

TROUBLESHOOTING



CHAPTER 8

In this Chapter...

<i>C-more</i> Micro-Graphic Panel does not Power up.....	8-2
Display is Blank	8-2
Display is Dim	8-3
No User Program	8-3
Lost Firmware – Red ‘Update Mode’ Screen Displayed.....	8-4
No Communications between Panel and PC (Personal Computer)	8-5
No Communications between Panel and PLC	8-7
Panel & PLC Error Codes	8-8
<i>C-more</i> Micro-Graphic Panel Runtime Errors.....	8-9
Panel Errors.....	8-9
Electrical Noise Problems	8-10

Troubleshooting



The following are some common problems that may be encountered during the installation and operation of your *C-more*[®] Micro-Graphic panel. We have made some suggestions on what to check in order to correct the problem.

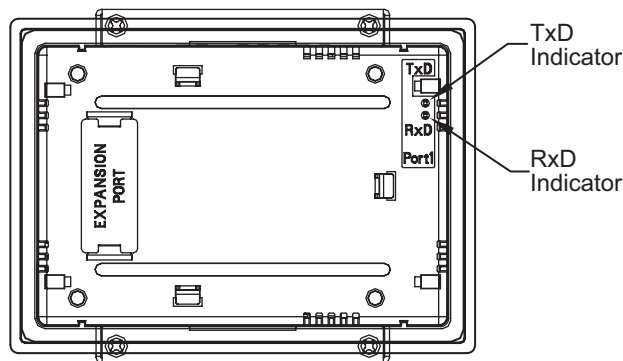
C-more Micro-Graphic Panel does not Power up

Powered from 5 VDC: If the panel's display is blank, not responding, and the panel is powered from a 5 VDC power source, check the incoming DC voltage level with a voltmeter. The DC voltage level should be in the range of 4.75 to 5.25 VDC. If the incoming DC voltage is zero, check any fusing that may be in the circuit. If the fuse is open, determine cause and replace.

Powered from 12-24 VDC: If the panel's display is blank, not responding, and the panel is powered from one of the optional DC Power Adapter modules, such as an EA-MG-P1 or EA-MG-SP1, check the incoming DC voltage level to the adapter with a voltmeter. The DC voltage level to the adapter should be in the range of 10.8-26.4 VDC. If the incoming DC voltage is zero, check any fusing that may be in the circuit. If the fuse is open, determine cause and replace.

Display is Blank

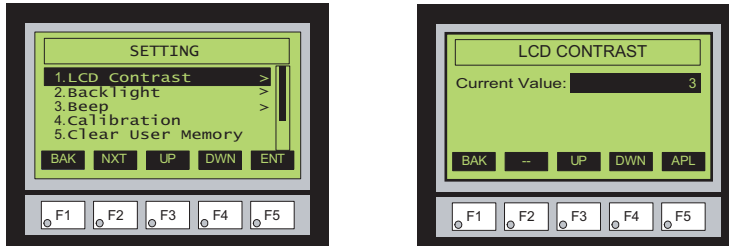
Also if the panel's display is blank, check the TxD and RxD indicators on the back side of the panel while the panel is communicating with the PLC. The LED indicators should be on or flashing at a fast rate. Indicator activity shows that the panel is communicating with the PLC. If there is communication activity, but the display is still blank, there is the possibility the program in the PLC is controlling the display. Try pressing the F1 and F5 keys simultaneously for 3 seconds. The panel should display the System Setup Screen menu if the screen is being forced to display a blank by the PLC program, or check the PLC program, it may have the



screen in the off state by placing a 0 in the current screen tag.

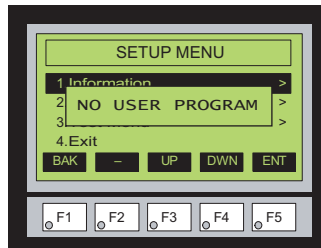
Display is Dim

Press the F1 and F5 keys simultaneously for 3 seconds to access the System Setup Screen menu. Select the Setting menu, and then select item 1, LCD Contrast. The default value is 3. Adjust the current value from 1 to 5 and the panel's contrast should become greater as the value moves toward 5 and it should become less as the value moves toward 1. If this does not happen, then the panel may need to be replaced.



No User Program

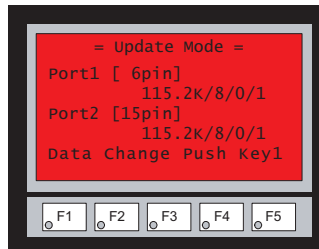
If the panel is displaying the message “No User Program” after it is powered up, then there is no project downloaded into the panel. Using the EA-MG-PGMSW C-more Micro-Graphic Programming Software, download your project to the panel.



Lost Firmware – Red ‘Update Mode’ Screen Displayed

If the *C-more* Micro-Graphic panel’s firmware becomes corrupted or for some reason is lost from the panel’s memory, the panel will display the **Update Mode** screen as shown below. This can happen if communication between the PC and the panel is interrupted during a firmware update from the programming software. To resolve the problem, try the following steps in the order shown:

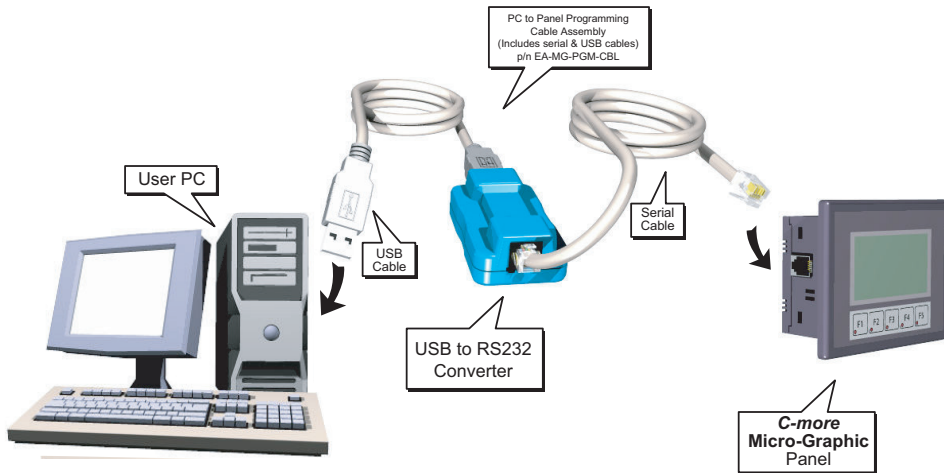
- 1.) Cycle power to the panel.
- 2.) Attempt to reload the firmware to the panel using the **Update Firmware** utility under the **Panel** pull down menu in the EA-MG-PGMSW Programming Software.
- 3.) If the firmware update is not successful, depress function keys F1 and F5 while cycling power to the panel. The panel should come up in the red **Update Mode** screen as shown below. Perform Step 2 again.
- 4.) Call Tech Support @ 770-844-4200.



No Communications between Panel and PC (Personal Computer)

The *C-more* Micro-Graphic panel is programmed using the *C-more* Micro-Graphic Programming Software, EA-MG-PGMSW. The developed project is transferred from the PC to the panel by a USB to RS-232 serial communications cable. The EA-MG-PGM-CBL Serial Programming Cable Assembly can be used to accomplish the interface between the PC and panel. Installing the programming software also installs a USB driver on the PC. When properly installed the programming cable will look like a serial communications port to the PC.

USB to RS-232 Programming Cable Assembly



NOTE: The panel has one built-in RJ12 serial communications port (Port 1 - RS-232) and the option to add one 15-pin serial communications port (Port 2 - RS-232/422/485) to the panel by installing the EA-MG-SP1 module. **Only one** of the ports can be used with a connected PLC. The programming software allows the user to select either Comm. Port1 or Comm. Port2 under the Panel Manager dialog box. When using Port 2 to communicate with the connected PLC, Port 1 can still be used with the EA-MG-PGM-CBL Software Programming Cable Assembly to transfer projects between the PC and panel.

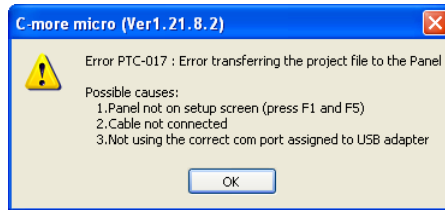


NOTE: If either DC power adapter is installed on the panel, the adapter must be powered and the panel not dependent on +5 VDC from the PLC's RJ12 comm port.

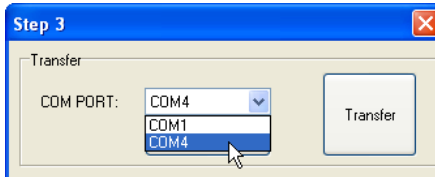
No communications between panel and PC continued top of next page.

No Communications between Panel and PC (Personal Computer) (cont'd)

There are three possible causes that prevent transferring the project to the *C-more* Micro-Graphic panel.

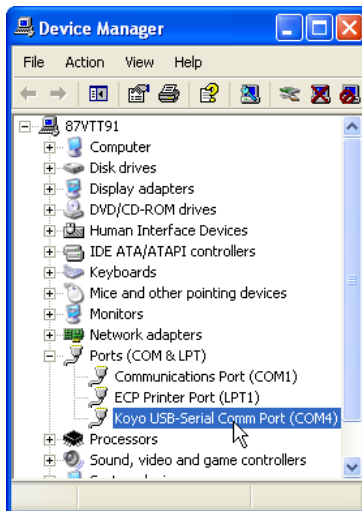


1. **Panel not on setup screen (press F1 and F5)** - Press and hold the F1 and F5 buttons simultaneously for three seconds to enter the setup screen.
2. **Cable not connected** - Double check the programming cable assembly to make sure the panel is correctly connected to the USB port on the PC.
3. **Not using the correct com port assigned to the USB adapter** - If the *C-more* Micro-Graphic panel



In the **Device Manager** window, view the active available ports by clicking the + button beside the Ports (COM & LPT) menu item. The *C-more* Micro-Graphic panel uses a USB driver called Koyo USB-Serial Comm Port. COM4 is the comm port used in this example. If you

is on the setup screen and the cable connection is correct, then check the PC COM port setting. If you are unsure which COM port the *C-more* Micro-Graphic programming cable is connected to, click on the **Device Manager** button. This will open Windows ® **Device Manager**.



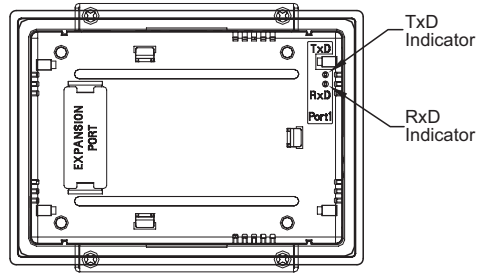
cannot find the Koyo USB-Serial Comm Port under the Ports (COM & LPT) menu item in **Device Manager**, the USB driver may not be correctly installed or the driver has a problem. See the software installation manual for details on installing the Koyo USB-Serial Comm Port driver. If you have selected the correct COM port and the error still occurs, try connecting the programming cable to a different USB port on the PC and try again.

If the program persists, call Technical Support at (770) 844-4200, available from 9:00 A.M. to 6:00 P.M. Eastern Time.

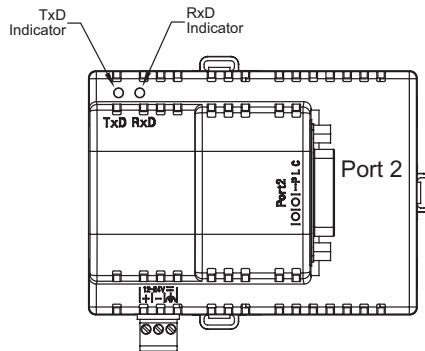
No Communications between Panel and PLC

The communications between the *C-more* Micro-Graphic panel and a designated PLC or controlling device can be accomplished using the panel's built-in RS-232 RJ12 serial communications port (Port 1) or by installing a EA-MG-SP1 Serial Port with DC Power Adapter module (Port 2) to the rear of the panel. The EA-MG-SP1 includes a 15-pin connector that can be connected for RS-232, RS-485 or RS-422.

Port 1: If you are using Port 1 then check the Txd and Rxd status indicators on the back side of the panel. They should be on or flashing at a fast rate. If there is activity on the LED indicators, then the panel and PLC are communicating. Location of Port 1's LED status indicators shown to the right.



Port 2: If you are using Port 2 then check the Txd and Rxd status indicators on the back side of the EA-MG-SP1 Serial Port with DC Power Adapter. They should be on or flashing at a fast rate. If there is activity on the LED indicators, then the panel and PLC are communicating. Location of Port 2's LED status indicators shown to the right.



On either serial communications port, if there is no activity on one or both TxD and RxD LED status indicators, then:

- Verify that the communication settings are correct in the panel manager
- Test or replace the cable.
- Test the panel or adapter's serial port (Page 5-14 & 5-15).
- Test the serial port on the PLC.

Electrical noise, pulse generating wiring and/or improper grounding can also cause problems with communications. Refer to the Electrical Noise Problems section in this chapter for additional help if electrical noise is suspected.

Panel & PLC Error Codes

The *C-more* Micro-Graphic panel includes built-in PLC communication protocol diagnostics that monitor the exchange of data between the panel and the PLC. The diagnostics look for the proper exchange of data, correct handshaking signals, addressing errors, incorrect data bytes, wrong packet format, etc. The diagnostics also monitor and display any of the errors that the designated PLC would normally generate if there is a problem with the PLC's communications. The PLC generated errors are interpreted by the *C-more* Micro-Graphic programming software and are displayed across the top of the panel's display embedded as a hexadecimal value in error code P499.

If a *C-more* Micro-Graphic communications error does occur, the error message will be displayed in the upper left of the panel's display screen along with the error code number. The error code with error message will blink off and on. A detailed list and description of the various PLC protocol errors can be found in **Appendix A: Panel & PLC Error Code Tables**.

Panel Error Code Table Example:

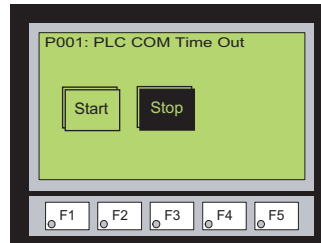
<i>C-more</i> Micro-Graphic Panel Error Table		
Error Code	Error Message	Cause
P001	PLC Com Time Out	A timeout occurred after sending a request to the PLC.
↕	↕	↕
P499	ErrCode Received -> Recv .Err Code XXXX	A PLC generated error code with a hexadecimal value of XXXX has been returned from the PLC.

PLC Error Code Table Example:

PLC Error Codes for <i>Direct</i> LOGIC – ModBus (Koyo)	
Panel Error Code P499 Hex Value	Description
0x1	The function code is unknown by the server.
↕	↕
0x4	The server failed during the execution.

Note: See **Appendix A: Panel & PLC Error Code Tables** for a complete list of all error codes.

Panel Communications Error Code Example



C-more Micro-Graphic Panel Runtime Errors

The *C-more* Micro-Graphic panel includes built-in diagnostics that check for proper operation of the panel when it is running a project that has been transferred to its memory. Faults detected while the panel is running will produce a “Runtime” error. These errors are displayed in a popup window in the center of the panel’s display.

Troubleshooting a Panel Runtime Error:

Follow these steps to troubleshoot a panel runtime error.

1. Check the panel cable connections.
2. Cycle power at the panel.
3. Resend the project.
4. If the error still occurs, reset the panel back to factory default. Refer to Chapter 5 for details



NOTE: User memory is cleared when factory defaults are reset. Use the **C-more** Micro-Graphic programming software to read the program from the panel and save a backup copy.

Panel Errors

If more than one panel error occurs, each error message will display sequentially for three seconds with a two second delay between each message.

When only one panel error is active, that message will display continuously until it is no longer active.

Micro-Graphic Panel Errors		
Error Code	Error Message	Possible Solutions
R001	PC software tool Timeout	Check cables and connections. Cycle power at the panel.
R002	CRC Error occurred during project transfer from PC.	See Chapter 8 for Electrical Noise Problems. Check the area for sources of noise: electrical motors, transformers, etc. Check for proper grounding Resend the project.
R003	Project Check Sum Error. Resend Project file to Panel.	Cycle power. Resend the project.
R004	Protocol Module Check Sum Error. Resend Project File to Panel	
R005	Panel Check Sum Error. Panel Info (Not Project) will be initialized.	From the Setup Menu screen, reset panel options.
R006	SW Ver. Mismatch. Use software Ver.xx.xx.	Update to current version programming software and panel firmware.
R100	Option module detected without external power	EA-MG-SP1 or EA-MG-P1 optional power adapter module is installed on a C-more 3” Micro-Graphic panel without a 12-24 VDC power source. Provide 12-24 VDC power to the optional module.
R101	Unsupported module detected	EA-MG-SP1 or EA-MG-P1 optional power adapter module for a C-more 3” Micro-Graphic panel is installed on a C-more 6” Micro-Graphic panel. Remove the EA-MG-SP1 or EA-MG-P1.

Electrical Noise Problems

Noise is one of the most difficult problems to diagnose. Electrical noise can enter a system in many different ways which fall into one of two categories, conducted or radiated. It may be difficult to determine how the noise is entering the system but the corrective actions for either of the types of noise problems are similar.

- Conducted noise is when the electrical interference is introduced into the system by way of an attached wire, panel connection, etc. It may enter through a power supply connection, the communication ground connection, or the chassis ground connection.
- Radiated noise is when the electrical interference is introduced into the system without a direct electrical connection, much in the same manner as radio waves.

While electrical noise cannot be eliminated, it can be reduced to a level that will not affect the system.

- Most noise problems result from improper grounding of the system. A good earth ground can be the single most effective way to correct noise problems. If a ground is not available, install a ground rod as close to the system as possible. Ensure all ground wires are single point grounds and are not daisy chained from one device to another. Ground metal enclosures around the system. A loose wire can act as a large antenna, introducing noise into the system. Therefore, tighten all connections in your system. Loose ground wires are more susceptible to noise than the other wires in your system. Review **Chapter 4: Installation & Wiring** if you have questions regarding how to ground the touch panel.
- Electrical noise can enter the system through the power source for the *C-more* Micro-Graphic panel. Installing a properly wired isolation transformer (neutral grounded) for all AC sources can help the problem, but only if wired correctly. DC sources should be well-grounded good quality supplies.
- Never run communication cables or low-voltage power wiring close to high voltage wiring or pulse generating wiring that controls such devices as solenoids, servos, VFOs, etc.

Selecting a lower communication rate in Panel Manager may help the panel resist noise.