



**victron energy**  
BLUE POWER

ENGLISH



# Smart Battery Sense Manual

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## 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 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.

## 3. 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.

<https://www.youtube.com/embed/v62wCfXaWXY>

## 4. 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.<br><br><i>Smart Battery Sense</i> 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        |  |
| On            | Fast blinking | Firmware update           | Programming      |  |

## 5. Troubleshooting

See both the [VictronConnect manual](#) and the [VE.Smart Network manual](#).

## 6. 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            |
| Bluetooth Frequency         | 2402-2480MHz   |
| Bluetooth Power             | -4dBm          |

### 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    |