Intervals: (s)		Battery Voltage: 53.84	V		220.2	V
		Battery Capacity: 66	×		50.03	Hz
Record Interval: (ain)		Charge Current: 9.1	A		12	¥
· · · · · · · · · · · · · · · · · · ·		Discharge Current: 0	A		12	VA
					0.0	*
Apply		Error:		Warning:		
		State: Combine charge and	Bypass	Charge Priority: PV	AUTI	
Product Information	Electricity statistics					
Model: MHP 5000		0 КЖН То		63.	3 1	
Serial Number: ASD7654321		0 KWH To		oduction: 2.5	; I	
Inverter CPU Version: 001.13		0 KWH To		70.	3	
002 03		0 KWH To		me: 7.8	3	
MPF1 CFU Version:		0 KWH To		mption: 3.3) I	

AC Charge and Bypass. In this mode, the utility grid supplies power to the load and charge the battery at the same time.

🔀 PVkeeper V2.0					
Setting Observation Langu	iage Help				
0 0 0					
Basic Configuration -			Essential Information		
Port:			Grid Voltage: 223.2	V PV Voltage:	0 V
COM18			Grid Frequency: 49.95	Hz PV Charge Current	: 0 A
			AC Charge Current: 0.1	A PV Power:	0 X
l Read Intervals: (s)			Battery Voltage: 54.02	V Output Voltage:	223. 2 V
0.5	-		Battery Capacity: 100	% Output Frequency:	49.97 Hz
Record Interval: (min)		e , e	Charge Current: 0	A Output Active Pow	er: 10 W
I		✓	Discharge Current: 0	A Output Apparent P	ower: ³⁵ VA
					0.1 %
Apply			Error:	Warning:	
			State: AC charge and Bypa	ss Charge Priority:	PV First
	Product Information				
	Model: MHP 5000	Today Energy:	О КЖН То		0 KNH
	Serial Number: ASD7654321	Today Storang Froduction	: 0 KWH To		2.1 KWH
	Inverter CPU Version: 001.13	Today charged:	0.1 KWH To		6.1 KWH
	002.00	Today Grid Consume:	0.2 KWH To		6.7 KWH
	MPPT CPU Version: 002.00	Today Load Consumption:	0.1 KWH To		2.7 KWH

Bypass. In this mode, the utility grid supplies power to the load, but it doesn't charge the battery.

👪 PVkeeper V2.0							
Setting Observation Languag	ge Help						
Basic Configuration			□ Essential Inform □	ation ———			
Port:				223.8 V		0	V
COM18))		49.97 Hz		0	A
bevice ib.				0 A		0	¥.
l Read Intervals: (s)				50.03 V		223.8	v
				99 %		49.96	Hz
Record Interval: (min)				0 A		10	¥
1				0 A		11	VA
						0.0	*
Apply			Error:		Warning:		
)	State: Bypass		Charge Priority:	VAUTI	
	oduct Information	- −Electricity statistics					
M	lodel: MHP 5000		0 KWH		6	3.3	
	ASD7654321		0 12001		Production: 2		
	001 10						
I	Inverter CPU Version: DUI.13		0.0 KWA				
M	IPPT CPU Version: 002.03		U.S KWA		nsume: 8	10 R	
			0 KWH		nsumption: 3	3	

PV Charge and Discharge. In this mode, the PV supplies power to the load and charges the battery at the same time. If the PV power is not enough for the load, the battery and PV will both supply power to the load.



3.3 Setting Mode

Press Setting or Ψ , you will enter the setting window. You should login first before enter into that window. The original password is '123456'.

Input password	×
Input password	OK
	Cancel

You can change the password by 'Help>>Change password', then you will get the diagram as below:



After you logged in, you can enter the setting window as below:

🗯 Setting							- • •
Power Saving Mode 💿 Eng	able 🔘 Disable	Apply		Bulk Charge Voltage		v Apply	(20.0~64.0V)
Alarm Control 💿 On	🔘 Off	Apply		Floating Charge Voltage		V Apply	(20.0 [~] 64.0V)
Max Charge Current		A Apply	(0~180A)	DC Cut-off Voltage		V Apply	(20.0 [~] 64.0V)
Max AC Charge Current		A Apply	(0~100A)	Back to Utility		V Apply	(20.0~64.0V)
LI Battery Protocol type		Apply		Back to SBV/SOL		v Apply	(20.0 [~] 64.0V)
Output start time period		H Apply	(0~23H)	Output end time period		H Apply	(0 [~] 23H)
Charging start time peri	4	H Apply	(0 [~] 23H)	Charging end time period		H Apply	(0 [~] 23H)
Output Source Priority	Bat First 🗸 🗸	Apply		Charge Priority	PV First 🗸 🗸	Apply	
AC Input Volt Range	APL 🔻	Apply		Battery Type	AGM 🗸	Apply	
Output Frequency	50Hz 🔻	Apply		Ac Discharge Voltage	208VAC 🗸	Apply	
Overload Restart	Restart 🗸	Apply		Overtemp Restart	Restart 🗸	Apply	
Back Light	Dff 🗸	Apply		Remote Switch	Off 🗸	Apply	
						Refresh	Close

In this window, there are a lot of functions can be set by the user.

• Power Saving Mode

If disabled, output will be on continuously when the device is operated in battery mode. If enabled, inverter output will be on or off depending on the connected load is detected or not. If the load is not detected, the output of the inverter will be off until load reaches a certain level. Check product manual for more details.

Alarm Control

If disabled, buzzer won't be on when warn/fault occurred.

Maximum Charging Current

The maximum charging current can be set from 0A to 180A. The maximum charge current to battery in charging mode including solar charging current and AC charging current.

• Maximum AC Charging Current

The maximum AC charging current can be set from 0A to 100A.

• LT Battery Protocol type

The The maximum AC charging current can be set from 0 to 99.

• Output start time period

You can set the output start time

• Charging start time period

You can set the charging start time

Bulk Charge Voltage

The bulk charge voltage can be set from 20.0V to 64.0V. It is charging voltage in constant charging mode.

• Floating Charge Voltage

The floating charge voltage can be set from 20.0V to 64.0V. It is charging voltage in floating charging mode.

• DC Cut-Off Voltage

The DC cut-off voltage can be set from 20.0V to 64.0V. When battery voltage is lower than this setting voltage, the output will be cut off.

• Back to Utility

Input the value between the maximum and minimum. If "SBU" is selected in output source priority, the inverter will transfer output source to utility grid when battery voltage drops to low battery voltage point.

Back to SBU/SOL

When battery voltage is higher than this setting voltage, battery will be allowed to discharge.

• Output end time period

You can set the output end time

Charging end time period

You can set the charging end time

• Output Source Priority

Click up-down arrows to set up output source priority. There are 4 options: utility first, solar first ,SBUandSUB. See product manual for the details of these options.

• Charge Priority

Click up-down arrows to set up charger source priority. There are 3 options: solar first, solar and utility and solar only. See product manual for the details of these options.

• AC Input Voltage Range

Click up-down arrows to set up suitable input range for connected devices. When selecting "Appliance", it's allowed to connect home load. When selecting "UPS", it's allowed to connect personal computer.

• Battery Type

Select connected battery type. There are three options: AGM, Flooded, Li, US2 and User.

Output Frequency

Nominal output frequency, 50Hz or 60Hz selectable.

• Ac Discharge Voltage

Click up-down arrows to set up AC output voltage range. There are 7 options: 208VAC,230VAC,220VAC,240VAC,100VAC,110VAC and 120VAC. See product manual for the details of these options.

• Overload Restart

Click up-down arrows to set up overload. There are 3 options: restart,not restart and switch to AC. See product manual for the details of these options.

• Overtemp Restart

Click up-down arrows to set up overload. There are 2 options: restart and not restart and. See product manual for the details of these options.

Back Light

Can control the brightness of the display screen.

Remote Switch

You can switch the machine on and off

tips: After setting, if you want to confirm whether the setting is successful, you can click the refresh button.

3.4 Data Log

Press Observation or 🥮, to get the working data of inverter saved in table.

0	Data							and the second second		- 🗆 🗙
					<mark>2018</mark> / 3/ 5 [] ▼ 2018/	3/5 🗐 🔻	Query Dele	te Delete all	Export Excel
Fi	d	Serial	Time1	Status	V_pv1	V_pv2	P_pv1	P_pv2	V_battery	Bat_Cap
7		SK12345678	2018/3/5 19:31	Discharge	0	0	0	0	50. 75	100
6		SK12345678	2018/3/5 19:30	Discharge	0	0	0	0	50.74	100
5		SK12345678	2018/3/5 19:29	Discharge	0	0	0	0	50. 75	100
4		SK12345678	2018/3/5 19:28	Discharge	0	0	0	0	50. 75	100
3		SK12345678	2018/3/5 19:27	Discharge	0	0	0	0	50. 76	100
2		SK12345678	2018/3/5 19:25	Discharge	0	0	0	0	50. 76	100
1		SK12345678	2018/3/5 19:24	Discharge	0	0	0	0	50. 78	100
										•
Ľ										· .

 $ightarrow \Box$ "Delete": Select specific data and click "Delete" button to delete the record.

>□"Delete All": Click "Delete all" button to delete all records.

"Query": Click "Query" button to query records which the user wants to get.
"Export Excel": Click "Export", it will save listed table to local PC in .xls file.

3.5 Event Log

Press (), to get the Event data of inverter saved in table.

() Ever	nt_log						_ D _ X
l			2018/ 3/	5 💷	2018/3/5 📃	Query	Delete Delete all	l Export Excel
l								
l		id	Grade	Time		Event	_	_
J	•	1	Warning	2018/3/5 19:33		Fan lock	warning	
I								
l								

 $ightarrow \Box$ "Delete": Select specific data and click "Delete" button to delete the record.

 $ightarrow \Box$ "Delete All": Click "Delete" button to delete all records.

 \geq "**Query**": Click "Query" button to query records which the user want to get.

≻□**"Export Excel":** Click "Export", it will save listed table to local PC in .xls file.