



# epc-2

## Dual Channel Open Loop Driver Application

Home | Request Info.

**HCT** High Country Tek, Inc.  
Electronic Control Solutions for the Global Fluid Power Industry (530) 265-3236 /Fx: (530) 265-3275

LITERATURE SOFTWARE Parker / Denison | Sauer Danfoss CONTACT US UTILITIES

### epc-2 Dual Channel Pump Controller

Open Loop Optimized Product Control

- epc-2 User Interface Installation only
- Full Software Installation Instructions
- epc-2 Dual Channel Software Suite
- epc-2 Dual Channel Driver User Manual

High Country Tek, Inc.  
208 Gold Flat Court  
Nevada City, CA, 95959  
E-mail: [info@hctcontrols.com](mailto:info@hctcontrols.com)

[www.hctcontrols.com](http://www.hctcontrols.com)

HCT-epc-2-Dual-Driver-B Copyright 2011, High Country Tek, Inc.

## Application & Graphical User Interface Installation Guide

The information in this publication is intended as a guide only, and **High Country Tek, Inc** takes NO responsibility for usage and implementation of this code or in any user written application code structure. HCT strongly suggests that the user attends one of the structured product training courses to ensure correct and full understanding of this information and to learn further optimized methods of control techniques. Please contact your nearest HCT distributor or contact **High Country Tek, Inc** customer service to find out where your nearest scheduled training will be held.

[www.hctcontrols.com](http://www.hctcontrols.com)



## Foreword:

Thank you for using **High Country Tek, Inc** products, we appreciate your business and look forward to working with you in the future.

This CD contains information and software that will allow the user to install:

- 1) The latest version of the Program Loader Monitor ( PLM ) – v4.76
- 2) The dual channel open loop driver application for epc-2 controllers
- 3) The PC Graphical User Interface ( GUI ) that will allow each channel to be optimized for the customer.

OEM Product compatibility pages found along here

Click here to open an HCT contacts list with individual E-mail addresses.

HOME button, click here to go to START page

Click here to open a 'Utilities' page

Click here to begin software installation



Mouse-over and Click here to go to open your e-mail client and send us electronic communications.

Click anywhere on the product picture to go to the epc-2 product information page on the High Country Tek website: [www.hctcontrols.com](http://www.hctcontrols.com) ( Internet connection needed here )

Mouse-over and Click here to go to the general **High Country Tek, Inc** website

Mouse-over and Click here to go to the **NFPA** website

## epc-2 Dual Channel CD:

### 1) Instructions –

- Follow these instructions for a successful conclusion to the program upload and operation of your system.
- Proceed to the software section of the CD that will allow you to upload the program into any epc-2 controller as needed.
- Click on the literature button for full technical details of the dual driver application and connection information.



### Follow these steps:

**Step 1:** Install the PLM v4.76 program onto your computer. Click this button to start the process and follow the on-screen instructions:

**Step 2:** Once the PLM has installed correctly, proceed to **page 4** of this manual and follow the instructions there that will upload the new application program into the epc-2 module, return **HERE** when you successfully reach the **end of page 8**.

**Step 3:** Now that you have loaded the new application program into the epc-2, we have to install the PC user interface or GUI so the configuration file can be optimized for the system.

Click on the **'Install PC user Interface'** button to start the process and follow the on-screen instructions:



### NOTES:

If the user is familiar with HCT products or the PLM is already installed on the host computer, **STEP 1 should still be actioned** as this will ensure the latest PLM files are on the computer. If the files are all up to date, the smart installer, will make NO changes but as part of the completion process, will copy the \*.PGM file to the PLM directory so the file is placed, and ready to be used by the PLM for the upload process.

### Additional CD information:

- Clicking this button allows the user to view the program file on the CD. This feature can be used if the user is familiar with HCT products and has all the other programs installed and only requires the **PGM** file.
- Clicking this button allows program developers with the **HCT Intella™ suite**, to access the raw un-compiled program files for use as a training reference or to use the code as a template for inclusion in other applications or as a base to add logic features to this application.



- Clicking this button takes the user back to the previous page.
- This button takes the user directly to the **High Country Tek, Inc** software download page ( Internet connection required here ) for all software support and extra information when available.

### Before you call for help:

- Check ALL cables to and from the computer and epc-2 Module are correctly connected and in good working condition.
- The epc-2 module has power applied as required
- The program ( using the \*.PGM file ) has been uploaded correctly
- The PC user interface has been installed correctly and is communicating with the epc-2
- The valves are connected correctly and hydraulics are operational

### If you have problems with this product and wish to speak to a technical representative, please have the following information ready:

- Operating software type ( i.e. Windows XP Professional e.t.c. )
- Module part number
- Module Serial number ( from rear label by connector )
- If you are using a USB to serial converter – model and part number

### Then do the following:

- 1) Contact the distributor where you purchased the epc-2 module and software CD requesting support.
- 2) If you purchased the controller direct from HCT, go to our website for information or call 1 530 265 3236 and ask for the customer service department.



## Program Loader Monitor - PLM

### 1) Introduction:

The Program Loader Monitor (PLM) is used to download programs to the epc/DVC family of controllers and to display information from the unit. It runs on your Windows PC / Laptop / TekBook and uses a RS232 cable to communicate with the chosen DVC/epc module.

### 2) Connecting to the epc/DVC Family:

The epc/DVC controller uses the RS232 standard to communicate between itself and the PC. If a traditional 'D' sub-miniature serial COMM port is available, please use this port or, use one of the HCT recommended USB to serial converters to ensure correct connection. Full details can be found on our website, and make sure that the converter software drivers are fully installed as recommended. For a standard 'D' sub-miniature port follow the directions below:

- Install the Program Loader Monitor from the application disk provided, following all on-screen instructions.
- Apply power to the DVC module.
- Locate an open serial communications port on your Windows PC.
- Plug one end of the epc/DVC Family RS232 serial cable into the chosen serial port (i.e. COM1, COM2, COM3, etc.) on the computer.
- Plug the other end into the epc/DVC serial cable WeatherPack connector that comes from the epc-2 module main connector.

### **Important Notes – Accidental programming mode on epc-2 module:**

If the RS232 serial cable is connected to the epc/DVC module and the Program Loader Monitor program is not running, the epc/DVC controller may enter programming mode on power up, indicated by NO LED illumination at all ( NO power ON e.t.c. )

To exit accidental programming mode try one of these solutions below:

- **START** the Program Loader Monitor program ( this takes control of the COMM port ) and cycle power to the epc/DVC module
- Unplug the RS232 cable and cycle power to the epc/DVC module.

To **exit programming mode at ANY time**, disconnect the RS232 cable from the epc/DVC module and cycle power to the controller.

### 3) Starting the Program Loader Monitor:

From Windows press the “Start” button and then from the menu select **HCT Products\Intella\PLM v4.76**

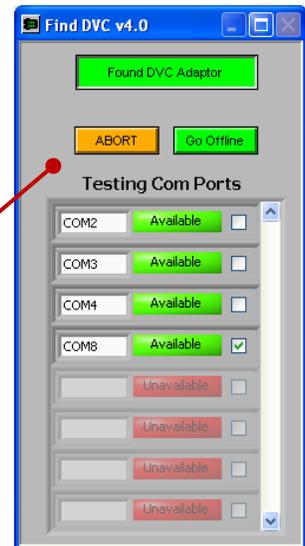
**OR**

Using Windows file explorer, locate the file here:  
**C:\Program Files\HCT Products\Intella\PLM v4.76.exe**

The first time you execute the Program Loader Monitor program, the following screen appears:

The port selection should be automatic but under certain circumstances or if you have previously used the COMM or USB ports for other equipment, you may have to manually select the port to be used or to reset the PC hardware manager, restart your computer.

If required, select the PC COMM port to which your RS232 cable is attached or which has been allocated by the USB driver installation.



### 4) Main Program Loader Monitor Screen:

The first information screen you will see after port selection is successful is shown here.

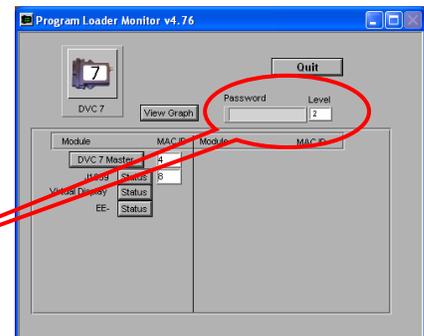
This window shows all of the modules in your applications project. Module icons that are blurred indicate that the epc/DVC controller is not communicating with that module.

You will need to enter a password to gain access to the download feature of the Program Loader Monitor.

For ease of use, the password for this application is-

The word: **TWO** ( case sensitive )

This must be typed into the box called ‘Password’ and the number ‘2’ must appear under the word ‘Level’ to indicate that you are now authorized to upload an application program to the controller.

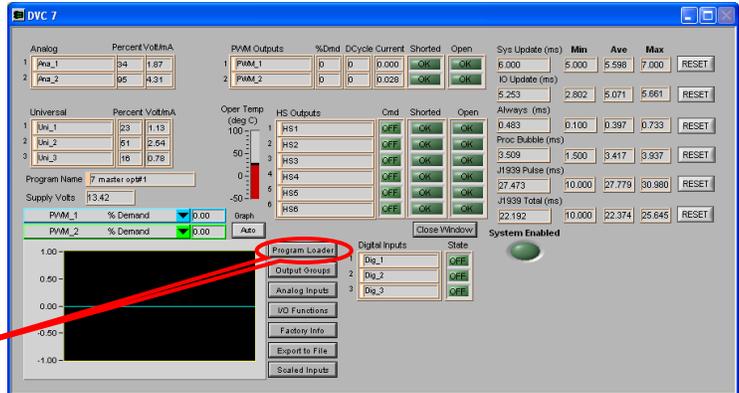


Once the password has been successfully entered, the user **MUST** click the ‘DVC 7 Master’ button shown here to proceed and open the Master Display screen shown below:



### 5) DVC Family Master Display:

The Program Loader Monitor is used to observe the actual input and show specific information as your application executes. The names assigned to them in the Programming Tool appear on the main screen shown below. The runtime graph is used to plot any two variables as fast as the computer can collect data from the epc/DVC.

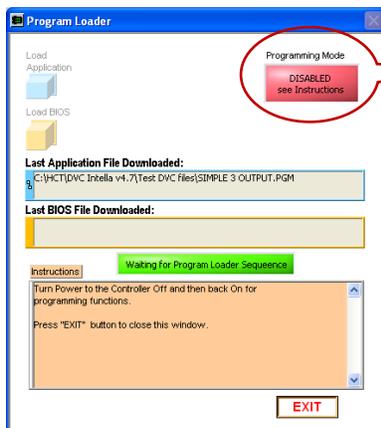


To allow the next step, and load the application, the user MUST click the 'Program Loader' button shown here:

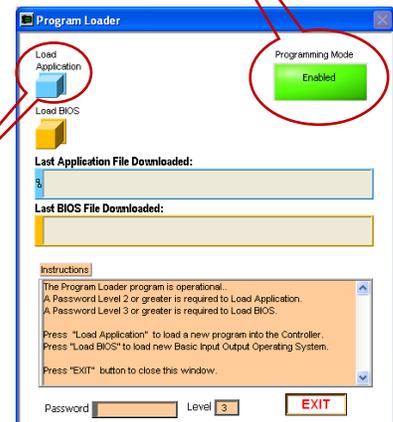
### 6) Program Loader

Once clicked the Program Loader button sets a signal in the serial cable that allows the epc/DVC to go into programming mode when power is cycled.

After selecting the Program Loader button in 5) above, and power cycling the epc/DVC, look for the indicator in the Program Loader window to change color and determine that the epc/DVC controller is in programming mode:



- 1) The **Programming Mode** indicator will go from RED ( disabled shown here ) to GREEN and say "Enabled" as below – the module is now ready to accept a new program.



To load your new application, select the **Load Application** button shown here.



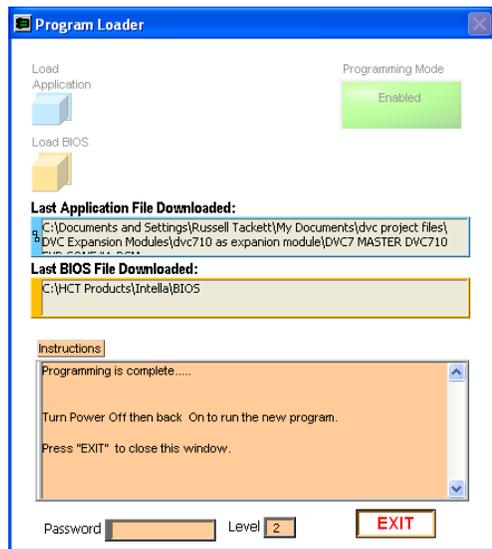
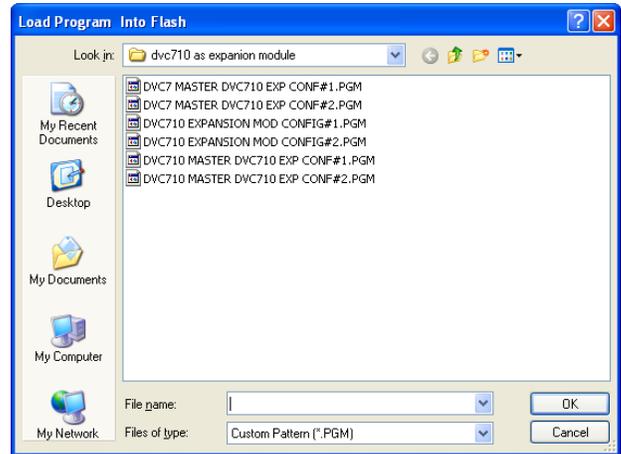
Once the blue button is pushed, the window shown to the right will open and allow the user to browse and navigate to the file for the project with the **.pgm** file extension.

The browser window will filter all other file types so only valid files will be seen.

Once the correct application file has been found, the user should click one to highlight the choice in the list, then click the 'OK' button.

At this point, the program will be retrieved from the location and program download to the epc/DVC will begin automatically.

The download should take approx. 90 seconds to complete and there is a progress bar that moves across the screen from left to right.



After the program is successfully uploaded into the epc/DVC module, the screen will after a few seconds, change to the screen shown here.

The user is instructed to cycle power to the epc/DVC module to take it out of program mode and into normal operation.

To finalize the operation, the user should click the 'EXIT' button to correctly close the Program Loader Monitor (PLM). This informs Windows and the PC that any resources or communications ports are now free to be allocated to other devices as required.

**END of instructions:**

### Frequently Asked Questions:

**Description:** DVC controller goes into programming mode when powered on.

**Models Affected:** epc-2, DVC7

### Background:

**The epc/DVC controller is in programming mode when ALL the LED's are OFF – even the power LED will extinguish in this mode.**

The epc/DVC controller normally goes into programming mode when the Program Loader Monitor running on your PC is active, the serial RS232 cable is connected between the PC and the epc/DVC controller, you are attempting to load an application and the epc/DVC power input is cycled. The epc/DVC, when it is powered cycled looks at the RS232 lines (RTS specifically) to decide if it should go into programming or normal execution mode. On some PCs depending on the installed RS232 driver and the last program to access the serial port the RTS line can be left in a state where the epc/DVC believes it should go into Programming mode even though the Program Loader Monitor is not running.

### Solution:

To ensure that this does not happen, disconnect the serial cable from the PC or the epc/DVC controller and power cycle the epc/DVC. Reconnect the cables, and operate as normal.

### Module & Network Status (MS/NS):

#### Module Status (MS) (R/G):

- Off – There is no power applied to the Module.
- On green – The module is operating in a normal condition.
- Flashing green – Device is in standby state, May need commissioning.
- Flashing red – Recoverable Fault.
- On red – Module has an unrecoverable fault.
- Flashing Red/Green – Device is in self-test.

#### Network Status (NS) (R/G):

- Off – There is no J1939 device (or other epc/DVC) in the project.
- Flashing green – J1939 device in project but communication has not been established.
- On green – J1939 communication has been established.
- Flashing red – The J1939 communication is in a timed-out state.
- On red – The device has detected an error that has rendered it incapable of communicating on the network.

### epc-2/DVC 7 Module





## Re-Commissioning epc/DVC Master Modules

### Introduction:

This procedure should be used to regain use of a DVC Master Module ( epc/DVC 7 ) if the module Flash Memory becomes corrupt due to a power interruption during a Application Program download or any other reason. The presenting symptoms include a module that will not communicate with a PC and the Module Status (MS) and Node Status (NS) indicators are flashing green alternately at a one second interval.

If the user has this situation, we recommend you contact **High Country Tek, Inc** technical support for guidance on overcoming this mode.

*Thank again you for using HCT products, we appreciate your business.*

*If you need further help, advice, guidance or you would like to discuss further projects using our controllers, please contact your nearest distributor or use the contact information below as required.*



**High Country Tek Inc.  
208 Gold Flat Court  
Nevada City, CA, 95959.**

**Customer Service  
Phone: 1 530 265 3236  
E-mail: [info@hctcontrols.com](mailto:info@hctcontrols.com)**

**[www.hctcontrols.com](http://www.hctcontrols.com)**

---