USER MANUAL

USBtoCAN

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ECU MASTER

Contents

1. Device description

The **USBtoCAN** interface is a tool used for communication and working with Ecumaster devices. It allows you to connect and configure both main devices and accessories through the CAN protocol.

Main devices like the EMU PRO, PMU, and ADU are configured using dedicated software clients specifically designed for each device. Accessories (e.g., GPStoCAN, CAN Thermal Cameras) are set up using a Light Client, which provides a simpler interface. For detailed instructions on configuring each Ecumaster device, please refer to the corresponding manual.

Additionally, the USBtoCAN interface can be used as a **CAN sniffer** to monitor CAN messages, although this functionality is limited to the *Light Client* (https://www.ecumaster.com/files/LightClient/LightClientManual.pdf).

> ✏️ **Note:**
>
> Ecumaster EMU Black and EMU Classic are not compatible with the USBtoCAN interface. These devices are configured directly via a USB cable instead.

The Ecumaster USBtoCAN is equipped with a 120 Ohm terminator that can be used for CAN bus termination. If you are not using an external terminator, it is necessary to use the one provided by USBtoCAN interface, otherwise the communication will not work. The USBtoCAN terminator can be turned on or off using a switch on the casing.

The Ecumaster USBtoCAN indicates its current state using the three LEDs on its side. The table below shows all possible states and their corresponding LED colors:

Color	Description
Green Continuous	Device turned on
Green Flashing	Device turned on and connected to PC
Green and Orange Flashing	Data transfer in progress

Color	Description
Orange Continuous	Device turned on, currently in bootloader
Orange Flashing	Device turned on, firmware update in progress
Red Continuous	Temporary CAN communication error
Red Flashing	Permanent CAN communication error

2. Specification

Specification	
Dimensions	54 x 55 x 24 mm
Weight	80 g
CANbus connector	DB9
PC connector	USB type B
Status indicator	3 LEDs
Temperature range	-40°C to +85°C
Operating supply voltage	5 V from the USB connection

All dimensions in mm
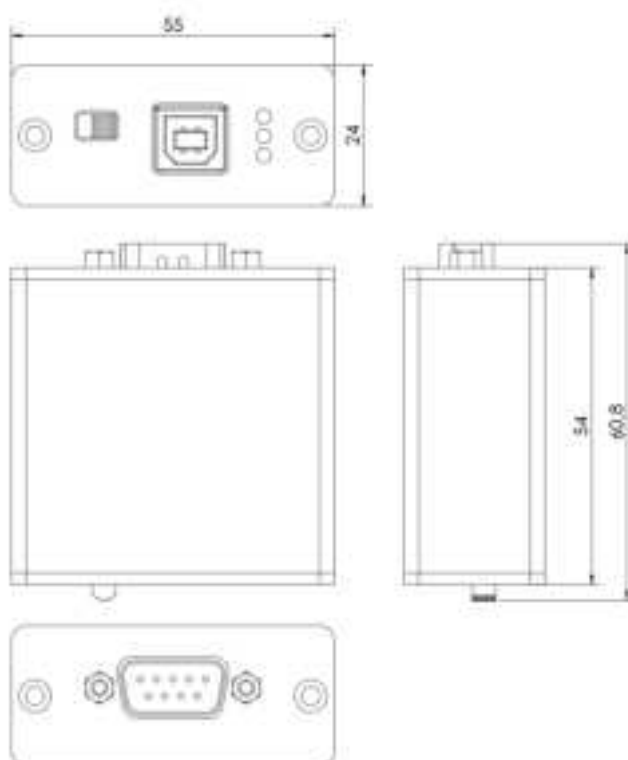
3. Pinout and Wiring

To connect the USBtoCAN for communication, you only need to wire **CAN high** and **CAN low**.
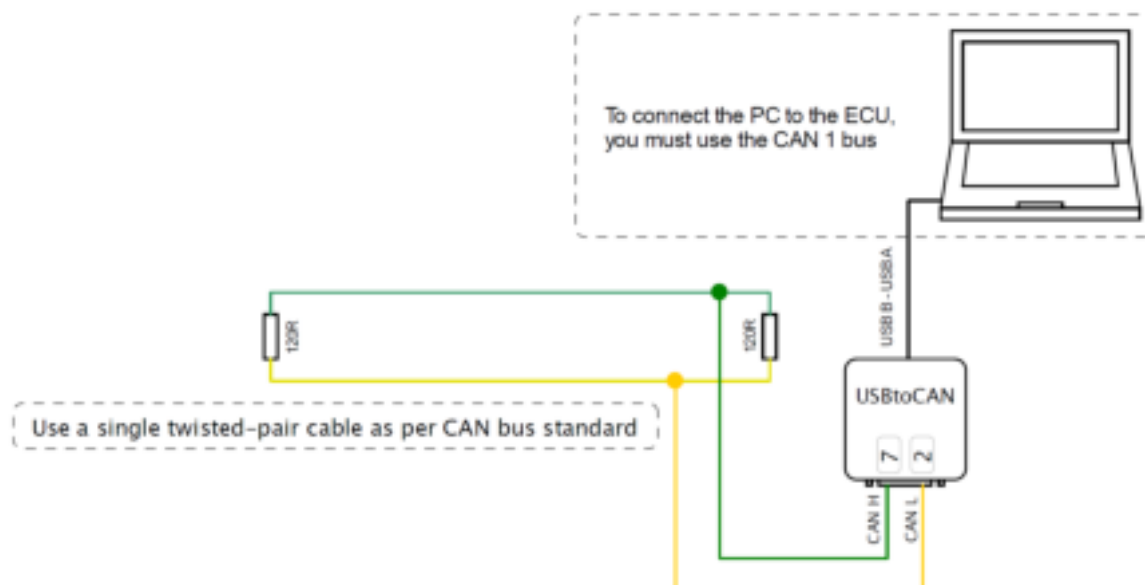
- Solder the **CAN low** wire to **pin 2** of the DB9 connector.
- Solder the **CAN high** wire to **pin 7**.

> ✎ **Note:**
>
> The CAN interface is powered through the USB port and does not require an external power source. The **+5V** pin can be used to provide USB power for additional devices.

Example connection diagram:

> ❗ **Attention:**
>
> When powering other devices via USBtoCAN, ensure proper grounding. A ground wire connection between the USBtoCAN interface and other CAN devices can be dangerous! Ground connections are only allowed if the devices have the same ground potential before connecting. To ensure safety, check for any potential difference by using a voltmeter to measure between the corresponding grounds.

4. Connecting to PC

To use Ecumaster USBtoCAN interface, user must be equipped in following items:

- USB A to USB B adapter to connect the interface to PC (Not included in the package)
- DB-9 Cable to connect interface to PMU
- Windows 10 should install Ecumaster USBtoCAN drivers automatically
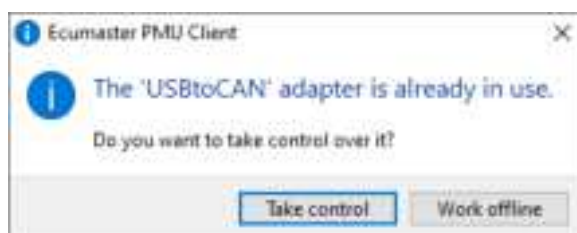- If using windows XP/7/8/8.1 - Ecumaster USBtoCAN interface drivers, available at: https://www.ecumaster.com/products/usb-to-can/

To install drivers, run EUSBtoCAN_Driver_vX.X.exe and follow instructions.

5. Switching the USBtoCAN between Ecumaster devices

From software version:

- EMU PRO Client - 63.0 Alpha
- PMU Client - 44.0
- ADU Client - 52.4
- Light Client - 1.7

it is possible to switch easily between programmes without having to close one to open another.

Ecumaster PMU Client dialog: The 'USBtoCAN' adapter is already in use. Do you want to take control over it? [Take control] [Work offline]

When opening a program (e.g., PMU Client) while another program (e.g., Ecumaster Light Client) is already active, a prompt will automatically appear, asking whether the new program (PMU Client) should take control of the USBtoCAN adapter.

The program that was in use (Ecumaster Light Client) will then lose connection and become inactive.

When the program is called back to the foreground, a message will automatically appear indicating that the previously lost connection can be restored.

6. Document history

Revision	Date	Changes
1.0	2017.08.30	Initial release
2.0	2024.09.26	Document layout changed to the Ecumaster standard format Additional details and images have been added for better clarity