

Update firmware using IAP over Ethernet

The IAP mode is part of the preparation for a firmware update. There are two ways to update firmware on a Programmable I/O (PIO) device in IAP mode, follow description below:

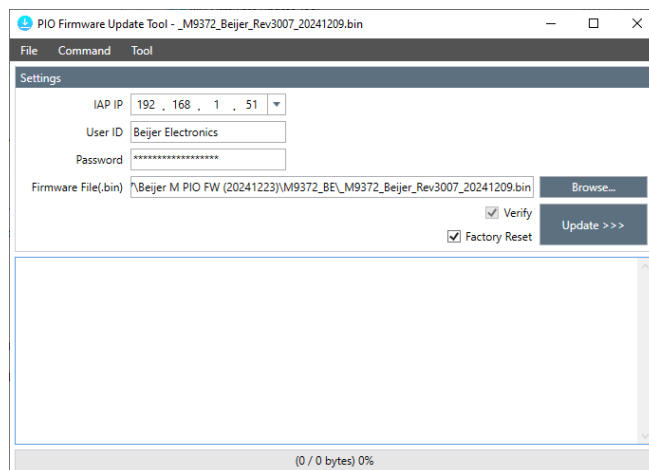
- PIO Firmware Update Tool (recommended)
- IAP mode web portal

PIO Firmware Update Tool (recommended)

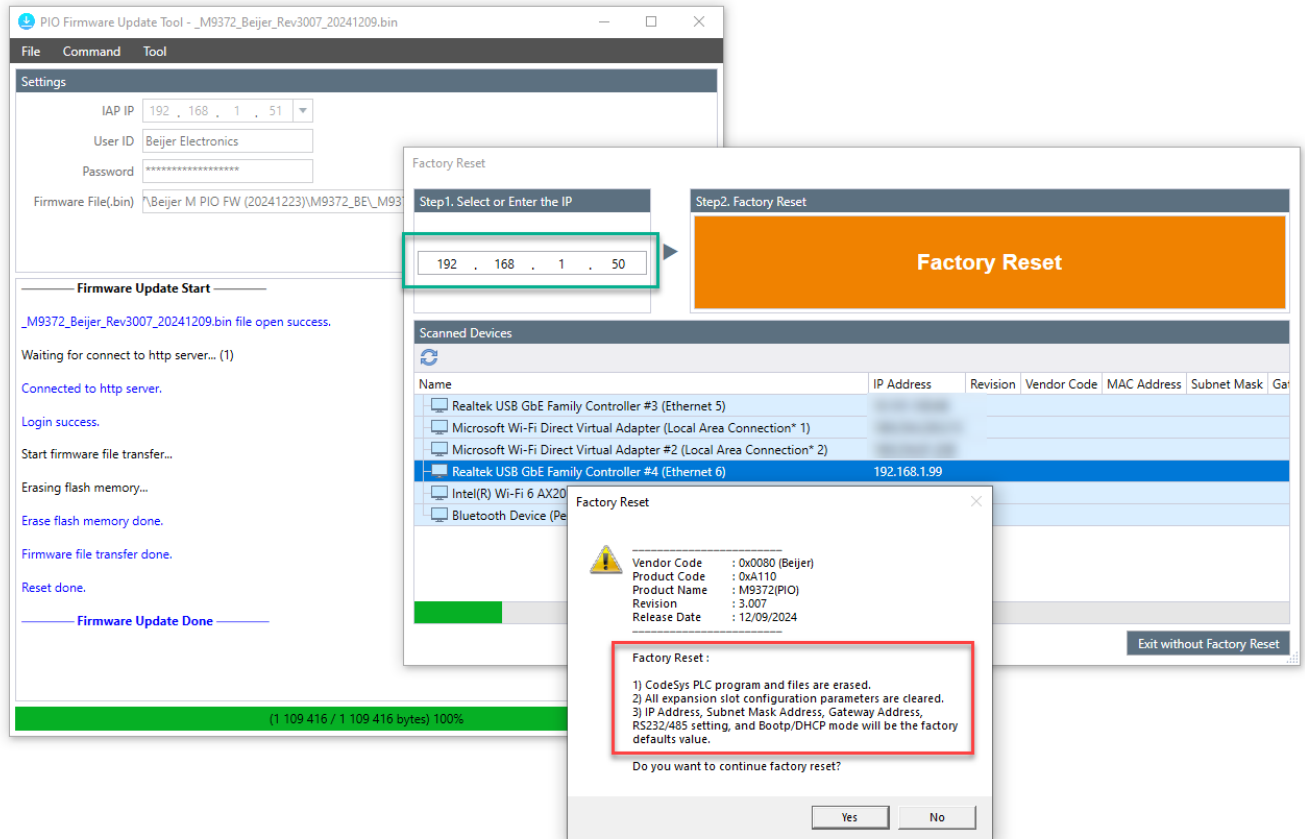
1. Connect a PC via Ethernet (LAN cable) to PIO (e.g. M9372, GN-9372 or GL-9972).

Note! A new Beijer PIO device has the default IP **192.168.1.50**. Make sure your PC is on the same subnet. For example 'Ping 192.168.1.50' or access the web server <http://192.168.1.50/setup.htm> to check connection from PC to the PIO device.

2. Power off the PIO device. Press and hold the reset button and apply power at the same time. Now the device will enter IAP mode → MOD LED will blink green / red.
3. Now access the device via IAP web server address: **192.168.1.51**
4. Start 'PIO Firmware Update Tool' (example showing tool rev. 1.0.0.5)
5. Add the IAP Web server settings to access the PIO module:
 - Beijer IAP IP address: **192.168.1.51**
 - Beijer User ID: **Beijer Electronics**
 - Beijer User Password: **Beijer Electronics**
6. Click the 'Browse' button and select the firmware file (Bin file).
 - Tick the 'Verify' and 'Factory Reset' check boxes.
 - i. **Verify** - To check PIO information after firmware update (Ex: Vendor code, Product code, Product name, Firmware version, Firmware release date)
 - ii. **Factory Reset** - It's always recommended to proceed with a Factory Reset after firmware update. When checked, a factory reset will be carried out after a successful verify procedure.



7. Start firmware update procedure by pressing the ‘Update’ button.
 - After the correct User ID / Password has been entered, the PIO Firmware update tool will connect to the PIO device and a login is performed.
 - Then it starts with firmware transfer and erasing flash.
 - Expand the windows to show the logged status.
 - Factory Reset will be performed (add IP: 192.168.1.50) press button in Step2.



8. When the update process is completed recycle the power.
9. Connect to the webserver <http://192.168.1.50/setup.htm> and verify firmware and CODESYS version.
10. Download application program.

IAP mode web portal

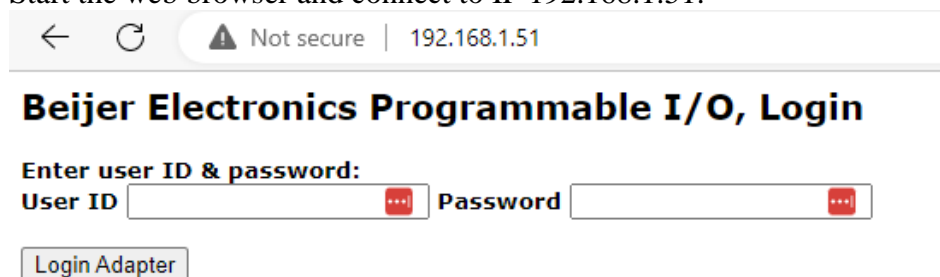
1. Connect a PC via Ethernet (LAN cable) to PIO (e.g. M9372, GN-9372 or GL-9972).

Note! The PIO device has the default IP **192.168.1.50**, make sure the PC is on the same subnet. Ping the device or access the web server at: <http://192.168.1.50/setup.htm>.

2. Power off the device. Press and hold the reset button and apply power at the same time. Now the device will enter IAP mode → MOD LED will blink green / red. Access the device via IAP web server address: **192.168.1.51**

Example from IAP mode of a M9372 device:

3. Start the web browser and connect to IP 192.168.1.51.



The screenshot shows a web browser address bar with the URL 192.168.1.51. The page title is "Beijer Electronics Programmable I/O, Login". Below the title, there is a prompt "Enter user ID & password:" followed by two input fields: "User ID" and "Password". Both fields have red "x" icons indicating they are required. A "Login Adapter" button is located below the input fields.

4. Login with User ID: **Beijer Electronics** / Password: **Beijer Electronics**



The screenshot shows the same login page as above, but with the User ID field containing "Beijer Electronics" and the Password field containing "Beijer Electronics". The "Login Adapter" button is still visible.

5. Specify a firmware binary file (*.bin) with 'Choose File'.

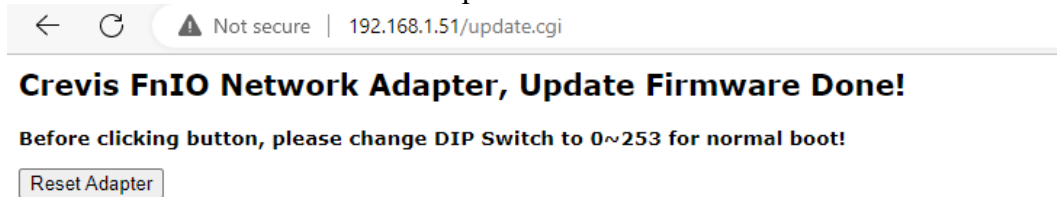


The screenshot shows a web browser address bar with the URL 192.168.1.51/checklogin.cgi. The page title is "Beijer Electronics Programmable I/O, Update Firmware". Below the title, there is a prompt "Please specify a firmware binary file(.bin) to send to the adapter". There is a "Choose File" button next to the text "No file chosen". A "Update Firmware" button is located below the "Choose File" button.

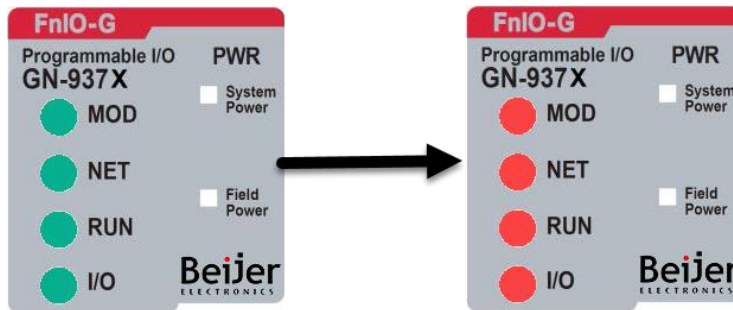
- 6. Select the file and press ‘Update Firmware’.



- 7. When finished click the ‘Reset Adapter’.



- 8. It’s recommended to always proceed with a **Factory Reset** after firmware update, for example when transitioning from CODESYS version SP11 to SP17 or the contrary.
 - a. After updating to the latest firmware.
 - b. Press and hold the reset button for 20 seconds (see pictures below).
 - c. During the Factory Reset process, all LED indicators will switch from green to red



- d. Cycle Power.
- e. Download your PLC project.

Example) M9372 PIO



2.5.1. Toggle Switch

Toggle Switch Status	Module is	Description
UP	RUN	PLC Run
DOWN	STOP	PLC Stop

2.5.2. Push Botton

Push Botton	Module is	Description
Push and detach	Reset	PLC Reset and Stop
Push for 5sec and Power Reset	PLC Reset	Erase PLC user program and Retain memory
Push for 20sec and Power Reset	Factory Reset	Erase PLC user program and PLC parameter reset
Push hold and Power Reset	IAP mode	Firmware download via FireFox.

- 1 Toggle Switch (Run / Stop)
- 2 Push Button (Reset / IAP Mode)

Example) GN-9372 PIO

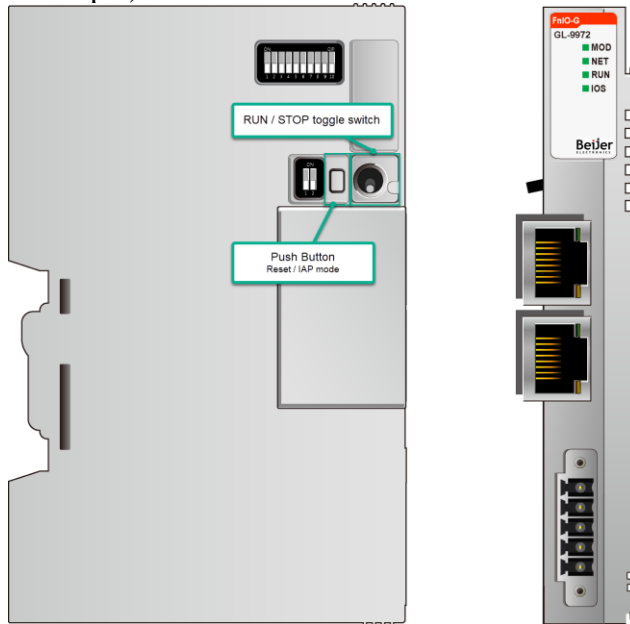


Toggle Switch Status	Module is	Description
UP	RUN	PLC Run
DOWN	STOP	PLC Stop

Push Button	Module is	Description
Press and detach.	Reset	Reset the PLC and then stop.
Push for 5sec and power Reset	PLC Reset	Erase PLC user program and Retain memory
Push for 20sec and power reset	Factory default	Erase PLC user program and PLC parameter reset
Hold down and reset the power.	IAP mode	Available for firmware download using FireFox

- 1 Toggle Switch (Run / Stop)
- 2 Push Button (Reset / IAP Mode)

Example) GL-9972 PIO



Push Button	Module is	Description
Push and detach	Reset	Reset CODESYS PLC program and make the program be in the stop status.
Push for 5sec	PLC Reset	Erase CODESYS PLC program and retain memory.
Push for 20sec	Factory Reset	Erase CODESYS PLC program and parameter reset.
Push hold and Power Reset	IAP mode	Firmware download via FireFox.

9. When the update process is completed recycle the power.
10. Connect to the webserver <http://192.168.1.50/setup.htm> and verify firmware and CODESYS version.

Example web server of M9372 F/W Rev 3.007

The screenshot displays the web interface for the Beijer Electronics M9372 Programmable IO. On the left is a navigation menu with the following items: **Beijer ELECTRONICS**, Network Adapter, Expansion Module, CodeSys PLC, Network Setting, CPU Usage, and Login. The main content area is titled "Beijer Electronics" and "Network Adapter M9372(Programmable IO)". It features two buttons: "IO Input Data" and "IO Output Data". Below these are several sections of data:

- Network Settings:**
 - IP Address : 192.168.1.50
 - Subnet Mask : 255.255.255.0
 - Gateway : 0.0.0.0
 - MAC Address : 00:50:6C:0C:D0:A0
- Connection Status:**
 - MODBUS/TCP Connections : Available
 - MODBUS/UDP Connections : Available
 - CODESYS/UDP Connections : Available
 - HTTP(Web Server) Connections : Available
 - MODBUS/RTU(RS232) Communication : Available
 - MODBUS/RTU(RS485) Communication : Available
- System Information:**
 - Firmware Revision : 3.007(12/09/2024)
 - Expansion Modules : 3 module(s)
 - IO Size(Input) : 4 byte(s)
 - IO Size(Output) : 2 byte(s)
- CODESYS Version:**
 - CODESYS(IEC61131-3) V3.5 SP17 PLC : Available

11. Download application program.