

TIME OF USE AND WEATHER OPTIMIZE FUNCTIONS FOR 18kPV

1. TIME OF USE FUNCTION

1. **Real-time Price Data Integration:** The inverter establishes a real-time connection with the grid company's backend to fetch live updates on the current electricity prices.
2. **Maximize Economic Benefits:** The primary goal of this function is to, without compromising the normal operation of the system, maximize cost savings by flexibly adjusting the battery's usage pattern.
3. **User Customization:** Users can customize settings through the inverter monitoring software based on individual needs and fluctuations in electricity prices. This customization enables meeting energy demands and supplies during different time periods.
4. **Real-time Monitoring and Reports:** Users can access real-time system status through the monitoring software. The system also provides detailed reports, helping users better understand system performance and economic benefits.

1.1 OPERATING STEPS USING EG4 MONITORING

1. **Complete Inverter Information:** Users need to input necessary information about the inverter, such as the serial number, county, and postal code, into the monitoring system. The cloud platform automatically fetches daily electricity price data and analyzes it.
2. **Data Transmission to Inverter:** User settings are transmitted from the cloud platform to the inverter, ensuring the inverter understands the user's charging preferences and price strategies.
3. **Inverter Feedback on Settings:** The inverter provides feedback to the cloud platform, confirming the receipt of settings and executing charge/discharge operations according to user-specified strategies.

2. WEATHER OPTIMIZE FUNCTION

Our system introduces an advanced weather optimization function by fetching real-time weather data from Google. The system offers multiple operating modes to adapt to various scenarios:

- **Charge Priority Mode:** Suitable for areas with unstable power supply, prioritizing battery charging to ensure stable electricity usage.
- **Self-use Mode:** Designed for regions with higher electricity prices, the system prioritizes using self-generated solar power to meet household electricity demands.
- **Forced Charge/Discharge Mode:** Applicable in time-of-use pricing areas, the system enforces charging or discharging based on electricity pricing.

However, due to the diversity of customer scenarios, one mode often can't fulfill all requirements. Therefore, we introduce the Weather Optimize Function to enhance the system's intelligence.

2.1 WEATHER OPTIMIZE FUNCTIONALITY:

1. **Intelligent Charging Control:** Based on real-time weather information, the system automatically adjusts the charging percentage to maximize solar energy utilization efficiency.
2. **Stable Electricity Usage:** While ensuring stable electricity consumption, the system optimizes charging strategies based on the weather's conditions, ensuring the battery remains adequately charged.

2.2 OPERATING STEPS USING EG4 MONITORING

1. **Address Input:** Users input the device's location into the system, and the cloud platform automatically fetches and categorizes local weather information.

Serial number	Station name	Charge Time Range	Location	Action
1		00:30 - 04:00	X	Management
2		00:00 - 04:00	✓	Management
3		05:00 - 20:00	✓	Management
4		08:00 - 18:00	✓	Management
5		00:30 - 04:00	X	Management
6			X	Management
7			X	Management
8			X	Management
9			X	Management
10			X	Management
11			✓	Management
12			✓	Management
13			✓	Management
14			✓	Management
15			✓	Management
16			✓	Management
17			✓	Management
18			X	Management
19			✓	Management
20			✓	Management

Serial number	Date	Time	Weather next day	Charge Percent	Set Result	Fail Reason	Action
1	2024-02-08	2024-02-08 17:00:01	Broken clouds	80%	Success		View
2	2024-02-08	2024-02-08 17:00:01	Overcast clouds	95%	Success		View
3	2024-02-08	2024-02-08 17:00:05	Overcast clouds	95%	Success		View
4	2024-02-08	2024-02-08 17:00:01	Overcast clouds	95%	Success		View
5	2024-02-08	2024-02-08 17:00:01	Broken clouds	65%	Success		View
6	2024-02-08	2024-02-08 17:00:05	Overcast clouds	95%	Success		View
7	2024-02-08	2024-02-08 17:00:01	Overcast clouds	95%	Success		View
8	2024-02-08	2024-02-08 17:00:04	Overcast clouds	95%	Success		View
9	2024-02-08	2024-02-08 17:00:06	Overcast clouds	100%	Success		View
10	2024-02-08	2024-02-08 17:00:09	Overcast clouds	65%	Success		View
11	2024-02-08	2024-02-08 23:00:01	Overcast clouds	95%			View
12	2024-02-08	2024-02-08 23:00:04	Overcast clouds	95%			View
13	2024-02-08	2024-02-08 23:00:04	Snow	90%			View
14	2024-02-08	2024-02-08 22:00:05	Clear sky	30%			View
15	2024-02-08	2024-02-08 23:00:08	Broken clouds	85%			View
16	2024-02-08	2024-02-08 23:00:25		--			View
17	2024-02-08	2024-02-08 23:00:08	Scattered clouds	20%			View
18	2024-02-08	2024-02-08 23:00:02	Light rain	80%			View
19	2024-02-08	2024-02-08 23:00:14	Broken clouds	85%			View
20	2024-02-08	2024-02-08 22:00:12	Broken clouds	85%			View

2. **Time and Percentage Settings:** Users set charging times and percentages based on their electricity usage patterns and different weather conditions.

Station

Add device

Serial number	Station name	Charge Time Range
1	The Jacksons	00:00 - 23:30

Edit

* Serial number

* Charge Start Time

00:00

* Charge End Time

23:30

Charge percent(%) by weather:

* Clear sky

30

* Few(11%-25%) clouds

65

* Scattered(25%-50%) clouds

75

* Broken(51%-84%) clouds

85

* Overcast(85%-100%) clouds

95

* Light rain

80

* Moderate rain

90

* Heavy rain

100

* Other

90

Edit

Cancel

3. **Data Transmission:** The cloud platform sends user settings to the inverter.

4. **Feedback and Execution:** The inverter provides feedback to the cloud platform, confirming the receipt of settings and executing charging operations according to user-defined parameters.

Weather Optimize - - 2024-02-08 ×

Time	Charge	Discharge	Time	Charge	Discharge
00:00			00:30		
01:00			01:30		
02:00			02:30		
03:00			03:30		
04:00			04:30		
05:00			05:30		
06:00			06:30		
07:00			07:30		
08:00			08:30		
09:00			09:30		
10:00	✓		10:30	✓	

Cancel