

# How to Control a Victron Color Control GX with a WatchMon

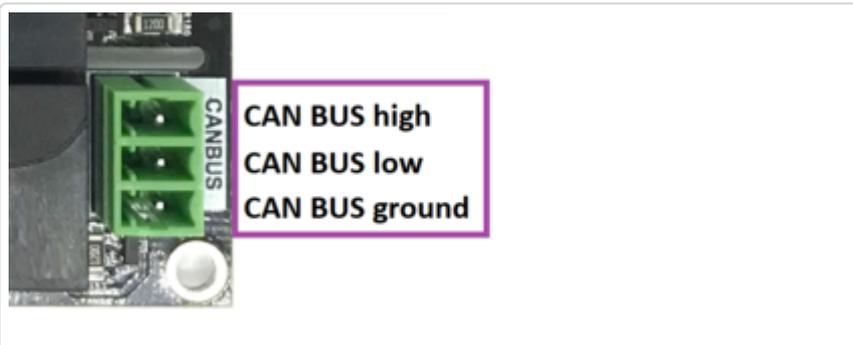


Here are the steps to configure the Victron Color control GX to the WatchMon Supervisor.

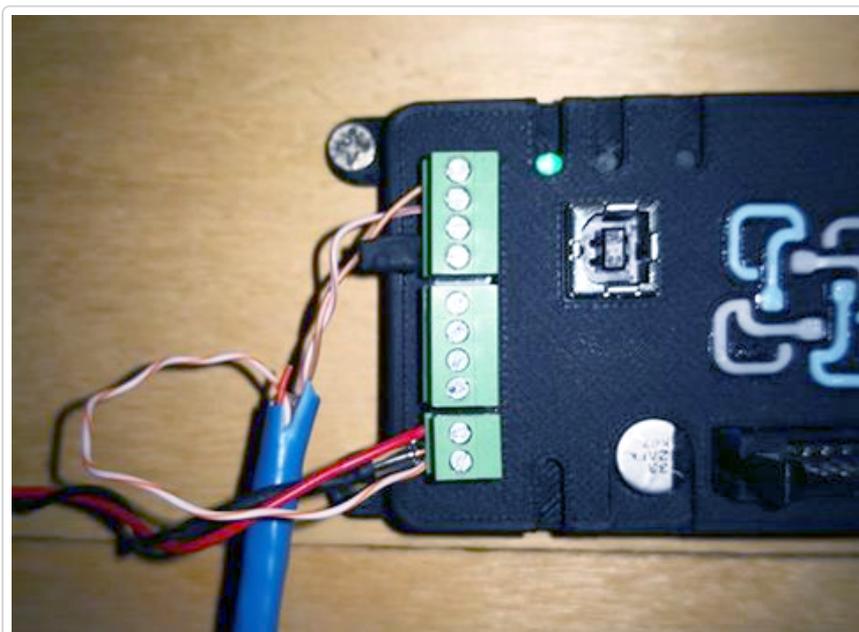
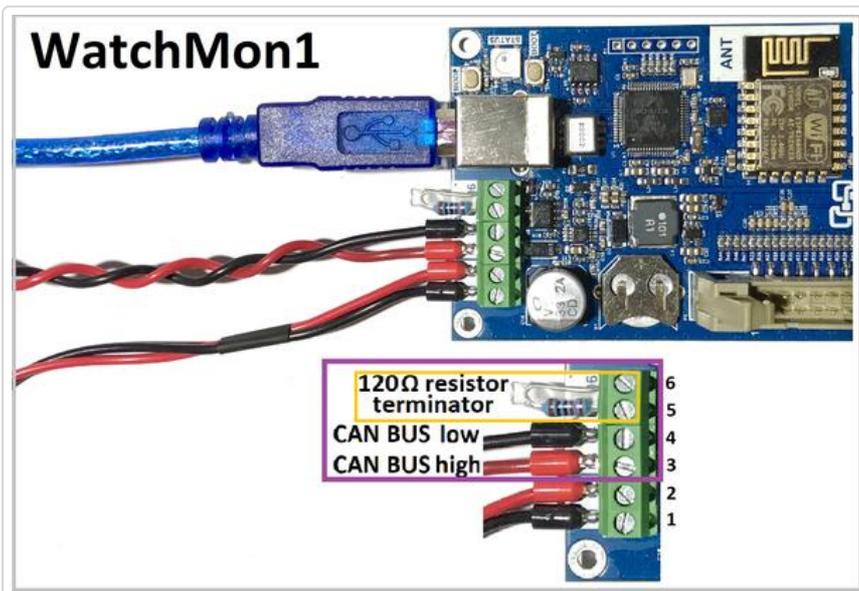
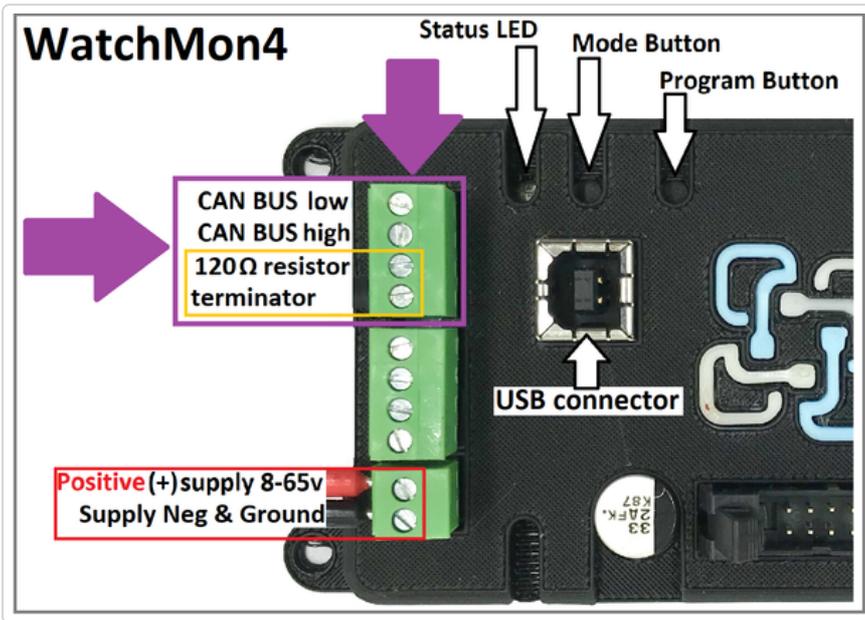
**CAUTION:** The example below has values shown for a demo LiFePO 4 cell pack, please ensure that you adopt values suitable to your application and comply with the battery suppliers recommendation.

**Step 1** - Install communication cable to CAN port on WatchMon.

For newer WatchMon (note 120 Ohm resistor shares CANbus High and CANbus Low



For older WatchMon with 4 pin CAN see below



**Step 2** - Install communication cable to Victron CCGX canbus socket (**extract from manual**)

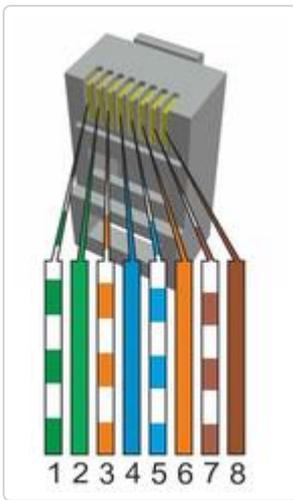
Plug the CCGX side of that cable into one of the VE.Can sockets on the back of the CCGX. Plug the other end into the battery. Then, plug a VE.Can Terminator in the other VE.Can socket on the CCGX.



Custom Cable pinout for CCGX

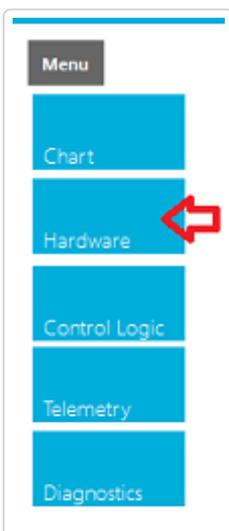
Function	VE.Can RJ-45	Watchmon
GND	Pin 3	Supply negative / ground
CAN-L	Pin 8	CAN low
CAN-H	Pin 7	CAN high

For reference, here's an Ethernet plug diagram. Be aware that some Ethernet Cables may vary.

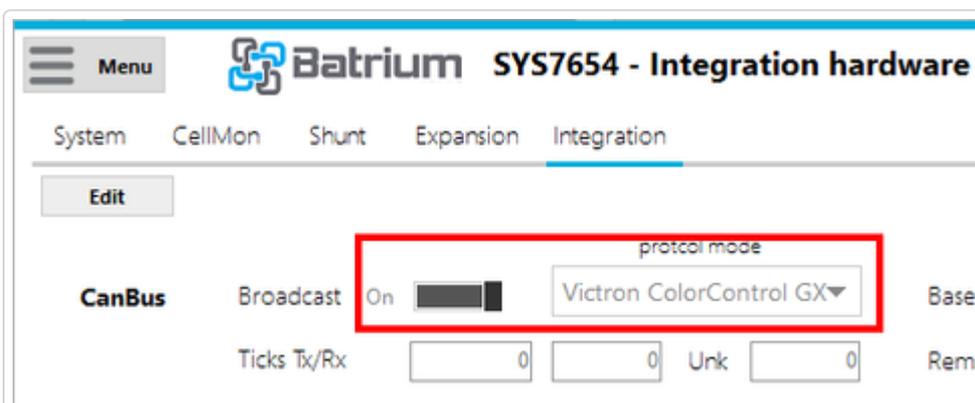


To make up the custom Ethernet Cable for the CCGX properly, you should use a proper crimper and fresh RJ45 male connectors. Label both ends of the cable and install it.

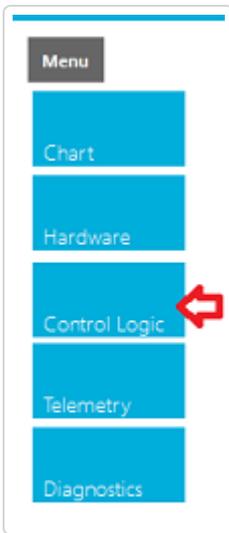
**Step 3** - Navigate to **Hardware**, then **Integration** tab.



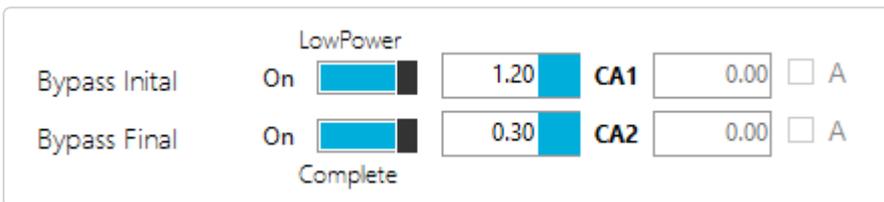
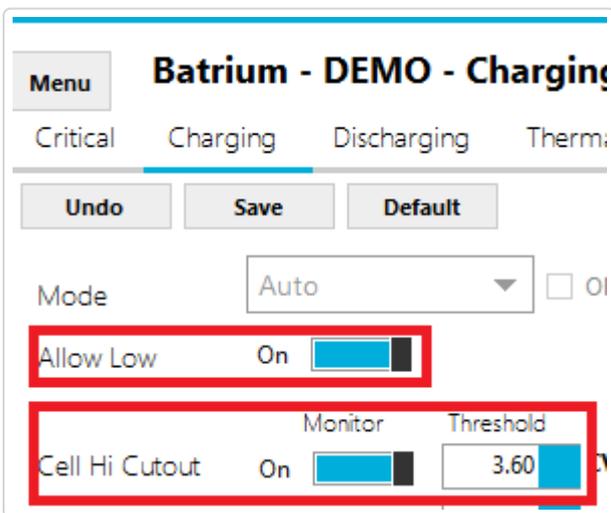
**Step 4** - Select Canbus protocol to "**Victron ColourControl GX**" and Save.



**Step 5** - Navigate to **Control Logic**, then **Charging** tab.



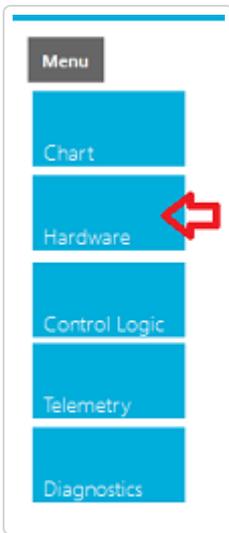
**Step 6** - Adjust the Charging control logic to suit the application.



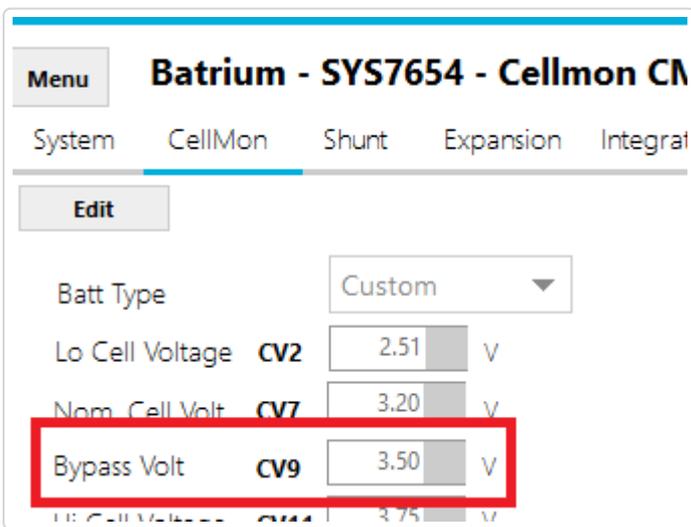
**Notes:**

- Low power must be enabled.
- Cell Hi Cutout should be above the CellMon bypass voltage threshold as a safe guard target.
- Low power current should suit the bypass capability of CellMon.
- When the bypass current is above Initial will trigger the system to low power.
- When the bypass current for all cellmons is above Final the system will complete charging cycle.

**Step 7** - Navigate to **Hardware**, then **CellMon** tab.

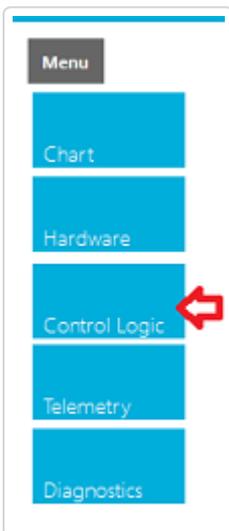


**Step 8** - Adjust the CellMon bypass voltage to suit the application.



**Note:** Make sure to "Device Sync" the changes to the CellMons.

**Step 9** - Navigate to **Control Logic**, then **Remote** tab.



**Step 10** - Adjust the remote charging target to suit the application.

**Menu**    **Batrium - SYS7654 - Remote Comms logic co**

Critical    Charging    Discharging    Thermal    Remote    Overvi

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**Edit**

**Charge Targets**

	High	Low		Scaling
State	High Power			
Voltage	56.0	56.0	V	10
Current	10.0	0.8	A	10
Power	0	0	VA	1
	Normal	Limited		

Notes:

- Scaling must be 10 for both voltage and current.
- Low power must be enabled on charging tab.
- Low power current should suit the bypass capability of CellMon.
- Charger voltage target needs to be sufficient for all cells to reach bypass threshold.

**Step 11** - Adjust the remote discharging targets to suit the application.

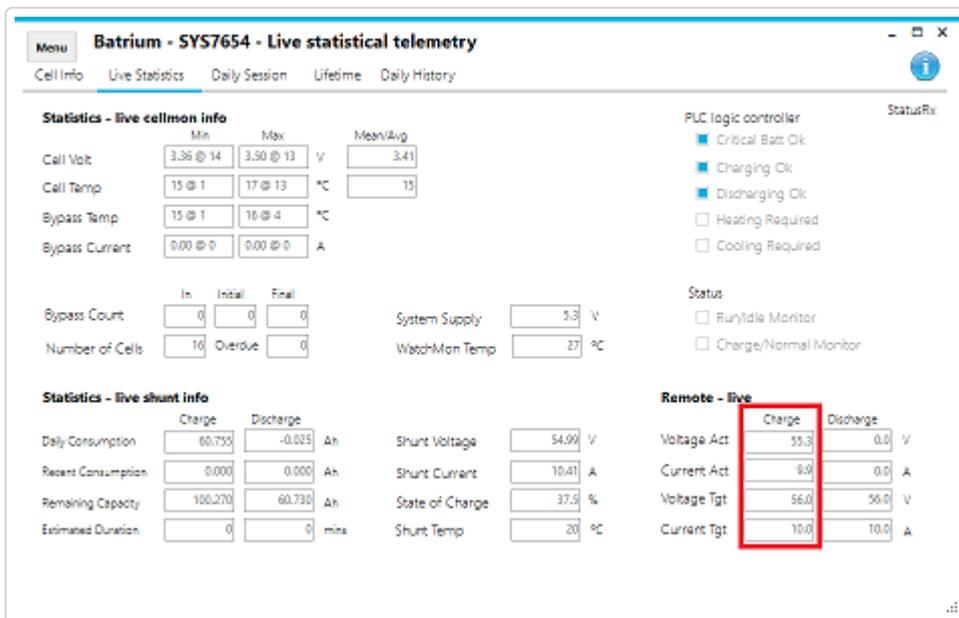
**Discharge Targets**

	High	Low		Scaling
State	High Power			
Voltage	50.9	0.0	V	10
Current	80.0	0.0	A	10
Power	0	0	VA	1
	Normal	Limited		

Notes:

- Scaling must be 10 for both voltage and current.
- Do not run low power mode on discharging tab.
- Control logic discharge voltage cutout should match the remote target.

**Step 12** - Navigate to **Telemetry**, then **Live Stats** to observe system operation.



## Step 13 -Within Victron software - VEConfigure settings

### 13.1 General tab

1. Check “Enable Battery Monitor”
2. Enter the battery capacity in Amp Hours ( i.e. **120.0 Ah**)
3. The other parameters ( “**State of charge when bulk finished**” and “**Charge efficiency**”) can be left to their default setting. They are not used in this setup.

### 13.2 Charger tab

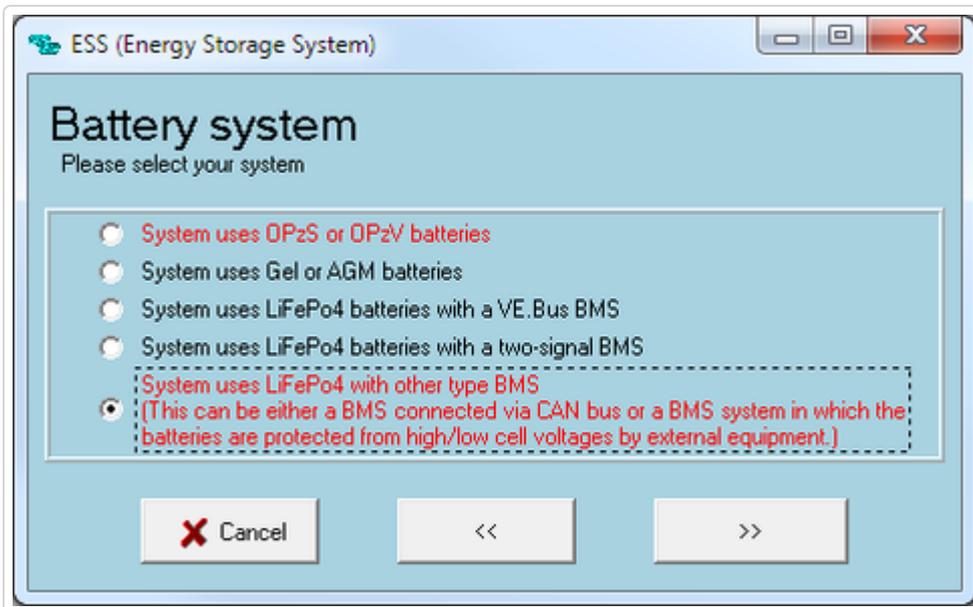
Parameter	Setting
Battery type	Lithium
Charge curve	Fixed
Absorption voltage	60.75 V
Float voltage	60.00 V
Absorption time	1 Hr

**Note: make sure to double check the float voltage after completing Assistants, and if necessary set it back to 60.00 V.**

This needs to be adjusted to match the BMS operating targets.

### 13.3 ESS (Energy Storage System) Assistant

Select the fourth battery type:

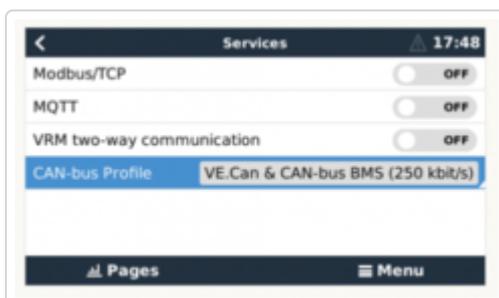


Then:

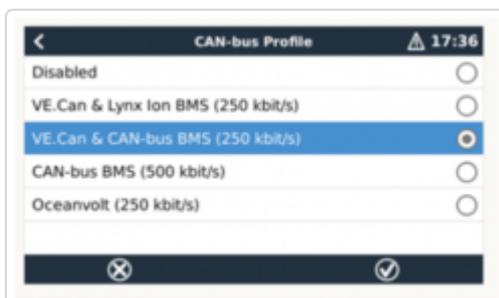
1. **Do not change the dynamic cut-off values**, they have already been set correctly after selecting the lithium battery type.
2. Sustain voltage: 50 V
3. Same for the restart offset: **do not change that.**

#### Step 14. Within Victron software - device configuration

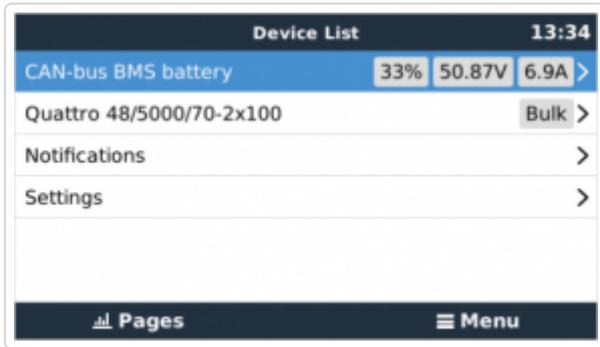
- Select the *CAN-bus BMS (500 kbits/s)* CAN-profile in the Venus device. Menu path: *Settings* → *Services* → *CAN-profile*. Note that this changes the function of a VE.Can port: it is not possible to connect both VE.Can products and a BMS battery together on a Color Control GX.



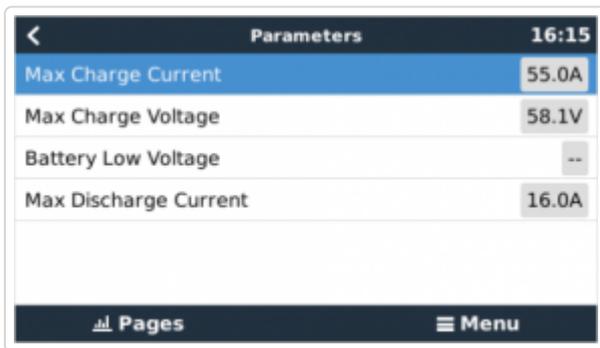
- Select CAN-bus BMS (500 kbit/s)



- After properly wiring and setting up, the BMS the ESS will be visible as a battery in the device list:



- The Parameters option within the battery page shows the actual battery charge and discharge limits:



\*Contenido y/o imagines son propiedad de Batrium y Victron