



INVENTURE
AUTOMOTIVE
SIGNALS • DATA • ANALYTICS



Inventure Trailer ID

User's manual

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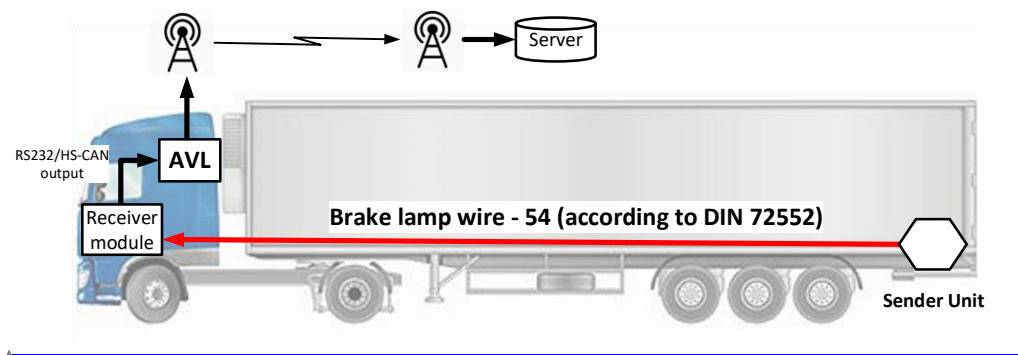
1 Introduction

Thank you for purchasing an Inventure product. Your new Inventure Trailer ID 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 Inventure Trailer ID system

2.1 System Overview



Feldfunktion geändert

1. Figure Main components of the Inventure Trailer ID system

The Inventure Trailer ID system consists of a Trailer Sender unit installed in the rear junction box of the trailer and a Receiver module which provides RS232 compatible level serial or an HS-CAN output.

Installation is easy and basically no maintenance is needed since no batteries are installed, Trailer ID runs on the electricity of the trailer's brake lamp. When the trailer is coupled to the tractor and the brake lamp is ignited, the Sender unit transfers the identification number to the Receiver module as seen on the illustration above.

We designed Trailer ID so that it is compatible with any brand and make and it supports 2 trailer units at the same time. For correct installation please refer to our installation guide and manuals.

2.2 Main features

With this intelligent interface we provide solution for many different needs. With the Trailer ID, you can:

- ❖ Identify, hence track connected trailer units
- ❖ Replace cumbersome paper-based administration
- ❖ Early detect inevitable human errors by double-check connected trailers with real-time data

2.3 Use cases

Among numerous use cases we present a few examples as follows:

- ❖ Sending real-time alerts on wrong attachments thus avoiding mistaken trips
- ❖ Sending periodic notifications about upcoming service intervals thus saving you time and money
- ❖ Mitigating human error by automatizing the identification procedure
- ❖ Tracking trailer units through the AVL

3 Safety notices



Please read the following safety instructions carefully. Inventure Automotive accepts no liability for damage that results from disregarding the safety instructions.

- ❖ Before installation please read this document carefully! Appropriate operation of the device depends on proper 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.
- ❖ 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.
- ❖ Fix Inventure Trailer ID device properly to avoid hitting to vehicle elements, or rattling!
- ❖ Device should be installed away from direct heat and moisture.
- ❖ Although device contains (Multi)fuse, application of a 1...3 Amp fuse at power source is highly recommended.
- ❖ Inventure Trailer ID device must be installed by professional skilled in automotive electronics.

4 Connection overview

Inventure Trailer ID interface consists of two separate units a Receiver and an Sender unit. The connections of each unit are given below.

4.1 Receiver module



Figure 2 – Receiver module connectors

Pin	Signal	Description
1	DNC	Do not connect
2	RS232_TX	RS232 channel transmit data line
3	CAN_H	CAN High line
4	CAN_TER2	CAN Bus terminating resistor loop 2
5	RS232_GND	RS232 channel Ground
6	GND	Ground
7	Brake	Brake lamp wire for signal input and DC-BUS*
8	DNC	Do not connect
9	RS232_RX	RS232 channel receive data line
10	CAN_L	CAN Low line
11	CAN_TER1	CAN Bus terminating resistor loop 1
12	DNC	Do not connect
13	IGN	Main power input and DC-BUS*
14	DNC	Do not connect

Table 1 – Trailer ID pinout

* – One or the other, it is configurable via CN101 jumper

4.2 Sender unit

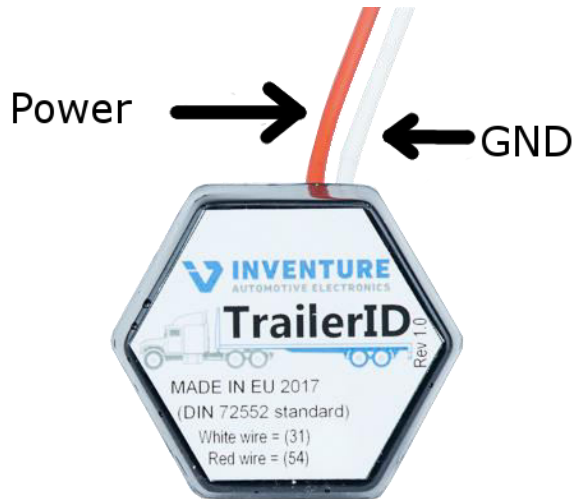


Figure 3 - Sender unit

Pin	Signal	Description
1	GND	Ground
2	Brake	Brake wire for power and signal input and DC-BUS

Table 2 - Sender unit connector pinout

5 Installation

5.1 Trailer ID Sender unit

The Sender unit has to be installed on the trailer unit. For more specific information on the install process please refer to our installation guide, which is available at Inventure Support (support@inventure-automotive.com).

5.2 Trailer ID Receiver module

The Trailer ID Receiver module goes inside the cabin of the tractor unit ideally somewhere near to your AVL device (that can also be installed outside of the cabin in case of radio interference). The device needs a connection to the massive ground (31) and ignition (15) as power supply. The brake wire signal junction point has to be found and connected as well.

Because every truck is different, type-specific installation guides will be available in the future for your reference.

6 Operating states

The Inventure Trailer ID has a status LED on its PCB back of the enclosure, which indicates the current operational mode.

LED Statuses:

Status	Status LED
Normal state	Green
Standby state	Flickering green
DC-BUS active state	Fash flashing red on constant green
No power, or incorrect polarity	No light

6.1 Description of the states

Normal state (green light):

The device is operating normally, it is ready to send or receive messages to the Sender unit.

Standby (flickering green light):

The device goes to this low current consumption mode about 3 seconds after the end of communication with the Sender unit.

DC-BUS active (fast flashing red on constant green):

Communication is in progress.

No light on LED:

No power supply, or incorrect power polarity.

7 System Characteristics

7.1 Receiver module

Parameter	Symbol	Min.	Typ.	Max.	Unit
Power supply					
Voltage supply	VBAT	11		32	V
Operating current	I _{op}			40	mA
Standby current	I _{sb}		11		mA
Environmental characteristics					
Storage temperature	T _{storage}	-40		85	°C
Operating temperature	T _{op}	-40		75	°C
Humidity	RH	5		80	%

Table 3. Operation and storage characteristics

Other characteristics:

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

7.2 Sender unit

Parameter	Symbol	Min.	Typ.	Max.	Unit
Power supply					
Voltage supply	VBAT	11		32	V
Operating current	I _{op}			70	mA
Standby current	I _{sb}		11		mA
Environmental characteristics					
Storage temperature	T _{storage}	-40		85	°C
Operating temperature	T _{op}	-40		75	°C
Humidity	RH	5		80	%

Table 4. Operation and storage characteristics

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 Trailer ID 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 Trailer ID 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 Trailer ID during normal operation. Should the product be damaged or corrupted, the warranty for the Inventure Trailer ID 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 Trailer ID 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:

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