

INVERS

Customer Manual



CloudBoxx

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INVERS GmbH
Untere Industriestraße 20
57250 Netphen
GERMANY

Tel.: +49 (271) 23888-0
Fax: +49 (271) 23888-29

eMail: cloudboxx-support@invers.com
<http://www.invers.com>

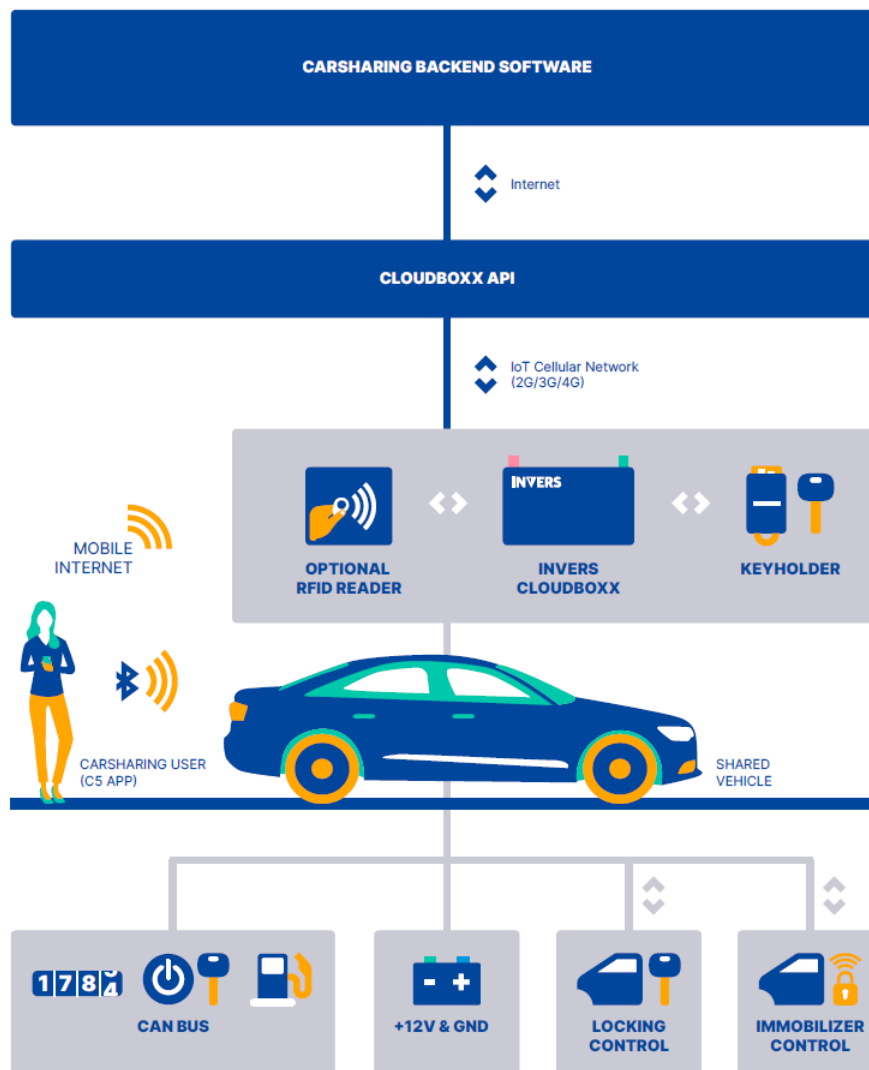
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WELCOME TO CLOUDBOXX SYSTEM

The CloudBoxx telematic device is installed into a vehicle only by qualified staff. The CloudBoxx allows remote interaction between the driver and the vehicle via Bluetooth (BLE) and cellular mobile data communication (2G/3G/4G) in order to share the vehicle with other people.

With their smartphone app, customers of a sharing operator can locate, reserve and activate their vehicles for use. The CloudBoxx is the interface between the backend system of the sharing operator and the vehicle. It controls access to the vehicle and reads data from the sensors and transmits it to the operator's backend system. With CloudBoxx, many vehicle variants can be made shareable. The concrete usage sequence and scope of functions results from the interaction between vehicle, CloudBoxx and backend system.



For detailed description of features and options please use your personal login to the CloudBoxx-API-Documentation: <https://api.cloudboxx.invers.com/api>

Please note that the respective operating model and its functional and safety features are the responsibility of the operator.

TECHNICAL DATA AND LIMITS

The CloudBoxx is designed for following conditions:

- Installation and operation only in vehicles
- Power Supply: 7...56V DC ; max. Peak Current 300mA
- Digital and Analogue Inputs: max. 14V DC
- Operating Temperature: -20 ... +85 °C
- Cable lengths: max. 3 meters CAN-Bus wires max. 1.0 meters (twisted)
- Protection Class: IP44 (installation only in dry areas!)
- Minimum distance more than 20cm of CloudBoxx and antennas to human body and sensitive electronics

SAFETY ADVICE

To immobilize the car, only interrupt power circles not needed during driving. **Ignition and fuel pump must not be interrupted because of security reasons!**

The installation of the devices must not block the sight of the driver. Also do not install the devices in the cabin within the collision area of passengers (e.g. dashboard or similar) or in the within the deployment radius of airbag systems.

Attention: Starting with CloudBoxx 4G the Pins 22 and 23 of the main connector are used to enable the "write" functionality for both high speed CAN buses (CAN0 and CAN1). **You must not connect any wires to these pins without specific instructions by INVERS support!** Please contact cloudboxx-support@invers.com if you wish to utilize the CAN write functionality, or if you want to connect the CloudBoxx 4G to a low speed CAN bus.

Do not boot the device if you detect / assume any damage or error. Please contact the Invers support team.

INSTALLATION

IMPORTANT INSTALLATION AND SAFETY REMARKS

- Installation only by qualified staff!
- Installation staff is responsible for correct installation according to relevant regulations!
- Disconnect the vehicle battery before starting the installation!
- Use CloudBoxx standard harness or vehicle specific harness for the installation
- Connection to the vehicle supply voltage only with suitable cables and appropriate fuse

- Connection to CAN-Bus must be realized with twisted wires according to SAE J2284
- Install the wires in a way they get not damaged on sharp objects or ruptured by mistake
- All cable connections to the vehicle electronics must be reliably plugged, crimped or soldered
- Unused wires of the standard harness should be cut off and the ends must be insulated!
- All components and cables must be fixed in such a way that under no circumstances may they block moving parts of the vehicle (pedals, steering, wheels...)!
- To immobilize the vehicle, only interrupt power circles not needed during driving. **Ignition and fuel pump must not be interrupted because of safety reasons!**
- No assembly of components in the crash-impact area of the passengers or in the airbag inflation area
- For a good geo-position the Logo on the antenna should be aligned to the sky if possible and not be shielded by metal surfaces nearby (see instructions attached to the antenna)
- The on-board unit is prepared for a 12-volt vehicle wiring (passenger car). If you intend to do the installation in a 24-volt vehicle (heavy truck), please contact the Invers support team.
- Contact cloudboxx-support@invers.com if you wish to utilize the CAN write functionality, or if you want to connect the CloudBoxx 4G to a low speed CAN bus.
- All work must be carried out professionally according to current technical regulations
- Please respect the local legal obligations!
- Keep a record of all installation steps on the installation protocol

For registered customers INVERS provides vehicle specific instructions for multiple vehicles, makes and models. Please contact cloudboxx-support@invers.com.

After installation, please use the Setup & Test App for configuration and test. It can be downloaded from Google Play:

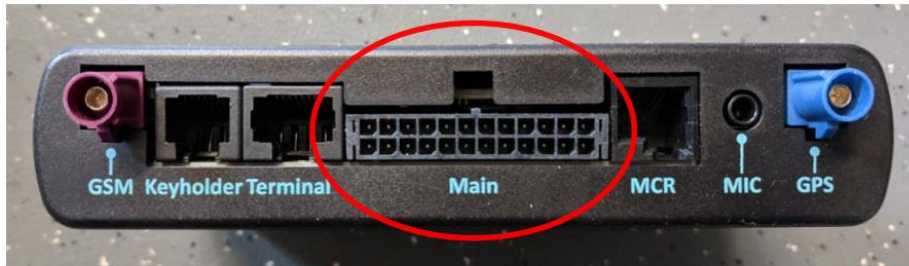
<https://play.google.com/store/apps/details?id=com.invers.cloudboxxsetupandtest>

If you intend to do the installation under different conditions, please contact the Invers support team.

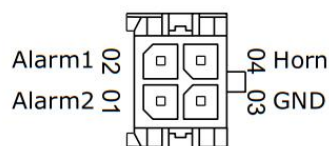
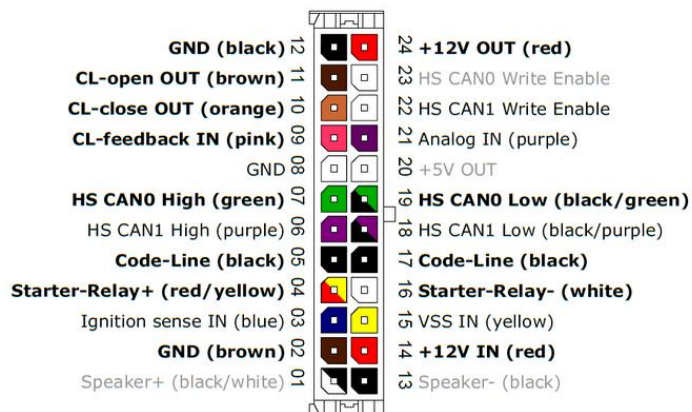
CONNECTING THE CLOUDBOXX TO THE VEHICLE

Use CloudBoxx standard harness or vehicle specific harness for connecting the CloudBoxx to the vehicle. Please ask INVERS support for vehicle specific installation recommendations!

Connector Overview CloudBoxx 4G



Pin assignment and colour scheme of the connections



Color	Description
Red	+12V (clamp 30) (e.g. in radio harness), use 5 amp fuse if you connect this pin to a power supply that is not already protected by another fuse
Brown	Ground (clamp 31) (e.g. in radio harness)
Blue	Ignition sense (clamp 15) Attention! The blue wire for the ignition (Pin 3) only has to be pinned in if the ignition is not detected via CAN.
Yellow/red and white	Relay connector: This cable pair attaches to the external relay that interrupts the starter signal. The wiring from the relay to the interface to connector 50 should be as short as possible because of high current at this location. For safety reasons, neither the fuel pump nor the ignition should ever be interrupted because both circuits are used while the vehicle is being driven.
Black & Black	Code line interruption. This cable pair interrupts the wire from the transponder coil. Maximum current is 1A. For safety reasons, neither the fuel pump nor the ignition should ever be interrupted because both circuits are used while the vehicle is being driven
Yellow	Speedometer signal is only required if the vehicle speed is not taken directly from the CAN or via an external CAN adapter
Brown & orange	Open/close control of vehicle central locking if the car key modification is not used. (Ground signal, max 2 A load)
Pink	Central locking response signal. (For one-button central door locking in the vehicle)
Green	Connector for CAN high. The CAN high and CAN low cables should not be extended and should, if possible, be shortened. According to the SAE J2284 specification, the CAN bus cables should be twisted when installing them. The number of twists should be from 33 to 50 per meter of cable.
Green/black	Connector for CAN low. The CAN high and CAN low cables should not be extended and should, when possible, be shortened. According to the SAE J2284 specification, the CAN bus cables should be twisted when installing them. The number of twists should be from 33 to 50 per meter of cable.
Purple	Analogue fuel level (optional)
CAN 1 is designated for a second CAN bus connection (optional). It is only needed for some cars (see car list). Please connect two additional wires to the CloudBoxx connector. CAN bus wires should always be twisted.	

Invers has a large library of vehicle-specific documentation.

Please contact cloudboxx-support@invers.com.

INSTALLATION OF THE EXTERNAL KEY HOLDER

The key holder is used to track the car key and the fuel and parking cards. The key holder is the storage place for the car key and cards while the car is not in use.

Choose a suitable installation spot for the key holder.

For security reasons, please choose a spot where the car key is not visible from outside.

The driver should be able to access this place. To locate it easily, the key holder is illuminated.

Common installation spots are the glove compartment or a storage compartment.

Please make sure that the key does not hang in front of the key holder. Otherwise there could be an interference with the fuel and parking card recognition.

Use the attached screws to fix it and connect the plug into the on-board unit.

Fix the black data fob and the car key with the attached key-ring.

Dimensions (width x depth x height) in mm: 76 (98 with mounting plates) x 97 x 29



INSTALLATION CELLULAR / GNSS ANTENNA

Install the Cellular-GNSS-Antenna on the dashboard or on the windshield or on the dashboard below using the fastening pad. It is also possible to install more firmly on a mounting plate as long as the plate is not made of metal. Run the cable to the CloudBoxx and insert the blue and purple connectors. Roll up any superfluous cable and fasten it with some Zipties. Make sure airbag functionality is not compromised. The antenna must be mounted so that the Hirschmann logo is directed skyward.

The CloudBoxx may only be operated with the antenna supplied by INVERS.

INVERS order no: 13261 Description: 955.179.003 Hirschmann LTE/GNSS Fakra 3m

Important: Please follow instructions provided in the documents accompanying the antenna. Respect 20cm minimum distance to CloudBoxx, human body and other antennas and electronic devices!



CLOUDBOXX FINAL ASSEMBLY

Connect all connectors to the on-board unit and reconnect the car battery and check if all connectors are connected properly. Double-check the fitting spots and the installation.

FINAL TEST

Please check the separate instructions by using the Setup&Test App. The Setup & Test App can be downloaded from Google Play:

<https://play.google.com/store/apps/details?id=com.invers.cloudboxxsetupandtest>

Install all plastic parts after installation was successful.

INTERNATIONAL REGULATIONS

CE DECLARATION

Herby, INVERS GmbH declares under its sole responsibility that the following products comply with the essential requirements and other relevant provisions of Radio Equipment Directive (RED) 2014/53/EU and Restriction of Hazardous Substances (RoHS) Directive 2011/65/EU. Complete Declaration of Conformity available on request.

ECE R10 APPROVAL

This device is approved by the German type approval authority "Kraftfahrt-Bundesamt (KBA)" as a type of electrical/electronic sub-assembly with regard to the EU/ECE Regulation No.10 including amendment No 05 supplement 01.

Genehmigungsnummer: **E1*10R05/01*8665*00**

Approval number:

FCC PART 15 NOTICE

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

- (1) this device may not cause harmful interference, and
- (2) this device must accept any interference received, including interference that may cause undesired operation.

Changes or modifications not expressly approved by INVERS GmbH could void the user's authority to operate the equipment.

Note: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation.

If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

To comply with FCC RF exposure compliance requirements for an uncontrolled environment, the external WWAN antenna used for this transmitter must be installed to provide a separation distance of at least 20 cm from all persons.

INDUSTRY CANADA (IC) COMPLIANCE NOTICE

This device contains license-exempt transmitter(s)/receiver(s) that comply with Innovation, Science and Economic Development Canada's license-exempt RSS(s). Operation is subject to the following two conditions:

- This device may not cause interference.
- This device must accept any interference, including interference that may cause undesired operation of the device.

To comply with ISED Canada RF exposure compliance requirements for an uncontrolled environment, the external WWAN antenna used for this transmitter must be installed to provide a separation distance of at least 20 cm from all persons.

Pour se conformer aux exigences d'ISED Canada en matière d'exposition aux radiofréquences dans un environnement non contrôlé,

l'antenne externe du WWAN utilisée pour cet émetteur doit être installée de manière à assurer une distance de séparation d'au moins 20 cm par rapport à toutes les personnes.

L'émetteur/récepteur exempt de licence contenu dans le présent appareil est conforme aux CNR d'Innovation, Sciences et Développement économique Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes :

1. L'appareil ne doit pas produire de brouillage;
2. L'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

Pour se conformer aux exigences d'ISED Canada en matière d'exposition aux radiofréquences dans un environnement non contrôlé,

SUPPORT

For detailed description of features and options please use your personal login to the CloudBoxx-API-Documentation: <https://api.cloudboxx.invers.com/api>

For any questions and additional information please contact us @ cloudboxx-support@invers.com

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Untere Industriestr. 20

D-57250 Netphen (Germany)

Tel: +49-271-238 88-0

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