CAN-Repeater CRep S10I

Special Features

- Protocol transparent CAN repeater
- 10 CAN channels
- Low propagation delay
- Galvanic separation between CAN channels and power supply
- ISO 11898 compatible bus interface
- Detach of dominant locked bus segments
- Rail mountable

Description

The compact CAN repeater CRep S10I transmits and amplifies signals transparent to the CAN protocol. Each of the ten CAN connections has the physical behaviour of a single bus node. CRep S10I 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 S10I 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 S10I. 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 S10I 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 occuring errors. All CAN channels are galvanic separated to each other and to the power supply.

The presence of power is indicated by a LED. Each CAN channel is provided with a LED indicating that this channel has originated a CAN message.

Technical Data

Layout and Connection

A CRep S10I device includes 10 CAN segments, wired by terminal blocks with 3 clamps. The power supply of CRep S10I 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 of power supply

The power supply is galvanicly decoupled from the CAN system.

Limiting Values

Parameter	Minimum	Maximum	Unit
Storage temperature	-40	+80	°C
Operating temperature	-20	+70	°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 S10I 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)	-	10	-	mA
Current consumption (250 kBits/s, 100% busload)	-	260	-	mA
Supply voltage	10	24	30	V
Propagation delay between two arbitrary channels	-	150	230	ns

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