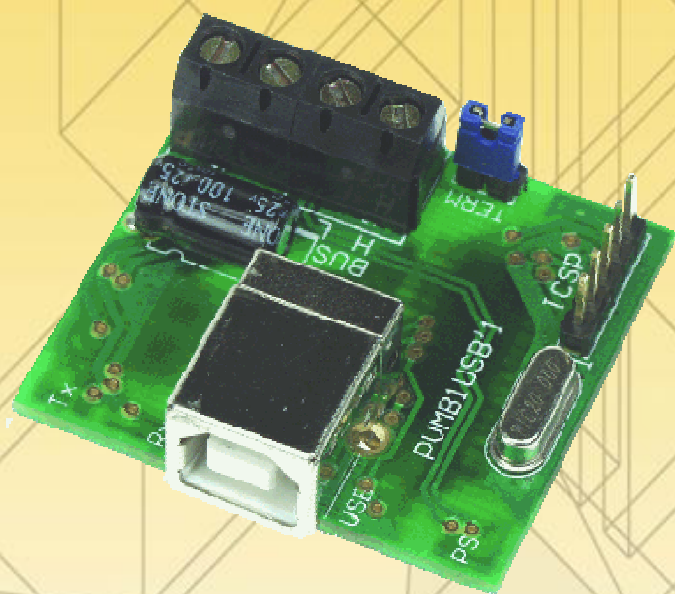




# Velleman Home Automation System



## VMB1USB

USB-interface voor het  
VELBUS-systeem

# INDEX

<b>Features</b> .....	<b>3</b>
<b>Velbus data</b> .....	<b>3</b>
<b>RS232C</b> .....	<b>3</b>
<b>Connection</b> .....	<b>4</b>
<i>Termination</i> .....	<b>4</b>
<b>Use</b> .....	<b>5</b>

## Features:

- ◇ VELBUS system control through a computer
- ◇ VELBUS message processing on the computer
- ◇ Galvanic separation between the computer and the VELBUS system
- ◇ LED indication for:
  - Power voltage
  - Status of the USB communication
  - Data reception and forwarding through VELBUS
- ◇ Required mains voltage: 12V ... 18VDC
- ◇ Power consumption: 13mA
- ◇ Consumption USB port : 35mA
- ◇ Dimensions (L x W x H): 43 x 40 x 18mm

## VELBUS:

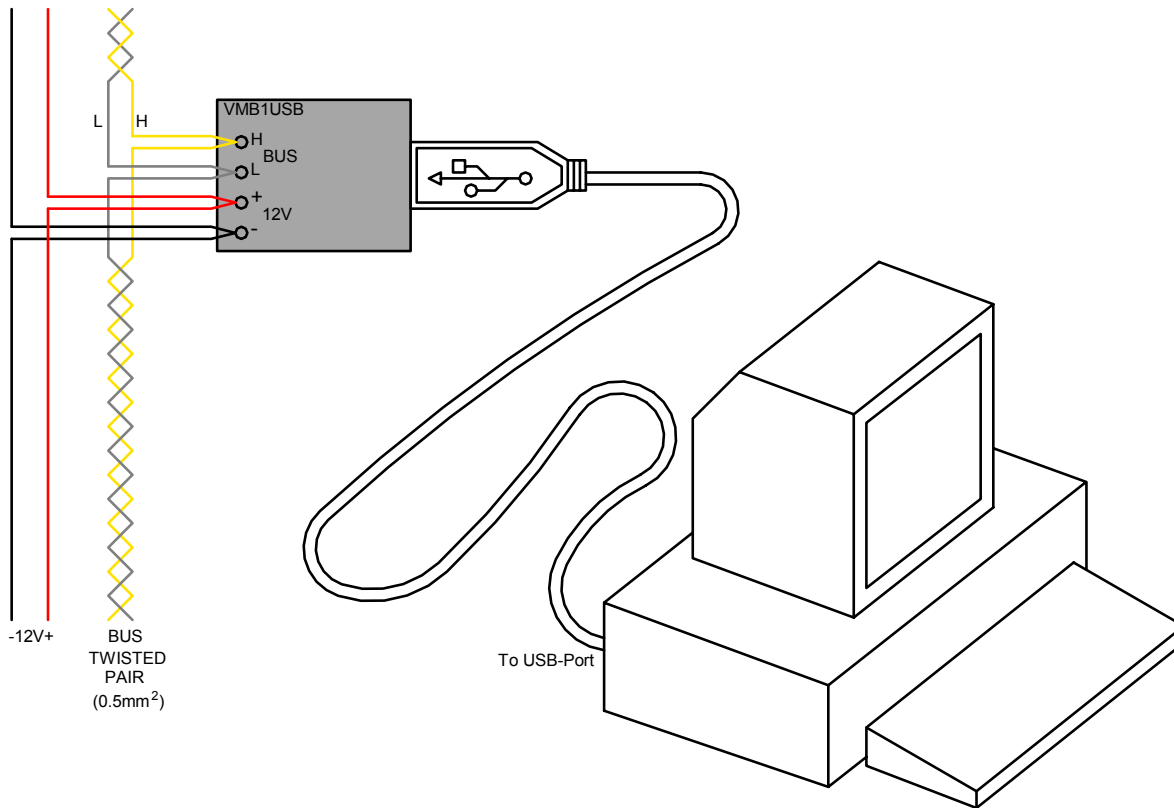
2-wire communication for the VELBUS data and 2 wires for power.  
Data transfer: 16,6Kbit/s  
Serial data protocol: CAN (Controller Area Network)  
Short-circuit proof (towards negative or positive of power)  
Self restoring after 25 seconds in case of a bus error  
Reception buffer for 6 commands  
Reporting when the reception buffer is full and free for reception  
Bus error and 'active bus' indication

## USB:

USB V2.0 compatible  
Data transfer: 12Mb/s (full speed)  
RS232 emulation over the USB bus  
Uses standard Microsoft® Windows® 'usbser.sys' driver.  
Driver (.inf) file available for Microsoft® Vista, Microsoft® Windows® XP and Windows® 2000.

## CONNECTION

For connection between the modules, use twisted pair cable (ex. EIB 2x2x0.8mm<sup>2</sup>, UTP 8x0.51mm - CAT5 or other). Use minimum 0.5mm<sup>2</sup> cable. For long wiring (>50m) or if a lot of modules (> 10) are connected to one wire, use 1mm<sup>2</sup> cable. Connect the 12-18Vdc (mind the polarity) and connect the bus wires (mind the polarity). Connect the module with a USB port on the computer. You can use one of the following Velleman USB cable types: CW076, CW077, CW078, CW090A, CW090B or CW090C.

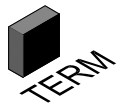
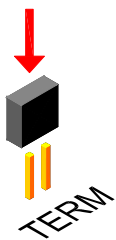


### Remark:

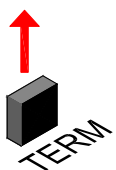
The USB computer connection is electrically separated from the VELBUS and the 12V power cable via an optical link.

### Termination

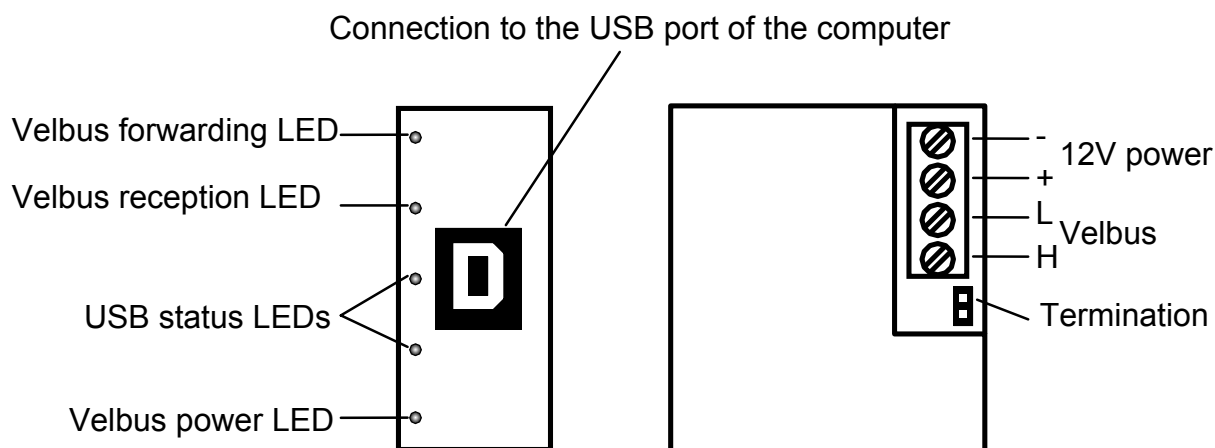
If the module is connected at the start or end of a cable on the VELBUS, place the 'TERM' jumper.



Remove the jumper in all other cases.



If different cable wiring topologies (tree, star, loop, ...) are used, place a jumper on the end module of the longest cable only, NOT on each end point.



Connect the module to the VELBUS system and the computer (see connection diagram).

At the First connection of the module with a computer without the driver, the upper USB status LED will blink. The computer operating system detects new hardware and will ask to localize and to install the driver (.inf file). This file can be downloaded from [www.velbus.be](http://www.velbus.be)

After the installation of the driver, both LEDs will alternately blink as an indication communication is possible.

In case of a different LED status, the interface will be in one of following situations:

- Both LEDs are turned off when the USB cable is not connected.
- Both LEDs turn on when the USB cable is connected but the interface module is not powered.
- Only the upper LED turns on when the interface is powered but not reset.
- Only the lower LED turns on when the interface is powered and reset but has no attributed address.
- The LEDs blink very rapidly at too high a power consumption.

Run a program on the computer allowing you to communicate with the VELBUS system.

This program or the information needed to develop this program can be downloaded from [www.velbus.be](http://www.velbus.be).

When powering the module a 'Bus active' and a 'Reception ready' message will be sent to the computer.

All messages appearing onto the VELBUS system will also be forwarded to the computer.

Valid commands generated by the computer are forwarded to the module via the USB port.

These commands are placed onto the VELBUS system by the USB interface module.

When sending too many commands simultaneously, the reception buffer will overflow. This will be reported to the computer. The computer program must break off the communication and wait for the 'reception ready' message to send new commands.

If the commands are incorrectly placed onto the VELBUS, a bus error will occur and be forwarded to the computer. The USB interface module will auto-restart after 25 seconds and erase the reception buffer.

# Velleman Home Automation System

Velleman<sup>®</sup> is a major distributor of electronic products and components and has its own R & D department. Velleman<sup>®</sup> is market leader in electronic kits with offices all over the world.



In-house training & demonstration facility.

