CompactLogix 5069 PLC Reset and Configuration Guide

This guide will go through an example of how to set up a connection between LS H100+,G100, S100, iS7, H100 drives And CompactLogix5069. You will need to insert your own information for some of the fields.

Resetting the PLC

- **Soft and Hard Reset:**
    - Refer to the YouTube guide: How to Soft and Hard Reset a CompactLogix 5069 PLC

Firmware Update

1. Download and install **ControlFlash Plus** for firmware updates.
2. Ensure the PLC is connected to power.

Preparing for Ethernet Communication

1. Verify the VFD is Ethernet-capable.
    - Add the required option card if needed.

1. **Ethernet Setup:**
    - Open **Network Connections** on your computer.
    - Navigate to **Ethernet > Properties**.
    - Select **Internet Protocol Version** and double-click.
    - Configure the following:
        - **IP Address:** 192.168.1.20
        - **Subnet Mask:** 255.255.255.0

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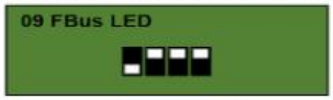
You will now see the new Ethernet Module under the A-B I/O configuration tree; it will have "H100" in the name.. **All Setup Is Now Complete.**

[COM-09] FBus Led: Information about LED indicators on the communication board

Displays on the Keypad the status of the LED indicators on the H100 RAPIEnet+ communication board. Refer to sections "11.3/12.4 LED indications and troubleshooting."

Example of the COM-09 (FBus LED) indication



LINK1	LINK2	ERROR	CPU
LED is OFF	LED is ON	LED is ON	LED is ON

Setting Up PLC Ports

Initial Configuration:

- Ensure a USB connection is established.
- Open **RSLinx Classic**:
    - Navigate to **Communication > Add New**.
    - Add an **Ethernet/IP Driver**.
    - Select the appropriate route (e.g., Ethernet Adapter with IP: 192.168.1.20).
    - Label the setup (e.g., "NEWSETUP").

Port Configuration:

- Expand the submenu under "NEWSETUP."
- Right-click the IP address and select **Configuration > Port Configuration**.
- Assign the following IPs:
    - **PLC Port A1:** 192.168.1.2
    - **PLC Port A2:** 192.168.2.1 (different network for VFD connection).

Connecting the VFD

- **Power Setup:**
    - Connect the VFD to a power source.
- **VFD Network Configuration:**
    - **Drive IP:** 192.168.1.12
    - **Ethernet Adapter:**
        - **IP Address:** 192.168.1.20
        - **Subnet Mask:** 255.255.255.0

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1 Serial Communications Option Card Hardware

1. With no power applied to the drive, remove the I/O cover.
2. Attach the Ethernet/IP option module to IO Card. (There is only ONE option slot available in the H100+).

2 Parameters to Change using the drive LCD keypad

To setup communications and allow control for the motor via a PLC there are only 6 steps needed for the drive. Utilize the LCD keypad can be used.

1. Enter the network address information
    a. IP Address: COM.10,COM.11,COM.12 & COM.13 (COM.13 + COM.07)
    b. Subnet Mask: COM.14,COM.15,COM.16 & COM.17
    c. Gateway: COM.18,COM.19,COM.20 & COM.21 *(If necessary)*.
    d. Station ID: COM.07 (Unique station address RAPI net).
2. Enter the Input and Output Assembly information
    a. CIP Input Define: COM.23 (Defines the Input Assembly Size).
    b. CIP Output Define COM.24 (Defines the Output Assembly Size).
    See page 4 for the PLC parameters related to these CIP listed above.
3. Enter the command source *(If controlling drive from host)*.
    a. Run Command Source: DRV.06 to "Field Bus".
    b. Speed Command Source: DRV.07 to "Field Bus".
4. Verify that CNF.30 reads "RAPI net" *(or perhaps "Reserved-18" depending on H100 drive Firmware Version)*.
5. RAPI net Disable
    a. COM.25 set either to a "0" or a "2". *(If left on a "1", Ethernet will not comm.)*.
6. **Parameter Save**
    a. Set CNF.48 to a "1". (To store serial option card data to drive EEPROM).

2.1 Parameters to change (COM Group)

COM-10	Opt Parameter1	192	0 – 255	Sets the IP address.
COM-11	Opt Parameter2	168	0 – 255	* To connect to the network via the RAPIEnet protocol after setting COM-25 to "2 (RAPIEnet Enable)," It is recommended to set COM-13 to "100 + COM-07."
COM-12	Opt Parameter3	1	0 – 255	
COM-13	Opt Parameter4	101	0 – 255	
COM-14	Opt Parameter5	255	0 – 255	
COM-17	Opt Parameter8	0	0 – 255	
COM-18	Opt Parameter9	192	0 – 255	Sets the Gateway address.
COM-19	Opt Parameter 10	168	0 – 255	
COM-20	Opt Parameter 11	1	0 – 255	
COM-21	Opt Parameter 12	10	0 – 255	
COM-22	Opt Parameter 13	0	0	Set the network communication speed. (fixed to 100 Mbps Auto)
COM-23	Opt Parameter 14	1	0 – 11	CIP Input Instance
COM-24	Opt Parameter 15	1	0 – 11	CIP Output Instance
COM-25	Opt Parameter 16	2	0 – 2	2: RAPIEnet Enable 0 or 1: RAPIEnet Disable

- Com 12: 192
- Com 13: 168
- Com 14: 2
- Com 15: 10
- Com 16: 24
- Com 17: 192
- Com 18: 168
- Com 19: 1
- Com 20: 1
- Com 21: 0

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2.2 Parameters to Change (DRV Group)

Change the **Run Command Source DRV.06 to "Field Bus".** Change the **Speed Command Source DRV.07 to "Field Bus".** This allows the PLC to control the speed and run commands.

Code	Comm. Address	Name	LCD Display	Setting Range		Initial value	Property*	V/F	SL	Ref.
00	-	Jump Code	Jump Code	1-99		9	O/A	O	O	p.49
01[2]	0h1101	Target frequency	Cmd Frequency	Start frequency - Maximum frequency(Hz)		0.00	O/L	O	O	p.53
02	0h1102	Torque command	Cmd Torque	-180~180[%]		0.0	O/A	X	O	-
03[2]	0h1103	Acceleration time	Acc Time	0.0-600.0(s)		20.0	O/L	O	O	p.89
04[2]	0h1104	Deceleration time	Dec Time	0.0-600.0(s)		30.0	O/L	O	O	p.89
06[2]	0h1106	Command source	Cmd Source	0	Keypad	1: Fx/Rx-1	X/L	O	O	p.82
				1	Fx/Rx-1					
				2	Fx/Rx-2					
				3	Int 485					
				4	Field Bus					
07[2]	0h1107	Frequency reference source	Freq Ref Src	0	Keypad-1	0: Keypad-1	X/L	O	O	p.69
				1	Keypad-2					
				2	V1					
				4	V2					
				5	I2					
				6	Int 485					
				8	Field Bus					
				12	Pulse					

Figure 3. H100 Drive Group Parameters to Change

3 Allen Bradley PLC Setup for the H100

In A-B RS/ Control Logics to perform the following steps.

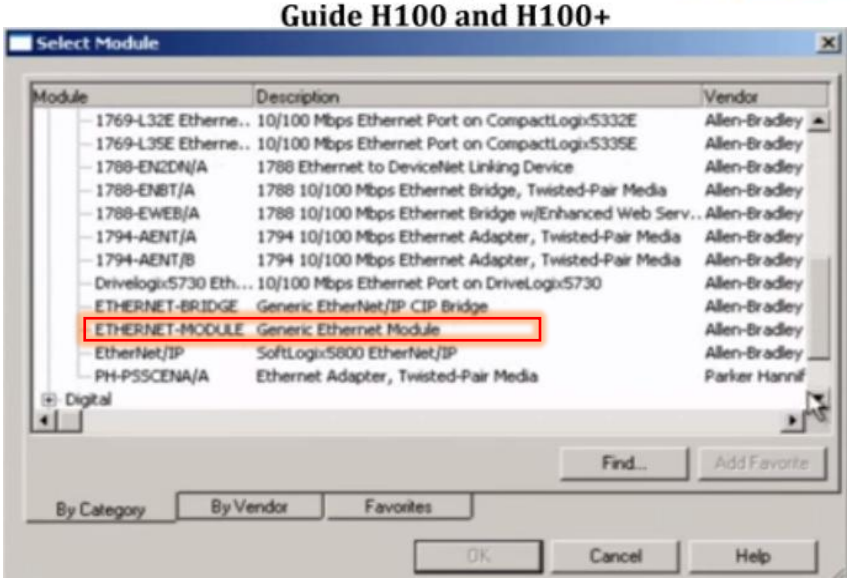
1. Open a project previously created.
2. Double click the *Ethernet* port in the I\O Configuration tree (In the left hand window)
    a. Under the General tab, enter the IP Address you will be using and click *OK*.
3. Right click *Ethernet*, located under the I\O Configuration tree
    a. Select *New Module*
        i. Expand the Communication tree
            1. Scroll to find *Generic Ethernet Module*
            2. Select it and click *OK*

Studio 5000 Setup

1. Open **Studio 5000** and select the appropriate PLC model.
2. Configure communications:
    - Navigate to **Communications > Who Active**.

- Select **Ethernet Port (A1)** with IP 192.168.1.2 and click **Go Online**.

3. Add the VFD:
    - Assign it under **Port A2**.
    - Use the VFD's IP: 192.168.2.23.



4. In the Generic Ethernet Module window,
    a. Enter a name (typically use the drive series name i.e. H100)
    b. Select the Comm Format of *INT* as seen in the image below.
    c. Enter the Connection Parameters as seen in the image below
    d. Enter the correct IP Address as seen in the image below.
    e. **The IP address shown below is only an example.**

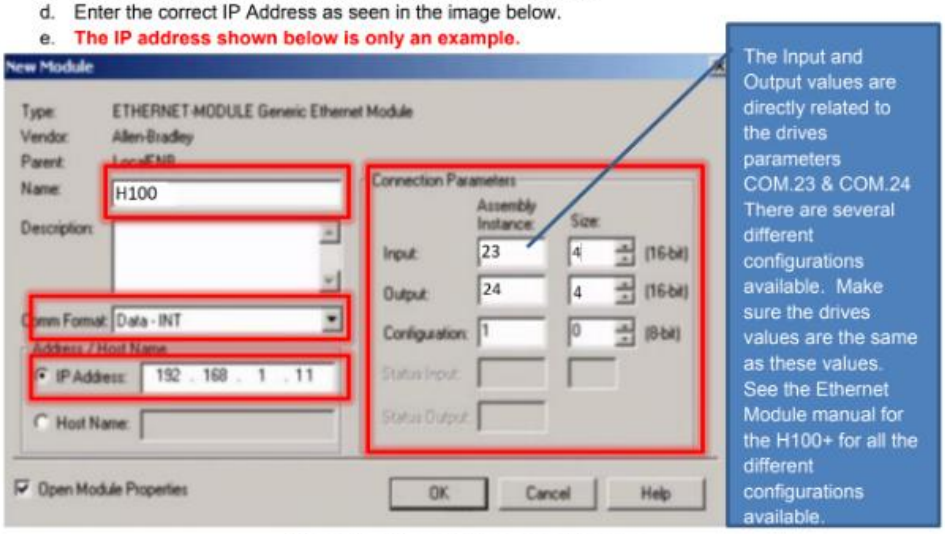
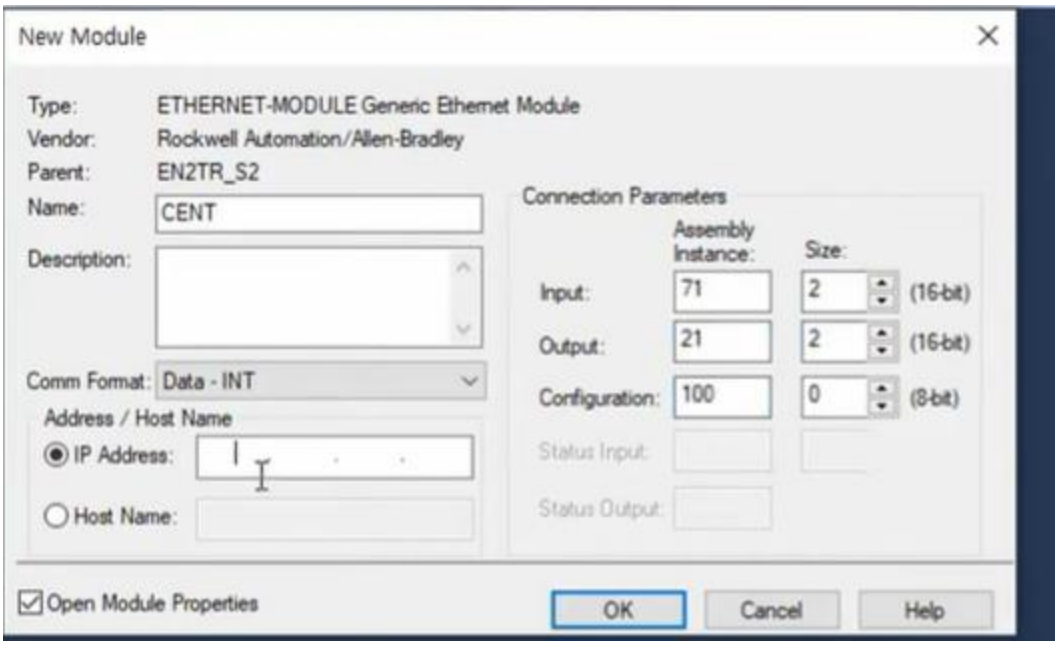


Figure 5. A-B Generic Ethernet Module Setup



THE IP ADDRESS WILL BE THAT OF THE VFD!!

Import Add-On Instructions:

- Download instructions from the following resources:
  - LS Electric Ethernet Add-On Instructions
  - YouTube Video
- In Studio 5000:
  - Navigate to **Add-On Instructions > Import**.
  - Follow the video tutorial starting around the 2-minute mark.