Troubleshooting MSP/ClearView Installation and Communication Issues

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Note: *This document contains Windows-specific terms and concepts that may not be familiar to all users. Please call or email support@teknic.com if you require further assistance.*

This document was created to help users of Teknic ClearPath motors who are experiencing MSP (Motor Setup Program) and ClearView issues listed below.

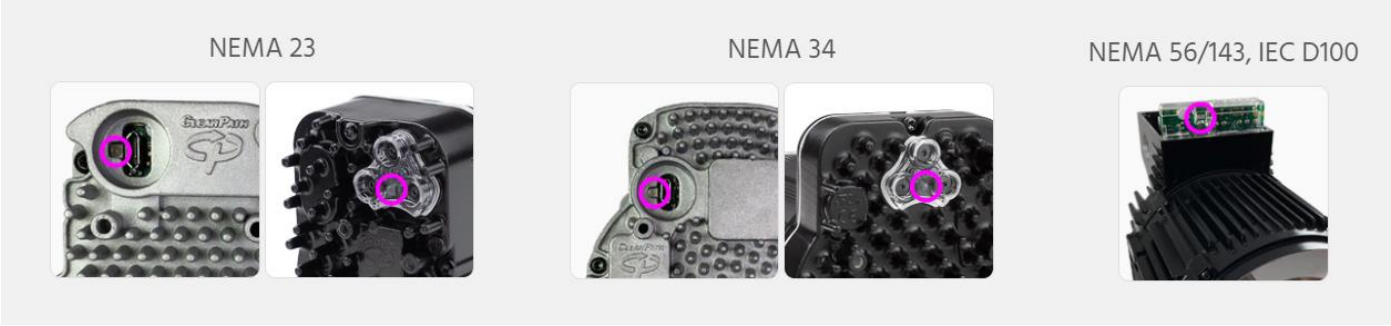
- User cannot complete installation of MSP or ClearView software.
- System hangs or reports errors or warnings during installation.
- User is able to install MSP or ClearView software but cannot communicate with the ClearPath motor.

Contents

I. Powering Your ClearPath System

The first step if you are having communication problems is to check that the motor is receiving the correct power. Each product has different power requirements.

How do I know if my motor is receiving power? If the servo LED is on, it is receiving power sufficient for communication. Below are images for each ClearPath type to identify where the LED is located.



If the LED is not on, consult the ClearPath User Manual specific for your motor for proper power wiring instructions:

A. DC Input Standard IP53 Motor Body (Molex Connectors)

IP53 ClearPath servos look like the picture on the right, with a silver front face and rear cover, and rectangular Molex connectors.

These servos come in three different series, with their own respective manuals:

- ClearPath-MC/SD: https://teknic.com/files/downloads/clearpath_user_manual.pdf
- ClearPath-SC: https://teknic.com/files/downloads/Clearpath-SC%20User%20Manual.pdf

B. DC Input IP-67 Sealed (Circular M-12 Connectors)

IP66K/IP67 ClearPath servos look like the picture on the right, with a silver front face and a black back cover. These use circular M12 connectors and have dedicated inputs for both main bus (24-75VDC) and logic (12-75VDC) power. DC power must be present on the logic power input for proper communication.

These servos come in four different series, with their own respective manuals:

- ClearPath-MC/SD: https://teknic.com/files/downloads/clearpath_user_manual_ip67.pdf
- ClearPath-SC: https://teknic.com/files/downloads/Clearpath-SC%20User%20Manual_ip67.pdf
- ClearPath-EC: https://teknic.com/files/downloads/ClearPath-EC_User_Manual.pdf

C. AC Input

AC input ClearPath servos look like the picture on the right, with a silver front face and a junction box on top. AC bus power or 24VDC logic power is required to communicate with these servos.

These servos come in three different series, with their own respective manuals:

- AC ClearPath-MC/SD: https://teknic.com/files/downloads/ac_clearpath-mc-sd_manual.pdf
- AC ClearPath-SC: https://teknic.com/files/downloads/ac_clearpath-sc_manual.pdf

II. Software Installation and Driver Issues

This section outlines some common issues experienced when attempting to connect a ClearPath motor to its respective setup software, with possible solutions.

A. Choosing the Correct Setup Software

ClearPath motors connect to one of three different setup software depending on the series. The correct setup software can be downloaded from the Downloads page on the Teknic website by selecting ClearPath -> Your motor series -> Your motor body type -> Software.

Downloads Page: https://teknic.com/downloads/

1. Series that use MSP (Motor Setup Program):

- ClearPath-MC (PN: CPM-MCxx-)
- ClearPath-SD (PN: CPM-SDxx-)

2. Series that use ClearView:

- ClearPath-SC (PN: CPM-SCxx-)

3. Series that use ClearView 3.0:

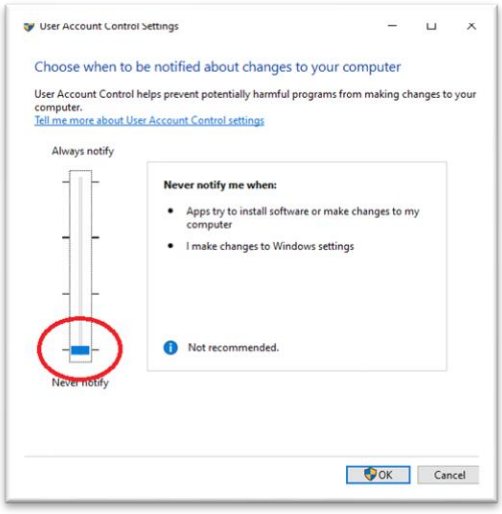
- ClearPath-EC (PN: CPM-ECxx-)

B. Software appears to install but will not run

1. UAC Restriction

A restrictive Windows UAC (User Account Control) setting may prevent the proper installation of some components of MSP or ClearView. To resolve UAC Restriction issues:

1. On the target PC, uninstall all instances of the Teknic software.
2. Change the Windows UAC (User Account Control) setting to the least restrictive setting. To do this, type "UAC" in the Windows Start Menu. Set the slider as shown below



3. Reboot your PC (required for changes to take effect).
4. Log in with administrator privileges.
5. Reinstall the Teknic software and attempt to run it.

2. Antivirus Incorrectly Flagging Setup Software

Antivirus or process monitoring software may incorrectly flag MSP/ClearView or its files as a threat and prevent it from launching (with no error message or notification). This is not an issue with the setup software. To resolve the issue:

1. On the target PC, disable antivirus software, then uninstall and reinstall the setup software. A reboot may be required.
2. Contact your IT department (if applicable) to find out if antivirus or process monitoring software may be preventing the setup software from launching. Webroot is one application known to prevent launching. The Webroot utility should be viewable in Task Manager under Processes. Often, an IT department can create an exclusion to allow for the installation and operation of the setup software. The exclusion should be made for the setup software you are using:
    a. MSP: C:\Program Files (x86)\Teknic\ClearPath MSP 2.0
    b. ClearView: C:\Program Files (x86)\Teknic\ClearView
    c. ClearView 3.0: C:\Program Files (x86)\Teknic\ClearView 3.0

C. Driver Issues (software installs and opens but will not communicate)

Under certain circumstances, the correct drivers for ClearPath can fail to install, causing communication issues.

Before continuing with any of the fixes below, uninstall the setup software and reinstall the latest version from the Downloads page of Teknic's website. When reinstalling, ensure that there are no ClearPath systems connected to the PC as this can cause installation issues.

Updating the driver software is a potential solution for many of these problems. Below are instructions on how to update the driver software. This step is referenced in several cases listed below.

To update the driver software:

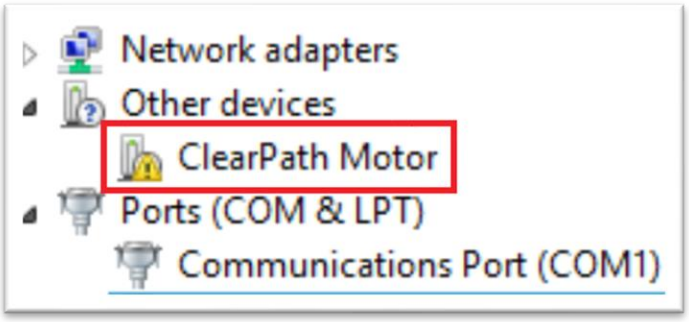
1. In Device Manager, right click the device that needs updating.
2. Select "Update Driver Software"
3. Select "Browse my computer…" and point to the install location of the drivers (C:\Program Files\Common Files\Teknic). Ensure that the "Include subfolders" checkbox is selected.

1. Failed Windows driver installation (Yellow Warning Triangle)

If the required drivers failed to install, a yellow warning triangle may appear next to the motor inside device manager.

1. On the target PC, navigate to Device Manager -> Other Devices.
2. If ClearPath motor appears under the "Other Devices" heading with a warning triangle as shown below, proceed with driver update. (Note: It is possible that this can appear under

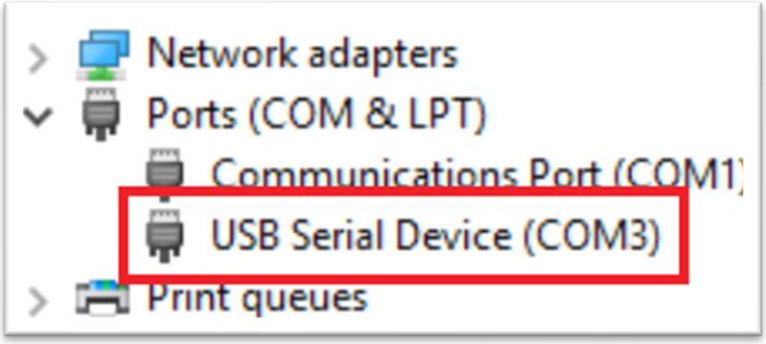
other sections of device manager such as “Ports (COM & LPT)”.)



3. Right-click the "ClearPath Motor" device and update the driver software.

2. “Compatibility” driver installed (e.g. USB Serial Device)

If Windows installs a "compatibility" driver instead of the correct driver, you may see a generic looking "USB Serial Device" show up under Ports in Device Manager when you connect your motor to the PC. In this scenario, MSP will be unable to communicate with any attached ClearPath motor.

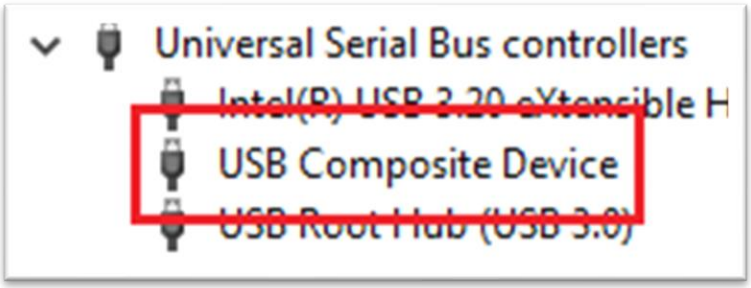


Uninstalling the current version of your setup software and reinstalling the latest version will likely solve this problem.

If you are running the most recent version of MSP or ClearView and you experience this problem, please submit a contact request at https://teknic.com/contact/.

3. “Composite Device” driver installed (USB Composite Device)

If Windows installs a general USB driver, such as a “Composite Device”, instead of the correct one:



1. On the target PC, navigate to Device Manager -> Universal Serial Bus Controllers.

2. Unplug and re-plug the USB cable connecting ClearPath to the PC.
    a. If a “USB Composite Device” disappears and re-appears during this process, continue with this solution.
3. After identifying the “USB Composite Device” that corresponds to ClearPath, right click it and update the driver software.

D. USB Port Communication Issues

If you are experiencing communication issues and are using a USB 3.0 port, try a USB 2.0 port or a USB 2.0 hub plugged into a USB 3.0 port. ClearPath is compatible with fully compliant USB 3.0 ports, however there are known issues with the USB 3.0 ports made by certain manufacturers.

III. SC4-Hub Communication Issues (SC Series Only)

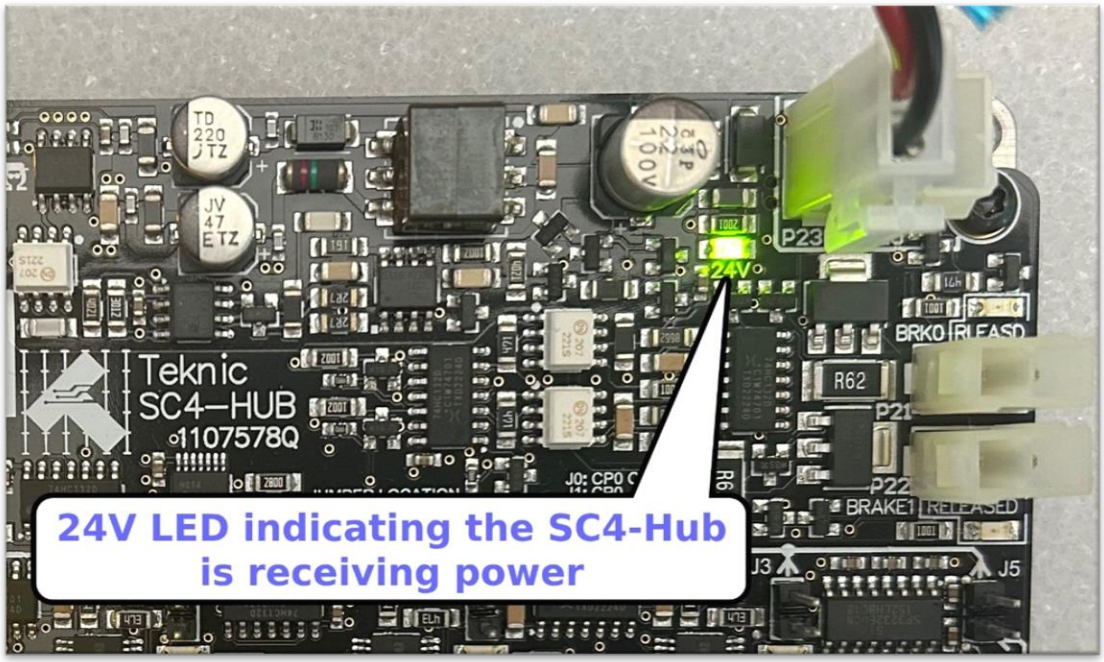
This section describes common issues experienced when using ClearView to communicate with ClearPath-SC motors through the SC4-Hub accessory.

ClearPath-SC communicates using a serial loop. Communication may stop when any portion of the loop is broken. This can be caused by many different things, and some common causes are listed below.

Before continuing, attempt to connect each ClearPath-SC motor individually to ClearView using its rear diagnostic port. Verifying that each individual motor is able to communicate will ensure that the communication issue stems from an incorrect setup of the SC4-Hub.

A. SC4-Hub is not receiving 24 VDC power

The SC4-Hub must have 24VDC power to function. If the SC4-Hub is supplied with power, the 24V LED will be on.



B. Motor connectors are not populated sequentially

The motor connectors must be populated in the correct order to complete the serial loop. The correct order is M0 -> M1 -> M2 -> M3.

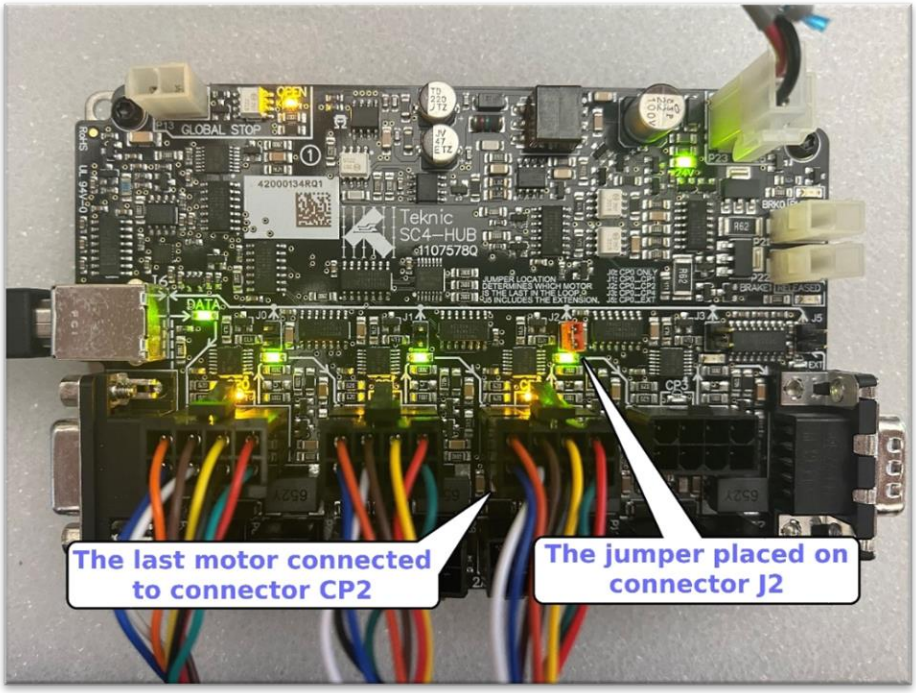
When using multiple SC4-Hubs daisy-chained to run on one port, all hubs except for the last one must have all four motor connectors populated. The last hub will follow the above pattern of M0 -> M1 -> M2 -> M3.

C. End-of-loop red jumper is installed in the incorrect location

The red End-of-loop jumper must be seated in the correct location to close the serial communication loop. There are two setups for choosing the correct location of your jumper depending on how many SC4-Hubs you are using.

a) One SC4-Hub Jumper Position:

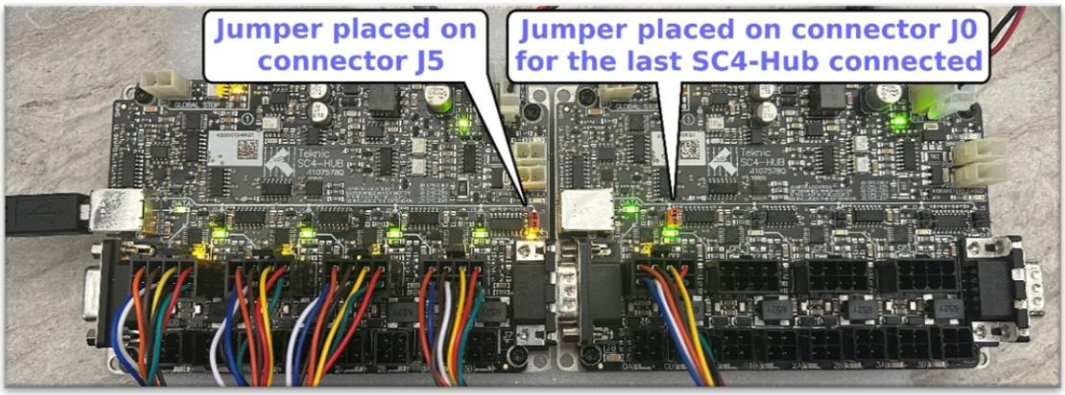
Place the jumper block on the 2-pin header associated with the last motor connected to your SC4-Hub. For example, if the last motor is connected to connector CP2, place the jumper on connector J2. When correctly placed, there will be no LEDs lit for motor connectors after the jumper:



b) Multiple SC4-Hub Jumper Positions:

For the last connected SC4-Hub, follow the above instructions for using one SC4-Hub.

For all previous connected SC4-Hubs, place the jumper on connector J5.



IV. USB Cable Selection

Your USB cable must support high-speed data transfer to work properly with ClearPath. The type of USB communication will vary depending on the series and motor body. All types are listed below along with Teknic part numbers of appropriate cables.

A. DC Input Standard IP53 Motor Body (Molex Connectors)

- Use a data-rated USB Micro-B cable.
- Teknic PN: CPM-CABLE-USB-120
- https://teknic.com/CPM-CABLE-USB-120/

B. DC Input IP-67 Sealed (Circular M-12 Connectors)

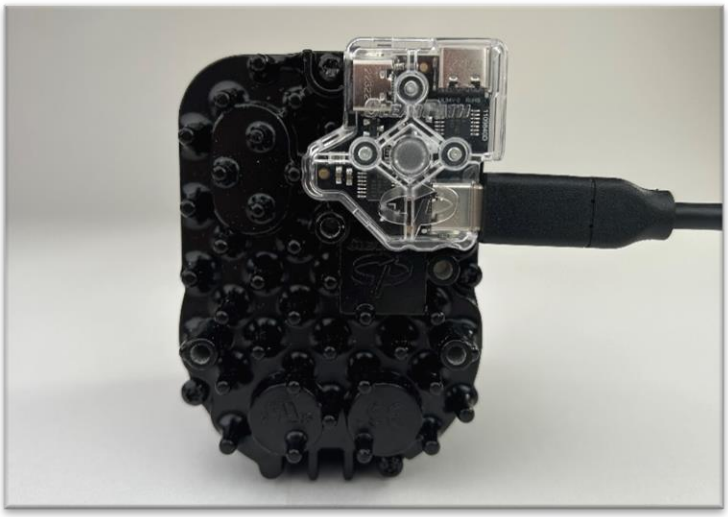
- Use a data-rated USB-C cable and Teknic USB-IR Converter.
- USB-C Cable Teknic PN: CPM-CABLE-USB-118AC
    - https://teknic.com/CPM-CABLE-USB-118AC/
- USB-IR Converter Teknic PN: CPMS-USB-IR
    - https://teknic.com/CPMS-USB-IR/

C. AC Input ClearPath and SC4-Hub

- Use a data-rated USB-B cable.
- Teknic PN: CPM-CABLE-USB-120AB
    - https://teknic.com/CPM-CABLE-USB-120AB/

V. USB IR Converter Seating (IP67/IP66K Sealed ClearPath Only)

Communication issues can occur if the USB-IR converter used with sealed ClearPath motors is not seated correctly. Ensure the USB-IR converter is seated as shown below, with exactly one USB-C cable connected.



When seated correctly, the "ClearPath" text on the USB-IR converter should be facing up