



INVENTURE
AUTOMOTIVE
SIGNALS • DATA • ANALYTICS



CL-J1708™ sensor v2

User's manual

User's manual

Inventure

CL-J1708[™] sensor v2

Legal Notice

Although care has been taken in preparing the information contained in this document, Inventure Hungary Inc. does not and cannot guarantee the accuracy thereof. Anyone using the information does so at their own risk and shall be deemed to indemnify Inventure Inc. from any and all injury or damage arising from such use.

This document is for use by the intended recipient and contains confidential information under applicable law. You are hereby formally notified that any use, copying or distribution of the document, in whole or in part, is strictly prohibited.

This publication supersedes and replaces all information previously supplied.

Trademarks

The Inventure logo and product names are trademarks of Inventure, Inc. and are protected by copyright law.
All rights reserved.

Copyright Notice

© Copyright 2019, Inventure, Inc.

Revision

D01-032-02-04-05EN

Contact

INVENTURE Automotive Electronics R&D, Inc.
Fürj street 2. Building B, 1. floor
H-1124 Budapest
HUNGARY
Phone: (+36) 1 381-0970
E-mail: support@inventure-automotive.com
URL: www.inventure-automotive.com

Table of contents

- 1 INTRODUCTION5**
- 2 FUNCTION, APPLICATION FIELDS.....5**
- 3 NOTICES.....6**
- 4 INSTALLATION.....7**
 - 4.1 CONNECTION PORTS OF THE INVENTURE CL-J1708 DEVICE7
 - 4.2 INSTALLATION STEPS7
- 5 CHECKING THE PROPER OPERATION.....8**
- 6 OPERATING STATES.....9**
 - 6.1 DESCRIPTION OF THE STATES.....9
- 7 SYSTEM CHARACTERISTICS10**
- 8 WARRANTY11**
- 9 HOW TO CONTACT INVENTURE?12**

1 Introduction

Thank you for purchasing an Inventure product. Your new Inventure CL-J1708 device is a carefully engineered, high quality durable product with modern features. It is designed to give you the quality and convenience you expect from an automotive measuring instrument.

To familiarize yourself with all the features of your unit, please read the following instructions carefully. Retain this guide for future reference.

2 Function, application fields

Most modern (personal and commercial) vehicles are equipped with communication system, such as J1708 system. The Inventure CL-J1708 device is designed for capturing vehicle data from such communication system.

The Inventure CL-J1708 device is a contactless J1708 bus reader applying non-intrusive technology to acquire vehicle specific data. The usage of the device eliminates any vehicle warranty issue since avoids galvanic connection to vehicle communication wires.

Inventure CL-J1708 device can be useful for any aftermarket device that requires vehicle J1708 data such as:

- Automatic Vehicle Locating system
- Fleet Management System
- Vehicle status display
- Fuel control
- Etc.

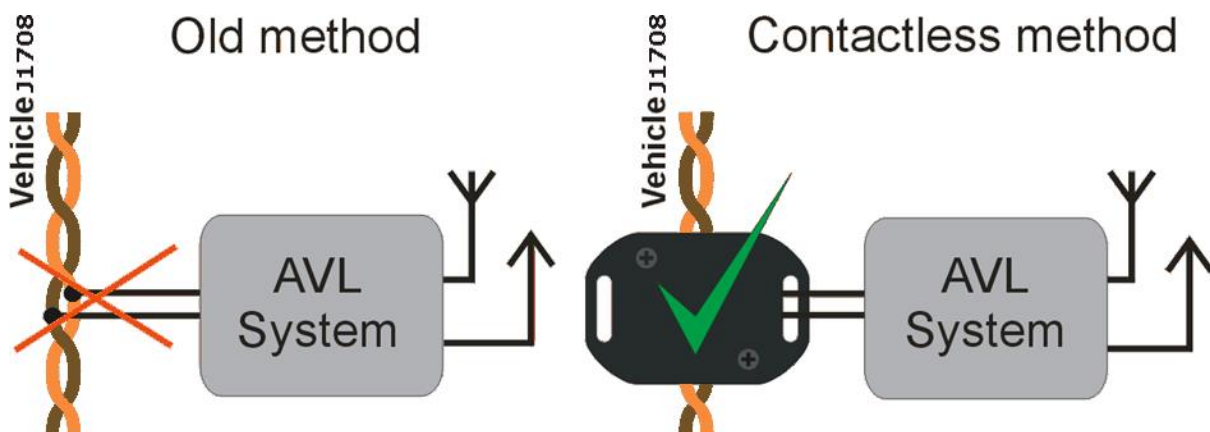


Figure 1. Usage of CL-J1708

3 Notices



- Before starting the installation please read this document carefully! Appropriate operation of the device depends on proper installation.
- Do not remove the silicone rubbers from the cover of the contactless unit during the installation!
- Usage of the device is permitted for industrial purposes only. It must not be used in situations in which human lives depend upon the operation of this equipment.
- The installation of the device may eventually be in conflict with a country's regulations or the vehicle manufacturers (OEM) instructions. The conformance shall solely be the Customer's responsibility. Improper device installation may have an effect on vehicle warranty.
- Inventure takes no responsibility for any damages originated in device installation.
- Aftermarket installed devices connected to J1708 bus may affect negatively the operation of CL-J1708.
- Exceeding maximum allowable power supply may impair the device.
- Vehicle ignition must be off at the start of installation.
- Misuse and/or physical damage on device may lead to loss of warranty.
- Vehicle J1708 wires must not be cut, pierced, or soldered. J1708 wires must be intact for undisturbed vehicle J1708 communication. Inadequate connection to vehicle J1708 wires may affect vehicle operation and may cause safety issues.
- Fix Inventure CL-J1708 device properly to avoid hitting to vehicle elements, or rattling!
- Device should be installed away from direct heat and moisture. Installation in cabin is recommended.
- Avoid installation at steering column and above pedals!
- Although device contains (Multi)fuse, application of a 1...3 Amp fuse at power source is highly recommended.
- Inventure CL-J1708 device must be installed by professional skilled in automotive electronics.
- Avoid damaging, polluting or scratching sensor surfaces! Also ensure clean wire surfaces (use isopropyl-alcohol for cleaning if necessary)!
- The AVL system input must not transmit any J1708 message, only receiving devices are allowed to connect to CL-J1708 output, (e.g. FMS Gateway).

4 Installation

4.1 Connection ports of the Inventure CL-J1708 device

- Signal input. Contactless J1708 sensor surfaces (horizontal, High and Low stripes)
- Power supply. Black: GND, Red: power (constant power or ignition)
- J1708 output. Brown: J1708B, Amber (Orange): J1708A

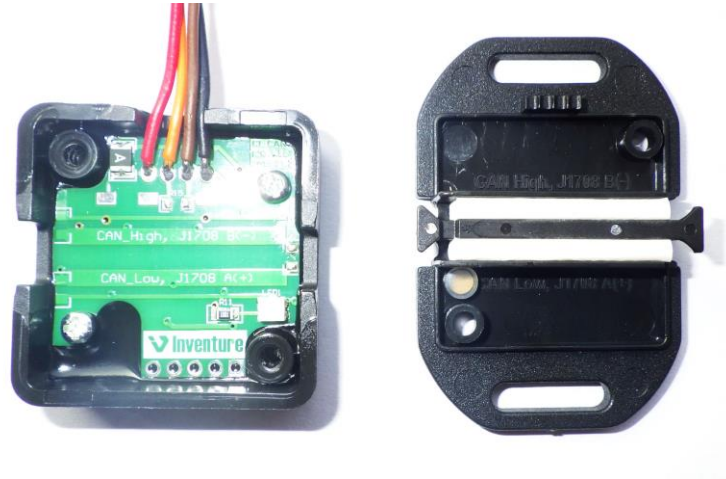


Figure 2. Internal view of CL-J1708

4.2 Installation steps

1. Mount output connector to Inventure CL-J1708 device matching to the AVL input!
2. Check voltage level of vehicle J1708 A and B wires! (A is more positive than B.)
3. Make sure ignition is off
4. Provide power supply connection (7...32 V). Recommended to use free points of fuse box. (If not available tap a low amperage, not safety-critical battery or ignition wire with 3M UB2A - or similar - IDC tap splicing connector!)
5. Inventure CL-J1708 output installation.
 - a. For Inventure FMS Gateway device: connect the 2x4 pin Minifit connector
 - b. For other telematic device: use the appropriate connector
6. Turn on ignition (optional)
7. Place cover of CL-J1708 device under vehicle J1708 wires! Ensure vehicle J1708 wires not to be strained and/or bended sharply, but run straight in the indicated High and Low slots! **Please do not remove the silicone rubbers from the cover!**

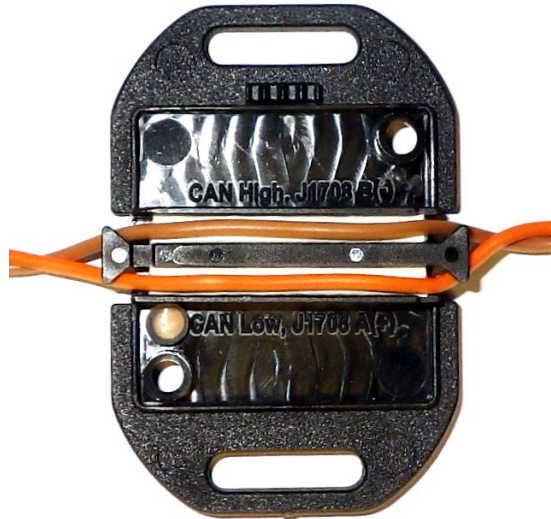


Figure 3. Intended wire paths below the cover

8. Place the cover to match the CL-J1708 device. The hole on the cover must be aligned with the status LED.
9. (Optional) Check status LED (section 6)! If ignition is on the red light changes to green indicating proper vehicle J1708 polarity
10. Screws must be fixed tightly. Make sure vehicle J1708 wires are not pinched!

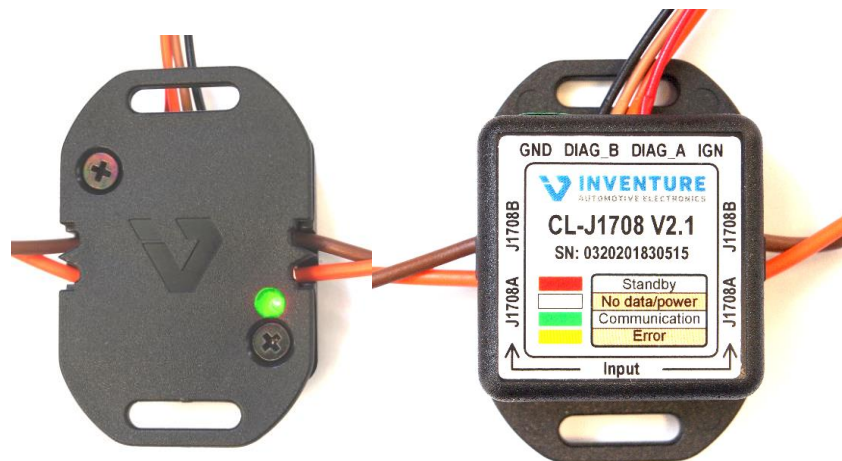


Figure 4. Illustration of device installation on vehicle J1708 bus

5 Checking the proper operation

- Turn ignition on
- LED must light green (see section 6, LED status!)
- Green light indicates data reception. To make sure data received correctly check Inventure FMS Gateway LED status / your telematic device function connected with Inventure CL-J1708.
- Output data can be checked with any PC J1708 Tool (optional)

6 Operating states

The Inventure CL-J1708 has a status LED on the back of the enclosure which indicates the current operational mode.

Table 1. The states of the status LED:

Status		Status LED	
Standby (in case no J1708 communication for at least 2 seconds)		red	
No communication, or no power supply		no light	
Communication		green	
J1708 polarity error		orange	
Overheating (above 85°C)	communication	blinking orange andgreen
	no communication		...red

The label on the box shows explanation to make understanding the signs easy:

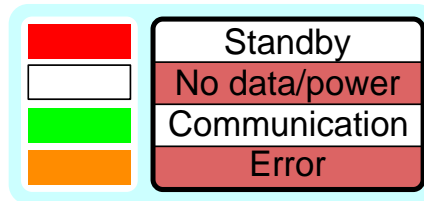


Figure 5. Short explanation of color signs, printed on the device label.

6.1 Description of the states

- **Standby (red light):**
- The device goes to this low consumption mode 2 seconds after ending communication on vehicle J1708 bus, or after power on.
- **No light on LED:**
- No communication (up to 2 seconds then device goes to standby mode)
- No power supply, or incorrect power polarity.
- **J1708 polarity error (orange LED):**
- Reversed J1708 High and Low wires
- **Overheating (alternating orange/green or orange/red)**
 - Temperature is too high inside the box (75°C)

Possible reasons:

- Heat in the environment
- Bus overload or multiple terminating resistor or short circuit on Inventure CL-J1708 output

7 System Characteristics

Table 2. Operation and storage characteristics

Parameter	Symbol	Min.	Typ.	Max.	Unit
Power supply					
Voltage supply	VBAT	7		32	V
Operating current	I _{op}	10	15	35	mA
Standby current	I _{sb}		4		mA
J1708 interface					
Baud rate			9600		kBaud
Environmental characteristics					
Storage temperature	T _{storage}	-40		85	°C
Operating temperature	T _{op}	-40		75	°C
Humidity	RH	5		80	%

Other characteristics:

- protected against incorrect polarity
- protected against transient overvoltage
- ESD protection up to at least 8 kV (HBM) on any port

8 Warranty

There is a one-year warranty on the Inventure CL-J1708 device from the date of the original purchase. The warranty covers any defect in materials or workmanship. The warranty is valid only if the device was operated under normal circumstances in regular use. The warranty does not include damage from misuse or neglect.

As the Inventure CL-J1708 has a well thought design, it is thoroughly tested before release and it is composed of high quality parts, there should be no need for maintenance of any parts of the Inventure CL-J1708 during normal operation. Should the product be damaged or corrupted, the warranty for the Inventure CL-J1708 is no longer valid.

Remember to save your sales receipt in case you ever need warranty service. Please refer to the serial number of your Inventure CL-J1708 in case of any problems. The serial number can be found on a label outside the box. In case of warranty claims contact your local dealer or directly Inventure, Inc.

9 How to contact Inventure?

Inventure provides customer support via its World Wide Web (WWW) site. The Inventure website is available by using from your favorite Internet browser at:

www.inventure-automotive.com

Our website provides a variety of services. Read up-to-date information about the company, the products, application possibilities and the services. Frequently asked questions and the corresponding answers are also available on the Inventure site.

If you have problems, questions, suggestions, or you just want to express your opinion about us or our products, please feel free to write an email to us, and we will surely find a way to the solution.

support@inventure-automotive.com

Come and visit our website, tell us your experience concerning our product, fill out the registration form to be able to inform you directly about the latest results of research and development and the continuously improving customer services.

Your comments are also welcome under the following address:

**Inventure Automotive Electronics R&D, Inc.
H-1124 Budapest
Fürj Street 2.
HUNGARY**

Phone: (+36) 1 381-0970

Notes

Notes

Notes



<http://www.inventure-automotive.com>