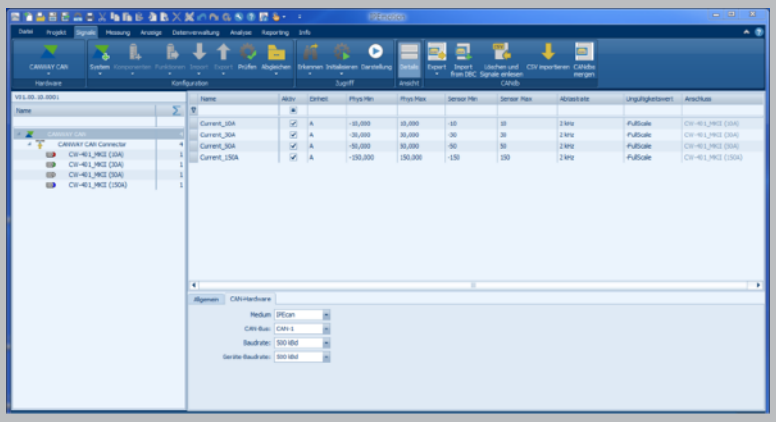
CW-401 MkII

CANWAY Plug-in for IPEmotion



Documentation

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TECHNOLOGY I ENGINEERING

Warranty and Safety Notes

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Safety

The following general safety precautions must be observed during all phases of operation of this device. Failure to comply with these precautions or with specific warnings or instructions elsewhere in this manual violates safety standards of design, manufacture, and intended use of the device. CANWAY assumes no liability of the customer's failure to comply with the requirements.

General

Do not use this device in any manner not specified by the manufacturer. The protective features of this device may be impaired if it is used in a manner not specified in the operation instructions.

Before applying Power

Verify that all safety precautions are taken. Make all connections to the unit before applying power.

Do not modify the Device

Do not install substitute parts or perform any unauthorized modification to the device. Return the device to CANWAY for service and repair to ensure that safety features are maintained.

In Case of Damage

Devices that appear damaged or defective should be made inoperative and secured against unintended operation until they can be repaired by qualified service personnel.

Table of Contents

1. General Information

This manual describes the structure and functions of the CANWAY IPEmotion plug-in. It shows you how to configure CW-401 MkII current clamp in order to integrate them into the IPEmotion data acquisition system.

Further technical information can be found in the CW-401 MkII current clamp data sheet.

The CANWAY plug-in is supported from IPEmotion version 2018 R3 (32 bit or 64 bit).

The following current clamps are supported:

- CW-401 MkII 10 A
- CW-401 MkII 30 A
- CW-401 MkII 50 A
- CW-401 MkII 150 A

2. Installation/Deinstallation

2.1. System Requirements

The minimum hardware requirements correspond to those of the IPEmotion version used.

2.2. Installation

You need administrator rights on your PC for the installation of the plug-in.

Extract the ZIP file and start the installation. The installation wizard will guide you through the installation.

After successful installation, the plug-in will be listed in IPEmotion as available plug-in.

2.3. Deinstallation

1. Click the Windows Icon in the status bar and select **Settings.**
2. Click **Apps.**
3. Select CANWAY IPEmotion plug-in Vxx.xx.xx.xxxx and to uninstall.

After successful deinstallation the plug-in is removed from your computer and is no longer integrated into IPEmotion.

3. Working with the CANWAY Plug-in

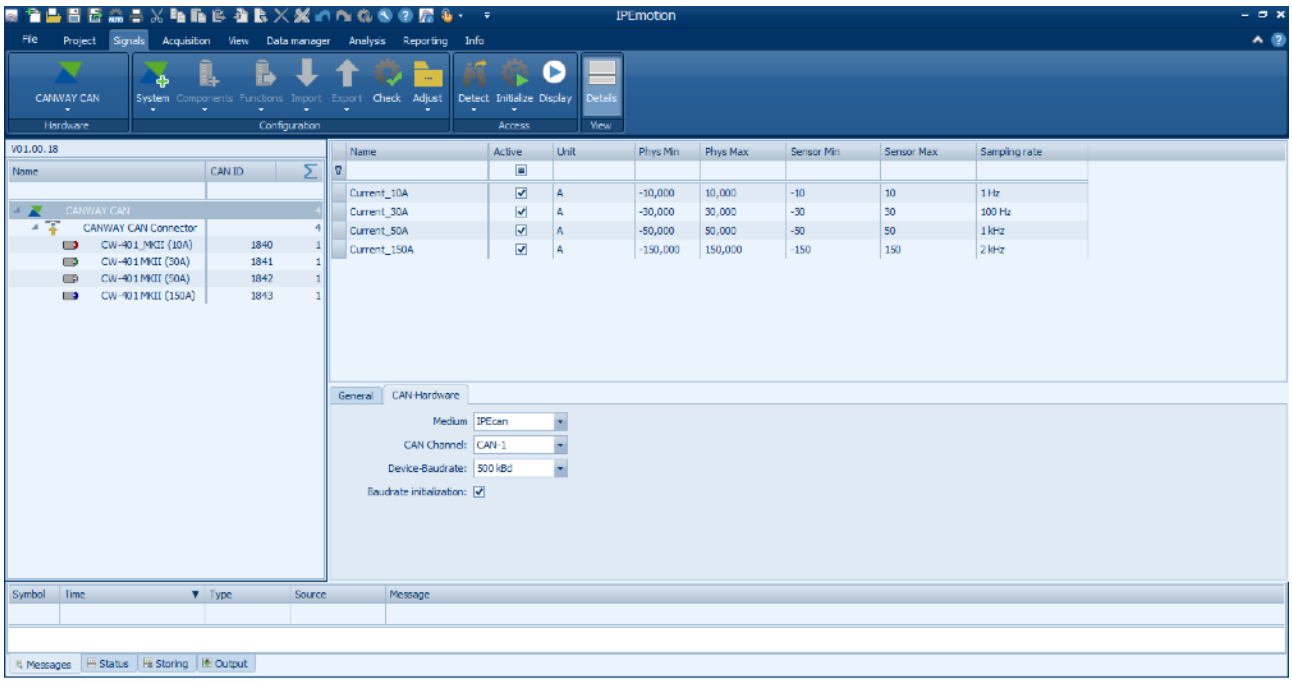
The following chapter gives you an overview of how to use the plug-in. It shows you how to configure the devices and prepare them for a measurement.

3.1. Hardware Detection

The plug-in is able to automatically detect all connected and supported CANWAY devices with IPEmotion's hardware detection feature.

The plug-in searches CANWAY devices on all connected CAN busses, reads their configuration and assembles the devices in the IPEmotion overview. In case of a hardware detection, all configurations, including those of other plug-ins, will be deleted.

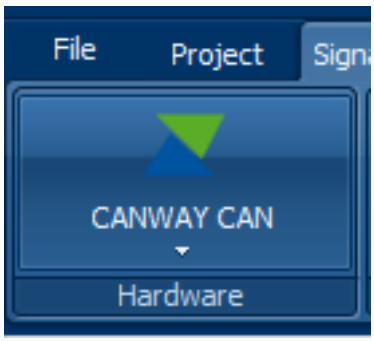
The following figure shows an example configuration with four current clamps:



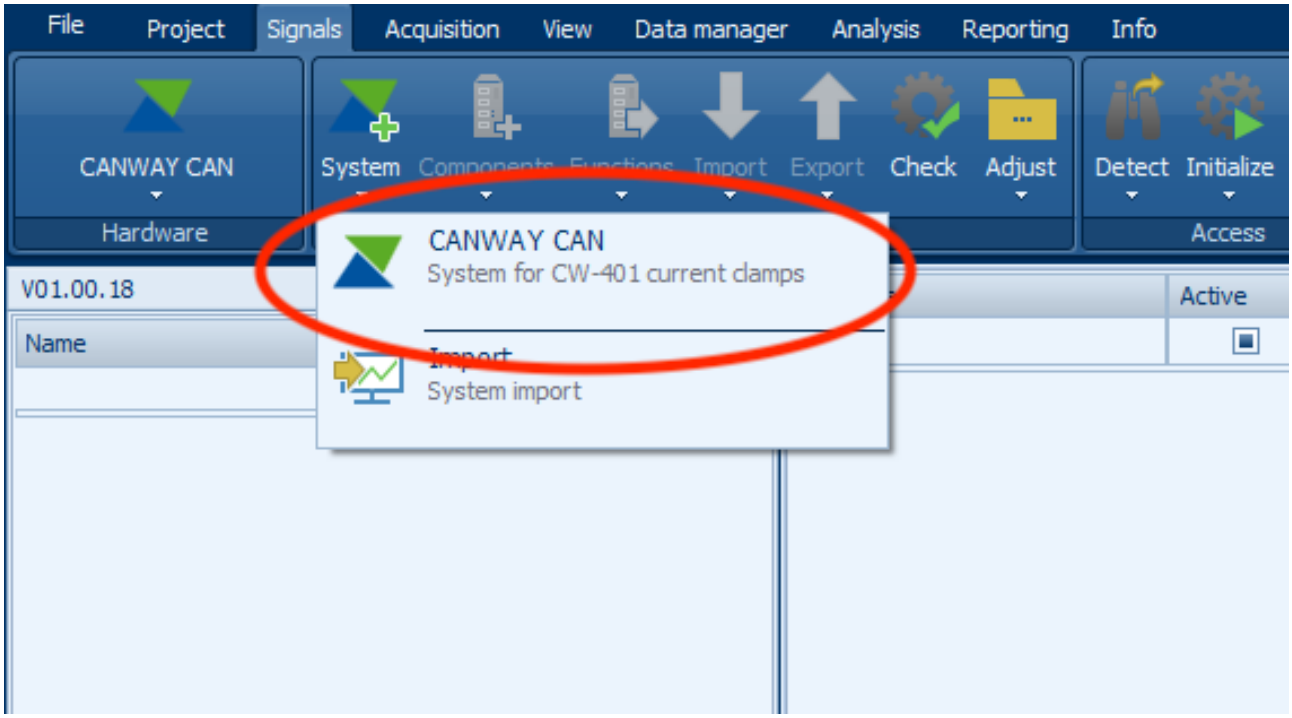
3.2. Adding current clamps manually

You can add current clamps manually to your configuration:

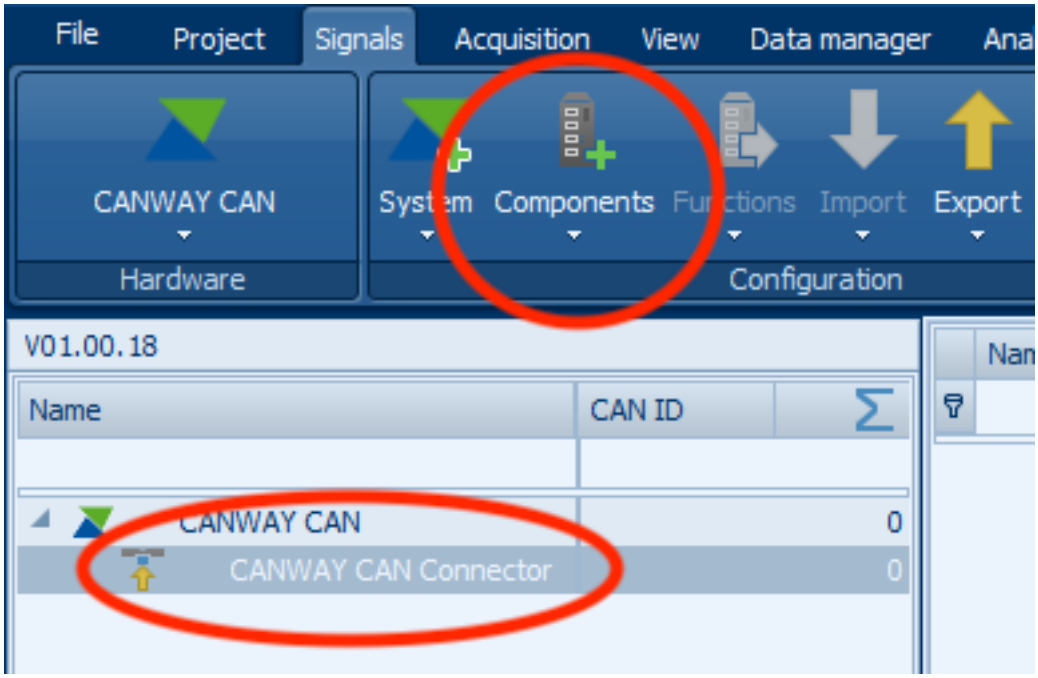
1. If the CANWAY plug-in is not selected as hardware, click on **Hardware** in IPEmotion and select the CANWAY plug-in in the list.



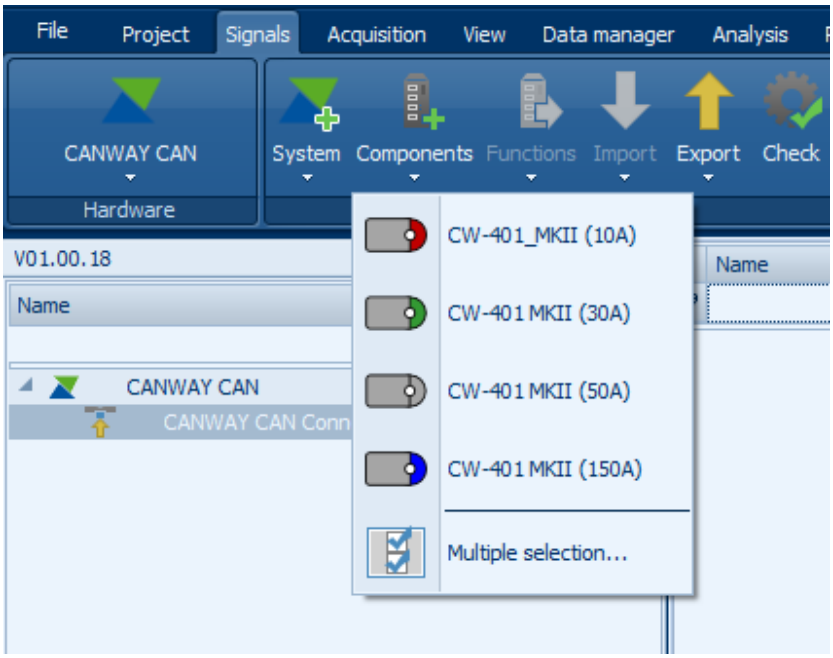
2. Next to the **CANWAY CAN Hardware** button you will find the CANWAY **System.** Click on **System** and select **CANWAY CAN**.



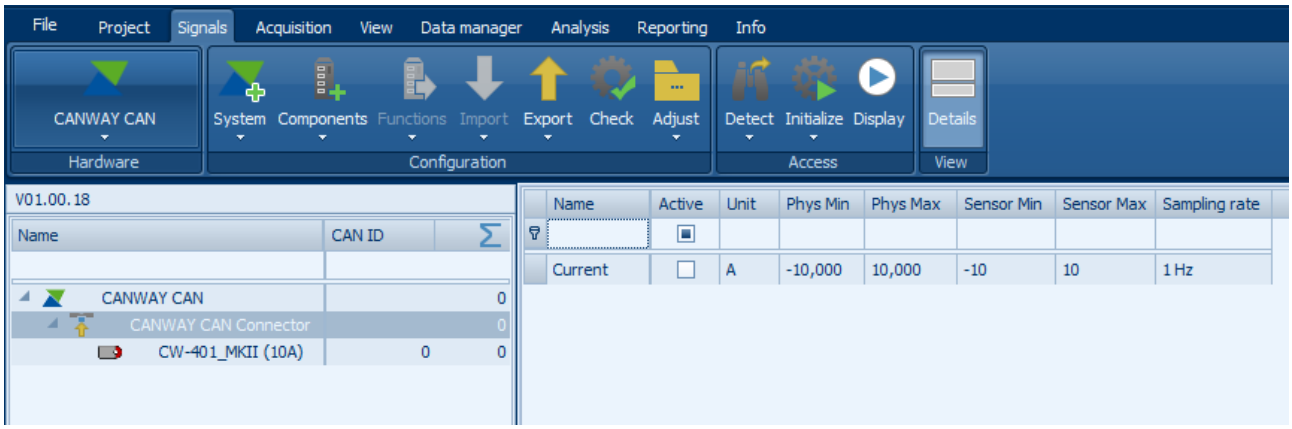
3. By clicking on **CANWAY CAN,** IPEmotion adds a **CANWAY CAN** system to the tree structure. At the same time the **CANWAY CAN** system is extended by a **CANWAY CAN Connector** as a subelement. Click on the **CANWAY CAN Connector** and unlock the **Components** button.



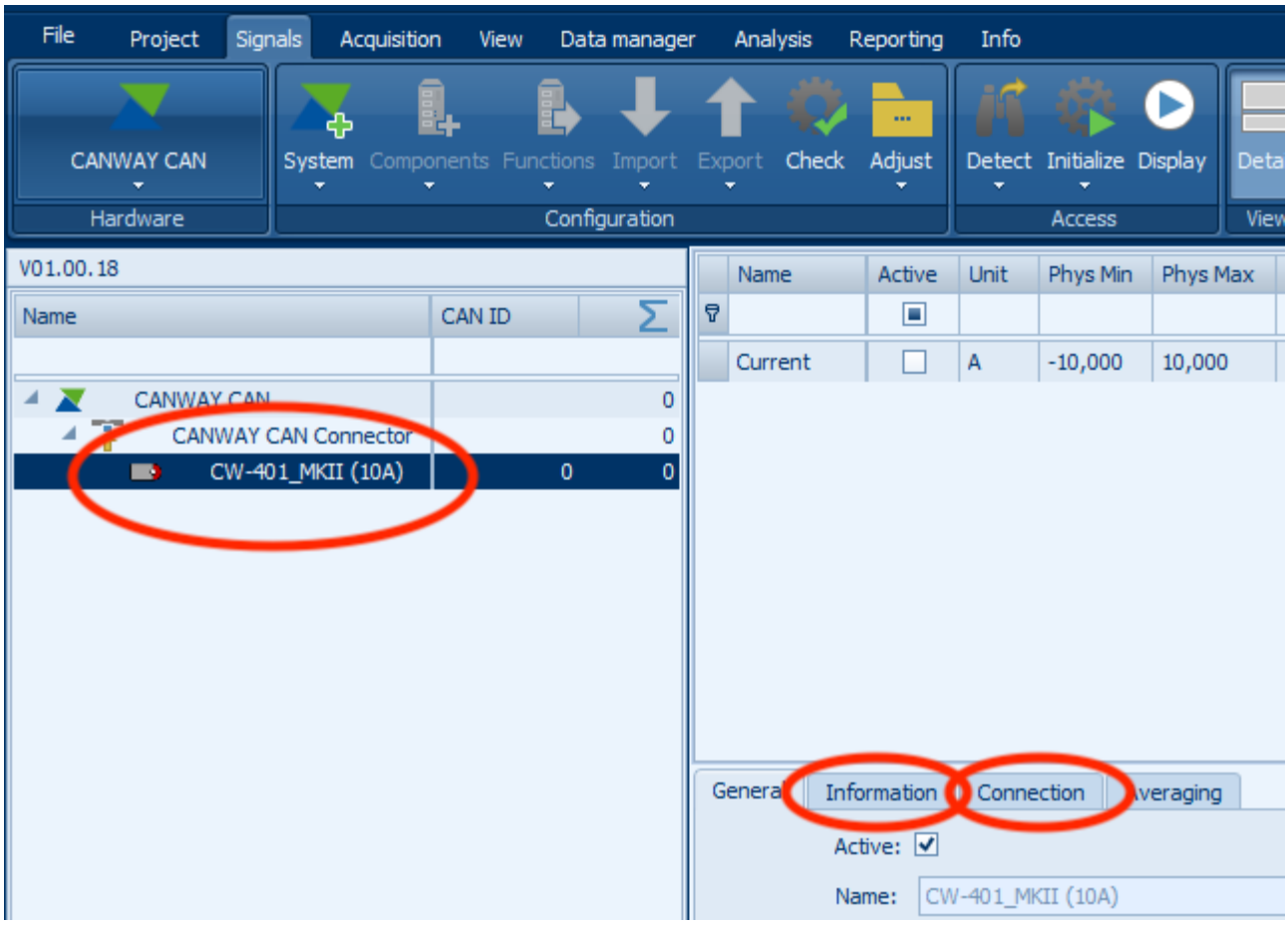
4. Click on **Components**. A selection of the supported CANWAY current clamps opens.



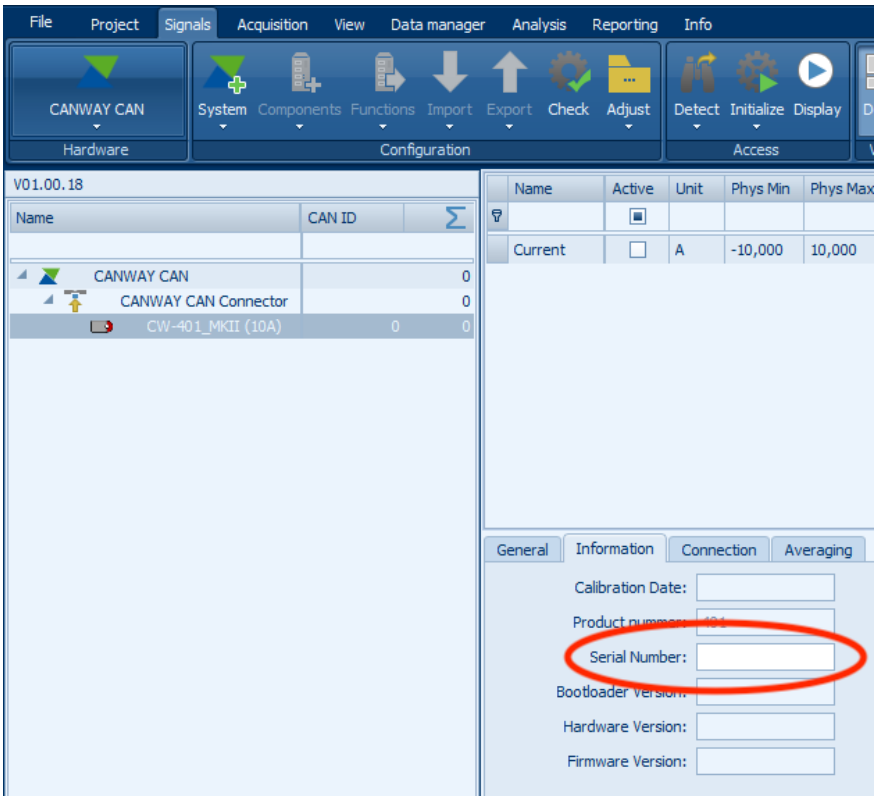
5. Add one or more current clamps to the CANWAY tree structure.



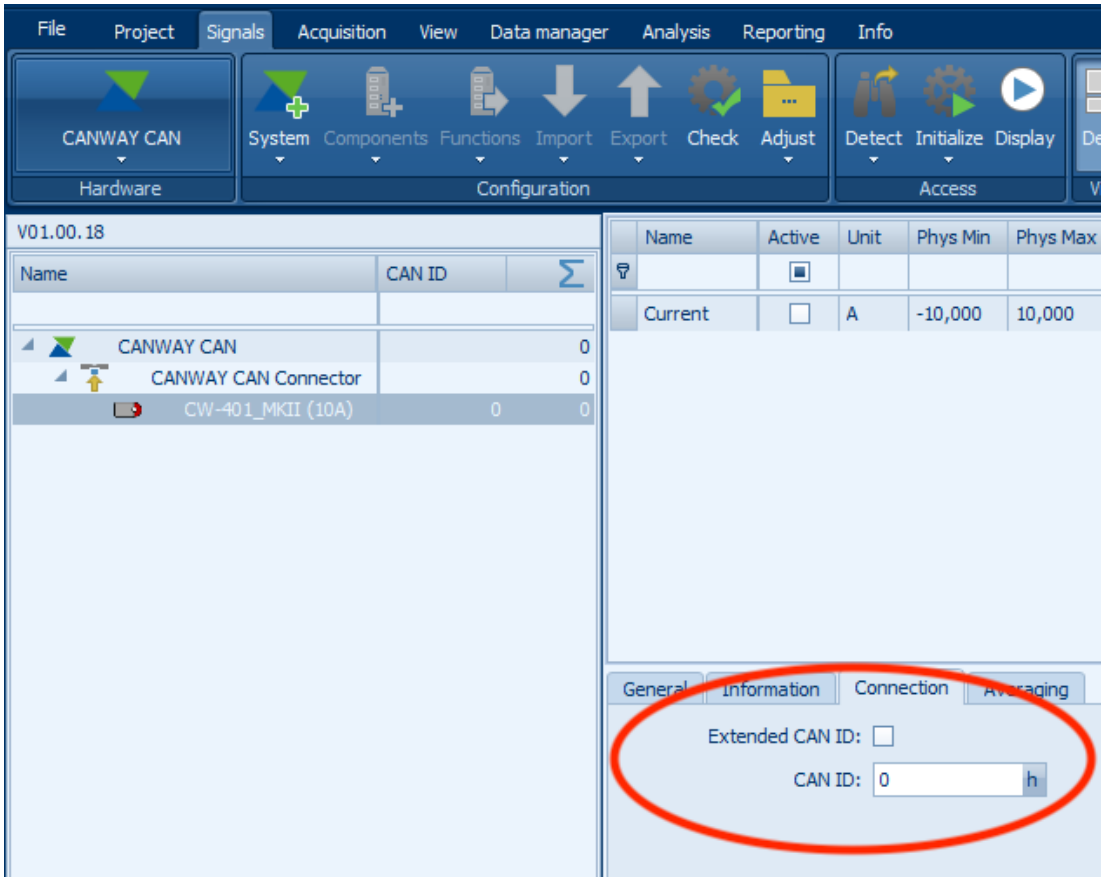
6. Click on the current clamp. IPEmotion displays two tabs, **Information** and **Connection**.



7. Open the tab **Information** and enter the serial number of the current clamp.

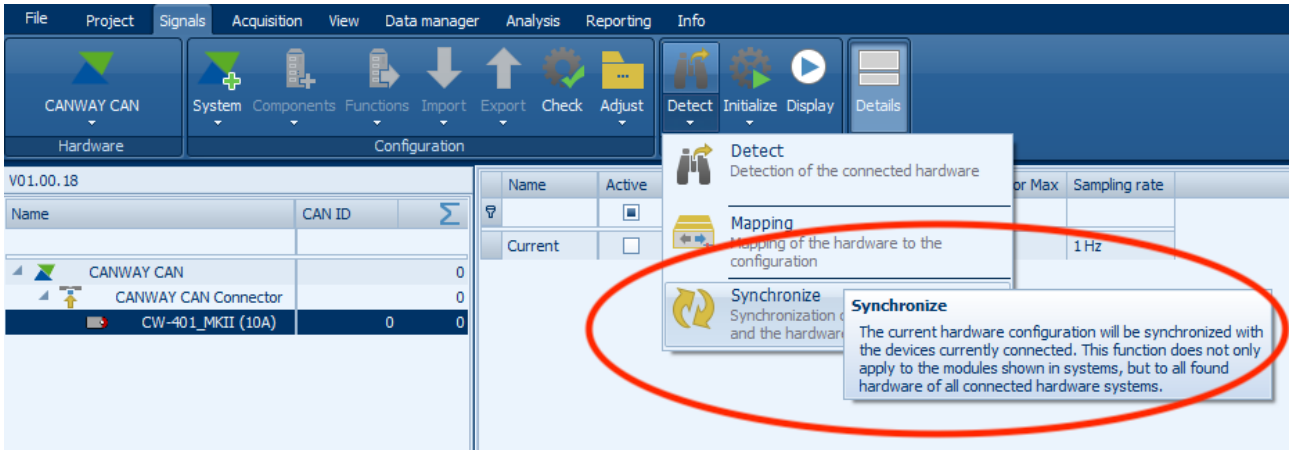


8. Open the **Connection** tab and specify whether the current clamp uses an extended CAN ID and set the CAN ID of the current clamp.



3.3. Synchronization

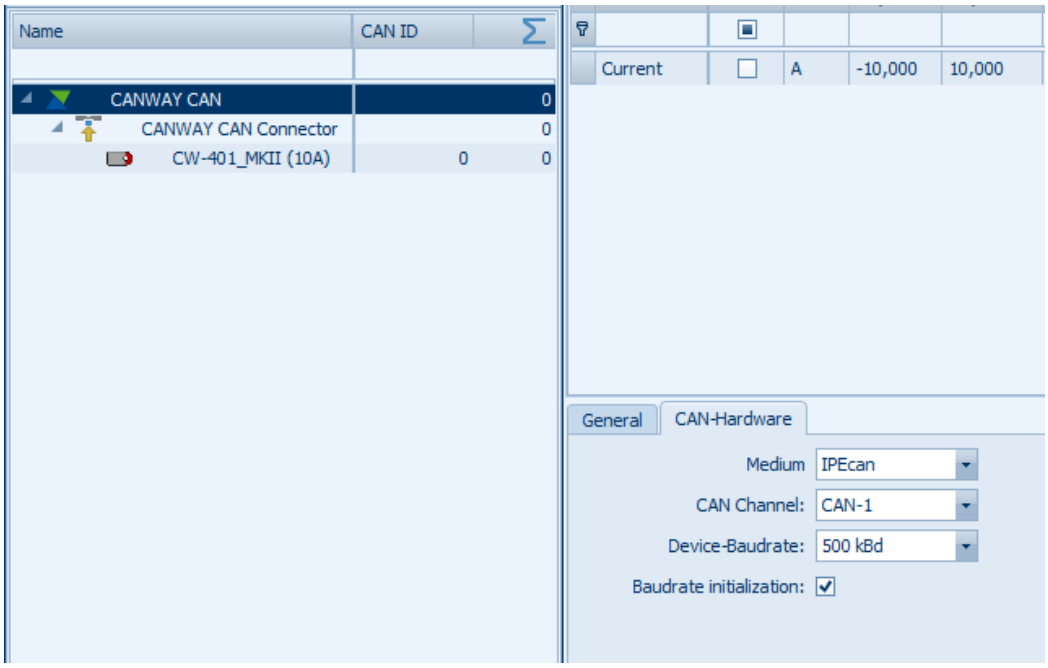
In case of a hardware detection all configurations, including those of other plug-ins, are deleted. To integrate new current clamps into your measurement hardware, perform a synchronization in IPEmotion.



Synchronization will not remove configured current clamps from IPEmotion. The system scans all CAN busses and adds all newly found current clamps whose serial numbers are not listed in the existing configuration.

3.4. CANWAY System

A CANWAY system represents a CAN adapter and its settings



The following parameters can be configured in the **CAN-Hardware** tab:

Medium: Connected CAN adapter, e.g. IPEcan

CAN Channel: Used CAN bus at the Medium

Device-Baudrate: Baudrate of the connected current clamps

Baudrate initialization: When configuring the CAN bus, the baud rate of the CAN bus is initialized if necessary. Please note that only one plug-in is allowed to perform the baud rate initialization.

During hardware detection, parameters and properties (see sections 3.4, 3.6, and 3.7) are read from the current clamps connected at the CAN bus.

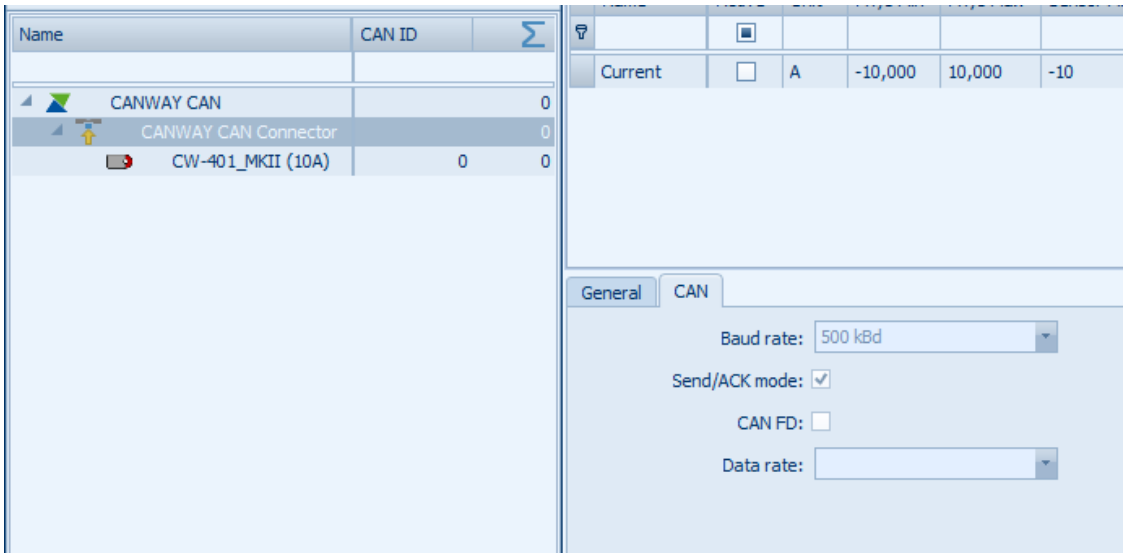
After successfully changing the device baud rate, the default baud rate may have to be adjusted in the options (see sections 3.9.2). A hardware detection is always executed with the default baud rate set in the options.

If devices from different manufacturers are used on a single CAN bus, make sure that the devices are separated according to manufacturer before changing the device baud rate. It is not possible to change the device baud rate via several plug-ins.

All other configurations, such as name assignment or descriptions in the **General** tab, are not described here or in the following chapters since they are not specific to the plug-in. For more details, refer to the IPEmotion documentation.

3.5. CANWAY CAN Connector

The CANWAY CAN Connector is not configurable. All parameters in the tabs are read-only.

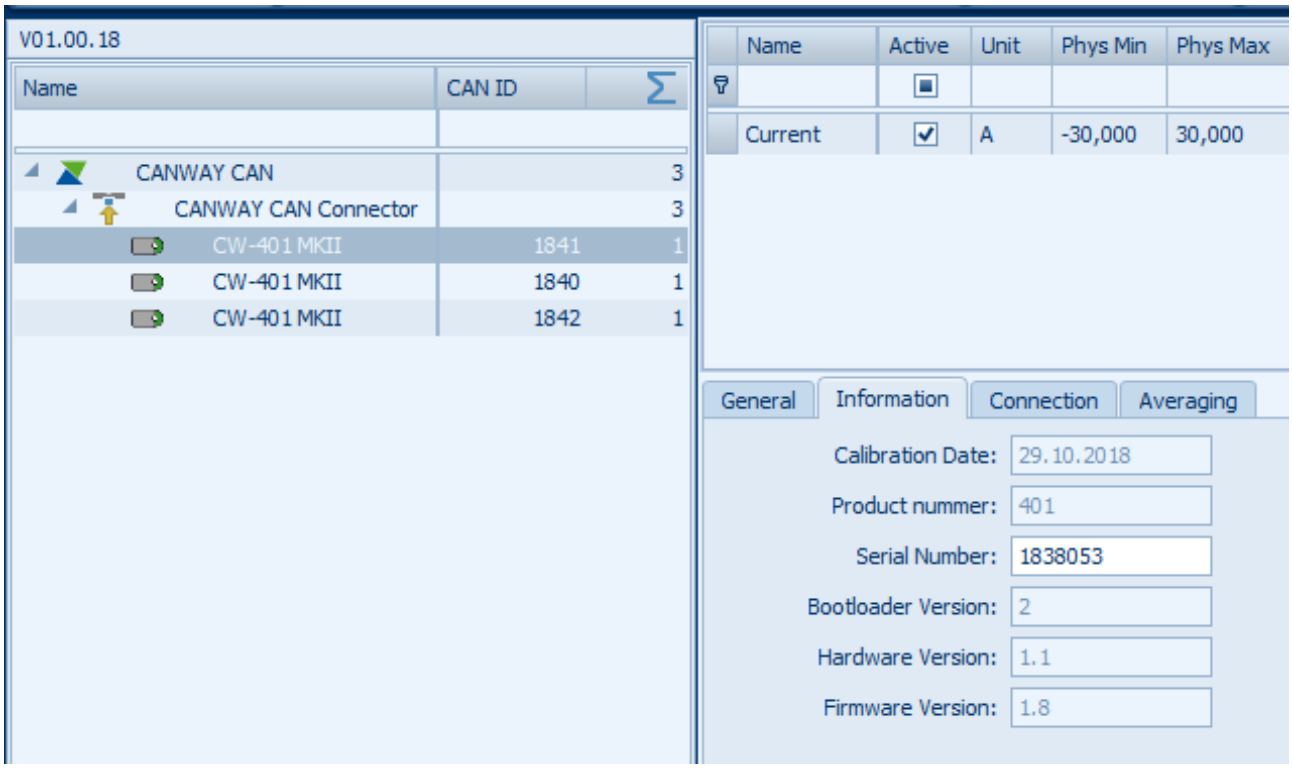


The baud rate displayed in the **CAN** tab corresponds to the CAN bus baud rate of the connected CAN adapter.

3.6. CW-401 MkII Current Clamp

3.6.1. Information

With the hardware detection product information will be read from the current clamps, which is displayed in the **Information** tab.



The following values can be read out:

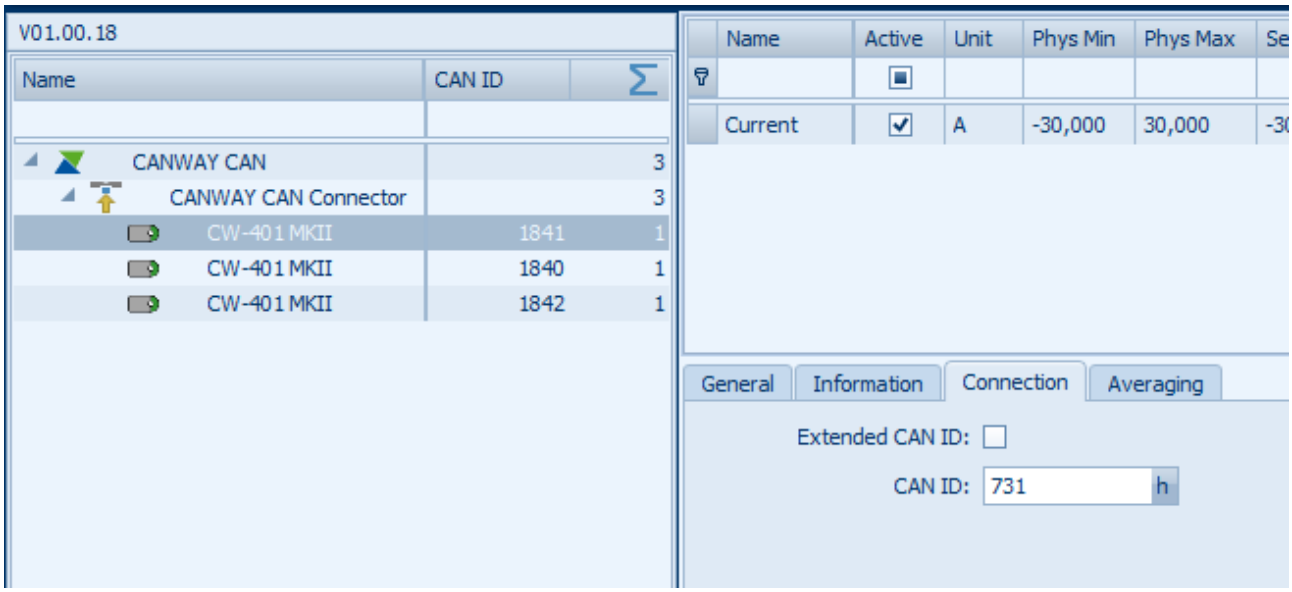
- Date of the latest calibration
- Product number
- Serial number
- Bootloader version
- Hardware version
- Firmware version

The serial number can be edited to identify a current clamp when manually assembling a configuration. The serial number cannot be written into a current clamp.

3.6.2. Connection

In the tab **Connection** the CAN ID is configurable with the following parameters:

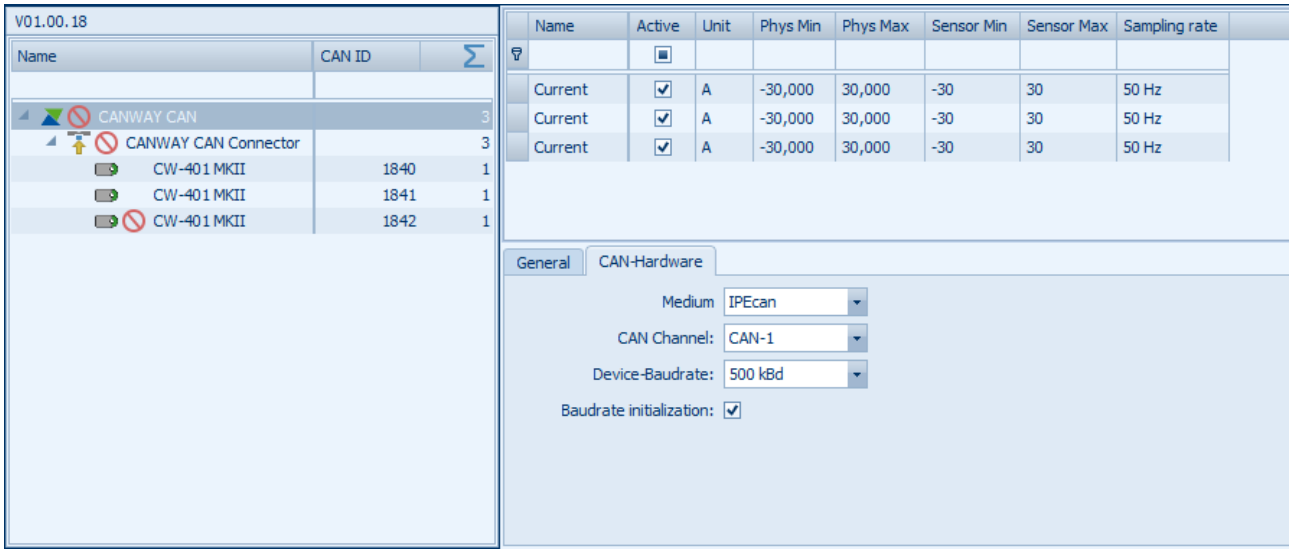
- Activate/deactivate extended CAN ID
- CAN ID of the current clamp



3.6.3. Automatic CAN ID

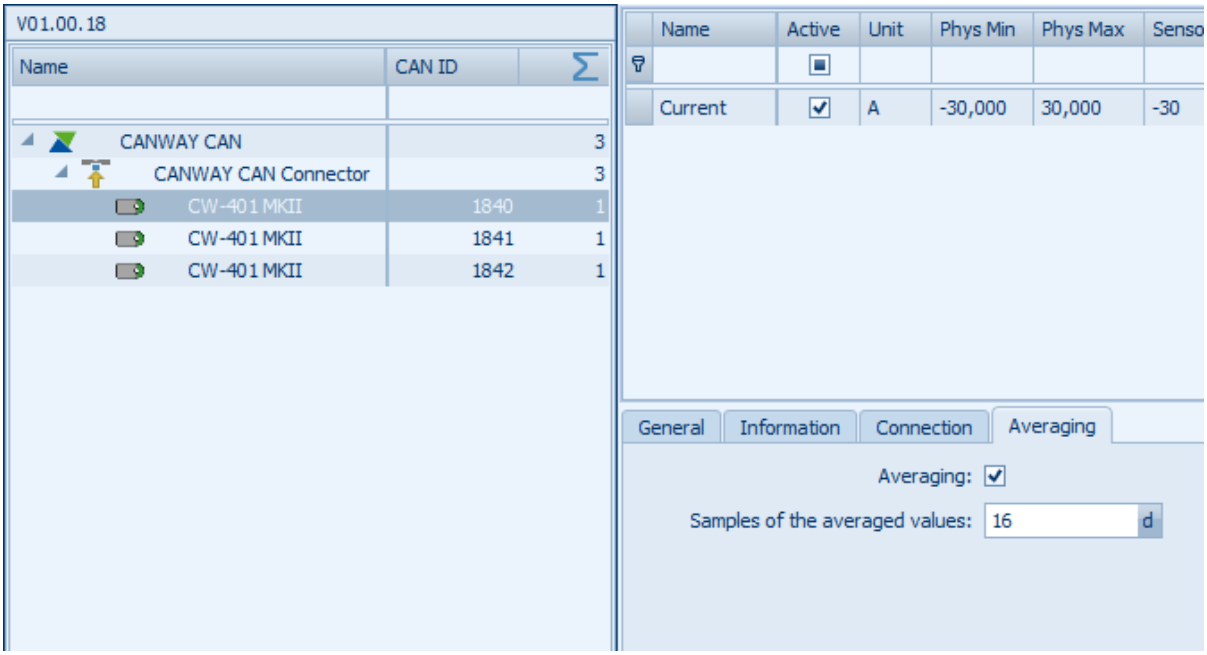
In the plug-in options (see section 3.9.1) an automatic CAN ID assignment can be activated or deactivated. It is possible to detect or read out multiple current clamps with the same CAN ID.

To reconfigure duplicate CAN IDs, the button **Initialize** must be executed. The plug-in sorts the CAN IDs according to the specified start CAN ID and shows the modified CAN IDs. After executing the initialization again, the CAN IDs are transferred to the respective current clamps.



3.6.4. Average Value

The averaging in the current clamp can be configured in the tab **Averaging**.



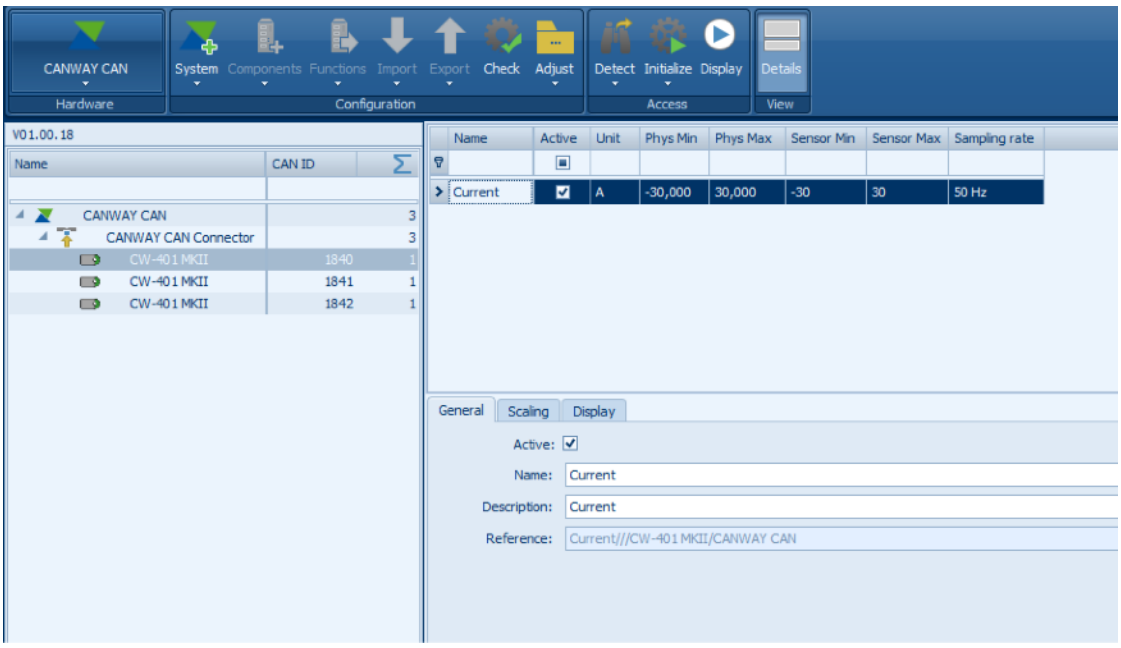
The following parameters can be configured in detail:

- Activate/deactivate averaging
- Samples of the averaged values

3.7. Current Channel

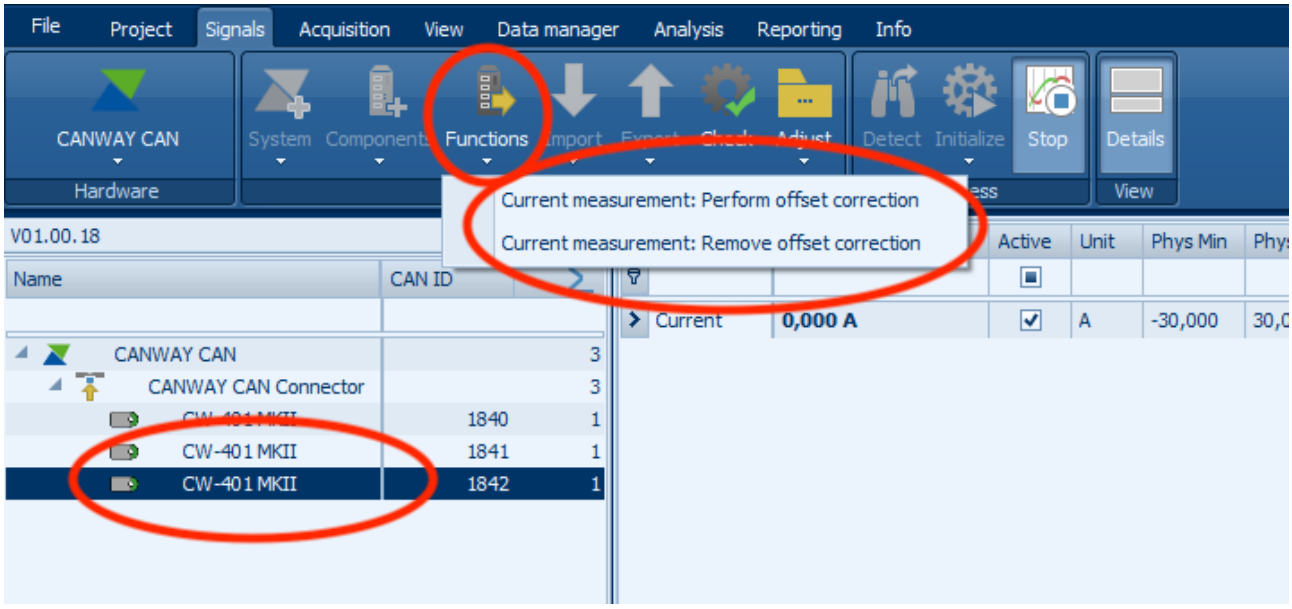
The current channel corresponds to a typical IPEmotion channel. For this reason the channel configuration is not discussed in detail here.

Note: Channel name, sampling rate, CAN ID and averaging are written to the current clamp during initialization.



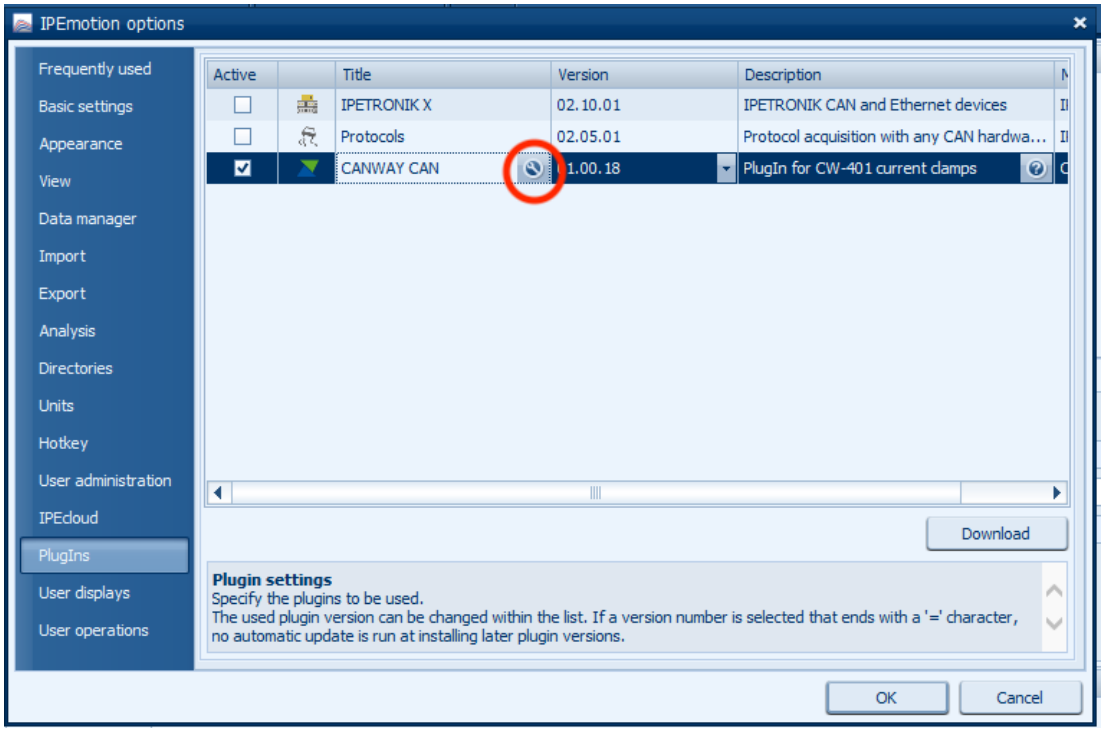
3.8. Offset Correction

During measurement it is possible to start an offset correction in the current clamp or to cancel a correction already carried out. To start an offset correction click on the current clamp to unlock the **Functions** button. Click on **Functions** to see the correction functions.

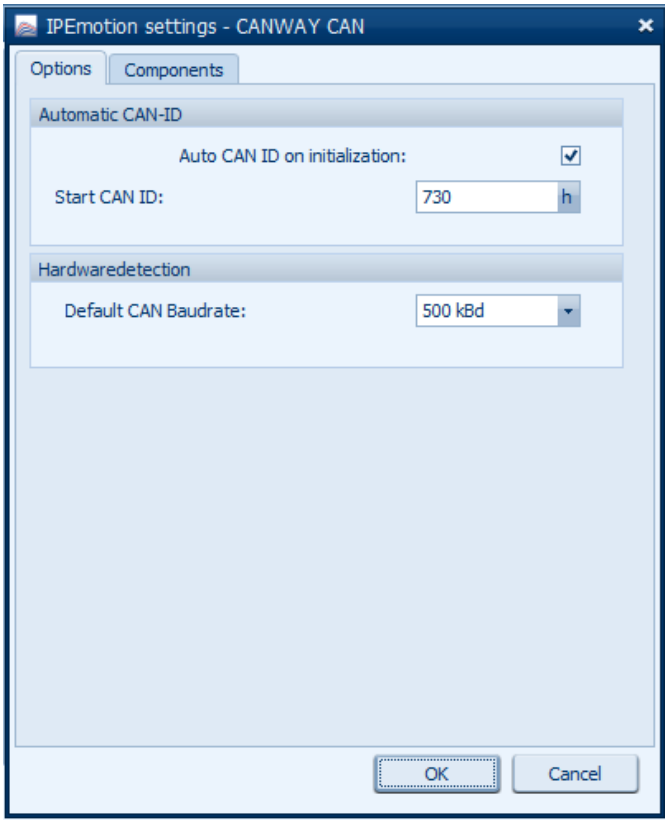


3.9. Options

The plug-in provides specific options. Select the CANWAY plug-in under File -> Options -> plug-ins and click on the wrench.



A window with the plug-in options opens.



The parameters are explained below:

Auto CAN ID on initialization:	Enables/disables the automatic CAN ID assignment
Start CAN ID:	Assigns the current clamps ascending IDs from this value
Default CAN Baudrate:	Specifies the baud rate at which a hardware detection is executed.

3.9.1. Automatic CAN ID

Duplicate CAN IDs can cause conflicts on the CAN bus. If current clamps are read in with duplicate CAN IDs during the hardware detection, CAN IDs can be reassigned automatically by the plug-in (see section 3.6.3).

The function Auto CAN ID on initialization is active by default and can be deactivated.

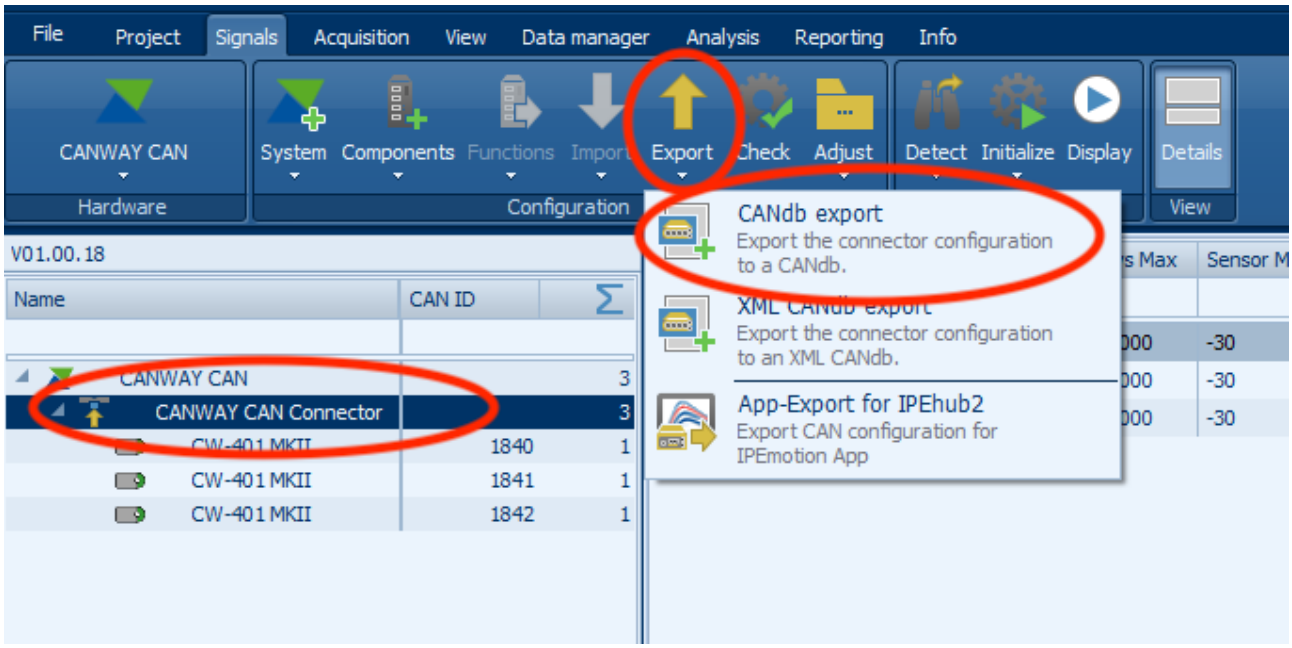
A Start CAN ID can be set. The CAN IDs of the current clamps are incremented accordingly.

3.9.2. Hardware Detection

In the options of the plug-in the default baud rate is configurable. The default baud rate is used for hardware detection. If this default baud rate does not match the baud rate of the current clamps on the CAN bus, this can lead to conflicts.

3.10. CANdb Export

The plug-in allows the export of a channel configuration into a CANdb file. Click on the **CANWAY CAN Connector**. The **Export** button is unlocked. Click on **Export** and select **CANdb Export** and follow the instructions.



4. Technical Data

Current

Measurement ranges:	±10 A, ±30 A, ±50 A and ±150 A
Resolution:	1 mA
Accuracy:	1 % plus ±50 mA (relative to the measuring range)
Output rate:	Max. 2 kHz, configurable
Measurement category:	CAT I
Averaging:	Configurable

CAN-Interface

Type:	ISO 11898-2 (High-speed) CAN protocol Versionen 2.0 A und 2.0 B
Data rate:	High-speed up to 1 Mbit/s
Connector:	4 pol. Lemo 2 x 9 pol. Lemo (Variant M-CAN)

Supply

Power Supply:	9 VDC to 30 VDC
Power consumption:	40 mA at 12 VDC

Environmental conditions

Temperature range:	-40 °C to +120 °C
Protection class:	IP65

General information

Housing:	Robust aluminum housing
Dimensions (LxWxH):	up to 50 A: 59 mm x 32 mm x 17.5 mm up to 50 A: 65 mm x 38 mm x 21.5 mm (Variant M-CAN) 150 A: 68 mm x 36 mm x 17,5 mm 150 A: 68 mm x 36 mm x 21,5 mm (Variant M-CAN)
Cable diameter:	up to 50 A: 6,1 mm 150 A: 11 mm
Weight:	up to 50 A: approx. 60 g up to 50 A: approx. 100 g (Variant M-CAN) 150 A: approx. 80 g 150 A: approx. 120 g (Variant M-CAN)
Factory calibration:	Standard: -20 °C to +110 °C Extended: -40 °C to +120 °C DAkkS calibration on request

5. Document History

Version	Date	Author	Change log
1.0	22.04.2020	PA	Initial Version