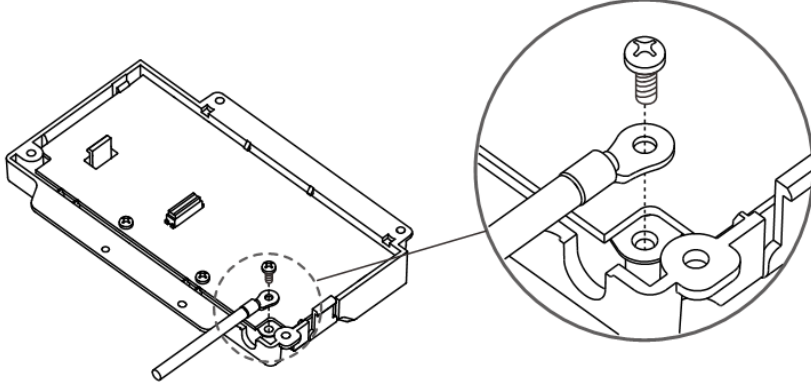
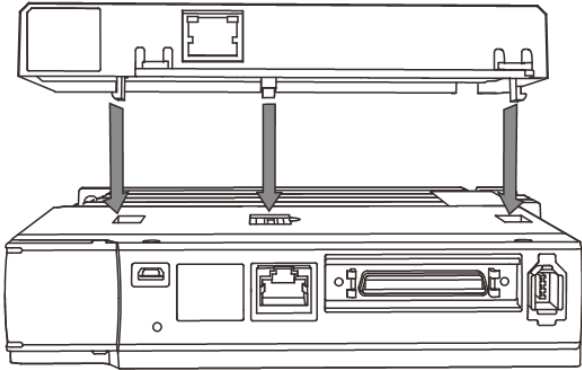
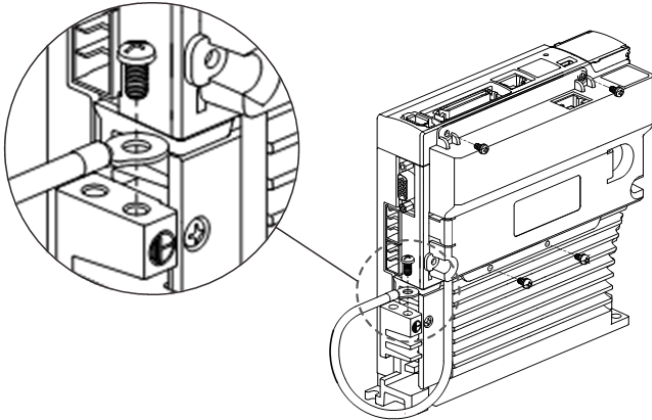


9.5.5 - INSTALLATION

Follow the steps below to install the SV2-CM-MODTCP card in your SureServo2 drive.

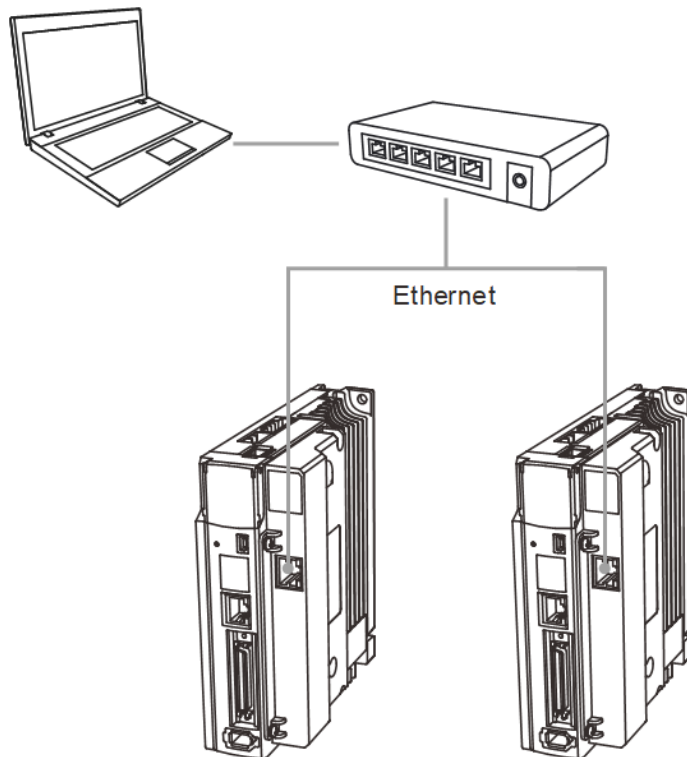
- Wiring
- Parameters
- DI/DO Codes
- Monitoring
- Alarms

Step	Description
1	<p>Remove the screw from the ground terminal of the communication card to screw on the grounding wire that comes with the communication card.</p> 
2	<p>Ensure the firmware update switch is in the "Normal" position. For instructions on updating the firmware (normally not required), see Section 9.9.</p>
3	<p>Align the hooks of the communication card with the installation slot of the servo drive. Evenly press and insert the hooks into the slots to attach the communication card to the servo drive. Inserting the hooks by force may damage the communication card.</p> 
4	<p>Tighten the four screws with a torque of 6.5 Kg-cm (5.64 in-lbs) to secure the communication card. Connect the other end of the grounding wire to the ground terminal of the servo drive.</p> 

9.5.6 - NETWORK CONFIGURATION

Connect SV2-CM-MODTCP to an Ethernet hub with the CAT-5e twisted-pair cable. SV2-CM-MODTCP has the Auto MDI / MDIX function, so the CAT-5e twisted-pair cable does not require crossover.

The network connection between the computer and the SV2-CM-MODTCP module is as follows:



Wiring
Parameters
DI/DO Codes
Monitoring
Alarms

9.5.7 - MODBUS COMMUNICATION STANDARD

The following function codes are supported:

Function Code	Description
0x03	Read the register.
0x10	Write multiple data sets to the register.



NOTE: It is highly recommended to set P2.030=5 before initiating control with communication. This will disable writing any changes to the servo EEPROM. While the EEPROM can be written to several millions of times, inadvertent messaging could reach that limit within a few years. Setting P2.030 =5 eliminates this potential.

Troubleshooting:

If the servo drive sets the Ethernet card parameters to zero at drive power-up, ensure the following:

- 1) The Ethernet card is properly seated onto the drive.
- 2) The Ethernet card ground wire is properly attached to the card and to ground.
- 3) The Ethernet card Firmware Update switch is set to the “Normal” position.



NOTE: SureServo2 / PLC ModTCP communication requires that the Station ID (typically a serial communication setting) be configured correctly in both the PLC ModTCP message and SureServo2 P3.000.

9.7 - COMMUNICATION CARD TROUBLESHOOTING

This section provides alarm descriptions for the error codes displayed on the SV2 panel and the corrective actions you can use for troubleshooting when the LED indicators of the SV2-CM-MODTCP and SV2-CM-ENETIP communication cards are on.

NOTE: *If the servo drive sets the communication card parameters to zero at drive power-up, ensure the following:*



- 1) *The communication card is properly seated onto the drive.*
- 2) *The communication card ground wire is properly attached to the card and to ground.*
- 3) *The communication card Firmware Update switch is set to the “normal” position.*

9.7.1 - LED INDICATORS

Indicator	LED Color	Description	Corrective Action
MS (Module Status) Indicator	Flashing red / green	Self-test.	No action required.
	Steady red	Unrecoverable fault.	Malfunction of the hardware. Contact the distributor.
	Steady green	Parameter setting is configured.	No action required.
	Flashing red	Recoverable fault.	Check the parameter settings.
	Flashing green	Parameter setting has not been configured.	Set the parameters as described in the user manual.
	Steady off	No power.	Check if power is supplied to the servo drive.
NS (Network Status) Indicator	Flashing red / green	Network status self-test.	No action required.
	Steady red	A duplicate IP address has been identified.	Check the IP address setting.
	Steady green	Network connection is established.	No action required.
	Flashing red	Communication timeout / disconnected / IP address is changed.	Check the communication setting.
	Flashing green	Network packet sending / receiving.	No action required.
	Steady off	Not connected to the network.	Check if the network cable is connected.
POWER indicator is OFF	n/a	No power is supplied to the servo drive.	Check if the servo drive is powered on and the power supply is normal.
		Ethernet card is not connected to the servo drive.	Check if the Ethernet card is firmly connected to the servo drive.
LINK indicator is OFF	n/a	The communication card is not connected to the controller.	Check if the network cable of the communication card is connected to the controller.
		RJ45 connector has poor contact.	Check if the RJ45 connector is firmly connected to the Ethernet communication port.

- Wiring
- Parameters
- DI/DO Codes
- Monitoring
- Alarms

9.7.2 - SURESERVO2 WARNING/ERROR CODES

The current Error Code is available in P3.048.

ID	Description	Corrective Actions
75	Manufacturing parameter read error.	Restore the default settings of the communication card. If the issue persists, contact AutomationDirect.
76	Internal parameter setting error.	1. Re-install the communication card or check that the wirings of the control circuit, RST circuit, and grounding meet the requirements for resisting interference. 2. Restore the default settings of the communication card. If the issue persists, contact the servo system distributor.
80	Ethernet connection error.	Make sure the Ethernet cable is firmly connected.
81	The communication between the communication card and SV2 has timed out.	Re-install the communication card or check that the wirings of the control circuit, RST circuit, and grounding meet the requirements for resisting interference.
83	Communication card resets to the default.	Troubleshooting is not required.
84	Modbus TCP exceeds the maximum number of communications.	Reduce the number of communications for the Modbus TCP controller.
85	EtherNet/IP exceeds the maximum number of communications.	Reduce the number of communications for the EtherNet/IP controller.
86	IP address error.	1. Make sure there is no IP address conflict onsite. Remove all other devices from the network to test for IP address conflicts. 2. Reset the IP address or ensure the normal operation of the DHCP/BOOTP Server.
89	Communication card cannot communicate with SV2.	Re-install the communication card or check that the wirings of the control circuit, RST circuit, and grounding meet the requirements for resisting interference.

9.7.3 - ETHERNET/IP CIP CONNECTION STATUS CODE

Status Code	Status	Description
0x00	Success	The requested service is successfully executed.
0x01	Connection failure	The connection service failed.
0x04	Path segment error	The program node cannot identify the definition or syntax of a path segment. When this error occurs, the execution of the path program will be terminated.
0x05	Path destination unknown	The path is related to an object type, but the program node does not include or cannot identify the type or structure of the object. When this error occurs, the execution of the path program will be terminated.
0x08	Service not supported	The object type does not support the requested service or this service has not been defined.
0x0E	Attribute not settable	Received a request to modify an unchangeable attribute.
0x13	Not enough data	Received insufficient data to execute the command.
0x14	Attribute not supported	The requested attribute is not supported.
0x15	Too much data	Received more data than needed to execute the command.
0x20	Invalid parameter	The requested parameter is invalid. This status code indicates that the parameter does not meet the requirement definition or the requirement has been defined in the Application Object Specification.
0x26	Path size invalid	The size of the transmission path is not sufficient to route the request to the object or too much routing data is included.

- Wiring
- Parameters
- DI/DO Codes
- Monitoring
- Alarms