

FLASH MODULE FOR EZPLC

Module to back up and distribute user program for EZPLC

www.EZAutomation.net

1-877-774-EASY

1-877-775-EASY (Fax)

EZAutomation,
4140 Utica Ridge Road,
Bettendorf, IL 52722

© Copyright 2009 AVG Automation



Document Revision History:
April 2009: Initial Release

FLASH MODULE FOR EZPLC

1. Introduction	4
1.1 Part Numbers:	4
1.2 Features:.....	4
1.3 Requirements:.....	4
2. Specifications	5
3. Installation and Wiring	5
4. Creating user program backup.....	6
Pre-requisite.....	6
Caution	6
Procedure.....	6
5. Restoring User Program from the module.....	8
CAUTION:	8
Procedure:.....	8

FLASH MODULE FOR EZPLC

1. Introduction

Flash module is used with EZPLC. The purpose of the module is to store user program (ladder logic) on a plug-in module. It can be used by end users to keep backup of their user program, and restore those when needed without bringing out a computer and running EZPLC Editor.

OEMs can use this module to distribute updated ladder logic to their customers. Customer can upgrade the ladder logic using the module without the need for a computer and editor software.



1.1 Part Numbers:

EZIO-PRGM: Flash module for user programs

1.2 Features:

- Module to back up and restore user program (Ladder Logic) on EZPLCs

1.3 Requirements:

The module requires

- EZPLC Firmware version D.12 or later
- EZPLC software editor version 1.6 or later

2. Specifications

- Module can be used in any slot (except slot 11 and 12 of the 12-slot base) of the EZPLC base
- Module provides 128KB of Program storage
- LED indicators :
 - PWR: Green LED, Indicates Power to Module is ON
 - BUSY: Green LED, Indicates that the flash memory on the module is being accessed (Power to the PLC should be not turned off during when flash memory is being accessed)
 - PGM: Green LED. Indicates status of backup or restore operation
 - ERR: Red LED, indicated error in Backup or restore operation.



3. Installation and Wiring

For creating backups, you can install one or more modules on a PLC base to program. (PLC base need not match the base size of target PLC). The editor would detect all the installed modules and prompt you to select the modules that you want to program.

For restoring user program: An already programmed module can be installed in any slot of the EZPLC. Module must be installed only during backup or restoring of the ladder logic. EZPLC automatically detects module on power up and restores the program. You would need to remove module and power cycle to PLC to get the control program functioning.

Note that if EZPLC detects a module in any slot, it suspends its normal control operation.

No wiring is required.

4. Creating user program backup

User program backup is created using PLC editor. Follow below given steps to create backup of user ladder logic on the module.

Pre-requisite:

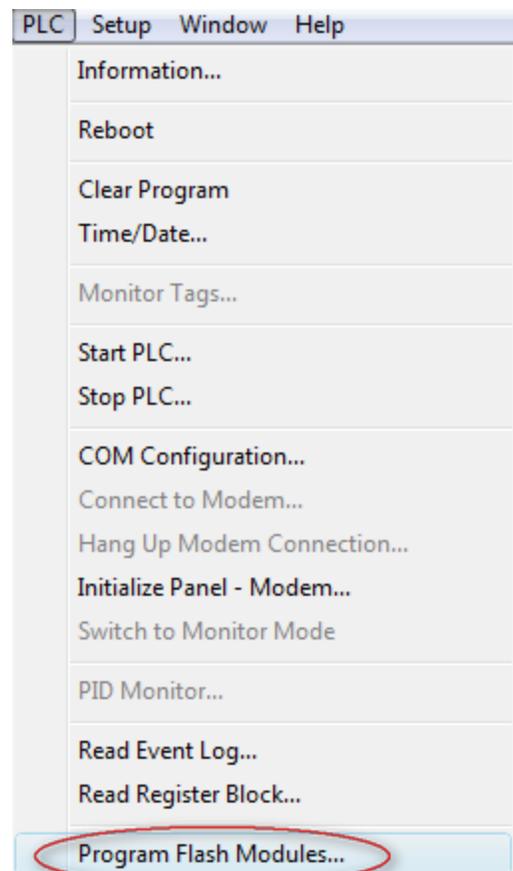
- You would need PLC editor version 1.6 or later.
- An EZPLC with firmware revision D12 or later (Number of slots on the ezplc used for backing up modules may be different than the slots in the ezplc used in ladder logic. For example an OEM using a 4-slot EZPLC can use a 12-slot EZPLC to program 10 modules (slot 11 and 12 cannot be used) simultaneously for his 4-slot EZPLC programs)

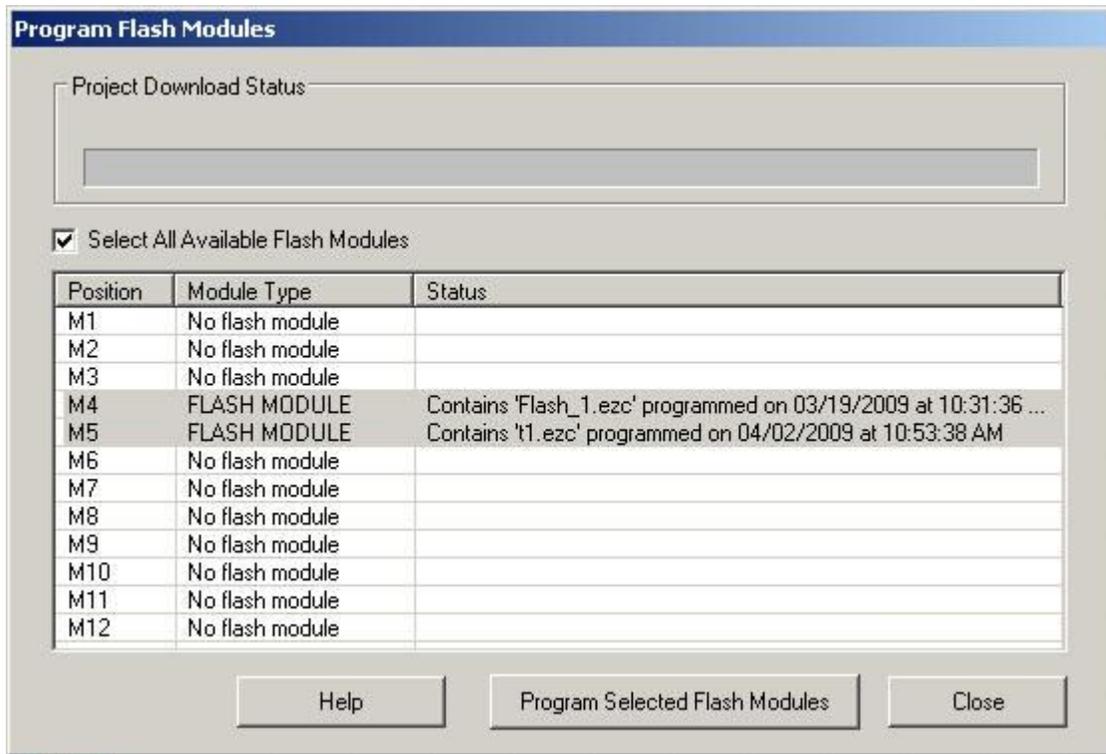
Caution

The ladder logic already in the PLC used for creating back will be overwritten as soon as you install a module and turn power on. If necessary, make a copy of the program by reading it back and saving it on a PC BEFORE installing any flash module on the PLC

Procedure

1. Install as many modules as you would like to program with the backup of the user program (ladder logic).
2. On Power up, the module would turn on PWR, PGM, and ERR indicators briefly. EZPLC would then automatically restore the program from the module detected in the lowest slot number, and turn on appropriate indicators indicating result of the restore (the indicators are discussed in Restore section below. For the time being ignore these). (This is unintended restore but would be overwritten after back up procedure).
3. Run EZPLC Editor and connect to the EZPLC over serial or Ethernet connection.
4. Open the program that you want to back up on the flash module(s).
5. Click Menu PLC>Program Flash Modules.
6. The EZPLC Editor communicates with the EZPLC and find out which slots have flash Modules, and presents dialog box on next page:





The dialog box displays 12 possible module positions (note that slot positions 11 and 12 cannot be used for Flash module). It also shows on which positions the editor detected Flash Modules and the name of the program on each module if the module is programmed.

(If PLC Editor is unable to communicate with the PLC, it will display an error message.)

7. Select as many modules as you like to program. You may select all modules by checking the box "Select All Available Flash Module." Click "Program Selected Flash Module." The editor downloads the open ladder logic to the EZPLC and initiates programming each module. During the writing of each module, its BUSY indicator would blink green.
8. Indicators: on Successful programming of each module, the PGM indicator of that module turns solid green. If there is any problem in programming the module, its ERR indicator would blink RED.



Successfully Programmed
PGM= **Green**



Unsuccessful Programming
ERR= **Red Blinking**

5. Restoring User Program from the module

CAUTION:

On Power up, the PLC program is replaced by the program from the module. The previous program of the plc would be overwritten. If you need to save previous project, read it using PLC editor and save on PC.

Procedure:

1. Install the flash module that has already been programmed in any slot of PLC.
2. Turn on Power; on power up, the PLC detects the module and tries to restore the user program from the module. On power up, PWR LED is on, and PGM & ERR LEDs are on briefly.
3. During the restore, BUSY LED blinks. (Don't turn off the power to PLC while BUSY LED is blinking. Doing so may leave PLC in a unusable state).
4. Based on the result of the restore, indicators are turned on as shown below:

LEDs	Reason	Result
PGM = off ERR= RED	Invalid Module (Module is not formatted* as a backup module)	No change in existing user program (ladder logic) of the PLC
PGM = off ERR= Blinking RED	Problem in restoring: The problem may be in erasing or writing the onboard flash of PLC, or program on module is larger than the on-board flash size.	No change in existing user program (ladder logic) of the PLC
PGM= Blinking GREEN ERR= off	Either the module did not have a user program, or the user program on the module and on PLC are same	No change in existing user program (ladder logic) of the PLC
PGM= Solid GREEN ERR= off	Successful restoration of user program	Change: The PLC program has been replaced by the program on the module

*All modules are formatted in factory. However, the backup process automatically formats a module if it detects an unformatted module. So if you somehow got an unformatted module, you would still be able to backup a user program on it.

5. Turn the power to the PLC off, and remove the flash module. If the program restore was successful (see table above), then on power-up, the PLC would execute the new program. (Please note that the PLC does not execute any control program while a flash module is installed in the PLC.)