PLC Program Download Device
## Model PPDD
IC690ACC990-CC

The PLC Program Download Device (PPDD), IC690ACC990 allows you to transfer logic applications, reference table data and configuration between a Series™ 90-30 or VersaMax® PLC and a USB memory stick. The PPDD is an ideal tool for updates and maintenance of PLCs in the field. Configuration data can include Ethernet Global Data and Advanced User Parameters for the Ethernet interface. Once the data is copied to the USB memory stick, it can be written to one or more other PLC CPUs of the same type, with no programmer needed.

For details on the types of CPUs supported, refer to "Functional Compatibility" on page 2.
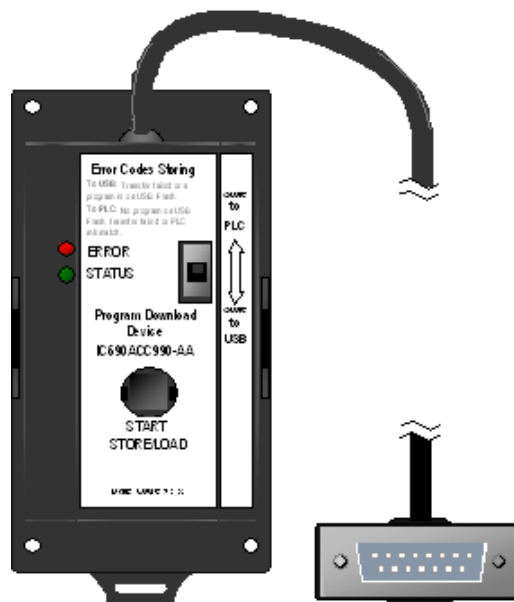
Features

¦ Plugs directly into the RS-485 serial port located on the Series 90-30 or VersaMax PLC.

¦ Pushbutton switch initiates update from the device to a PLC

¦ Can be mounted on a DIN rail or directly on a cabinet.

¦ Goes to sleep mode automatically after 2 minutes of idle time.

¦ Allows user configuration of security level, download operation and flash operation.

¦ Power for the PPDD is supplied by the PLC serial port to which it is connected and is isolated from the PLC's primary power input. Therefore, the PPDD does not require a battery pack or external power supply.

Specifications

Dimensions	950mm x 50mm x 30mm (3.74 in. x 1.97 in. x 1.18 in.)
Power Requirements	200mA maximum at +5 VDC from the Series 90-30 or VersaMax serial port

Environmental Requirements

Vibration	10—57 Hz, 0.012" displacement peak-peak 57—500 Hz, tested to 2.0g acceleration (IEC60068-2-6, JISC0911)
Shock	15G, 11ms sinusoidal (IEC60068-2-27, JISC0912)
Operating Temperature	0°C to 60°C: [inlet] (32° to 140°F)
Storage Temperature	-40°C to +85°C (-40° to 185°F)
Humidity	5% to 95%, non-condensing

Functional Compatibility

Operation of the PPDD requires the following products:

- Proficy Machine Edition programming software
- A commercially available memory stick with a Type A USB connector. An empty memory stick is recommended.

  The following memory sticks have been tested for use with the PPDD:

  - GE Intelligent Platforms 128MB, IC690USB128
  - Transcend JetFlash V30 1GB, TS1GJFV30

- A supported PLC CPU:

  - VersaMax modular CPUs that have an available RS-485 serial port
  - VersaMax Micro CPUs that have an available RS-485 serial port (*Not compatible with PPDD firmware version 1.01.* See http://support.ge-ip.com/ for compatible version.)
  - Series 90-30 CPU models CPU350 and higher

  To use a memory stick with CPUs that have different firmware versions, you must load the data from the PLC that has the oldest firmware version. The memory stick will then work with that firmware version and all later versions.

PPDD does not support 90-30 CPU models prior to CPU350

The PPDD does **not** support the following 90-30 CPU models:

IC693CPU311
IC693CPU313
IC693CPU321
IC693CPU323
IC693CPU331
IC693CPU340
IC693CPU341

The PPDD issues some requests that are not supported by these early 90-30 models. When a load to the USB memory stick is attempted with these CPUs, the load fails when the CPU rejects the unsupported request. The PPDD slowly flashes the red Error LED to indicate a failure and records the following entry in the load.log file: 27 xx 01 00 (xx is the hex-ASCII value of the first letter of the controller target name). For additional error record definitions, refer to "Data Transfer Errors" on page 14.

Current Available to Memory Stick

VersaMax: 140mA maximum

Series 90-30: 500mA maximum.

Note: Available current is affected by 90-30 system configuration. System use of backplane +5V supply may limit the maximum current available to the PPDD and any memory stick used with it.

Release Information

Release 1.04 adds the ability to change the baud and parity communication options, and corrects the problems listed in "Problems Resolved by Version 1.04."

Release History

Catalog Number	PPDD Firmware Version	Date	Comments
IC690ACC990-CC	1.04	October 2010	Hardware update to change labeling. No changes to functions, operation or compatibility.
IC690ACC990-BC	1.04	May 2009	
IC690ACC990-BB	1.01	August 2008	
IC690ACC990-AA	0.26	February 2008	

Updates

PPDD firmware is field upgradeable to the latest version using the upgrade kit. This is a firmware upgrade only. The hardware is not field upgradeable.

To update the PPDD firmware, you need:

- ✍ A USB type A to type A cable
- ✍ ATMEL Flip software, which can be downloaded from http://www.atmel.com/dyn/products/tools_card.asp?tool_id=3886
- ✍ Firmware upgrade kit 82A1484-MS10-002-A0, which can be downloaded from http://support.ge-ip.com/

To install the upgrade, refer to Instructions for *Upgrading Firmware for the PLC Program Download Device* drawing, 82A1485-PM01, which is provided in the upgrade kit.

Problems Resolved by Version 1.04

PPDD now handles the AUP file for the CPU372 properly

When loading a project with an AUP file from the CPU372 to the USB flash drive, the PPDD was not providing required parameters in the request that read the AUP file. Consequently, the CPU372 returned an error. On subsequent Store to PLC attempts, the PPDD did not store the AUP file to the CPU372.

PPDD is now compatible with VersaMax Nano/Micro

The version 1.01 firmware for the PPDD was not compatible with the VersaMax Nano/Micro PLCs. If version 1.01 of the PPDD was used to store a project to the VersaMax Nano/Micro, the PLC was put into stop-fault mode. Versions 1.04 and later correctly support VersaMax Nano/Micro PLCs.

Absence of store.log file in PLC directory no longer prevents recording of errors during Store to PLC operation

If the user deleted the STORE.LOG file in the PLC directory, the PPDD did not re-create the file at the start of the next store operation. This prevented the recording of new errors in subsequent Store to PLC operations. In versions 1.04 and later, the *store.log* file is generated correctly.

New Features and Enhancements

New Communication Options

The *options.txt* file supports two new keywords (BAUD, PARITY) that can be used to specify characteristics of the RS-485 serial port to which the PPDD is connected. The BAUD keyword allows selection of 19200 or 9600 baud. The PARITY keyword allows selection of odd, even, or no parity. For syntax, see "Using an options.txt file to specify download options" on page 12.

Relaxed Syntax Rules for options.txt

The statements in the *options.txt* file are now case insensitive. Extra space characters are now allowed within statements and at the end of statements.

Restrictions and Open Issues

PPDD does not detect or indicate CPU or USB communication timeouts

If the PLC CPU does not respond in a timely manner to a request from the PPDD, or if the USB flash drive does not respond in a timely manner to a read/write request, the PPDD indicates a communication problem by flashing the red Error LED, and puts an error code into the log file. Currently, the PPDD detects communication problems only upon the initial handshake with the PLC, and displays a double-flash pattern on the ERROR LED if communications cannot be initiated. But if communications with the PLC are subsequently lost, the PPDD does not detect the loss and continues to flash the green LED as though there was no problem.

There is no timeout mechanism for the USB flash drive. If the drive has insufficient free space, or if the drive formatting has become corrupted, read/write requests to the drive may fail even while the PPDD continues to flash the green LED.

The following conditions may cause communication timeouts:

- If the CPU is responding to a large quantity of interrupts from other modules, such as an Ethernet module, it may not be able to keep up with the serial communication traffic coming from the PPDD. If this type of timeout occurs, retry the data transfer.

- If the USB memory stick is running out of space, data transfers to the memory stick become progressively slower, and ultimately the drive fails to respond.

Operational Notes

PPDD is not compatible with some types of USB memory stick

Each type of USB memory stick has its own power usage characteristics. Some combinations of memory stick, CPU, and power supply perform poorly, resulting in a variety of problems. The following problems have been observed for some types of memory stick:

- Failure of the PPDD to respond to the START button.

- Communication problems between the PPDD and memory stick, or between the PPDD and CPU. When a communication attempt fails, the PPDD waits indefinitely for a response while still flashing the green Status LED, thus giving the false impression that the operation is proceeding normally.

- Corruption of the file system on the USB memory stick after a load from CPU. The corruption may involve one or more files, and may require the memory stick to be reformatted.

These problems can be avoided by using a USB memory stick that has been tested for proper operation with the target CPU. For details on the types of memory sticks supported, refer to "Functional Compatibility" on page 2.

Cannot Load/Store on flash drive with insufficient free space

When performing a load from the CPU to the memory stick, the PPDD does not check if the drive has sufficient free space to hold the downloaded data. If there is not enough free space to hold the data, a variety of problems may occur:

- As space on the drive becomes critical, operations with the memory stick become progressively slower. Finally the drive may not respond, and the PPDD waits indefinitely because it does not implement timeouts.

- When the load stalls as described above, the PLC folder on the memory stick is left in an indeterminate state. Some of the files may be corrupted. This can be fixed in some cases by using "chkdsk /f" at the Windows command prompt. In severe cases, the memory stick may need to be reformatted.

To avoid performance issues during the load from CPU, an empty memory stick is recommended.

PPDD does not detect serial port configuration

The PPDD normally requires the PLC CPU's serial port to be set to 8 data bits and 1 stop bit, with baud and parity set to match the settings in the *options.txt* file. The *options.txt* file may be used to adjust the baud (19200, 9600) and parity (odd, even, none). If the serial port configuration is mismatched with the PPDD settings, the PPDD will fail to connect to the CPU, and after 5 seconds it will begin to display a double-flash pattern on the red ERROR LED.

PLC directory may optionally be renamed

When a load-to-USB operation is performed, the PPDD creates a directory named *PLC* on the USB flash drive. You may rename this directory and the PPDD will use that folder for subsequent Store to PLC operations. The new directory name must begin with the letters *PLC* and not exceed 20 characters in length. (Example: *PLCxyz*) When attempting the Store to PLC operation, the PPDD requires that there be one and only one directory that starts with the letters PLC; otherwise the operation will fail.

Selector switch behavior

The PPDD reads the position of the selector switch when the Start pushbutton is pressed. Changes in the switch position are ignored while an operation is in progress.

Sleep mode entry behavior

After a successful load or store operation, the PPDD normally enters sleep mode (with no LEDs on) after 2 minutes of idle time. However, if the PPDD experienced a failure during the operation as indicated by the ERROR LED, the PPDD does not enter sleep mode. Sleep mode is not intended to hide an error condition. There is one exception: if there is no flash drive attached to the PPDD when it is powered up, the ERROR LED is turned off after 20 seconds.

Return to Run mode after successful Store to PLC operation

If the PLC is in Run mode when the PPDD performs a Store to PLC operation, the PPDD will transition the PLC to STOP mode before proceeding with the store. If the store completes successfully, the PPDD returns the PLC to RUN mode. However, if an error occurs during the store, as indicated by the ERROR LED, the PPDD leaves the PLC in STOP mode.

### *Double-quote characters in the security.dat file*

When enclosing passwords in double-quotes, it is important to use the proper double-quote character. The PPDD recognizes only the standard ASCII double-quote character " (22 hex, 34 decimal), also known as straight quotes. Some editors such as Microsoft Word may automatically insert smart quotes ("”), which distinguish the left and right quote characters. A simple editor such as Notepad is recommended because it uses straight quotes.

Installation

The PPDD should be mounted near the PLC's RS-485 serial port. (The PPDD has an 18" cable that connects to the port.)

Mounting on a Cabinet

Use four appropriately sized screws to attach the PPDD to the cabinet.
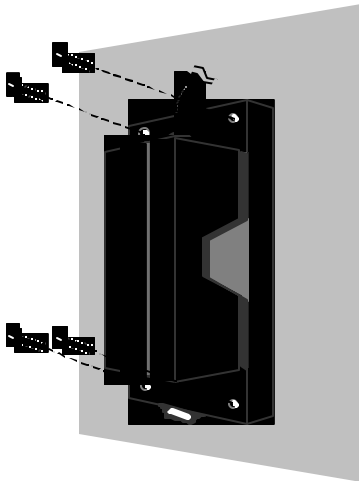
Mounting on a Standard DIN Rail

1. Pull down the locking tab on the bottom of the PPDD.

2. Slide the PPDD onto the DIN rail.

3. Press the locking tab up until it locks into place and secures the PPDD onto the DIN rail.

Removing the PPDD from the Mounting Bracket

If you do not intend to mount the PPDD on a cabinet or DIN rail, you can remove the mounting bracket.

1. Use a flat-blade screwdriver to gently pry open one side of the mounting bracket.

2. Pull the PPDD out of the bracket.

To replace the PPDD in the mounting bracket, simply snap the PPDD into place in the bracket.

## Transferring Data from the PLC to the Memory Stick

Overview

The following figure illustrates the Transfer to USB process. For a summary of LED indications, refer to "Diagnostics" on page 13.
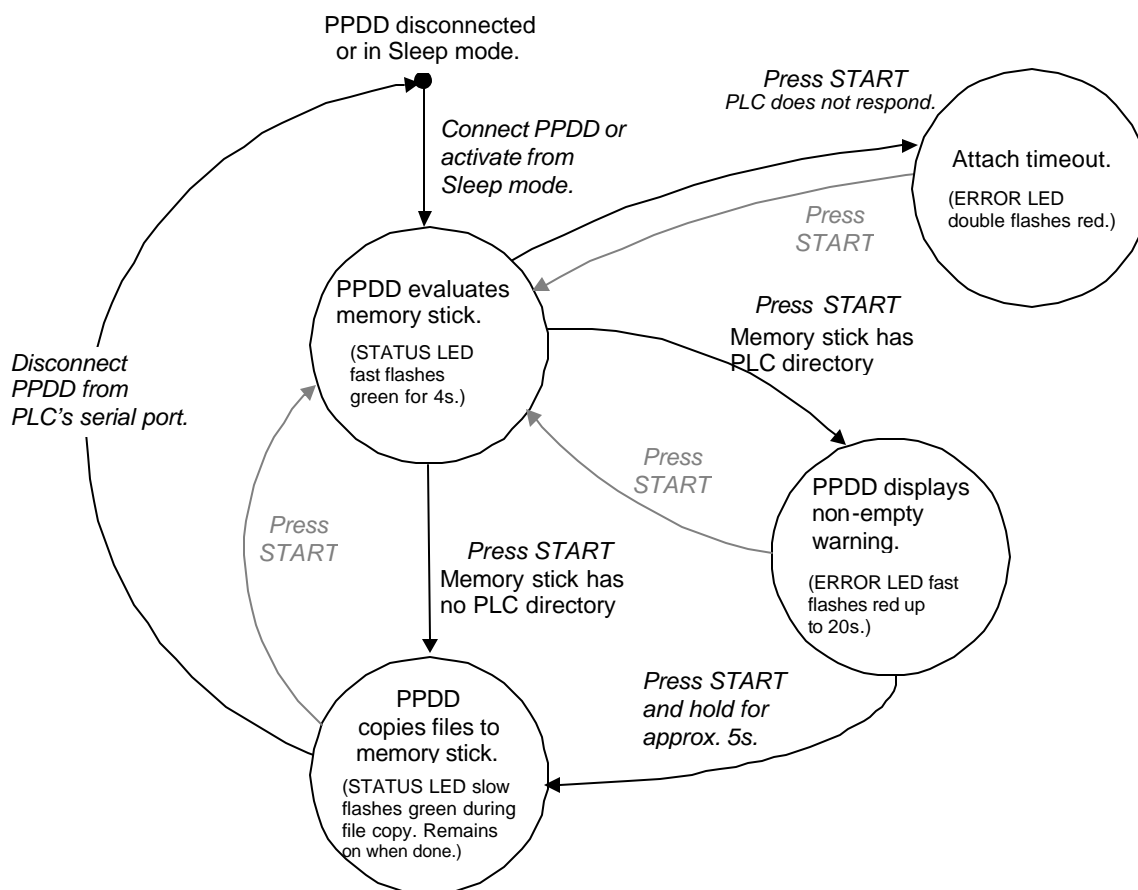
Procedure for Transferring from PLC to Memory Stick

Before starting the transfer:

- The PPDD requires the PLC CPU's serial port to be set to 8 data bits and 1 stop bit, with baud and parity set to match the settings in the *options.txt* file.

- To avoid performance issues during the load from the PLC, the use of an empty memory stick is recommended.

1. Connect the PPDD's 15-pin DSUB to the PLC's RS-485 port. Tighten the screws on the connector to secure the connector to the port.

2. Set the selector switch to the Store to USB position.

3. Make sure the PLC power supply is powered up.

   If the PPDD does not have a memory stick installed, the red ERROR LED will flash.

4. Connect a USB memory stick to the port on the bottom of the PPDD. The front of the USB memory stick faces to the right side of the PPDD when viewed from the front.

   The green STATUS LED will flash rapidly for 4 seconds.

Store
to
PLC

Store
to
USB
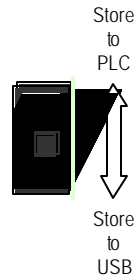
5. Press the START button.

   - If the memory stick is empty, the green STATUS LED will flash slowly while the data is loaded from the PLC to the memory stick.

   - If the memory stick already contains a PLC directory, the red ERROR LED will flash rapidly for up to 20 seconds. To continue the data transfer, press the START button and hold it for 5 seconds. The STATUS LED will flash slowly while the load is in progress.

   Note: When the PPDD copies files from the PLC to the memory stick, it deletes the application files on the memory stick from any previous operation. The PPDDFW.txt and the optional user configuration files, *security.dat* and *options.txt* files, if present on the memory stick, are not deleted.

   - The PPDD copies all the necessary information contained in the project file to the memory stick, disconnects from the PLC, and drops the serial connection. When the load is complete, the green STATUS LED will be steady on.

   - A log file, with the name load.log is generated. If errors occur during the transfer, the file will contain the error code(s) and additional information concerning the failure. If no errors occur, the file will have a length of zero.

Note: If the PLC has a privilege level of 2 or higher enabled, the PPDD attempts to obtain the password from the *security.dat* file. Also, if OEM protection is enabled, the PPDD attempts to obtain the OEM password from the security.dat file. If the PPDD fails to obtain the correct password, it stops the load process, flashes the ERROR LED, and creates an entry in the *load.log* file on the memory stick. For information on using passwords with the PPDD, see "Optional Configuration Files" on page 11.
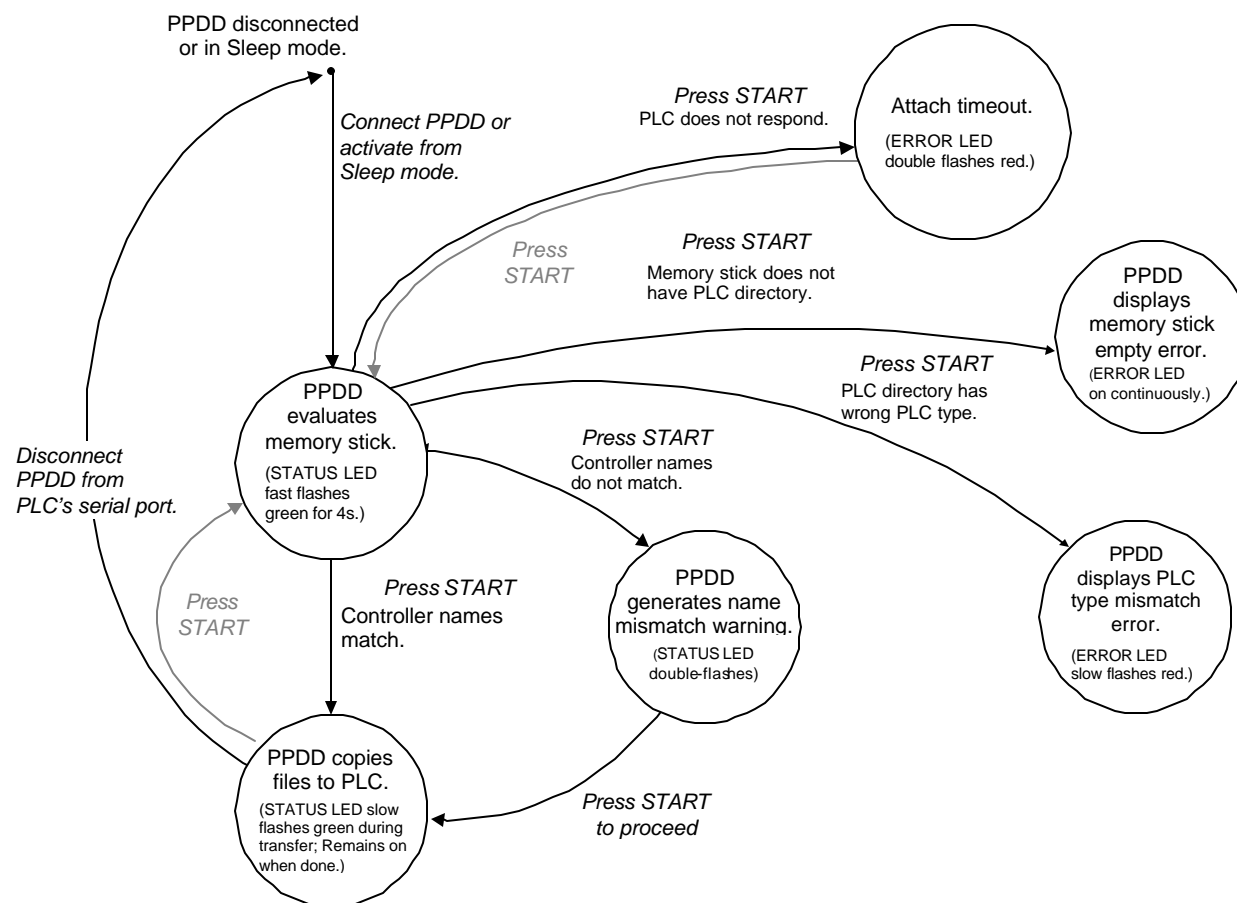
6. To verify the project was successfully loaded from the PLC to the memory stick, store the contents of the memory stick to a cleared PLC CPU and then connect Machine Edition to that PLC.

Transferring Data from the Memory Stick to the PLC

Overview

The following figure illustrates the process for transferring data to the PLC. For a summary of LED indications, refer to "Diagnostics" on page 13.

PPDD disconnected
or in Sleep mode.

*Connect PPDD or
activate from
Sleep mode.*

Press START
PLC does not respond.

Attach timeout.

(ERROR LED
double flashes red.)

*Press
START*

Press START
Memory stick does not
have PLC directory.

PPDD
displays
memory stick
empty error.
(ERROR LED
on continuously.)

*Disconnect
PPDD from
PLC's serial port.*

PPDD
evaluates
memory stick.

(STATUS LED
fast flashes
green for 4s.)

Press START
PLC directory has
wrong PLC type.

Press START
Controller names
do not match.

PPDD
generates name
mismatch warning.

(STATUS LED
double-flashes)

PPDD
displays PLC
type mismatch
error.

(ERROR LED
slow flashes red.)

*Press
START*

Press START
Controller names
match.

PPDD copies
files to PLC.

(STATUS LED slow
flashes green during
transfer; Remains on
when done.)

*Press START
to proceed*

Specifying Store and Flash Operation

An optional file, *options.txt* can be used to modify the Store to PLC operation. For information on the commands supported by the PPDD, see "Optional Configuration Files" on page 11.

Procedure for Transferring from Memory Stick to PLC

<div style="border:1px solid black; display:inline-block; padding:4px 12px;">Caution</div>

When the PPDD copies files from the memory stick to the PLC, it overwrites existing configuration, program files and data in the target PLC.

Before starting the transfer:

- The PPDD requires the PLC CPU's serial port to be set to 8 data bits and 1 stop bit, with baud and parity set to match the settings in the *options.txt* file.

- The PPDD and the PLC must both have either no OEM key password or the same OEM key password for an update to occur. If a PLC that will be updated by the PPDD is protected by an OEM key password, be sure the same OEM password is present in the *security.dat* file on the memory stick; otherwise no update will be possible. For information on using passwords with the PPDD, see "Optional Configuration Files" on page 11.

  If you replace the memory stick in order to use one with the correct controller name, you must first disconnect the PPDD from the CPU serial port and then reconnect it before pressing the START button. This step resets the PPDD. It is not necessary to reset the PPDD for other types of errors.

- If the PLC is in RUN mode, the PPDD automatically sets it to STOP mode, and then returns it to RUN mode when the transfer is complete.

1. Set the selector switch to the Store to PLC position.

2. Connect the PPDD's 15-pin DSUB to the PLC's RS-485 port. Hand tighten the screws on the connector to secure the connector to the port.

3. Make sure the power supply is powered up.

4. If the PPDD does not have a memory stick installed, the red ERROR LED will flash.

5. Connect a USB memory stick to the port on the bottom of the PPDD. The front of the USB memory stick faces to the right side of the PPDD when viewed from the front. The green STATUS LED will flash rapidly for 4 seconds while the PPDD evaluates the memory stick.

Store
to
PLC

Store
to
USB

6. Press the START button.
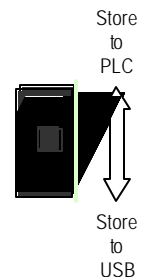
   The PPDD copies all the necessary information contained in the project file to the PLC, disconnects from the PLC, and drops the serial connection. When the transfer is complete, the STATUS LED will be steady on.

   - If the project name on the USB memory stick matches the project name on the PLC, the green STATUS LED will flash slowly (1 sec. on/1 sec. off) while the transfer is in progress.

   - If the project name on the USB memory stick does not match the project name on the PLC, the STATUS LED will double-flash (flash two quick pulses on, pause and then repeat the two pulses). To continue the transfer operation, press the START button.

   - If the PLC has faults before starting the data transfer, the fault tables will be copied to the memory stick as *plcfltbeforestore.dat* (for Controller faults) or *iofltbeforestore.dat* (for I/O faults). After the data transfer is completed, fault tables will be copied onto the memory stick as *plcfltafterstore.dat* and *iofltafterstore.dat*.

   - If the memory stick is empty, the red ERROR LED will be on continually.

   - A log file with the name *store.log* will be generated. If errors occur during the transfer, the file will contain the error code(s) and additional information concerning the failure. If no errors occur, the file will have a length of zero.

- If the PLC has a privilege level of 4 or higher enabled, the PPDD attempts to obtain the password from the *security.dat* file. Also, if OEM protection is enabled, the PPDD attempts to obtain the OEM password from the *security.dat* file. If the PPDD fails to obtain the correct password, it stops the transfer process, flashes the ERROR LED, and creates an entry in the store.log file on the memory stick. For information on using passwords with the PPDD, see "Optional Configuration Files" below.

Sleep Mode

The PPDD shuts down after 2 minutes of idle time. After performing a data transfer, it waits 2 minutes and, if there is no activity, goes to sleep mode, with no LEDs on. If the START button is pushed, the PPDD wakes up.

Optional Configuration Files

You can modify the operation of the PPDD through the use of configuration files that are placed at the root directory on the memory stick. These optional files are: *security.dat* and *options.txt.*

Note: The *security.dat* and *options.txt* filenames must be all lower-case.

Using a security.dat file to specify passwords and access levels

You can use a *security.dat* file to specify any passwords, including the OEM password, that are needed to connect to the PLC.

The *security.dat* must contain all five password lines in the order shown in the following example. If a password is not used, the password line should include a pair of quotes with no enclosed characters (that is, a blank password). Passwords may be one to seven ASCII characters in length. For additional requirements concerning passwords, refer to the user manual for the PLC CPU.

Note: The PPDD recognizes only the standard ASCII double-quote character " (22 hex, 34 decimal), also known as straight quotes. For details, see "Operational Notes."

If the *security.dat* file specifies a blank OEM password, the PPDD can perform load/store operations only if OEM protection is disabled in the PLC. If security.dat specifies a non-blank OEM password, the OEM password must match the value in the PLC in order to allow load/store operations. If security.dat contains an OEM password, but OEM protection is not currently active on the PLC, the PPDD activates OEM protection in the PLC at the conclusion of the load/store operation.

Sample security.dat file

```
Password_Level1 ""
Password_Level2 "abc123"
Password_Level3 "efg456"
Password_Level4 "jkl789"
Oem_Password ""
```

Using an options.txt file to specify download options

An _options.txt_ file is used to specify particular behaviors of the PPDD during the Store to PLC. The option statements can be entered in any order and letter case is ignored.

If an option statement is omitted from the file, the default value will be used.

The PPDD supports the following keyword commands.

Option Keyword	_Values_	_Default Value_	_Description_
Download_LogicAndCfg	Y (yes)	Y (yes)	Logic and Configuration are copied to the PLC.
	N (no)		Logic and Configuration are NOT copied to the PLC.
Download_Data	Y (yes)	Y (yes)	Reference memory is copied to the PLC.
	N (no)		Reference memory is NOT copied to the PLC.
Write_Flash	Y (yes) N (no)	Y (yes)	The downloaded PLC contents (as specified by the previous keywords) will be written to flash upon completion of store.
			If both Download_LogicAndCfg and Download_Data are set to N, the Write_Flash option is ignored.
			No flash operation.
Baud	19200 9600	19200	Specifies the baud rate to be used on the serial port to the PLC. If any value other than 19200 or 9600 is specified, the baud rate is set to 19200.
Parity	E (even) O (odd) N (none)	O (odd)	Specifies the character parity (even, odd, none) to be used on the serial port to the PLC. If any value other than E, O, or N is specified, the parity is set to O (odd).

If you want logic, configuration and reference memory to be copied to the PLC and then written to flash, an _options.txt_ file is not necessary because the default values will achieve the desired results.

Sample options.txt file

If you want to copy only reference memory to the PLC, do not want anything written to flash and want to use default baud and parity values, the _options.txt_ file should contain the following lines:

```
Download_LogicAndCfg N
Download_Data Y
Write_Flash N
```

Diagnostics

LED Operation

LED	LED State	Flash Pattern	Operating State
STATUS (green)	On Steady	None (0 Hz)	Load, store, or memory stick evaluation operation complete.
	Slow Flash	1 second on, 1 second off (0.5 Hz)	Load or Store is in progress.
	Fast Flash	200 msec on, 200 msec off (2.5 Hz)	Memory stick evaluation in progress.
	Double Flash	On for 250 msec, off for 250 msec, on for 250 msec, and then off for 1 second. This pattern repeats.	Controller name mismatch detected (Store to PLC).
ERROR (red)	On Steady	None (0 Hz)	PLC directory not found on memory stick (Store to PLC).
	Slow Flash	1 second on, 1 second off (0.5 Hz)	PLC type mismatch (Store to PLC), privilege violation, or PLC communication error.
	Fast Flash	200msec on, 200msec off (2.5 Hz)	PLC directory already exists on memory stick (Load to memory stick), or memory stick error.
	Double Flash	On for 250 msec, off for 250 msec, on for 250 msec, and then off for 1 second. This pattern repeats.	PPDD was unable to attach to the PLC within the 5-second timeout limit. Press the START button to resume the attach sequence. It may be necessary to press the START button again to continue the data transfer. If this problem persists, ensure that the serial port is configured correctly: 8 data bits and 1 stop bit, with baud and parity set to match the settings in the *options.txt* file.

Error Log Files

PLC and I/O Fault Log Files

If the PLC has faults before starting the data transfer, the fault tables will be copied to the memory stick as *plcfltbeforestore.dat* (for Controller faults) or *iofltbeforestore.dat* (for I/O faults). After the data transfer is completed, fault tables will be copied onto the memory stick as *plcfltafterstore.dat* and *iofltafterstore.dat*.

load.log and store.log

When transferring data from the PLC to the USB memory stick, the PPDD creates a file with the name *load.log*. Similarly, when transferring data from the USB memory stick to the PLC, the PPDD creates a file with the name *store.log*. If no errors occur during the transfer, the file will have zero length; otherwise, the file will contain one or more records to capture information about the errors.

In some cases, errors may be non-fatal to the overall operation, and the operation completes successfully as indicated by the green STATUS LED. If an error is fatal, the operation does not complete and the red ERROR LED is on. In that case, the last record in the log file provides information to help in understanding the error.

In both load.log and store.log, the error records have the same format, consisting of four hexadecimal numbers.

The following table lists some of the error records that may occur during a data transfer.

Data Transfer Errors

Error logged	Description
04 FD 05 E4/E9	There were no Motion files to be loaded from the PLC. This is expected if the project on the PLC does not contain any motion programs (E4), or the PLC does not support Motion files (E9).
04 E5 05 E4/E9	There were no Ethernet Global Data (EGD) files to be loaded from the PLC. This is expected if the project on the PLC does not contain EGD in the configuration (E4), or the PLC does not support EGD (E9).
04 57 05 E4/E9	There were no Advanced User Parameters (AUP) files to be loaded from the PLC. This is expected if the project on the PLC does not contain any AUP files (E4), or the PLC does not support AUP files (E9).
04 FE 05 E4/E9	There was no Name Resolve file for the PLC (E4), or the PLC does not support the Name Resolve file (E9). The Name Resolve file is used by the CPU364 to hold the Ethernet Adapter name.
04 EC 04 8E	The PPDD attempted to store to a PLC that has a lower firmware revision level than the PLC used to load the memory stick.
07 *xx* 02 00	The PPDD encountered a privilege violation during a store to the CPU. This can occur if the PPDD folder contains a hardware configuration that activates the Memory Protect feature, and the CPU's keyswitch is set to ON (protected). The xx value indicates the type of memory that first encountered the privilege violation, and can vary depending upon when the memory protection becomes active during the store sequence.
20 02 05 EF	The PPDD could not log on to the PLC, because another programmer is already connected to the PLC. This can occur if the programmer is connected to the PLC on another serial port. It can also occur on the CPUE05 if the programmer is connected at the Ethernet port.
21 0n 05 F5	The PPDD could not acquire the privilege level needed to perform the operation. The required privilege level is displayed by the 'n' value. This can occur if the PLC is using passwords, and the PPDD does not have the matching passwords in its security.dat file, or does not have a security.dat file.
27 xx 01 00	CPU model not supported. (xx is the hex-ASCII value of the first letter of the controller target name.)
29 80 02 00	The PPDD could not store to the CPU due to a privilege violation. This can occur if the Memory Protect feature is enabled in the CPU's configuration and the CPU keyswitch is set to ON (protected).
43 00 00 00	The PPDD attempted to store to a PLC that does not match the PLC type of the folder on the memory stick, or the PPDD has detected a logic or configuration checksum mismatch.
45 00 02 00/FE	The PPDD could not write to flash memory in the PLC, because the flash memory was protected. This problem can be fixed by either changing the CPU keyswitch position to OFF, or by specifying 'Write_Flash N' in the options.txt file.
47 00 05 F5	The PLC has OEM protection activated, and the PPDD does not have the matching OEM password in the security.dat file, or does not have a security.dat file.

Obtaining the PPDD Firmware Version

The PPDD writes the file PPDDfw.txt to the memory stick when power is applied to the PPDD and the memory stick is already present, or when a memory stick is inserted into the PPDD while the PPDD is powered up.