CAN-PC Interface

CPC-USB

User Manual

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User manual for CAN-Interface CPC-USB

Document version: V1.2
Documentation date: December 20th, 2005

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Our products are continuously improved. Due to this fact specifications may be changed at any time and without announcement.

WARNING: CPC-USB hardware and software may not be used in applications where damage to life, health or private property may result from failures in or caused by these components.

Contents

1 Overview

1.1 Attributes

- CAN interface for industrial applications
- Powerful 16-bit microcontroller with internal CAN controller
- CiA DS 102 and ISO 11898 compatible physical layer
- Supports CAN protocols 2.0A and 2.0B
- Display of USB communication and CAN data transfer via LEDs
- Supply completely over USB
- Extended ESD protection of the CAN transceiver
- Galvanic isolation between PC and CAN bus (optional)
- Firmware programmable over USB

1.2 General Description

CPC-USB is a CAN interface for USB ports in a compact and robust metal housing. Due to easy handling and favorable price CPC-USB is suitable for configuration and analysis of CAN systems.

CPC-USB includes a CAN interface that supports 11-Bit and 29-Bit CAN identifiers as well as a 16-bit microcontroller of type M16C with 256kByte Flash and 10kByte RAM. The interface is supplied via USB, a separate supply for the CAN side is not needed.

The interface is optionally available with galvanic isolation. In addition, a variant with low speed transceiver for automotive environ-

ments is also available.

Application development kits for the operating systems MS-Windows and Linux are offered separately.

1.3 Ordering Information

10-08-300-20	**CPC-USB/M16C** CAN-PC interface for USB ports with 16-bit microcontroller M16C
10-08-301-20	**CPC-USB/M16C-GTI** CAN-PC interface for USB-Ports with 16-bit microcontroller M16C and galvanic separation of the CAN transceiver

2 Electrical Characteristics

2.1 Absolute Limiting Values

Parameter	Min.	Max.	Unit
Storage temperature	– 20	+ 80	ºC
Operating temperature	0	+ 70	ºC
Supply voltage	– 100	+ 6	V
Voltage on the bus connections	– 30	+ 30	V

Any (also temporary) stress in excess of the limiting values may cause permanent damage on CPC-USB and connected devices. Exposure to limiting conditions for extended periods may affect the reliability and shorten the life cycle of the device.

2.2 Nominal values

Parameter	Min.	Typ.	Max.	Unit
Current consumption (idle mode)	–	270	300	mA
Current consumption (operation mode)	–	300	360	mA
Supply voltage	4,0	5,0	5,5	V

All values, unless otherwise specified, refer to a supply voltage of 5V and an environmental temperature of 20°C.

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3 Operating Instructions

3.1 Pin configuration of CAN connector

The CAN Interface connector (D-Sub 9 male) complies to CiA Standard DS 102. The pin usage is detailed in the following table:

Pin 1	–	Reserved by CiA, not connected
Pin 2	CAN_L	CAN bus line, dominant low
Pin 3	GND	Ground
Pin 4	–	Reserved by CiA, not connected
Pin 5	–	Reserved by CiA, not connected
Pin 6	–	Reserved by CiA, not connected
Pin 7	CAN_H	CAN bus line, dominant high
Pin 8	–	Reserved by CiA, not connected
Pin 9	–	Reserved by CiA, not connected

3.2 Installation

CPC-USB may be connected to a free USB port of a computer. To avoid damage please pay attention to the following hints:

WARNING: Avoid damage by achieving equal potential between the corresponding devices before plugging any connections to CPC-USB.

To the CAN connector of CPC-USB only CAN networks with a connector and electrical character complying with CiA DS-102 may be attached.

PC interface and CAN bus are not galvanic decoupled in the standard version of CPC-USB. Use in systems with diverging ground potential of PC and CAN bus is not permitted in this case.

Besides the instructions mentioned in this manual carefully observe the instructions in your computers users manual.

If you are not sure about the installation please contact **EMS Dr. Thomas Wünsche.**

CPC-USB needs a driver to operate on Windows operating systems. This driver is part of the ‘CPC-Series Runtime Kit for MS-Windows Environment’, which is part of the delivery.