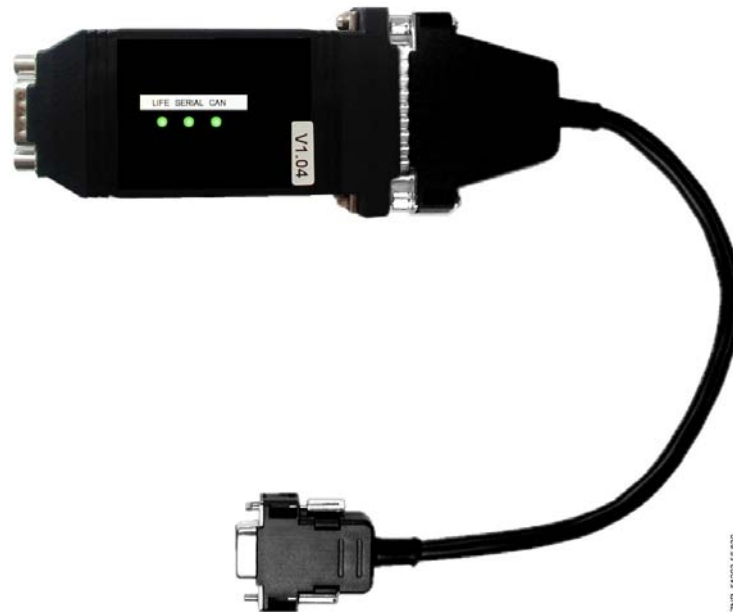


## Operating instructions

### CAN bus-PC Adapter Firmware V 1.04



**CAN bus-PC Adapter:**

**Accessory:** Y-cable for connecting the PC to the CAN bus  
(e.g. for service purposes):

Order number: LICANBUSAD

Order number: LICANYKAB

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*Before commissioning and use, please check that this is the latest version of the document. With the publication of a new version of the documentation, all previous versions lose their validity.  
Errors and technical modifications are expressly reserved.*

Information on safety and connection instructions are described in detail in the manual "Basics and General Safety and Connection Instructions".

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## 1 Technical safety information



1. Commissioning and operation of the device may only be performed by qualified personnel. "Qualified personnel" as defined by this technical safety information means persons who have the authorisation to start up, earth and designate devices, systems and electric circuits in accordance with security technology standards.
2. Mounting, positioning and wiring may only be conducted when the electricity supply to the assembly has been cut off.
3. The faultless and safe operation of the product presupposes proper transport, appropriate storage, positioning and assembly, as well as careful operation and maintenance.
4. Voltage must only be supplied by VDE-tested and CE-certified power packs.
5. Ensure that the voltage supply and the data cable are correctly connected.
6. If the product is brought into the working area from a cold environment, condensation may form. The product must be completely dry before being commissioned. Do not assemble or install the product near water or in damp surroundings.
7. Do not take the product apart or remove the enclosure. The guarantee rights will become invalid if the housing is opened.

## 2 Function of the CAN Bus Adapter

The CAN bus to PC adapter (article number LICANBUSAD) is designed for use in the E•LDS system. It forms the interface between a user PC/service PC, on which the LDSWin software is installed, and the CAN bus, through which communication is established with the E•LDS components.

### Typical applications:

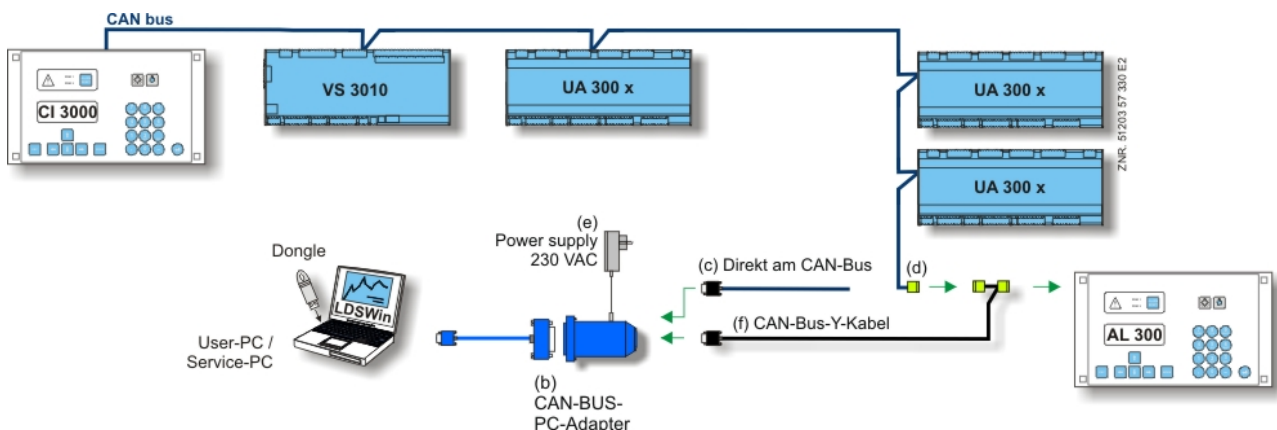
- Enables the LDSWin software to communicate with individual E•LDS components (e.g. CI 3000, VS 3010, VS 300, UA 300) via the CAN bus
- Communication with E•LDS components at any connection point on the CAN bus
- In the case of serial connection to LDSWin prevents the distance between PC and CI 3000 / CI 3100 / CI 300 being restricted to 15 m
- Enables LDSWin connection to CI 3000 / CI 3100 / CI 300 store computer when COM port is occupied by modem

### Integration in the E•LDS system:

The CAN bus connection is based on the CiA standard. The CAN bus PC adapter (b) must be provided with power by an external power pack (e, provided). The CAN bus to PC adapter is connected to the PC serial port (COM port) by means of a special adapter cable (a, provided).

### Connection to the CAN bus:

- The connection to the COMBICON plug on the CAN bus (d) is directly established via the 9-pole Sub-Min-D plug with screw terminals (c, provided) (see also chapter 3.1).
- To any required E•LDS component. Here all that is required is for its COMBICON plug connection to the CAN bus to be interrupted and the CAN bus Y-cable (f, article number LICANYKAB) to be inserted in between (also ideal for service purposes)



Picture 2-1: CAN bus to PC adapter in E•LDS system

### Interfaces:

CAN bus: Communication in E•LDS system  
RS232: Serial interface (COM port) of the PC

## 3 Installation and Commissioning of the CAN Bus to PC Adapter

### 3.1 Installation of the CAN bus connection

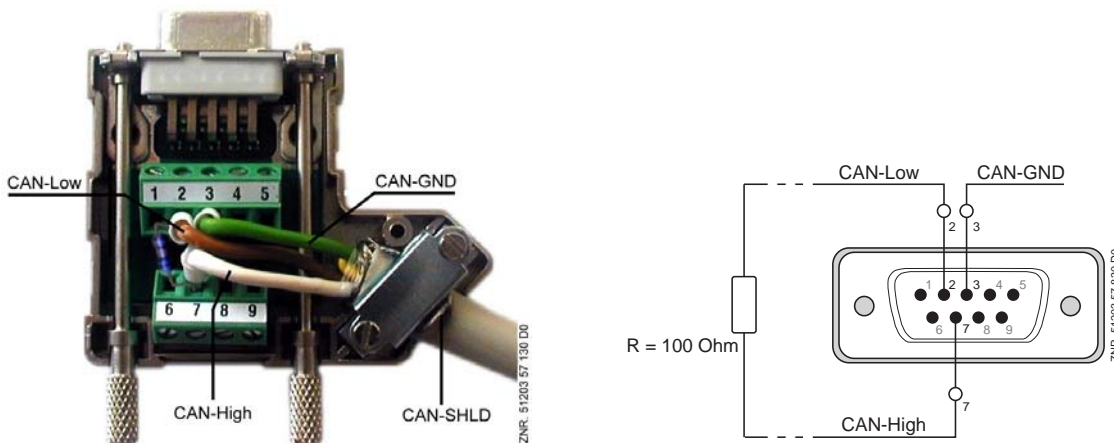
Before the CAN bus to PC adapter is put into operation, the 9-pole Sub-Min-D-Plug and the COMBICON plug must be connected using a CAN bus cable. The COMBICON plug can then be connected to the CAN bus interface of an E•LDS component (e.g. AL 300, CI 3000). Special details for the connection to the CAN bus (specification of conductor type, permissible conductor length, necessary terminating resistor and correct routing) are described in detail in the chapter Introduction.

The following 3 steps are required:

1. Connect the CAN bus cable to the Sub-Min-D plug (see table 3.1-1 and picture 3.1-1)..

CAN bus	Wire/colour	9-pole Sub-Min-D	COMBICON plug	Comments
SHLD	SHLD	-	1	SHLD is <b>ONLY</b> to be connected to the pull relief on the 9-pole Sub-Min-D plug housing (see picture 3.1-1)
CAN-GND	Green	Pin 3	2	-
CAN-Low	Brown	Pin 2	3	If the adapter is at the end of the CAN bus line, a terminating resistor <b>must</b> be inserted between pin 2 and pin 7: R = 100 Ohm / 0.25 W (see picture 3.1-1)
CAN-High	White	Pin 7	4	

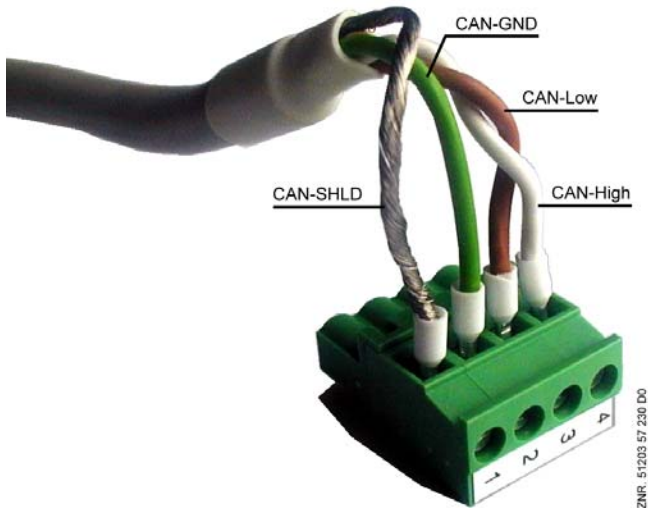
Table 3.1-1: Wire assignment for Sub-Min-D and COMBICON plugs



Picture 3.1-1: Wire assignment Sub-Min-D plug (with terminating resistor R = 100 Ohm / 0.25 W).

2. Assembly according to the accompanying Sub-Min-D plug instructions.

3. Connect the CAN bus cable to the COMBICON plug (see table 3.1-1 / picture 3.1-2).



Picture 3.1-2: Wire assignment for the connection of the COMBICON plug to the CAN bus (pictured without through looping)



*For safe operation it is sufficient to connect the signals CAN-low, CAN-high and CAN-GND to the Sub-Min-D plug.*



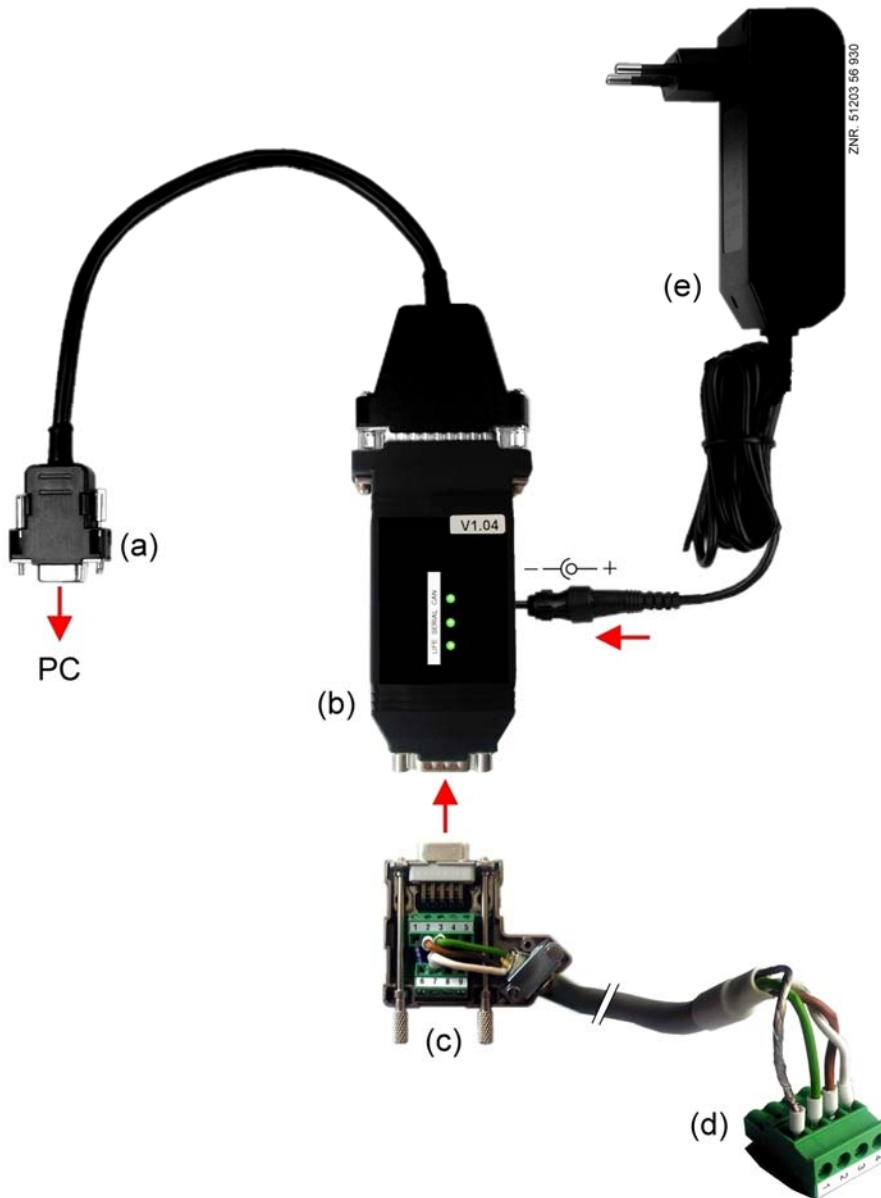
*The additional use of the CAN-SHLD in the Sub-Min-D plug can cause problems as the E•LDS system's CAN bus uses CAN-SHLD **and** CAN-GND differently, although these signals are connected internally within the adapter!*

*Incorrect shielding can lead to electromagnetic noise fields. During wiring work, it is essential that the conductors be connected by a professional and correctly shielded.*



*If the CAN bus to PC adapter is not positioned at the end of the CAN bus, then the cable must be looped through from the Sub-Min-D plug. The terminating resistor in picture 3.1-1 is obsolete and is to be attached to the end of the CAN bus (on the last node).*

## 3.2 Commissioning



Picture 3.2-1: CAN Bus to PC Adapter

The commissioning of the CAN bus to PC adapter consists of the following 8 steps:

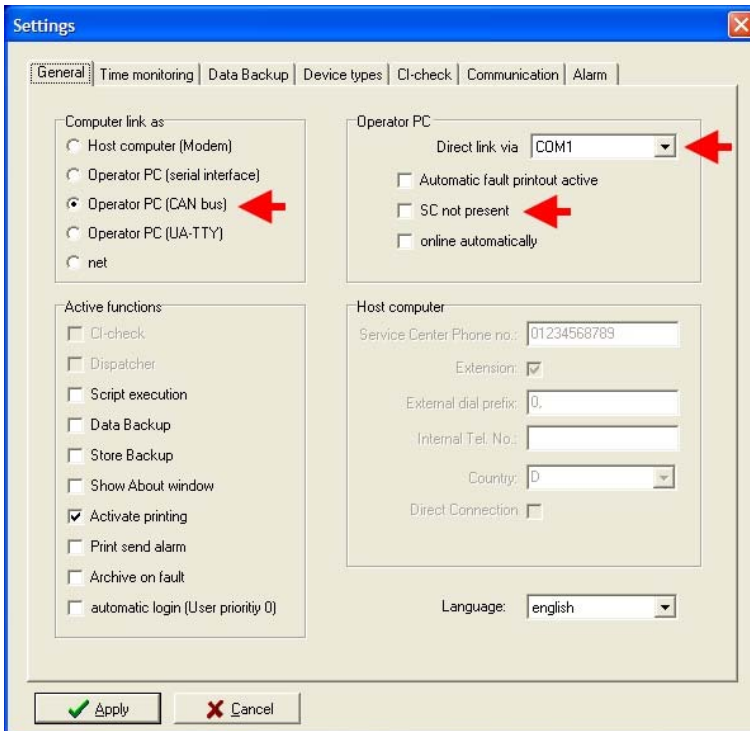
1. Turn off the PC.
2. Connect the RS232 plug (a) of the adapter (b) with the PC's serial interface (COM port).
3. Attach the Sub-Min-D plug (c) to the adapter (b) and screw into place.
4. Connect the COMBICON plug (d) with the CAN bus and plug into E•LDS components. (See chapter 3.1 – Installation CAN Bus Connection).
5. Connect the power pack (e) to the adapter (b) and plug into the mains power supply.



6. Turn on the PC and start the LDSWin software.
7. Under the menu item "File /Settings" in the "General" screen select the required COM port and "CAN bus adapter" (see picture 3.2-2) and press "Accept".



*If communication is only carried out with individual components without a store computer CI 3000 / CI 3100 / CI 300 being connected to the CAN bus, then "SC not available" must also be selected.*



Picture 3.2-2: CAN Bus to PC Adapter

8. Communication can now be established with the E•LDS components via the LDSWin software. For further information see the LDSWin Software documentation.

#### 4 Operating states



Picture 4-1: CAN bus to PC adapter status LEDs

During operation the CAN bus to PC adapter’s “LIFE” LED is lit green. During data transmission, i.e. communication between the CAN bus and the PC’s serial interface the LEDs “CAN” and “SERIAL” flash green on a cyclical basis. If the “CAN” or “SERIAL” LEDs are lit red then there is a fault in the interfaces.

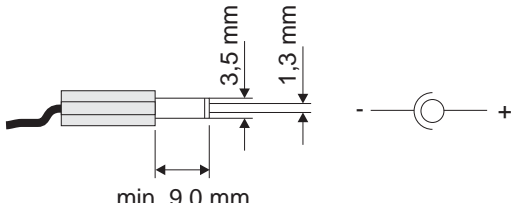
Colour	LED 1 LIFE	LED 2 SERIAL	LED 3 CAN
Green - flashing	Operating	Data transfer serial	Data transfer CAN bus
Red -lit	-	Fault serial interface	Fault CAN bus interface

## 5 Technical data

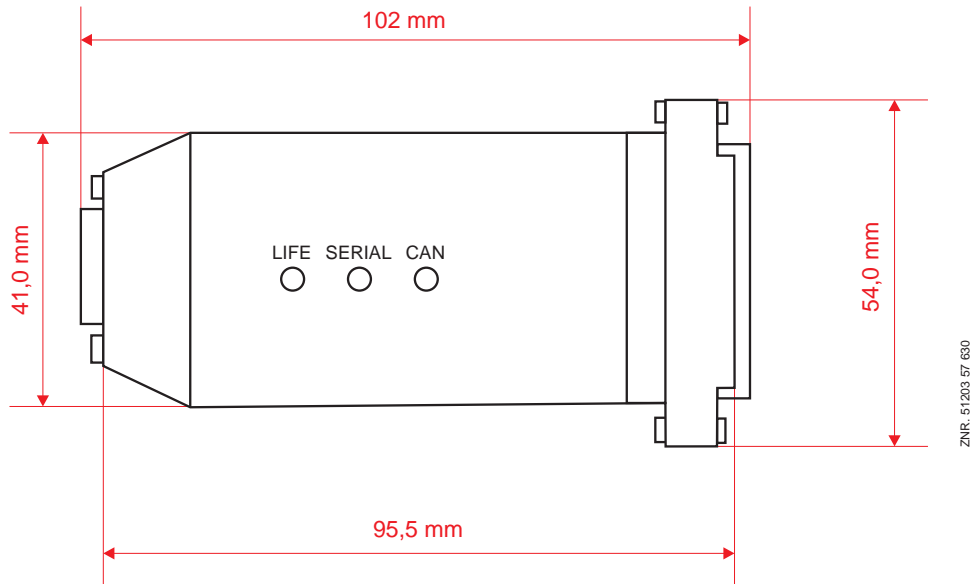
### 5.1 Electrical data CAN bus to PC adapter

Technical data	CAN Bus to PC Adapter
Article numbers	CAN Bus to PC Adapter: LICANBUSAD CAN bus Y-cable: LICANYKAB
Physical interface	CAN compliant with ISO 11 898
Temperature range	0° C .. +55° C
CAN bus connection	9-pole Sub-Min-D plug CAN compliant with CiA / DS102
PC connection	9-pole Sub-Min-D plug on connection cable
Housing	Plastic, degree of protection IP30
Indicator	3 x Duo LEDs (green/red)
Power supply	External, 7 - 32 V DC per jack plug
Current consumption	typically 500 mA at 8 V DC
CE conformity	Manufacturer's CE declaration of conformity

### 5.2 Electrical data power pack

Technical data	Power pack
Input voltage	90 - 260 V AC
Output voltage	12 V DC stabilised +/- 3 %
Max. output current	500 mA
Temperature range	0° C ... +40° C
Plug (AC side)	Euro plug
Plug (DC side)	Standard jack plug type DC 3.5/1.3mm External diameter: 3.1 mm Internal diameter: 1.3 mm Length: min. 9 mm
Connector assignment / dimensions jack plug	 <p style="text-align: right; font-size: small;">ZNR 51/203 57 530</p>

### 5.3 Mechanical data CAN bus to PC adapter



The right to make technical changes is reserved! No liability is accepted for any errors!