PCC-III to PCC-IV Conversions

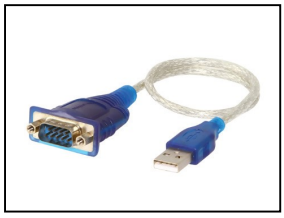
The Preferred Instruments PCC-IV Multiple Loop Controller is a direct replacement for existing PCC-III controllers. The conversion process can be done with a quick and simple auto-convert process using the free PC3_Edit and Preferred_Draw software as outlined below.

I. Required Parts

- A laptop/computer running Windows 7 or above with at least one USB port available.
- Installed software from Preferred's website:
  - PC3_Edit
  - Preferred_Draw

RS-232 Download Cable

- RS-232 Download Cable with DB9 Adapter (Preferred P/N 190355)
- If your computer does not have an available Serial port, you will also need a USB-to-Serial adapter. Refer to the included documentation that comes with your adapter for proper installation and setup.
- USB-to-microUSB cable
- The new PCC-IV that is replacing the old PCC-III
- A 24 VDC Power Supply capable of supplying 1A of power for each new PCC-IV being installed. (e.g., if 3 PCC-IVs are being installed, a single 3A power supply may be used to power all three PCC-IVs).
  - Preferred sells suitable 24 VDC power supplies (2.5A is P/N 92443. 5A is P/N 70432)



USB to Serial Adapter

- Screwdriver and/or other tools necessary to gain access to the controller being replaced (may vary be location).
- Wire, wire strippers, cutters suitable for wiring the 24 VDC power supply.

Warning

The equipment covered in this manual can cause extreme property damage, severe injury, or death. It is the responsibility of the owner or user to ensure that the equipment described herein is installed and commissioned in compliance with the requirements of all national and local legislation, whichever may prevail.

The installation and commissioning of this product must be carried out by suitably trained personnel who are experienced with the intended functions of this product and the operation of the equipment and systems to which it is applied.

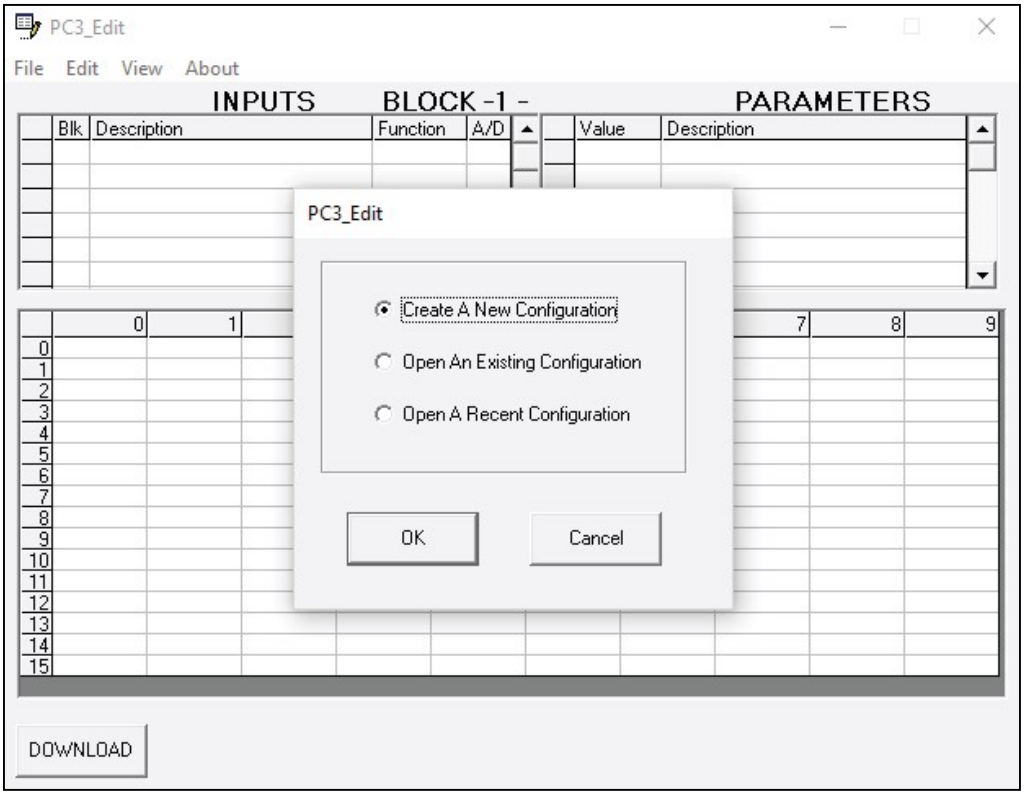
II. Conversion Procedure

1. Read the PCC-III program off the old PCC-III

   a. Take the RS-232 Download Cable with the DB9 Adapter and connect the Serial side to your computer Serial port or Serial to USB adapter. Remove the PCC-III screen and connect the RJ-11 side (looks like an old telephone jack) to the PCC-III.

   b. Run PC3_Edit from your computer

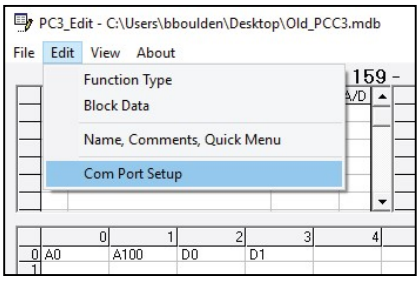
   c. Select “Create a New Configuration” and click OK.



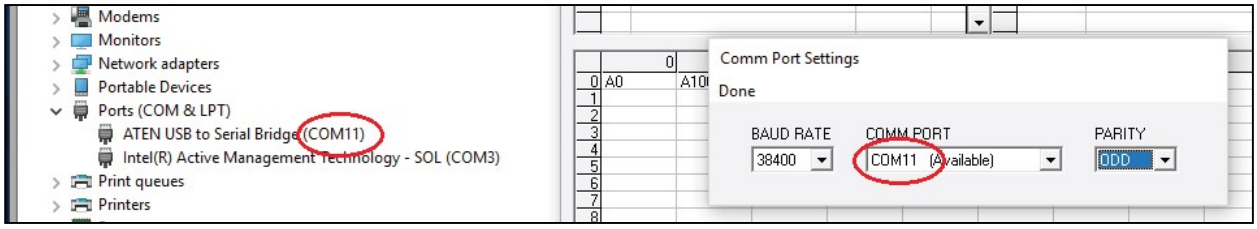
   d. Create a file (name it anything that you will remember) and click Open.

   e. At the pop-up, click “Done” in the top left corner.

f. Go to *Edit >> Com Port Setup*



g. Select the Baud Rate and Parity of your PCC-III (defaults are 38400 and Odd). Select an available Com port for your computer. This must be same Com Port as your USB-to-Serial adapter, if using one. Then click Done.



h. Click *File >> Upload From PCC3*

i. Click OK on the warning pop-up about overwriting the current file.

j. If the file upload fails, verify your Com Port settings. If using a USB-to-Serial adapter, verify that you have it properly set up using the documentation that was supplied with your adapter.

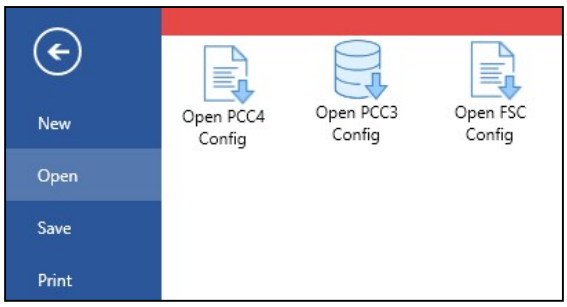
k. The program will be uploaded from the old PCC-III. You should see a progress bar followed by a program being loaded into PC3_Edit.

l. When complete, go to *File >> Save*

m. After saving the file, close PC3_Edit and disconnect the RS-232 Download Cable from both the PCC-III and your computer.

2. Auto-convert the old PCC-III program to a PCC-IV program.

a. On your computer, open Preferred_Draw



b. Open the PCC-III program using Preferred_Draw by going to *File >> Open >> Open PCC3 Config*

c. Navigate to the file you saved earlier and click Open.

d. In the Select Blockware Version pop-up, select 1.0 and click OK.

e. After a few seconds the auto-converted file will be open in Preferrred_Draw.

f. The physically printed buttons on the old PCC-III need to be added to the PCC-IV program. Make these changes to the Pushbutton names, LEDs, and Loop Names by going to *Edit >> Open Panel Settings*

g. In the Panel Data pop-up, change the Pushbutton Messages, LED Messages, and Loop Names to match the old PCC-III screen.

Push Button	Source Tag	Type	Upper Message On	Lower Message On	Upper Message Off	Lower Message Off
1 (UL)	B41_PB_OUT	MOM_HI	TRIM	A/M	TRIM	A/M
2 (UR)	B42_PB_OUT	MOM_HI	FIRING	A/M	FIRING	A/M
3 (LL)	B43_PB_OUT	MOM_HI	STORE	(CLEAR)	STORE	(CLEAR)
4 (LR)	B44_PB_OUT	TOGGLE	REMOTE	LOCAL	REMOTE	LOCAL

LED Num	Source Tag	Message
1 (UL)	B71_LED_OUT	N/A
2 (UR)	B72_LED_OUT	N/A
3 (LL)	B73_LED_OUT	N/A
4 (LR)	B74_LED_OUT	N/A
5 (ML)	B75_LED_OUT	TRIM
6 (MR)	B76_LED_OUT	MOD

Loop Names: Firing Rate | O2 Trim

i. The Pushbutton Messages are taken from the 4 buttons off the old PCC-III (UL = Upper Left, UR = Upper Right, LL = Lower Left, LR = Lower Right)

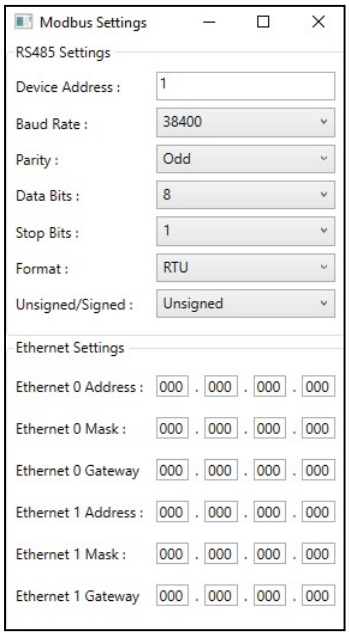
ii. The LED Messages are taken from the two middle LED lights (ML = Middle Left, MR = Middle Right).

iii. The Loop Names are from the old PCC-III plastic label

h. After making the necessary changes, close the Panel Data pop-up window.

i. Next, open the Modbus Settings window by going to *Edit >> Open Modbus Settings*

j. Change the Modbus settings to match the settings on the old PCC-III. Refer to the PCC-III Technical Manual if necessary for how to retrieve these settings from the PCC-III. Ethernet settings may be ignored for an auto converted file. When finished, close this window.



k. Save the file by going to *File >> Save >> Save Config as Config*

l. In the pop-up window, name the file and save it to a convenient location, by clicking Save.

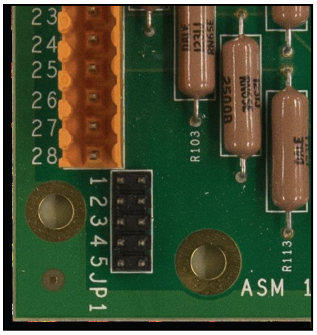
3. Place the controlled system into a safe condition. Prior to removing power from the PCC-III or removing wires/connectors, ensure the system being controlled is in a safe condition and that site conditions allow for the removal of the PCC-III.

4. Remove the old PCC-III from the panel and move any option cards to the new PCC-IV.

    a. Unplug the terminal blocks from the PCC-III. Keep all wires and connections in the same configuration. The terminal blocks from the PCC-III will plug into identical plugs on the PCC-IV.

    b. The option cards from the PCC-III will be reused uless you have purchased new replacement option cards. Remove all option cards from the old PCC-III and install them in the identical places on the PCC-IV. They must be installed in the same locations on the new controller as they were on the old controller.

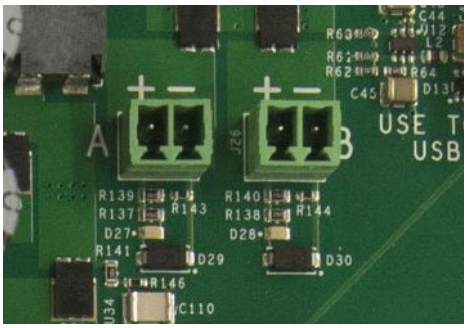
    c. Ensure that the 250-ohm jumpers on the PCC-IV (JP1(1-5) on the PCC-IV) match the identical jumpers on the PCC-III (JP2(1-5_ on the PCC-III).



5. Install a 24 VDC Power Supply inside the panel. An existing 24 VDC Power Supply may be used as long as it has at least 1A of available power per PCC-IV.

6. Install the new PCC-IV in the same location as the old PCC-III. All wiring is the same. Plug in the terminal blocks that were previously removed from the PCC-III.

7. Connect the 24 VDC power to the PCC-IV. Power may be connected to either plug.



8. Write the converted PCC-IV file to the new PCC-IV controller.

    a. Reopen Preferred_Draw if necessary and open the PCC-IV config.

    b. Connect the larger end of the USB cable to your PC, and connect the microUSB end to the PCC-IV. Use the USB jack at the front of the PCC-IV board, behind the faceplate.

    c. In Preferred_Draw, go to *Data >> Write* and click Continue.

    d. After a successful write, you will receive a confirmation message. Click OK.