

PANTA RHEI USB-Adapter



Functions of the Panta Logic Software

For all Panta Rhei devices
communicating with Panta Rhei CAN-Bus



PANTARHEI
Aquaristik im Rhythmus der Natur



PANTARHEI
Natural Aquarium Technology

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01) Scope of delivery

The USB/CAN interface is supplied with the following items

- Electronics (1 piece)
- USB-cable (1 piece)
- Panta Rhei CAN-Bus-cable (1 piece)
- Terminating resistor (2 pieces)
- USB-memory stick (1 piece)
- Operating manual (1 piece)

02) Safety notes

The Panta Rhei USB-CAN-Bus-interface is exclusively designed for the operation of Panta Rhei products. For the use with the products of other manufacturers no warranty can be granted. The Panta Rhei USB-CAN-Bus-interface is not suitable for the use as a communication interface for applications other than those described here.





03) General description

The Panta Rhei USB-CAN-Bus-interface is a hardware interface used to set and monitor the functions of Panta Rhei products like the Hydro Wizard® or the Hydro Jet using a Windows PC.

04) Getting started

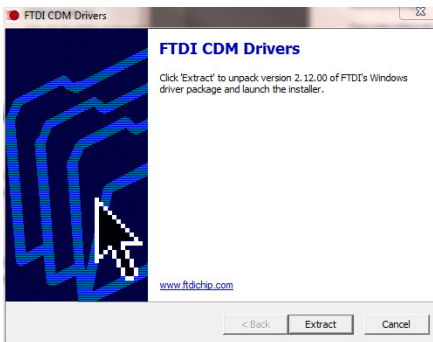
a) Assembly / connections

1. To install the Panta Rhei USB-CAN-Bus-interface please first insert the USB-memory stick into the USB-port of your PC. Start the Panta Logic set-up-program from the USB-stick. The Panta Logic Set-up-assistant will install the software. Select the desired directory and acknowledge by pushing the button “Install”. Then continue to follow the instructions.





2. The installer will now ask to upload the device drivers. Click „Extract“ and follow the instructions of the installation program.
3. Install your Panta Rhei device according to the operating instructions and check the functions.
4. To install the Panta Rhei USB-CAN-Bus-interface connect the electronic box with the USB-cable (plug-type B) on one side of the Panta Rhei CAN-Bus-cable, and screw the terminating resistor securely in to the socket on the other side. Make sure the plug connector for the Panta Rhei CAN-Bus-cable as well as the terminating resistor are screwed on securely. It does not matter which of the two sockets the Panta Rhei CAN-Bus-cable and the terminating resistor are connected with.
5. Now connect the Panta Rhei CAN-Bus-cable with the controller of your Panta Rhei device and install the second terminating resistor at the remaining Panta Rhei CAN-Bus-port. In the instance of multiple Panta Rhei





devices being connected, connect each additional one with an additional Panta Rhei CAN-Bus-cable with the previous device and place the terminating resistor at the end, in the last remaining Panta Rhei CAN-Bus-socket of the last device in the chain.

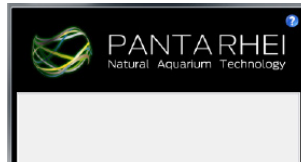
6. To finish the installation, connect the open end of the USB-cable to your PC.

05) Operating and programming the software

a) Starting the program

When the program is started, it connects to the Panta Rhei USB-CAN-Bus-adapter.

Once connected, the Panta Rhei logo changes from highlighted red to highlighted green to indicate the correct connection.



b) Device overview

The program will search for connected Panta Rhei devices in regular intervals. Detected products are shown in the program. If a device no longer answers it is removed.





c) Status display and input settings

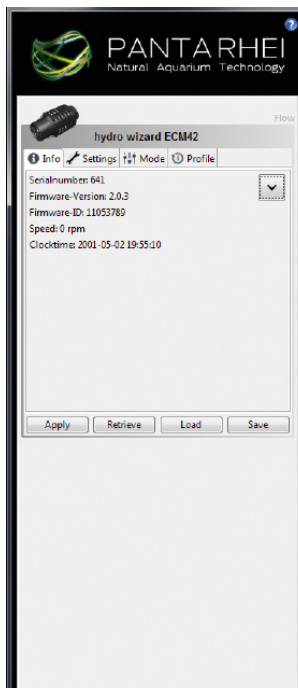
Clicking on a Panta Rhei device will open the settings panel. The settings tabs are along the top. Inside the window, below the settings tabs there are four buttons:

When you click the „Set-button“ all parameters set in the program are transmitted to the Panta Rhei device and applied.

When you click the „Retrieve-button“ all set parameters are transferred from the Panta Rhei device to the program and overwrite the currently set values.

When you click the „Load-button“ parameters from another file can be loaded.

When you click the „Save-button“ parameters can be written into a file. The device currently connected to the Panta Logic will flash in order to identify it. Operating data are displayed in the Settings „Info“ tab depending on the device type.





Device-specific settings can be made on the second tab „Settings“.

(On the right an example for the Hydro Wizard® ECM 42)

The individual settings (depending on the device) are shown in the following chapters.



The operating modes of the devices can be set in the third tab „Mode“.

The individual settings (depending on the device) are shown in the following chapters.





Initial states (on/off) can be set in the fourth tab „Profile“ (if they are supported by the Panta Rhei product).

A profile consists of several initial states. A new initial state is added with the „+“ button and can then be defined. An initial state is comprised of a start and end time per day and a state (e.g. the flow intensity at the Hydro Wizard®) of the connected device within the defined period of time.

Panta Logic allows the entry of up to 30 initial states per day. This is an interesting way to simulate high and low tides, following nature's model: a total period of 25 hours (4×6.25 hours).



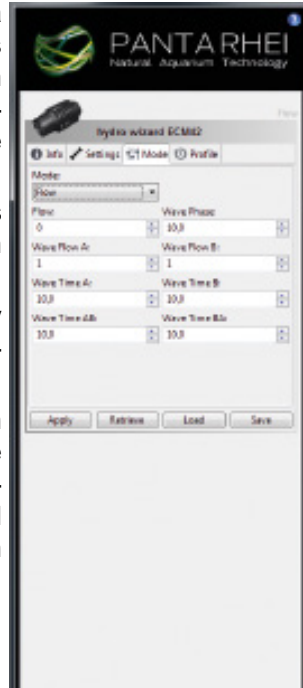


After adding an initial state a configuration window for this entry opens automatically (an example for the Hydro Wizard® ECM 42 is shown on the right).

If you click „OK“, the entry is added and the configuration window is closed.

If you click „Cancel“, the entry is discarded and the configuration window is closed.

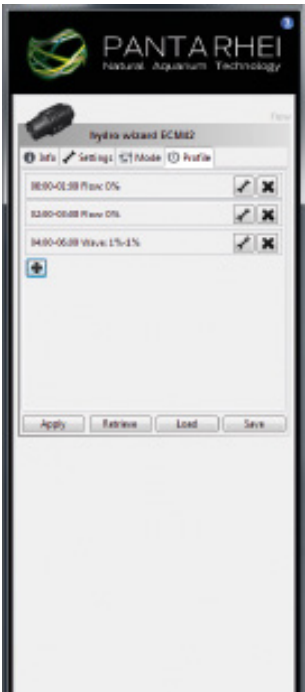
Entries must not overlap in the start and stop times. We therefore recommend to write down at least the start and end time on paper to avoid an unintended overlap.





The individual entries are sorted in chronological order.

Click the „Tool-symbol“ to enter the configuration window. A click on „x“ cancels the corresponding entry.





06) Setting up your Hydro Wizard® with Panta Logic

a) Selecting an operating mode

The operating mode can be selected in the main menu with the tab „Mode“.



A change of the operating mode in the selection window results in an immediate takeover of the operating mode without further acknowledgement. The selected mode then works with the previously set parameters.



After a power outage the system will not restart by itself. The settings are stored and are available after a power outage. When power is restored the Hydro Wizard® is stopped. To automatically restart a device after a power outage, click „Restart“ in the menu.

b) Flow mode operation

Flow mode will generate an even flow (current) in the tank.

After selecting flow mode, the flow intensity (setting in percent) can be changed in the menu tab „Mode“ with the value „Flow“.



Change the flow slowly from a low to a high value and set it carefully not to exceed an intensity suitable for your tank.



c) Wave mode operation

Wave mode will generate waves in the tank.

After selecting wave mode (you can change this mode in the menu tab „Mode“).

The Hydro Wizard® generates waves by changing between two flow intensities. The flow intensities A and B can be varied between 1% and 100%.

The operating time in the respective intensity can be selected through the parameters „Time A“ and „Time B“.

The parameter „Time A-B“ defines the length of the lag interval at the change from „Flow A“ to „Flow B“. The parameter „Time B-A“ defines the length of the lag interval at the change from „Flow B“ to „Flow A“.

The parameter „Phase delay“ is provided to set a phase shift among the devices if several controller are combined in a network. A time is defined by which the wave is started later than the one of the master device.

d) Profile mode operation

The profile mode is provided to start or stop the wave and flow mode automatically. In the process wave and flow intervals can be set for each time interval individually.



To program „wave and flow mode“ read the chapters „Wave mode operation“ and „Flow mode operation“.

After the change into profile mode you can add a new switch interval on the menu tab „Profile“ or change or cancel an already entered one.

Note that the Hydro Wizard® changes the operating modes by itself at the selected time. Wave or flow settings that are too strong can destroy or overflow the tank!

*Warning: **ALWAYS** test the wave and flow settings in the respective mode before you program them into the profile mode!*

e) Networking

Four networking options can be selected:

„**OFF**“, „**SYNC**“, „**SLAVE**“ and „**MASTER**“

When several powerboxes / controller are combined to a network, one device must be selected to act as a **MASTER**. This sets standards for other devices in the network according to their settings. A crown in the clock (indicated on the information screen of a device) shows it is configured as **MASTER**.

If a device is operated as a **SLAVE**, it automatically takes over the flow rate of the master if connected. This is indicated by the word **SLAVE** on the information screen (and by the preset flow rate transmitted by the master).

If the connection is lost, the device continues to operate in this set mode.



If a device is operated as „**SYNC**“ it takes over the exact time and start settings of the master, but operates independently otherwise.

Complex processes can be programmed in this mode through the wave and profile mode (e.g. phase control of the wave or time dependent control of the flow).

If a device is configured as **SYNC** and a **MASTER** is connected / available, this is indicated by an „**S**“ on the clock.

f) Sample applications:

For simplicity, the following examples are carried out with two Hydro Wizard®. Applications with many devices are programmed in the same simple installation with the Panta Rhei CAN-Bus system.

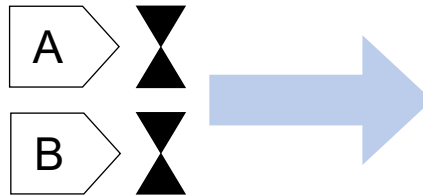


1. Flow and wave operation with several Hydro Wizard®:

In this example a stronger and more even flow or wave is generated by the parallel operation of two Hydro Wizard®.

A **SLAVE** network is used.

Required settings:



Hydro Wizard® A: Network → Master
Mode → Flow
Settings → Flow → 55%

Hydro Wizard® B: Network → Slave

With this configuration the flow of Hydro Wizard® A can be changed at your discretion and Hydro Wizard® B will generate exactly the same flow or wave.

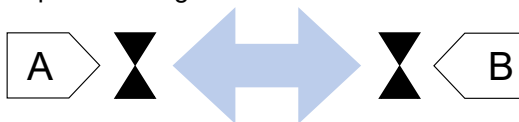
In this case, the master device can be operated in flow, wave or profile mode.



2. Forwards or backwards drifting wave:

In this example a wave is generated by the operation of two Hydro Wizard® in opposite directions. In doing this Hydro Wizard® A runs the first half of the time, at 100% flow and then Hydro Wizard® B the second half. Phase-synchronisation of the **SYNC**-Network is used.

Required settings:



<i>Hydro Wizard® A:</i>	<i>Network</i>	→ Master	
	<i>Mode</i>	→ Wave	
	<i>Settings</i>	→ Flow A	→ 100%
	<i>Settings</i>	→ Flow B	→ 1%
	<i>Settings</i>	→ Time A	→ 2.0s
	<i>Settings</i>	→ Time B	→ 2.0s
	<i>Settings</i>	→ Time A-B	→ 0.1s
	<i>Settings</i>	→ Time B-A	→ 0.1s

<i>Hydro Wizard® B:</i>	<i>Network</i>	→ Sync	
	<i>Mode</i>	→ Welle	
	<i>Settings</i>	→ Flow A	→ 100%
	<i>Settings</i>	→ Flow B	→ 1%
	<i>Settings</i>	→ Time A	→ 2.0s
	<i>Settings</i>	→ Time B	→ 2.0s
	<i>Settings</i>	→ Phase delay	→ 2.0s



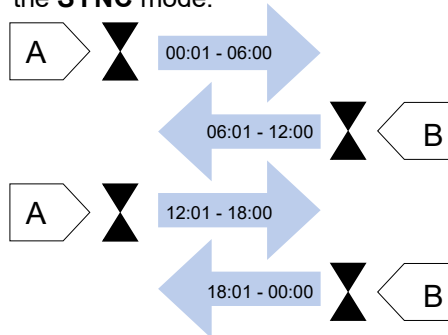
<i>Settings</i>	→ <i>Time A-B</i>	→ <i>0.1s</i>
<i>Settings</i>	→ <i>Time B-A</i>	→ <i>0.1s</i>

When several Hydro Wizard® are operated in wave mode through phase, it is important that the sum of Time A, Time B, Time A-B and Time B-A is the same for all. If this provision is observed, different values are possible for the respective individual values.

3. Tide control:

In this example Hydro Wizard® are used to simulate the natural flow of tides. Hydro Wizard® A will run with one set of parameters from 00:01 to 6:00 and from 12:01 until 18:00, while Hydro Wizard® B will run from 06:01 until 12:00 and from 18:01 until 00:00.

To achieve this, the time must be synchronized in the **SYNC** mode.



**Required settings:**

<i>Hydro Wizard® A:</i>	<i>Network</i>	→ <i>Master</i>
	<i>Mode</i>	→ <i>Profile</i>
	<i>Settings</i>	→ <i>New Interval</i>
	<i>Start</i>	→ <i>00:01</i>
	<i>End</i>	→ <i>06:00</i>
	<i>Flow</i>	→ <i>100%</i>
<i>Hydro Wizard® B:</i>	<i>Network</i>	→ <i>Sync</i>
	<i>Modus</i>	→ <i>Profile</i>
	<i>Settings</i>	→ <i>New Interval</i>
	<i>Start</i>	→ <i>06:01</i>
	<i>End</i>	→ <i>12:00</i>
	<i>Flow</i>	→ <i>100%</i>
<i>Hydro Wizard® A:</i>	<i>Network</i>	→ <i>Master</i>
	<i>Mode</i>	→ <i>Profile</i>
	<i>Settings</i>	→ <i>New Interval</i>
	<i>Start</i>	→ <i>12:01</i>
	<i>End</i>	→ <i>18:00</i>
	<i>Flow</i>	→ <i>100%</i>
<i>Hydro Wizard® B:</i>	<i>Network</i>	→ <i>Sync</i>
	<i>Modus</i>	→ <i>Profile</i>
	<i>Settings</i>	→ <i>New Interval</i>
	<i>Start</i>	→ <i>18:01</i>
	<i>End</i>	→ <i>00:00</i>
	<i>Flow</i>	→ <i>100%</i>



07) Cleaning function

The cleaning function is used, for example, to remove parts of water plants which are trapped in the Hydro Wizard®.

During the cleaning function, the Hydro Wizard® is operated in the opposite direction for a short time. The cleaning function can be selected through the menu tab „Settings“.

For the automatic cleaning function, two cleaning programs can be selected. They differ with respect to length and intensity of the cleaning:

- Short cleaning: about 2 s reverse operation at 20% flow,
- Intensive cleaning: about 2 s reverse operation at 35% flow.



Attention: Improper use of the cleaning function can damage the Hydro Wizard®.

Attention: The cleaning function does not substitute for regular maintenance and cleaning!



08) Warranty provisions

a) Extent of warranty

This limited warranty is applicable from the date of purchase for all new products from Panta Rhei GmbH purchased for your own normal use and not for reselling. Panta Rhei GmbH guarantees that a product covered by this warranty, apart from the exceptions listed below, is free from material and manufacturing defects.

b) Warranty period

The warranty period is limited to one (1) year and starting from the date of purchase. The exact warranty period depends on when and where the product was purchased. A valid purchase receipt is required to prove a warranty entitlement.

c) Warranty exclusions

The following are not covered by this warranty: use for other than the intended purpose, accidents or changes to the hardware or software, unauthorized modifications, an unsuitable physical or operational environment which does not meet the product specifications, inexperienced maintenance or defects caused by a product for which Panta Rhei GmbH is not responsible. There is no warranty entitlement for products whose nameplate has been removed or modified. Panta Rhei GmbH offers no other guarantees whatsoever,



including, but not limited to, implied agreements of conditions relating to the merchantability or suitability for a particular purpose. In some jurisdictions a restriction of implied agreements is not admissible so this restriction may not be applicable to you. Panta Rhei GmbH is not obliged to replace products which are not covered by this limited warranty.

09) Maintenance / upgrades

Maintenance of the USB-CAN-Bus-interface is not required. For maintenance and care of the connected devices, kindly refer to the respective operating instructions. The software is subject to permanent development in order to be able to integrate new devices, but also to realize new functions.

If the PC is connected to the Internet, Panta Logic can independently search for updates and inform the user when they are available. Updates will be installed automatically after prior acknowledgement.



10) Technical data

a) Dimensions

length: 106 mm

width: 62 mm

height: 32 mm

b) Connections

Panta Rhei CAN-Bus	3-pin	2 pieces
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USB	4-pin B	1 piece
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c) System preconditions

Windows Vista, Windows 7, Windows 8

at least 300 MB available hard drive storage space

1 USB 2.0 Port

Panta Rhei USB Adapter

PANTA RHEI CAN-BUS

PantaLogic Software

A product of



PANTARHEI
Natural Aquarium Technology

www.panta-rhei-aquatics.com