

POWERED ROLLER CONVEYOR

AUTO-CONFIGURATION

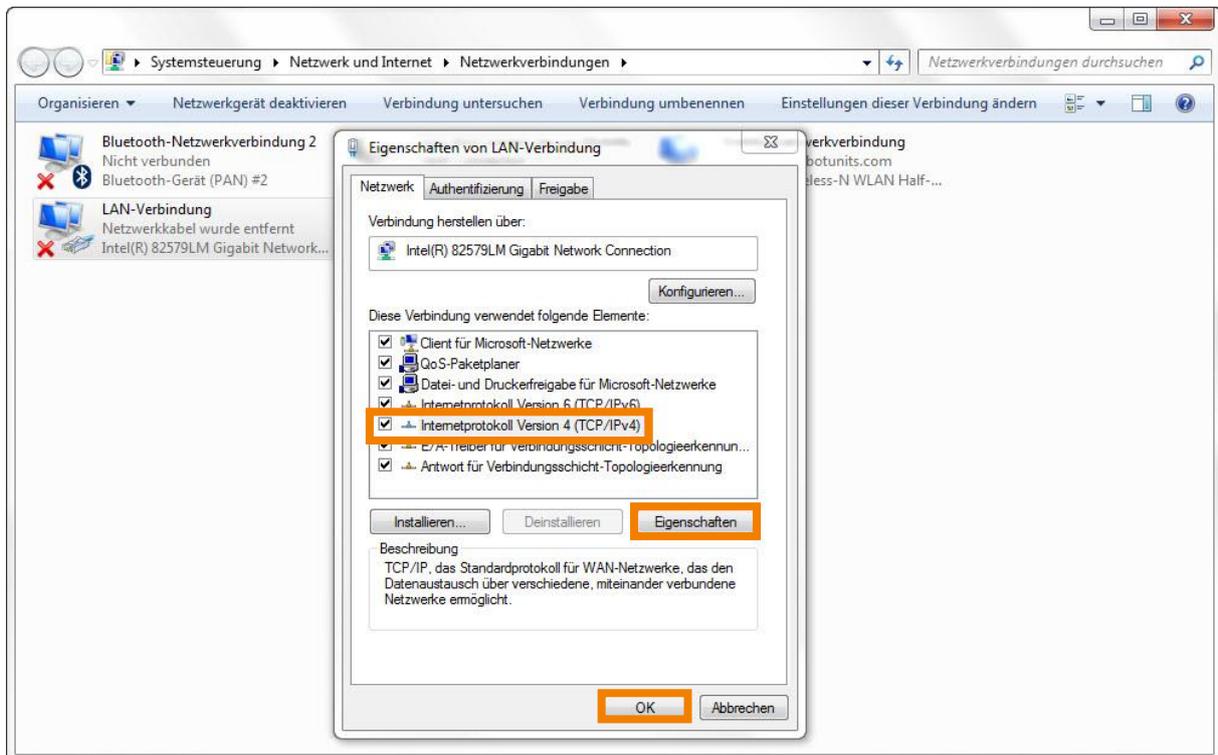
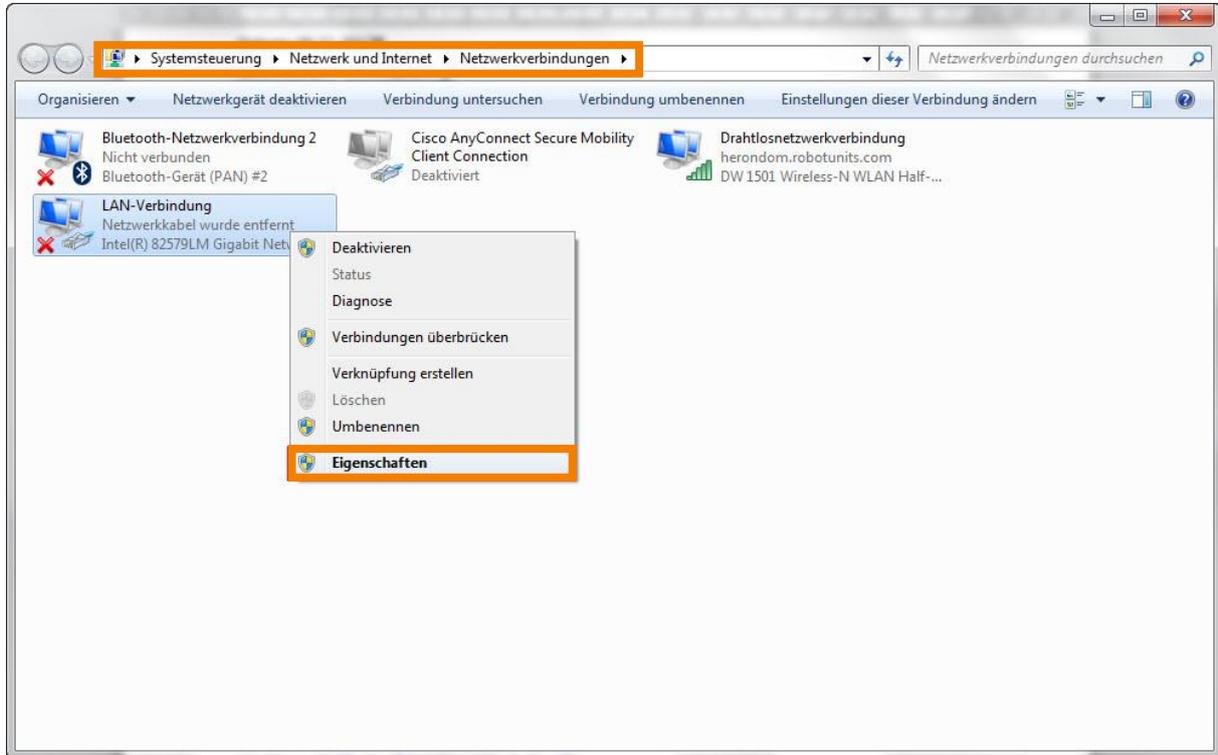


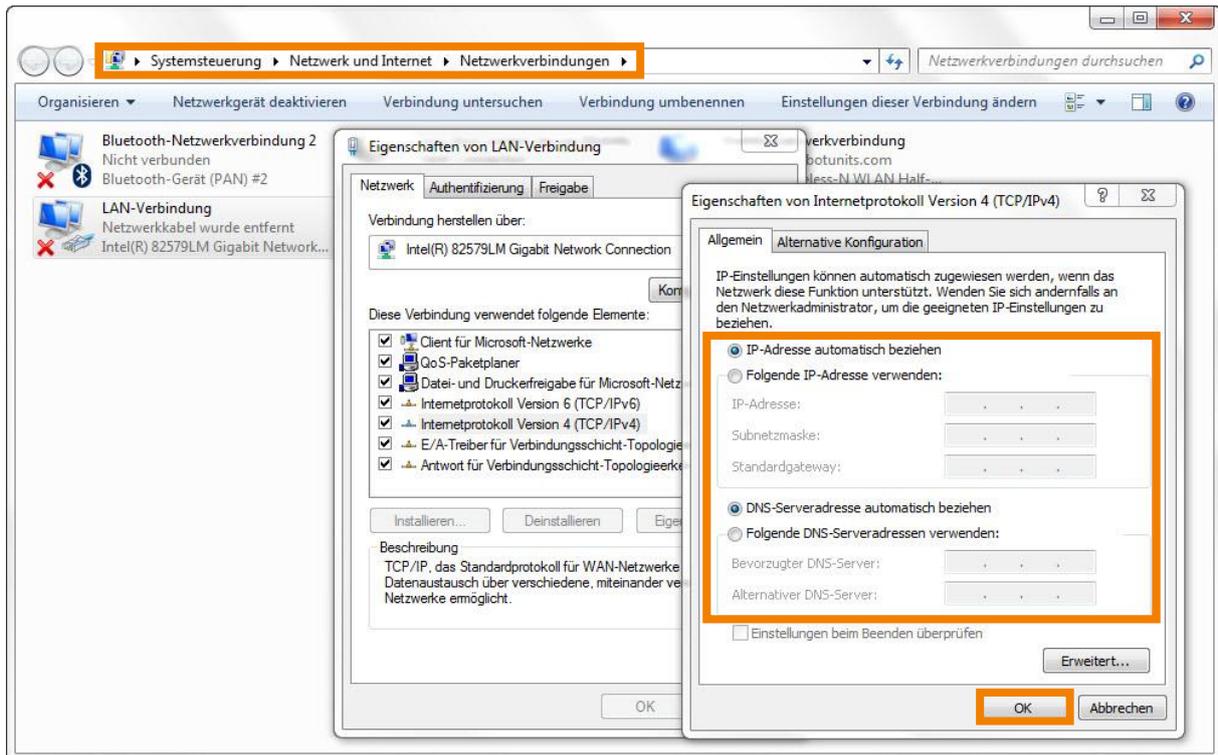
Table of contents

1. Connections	2
1.1 LAN connection	2
1.2 Wi-Fi connection	4
2. Software structure	5
2.1 Conveying direction from left to right	6
2.2 Conveying direction from right to left	6
2.3 Longer zones with two motor rollers	7
3. Auto-configuration	8
4. Standard settings	12
4.1 All zones	12
4.2 Last zone	14
5. Additional settings	15
5.1 Start sensor	15
5.2 Start sensor with time delay	17
5.4 Braking	18
5.5 Intermediate stop & transfer	19
5.6 Sensor signal read-out	21
5.7 Subsequently occupied	23
6 Merge	24

1. Connections

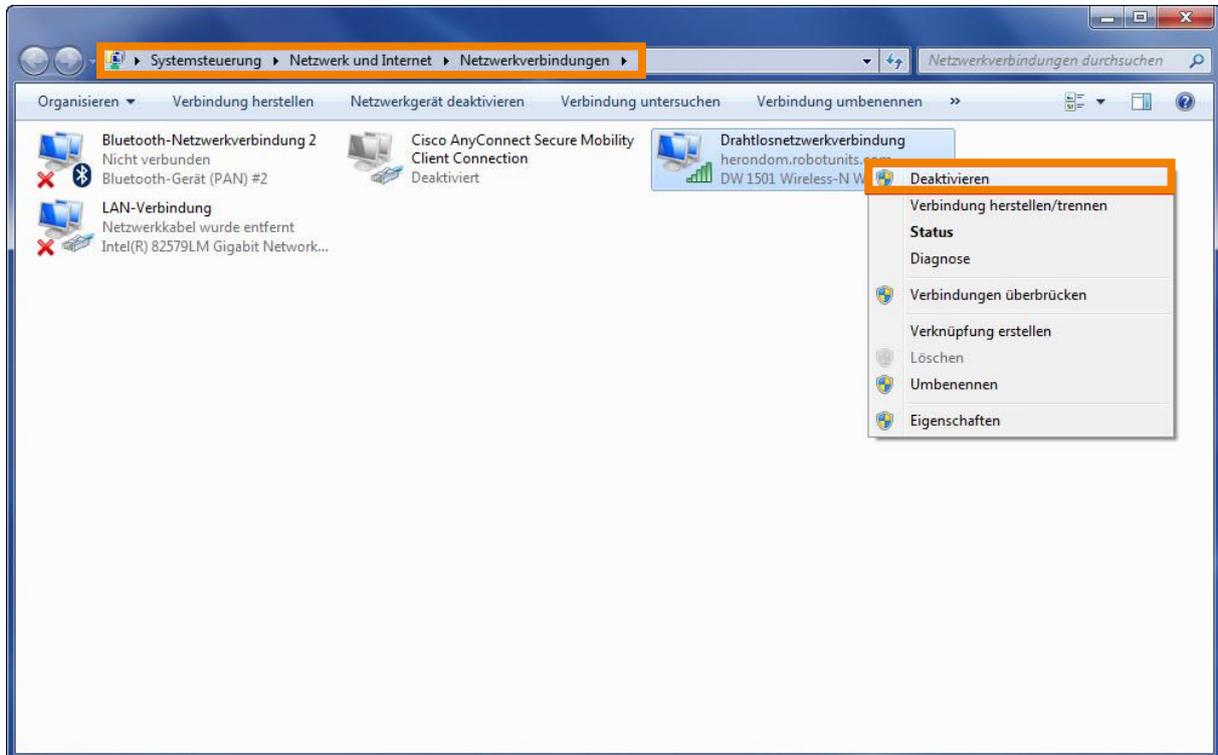
1.1 LAN connection





1.2 Wi-Fi connection

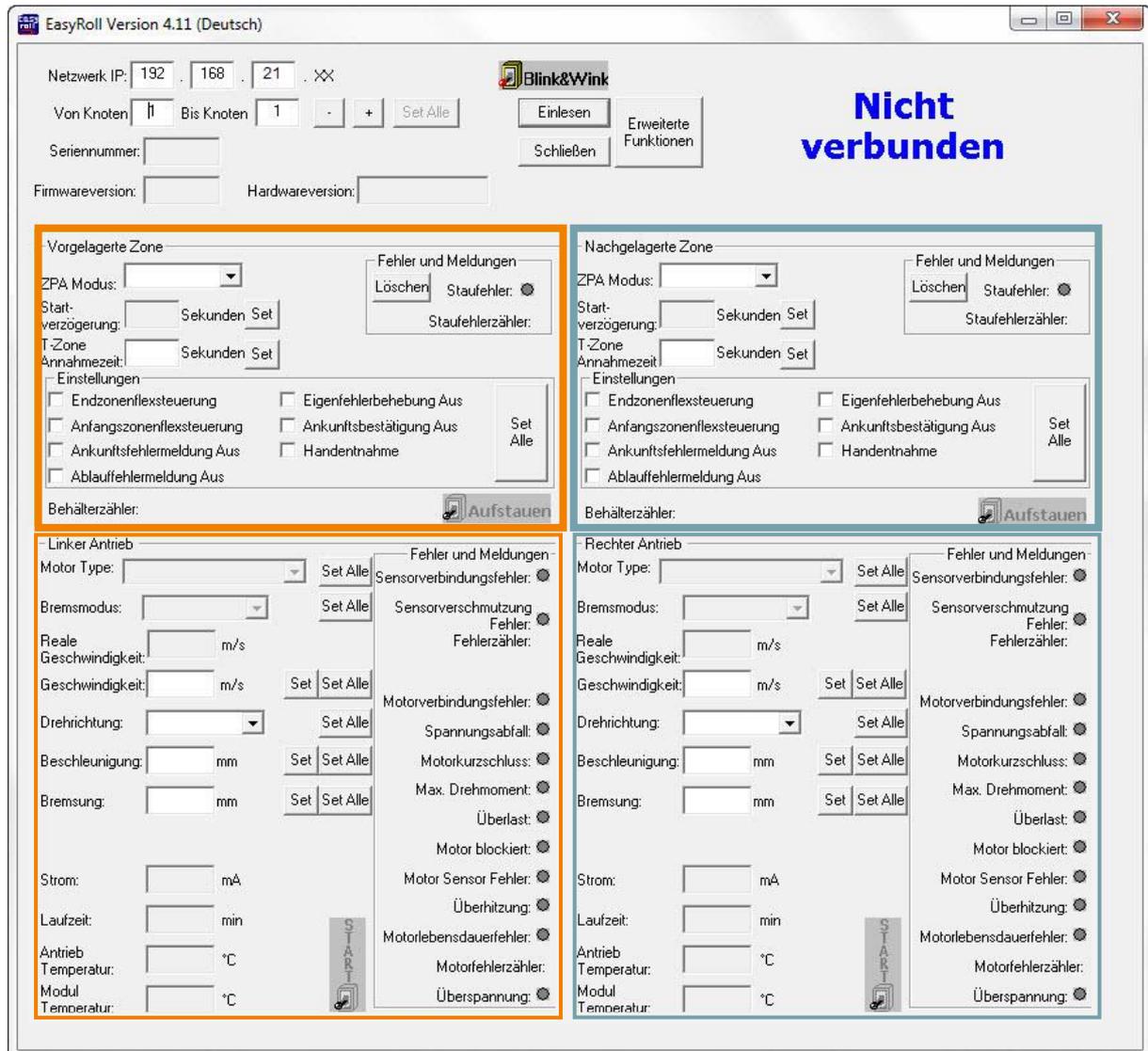
If possible, turn off the Wi-Fi connection before the configuration of ConveyLinx Ai2:



2. Software structure

In addition to the overview section (network IP, nodes, serial number), the program is divided into 4 sections:

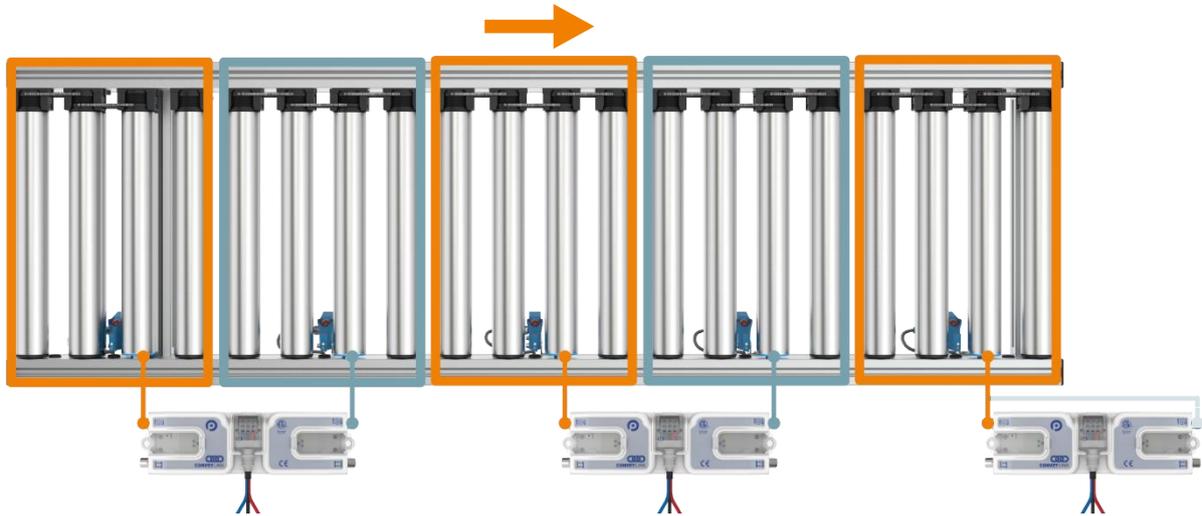
- Upstream and downstream zone
- Left and right drive



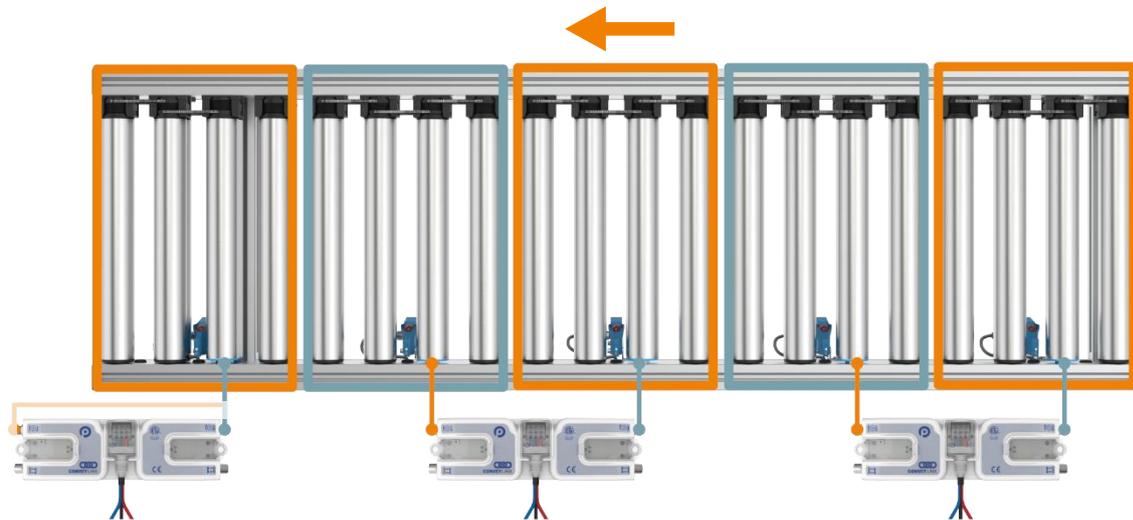
INFORMATION: One node corresponds to one ConveyLinx Ai2 controller

2.1 Conveying direction from left to right

The last motor roller in the conveying direction, with an odd number of motor rollers, can be connected to the controller on the right or left side. This is automatically recognized by the controller.

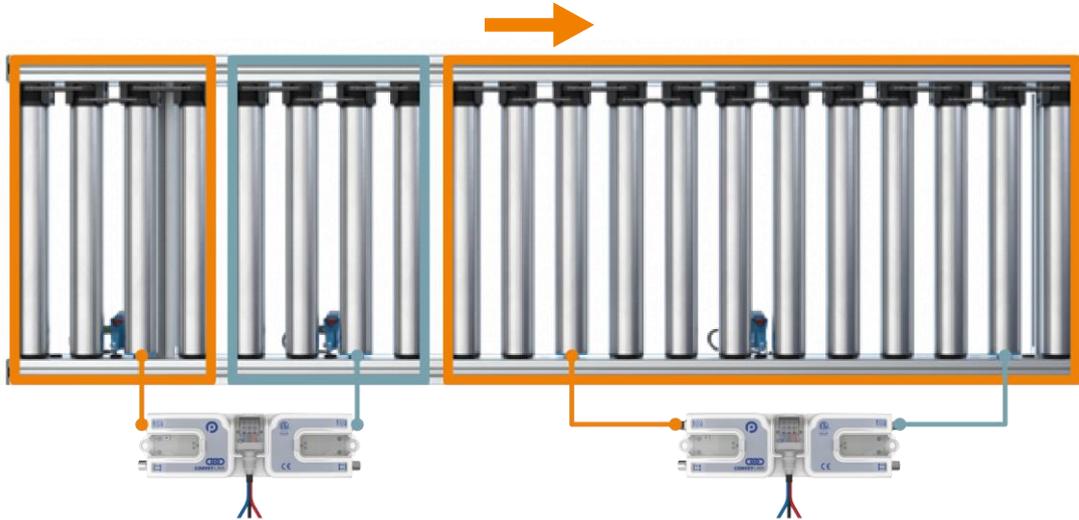


2.2 Conveying direction from right to left



2.3 Longer zones with two motor rollers

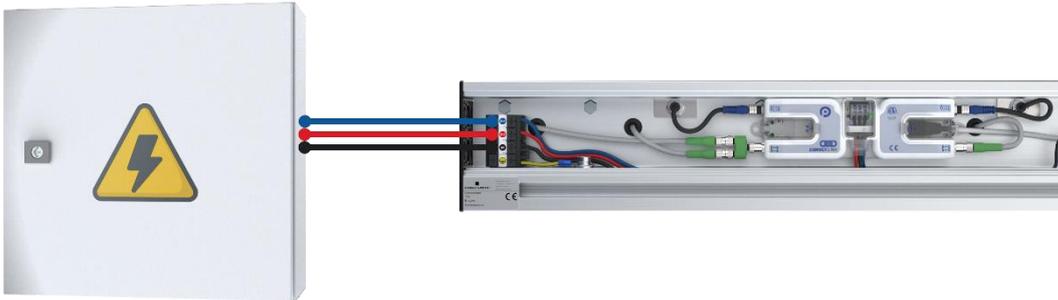
The controller recognizes when it is dealing with a longer zone with two motor rollers. In this case, two motor rollers and only one sensor are connected to the controller.



3. Auto-configuration

INFORMATION: There should be **no** goods on the roller conveyor during the configuration!

- 1) Connect power to the roller conveyor using the power supply as shown below:



- 2) Wait until the LED above the "Check Symbol" flashes **green**:



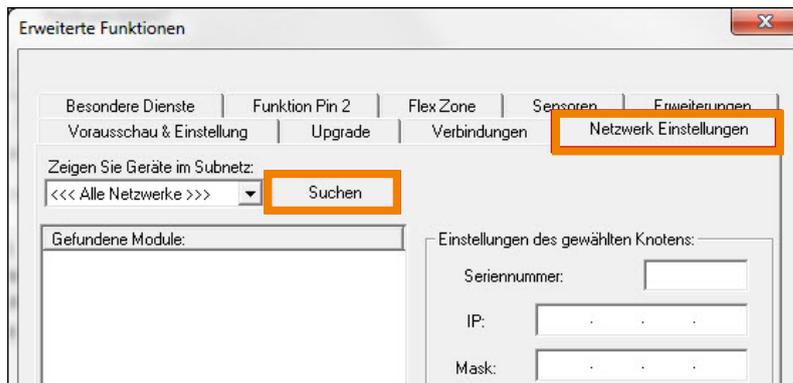
- 3) Connect the PC to the first controller in the conveying direction using a patch cable:



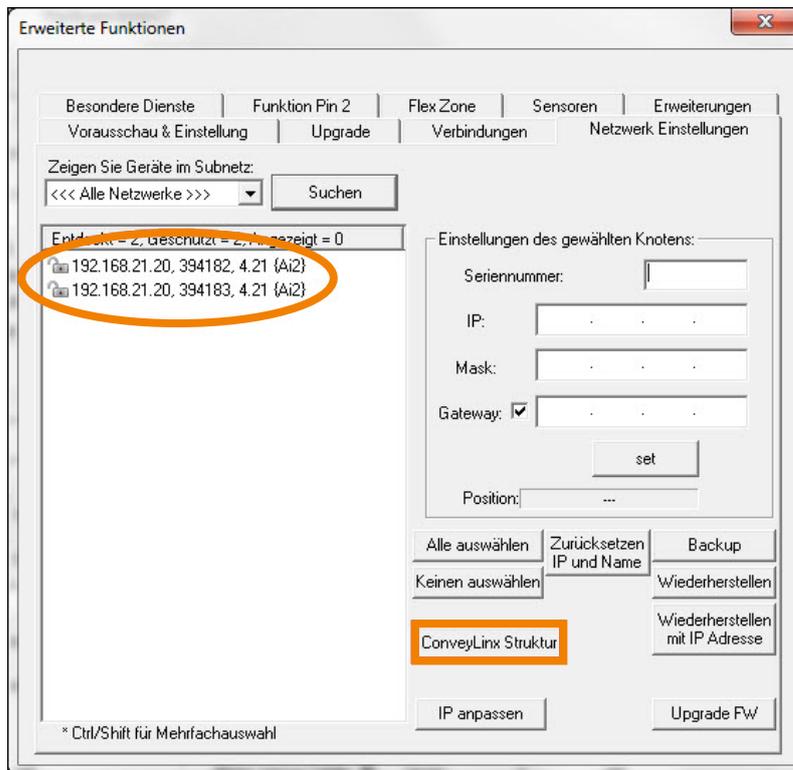
- 4) Wait 10 seconds and then start EasyRoll on the PC.
- 5) Click on the button "Advanced Dialog" and make sure that the network IP is **192.168.21.XX**:



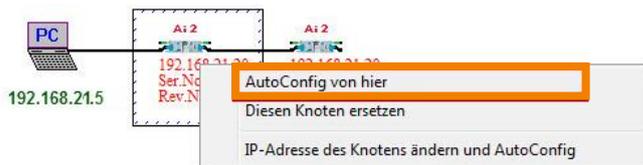
6) Select the tab "Network Services" and click on the button "Search":



- 7) EasyRoll now searches for all connected controllers.
Afterwards, click on the button "ConveyLinx Struktur":



- 8) Right-click on the first controller in the conveying direction and select "AutoConfig from here":

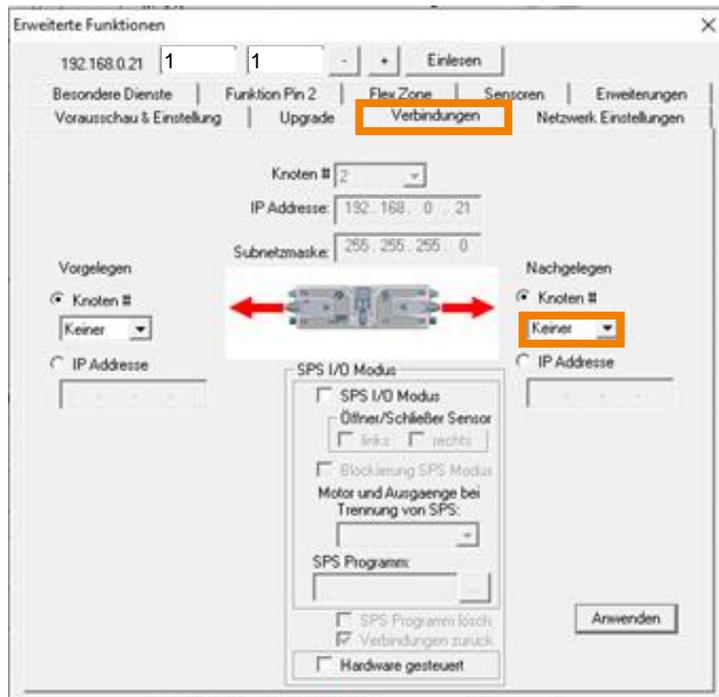


- 9) Now the controllers will be configured (**Attention: Motors rotate for test purposes**).
The configuration is completed when then motors no longer rotate and the LED above the "Check Symbol" flashes **green** again.

INFORMATION: If a roller conveyor is configured with 2 zones and 1 controller, the conveying direction is always set from left to right.

To configure the conveying direction from right to left, an additional controller with sensor must be connected in the conveying direction.

After the configuration of the controllers via "Advanced Dialog" and "Connections", set the downstream controller to "None" and remove the additional controller.



4. Standard settings

4.1 All zones

The screenshot shows the EasyRoll control interface with the following settings and annotations:

- Network Settings:**
 - Netzwerk IP: 192.168.21.xx
 - Von Knoten: 1 (circled 1)
 - Bis Knoten: n (circled 1)
 - Buttons: "Set Alle" (circled 4), "Einlesen", "Schließen", "Erweiterte Funktionen"
- Zone Settings (Vorgelagerte and Nachgelagerte Zone):**
 - ZPA Modus: Blocklückenat (circled 2)
 - Startverzögerung: 0.30 Sekunden (circled 2)
 - T-Zone Annahmezeit: 0.00 Sekunden
 - Buttons: "Set", "Löschen", "Staufehler", "Staufehlerzähler: 1/2"
- Motor Settings (Linker and Rechter Antrieb):**
 - Motor Type: Senergy-Ai ECO + (circled 3)
 - Bremsmodus: Normal
 - Reale Geschwindigkeit: 0.000 m/s
 - Geschwindigkeit: V m/s (circled 3)
 - Drehrichtung: CCW
 - Beschleunigung: S mm (circled 3)
 - Bremmung: S mm (circled 3)
 - Buttons: "Set", "Set Alle", "START"

1) Node settings

Select all nodes (all controllers) -> i. e. from node "1" to "n".
Afterwards click on "Refresh".

2) Zone settings

ZPA-Mode: Select "GAP Train".

Start delay: Enter 0.30 seconds and confirm by clicking "Set" or press ENTER.

3) **Drive settings**

Motor type: Select "Senergy-Ai ECO +".

Speed: Enter "**v**" in m/s and confirm by clicking "Set" or press ENTER.

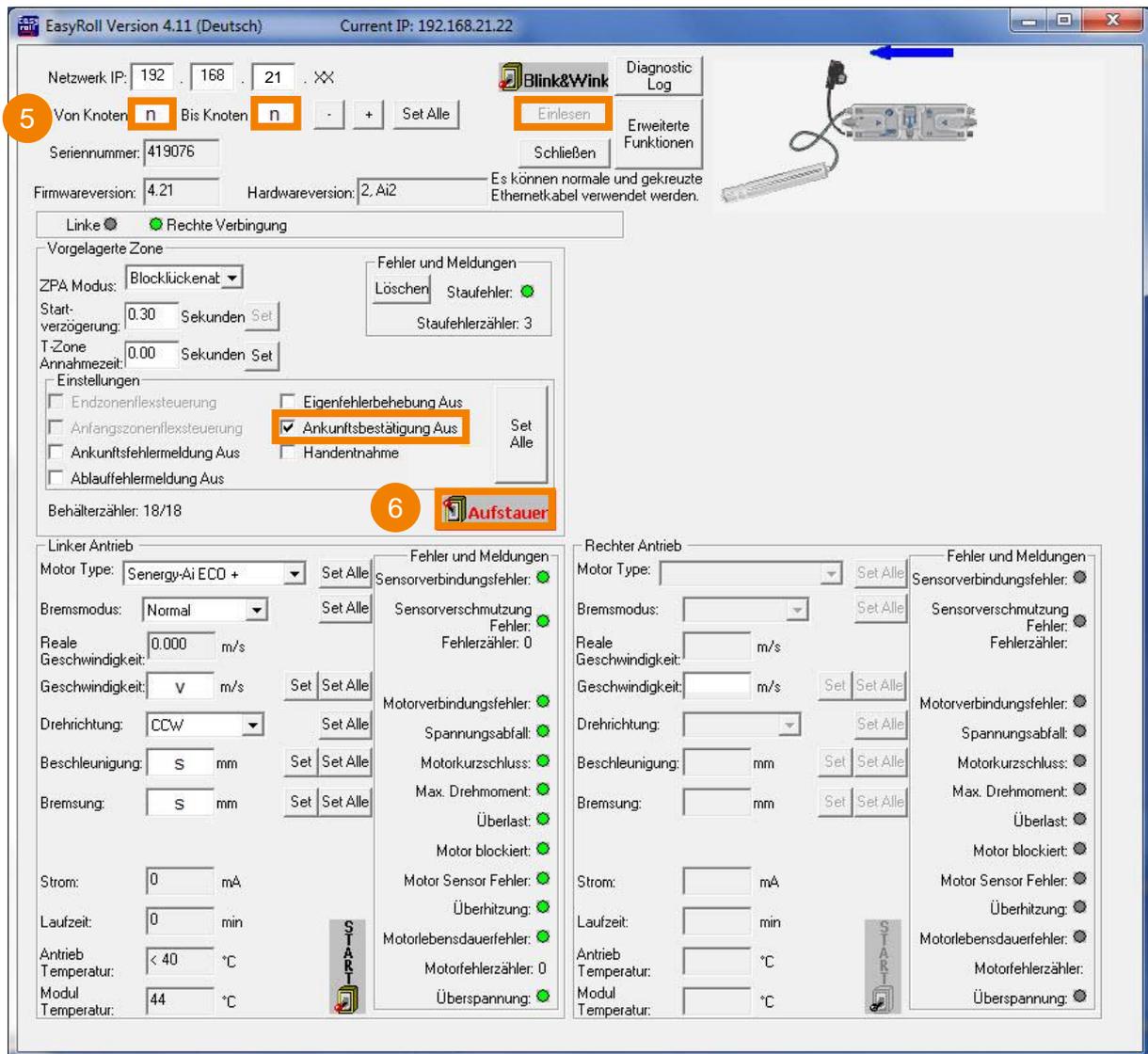
Acceleration: Enter "**s**" in mm and confirm by clicking "Set" or press ENTER.

Braking: Enter "**s**" in mm and confirm by clicking "Set" or press ENTER.

$$\mathbf{s = 1,5 \cdot \text{roller pitch} + 25\text{mm}}$$

- 4) To transfer the settings to all nodes, click the button "Set All" (within the node settings section).

4.2 Last zone



5) Node settings

Only select the last node -> i. e. from node "n" to "n".
Afterwards click on "Refresh".

6) Zone settings

Check the box "Disable Arrival Timeout".
Click on the button "Accumulate" (the text will then turn red).

The remaining zone and drive settings are set by clicking "Set All" in the "All zones" section.

5. Additional settings

5.1 Start sensor

At the beginning of the first zone of a roller conveyor, the start signal can be achieved via a start sensor:

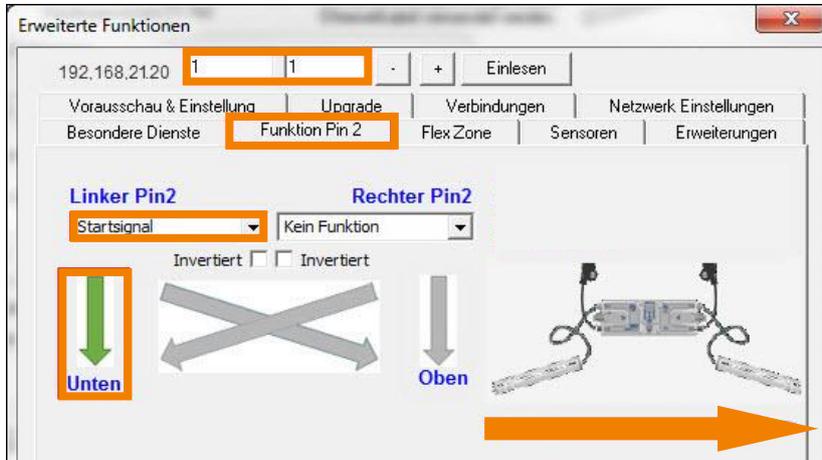


The zone and start sensor of the first zone must both be connected with a 3-pin cable. A Y-distributor is attached to the controller, to which both 3-pin cables are then connected.

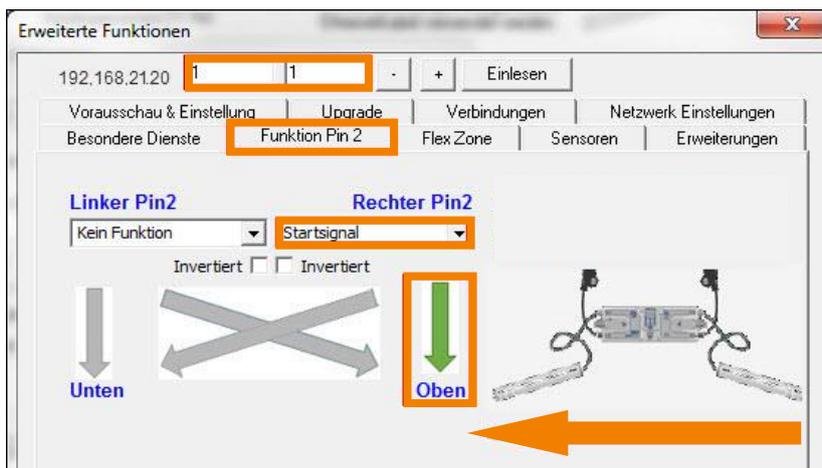


Now in EasyRoll the following setting must be made in "Advanced Dialog", under the tab "Function Pin 2":

Conveying direction from left to right 

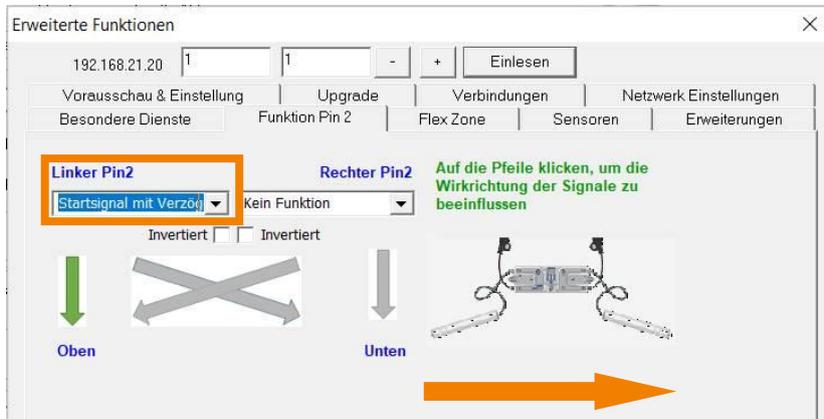


Conveying direction from right to left 

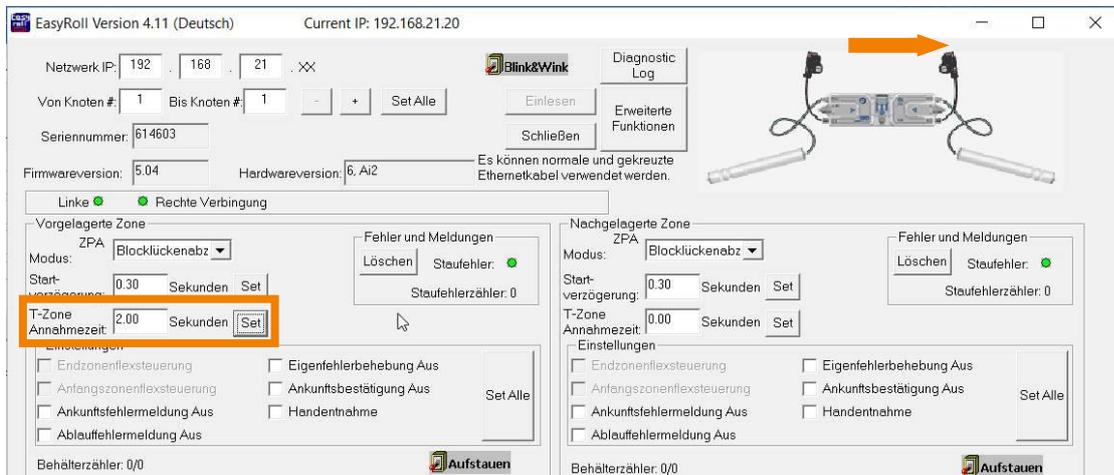


5.2 Start sensor with time delay

If the roller conveyor is to start with a time delay, the following setting must be made in EasyRoll in the "Advanced Dialog" under the tab "Function Pin 2":



Now the time delay must be defined under the "T-Zone Receival Time" setting:



5.4 Braking

With high loads and speeds, it is possible to brake the speed at the end of the roller conveyor or in a specific zone, if the zone in front is occupied. This can be set in the "Advanced Dialog", under the tab "Preview & Timing":

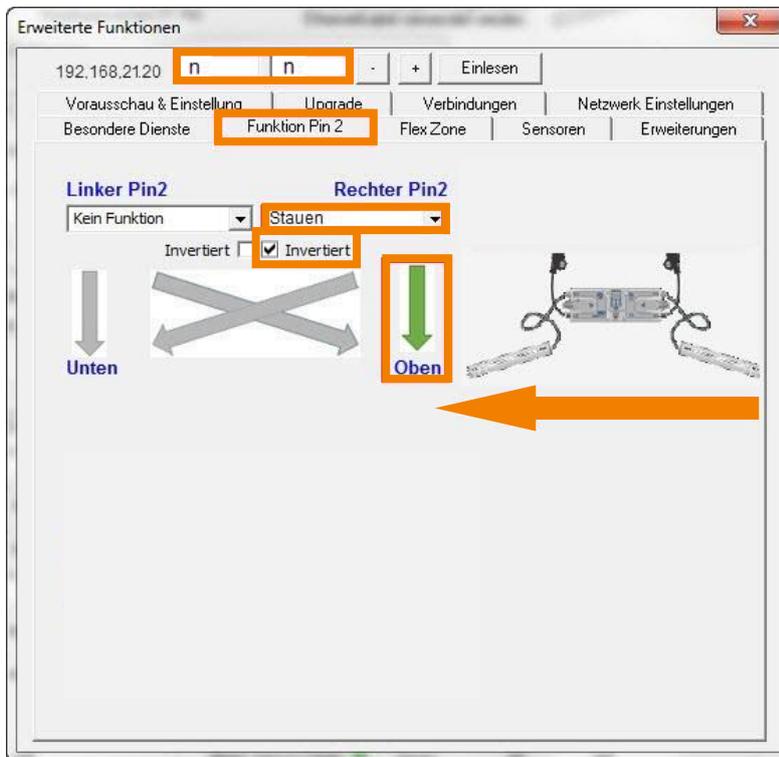
The screenshot shows the 'Erweiterte Funktionen' dialog box with the 'Vorausschau' tab selected. The 'Vorgelagert' and 'Nachgelagert' sections are highlighted with orange boxes. Each section contains the following controls:

- Abbremsen
- Geschwindigkeit %
- Schnellabzug
- Zeit Sekunden
- Set

There are also 'Set alle' buttons for each section. Below these sections are other settings for 'Stau Selbstbehebung Zeiteinstellungen', 'Nachlaufzeiten', 'Sensornachlaufzeit', and 'Sensorentprellung', each with their respective input fields and 'Set' buttons.

5.5 Intermediate stop & transfer

The transfer of conveyed goods at the end of any zone or at the end of the last zone of a roller conveyor is possible via an external signal. In EasyRoll, under the tab "Function Pin 2", the option "Accumulation" can be selected. It can be processed as following:



In order to accumulate the conveyed goods, a 24V signal must **NOT** be present at Pin 2. If the conveyed goods are to be transported further, a 24V signal **MUST** be present.

INFORMATION: If the option "Accumulation" under the tab "Function Pin 2" is selected, then

 **Aufstauen** may not be active in this zone.

If an external signal is only briefly present, the rollers will only rotate momentarily. The sensor debounce is set to allow the rollers to continue to run. The configured seconds correspond to the stopping time of the rollers.

Erweiterte Funktionen
✕

192.168.21.21 2 2 - + Einlesen

Besondere Dienste
Funktion Pin 2
Flex Zone
Sensoren
Erweiterungen

Vorausschau & Einstellung
Upgrade
Verbindungen
Netzwerk Einstellungen

Vorausschau

Vorgelagert

Abbremsen Geschwindigkeit % Set

Schnellabzug Zeit Sekunden Set

Nachgelagert

Abbremsen Geschwindigkeit % Set

Schnellabzug Zeit Sekunden Set

Set alle

Stau Selbstbehebung Zeiteinstellungen

Vorgelagert

Fehlerauslöse Zeit: Sekunden Set

Selbstbehebung Zeit: Sekunden Set

Nachgelagert

Fehlerauslöse Zeit: Sekunden Set

Selbstbehebung Zeit: Sekunden Set

Set alle

Nachlaufzeiten

Vorgelagert

Zeit ▼

Nachlauf: Sekunden Set

Sensornachlauf vorwärts: Sekunden Set

Sensornachlauf rückwärts: Sekunden Set

Nachgelagert

Zeit ▼

Nachlauf: Sekunden Set

Sensornachlauf vorwärts: Sekunden Set

Sensornachlauf rückwärts: Sekunden Set

Set alle

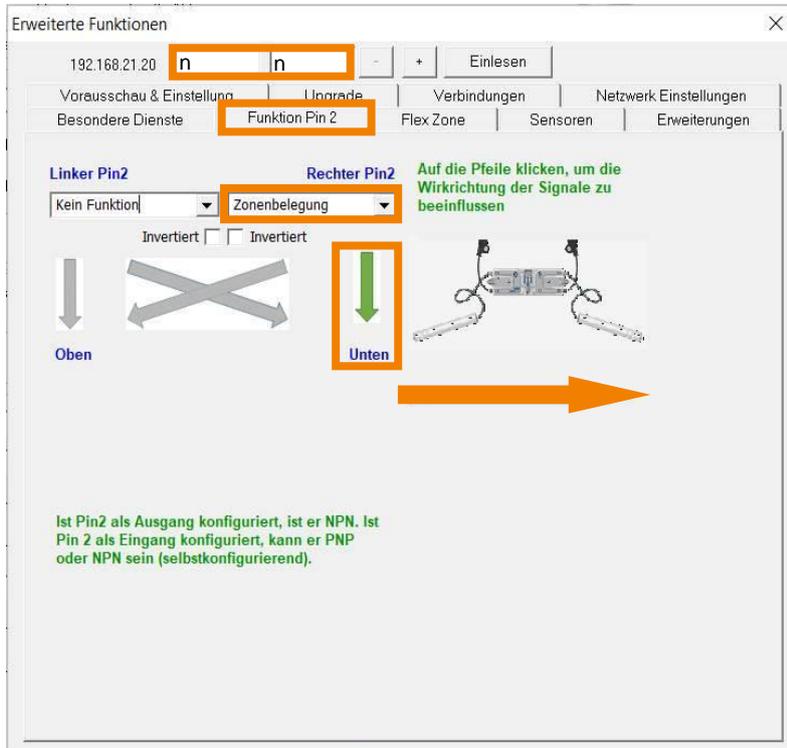
Sensorentprellung

Sekunden Set

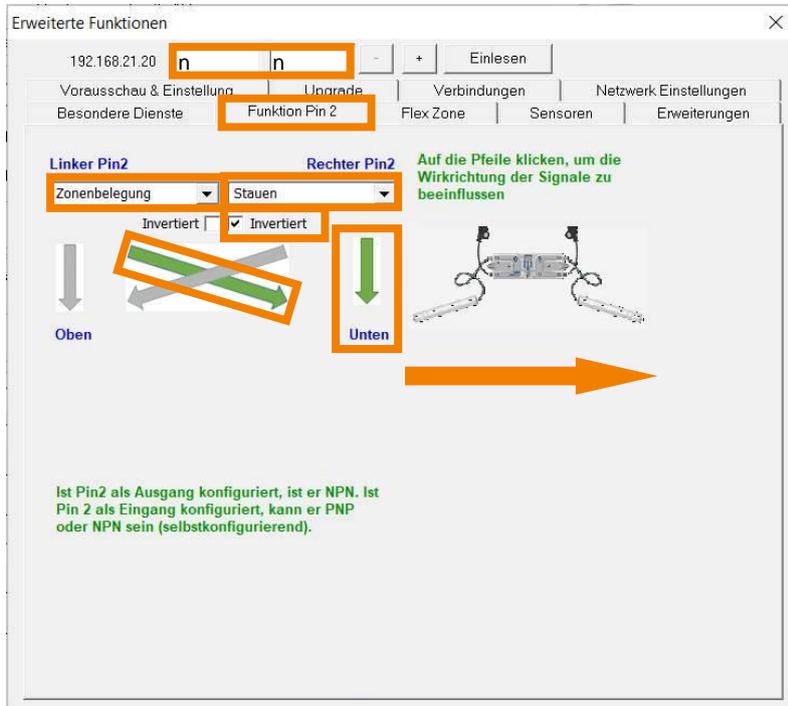
Set alle

5.6 Sensor signal read-out

It is possible to read the sensor signal of each zone. A 24V signal is sent, e.g. to the customer controls, as soon as the zone is occupied.

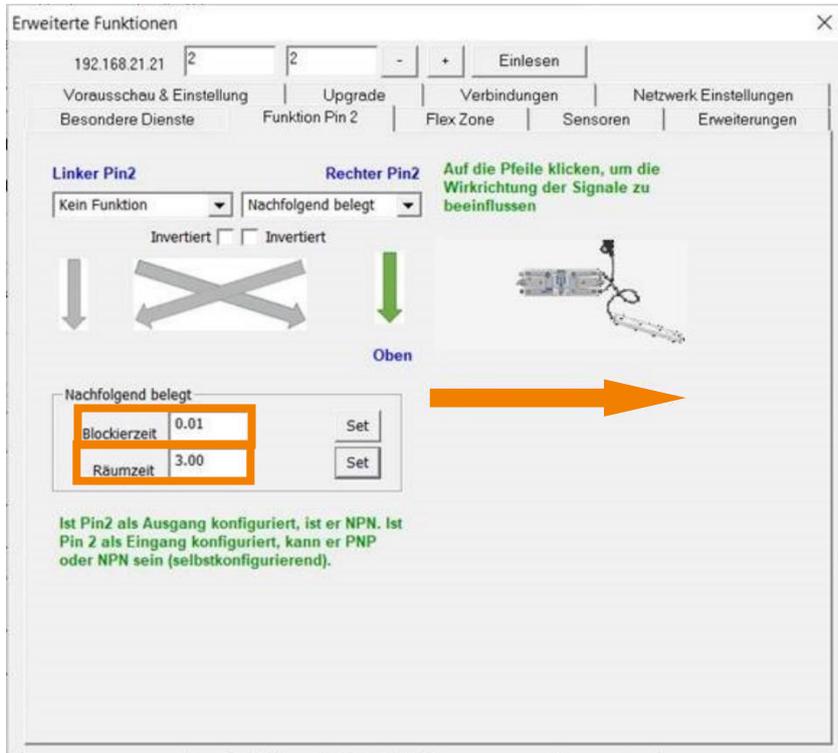


If the customer wants to achieve an intermediate stop with transfer via their control system, they require the information of when the zone with the transported goods is occupied. For this purpose, the command "Occupied Zones" can be set in combination with "Accumulation" as following:



5.7 Subsequently occupied

If a customer wants to transfer from the end of the last zone to another conveyor line, without ZPA logic, this can be achieved as following:



The **Blocking Time** is the time that the signal must be present in order to accumulate the product at the end of the conveyor line.

The **Clearance Time** is the time after which the product starts moving, when the signal is no longer present.

6 Merge

Each line must firstly be configured separately. The IP-Address and the subnet mask must be changed.

Network sharing:

Subnet mask (for all lines):.....255.255.128.0

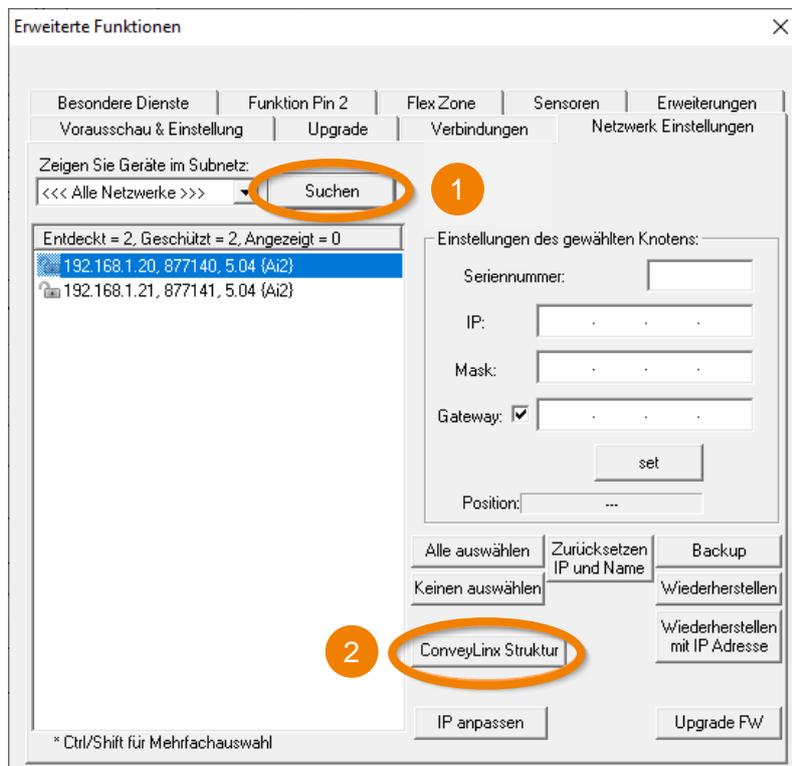
IP-Main line:.....**192.168.21.20**

IP-Merge line 1:.....192.168.22.20

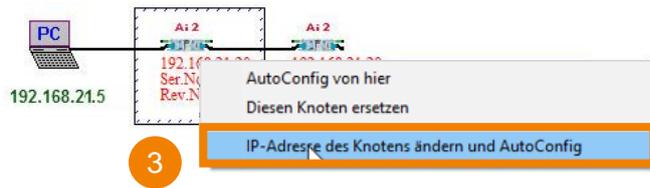
IP-Merge line 2:.....192.168.23.20, etc.

1) Search for the nodes in the "Advanced Dialog" and select the first one in the conveying direction.

2) Select the "ConveyLinX Struktur":



3) Click on "Change node IP-Address and AutoConfig":



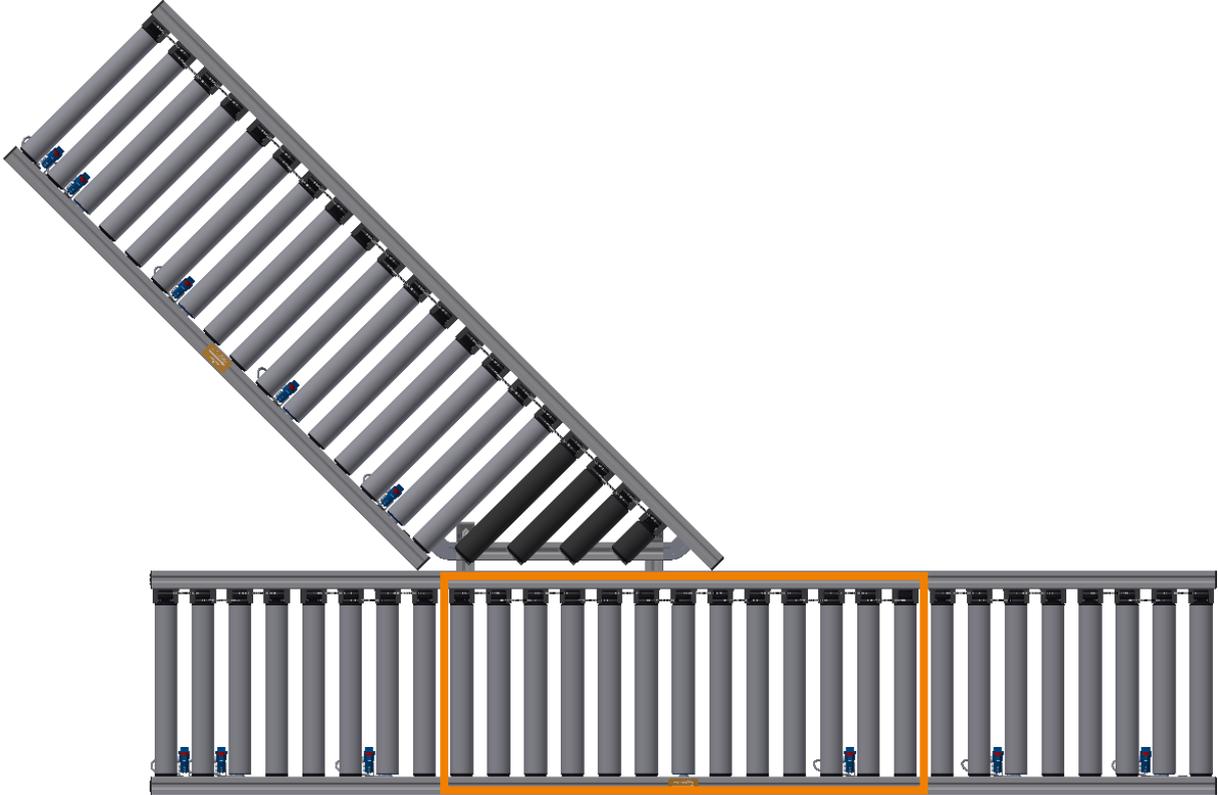
4) Enter and confirm the address and subnet mask:

The screenshot shows a dialog box titled 'IP-Adresse des Knotens ändern und A...'. The dialog contains the following fields and options:

- Einstellungen des gewählten Knotens
- Seriennummer: 877140
- IP: 192 . 168 . 21 . 20
- Mask: 255 . 255 . 128 . 0
- Gateway: 0 . 0 . 0 . 0
- Buttons: 'IP-Adresse des Knotens ändern und AutoConfig' (highlighted with a red circle and the number 4) and a close button 'X'.

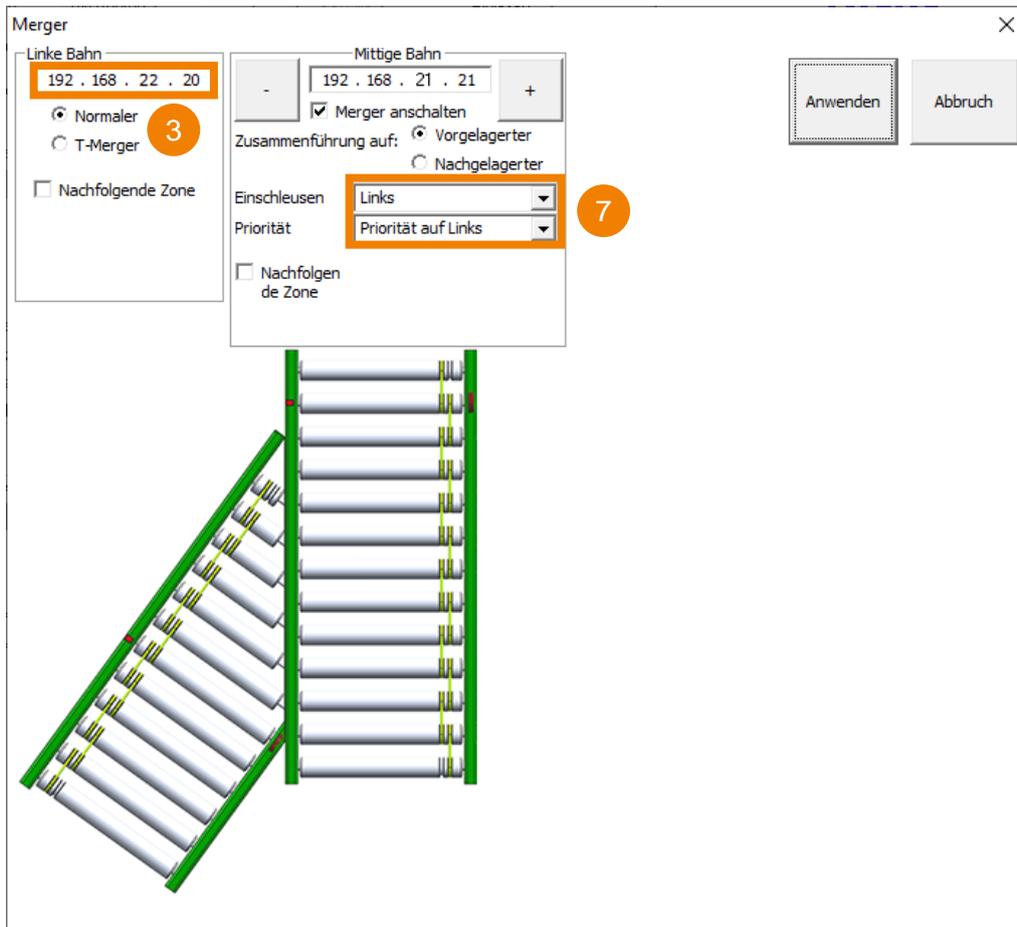
5) After configuring the individual lines, they can be connected via the switch.

6) Select the nodes for the desired Merge-Zone and open the Merge-Menu with STRG + Shift + M.



7) Determine the merge direction (left, right) and the prioritization.

8) Enter the IP-Address of the adjoining node:



The remaining parameters can be configured as default.



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