



CAN-Repeater

CRep S8C-.../S24/RMD

User Manual

preliminary

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Documentation for CAN-Repeater CRep S8C-.../S24/RMD.

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

WARNING: CRep S8C 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.

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1 Overview

1.1 Attributes

- Protocol transparent CAN repeater
- 8 CAN channels
- Low propagation delay
- Links for cascading up to 3 devices with one supply
- ISO 11898 compatible bus interface
- Detach of dominant locked bus segments
- Rail mountable

1.2 General Description

The compact CAN repeater CRep S8C transmits and amplifies signals transparent to the CAN protocol. Each of the eight CAN connections has the physical behaviour of a single bus node. CRep S8C permits a flexible design of the network topology and offers special support for star structured networks. Furthermore tree structures and long stub lines are supported. Through the possibility to use the network structure that fits the application best a reduction of installation costs can be reached.

The maximum data rate in CAN networks, depending on signal propagation delays, can be increased, if CRep S8C is used to improve the network structure. An increase of the maximum node count in a CAN network can be reached by splitting the network in subnets that are connected by CRep S8C. Each subnet makes the number of CAN nodes possible permitted by the drivers output current. Where CAN signals have to be transmitted over long

distances, CRep S8C can be used for signal conditioning. The capability to detach erroneous segments from the rest of the CAN system reduces the impact on the intact bus segments for the most commonly occurring errors.

The presence of power is indicated by a LED. Furthermore each CAN channel is provided with a LED indicating that this channel has originated a CAN message when the LED is on.

1.3 Ordering Information

12-04-1xx-20	CRep S8C-.../S24/RMD Multiport CAN repeater for rail mounting (... Inhibit time)
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2 Electrical Characteristics

2.1 Absolute Limiting Values

Any (also temporary) stress in excess of the limiting values may cause permanent damage on CRep S8C and connected devices.

Parameter	Min	Max	Unit
Storage temperature	-40	+80	°C
Operating temperature	0	+60	°C
Power supply voltage	-100	+35	V
Voltage on signal lines	-30	+30	V
Maximum power dissipation (at 60°C)	–	tbd	mW

2.2 Nominal Values

All values, unless otherwise specified, refer to a supply voltage of 24V and an environmental temperature of 20°C.

Parameter	Min	Typ	Max	Unit
Current consumption (no load)	–	70	–	mA
Current consumption (250kBit/s, 100% busload)	–	tbd	–	mA
Power supply voltage	19	24	30	V
Propagation delay between 2 arbitrary CAN channels	–	130	200	ns
Propagation delay cascade	–	8	10	ns

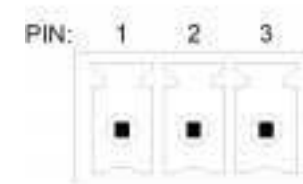
3 Operating Instructions

3.1 Pin Assignment

A CRep S8C device includes 8 CAN segments, wired by terminal blocks with 3 clamps. The power supply of CRep S8C is separately wired by a terminal block with 2 clamps.

The following table shows the terminal assignment of the CAN connector:

Pin	–	Function
1	CAN_H	CAN high bus line
2	CAN_L	CAN low bus line
3	GND	CAN ground



The following table shows the terminal assignment of the power connector:

Pin	Name	Function
1	POWER +	Positive supply +24V
2	POWER -	Ground

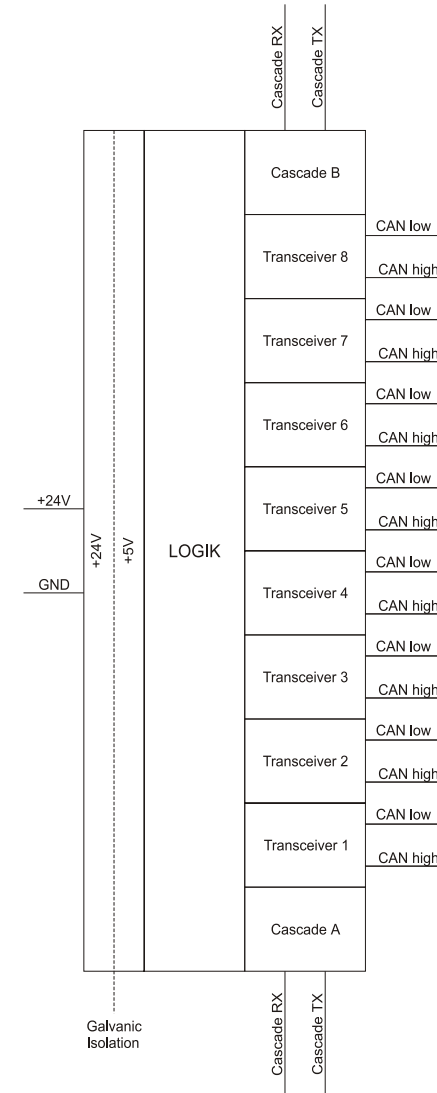
The power supply is galvanically decoupled from the CAN system.

The cascade connectors must not be used to any other purpose than to form a cascade with another CRep S8C.

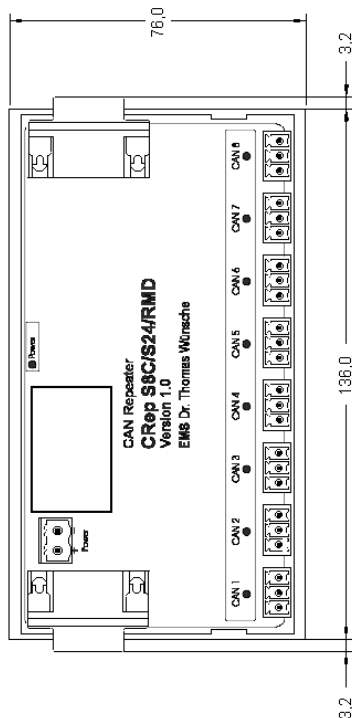
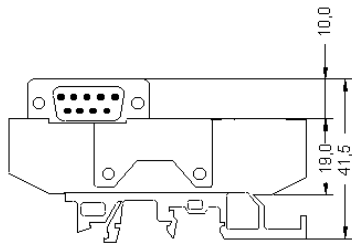
The cascade connection may only be done when no power is supplied to CRep S8C.

When a cascade is used only one power supply needs to be connected.

3.2 Block Diagram



4 Dimensions



Representation not full-scaled.

All dimensions without explicit tolerance have a tolerance of +/- 0,5 mm

Subject to change without notice.

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All values in [mm].