AVM-X

Smart 12V Voltmeter

User Manual

Powered by

accuwave

1. **How to connect to your sensor for the first time:**
   - Get the **SSA Studio** app from the App Store or Play Store
   - Turn on your SSA AVM-X sensor
   - Make sure Bluetooth is turned on, on both the sensor and your smartphone
   - Start the app and grant all necessary permissions
   - Click on Pair new device. Please wait for up to 15-20 seconds.
   - Select the newly discovered sensor from the list.
   - Confirm system pairing dialog and enter PIN from sensor display.
   - **Sensor will display a 6 character PIN code for 60 seconds**
   - App should connect and display data

GET THE APP:

/ SSA STUDIO

Download on the App Store

GET IT ON Google play

2. Installing the device

Connect GND, 12V+ and REM wires. Be mindful of polarity.

To unplug the connector, firmly grab all 3 wires and pull the plug from the device.

Mounting can be done with Velcro straps or double sided tape on the silicone case.

3D Printed and printable holder models will be coming soon.

3. Display

- **Display modes**
  - Voltmeter view: Hold the **MF** button to reset mini display
  - Graph view: Hold MF button to take snaphot of graph.
  - Events view: Hold MF button for device settings.
  - Time view – should show current device time. Time is synchronized at each connection.

  - Press the **MF** button to navigate through screens
- **Screensaver**

  Starts after 15s of inactivity to protect the OLED screen from burn-in

  Press **MF** button to cancel at any time

  New event or Bluetooth activity cancels the screensaver

  Configure screensaver mode from the app. In case device is hidden from view, choosing Screen Off greatly improves the lifetime of the OLED screen.

4. Settings Menu

To enter the menu, go to the Events screen and hold the **MF** button.

Press the **MF** button to scroll through menu items. Hold to select menu item.

Toggle BT: for standalone low-power use, sensor will reboot after toggle

About: display sensor firmware version

5. Factory Reset

To perform a factory reset on your sensor:

1. Remove all power from the sensor.
2. Press and hold the **MF** button
3. Apply a clean 12V. REM state is not relevant at this stage.
4. Keep holding the **MF** button down for another 8-10 seconds
5. Release the **MF** button
6. Sensor should start up with default factory firmware

NOTE: After performing a factory reset make sure to unpair your device from your phone's Bluetooth settings. Previous pairing information is invalid. It is also recommended to delete the device from the app.

6. Warnings

1. Do not leave in direct sunlight for extended periods of time.
2. Do not puncture, disassemble, or mechanically stress the sensor in any way
3. Make sure no water or debris enter the sensor
4. Do not apply more than 19V to the sensor inputs.
5. Take care of polarity when installing the device.

6. Troubleshooting

App cannot find sensor	Make sure the BT radio is ON - both on the sensor and phone Check app has permissions
Can connect to the device but I cannot see any data in the app	Unpair the sensor from your phone's Bluetooth menu
Sensor is stuck at splash screen	Perform a factory reset
No PIN dialog on Android devices	Check the notifications drawer

7. Features

- Factory calibrated. All AVM-X units are within 0.02V of each other.
- 30 samples per second, 15FPS+ display rate
- 0.66" OLED screen with multiple display modes
- Configurable high brightness warning LED
- Configurable low voltage alert trigger with pre-trigger buffer
- Internal storage for low voltage events
- User triggered snapshot
- Up to 7 seconds per log entry
- In-app log viewer
- In-app voltage drop detector with multiple AVM devices
- Notifications when app connected
- Reverse polarity protection

8. Specifications

- Operating voltage: 5V-19V
- Standby current: <7mA
- Storage: >100 events
- Operating temperature: -10C - 55C
- Size - without silicone cover: 75mm x 35mm x 12.5mm (2.95"x1.37"x0.5")
- Connectivity: Molex PicoLock 1.5mm pitch, 3-pin

  Replacement housing: Molex 5040510301

  Pre-crimped leads: Molex 79758-1004 or 79758-1003

9. Legal notices

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are de-signed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

To satisfy FCC RF Exposure requirements for mobile and base station transmission devices, a separation distance of 20 cm or more should be maintained between the antenna of this device and persons during operation. To ensure compliance, operation at closer than this distance is not recommended.

The antenna(s) used for this transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

This device complies with Industry Canada license-exempt RSS standard(s). Operation is subject to the following two conditions: (1) this device may not cause interference, and (2) this device must accept any interference, including interference that may cause undesired operation of the device. Le présent appareil est conforme aux CNR d'Industrie Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux onditions suivantes: (1) l'appareil ne doit pas produire de brouillage, et (2) l'utilisateur de l'appareil doit accepter tout brouillage radioélectrique subi, meme si le brouillage est susceptible d'en compromettre le fonctionnement. Under Industry Canada regulations, this radio transmitter may only operate using an antenna of a type and maximum (or lesser) gain approved for the transmitter by Industry Canada. To reduce potential radio interference to other users, the antenna type and its gain should be so chosen that the equivalent isotropically radiated power (EIRP) is not more than that necessary for successful communication. Conformément à la réglementation d'Industrie Can-ada, le présent émetteur radio peut fonctionner avec une antenne d'un type et d'un gain maximal (ou inférieur) approuvé pour l'émetteur par Indus- trie Canada. Dans le but de réduire les risques de brouillage radioélectrique à l'intention des autres utilisa-teurs, il faut choisir le type d'antenne et son gain de sorte que la puissance isotrope rayonnée équivalente (p.i.r.e.) ne dépasse pas l'intensité nécessaire à l'établissement d'une communication satisfaisante.

Specifications may change without notice.

Made in Romania