



CAN-Starter-Kit

for
Windows



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Changes in the chapters

The changes in the document below affect changes in the hardware as well as changes in the description of the facts only.

Chapter	Changes versus previous version
-	Supported Windows systems extended.
-	Monitor program CANscope renamed to CANreal.

Technical details are subject to change without further notice.

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1. Scope of Delivery

1.1 Hardware

The CAN-Starter-Kit is available with various PC-CAN modules. Below, the components of the kit are listed. By means of the list you can check, whether your delivery is complete.

Number	Unit
1	CAN-PC board with one CAN interface, alternatively either CAN-ISA/200 or CAN-ISA/331 or CAN-PCI/200 or CAN-PCI/266 or CAN-PCI/331 or CAN-PC104/331 or Centronics coupler CAN-PCC or CAN-USB
1	Digital CAN-I/O module CAN-CBM-DIO8
1	CSK-board with connectors for CAN-CBM-DIO8, equipped with load resistors for outputs and switches to simulate inputs
1	Twelfefold connector for staggered arrangement wiring
1	Desk power pack (24V/DC)
2	T-connectors (female-female-male)
1	CAN termination (female)
1	CAN termination (male)
1	CAN cable (ca. 2.0 m)
1	CAN cable (ca. 0.3 m)
1	CAN connector cable for CAN-CBM-DIO8 (ca. 0,25 m)
1 set	Software on CD ROM or floppy disk

1.2 Software

The product package contains the Windows driver software for the PC module. Furthermore, the monitor and diagnostic program CANreal (formerly known as 'CANscope') is included. CANreal offers a comfortable control surface. A short example program in C-source code is also included in the product package.

Note: You can download the current version of CANreal and other CAN-tools for free from our homepage at www.esd-electronics.com/tools

1.3 Documentation

Number	Document
1	CAN-Starter Kit for Windows (contains notes on scope of delivery and wiring of the components delivered (this document))
1 package	CAN introduction article (CAN basics and applications)
1	Manual: 'Hardware Installation and Technical Data' for (alternatively) for the CAN-PC module (e.g. CAN-PCI/266)
1	Manual: 'CAN-I/O module CAN-CBM-DIO8'
1	Manual: CAN-API, includes the parts: 'CAN-API Part 1: Function Description' 'CAN-API Part 2: Installation Guide'
1	Manual: 'C-Interface-Library for DOS and Win 3.11'
1	Manual: 'CANreal, CANopen Tool for Testing and Monitoring CANopen Networks'

2. Wiring

The following figure shows how you have to connect the components of the CAN-Starter-Kit.

Attention:

Please make sure that PC and desk power pack are disconnected from mains and all units are without power, before you connect the individual components!

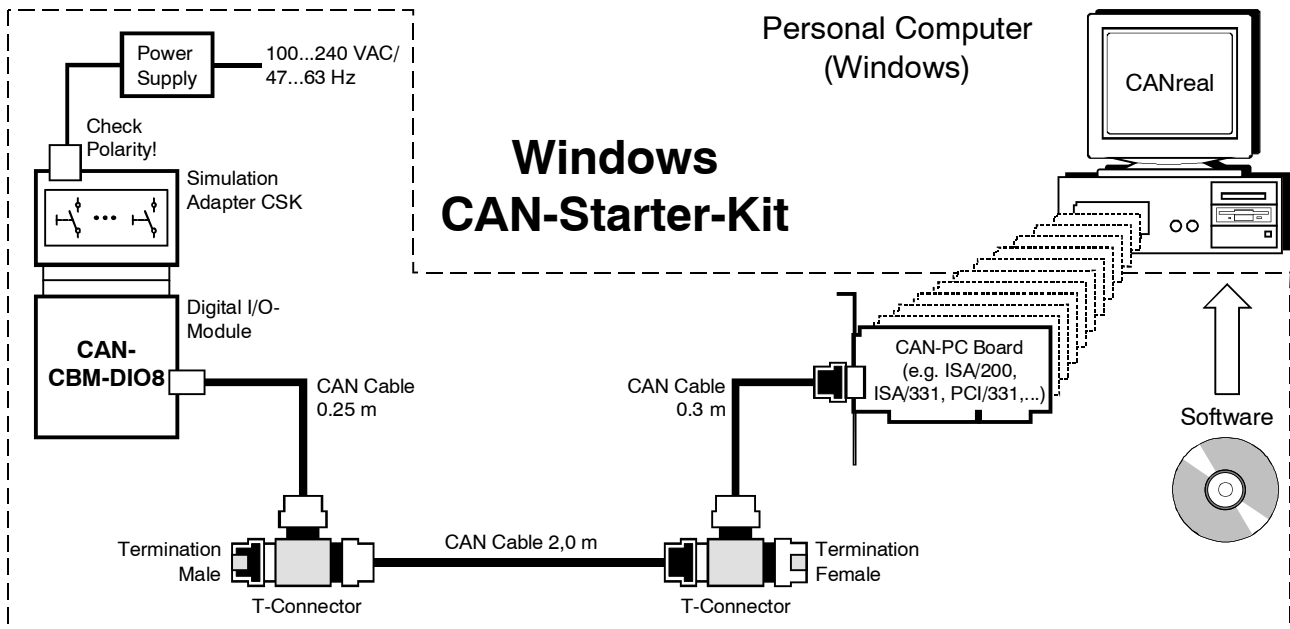


Fig.: Wiring the components of the CAN-Starter-Kit

The twelvefold connector for staggered arrangement of wiring is not required for the installation shown above. The connector is used to wire the CAN-CBM-DIO8 module, if the simulation board CSK is not used.

3. Ready to Go !

This chapter offers a **quick introduction** to the Starter Kit by means of a simple example configuration.

A detailed description of the connections and functions of the CAN-CBM-DIO8 module and the PC software can be taken from the according manuals in the register of this folder.

3.1 Initialising and Starting the PC Software

1	Install the driver software packages, the CANreal monitor program and configure the interfaces. -> see document 'CAN-API, Part 2: Installation Guide' (Note: If the current version of CANreal is downloaded from the web, it has to be manually copied in a directory called CANreal.)
2	Start CANreal.exe . For example under Windows95/NT via <i>Start \ Programme \ CAN \ CANreal</i>
3	Set baudrate to 125 kbit/s
4	Fill in Add/Delete ID-Area , e.g. complete area: low limit: 0 high limit: 2047
5	Click ' Add > ' button.
7	Click ' Start ' button.

3.2 Configuring the CAN-CBM-DIO8 Module

parameters to be configured are baud rate = 125 kbit/s
Module address = 2

Number of input/output (marked on the module next to LEDs)	configuration as
1	input
2	input
3	input
4	input
5	output
6	output
7	output
8	output

1 Switch on power supply of CAN-CBM-DIO8 module (connect mains connector to mains).

2 Set coding switch (DIP) as follows:

DIP1	DIP2	DIP3	DIP4	DIP5	DIP6	DIP7	DIP8	DIP9	DIP10	DIP11	DIP12
OFF	OFF	OFF	OFF	ON	ON	ON	ON	ON	ON	OFF	ON

3 Set DIP 12 to OFF.

4 Switch off module supply. Now the inputs and outputs have been defined and stored.

5 Set coding switch as follows:

DIP1	DIP2	DIP3	DIP4	DIP5	DIP6	DIP7	DIP8	DIP9	DIP10	DIP11	DIP12
OFF	ON	OFF	OFF	OFF	OFF	OFF	OFF	OFF	ON	ON	OFF

6 Switch on module supply. The green LED Module flashes.

3.3 Reading and Writing Inputs/Outputs via CANreal

☞ In order to „Start“ the CAN-CBM-DIO8 module the following values have to be transmitted on the CAN-bus:

ID: 000 RTR: 0 Len: 2 Data Bytes: 01 00

Click „transmit“ icon.

The green LED “operation/GND“ is now on constantly.

☞ When operating the switches at inputs 1 to 4, the CANreal window shows that the according messages have been transmitted.

☞ In order to configure outputs 4 to 8 (the numbers can be seen next to the LEDs on the module) you have to specify the following values:

ID: 202	RTR: 0	Len: 1	Data Bytes: ff	All outputs are activated
ID: 202	RTR: 0	Len: 1	Data Bytes: 10	output no. 5 is activated
ID: 202	RTR: 0	Len: 1	Data Bytes: 20	output no. 6 is activated
ID: 202	RTR: 0	Len: 1	Data Bytes: 40	output no. 7 is activated
ID: 202	RTR: 0	Len: 1	Data Bytes: 80	output no. 8 is activated
ID: 202	RTR: 0	Len: 1	Data Bytes: 00	all outputs are deactivated
ID: 202	RTR: 0	Len: 1	Data Bytes: 60	outputs 6 + 7 are activated