



CAN Repeater CRep Opto/M12

Special Features

- Galvanic separation of CAN segments
- Protocol transparent, the CAN error handling is preserved
- Extended error suppression, separation of faulty segments
- Wide power supply range
- ISO 11898 compatible bus interface
- Assembly rail fixing, connection by M12 connectors
- Metal housing

Description

The galvanic decoupling CAN repeater CRep Opto/M12 transmits and amplifies CAN signals in a protocol transparent way. Both CAN connections behave like one single physical CAN node. CRepOpto/M12 allows the design of flexible wiring topologies. Star and tree structures as well as stub lines can be realized. By selection of the most favorable network topology for the application needs the installation costs can be lowered.

The maximum data rate can be increased by use of CRepOpto/M12 and a suitable network structure. An increase in the number of nodes in a CAN network is possible through separation into sub networks, each of them connected by CRepOpto/M12. Each sub network can manage a maximum number of CAN nodes only restricted by the transceiver driver capabilities. With transmission over long distances CRepOpto/M12 allows signal recovering. Through the galvanic separation of the bus segments CAN sections with differing ground potential can be connected. For the most common occurring errors the integrated error suppression reduces the influence of faulty segments to intact sections.

Technical Data

Layout and Connection

CRep Opto/M12 devices include two CAN segments one fed to a male and one to a female plug of type M12. The plugs carry the CAN signals and the supply voltage. Each CAN segment needs its own power supply.

The following table shows the pinout of the M12 connectors.

Pin	Name	Function
1	SHLD	Shield connection
2	VCC	Supply voltage +24 V
3	GND	Ground
4	CAN_H	CAN data line (dominant high)
5	CAN_L	CAN data line (dominant low)

Limiting Values

Parameter	Minimum	Maximum	Unit
Storage temperature	-20	+80	°C
Operating temperature	0	+60	°C
Supply voltage	-100	+35	V
Voltage on bus connections	-30	+30	V
Admissible power consumption (at 60 °C)	-	2000	mW

Any (also temporary) stress in excess of the limiting values may cause permanent damage on CRep Opto/M12 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	Minimum	Typical	Maximum	Unit
Current consumption (running idle)	-	30	-	mA
Current consumption (250 kBits/s, 100 % busload)	-	40	-	mA
Supply voltage	10	24	30	V
Propagation delay	-	125	200	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 Opto/M12
- User manual