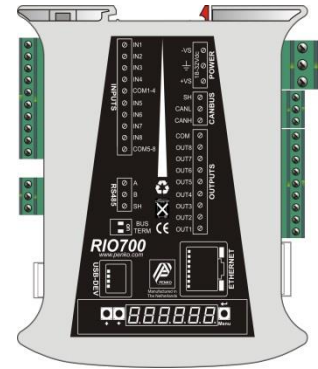


PENKO Engineering B.V.

Your Partner for Fully Engineered Factory Solutions



How to...

Connect the RIO700 to a FLEX 2100, FLEX
or FLEX 2ch. – 4ch.



an ETC Company

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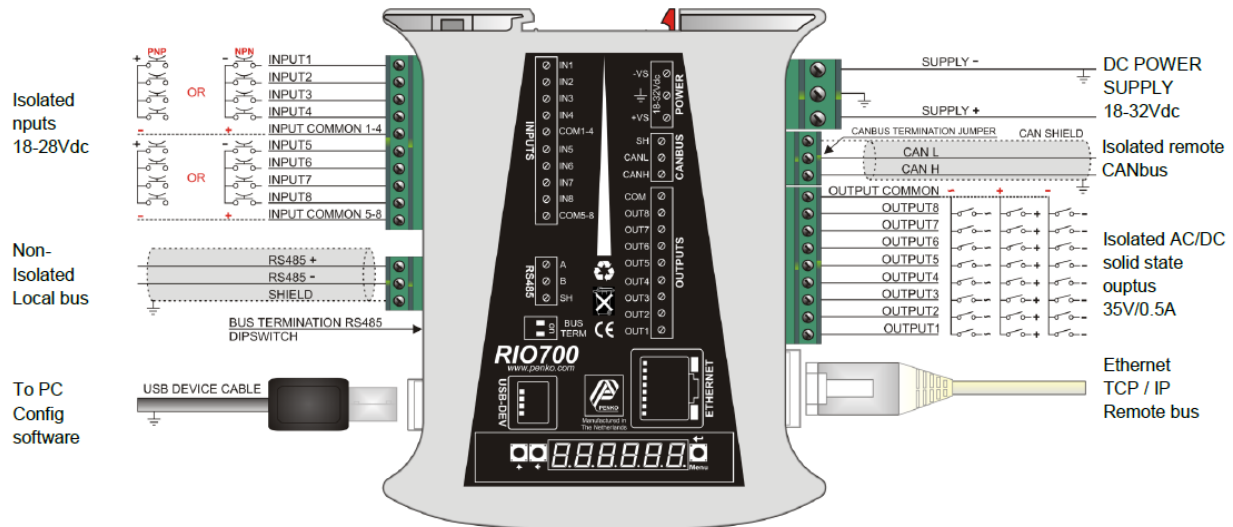
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PENKO How to...

Connect the RIO700 to a FLEX 2100, FLEX or FLEX 2ch. – 4ch.

General information

If you only connect the USB-Cable to power the RIO700, the communication ports, in- and outputs will not work. The power supply via the USB-Cable is for changing parameter only.



The RIO700 can be connected to a FLEX, FLEX2100 or a FLEX 2ch. – 4ch.using the Ethernet or CAN bus connection. It is possible to connect up to 5 RIO700's using Ethernet or CAN bus.

Ethernet

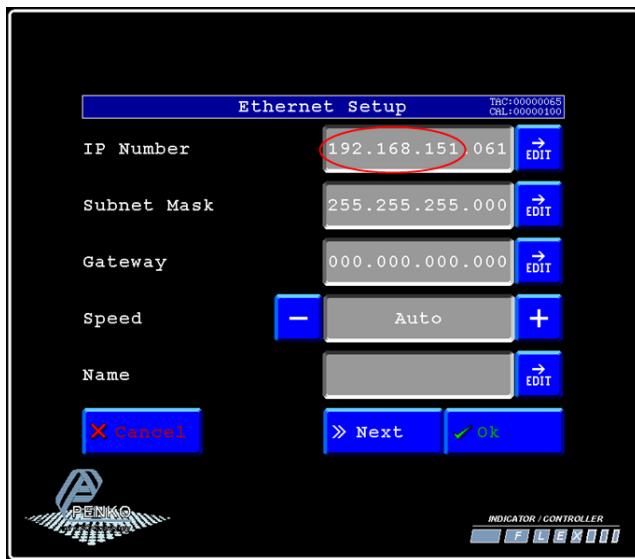
Note: you can only use the Ethernet Buslink or the CAN bus Buslink. You cannot use the Ethernet Buslink and CAN bus Buslink at the same time.

Use an Ethernet crossover cable to connect the RIO700 to a FLEX, FLEX2100 or FLEX 2ch. – 4ch directly, or use a switch to connect one or more RIO700's.

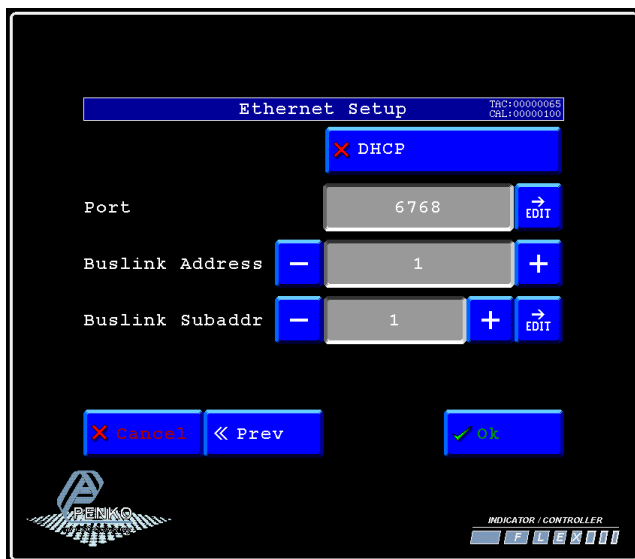
Set up the FLEX

Go to **Menu → System Setup → Port Setup → Ethernet Setup**. Enter an **IP Address**.

Note: the first 3 numbers must be the same as the RIO700.



Now press **Next**, **Set Buslink Address** on "1" and **Buslink Subaddr** on "1". Press **OK** to save settings.



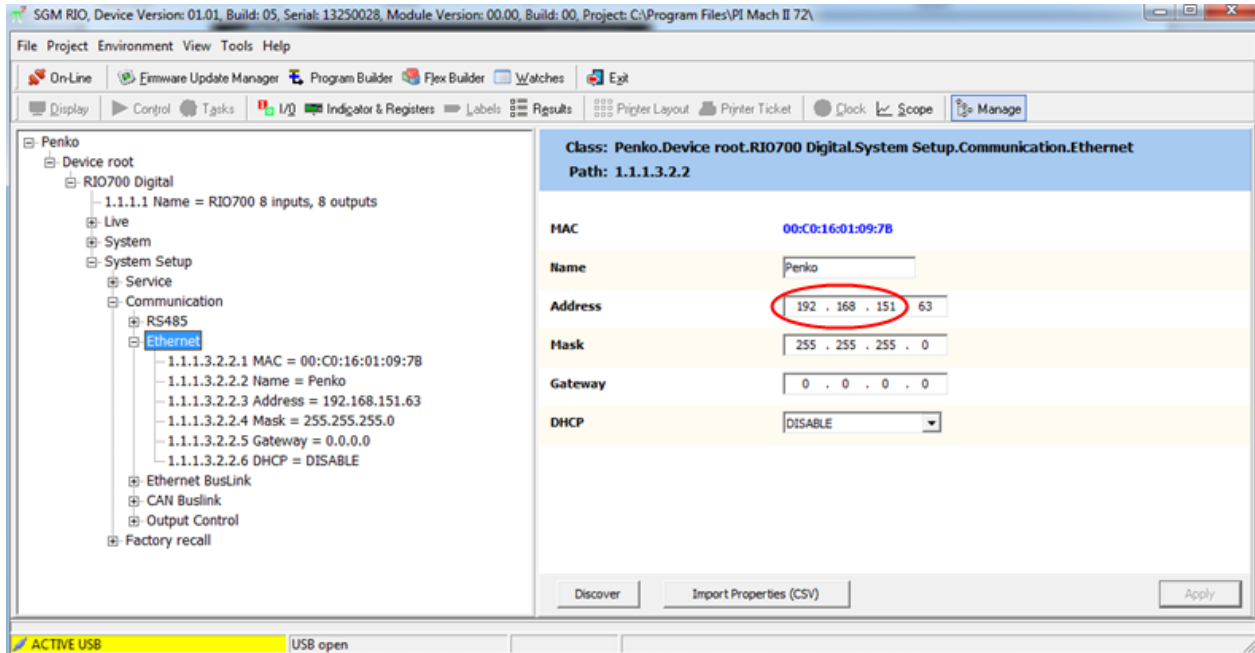
PENKO How to...

Connect the RIO700 to a FLEX 2100, FLEX or FLEX 2ch. – 4ch.

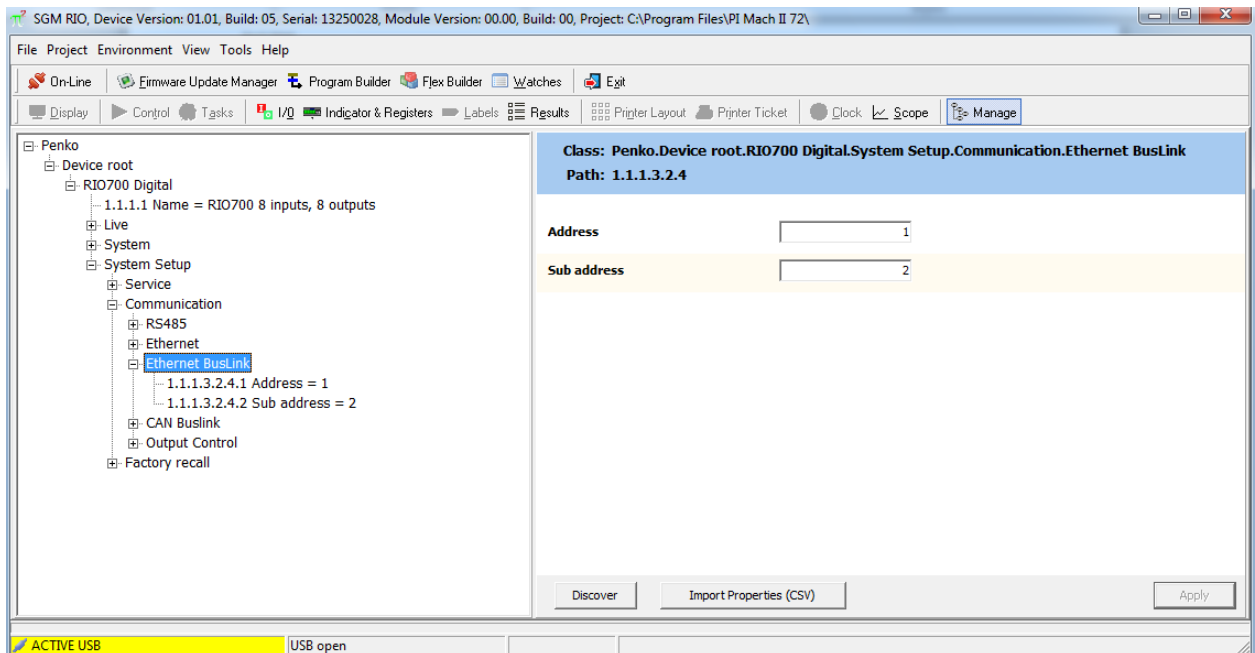
Setup the RIO700

Connect the RIO700 to a PC using a USB-cable and open Pi Mach II and double click on **RIO700**, then double click on **System Setup**, then double click on **Communication**, then double click on **Ethernet**, set the **IP address**. Click on **Apply** to save settings.

Note: the first 3 numbers must be the same as the FLEX.



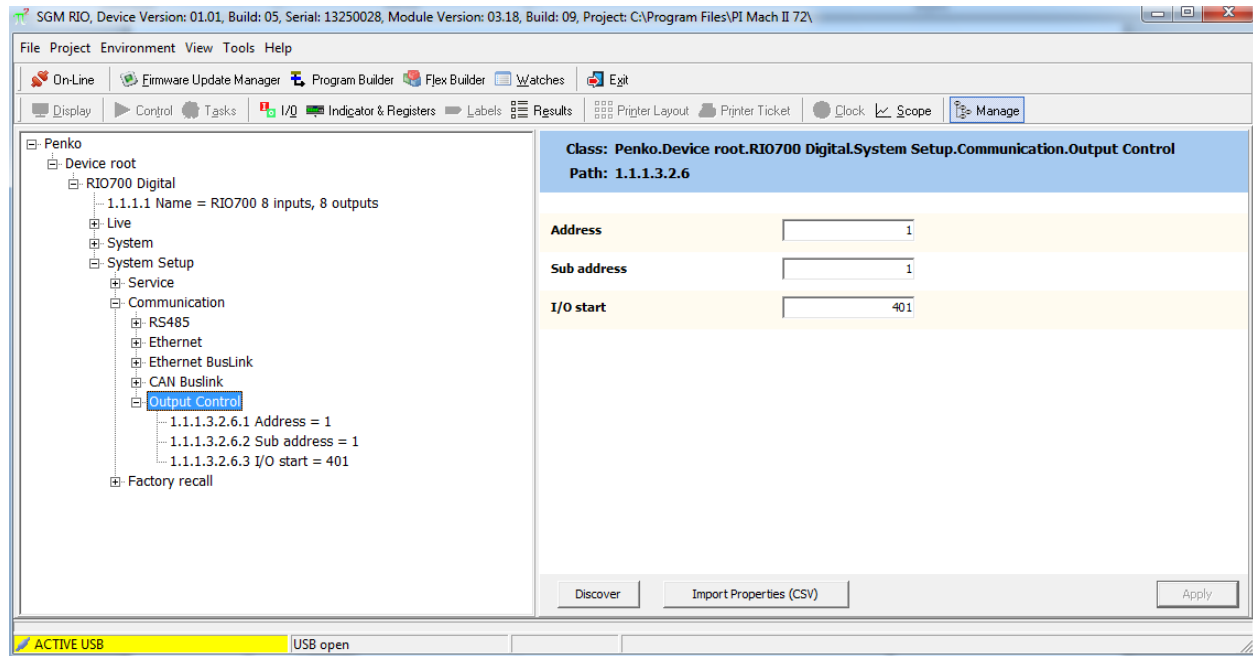
Double click on **Ethernet BusLink**. Set the address of the first SGM on **Address "1"** and the **Sub address on "2"**. Click on **Apply** to save settings.



PENKO How to...

Connect the RIO700 to a FLEX 2100, FLEX or FLEX 2ch. – 4ch.

Double click on **Output Control** and set **Address** to “1”, **Sub address** to “1” and **I/O start** to “401”. Click on **Apply** to save settings.



If you want to connect more than one RIO700, use the following settings for the Indicators:

| Device number | Inputs | | | Output control | | | | |
|---------------|------------------|---|-----------|----------------|-------------|-----------|--------------------------------|--------------------------|
| | Ethernet Buslink | | | Address | Sub Address | I/O Start | Outputs (shown on Status FLEX) | Outputs (use to program) |
| 1 | 1 | 2 | 1041-1048 | 1 | 1 | 401 | 1241-1248 | 401-408 |
| 2 | 1 | 3 | 1081-1088 | 1 | 1 | 409 | 1281-1288 | 409-416 |
| 3 | 1 | 4 | 1121-1128 | 1 | 1 | 417 | 1321-1328 | 417-424 |
| 4 | 1 | 5 | 1161-1168 | 1 | 1 | 425 | 1361-1368 | 435-432 |
| 5 | 2 | 1 | 2001-2008 | 1 | 1 | 433 | 2201-2208 | 433-440 |

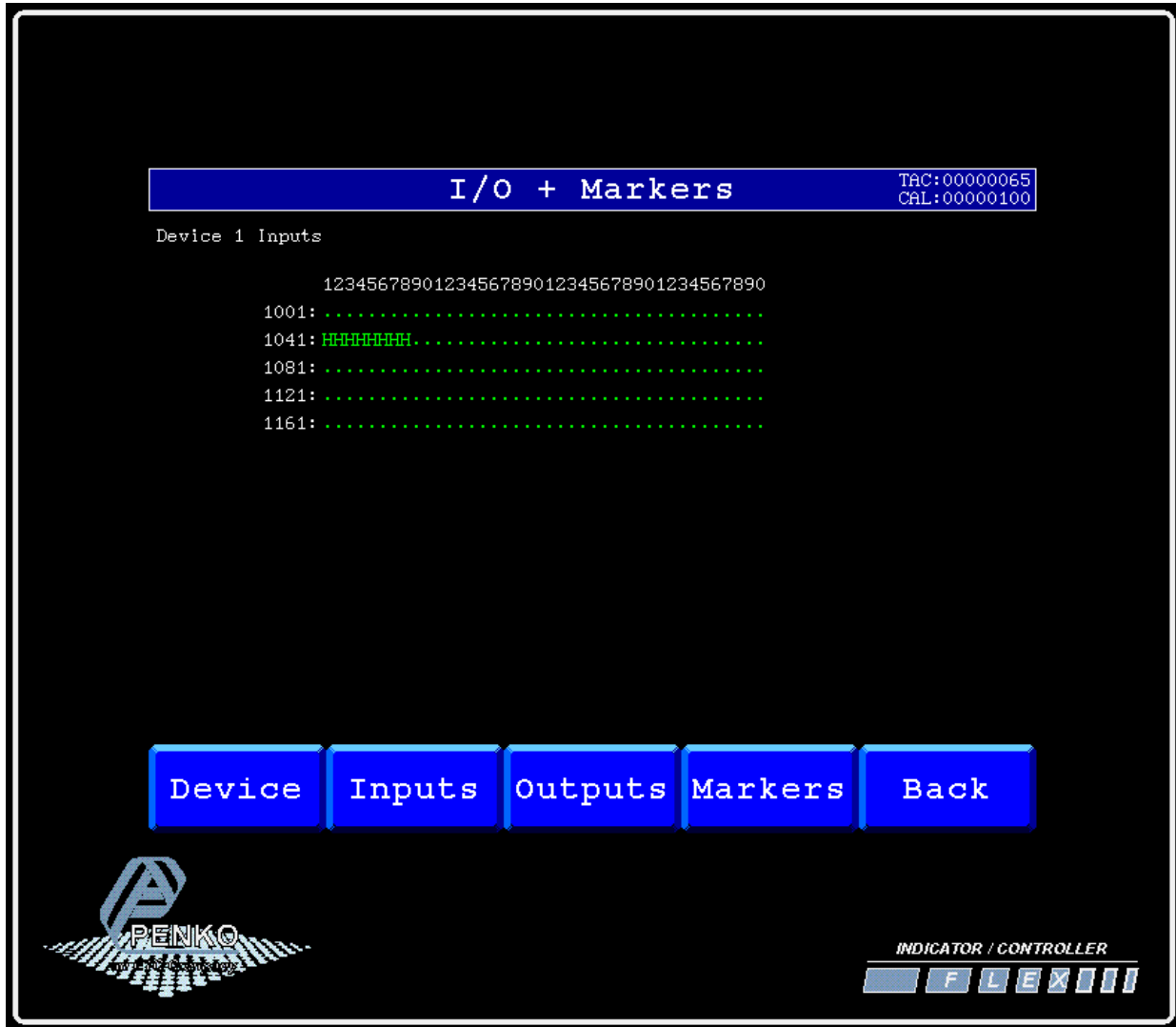
PENKO How to...

Connect the RIO700 to a FLEX 2100, FLEX or FLEX 2ch. – 4ch.

Checking the connection

To check if the connection works, use the FLEX and go to **Menu → Status → I/O + Markers → Device**.

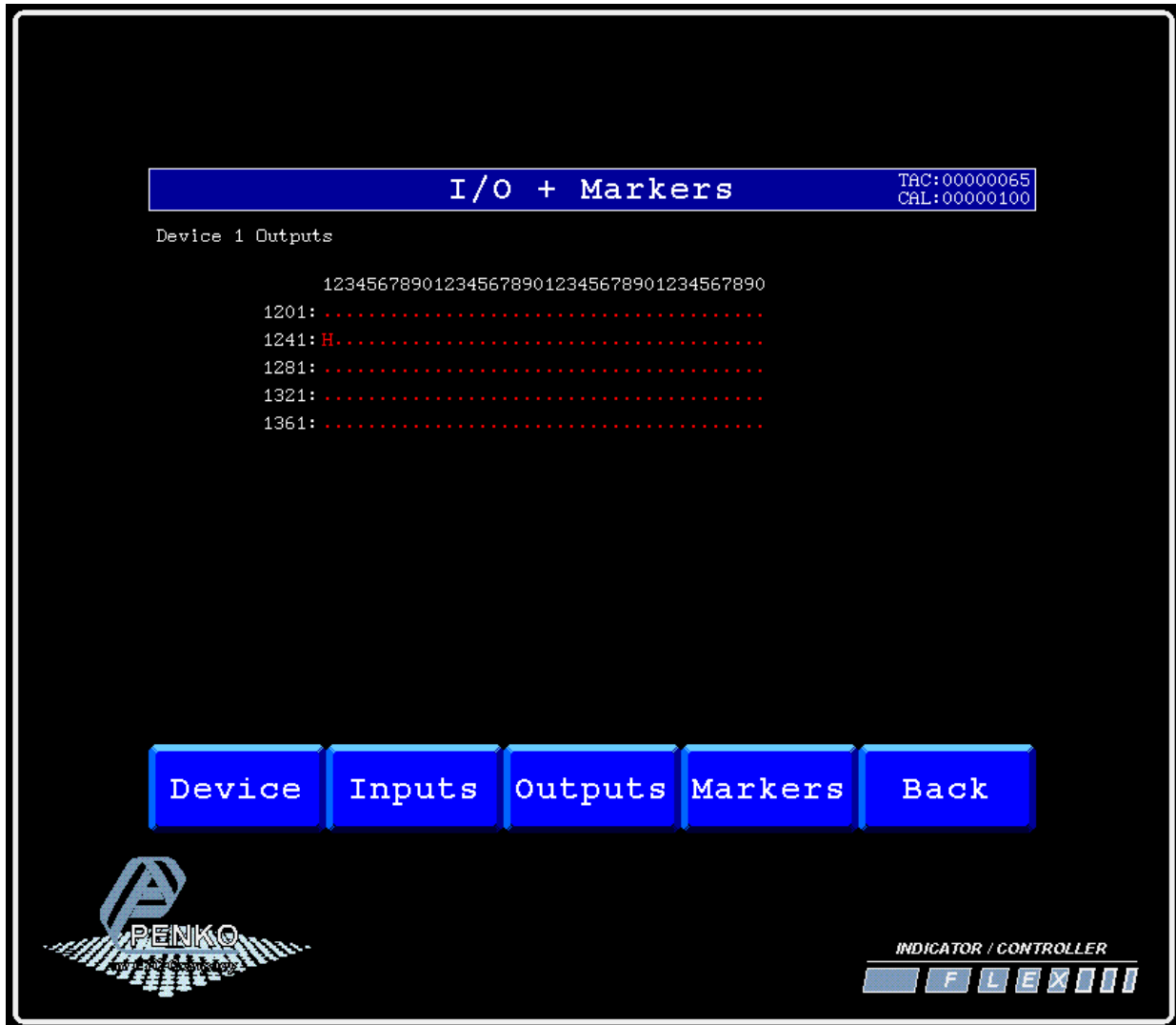
Now you should see the inputs from 1041 to 1048 if they are switched on.



PENKO How to...

Connect the RIO700 to a FLEX 2100, FLEX or FLEX 2ch. – 4ch.

Press on **Outputs** to see the outputs from 1241 to 1248. Now you should see the outputs from 1241 to 1248 if they are switched on in your program.



CAN bus

Note: you can only use the Ethernet Buslink or the CAN bus Buslink. You cannot use the Ethernet Buslink and CAN bus Buslink at the same time.

First of all you will need to connect one or more RIO700's to the FLEX, this can be done by connecting a cable with two wires and a shield parallel (**CanH** goes to **Can-H1**, **CanL** goes to **Can-L1** and **Shield** goes to **Shield**). Place a resistor of 120 Ω between **Can-H1** and **Can-L1** of the FLEX.

Connect the RIO700's to a FLEX 2100

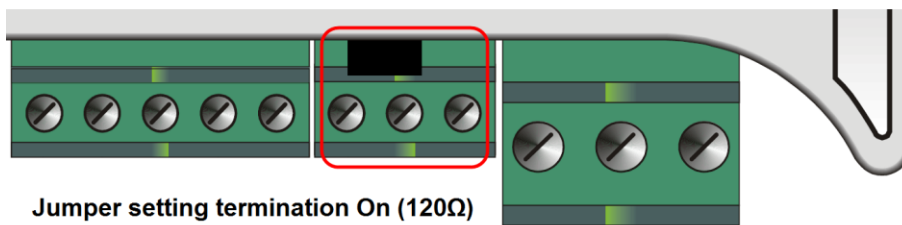
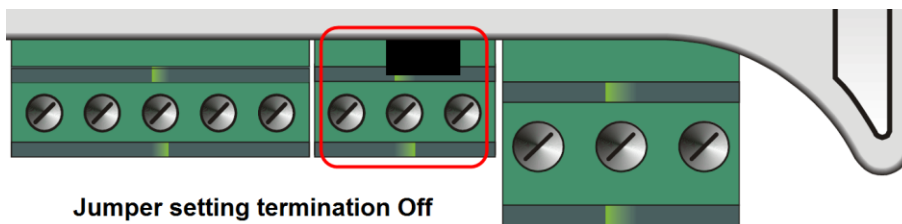
| FLEX 2100 | | RIO700 NO:1 | RIO700 No:2 | RIO700 No:3 |
|---------------|------------|-------------|-------------|-------------|
| CanH | Connect to | CanH | CanH | CanH |
| CanL | Connect to | CanL | CanL | CanL |
| Shield | Connect to | Shield | Shield | Shield |

Connect the RIO700's to a FLEX or FLEX 2ch. – 4ch.

| FLEX or FLEX 2ch. – 4ch. | | RIO700 NO:1 | RIO700 No:2 | RIO700 No:3 |
|--------------------------|------------|-------------|-------------|-------------|
| Can-H1 | Connect to | CanH | CanH | CanH |
| Can-L1 | Connect to | CanL | CanL | CanL |
| Shield | Connect to | Shield | Shield | Shield |

Set on the last RIO700 the jumper above the CAN bus connector in termination "ON" position. This will terminate the bus.

The CAN bus termination is done with a jumper:



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Connect the RIO700 to a FLEX 2100, FLEX or FLEX 2ch. – 4ch.

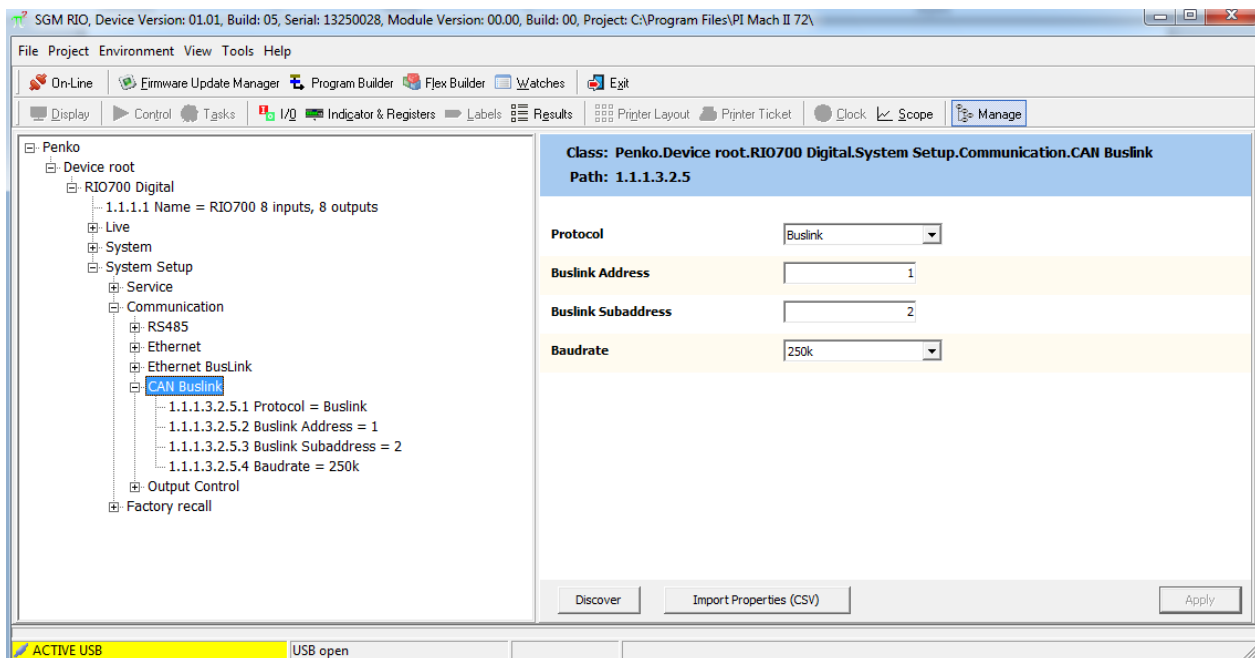
Setup the FLEX

Go to **Menu** → **System Setup** → **Port Setup** → **CAN1 Port**. Set **Protocol** on “**Buslink**”, **Baudrate** on “**250 kbs**”, **Buslink Address** on “**1**” and **Buslink Subaddr** on “**1**”. Press **OK** to save settings.



Setup the RIO700

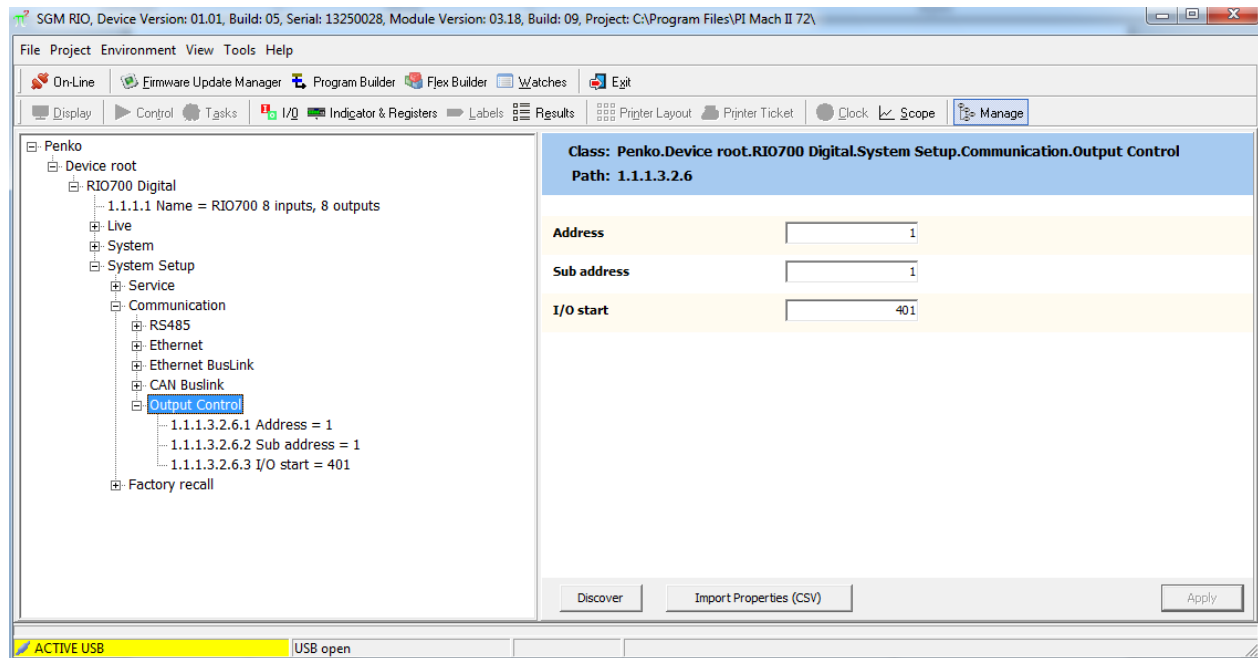
Open Pi Mach II and double click on **RIO700**, then double click on **System Setup**, then double click on **Communication**, then double click on **CAN Buslink**. Set **Protocol** on “**Buslink**”, **Buslink Address** on “**1**”, **Buslink Sub address** on “**2**” and the **Baudrate** on “**250K**”. Click on **Apply** to save settings.



PENKO How to...

Connect the RIO700 to a FLEX 2100, FLEX or FLEX 2ch. – 4ch.

Double click on **Output Control** and set **Address** to “1”, **Sub address** to “1” and **I/O start** to “401”. Click on **Apply** to save settings. The Buslink Address and Buslink Sub address must have the same address as the FLEX if you want to connect one or more RIO700’s to your FLEX.



If you want to connect more than one RIO700, use the following settings for the Indicators:

| Device number | Inputs | | | Output control | | | | |
|---------------|-----------------|-------------|-----------|----------------|-------------|-----------|--------------------------------|--------------------------|
| | CAN bus Buslink | | | Address | Sub Address | I/O Start | Outputs (shown on Status FLEX) | Outputs (use to program) |
| | Address | Sub address | Inputs | Address | Sub Address | I/O Start | Outputs (shown on Status FLEX) | Outputs (use to program) |
| 1 | 1 | 2 | 1041-1048 | 1 | 1 | 401 | 1241-1248 | 401-408 |
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| 3 | 1 | 4 | 1121-1128 | 1 | 1 | 417 | 1321-1328 | 417-424 |
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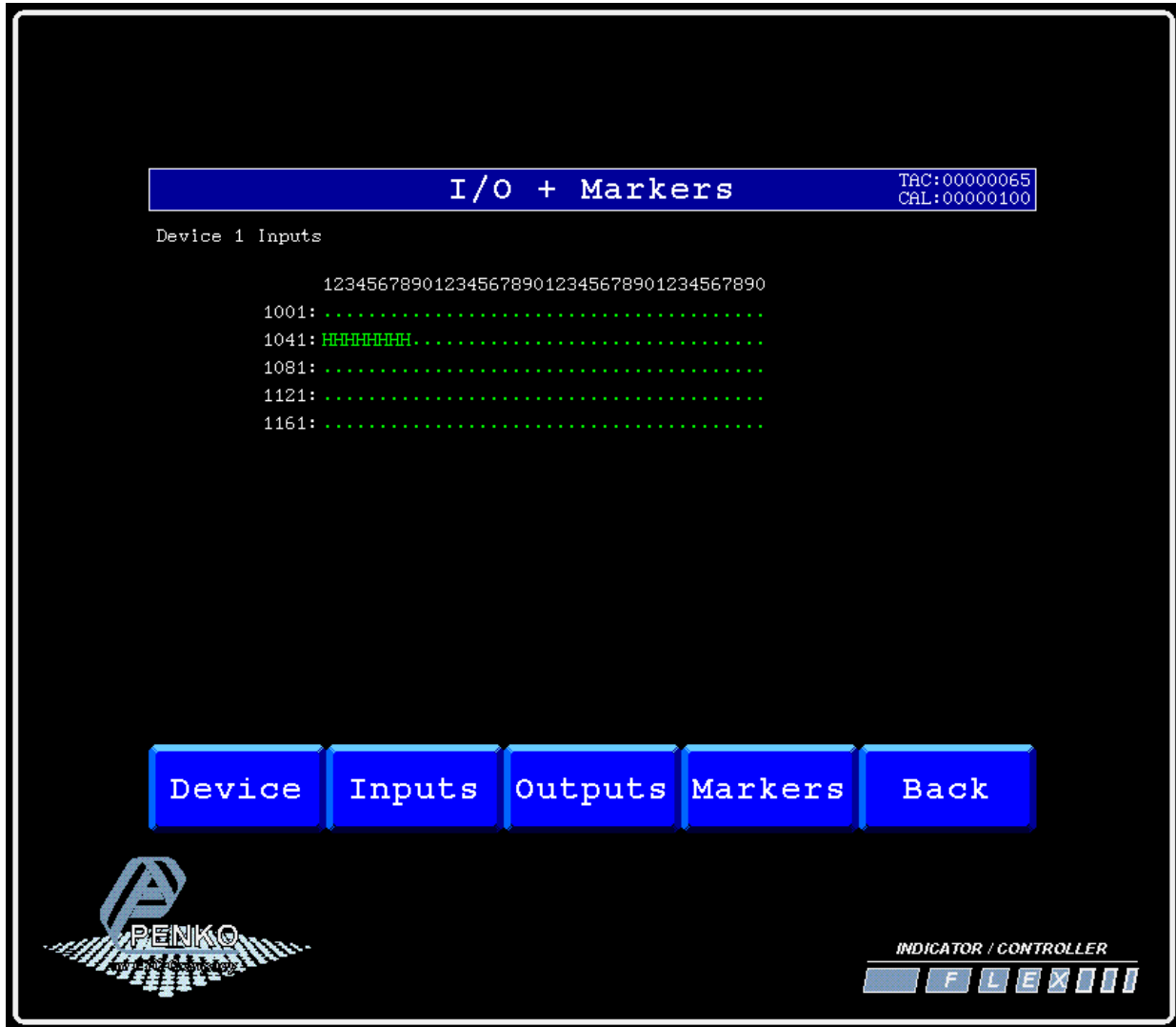
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To check if the connection works, use the FLEX and go to **Menu → Status → I/O + Markers → Device**.

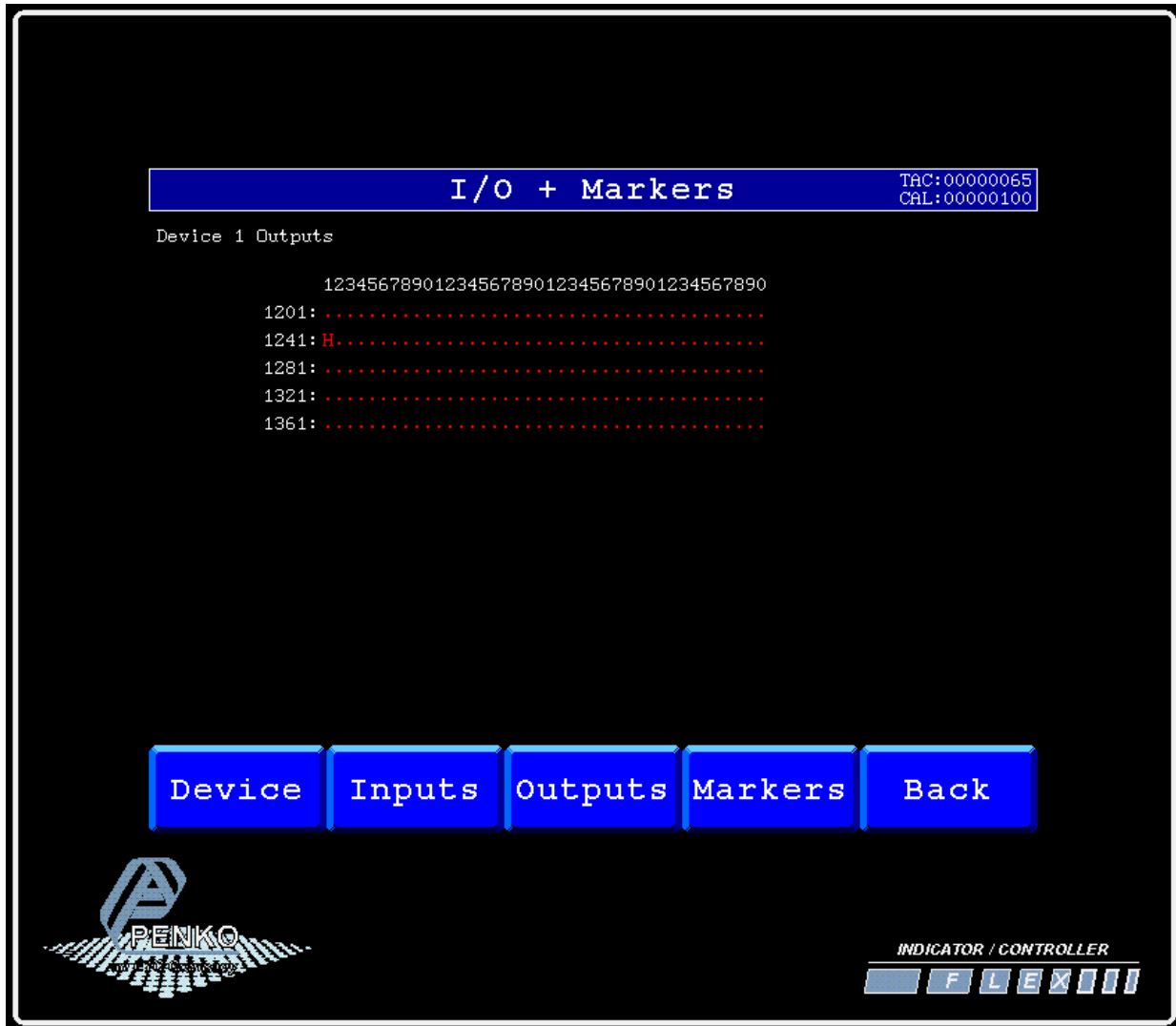
Now you should see the inputs from 1041 to 1048 if they are switched on.



PENKO How to...

Connect the RIO700 to a FLEX 2100, FLEX or FLEX 2ch. – 4ch.

Press on **Outputs** to see the outputs from 1241 to 1248. Now you should see the outputs from 1241 to 1248 if they are switched on in your program.





About PENKO

Our design expertise include systems for manufacturing plants, bulk weighing, check weighing, force measuring and process control. For over 35 years, PENKO Engineering B.V. has been at the forefront of development and production of high-accuracy, high-speed weighing systems and our solutions continue to help cut costs, increase ROI and drive profits for some of the largest global brands, such as Cargill, Sara Lee, Heinz, Kraft Foods and Unilever to name but a few.

Whether you are looking for a simple stand-alone weighing system or a high-speed weighing and dosing controller for a complex automated production line, PENKO has a comprehensive range of standard solutions you can rely on.

Certifications

PENKO sets high standards for its products and product performance which are tested, certified and approved by independent expert and government organizations to ensure they meet – and even – exceed metrology industry guidelines. A library of testing certificates is available for reference on:

http://penko.com/nl/publications_certificates.html



PENKO Professional Services

PENKO is committed to ensuring every system is installed, tested, programmed, commissioned and operational to client specifications. Our engineers, at our weighing center in Ede, Netherlands, as well as our distributors around the world, strive to solve most weighing-system issues within the same day. On a monthly basis PENKO offers free training classes to anyone interested in exploring modern, high-speed weighing instruments and solutions. A schedule of training sessions is found on: www.penko.com/training

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