Smart Battery Sense Manual

1. Introduction

Smart Battery Sense is a wireless battery voltage-and-temperature sensor for Victron MPPT Solar Chargers.

The Solar Charger uses these measurements to optimize its charge parameters. The accuracy of the data it transmits will improve battery charging efficiency, and prolong battery life.

The connection between *Smart Battery Sense* and one or more Solar Charger(s) is wireless: It uses VE.Smart Network - a wireless technology based on Bluetooth Smart.

Simple to install & configure, *Smart Battery Sense* comes with an inline fuse and pre-crimped eyelets. Revealing the self-adhesive tape on the back allows you to mount it directly on the battery.

Product page on our main website:
https://www.victronenergy.com/accessories/smart-battery-sense

When can I use Smart Battery Sense ...and when should I avoid using it?

- Check the VE.Smart Networking compatible products list for compatible Solar Chargers.
- *Smart Battery Sense* is not needed, or allowed, in systems which are already controlled by a Color Control GX or Venus GX, see FAQ Q6 for more info.
- *Smart Battery Sense* is not needed for installations which already have a BMV-712 (battery monitor) with a temperature sensor accessory.
- For installations using a BMV-702 together with its optional temperature sensor accessory - for wireless connectivity consider adding a VE.Direct Bluetooth Smart dongle instead of a *Smart Battery Sense*.

2. Installation

Connect the two eyelets to your battery terminals and attach the unit directly onto the battery-body using its self-adhesive strip.

For *banks* of batteries *Smart Battery Sense* may be connected to any one of the individual batteries.

If the bat+ and bat- cables are not long enough they may be extended - only make sure you use the same, or a thicker, gauge of cable.

4. Configuration

This video will show you how to install *Smart Battery Sense* and includes step-by-step instructions for connecting it your mobile phone via VictronConnect ve-smart-networking manual.



5. LED Status codes

Smart Battery Sense has two LEDs: a Bluetooth status LED (blue), and an Error LED (red).

On power-up, the Bluetooth LED will be slow-blinking - indicating that the device is ready to accept a Bluetooth connection.

If both LEDs remain illuminated, something is wrong with the *Smart Battery Sense* unit (Hardware error).

When the LEDs are alternating quickly for more than 30 seconds, the *Smart Battery Sense* is in firmware update mode and will need to complete the update before it can be used. Firmware updates are performed (where necessary) after connecting to VictronConnect.

Blue LED	**Red LED**	**Smart Battery Sense state**	**Connection State**	**Remark**
On	On	Not functional	Disabled	Hardware error. *Smart Battery Sense* will not be visible in VictronConnect and it will not be contributing information to the VE.Smart Network.
Slow blinking	Off	Measuring V/T	Not connected	If VE.Smart Networking has been configured, the device will be contributing the voltage and temperature information to the VE.Smart network.
On	Off	Measuring V/T	Connected	If VE.Smart Networking has been configured, the device will be contributing the voltage and temperature information to the VE.Smart network.
Fast blinking	Fast blinking	Firmware update	Not connected	Red and Blue LED Alternating
On	Slow blinking	Firmware update	Connected	

Blue LED	Red LED	Smart Battery Sense state	Connection State	Remark
On	Fast blinking	Firmware update	Programming	

6. Troubleshooting

See both the VictronConnect manual and the VE.Smart Network manual.

7. Technical product specification

Operation and Dimensions

Description	Value
Dimension h x w x d (mm)	14 x 38 x 38
Cable length	45cm
Eyelet hole size	10mm (M10)
Fuse rating	T1A 250V
Operating temperature range	-10°C to +60°C
Operating voltage range	8V to 60V
Absolute maximum voltage	65V

Power consumption

BatteryVoltage	Not Connected	Joining VE.Smart Network	Connected
12 V	0.3 mA	0.5 mA	1.6 mA
24 V	0.2 mA	0.3 mA	0.9 mA
48 V	0.2 mA	0.3 mA	0.6 mA

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Last update: **2019-01-22 09:16**