

ZPA Control – Manual

1 Prerequisites

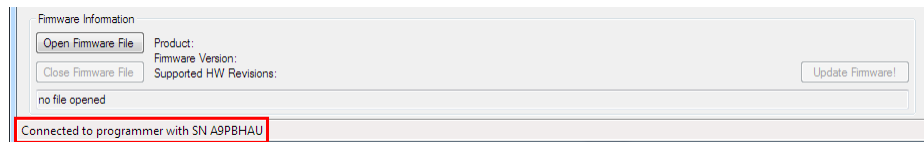
The ZPA Control software requires the following components to be installed on your computer:

- .net Framework 4.5 or later
- Hardware (ZPA Analyzer) driver

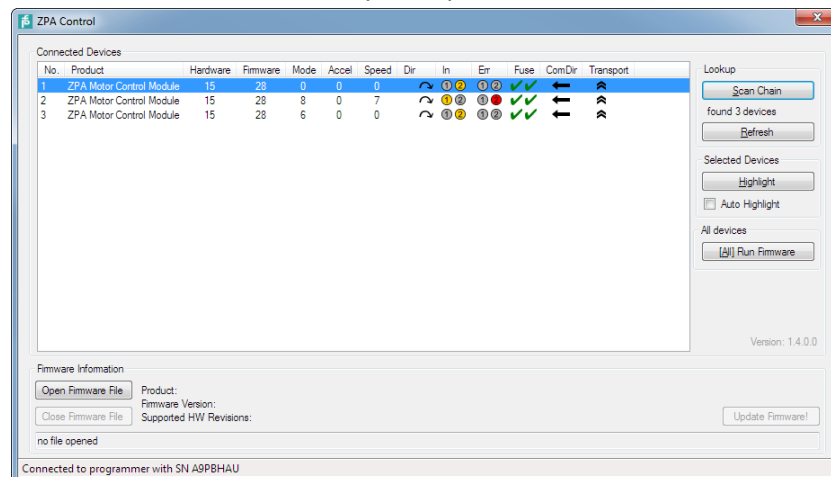
Both components are delivered together with the ZPA Control software.

2 Connecting the ZPA modules

1. Connect the ZPA Analyzer to an empty USB port of your computer.
2. Connect the M12 plug of the ZPA Analyzer to the X1 or X2 connector of the first ZPA module. To connect the ZPA Analyzer to the X2 connector you have to use a female / female crossover cable.
3. Make sure the ZPA modules are powered via the flat cable.
4. Open the ZPA Control Software. The connection to the ZPA-Analyzer is shown in the status bar.



5. Click on “Scan Chain” to find all connected ZPA modules and switch them into maintenance mode. The maintenance mode is indicated at the ZPA modules by flashing the two left- or rightmost yellow LEDs, depending on the direction where the ZPA Analyzer is connected. The connected ZPA modules are shown in the list, ordered by their position in the chain seen from the ZPA Analyzer.



3 Analyzing the ZPA module setup

When connected to the ZPA Control application, the ZPA modules won't activate any output. Operation with the ZPA Control application is intended only to analyze the chain of connected ZPA modules.

The list of connected ZPA modules provides the following information:

Column	Description
No.	The position of the ZPA module in the chain of connected devices, seen from the ZPA Analyzer
Product	The name of the connected device

Hardware	The hardware revision of the ZPA module
Firmware	<p>The firmware version of the ZPA module</p> <p>“Invalid”: No valid firmware installed – see chapter 0 To easily identify one or more ZPA modules along the chain you can click the “Highlight” button. All selected ZPA modules will start flashing their LEDs while the others switch their LEDs off. The “Auto Highlight” option automatically updates the highlighting on selection changes.</p> <p>Press the button “[All] Run firmware” or cycle power of the ZPA modules to resume normal operation.</p> <p>Firmware update procedure to install a valid firmware</p>
Mode	The mode switch setting (S3) at the back of the ZPA module
Accel	The Acceleration / Direction setting (S2) at the back of the ZPA module
Speed	The Speed setting (S1) at the back of the ZPA module
Dir	<p>The transport direction (derived from the switch setting)</p> <p>↻ clockwise</p> <p>↺ counterclockwise</p>
In	<p>The state of the two sensor inputs</p> <p>● no product detected</p> <p>● product detected</p>
Err	<p>The state of the motor error signals</p> <p>● no error</p> <p>● motor signals error / no motor connected</p>
Fuse	<p>The state of the two motor fuses</p> <p>✓ Fuse OK</p> <p>✗ Fuse blown</p>
ComDir	<p>The communication direction along the chain of ZPA modules</p> <p>← The communication direction of the ZPA Analyzer at this device is from right to left</p> <p>→ The communication direction of the ZPA Analyzer at this device is from left to right</p>
Transport	<p>The resulting transport direction of the ZPA module. All transport directions along the chain should be the same to form a valid ZPA chain.</p> <p>➞ The transport direction is towards the ZPA Analyzer</p> <p>➞ The transport direction is away from the ZPA Analyzer</p>

The information shown in the list can be refreshed by pressing the button “Refresh”.

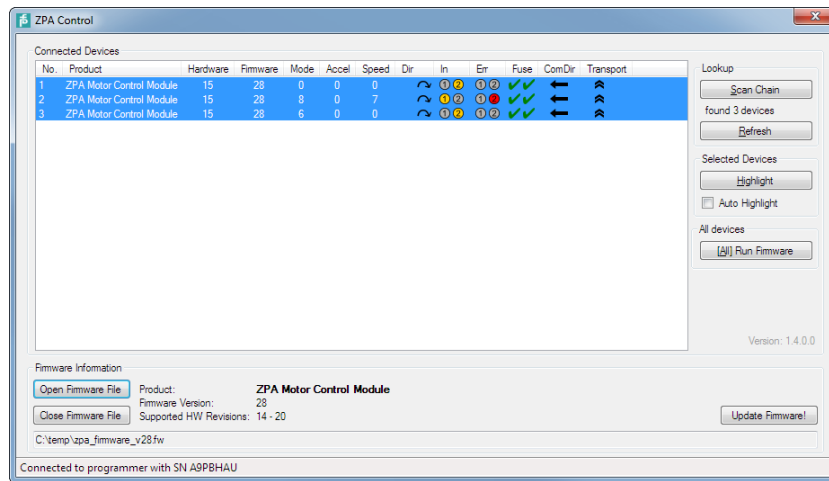
To easily identify one or more ZPA modules along the chain you can click the “Highlight” button. All selected ZPA modules will start flashing their LEDs while the others switch their LEDs off. The “Auto Highlight” option automatically updates the highlighting on selection changes.

Press the button “[All] Run firmware” or cycle power of the ZPA modules to resume normal operation.

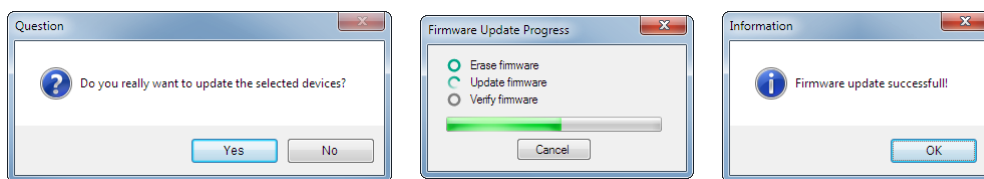
4 Firmware update procedure

The following procedure will update the firmware of one or more ZPA modules.

1. Click “Open Firmware File” and select the file with the new firmware. The firmware version of the selected firmware file is displayed along with the range of supported hardware revisions. All ZPA modules, which support the new firmware, are automatically selected. ZPA modules, which do not support the selected firmware are displayed in light gray until the firmware file is closed.



- Click “Update Firmware!” and confirm with yes to start the firmware update for all selected modules. Modules, which do not support the selected firmware, are automatically removed from the selection.



- After the firmware update the chain is scanned again and new firmware version is shown in the “Firmware” column.
- Press the button “[All] Run firmware” or cycle power of the ZPA modules to resume normal operation.

5 Error handling

If the firmware update failed for any reason (e.g. power or connection loss during update) the ZPA modules might have an invalid firmware. This is shown in the “Firmware” column by the word “invalid”. ZPA modules with an invalid firmware will end up in flashing all LEDs after power up. A valid firmware can still be programmed by following the steps of the previous chapter.

6 Troubleshooting

In case of an error, use the following checklist to find a solution. If none of the information specified in the following list solves the problem contact Pepperl+Fuchs via our sales office.

Checklist

Fault	Possible cause	Remedy
Status bar show no connection to the ZPA Analyzer.	USB plug not properly connected.	Check that the USB connector is connected to a working USB receptable of your computer
Status bar shows “Driver not found”.	The driver for the ZPA Analyzer was not installed properly.	Install the driver, which is supplied together with the ZPA Control software.
After clicking on “Scan chain” the list stays empty. Under the “Scan chain” button “no device connected” is displayed.	No device connected.	Check the connection of the ZPA Analyzer to the ZPA Motor Control Module. Ensure the ZPA Motor Control Modules are powered via the flat cable.

After clicking on "Scan chain" the list stays empty. Under the "Scan chain" button "unexpected response" is displayed.	The firmware version of the connected ZPA Motor Control Modules is not supported by the ZPA Control software.	Check the homepage of Pepperl+Fuchs for a newer version of ZPA Control Software.
The firmware update process fails.	Connection to the ZPA Motor Control Module(s) was interrupted during the firmware update process.	Ensure the power supply to the ZPA Motor Control Modules and the connection to the ZPA Analyzer is not interrupted during the update process.