Kvaser T-cannector v2 User's Guide

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Contents

1 About this manual

This manual is intended for Kvaser T-cannector v2 users. This document contains a description of the hardware's properties and functionality.

2 Introduction

This section will describe the functions and features of the Kvaser T-cannector v2.

2.1 Welcome to Kvaser T-cannector v2

Figure 1: Kvaser T-cannector v2

Kvaser T-cannector v2 is a CAN bus hub with three female and one male D-SUB9 connectors. Offering an adjustable CAN termination resistor (connecting a load of 120 Ω, 60 Ω, or 0 Ω) the Kvaser T-cannector v2 provides an affordable and safe way of terminating the CAN circuit when using Kvaser interfaces on a development board, as well as powering interface devices without internal power, such as Kvaser's Blackbird and Memorator series.

Device	Product Number (EAN)
Kvaser T-cannector v2	73-30130-00776-5

Table 1: Kvaser T-cannector v2 devices and their product numbers.

2.2 Major features

- Acts as a CAN bus hub with 3 female and 1 male D-SUB9 connectors
- Each D-SUB9 has screws to secure the connection to the Kvaser CAN interface
- Adjustable termination via easy-to-use switch
- LED to indicate power on
- Voltage range of 12 V - 24 V DC
- A complementary 12 V, 1 A power supply is included

3 Kvaser T-cannector v2 hardware

Kvaser T-cannector v2 is a CAN bus hub with three female and one male D-SUB9 connectors. All pins of these connectors are fully connected, e.g. pin 1 on any connector is connected to pin 1 on all other connectors. Pin 3 (CAN_GND)and pin 6 (GND) are also interconnected. See Figure 2 and Figure 3 on Page 8.

The terminal resistor is selectable using a three-way switch, see Figure 4 on Page 8 Pin 9 (CAN_V+) and pin 6 (GND) are connected to the power supply.

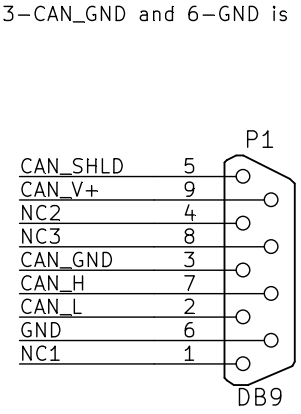

Figure 2: Female D-SUB9

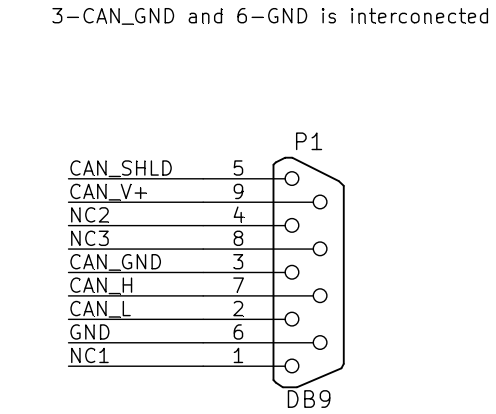

Figure 3: Male D-SUB9

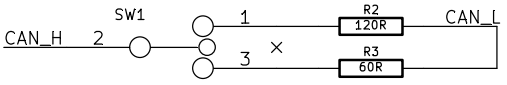

Figure 4: Terminal resistance selector

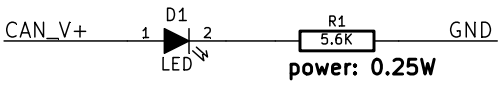

Figure 5: Power indicator

3.1 Power Distribution

The Kvaser T-cannector v2 may be powered from an external 12 V 1 A power supply, via a 2.1 mm x 5.5 mm connector, providing a power source for Kvaser CAN interfaces. The Kvaser T-cannector v2 may also distribute power via CAN_V+ in any of the D-SUB9 connectors.

3.2 LED Indicators

The Kvaser T-cannector v2 has one red power LED indicator, see Figure 6.

Figure 6: Power LED and termination resistor switch on Kvaser T-cannector v2.

3.3 Termination Adjustment

The Kvaser T-cannector v2 has an adjustable CAN termination, connecting a load of 120 Ω, 60 Ω, or 0 Ω, that provides an effective way of terminating the CAN circuit. The value of the load resistor is controlled by a three-way switch, see Figure 6.

4 Appendices

In this section you will find technical information about the Kvaser T-cannector v2 and its connectors.

4.1 Technical data

In Table 2 below you will find the Kvaser T-cannector v2's technical specifications.

CAN Connectors	3 female, 1 male (D-SUB9)
Galvanic isolation	No
CAN Bit Rate	1 Mbit/s "Classic CAN"
CAN FD Bit Rate	Up to 8 Mbit/s (with correct physical layer implementation)
Power consumption	Typically 20 mW at 12 V
Dimensions	55 x 90 x 30 mm
Weight	100 g
Operating temperature	−30 °C to +80 °C
Storage temperature	−40 °C to +85 °C
Relative humidity	0 % to 85 % (non-condensing.)

Table 2: Technical Specifications.

5 Disposal and Recycling Information

When this product reaches its end of life, please dispose of it according to your local environmental laws and guidelines.

For information about Kvaser's recycling programs, visit:
http://www.kvaser.com/en/kvaser/recycling-policy.html

6 Legal acknowledgements

6.1 Usage warning

WARNING FOR ALL USERS

WARNING! - YOUR USE OF THIS DEVICE MUST BE DONE WITH CAUTION AND A FULL UNDERSTANDING OF THE RISKS!
THIS WARNING IS PRESENTED TO INFORM YOU THAT THE OPERATION OF THIS DEVICE MAY BE DANGEROUS. YOUR ACTIONS CAN INFLUENCE THE BEHAVIOR OF A CAN-BASED DISTRIBUTED EMBEDDED SYSTEM, AND DEPENDING ON THE APPLICATION, THE CONSEQUENCES OF YOUR IMPROPER ACTIONS COULD CAUSE SERIOUS OPERATIONAL MALFUNCTION, LOSS OF INFORMATION, DAMAGE TO EQUIPMENT, AND PHYSICAL INJURY TO YOURSELF AND OTHERS. A POTENTIALLY HAZARDOUS OPERATING CONDITION IS PRESENT WHEN THE FOLLOWING TWO CONDITIONS ARE CONCURRENTLY TRUE: THE PRODUCT IS PHYSICALLY INTERCONNECTED TO A REAL DISTRIBUTED EMBEDDED SYSTEM; AND THE FUNCTIONS AND OPERATIONS OF THE REAL DISTRIBUTED EMBEDDED SYSTEM ARE CONTROLLABLE OR INFLUENCED BY THE USE OF THE CAN NETWORK. A POTENTIALLY HAZARDOUS OPERATING CONDITION MAY RESULT FROM THE ACTIVITY OR NON-ACTIVITY OF SOME DISTRIBUTED EMBEDDED SYSTEM FUNCTIONS AND OPERATIONS, WHICH MAY RESULT IN SERIOUS PHYSICAL HARM OR DEATH OR CAUSE DAMAGE TO EQUIPMENT, DEVICES, OR THE SURROUNDING ENVIRONMENT.
WITH THIS DEVICE, YOU MAY POTENTIALLY:

- CAUSE A CHANGE IN THE OPERATION OF THE SYSTEM, MODULE, DEVICE, CIRCUIT, OR OUTPUT.
- TURN ON OR ACTIVATE A MODULE, DEVICE, CIRCUIT, OUTPUT, OR FUNCTION.
- TURN OFF OR DEACTIVATE A MODULE, DEVICE, CIRCUIT, OUTPUT, OR FUNCTION.
- INHIBIT, TURN OFF, OR DEACTIVATE NORMAL OPERATION.
- MODIFY THE BEHAVIOR OF A DISTRIBUTED PRODUCT.
- ACTIVATE AN UNINTENDED OPERATION.
- PLACE THE SYSTEM, MODULE, DEVICE, CIRCUIT, OR OUTPUT INTO AN UNINTENDED MODE.

ONLY THOSE PERSONS WHO:
(A) ARE PROPERLY TRAINED AND QUALIFIED WITH RESPECT TO THE USE OF THE DEVICE,
(B) UNDERSTAND THE WARNINGS ABOVE, AND
(C) UNDERSTAND HOW THIS DEVICE INTERACTS WITH AND IMPACTS THE FUNCTION AND SAFETY OF OTHER PRODUCTS IN A DISTRIBUTED SYSTEM AND THE APPLICATION FOR WHICH THIS DEVICE WILL BE APPLIED, MAY USE THE DEVICE.
PLEASE NOTE THAT YOU CAN INTEGRATE THIS PRODUCT AS A SUBSYSTEM INTO HIGHER-LEVEL SYSTEMS. IN CASE YOU DO SO, KVASER AB HEREBY DECLARES THAT KVASER AB'S WARRANTY SHALL BE LIMITED TO THE CORRECTION OF DEFECTS, AND KVASER AB HEREBY EXPRESSLY DISCLAIMS ANY LIABILITY OVER AND ABOVE THE REFUNDING OF THE PRICE PAID FOR THIS DEVICE, SINCE KVASER AB DOES NOT HAVE ANY INFLUENCE ON THE IMPLEMENTATIONS OF THE HIGHER-LEVEL SYSTEM, WHICH MAY BE DEFECTIVE.

6.2 EU Regulatory Compliance

EU Declaration of Conformity (DoC)

We

Company Name:	Kvaser AB	City:	Mölndal
Postal address:	Aminogatan 25	Telephone number:	+46 31 886344
Postcode:	431 53	E-mail address:	sales@kvaser.com

declare that the DoC is issued under our sole responsibility and belongs to the following product:

Product: Kvaser T-cannector v2

Object of the declaration (identification of apparatus allowing traceability):
Product: Kvaser T-cannector v2
Type: 73-30130-00776-5

The object of the declaration described above is in conformity with the relevant Union harmonisation legislation:
Chemical substances (REACH) Regulation (EC) No 1907/2006

RoHS recast Directive 2011/65/EU

Waste Electrical & Electronic Equipment (WEEE) Directive 2012/19/EU

The following harmonised standards and technical specifications have been applied
(title, date of standard/specification):

EN 50581 (2012) EN 50419 (2005)

Signed for and on behalf of:

Mölndal	2018-01-30	
Place of issue	Date of issue	Claes Haglund, Supply Chain and Quality director

NOTE: This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his/her own expense.

7 Document Revision History

Version history for document UG_98209_t-cannector_v2:

Revision	Date	Changes
1.0	2018-01-30	Initial version