# CAN100 User Guide For GV300

ACCECAN100UG001

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# 0. Revision history

| Revision | Date | Author | Description of change |
|----------|------|--------|-----------------------|
| 1.00 | 2014-08-26 | Cid Xu | Initial |
| | | | |
| | | | |

# 1. General Description

CAN100 is designed to gather logistic information from car for use of vehicles monitoring systems. CAN100 provides various information which describes current state of the car in simple, RS-232 based protocol, which is not dependent from car maker or model.

CAN100 decodes information from vehicles digital buses (CAN bus and J1708),

i.e.

- vehicle distance,
- fuel level,
- fuel consumption,
- engine speed,
- engine temperatures,
- state of doors, locks, indicators on the dashboard,
- supports driver identification based on digital tachograph,
- and many others.

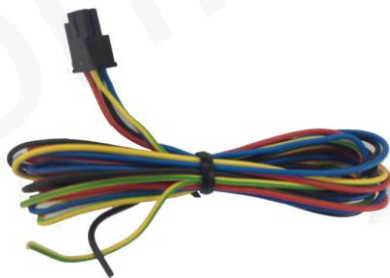The number of supported information and car models increases continuously.

## 2. Product Specification

### 2.1. Technical Specification

| NO. | ITEM | SPECIFICATION |
|:---:|------|---------------|
| 1 | Box size | 69mm*49.5mm*18mm |
| 2 | Power supply voltage | 7V to 32V |
| 3 | Power supply current | Typ. 11 mA |
| 4 | Power supply current in sleep mode | Max. 1 mA |
| 5 | Operating temperature | -40℃～+80℃ |

**Table 1.  CAN100 Technical Specification**

### 2.2. Part List

| Name | Picture | Remark |
|:---:|:---:|:---:|
| CAN100 |  | CAN bus module |
| 4 pin connector cable |  | Power supply and serial port |
| 6 pin connector cable |  | Canbus port |
| 8 pin connector cable |  | J1708 port |

| | | |
|---|---|---|
| CAN click (Optional) |  | Can connect to the CAN bus wire without breaking them |

**Table 2.  CAN100 Part List**

# 3. Installation

## 3.1. Pinout Description
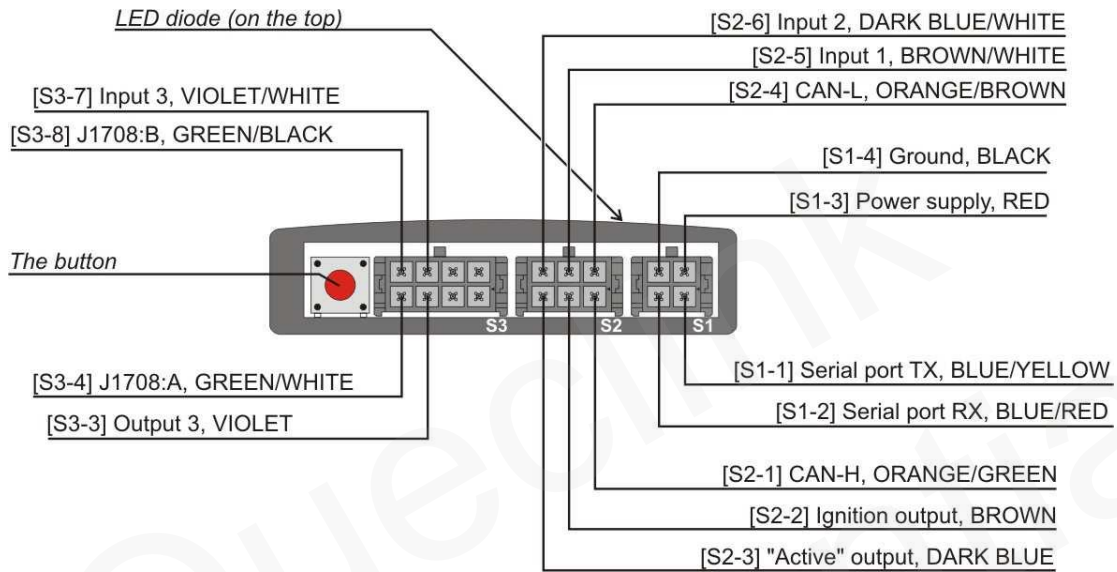


**Picture 1: CAN100 - Pinout**

- LED diode (on the top of the case) – indicates the mode of the device
- The button in front panel – runs synchronization, awakes the device

**PINOUT:**
- CANH and CANL - connect to CAN-bus in a vehicle
- J1708:A and B - connect to J1708 data bus in a vehicle (optional - in particular car models)
- SUPPLY POWER and GROUND - connect to vehicle power installation (both 12V and 24V installation accepted)
- Serial port TX and RX, full-duplex, compatible to RS232 and UART (options to choose) - connect to telemetric module serial port
- Ignition output (positive) - active, when car's ignition or engine is on (read from the CAN bus). Active level high (supply voltage, max. current 100 mA). Connect to telemetric device ignition input (instead of connecting vehicles ignition wire).
- Output "active" (negative) - indicate the status of digital buses in the car (CAN-bus and J1708). Shorted to ground (max. current 100 mA) when there goes information across CAN-bus or J1708. Inactive (high-impedance), when the car is in sleep (low power) mode. Connect to telemetric device's input, to wake it up when car is about to be running.

- Output 3 (negative, max. current 100 mA), configurable.
- Inputs 1, 2 and 3 - analog (resolution up to 12 bits) or digital (configurable).

## 3.2. Device Installation

The device is to be installed in the car connecting the power supply and CAN-bus (and optionally J1708) according to the installation diagram (diagram available for each car model, which CAN100 works with).

When you connect the power on, the LED diode on the top of the unit case flashes green:

- once per second, if the information is received from the CAN bus, or J1708,

- once per 4 seconds, if the CAN and J1708 bus are in sleep mode or improperly connected,

When the car goes into standby mode (low power), CAN bus (and J1708) goes sleep, too.

Then, the CAN100 goes into low power mode. Then the LED diode is off.

CAN100 returns to normal operation as soon as CAN or J1708 bus is activated. At the same time the output [S2-3] ("active") will be activated (negative).

Sleep mode can also be ended by pressing a button on the front panel of the device.

After pressing the button, the LED will flash accordingly.

**WARNING! If Ignition is turned on in the car, and the LED blinks every 4 seconds - the device is not properly connected to the vehicle CAN bus.**

After connecting (as described above), the CAN100 is ready to work and is able to communicate through the serial port.

## 3.3. CAN-bus Synchronization

Particular car models' CAN-buses vary from each other significantly. CAN100 is able to recognize each type of CAN-bus and adjust automatically.

Unconfigured device on first-time run starts synchronization immediately after power is supplied. Synchronization should be performed after the device is connected to the CAN bus (and J1708, if required). Make sure that car ignition is on during synchronization.

If device is configured for any car, synchronization can be started in the following way:

1. Connect the power for the device. The LED lights red.

2. Press the button on the front panel of the device (you can hold it while connecting power supply).

3. After approximately 3 seconds, the LED will light green. Then release the button.

After starting the device, sync LED blinks red. After several seconds (up to half a minute), synchronization is done and:

- if the green LED lights – car has been synchronized successfully, turn the power supply off and on after 5 seconds - now the device is synchronized with the car.

- if the LED flashes alternating green / red - it means an invalid connection to the CAN-bus. Make sure the CAN-bus wires are not swapped (CAN-H against CANL), and the ignition is turned on. If these conditions are met – the device is not connected to any CAN-bus.

- if the red LED light - CAN bus connection is correct, but the car has not been recognized. The current version of the software of CAN100 will not work with this car model.

CAN-bus synchronization may also be performed through the serial port.
On request, the device may be delivered with the proper configuration for the selected car model.

## 3.4. Firmware Upgrade

CAN100 firmware can be updated through the serial port. Before installing the unit in the car, make sure that the most current firmware version is loaded.
Subsequent versions of the software can support more information from the vehicle CAN-bus, and will also support more car models.
Details of software updates, as well as the latest firmware versions will be provided by the device supplier.

## 3.5. Installation Example (GV300)

GV300 can communicate with CAN100 device by RS232 port. This type of CAN100 device is named CAN100_STD.

The following table shows the definition of CAN100_STD device's external interface.

| Pin No. | Pin Name | Cable Color |
|---------|----------|-------------|
| S1-1 | TX | Blue/Yellow |
| S1-2 | RX | Blue/Red |
| S1-3 | Power Supply | Red |
| S1-4 | Ground | Black |

**Table 3.    External Interface of CAN100_STD Device**

The following table shows how to connect with the GV300.

| GV300 | | | | CAN100_STD | | |
|-------|----------|--------------|------------|---------|----------|-------------|
| Pin No. | Pin Name | Color | Connection | Pin No. | Pin Name | Color |
| 4 | RXD | Green or Pink | ←→ | S1-1 | TX | Blue/Yellow |
| 5 | TXD | White/Black | ←→ | S1-2 | RX | Blue/Red |
| 11 | Power | Red | ←→ | S1-3 | Power Supply | Red |
| 6 | Ground | Black | ←→ | S1-4 | Ground | Black |

**Table 4.    CAN100_STD Device Connects with GV300**

# 4. Message Format and Operation

Reference GVxxx @Track Air Interface Protocol.