

C-DIAS CAN Module

CCA 121

The CCA 121 allows two independent CAN bus systems to communicate over the C-DIAS bus.



Technical Data

Performance data

CAN controller	Implemented in the FPGA
CAN bus status display	Yes
Data transfer rate	20 / 50 / 100 / 125 / 250 / 500 / 615 / 1000 kBaud
CAN protocol	Version 2.0B
CAN mode	Full CAN 16 asynchronous Objects 56 synchronous Objects
Number of participants	31
EEProm	Detection on C-DIAS bus
CAN Bus Termination	Switchable over DIP switch

Electrical requirements

Voltage supply from C-DIAS bus	+5 V	
Current consumption of C-DIAS bus (+5 V supply)	Typically 90 mA	Maximum 110 mA

Miscellaneous

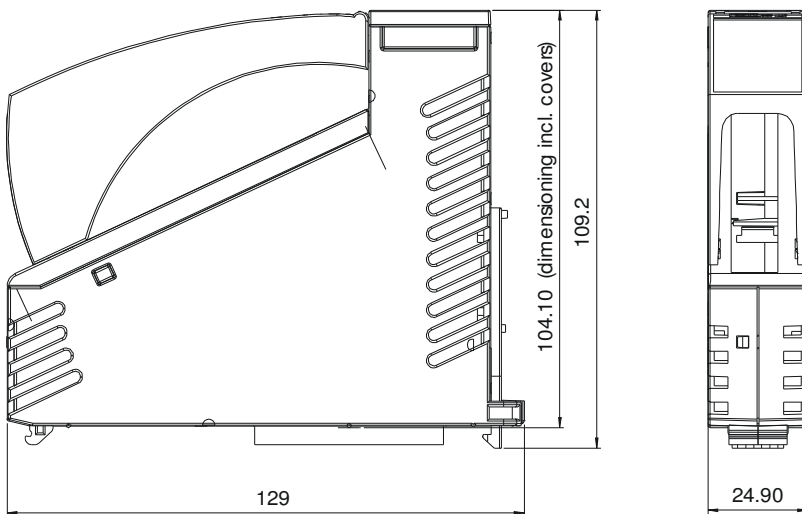
Article number	12-025-121 12-025-121-T with painting	
Module identification on DIAS bus	Yes	
Hardware version	1.x	
Standard	UL in preparation (not 12-025-121-T)	

Environmental conditions

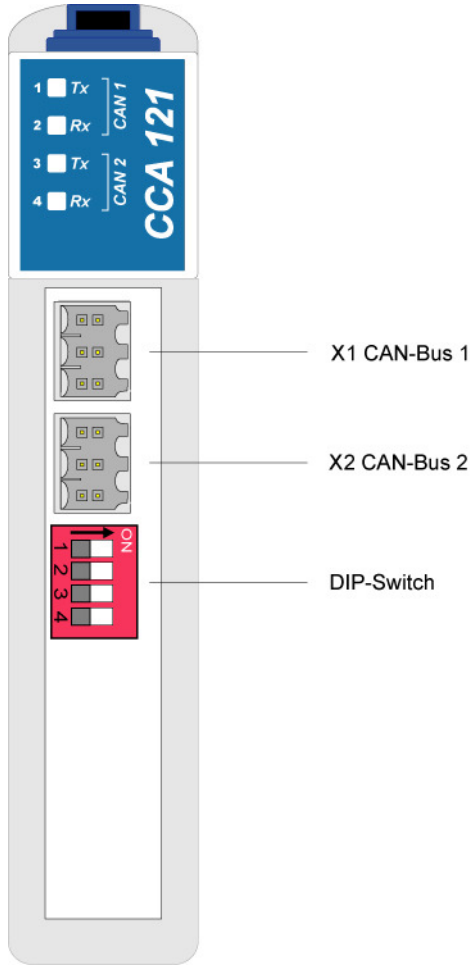
Storage temperature	-20 – +85 °C	
Operating temperature	0 – +60 °C	
Humidity	0 - 95 %, uncondensed	
EMV stability	According to EN 61000-6-2 (industrial area)	
Shock resistance	EN 60068-2-27	150 m/s ²
Protection Type	EN 60529	IP 20

The processor module and CCA 121 should be mounted on the same module carrier!

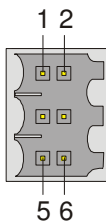
Mechanical Dimensions



Connector Layout



X1-X2: CAN bus



Terminal	Assignment
1	CAN A (CAN LOW)
2	CAN B (High)
3	CAN A (CAN LOW)
4	CAN B (High)
5	GND
6	(+5 V optional, for BU105 supply only)

The +5 V signal is connected to X1 and X2. This signal is not a +5 V output and is not connected to the module's voltage supply

4-pin Switch:

Dipswitch	Termination	Dipswitch	
	CAN 1: open CAN 2: open		Not used.
	CAN 1: terminated CAN 2: open		
	CAN 1: open CAN 2: terminated		
	CAN 1: terminated CAN 2: terminated		

Applicable connectors

X1 - X2: 6-pin Weidmüller plug B2L3.5/5

The complete C-DIAS CKL 071 connector set with spring terminals is available from SIGMATEK under the article number 12-600-071.

Status Displays



LED number	LED color	Definition	
1	Yellow	Tx CAN1	Lights when data is sent from the CAN1 bus.
2	Green	Rx CAN1	Lights when data is received by the CAN1 bus.
3	Yellow	Tx CAN2	Lights when data is sent from the CAN2 bus.
4	Green	Rx CAN2	Lights when data is received by the CAN2 bus.

CAN Bus Setup

This section explains how to configure a CAN bus correctly. The following parameters must first be set: Station number and data transfer rate.

CAN bus station number

Each CAN bus station is assigned its own station number. With this station number, data can be exchanged with other stations connected to the bus. Up to 31 stations can be installed in a CAN bus system. However, each station number can only be assigned once.

CAN bus data transfer rate

The data transfer rate (baud rate) for the CAN bus can be set. However, the longer the length of the bus, the smaller the transfer rate that must be selected.

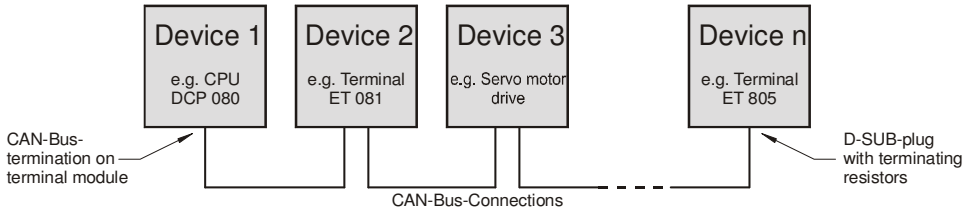
Baud rate	Maximum length
615 kBit/s	60 m
500 kBit/s	80 m
250 kBit/s	160 m
125 kBit/s	320 m
100 kBit/s	400 m
50 kBit/s	800 m
20 kBit/s	1200 m
1 Mbit / s	30 m

These values are valid for the following cable: 120 Ω , Twisted Pair.

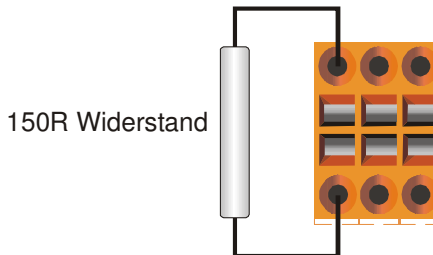
Note: The following is valid for the CAN bus protocol: 1 kBit/s = 1 kBaud

CAN Bus Termination

In a CAN bus system, both end modules must be terminated. This is necessary to avoid transmission errors caused by reflections in the line.



If the CCA 121 CAN module is an end unit, it can be terminated by placing a 150-Ohm resistor between CAN-A (LOW) and CAN-B (HIGH) or by setting the DIP switch accordingly.



Data in the EEPROM

Module data (Organized in bytes)

Address	Data	Description
\$00	\$xx	Checksum (\$00 - \$07)
\$01	123	Identification
\$02	19	Module group 19 = CCA
\$03	4	Variant 4 = CCA121
\$04	2	Number of channels (2x)
\$05	\$1x	Hardware version \$10 = HW-V1.0, \$11 = HW-V1.1, ...
\$10		Serial number

