



CAN-Repeater CRep S4

Special Features

- Protocol transparent CAN repeater
- 4 CAN channels
- Low propagation delay
- ISO 11898 compatible bus interface
- Detach of dominant locked bus segments
- Rail mountable

Description

The compact CAN repeater CRep S4 transmits and amplifies signals transparent to the CAN protocol. Each of the four CAN connections has the physical behaviour of a single bus node. CRep S4 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 S4 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 S4. 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 S4 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.

Technical Data

Layout and Connection

A CRep S4 device includes 4 CAN segments, wired by terminal blocks with 3 clamps. The power supply of CRep S4 is separately wired by a terminal block with 2 clamps.

Pin	Name	Function
1	CAN_H	CAN high bus line
2	CAN_L	CAN low bus line
3	GND	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.

Limiting Values

Parameter	Minimum	Maximum	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

Any (also temporary) stress in excess of the limiting values may cause permanent damage on CRep S4 and other connected devices. Exposure to limiting conditions for extended periods may affect the reliability and shorten the life cycle of the device.

Nominal Values

Parameter	Minimal	Typical	Maximal	Unit
Current consumption (running idle)	-	26	-	mA
Current consumption (250 kBits/s, 100% busload)	-	65	-	mA
Supply voltage	19	24	30	V
Propagation delay between two arbitrary channels	-	130	200	ns

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