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1 Important and general information

1.1 Important information

Please follow these instructions before and during the use and application on any IPETRONIK product!

1.1.1 Safety and Warning instructions

Please follow the instructions **and** information as contained in the user manual!

1. The user can **influence an electronic system by applying the IPETRONIK product**. This might cause risk of personal injury or property damages.
2. The **use and application of the IPETRONIK product is permitted only to qualified professional staff**, as well as, only in appropriate manner and in the designated use.
3. **Before using an IPETRONIK measurement system** in the vehicle it **has to be verified that no function of the vehicle, which is relevant for secure operation, might be influenced**:
 - by the installation of the IPETRONIK measurement system in the vehicle,
 - by an potential malfunction of the IPETRONIK system during the test drive.

In order to avoid possible danger or personal injury and property damages, appropriate actions are to be taken; such actions have to bring the entire system into a secured condition (e.g. by using a system for emergency stop, an emergency operation, monitoring of critical values).

Please check the following points to avoid errors:

- Adaption of sensors to components of the electrical system / electronics, brake system, engine and transmission control, chassis, body.
- Tap of one or several bus systems (CAN, LIN, ETHERNET) including the required electrical connection(s) for data acquisition.
- Communication with the vehicle's control units (ECUs), especially with such of the brake system and/or of the engine and transmission control (power train control system).
- Installation of components for remote data transmission (mobiles, GSM/GPRS modems, WiFi and Bluetooth components).



The products can be operated in extended temperature ranges greater 70 °C and therefore the operator has to take safety measures to avoid any skin burnings on hot surfaces while touching the products.

4. **Before** directly or indirectly using **the data acquired by an IPETRONIK measurement system to calibrate control units, please review the data regarding to plausibility**.
5. With regard to the application of IPETRONIK products in vehicles during use on public roads the manufacturer and/or registered user of the vehicle **has to ensure that all changes/modifications have no influence concerning the license of the vehicle or its license of operation**.
6. **User does agree to the instructions and regulations as mentioned above**. In case the user does not agree with the instructions and regulations as mentioned above, he has to notify this expressly and immediately in writing to IPETRONIK before confirming the sales contract.

1.2 Terms and conditions

See IPETRONIK website for details: <https://www.ipetronik.com/>

1.2.1 Legend of used icons

**Tip**

This icon indicates a useful tip that facilitates the application of the software.

**Information**

This icon indicates additional information for a better understanding.

**Attention!**

This icon indicates important information to avoid potential error messages.

1.2.2 Support

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Technical support and product information

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e-mail: support@ipetronik.com

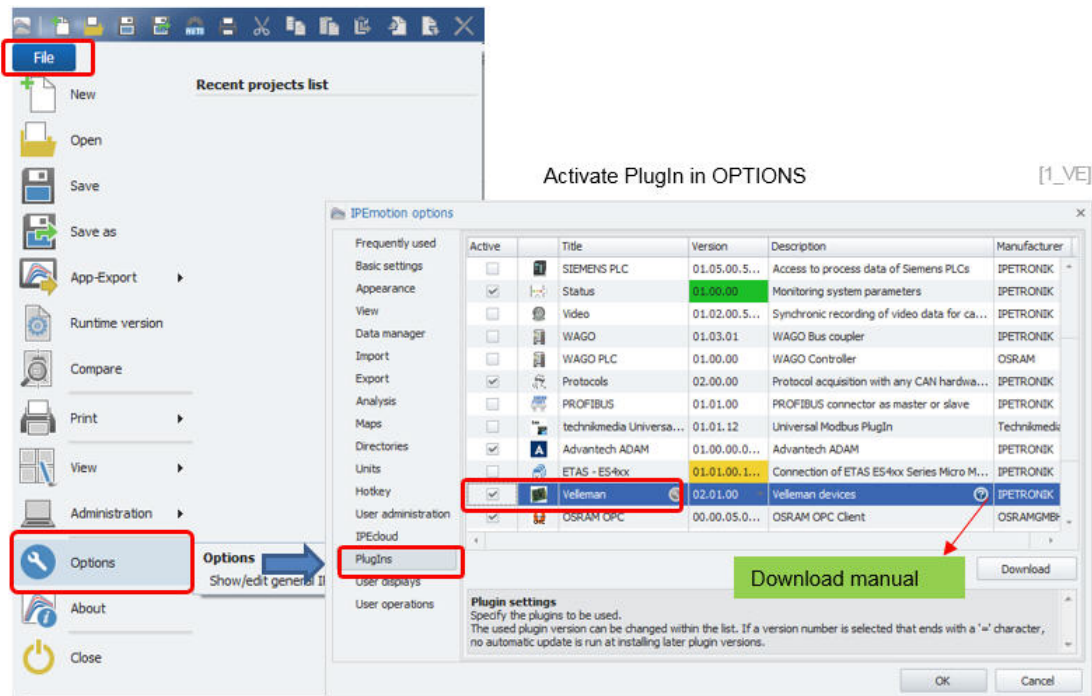
2 Overview of the PlugIn

2.1 PlugIn description

The Velleman PlugIn is supporting your data acquisition and control applications for the USB evaluation board K8055.

2.2 PlugIn Installation

The Velleman-K8055 PlugIn is hosted on the IPETRONIK website www.ipetronik.com. After having installed the PlugIn, you need to restart IPEmotion. A message window will notify you, telling that a new PlugIn was found. After activation, the PlugIn can be used for data acquisition.



The PlugIn is supporting the following Windows operating systems:

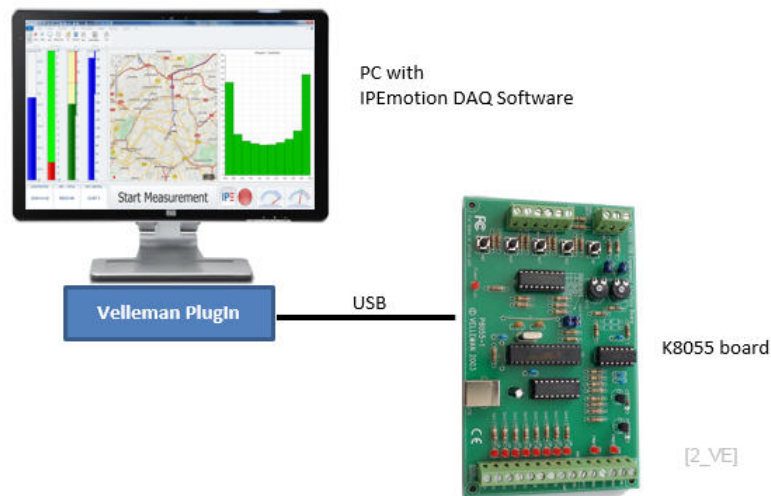
- ▶ 32 bit
- ▶ 64 bit

There is no need to install any board-specific USB drivers. The board is automatically identified as a standard USB interface device like mouse or keyboard.

3 PlugIn Configuration

3.1 Functional architecture

To get started you establish an USB connection between the PC and your Velleman K8055 board.

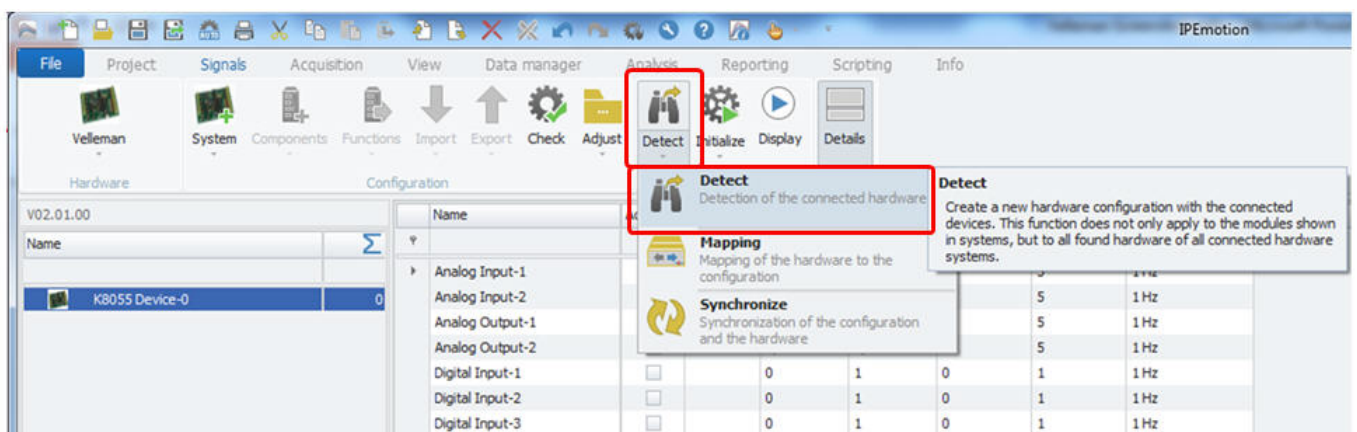


3.2 Automatic hardware detection

IPemotion provides functions for automatic hardware detection. For USB devices like the K8055 board it is very comfortable to use the automatic hardware detection to set up a communication with the board.

The following boards are supported:

- ▶ K8055
- ▶ K8055N
- ▶ VM110
- ▶ VM110N



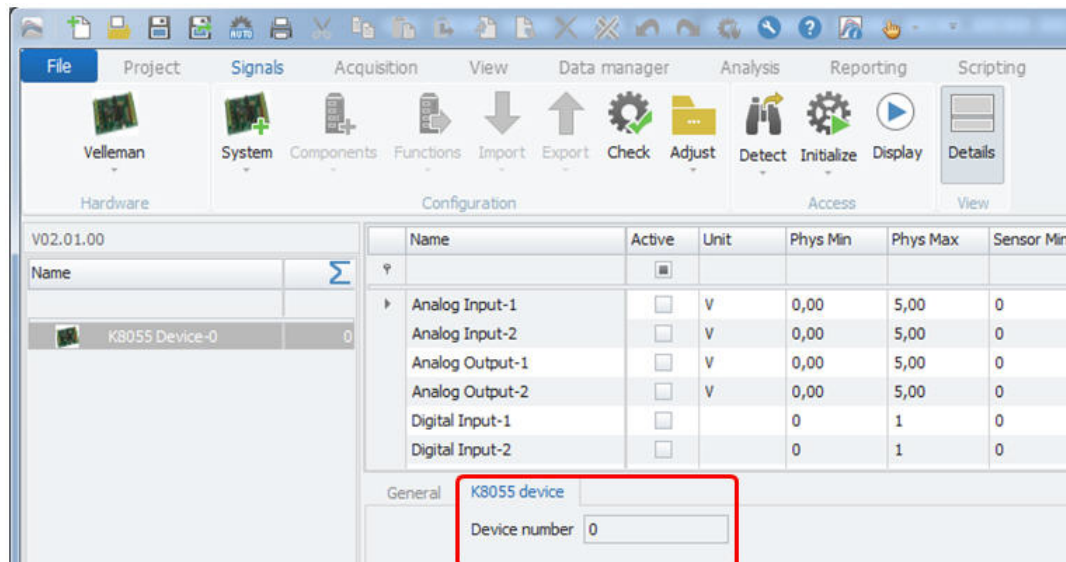
Run hardware detection

[2]

After the automatic hardware detection, all IO channels of the board are automatically created.

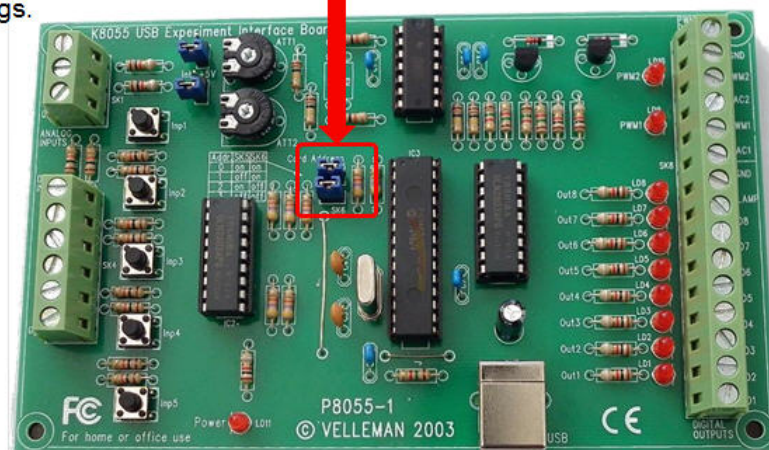
3.2.1 Board address and jumper settings

The address of the board is specified through a jumper setting as the following pictures indicate. The board can have up to 4 different address numbers (0, 1, 2, 3). Up to 4 boards can be operated simultaneously with IPEmotion. It is not possible to communicate with 2 boards having the same address. When the jumper setting is changed on the board, the board must be disconnected from the USB interface (power OFF /ON) to make the new setting effective.



Automatic address detection from jumper settings.

[3]



After updating the board address, users can either run an additional hardware detection to reconnect to the board with the new address or they can just type in the board number in the K8055 device tab sheet to start the communication.

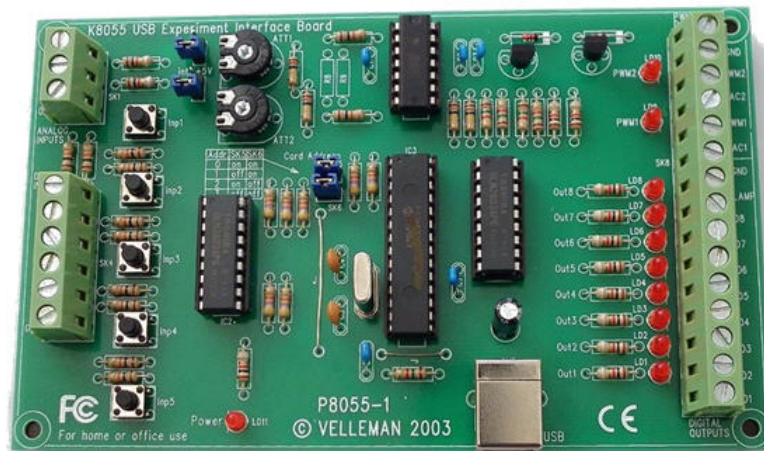
3.2.2 Sample rate settings

The sample rate can be configured individually on channel level.

Analog: Input / Output	Digital: Input/ Output / Counter
1 Hz	1 Hz
2 Hz	2 Hz.
5 Hz	5 Hz
10 Hz	10 Hz
50Hz	50 Hz

4 Board IO overview

4.1 Picture of the board



[4]

4.2 Specification of the board

- ▶ 5 digital inputs (0= ground, 1= open) (on board test buttons provided)
- ▶ 2 analog inputs with attenuation and amplification option (internal test + 5 V provided)
- ▶ 8 digital open collector output switches (max. 50 V/100 mA) (on board LED indication)
- ▶ 2 analog outputs:
 - ▶ 0 to 5 V, output resistance 1K5
 - ▶ PWM 0 to 100 % open collector outputs max 100 mA / 40 V (on board LED indication)
- ▶ general conversion time: 20 ms per command
- ▶ power supply through USB: approx. 70 mA
- ▶ dimensions: 145 x 88 x 20 mm / 5.7 x 3 x 0.8 "

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