MPPT Control

Rev 0.1

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Installation

Connect the MPPT Control to a BlueSolar MPPT with VE.Direct port using a VE.Direct cable.

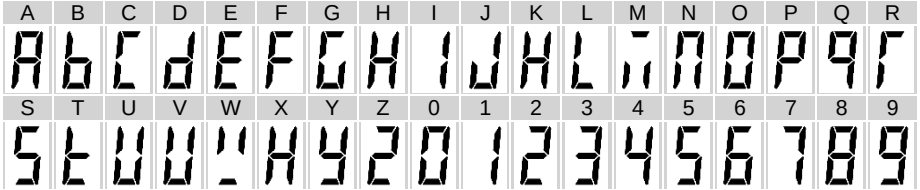
If the MPPT Control is connected to a MPPT that shuts down at night, the MPPT Control can be connected to a battery using the supplied cable. This way, the MPPT Control stays powered while the MPPT is off and the last received status, history and settings of the MPPT can be viewed.

Specifications

MPPT Control	
Supply voltage range	6,5 - 95 VDC (Battery powered) 5V (VE.direct powered)
Current draw, back light off	< 4 mA
Operating temperature range	-20 - +50°C (0 - 120°F)
Supported MPPTs	
Models	All models with VE.Direct port, except the BlueSolar MPPT 70/15
Software version	All software versions >= 1.12
INSTALLATION & DIMENSIONS	
Installation	Flush mount
Front	63 mm diameter
Front bezel	69 x 69 mm (2.7 x 2.7 inch)
Body diameter	52mm (2.0 inch)
Body depth	31mm (1.2 inch)
ACCESSORIES	
Cables (included)	cable with fuse for battery powered operation

Buttons and display

SETUP	Cancel / back	
SELECT	Select / confirm	
▲ ▼	Change item or value	
⇄	On	There is a connection with the MPPT.
	Blinking	There was a connection with the MPPT but the connection is lost. The last know values will be shown.
	Off	There has not been a connection with a MPPT.



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Menus

Status

The MPPT Control starts in the status menu. This shows the current status of the MPPT.

By pressing the up and down button, one can switch between the following values:

	PANEL POWER	
	PANEL VOLTAGE	
	YIELD TODAY	
	CHARGER ERROR	This is only visible when there is an actual error
	CHARGER STATE	Possible value: OFF, FAULT, BULK, ABSORPTION, FLOAT
	BATTERY CURRENT	
	BATTERY VOLTAGE	
	LOAD OUTPUT STATE	Possible values: ON, OFF Only visible on MPPTs with a load output
	LOAD CURRENT	Only visible on MPPTs with a load output

History

By pressing SELECT in the status menu, the history menu is entered. Here, the history stored in the MPPT can be viewed. This contains both overall history and well as a day to day history. For MPPTs with software version up to 1.15, only a few history topics are available and the day to day history contains 2 days: the current day and the previous day. For MPPTs with software version 1.16 and onwards, this is a 30 day history.

When viewing values, one can select a different day by pressing the up and down button. The MPPT Control will first show the value for a short time, then the currently selected day, and then the value again. When viewing an overall history value, pressing the up or down button will cause the MPPT Control to show “TOTAL”.

Pressing SETUP causes the MPPT Control to go back to the status menu topics when viewing topics or go back to the topics menu when viewing values.

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The topics are listed in the table below. Only topics marked with a * are visible in case of 2 day history.

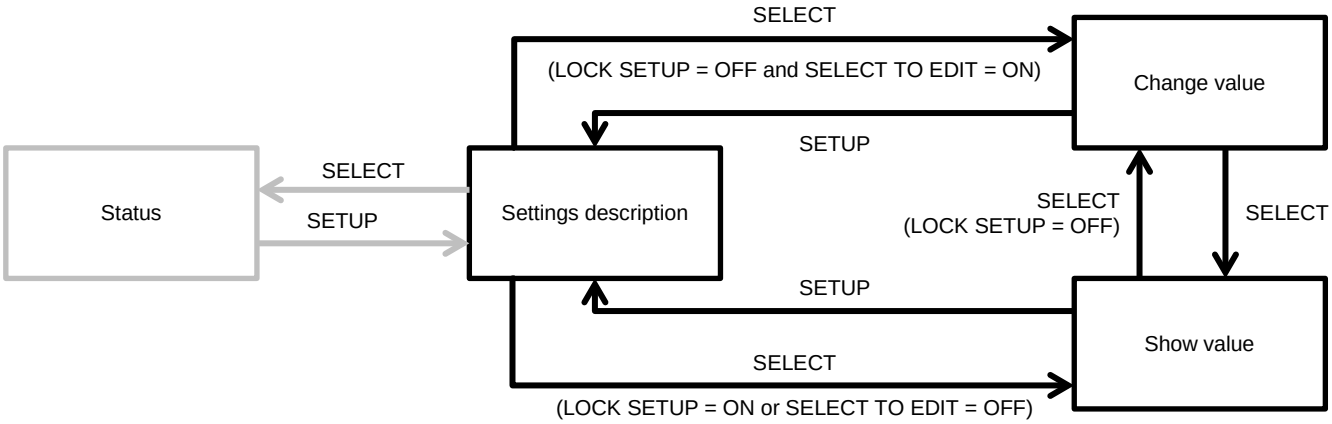
Overall topics		
	TOTAL YIELD*	The cumulative yield since the last history reset
	MAX PANEL VOLTAGE	The maximum panel voltage since the last history reset
	MAX BATTERY VOLTAGE	The maximum battery voltage since the last history reset
	MIN BATTERY VOLTAGE	The minimum battery voltage since the last history reset. (Only available for MPPT software version >= 1.17)
	LAST ERRORS	The last 4 errors since the last history reset. The number of blocks in the lower right of the screens determines which error is currently shown with 1 block being the latest and 4 blocks being the oldest.
Daily topics		
	YIELD*	The daily yield
	MAX POWER*	The maximum power per day
	MAX PANEL VOLTAGE	The maximum panel voltage per day
	MAX BATTERY CURRENT	The maximum battery current per day
	MAX BATTERY VOLTAGE	The maximum battery voltage per day
	MIN BATTERY VOLTAGE	The minimum battery voltage per day
	BULK TIME	The time spend in bulk per day
	ABSORPTION TIME	The time spend in absorption per day
	FLOAT TIME	The time spend in float per day
	LAST ERROR	The last 4 errors per day The number of blocks in the lower right of the screens determines which error is currently shown.

Settings

By pressing SETUP for 2 seconds in the status menu, the settings menu is entered. Here, the settings of the MPPT and MPPT Control can be viewed and changed. First the topic is shown and when SELECT is pressed, the corresponding value is shown. When SELECT TO EDIT is OFF, the value is shown before it can be changed by pressing SELECT again. When SELECT TO EDIT is ON, the current value is shown and a new value can immediately be selected. When LOCK SETUP is ON, settings only be changed after setting LOCK SETUP to off.

When editing a value, one can change its value by pressing the up and down buttons. When changing numeric values, pressing SELECT will go to the next digit, until the last digit. In this case, pressing SELECT will save the setting. When editing non numeric values, pressing SELECT will save the setting.

Pressing SETUP causes the MPPT Control to go back to the status menu topics when viewing topics or go back to the topics menu when viewing values.



The settings are listed in the table below. See the manual of the MPPT for the exact meaning of the settings.

01 LOCK SETUP	When this is ON, other settings cannot be changed. When trying to change a setting (except LOCK SETUP), the MPPT Control will show “LOCK” and show the value of that setting.
02 BATTERY VOLTAGE	The battery voltage that the MPPT is working with. When the setting is AUTO, it will show the A character in front of the voltage.
03 BATTERY TYPE	The battery type that the MPPT is working with. This can be set to FIXED or USER. When set to fixed, the rotary switch on the MPPT determines the actual battery type. When set to USER, all other charging related settings can be edited. It will be automatically set to USER when editing a charger related setting.
04 MAXIMUM CURRENT	The maximum charging current
05 BULK TIME LIMIT	The maximum time continuously spent in bulk
06 ABSORPTION TIME LIMIT	The maximum time continuously spent in absorption
07 ABSORPTION VOLTAGE	Battery voltage at which the MPPT switches to the absorption phase
08 FLOAT VOLTAGE	Battery voltage at which the MPPT switches to the float phase
09 TEMP COMPENSATION	
10 LOAD OUTPUT	Load output operating mode. Possible values: OFF, AUTO, ALT1, ALT2, ON, USER1, USER2
11 LOAD SWITCH HIGH	The high voltage level in case LOAD OUTPUT is set to USER1 or USER2
12 LOAD SWITCH LOW	The low voltage level in case LOAD OUTPUT is set to USER1 or USER2
13 CLEAR HISTORY	Clears the history of the MPPT
14 FACTORY DEFAULTS	Resets the MPPT back to factory defaults
15 BACKLIGHT INTENSITY	Sets the backlight intensity of the MPPT Control
16 BACKLIGHT ALWAYS ON	Determines whether the backlight of the MPPT Control is always on
17 SCROLL SPEED	Determines the scroll speed of the MPPT Control
18 SELECT TO EDIT	When set to OFF, the MPPT Control first shows the value of a setting and SELECT has to be pressed to be able to edit the value
19 AUTO LOCK	When set to ON, LOCK SETUP will be automatically set to ON, 2 minutes after changing a setting.
20 SOFTWARE VERSION	The software version of the MPPT Control
21 SERIAL NR	The serial number of the MPPT Control
21 MPPT SOFTWARE VERSION	The software version of the MPPT
21 MPPT SERIAL NR	The serial number of the MPPT