

APPLICATION NOTE NUMBER 25C

UPDATING FIRMWARE ON MICROGENIUS® S4 CHARGERS

Introduction

This application note describes how to update firmware on the MicroGenius S4 battery charger using the SENS Setup Utility. Firmware updates can be done while the charger is on-line. Updates to the power modules very briefly interrupt output, but during this time the connected battery will supply power to loads. Updates to the alarm / display / keypad board can toggle alarms, so it's best to prepare for the possibility of temporary false alarms during the update.

Required Equipment

1. PC running Windows 7, 8, 8.1 or Windows 10
2. SENSbus Adapter Kit or TCP/IP option included on system
 - Contact SENS customer service to obtain the adapter at no charge
 - How to determine if your system has the TCP/IP option:
 - S4 system has TCP/IP option if X is 1 or 3: S4-xXx-xxxxxxx
 - Example Model number: S4-A10-B0000000
3. Micro USB to USB cable for systems with TCP/IP option
4. SENS Setup Utility and drivers installed – see below for instructions (requires internet connection for download)

Downloading and installing the SENS Setup Utility

1. Visit our website to download the SENS Setup Utility (you will need to register to access the Download Center section of the website, <http://sens-usa.com/support/download-center/>).

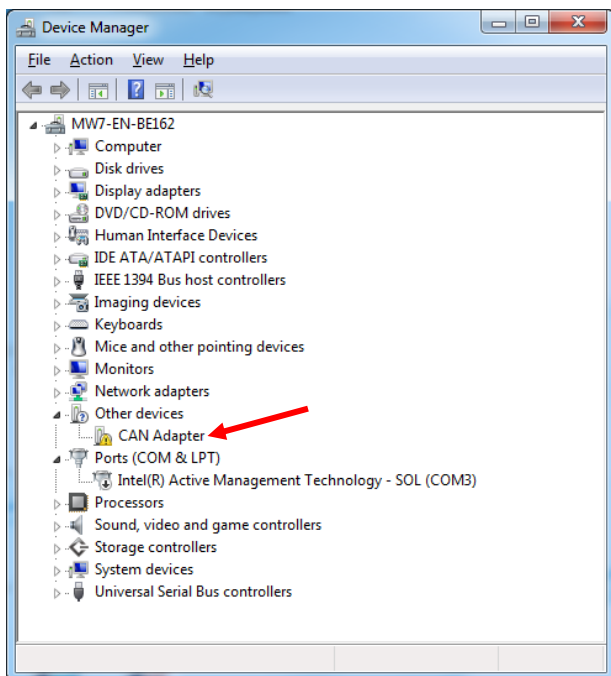
Product	Software	Size	Description	
IQ Family	IQ_Firmware_3.0.1_Upgrade	480 KB	Firmware and instructions for upgrading SENS EnerGenius IQ chargers to Release 3.0.1. The upgrade requires the use the black box data log memory card from the charger to be upgraded.	Download
IQ Family	SENS IQ & CommsGenius Setup Utility v 1.1.2	26.1 MB	SENS IQ & CommsGenius Setup Utility is a PC based package used to set-up SENS EnerGeniusIQ charger and communications parameters. It works with all IQ's equipped the CommsGenius digital communications option. Supported on Windows XP,7,8,8.1	Download
IQ Family	Insight V1.3.0	3.1MB	SENS Insight for Windows 7 and earlier PC's. Insight must be run in administrator mode with Windows 7. See help file for more details.	Download
Comms-Genius	CommsGenius Firmware Rev 2.02	61KB	Upgrade for the IQ CommsGenius option that improves communications between the SENS IQ & CommsGenius Setup Utility and the charger	Download
MicroGenius 150	MicroGenius Firmware Rev C to D upgrade	56KB	Firmware for upgrading SENS MicroGenius 150 chargers that improves factory calibration	Download
MicroGenius 2, S2/S4 and MicroCab	SENS Setup Utility Rev 2.4.0	36MB	SENS Setup Utility is a PC-based package used for advanced set-up of MicroGenius 2 rectifiers / battery chargers, S2/S4 battery chargers and MicroCab DC systems. Includes MicroGenius 2 Power Module Firmware Rev 2.3.0 and Display/Alarm/Keypad Module Firmware Rev 3.4.0. Supported on Windows 7, 8, 8.1 and 10. Requires .NET Framework 4.6 or later.	Download
MicroGenius 2, S2/S4 and MicroCab	MicroGenius 2 Power Module Firmware Rev 2.3.0	52KB	Upgrade firmware for MicroGenius 2 Power Module to add features. Load to MicroGenius 2 chargers, S2/S4 chargers and MicroCabs using SENS Setup Utility.	Download

2. The download will be in the form of a ZIP file. Extract contents of the ZIP file. Install the utility by double clicking the SENS Setup Utility installer file.

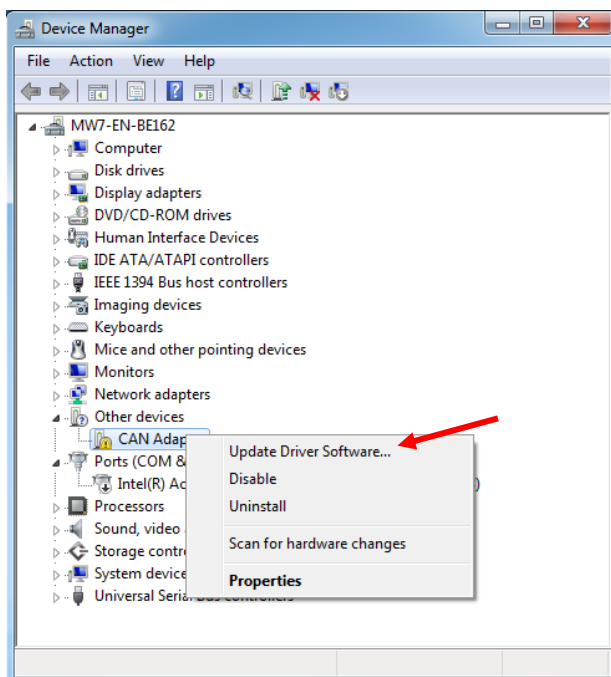
3. If you are running a Windows 7, 8 or 8.1 system you will need to manually install the driver for the adapter. Skip this section if running Windows 10.

3.1. Connect the SENS Bus Adapter or TCP/IP USB port to the laptop with the USB cable

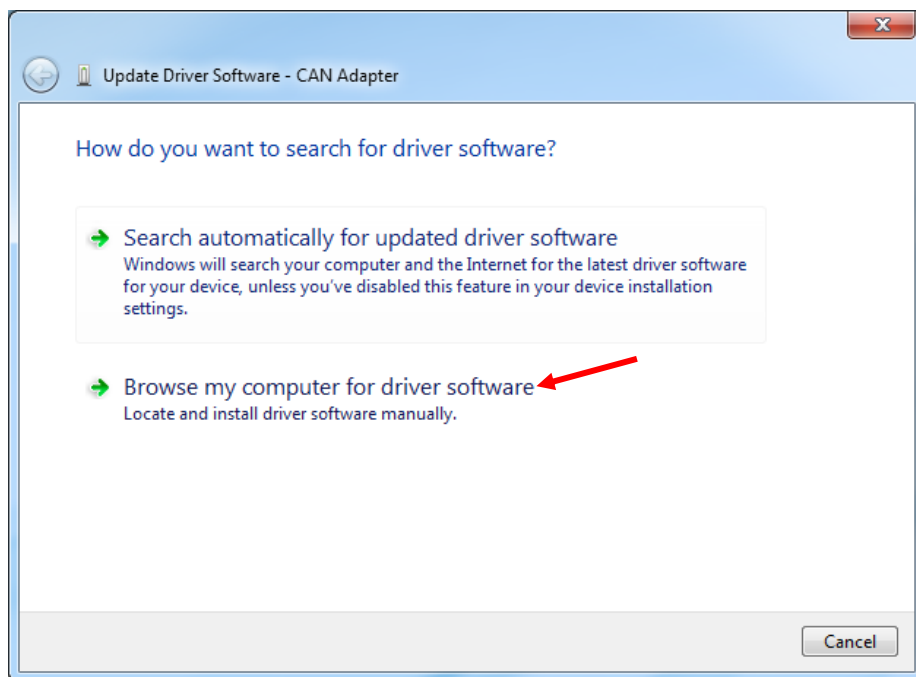
3.2. Open computer Device Manager to view devices. Note the “CAN Adapter” device under “Other devices.”



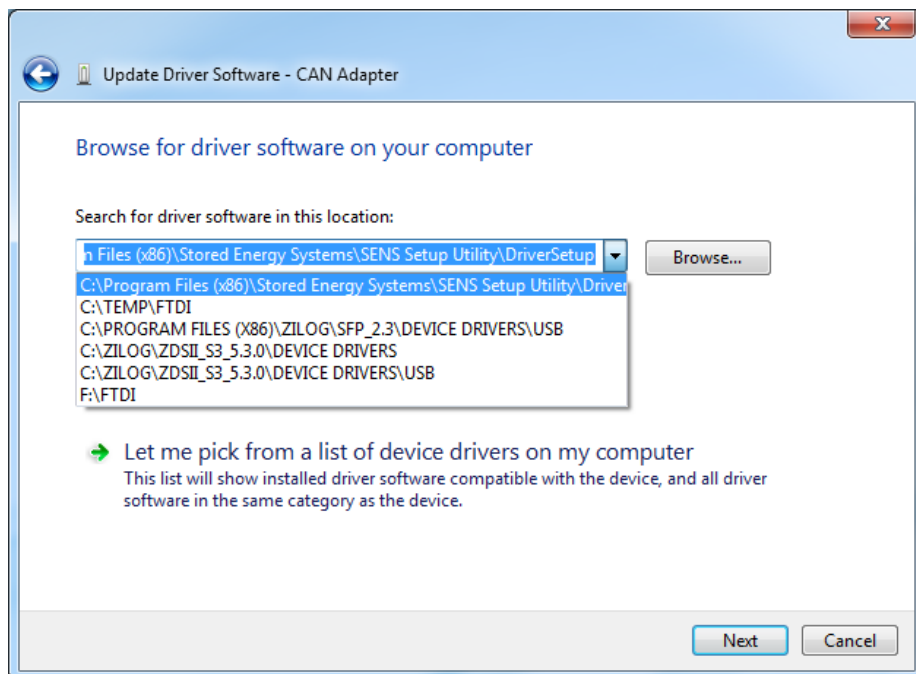
3.3. Right-click on “CAN Adapter” and select to “Update Driver Software...”



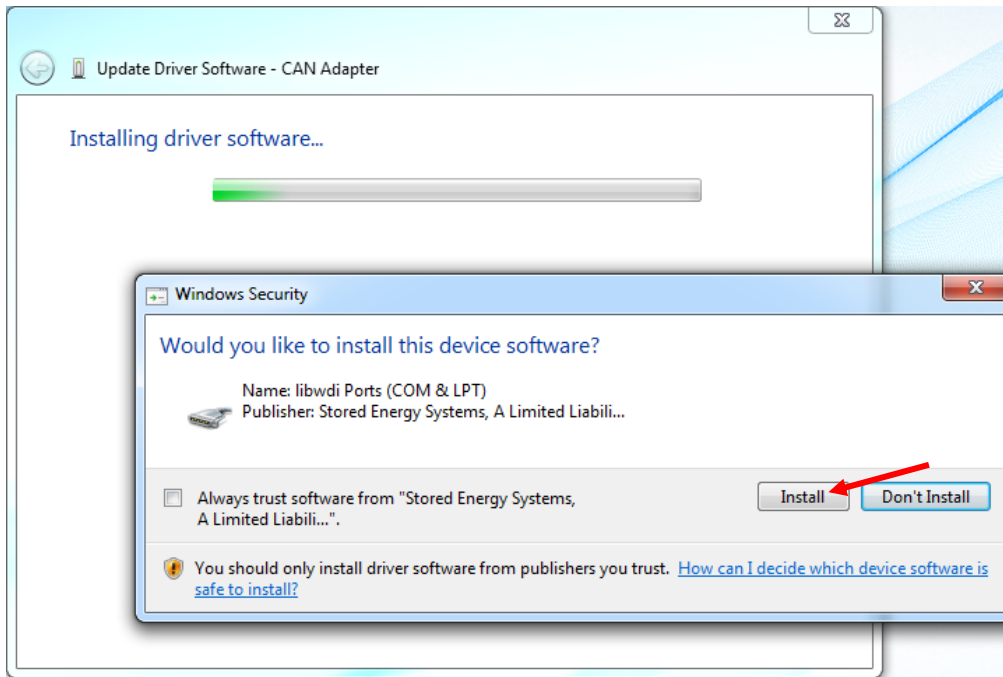
3.4. Select to browse for driver software.



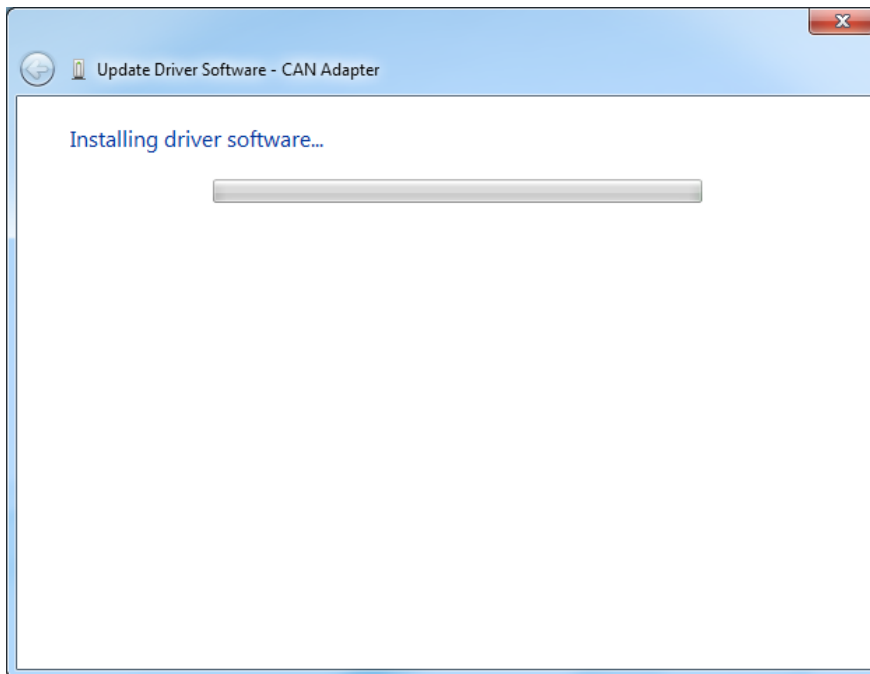
3.5. Select the “DriverSetup” folder at “C:\Program Files (x86)\Stored Energy Systems\SENS Setup Utility\DriverSetup.”



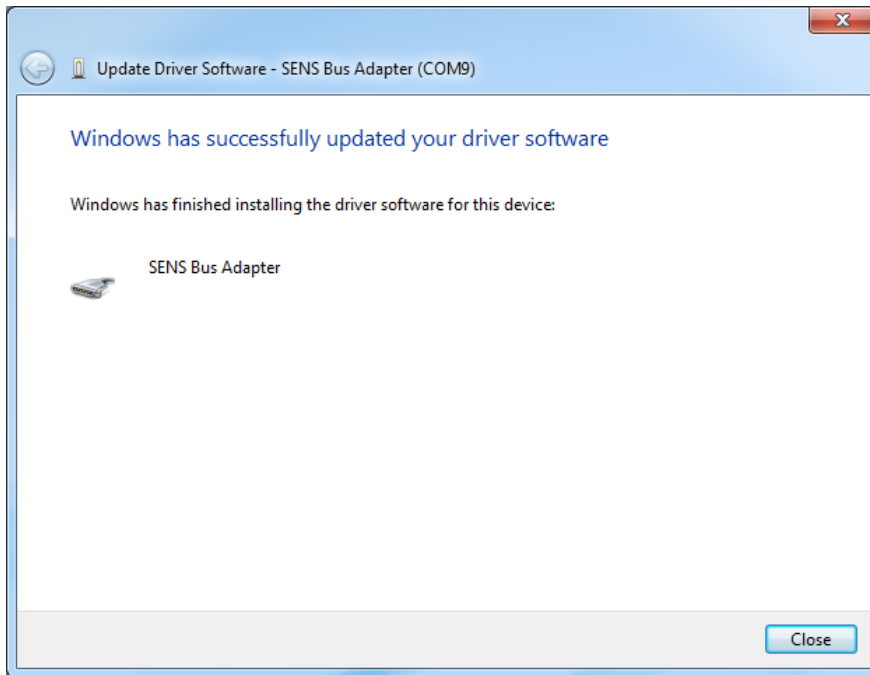
3.6. Select to install the device software.



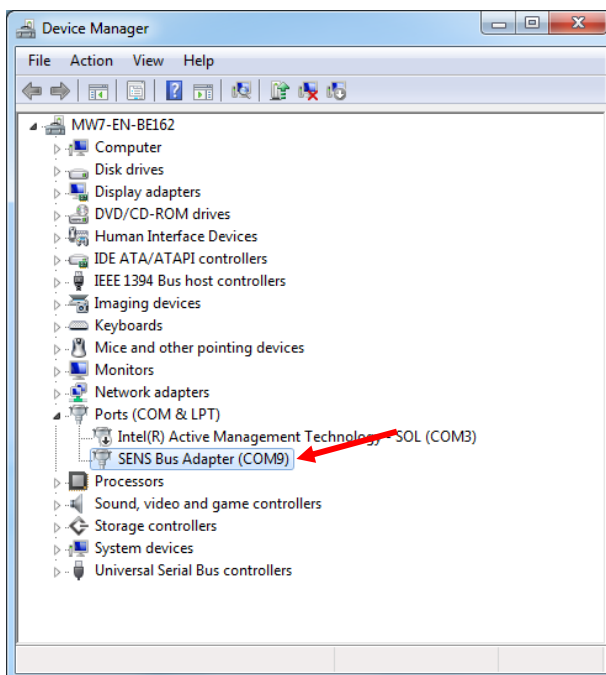
3.7. Wait for installation to complete.



3.8. Verify successful installation.



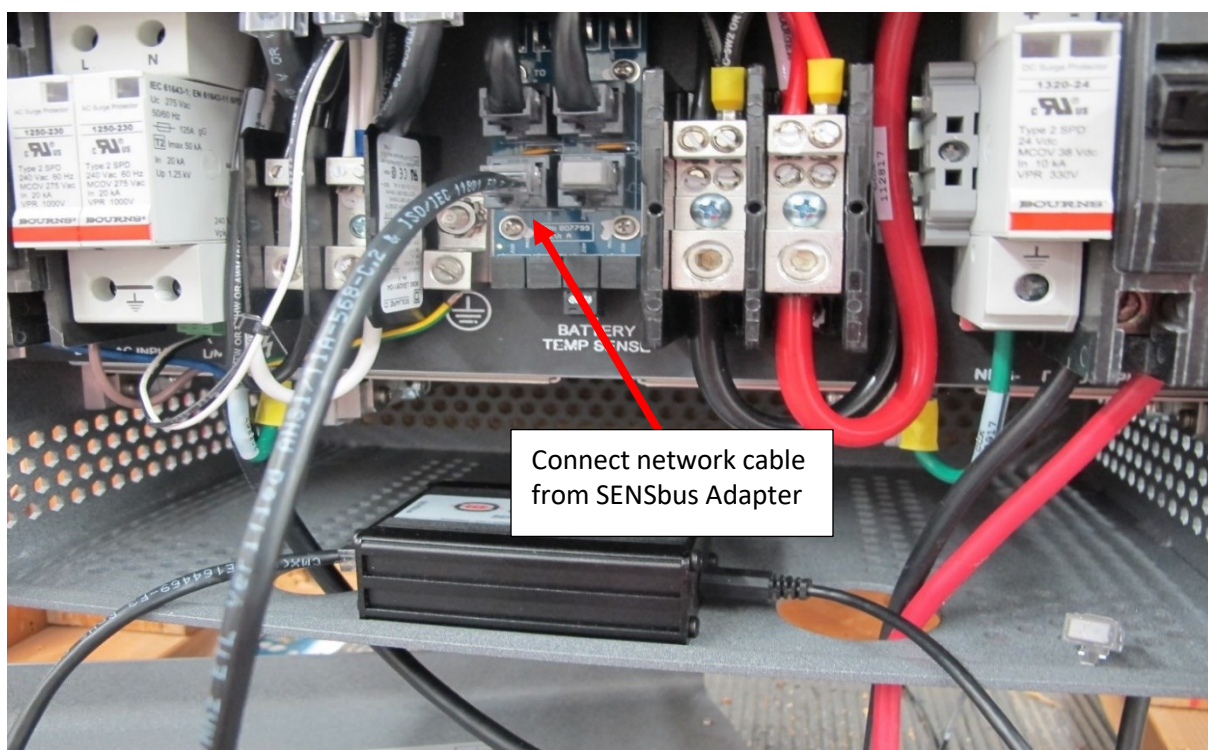
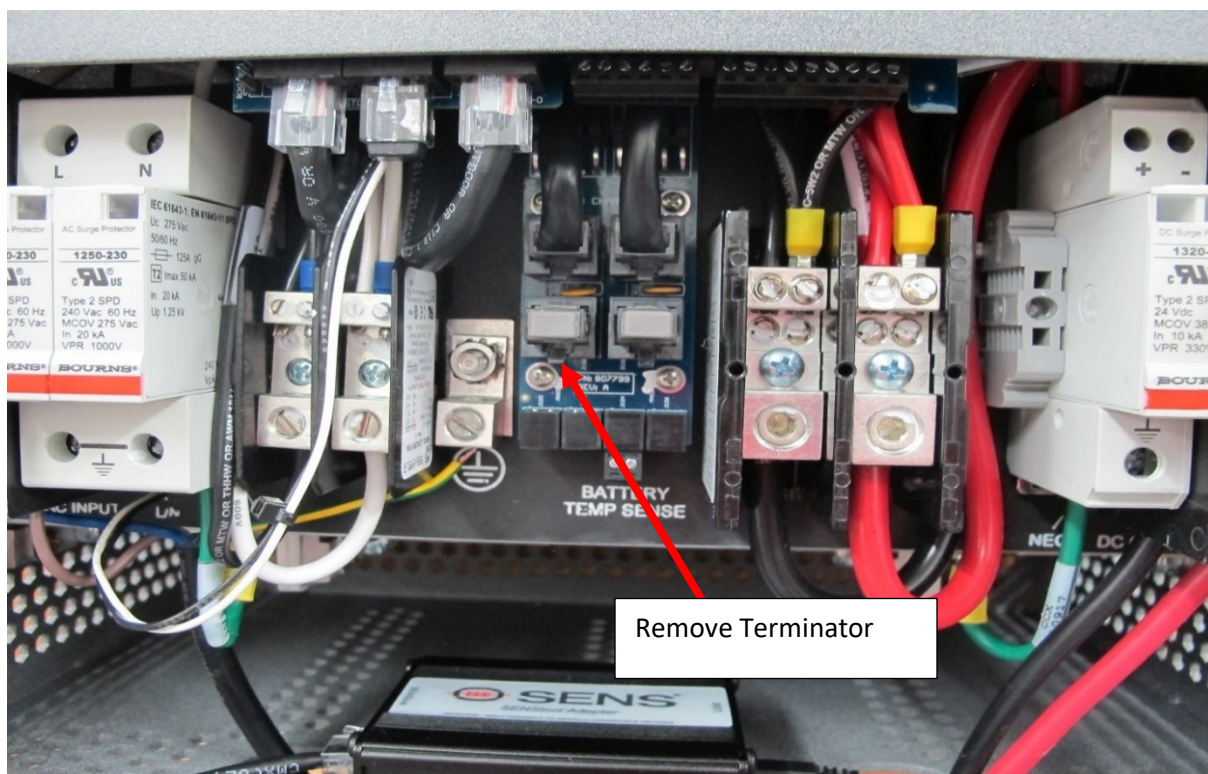
3.9. Note device successfully installed.



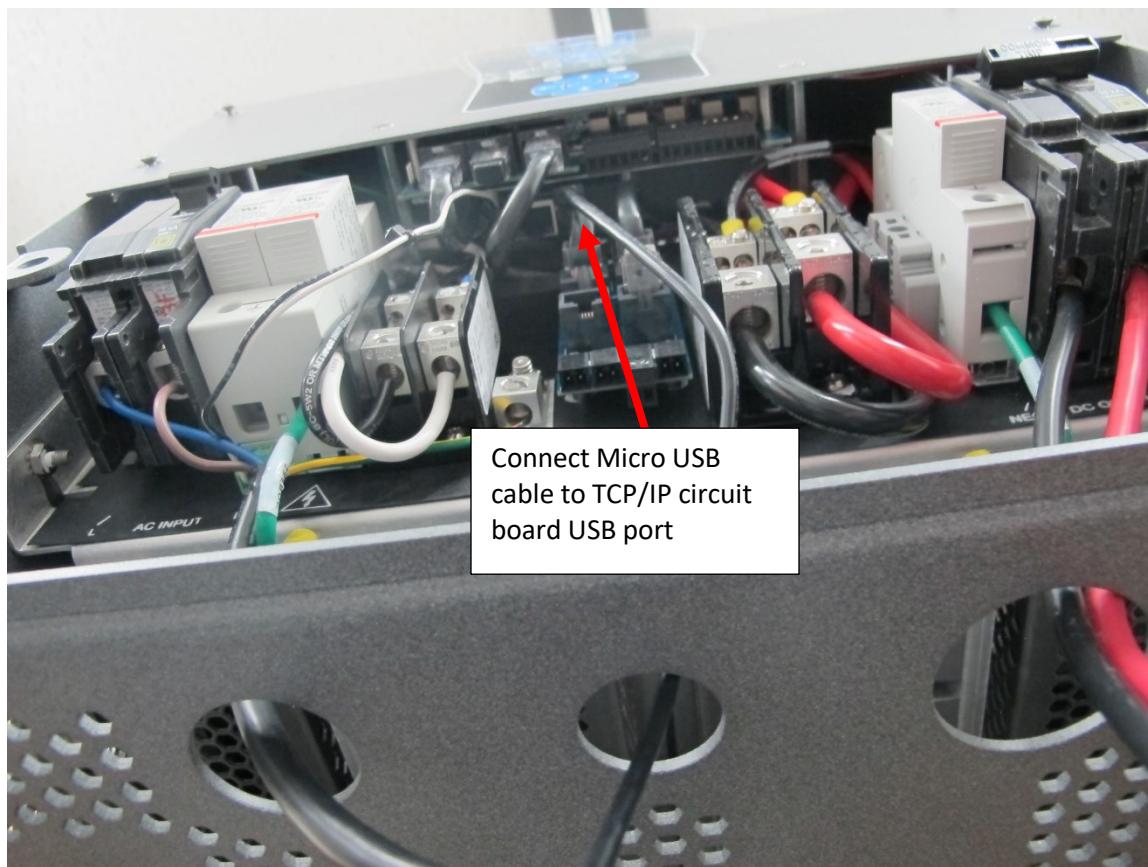
Connecting SENS Setup Utility to S4

Connect the utility computer to the S4 using either the SENSbus Adapter or the optional TCP/IP circuit board if included.


1. Connect cable to S4
 - If connecting the SENSbus Adapter to the S4 charger, first remove the grey terminator plug and then connect the network cable from the adapter to the open RJ45 connector as shown below.



- If connecting to the TCP/IP circuit board (rather than using the SENSbus Adapter), connect the Micro USB cable to the USB port on the TCP/IP circuit board.

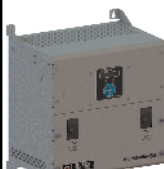


2. Connect the other end of the USB cable (from either the SENSbus Adapter or the TCP/IP circuit board) to the PC
3. Open the SENS Setup Utility
4. Once the utility is connected to the S4, navigate to the “Battery (DC) Settings” menu and update firmware by pressing the “Firmware Manager” button in the lower right-hand corner. Click “Auto Update.” The firmware for both the display and power circuit boards is embedded in the latest version of the utility and will be updated automatically.



SENS SETUP UTILITY

Charger System Setup



Model: **SIMULATED**
S4-C10-H0000000
Serial:
443871

Input AC 1 : **A** ▾
Output DC 1 : **A** ▾

Unit **Battery (DC) Settings** AC Settings

Output: **A** B C D Default

Basic Alarms Periodic Boost Battery Settings Commis

Program Battery Setpoints

Refresh from Device Load From File Save To File

Battery Type: VRLA Set Defaults

Number of Cells: 12

Settings: ☐ Use Auto-Boost ☐ Use HELIX

Float Voltage: 2.27 V/Cell 27.24 V

Settings are OK

Sys Status **A**

Voltage (V): 27.31 V
Current (A): 0 A
Power (W): 0 W
AC Voltage (V): 121 Vac
Battery Temperature (°C): 25.2 °C
Charger Mode: Float


System Summary

System Power: 0 W
Total Energy: 94.664 kWhr
Avg Power: 743.22 W
Display Rev: 3.4.0
Power Rev: 2.3.0 2.3.0 2.3.0 2.3.0

System Controls

Refresh From Sys Firmware Manager
Get Factory Defaults Save Snapshot
Save Battery Settings to Units

NotInitialized Version: 2.6.0 DLL Version: 2.3.0

 **FIRMWARE MANAGER**

Devices Available

CHARGER_MG2 - 443865 (M - A)

CHARGER_MG2 - 443866 (S - A)

CHARGER_MG2 - 443867 (S - A)

CHARGER_MG2 - 443869 (S - A)

ACCESSORY - 443871

CHARGERMG2 443865 @ 2.3.0

At Latest Revision: 2.3.0

Local	SWMG2PWRFUNC-ENCR_2.2.0.SENSf	2.2.0
Local	SWMG2PWRFUNC-ENCR.SENSf	2.3.0

Upload New File

Auto Update

Update Device

Please call SENS Customer Service at 303-678-7500, x137 with any questions