

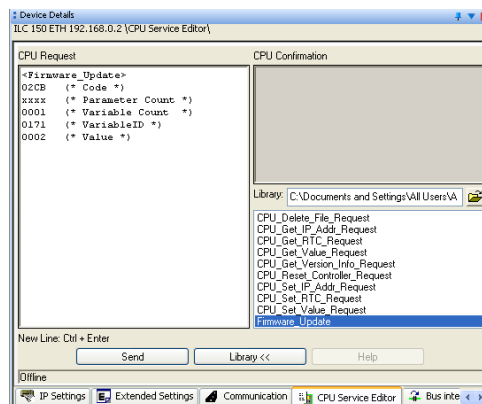
FIRMWARE UPDATE

ILC 1.../3..., RFC 4...

Information on updating the firmware to version 1.13 or later for the controllers listed in this document

Application note
7162_en_06

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1 Description

This document describes how to proceed when updating the firmware to version 1.13 or later for the controllers listed in Section 2 "Ordering data".

For the RFC 4XX controllers the firmware can alternatively be updated using a USB stick, see Section 7 "Firmware update for the RFC 4XX controllers using a USB stick".



Please note any other information available regarding firmware updates. If available, this will be included with the firmware update files.

Please note that only combinations of firmware and device versions that have been approved by Phoenix Contact may be created.

For information on compatible and approved firmware versions for your devices and instructions on how to perform updates, please visit www.phoenixcontact.net/catalog.



PC Worx version

For the firmware update described in this document, use the PC Worx software version 5.10 or later.



NOTE: Potential device malfunction

Do not interrupt the controller supply voltage during the firmware update process. Interruption of the supply voltage results in a malfunction on the controller. In this case, the device can no longer be used.



WARNING:

Take appropriate measures to ensure that the system/machine does not present any danger during the firmware update phase.



Make sure you always use the latest documentation. It can be downloaded at www.phoenixcontact.net/catalog.



This application note is valid for all products listed on the following page.

2 Ordering data

Products

| Description | Type | Order No. | Pcs. / Pkt. |
|---|----------------------|-----------|-------------|
| Inline controller with 10/100 Ethernet interface | ILC 130 ETH | 2988803 | 1 |
| Inline controller with 10/100 Ethernet interface | ILC 131 ETH | 2700973 | 1 |
| Inline controller with 10/100 Ethernet interface | ILC 131 ETH/XC | 2701034 | 1 |
| Inline controller with 10/100 Ethernet interface | ILC 150 ETH | 2985330 | 1 |
| Inline controller with 10/100 Ethernet interface | ILC 151 ETH | 2700974 | 1 |
| Inline controller with 10/100 Ethernet interface | ILC 151 ETH/XC | 2701141 | 1 |
| Inline controller with 10/100 Ethernet interface | ILC 155 ETH | 2988188 | 1 |
| Inline controller with 2 x 10/100 Ethernet interfaces, PROFINET IO device | ILC 170 ETH 2TX | 2916532 | 1 |
| Inline controller with 2 x 10/100 Ethernet interfaces, PROFINET IO device | ILC 171 ETH 2TX | 2700975 | 1 |
| Inline controller with 2 x 10/100 Ethernet interfaces, PROFINET IO device | ILC 190 ETH 2TX | 2700527 | 1 |
| Inline controller with 2 x 10/100 Ethernet interfaces, PROFINET IO device | ILC 191 ETH 2TX | 2700976 | 1 |
| Inline controller with 2 x 10/100 Ethernet interfaces, PROFINET IO device | ILC 191 ME/AN | 2700074 | 1 |
| Inline controller with 2 x 10/100 Ethernet interfaces, PROFINET IO device | ILC 191 ME/INC | 2700075 | 1 |
| Inline controller with 10/100 Ethernet interface and GSM modem | ILC 150 GSM/GPRS | 2916545 | 1 |
| Inline controller with 10/100 Ethernet interface and GSM modem | ILC 151 GSM/GPRS | 2700977 | 1 |
| Inline controller with 10/100 Ethernet interface | ILC 330 ETH | 2737193 | 1 |
| Inline controller with 10/100 Ethernet interface, PROFINET IO controller | ILC 330 PN | 2988191 | 1 |
| Inline controller with 10/100 Ethernet interface | ILC 350 ETH | 2737203 | 1 |
| Inline controller with 10/100 Ethernet interface, meets the requirements of maritime registers of shipping | ILC 350 ETH/M | 2985819 | 1 |
| Inline controller with 10/100 Ethernet interface, PROFINET IO controller | ILC 350 PN | 2876928 | 1 |
| Inline controller with 2 x 10/100 Ethernet interfaces | ILC 370 ETH 2TX-IB | 2876999 | 1 |
| Inline controller with 2 x 10/100 Ethernet interfaces, meets the requirements of maritime registers of shipping | ILC 370 ETH 2TX-IB/M | 2985327 | 1 |
| Inline controller with 2 x 10/100 Ethernet interfaces, PROFINET IO controller | ILC 370 PN 2TX-IB | 2876915 | 1 |
| Inline controller with 2 x 10/100 Ethernet interfaces, PROFINET IO controller, meets the requirements of maritime registers of shipping | ILC 370 PN 2TX-IB/M | 2985576 | 1 |
| Inline controller with 2 x 10/100 Ethernet interfaces, PROFINET IO controller | ILC 390 PN 2TX-IB | 2985314 | 1 |
| High-availability Remote Field Controller with redundancy function, 3 x 10/100 Ethernet, PROFINET IO controller, IP20 protection, plug-in parameterization memory | RFC 460R PN 3TX | 2700784 | 1 |
| Remote Field Controller with 3 x 10/100 Ethernet interfaces, INTERBUS master, PROFINET IO controller, PROFINET IO device | RFC 470 PN 3TX | 2916600 | 1 |
| Remote Field Controller with integrated safe PROFINET controller, INTERBUS master, PROFINET IO controller, PROFINET IO device | RFC 470S PN 3TX | 2916794 | 1 |

3 Installation of the setup program



This section is intended for updating the following controllers:

- ILC 1XX to firmware version ≥ 3.91
- ILC 3XX to firmware version ≥ 3.95
- RFC 4XX to firmware version ≥ 3.95
- RFC 470S PN 3TX to firmware version > 3.95

Installation of the setup program is not required for updating to earlier firmware versions. In this case, skip this section and directly proceed to Section 4 "Transmitting the file to the parameterization memory".

This section describes the installation of the setup program for updating to firmware version 3.91 using the ILC 150 ETH as an example.

When installing the setup program, the firmware file and PDF documents with device-specific information will be copied to the hard disk of your PC.

- Extract the "Setup_Firmware_v391_150.zip" file to the hard disk of your PC.
- Double-click on the "Setup_Firmware_v391_150.exe" file.
- Select the language for the setup.

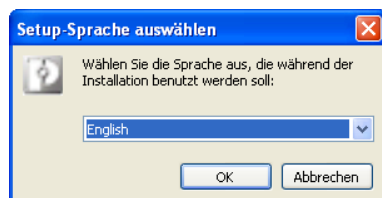


Figure 1 Selecting the setup language

- Confirm your selection with "OK".

The setup wizard is started.

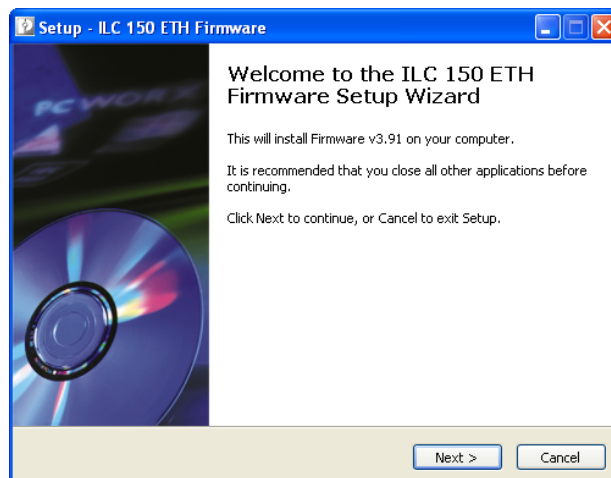


Figure 2 Setup wizard: Welcome

- Close all other applications before continuing the setup and click "Next".
- Carefully read and then accept the license agreement.

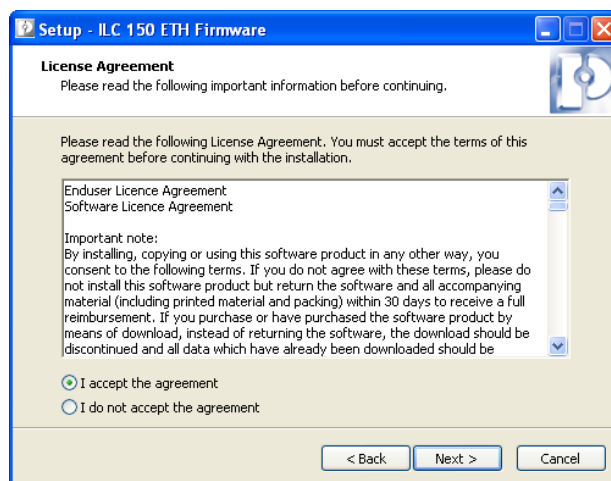


Figure 3 Setup wizard: License agreement

- Click "Next".
- Carefully read the information on firmware version 3.91.

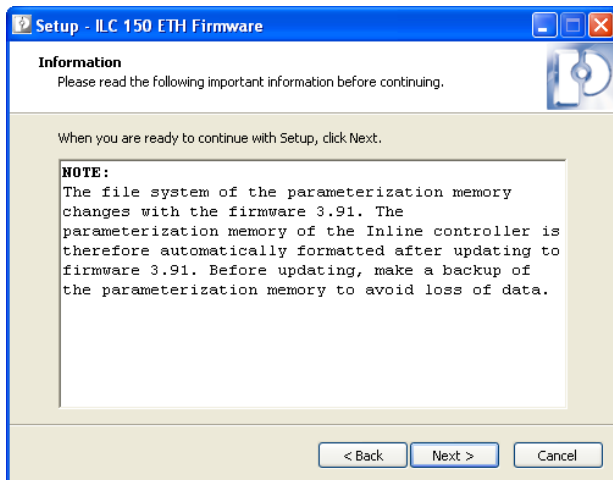


Figure 4 Setup wizard: Information on firmware version

- Click "Next".
- Select a target folder, to which the firmware files are to be saved.

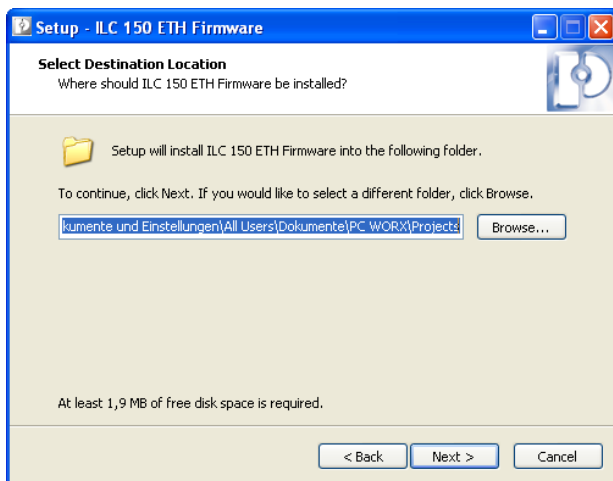


Figure 5 Setup wizard: Select target folder

- Click "Next".
- Click "Install" to start the installation process.

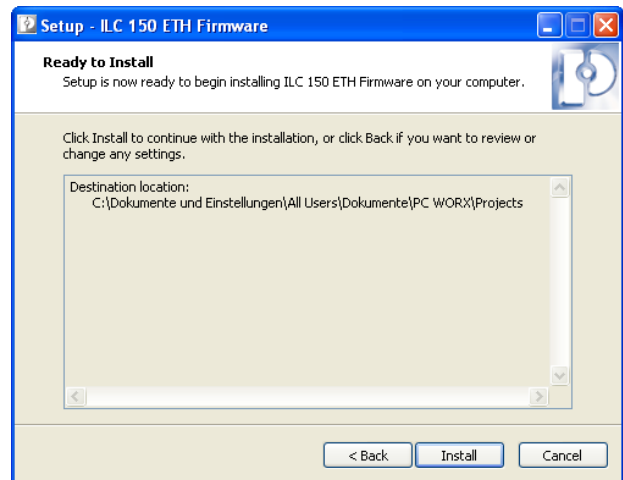


Figure 6 Setup wizard: Start installation

- Select the checkboxes for the PDF documents that should be opened automatically after exiting the setup wizard.
- Click "Finish" to exit the setup wizard.

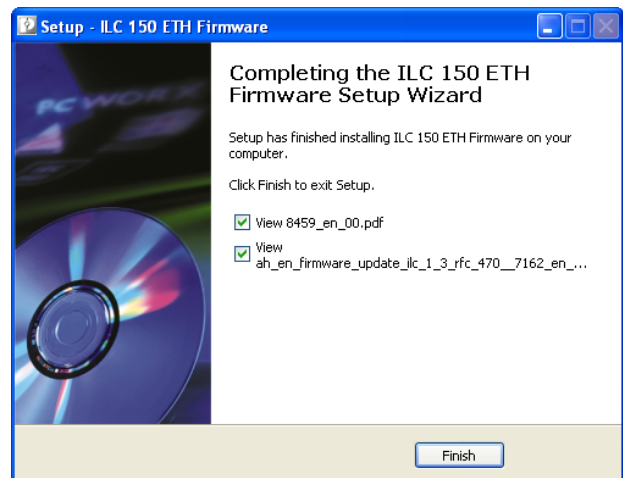


Figure 7 Setup wizard: Finish

The firmware file and the PDF documents have been copied to the selected folder on your PC. The previously selected PDF documents will be opened.

4 Transmitting the file to the parameterization memory

- Copy the firmware file to the parameterization memory of the controller via FTP.
ILC 1XX – Firmware file: "*.fw"
ILC 3XX – Firmware file: "*.ctn"
RFC 4XX – Firmware file: "*.ctn"



Please note that for devices with a plug-in parameterization memory (either a CF or SD memory card - depending on the device used), the parameterization memory must be inserted before you transfer the firmware file.
Exception: For the ILC 1X1 controllers, the firmware file can also be transmitted with the parameterization memory not being inserted in the device.

Proceed as follows:

- Please make sure that there is an online connection to the controller.
- Activate the FTP function in your browser or use an appropriate FTP program to copy the firmware file to the parameterization memory.

In the following example, check the "Enable folder view for FTP sites" option under "Tools, Internet Options, Advanced" in Microsoft Internet Explorer (see Figure 8).

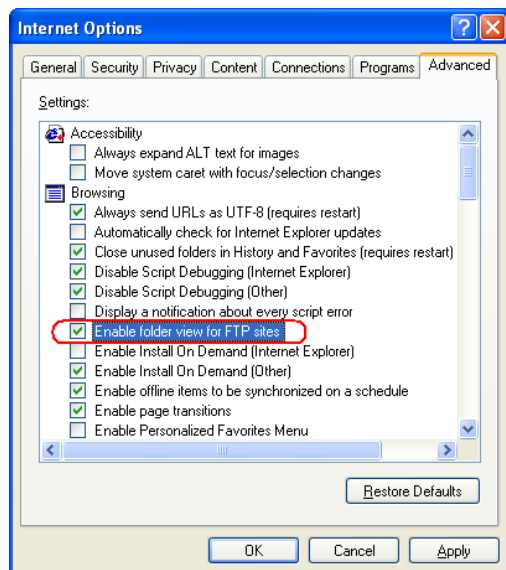


Figure 8 Internet Options:
Enable folder view for FTP sites

- Start the PC Worx software.

- Change to the bus configuration worksheet.
- In the "Bus Structure" window, select the controller used (in the example in Figure 9 on page 6: ILC 150 ETH).

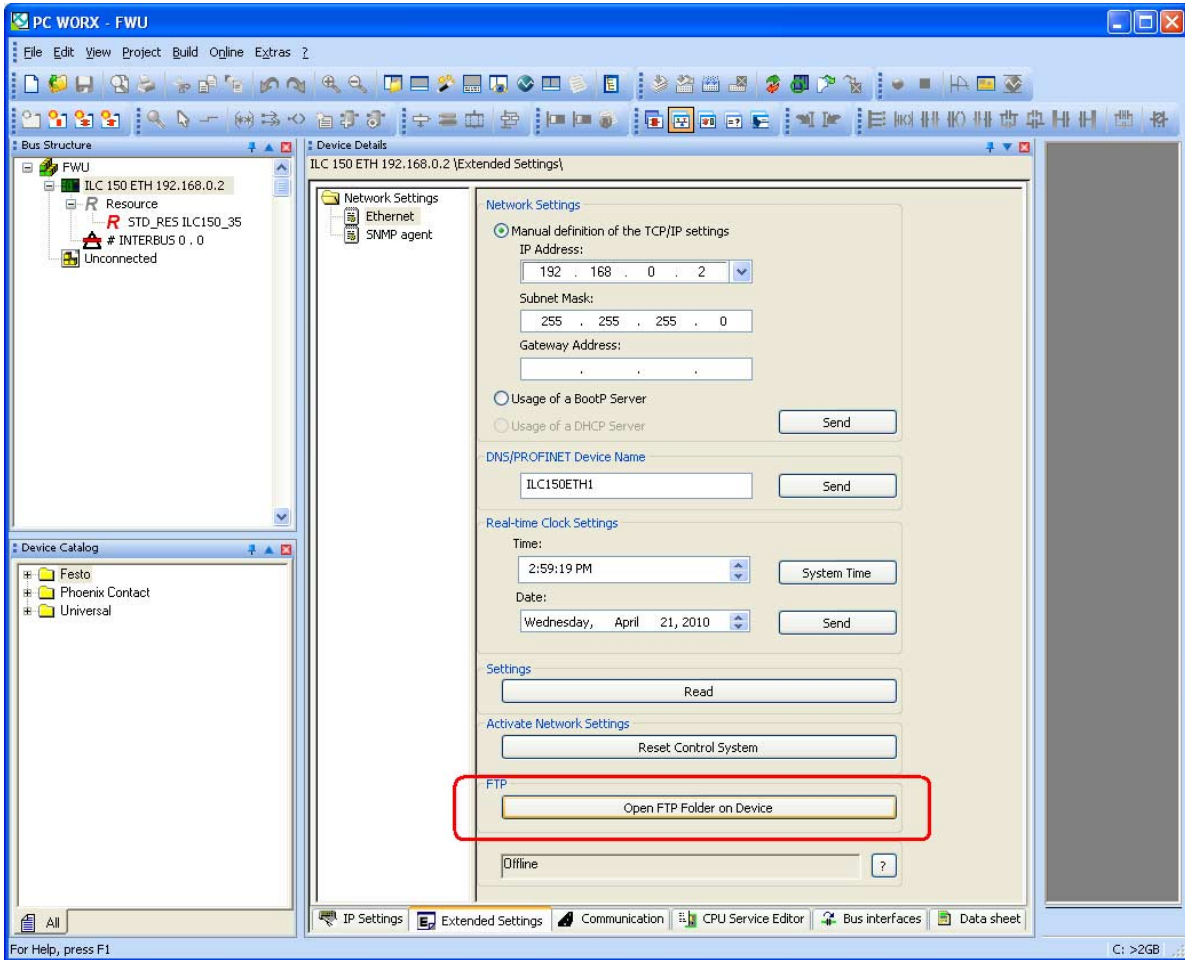


Figure 9 Device Details, Extended Settings: Open FTP Folder on Device

- Select the "Extended Settings" tab in the "Device Details" window.
 - Click the "Open FTP Folder on Device" button.
- In the example, Microsoft Internet Explorer opens (see Figure 10). The file structure on the parameterization memory will be displayed.

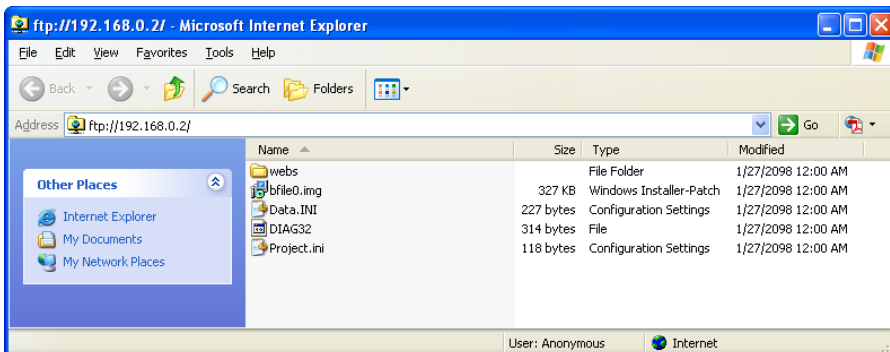


Figure 10 File structure on the parameterization memory

- Copy the firmware file into the root directory (in the example: "c2985330.fw" for the Inline controller of the 100 controller class used, see Figure 11).

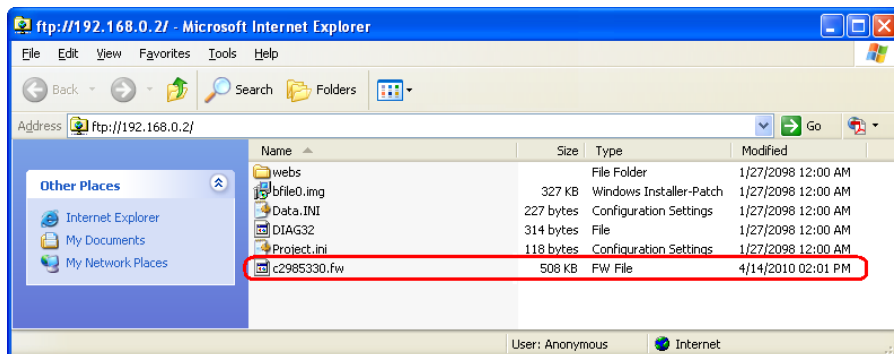


Figure 11 File structure on the parameterization memory – file "c2985330.fw"

- Close Microsoft Internet Explorer.

5 Performing the update

- In the "Device Details" window of PC Worx, select the "CPU Service Editor" tab.
- Click the "Open Service Library" button.

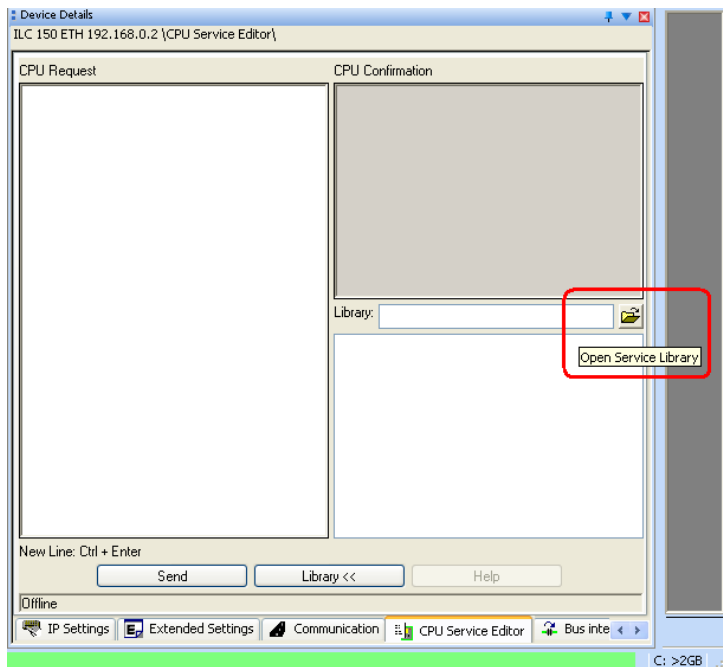


Figure 12 Device Details, CPU Service Editor: Open Service Library

- Open the service library which corresponds to your controller. In the example (see Figure 13 on page 8): "ILC1xx_Service_Common.slb" file.

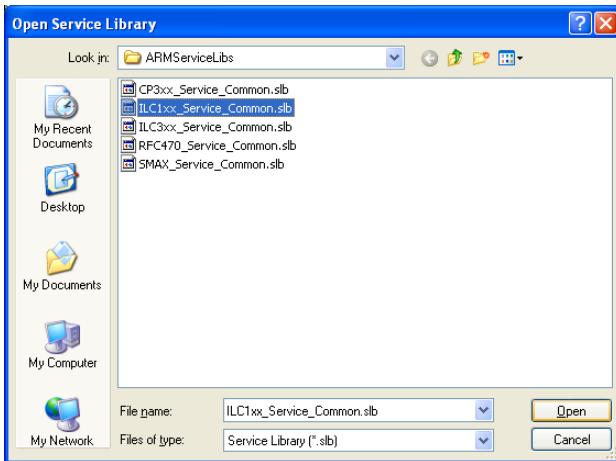


Figure 13 Select and open the service library

The available services will be listed after you have opened the service library (see Figure 14).

- Select the "Firmware_Update" service with a double-click.

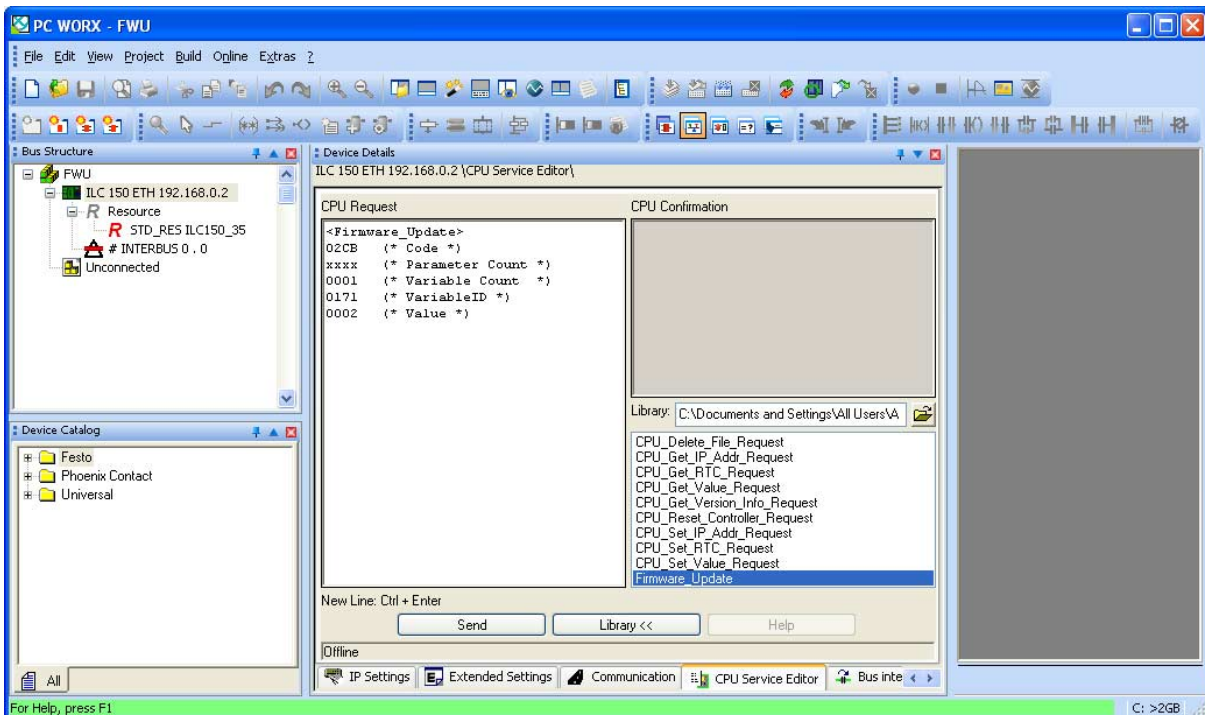


Figure 14 "Firmware_Update" service

The selected service will be shown in the "CPU Request" window. All values required are set.

- Start the firmware update by clicking the "Send" button.

The update process is indicated differently on the controllers.

Inline controller:

During the firmware update the following LEDs flash alternately on the controller:

- ILC 1XX: "FR" and "FF"
- ILC 3XX: "PLC RUN" and "PLC FAIL"

Remote Field Controller:

The "Firmware update" message is shown on the controller display. Following the update, the controller performs a reboot.

The update is complete when the LEDs stop flashing (ILC), the reboot has been performed (RFC) and the controller can be accessed online via the project control dialog box.

6 Checking the firmware version on the controller

- Open the project control dialog box in PC Worx.

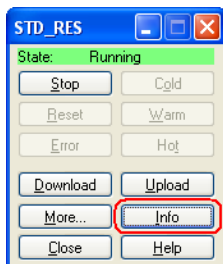


Figure 15 Project control dialog box: Info

- Click the "Info" button in the project control dialog box.

The "Info Dialog" window that opens shows the firmware version that is currently loaded onto the controller.

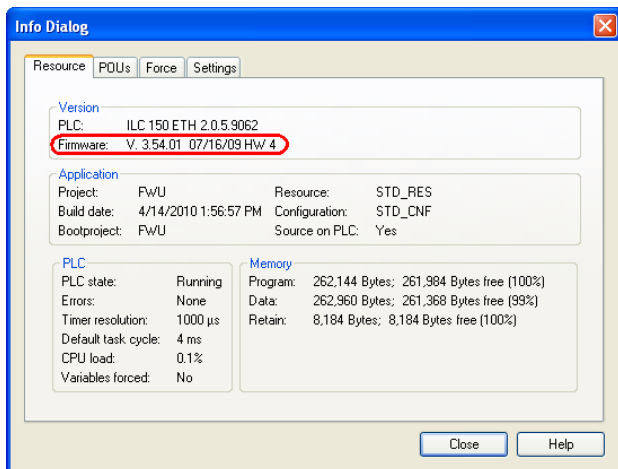


Figure 16 Info Dialog box

7 Firmware update for the RFC 4XX controllers using a USB stick



The RFC 4XX controllers can be updated to firmware version ≥ 3.95 using a USB stick.
The RFC 470S PN 3TX controller can be updated to firmware version > 3.95 using a USB stick.



For firmware update, always use the following USB memory stick:
VS-04-MS-IP20 (Order No. 1402490) USB memory stick, IP20, USB 2.0



The following must be observed when updating the firmware of the RFC 460R PN 3TX:
Always update the firmware for both Remote Field Controllers of the redundant control system one after the other. The order does not matter.
If you start the firmware update on the PRIMARY Remote Field Controller first, the redundancy roles of both Remote Field Controllers are switched. If the switch-over is completed without errors, the previous BACKUP Remote Field Controller becomes the PRIMARY Remote Field Controller and takes control of the process, i.e., the application continues running.


- If the required firmware file (Setup_Firmware_.....zip) is not available, download it from the device download area to the hard disk of your PC.
- Extract the file. If necessary, execute the "exe" file and follow the instructions.
- Copy the extracted firmware container file (XXXXXXX_Revision.ctn) from the hard disk of your PC to the main directory of the memory stick.
- Insert the memory stick in one of the two USB sockets.

Do not continue with the next step until the LED on the memory stick is permanently on.

- Call the "FW-UPDATE" menu item in the system menu using the operating keys ((A) in Figure 17).



Please note that the firmware update process starts as soon as the following step is executed.
Only select this item if you have inserted the necessary USB stick for the firmware update into the USB interface. There is no cancel for this operation.

- Start the firmware update using the  key ((B) in Figure 17).

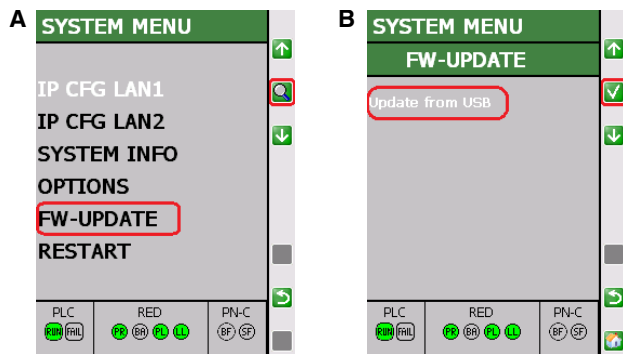


Figure 17 Update from USB (in the figure:
RFC 460R PN 3TX)

The firmware update is complete after the Remote Field Controller has successfully performed an automatic restart.



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