ABB

TOTALFLOW®
Technical Bulletin 73

Flash Memory

Totalflow Technical Bulletin

Version 1.0, Revision AA (8 January, 2001)

ABB

1. **Purpose**

To describe how to install, load, and use Flash memory.

2. Description

Caution: You should only load Flash memory with programs from the same family of EPROM that is in the flow computer. For example, you could load a Flash Program of 2015489-013 with a ROM program of 2015489-005, but you wouldn't want to load that same program with a ROM program for a pulse meter. The reason for this is a Flash program is warm booted in the computer and the memory map is still set up for the ROM program that is on the motherboard. The warm boot does not clear the memory map and you could get some erroneous data or the flow computer could even lock up.

If you have loaded the Flash program, you may re-boot without losing your Flash program. A warm boot, by either typing "**boot=WARM**" in the Terminal mode or by removing the charging source and the battery, but leaving the Lithium battery connected will cause a warm boot. This will retain all of your data. If you cold boot by additionally removing the Lithium battery, the flow computer will restart with ROM program. You may start the Flash program again by typing "**boot=FLASH**" in the Terminal mode. The flow computer will restart with the Flash program.

Note: The commands after the equal sign must always be in <u>CAPS</u>.
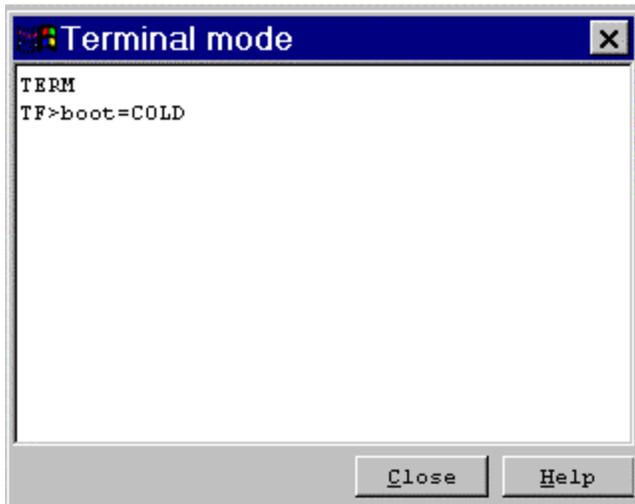
You can type "**boot=COLD**" in the Terminal mode and the flow computer will clear its memory map, and will restart the flow computer in either ROM or FLASH depending which program you were running at the time you typed in "**boot=COLD**".

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Exception: *You can cross families of EPROMs, if you can Load the Flash program, Connect to flow computer, and get to the Terminal mode and type in "**boot=COLD**". This will clear the memory map and the flow computer should work OK. Remember that if you COLD boot the flow computer by removing power sources and lithium battery, the flow computer will boot from ROM and reinitialize all data to default values.*

Installing Flash Memory

(Note: You should back up your configuration and data before installing Flash memory.)

To install Flash memory in the flow computer, disconnect any charging source, battery and Lithium battery. Make sure the Flash chip indention aligns with the indention on the 6700 motherboard socket. On the 6400 make sure the cut corner of the Flash chip is pointed toward the same corner of the flash socket.

Loading Flash Program

Incorporated in PCCU32 is a program to allow users to download software to devices that support flash memory such as the Models 6400 and 6700 flow computers.

Procedure For Downloading Software to Flash Memory:

Step 1 Connect the PCCU cable to the device.

Step 2 Start the PCCU32 program and single click the Connect Icon.

Step 3 Once connected, go to the Operate Menu, then single click the Flash Download
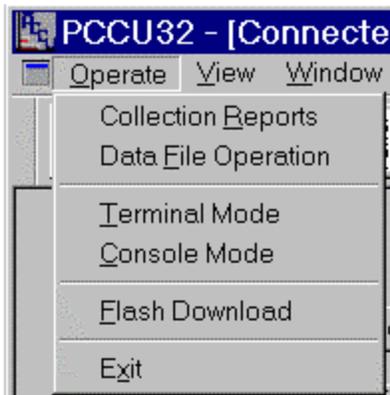
menu.

Step 4 Single click the Next button.
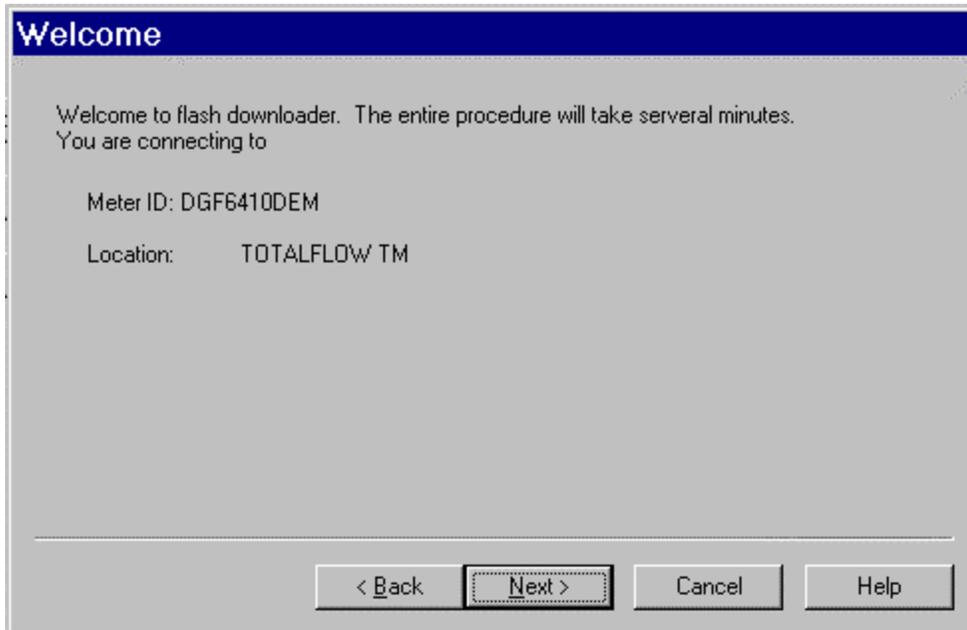
Step 5 Enter the path and file name where you have stored the file or click the Browse button to locate the flash file (*.mot).

Flash File

Enter flash file name:

Automation\Development\Software\Flash Programs\6700\2015489\VM.mot

Browse...

< Back   Next >   Cancel   Help
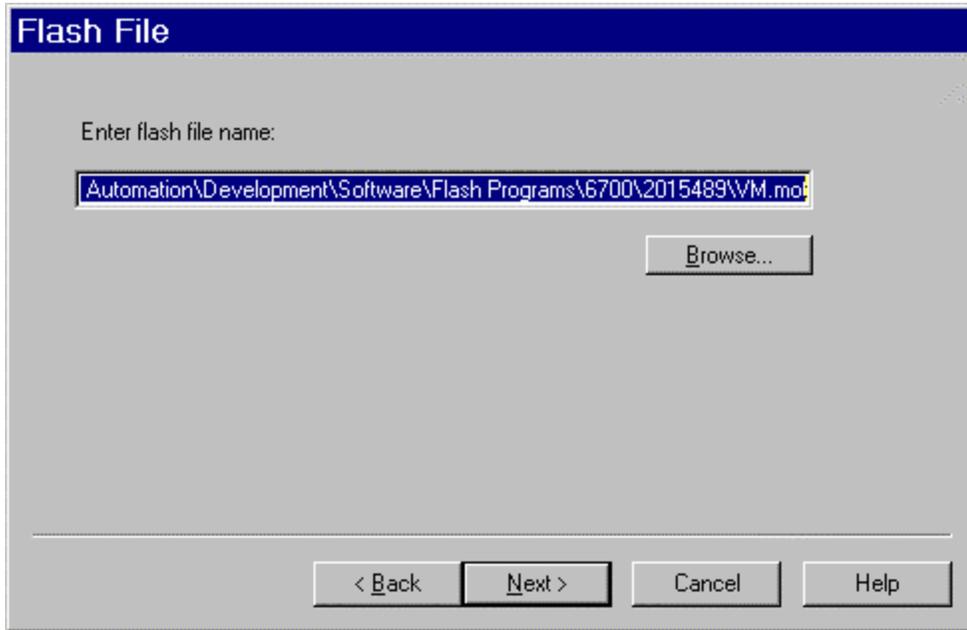
Step 6 Single click the Next button and note the text on the screen.

Step 7 Single click the Start download button. As the program sequences through the steps, it will provide the status in the Status window and check off the three sequences as they complete. The number of bytes downloaded is also continually updated. Below is the status of a typical sequence.

Programming

The program will perform the following steps once you click on "Start download"

☑ Start the flash loader in FCU
☑ Erase the current flash
☑ Program the flash

Status
Load File C:\Temp4\EB.mot
 Reading Load File...
 End of file: 19381 Records
 File Read: 304447 Bytes, CheckSum 0FF2
Booting Flash Loader...
 Flash Loader Booted.
Erasing Flash...
 Erase Complete.
Loading Flash...
 Load Complete.

Bytes downloaded   353026

Start download

< Back   Next >   Cancel   Help

Step 8 After the download is complete, you have the option of letting the program reboot the device. If Yes, it will be booted from flash. If No, may be warm started by removing the batter and charger sources, and leaving the lithium battery attached. This may boot from ROM or FLASH depending on the revision of software currently running in the ROM. Older revisions of FCU software will always try to boot from FLASH on a warm start if a valid program checksum is calculated in the FLASH memory. Newer revisions of FCU software will warm start from the device running when the unit was powered down. An explicit command – "boot=FLASH" or "boot=ROM", is required to select a different program source.
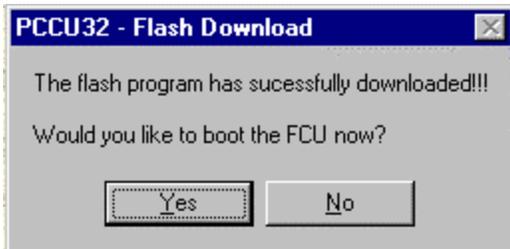
Step 9 After answering Yes or No, click the Cancel button. If PCCU32 is not closed out and left connected to the device, it will go through a reconnection process once the device has completed it's boot-up sequence.

3. Conclusion

If you have any questions concerning these procedures please call TOTALFLOW TECHNICAL SUPPORT at (800) 442-3097, press 2.