



# CAN Repeater CRep S4I/FD

## Special Features

- Protocol transparent CAN repeater for CAN FD and CC
- 4 individually galvanically isolated CAN channels
- Galvanic separation between CAN channels to power supply
- Low propagation delay
- ISO 11898-2:2016 compatible bus interface
- Detach of dominant locked bus segments
- Rail mountable
- Optional with 120 Ohm or high impedance termination resistors

## Description

The compact CAN repeater CRep S4I/FD transmits and amplifies signals transparent to the classic CAN and CAN FD protocol. Each of the four CAN connections has the physical behavior of a single bus node. CRep S4I/FD 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 delay, may be increased using CRep S4I/FD 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 S4I/FD. Each subnet can have the maximum number of CAN nodes specified by the used CAN transceivers. Where CAN signals have to be transmitted over long distances, CRep S4I/FD can be used for signal conditioning. The capability to detach permanent dominant segments from the rest of the CAN system reduces the impact on intact bus segments for many often occurring 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 S4I/FD device includes four CAN segments, wired by terminal blocks with 3 clamps. The power supply of CRep S4I/FD is separately wired by a terminal block with 2 clamps.

Pin	Name	Function
1	CAN_H	CAN data line (dominant high)
2	CAN_L	CAN data line (dominant low)
3	GND	Ground

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

Pin	Name	Function
1	Power +	Supply voltage +24 V
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	-20	+70	°C
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 S4I/FD 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)	-	120	-	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 24 V and an environmental temperature of 20°C.

## Scope of Delivery

- CAN repeater CRep S4I/FD
- User manual