



Optical Fibre Transceiver CTrans OL

Special Features

- Coupling of CAN systems by optical fibre
- Available for PMMA- and glass fibre, connection by connector or by clamping
- Protocol transparent; CAN error handling mechanisms are preserved
- Extended error suppression

Description

CTrans OL acts as a transceiver for protocol transparent transmission of CAN signals between copper based sections via an optical fibre.

Several technical improvements can be obtained by optical transmission of CAN signals, such as secure separation of high voltages and insensitivity to electromagnetic perturbation. Furthermore the transparent transmission of CAN signals with CTrans OL preserves the main benefits of CAN, such as error correction and priority driven bus access.

Like repeaters Ctrans OL can be used to build flexible wiring topologies. Star and tree structures as well as stub lines can be realized. The integrated error suppression reduces the influence of faulty segments onto intact sections.

For the optical connection cost effective PMMA fibres with clamped connection and 62,5µm multimode glass fibres with SMA and ST connectors are supported. Depending on the type of fibre a wiring distance up to 3000m can be achieved.

Technical Data

Layout and Connection

CTrans OL devices include one CAN segment (marked 'CAN') fed to a male and female plug of type D-Sub 9. The plugs carry the CAN signals and the supply voltage, the latter can optionally be fed into a separate connector (marked 'Power'). The following table shows the function of the internally connected CAN interface. The optical connection is provided by a type dependent optical fibre adapter mounted on an additional connector (marked 'Opto Link').

Pin	Characterization CAN connector	Characterization power connector	Function
2	CAN_L	–	CAN_L bus line (dominant low)
3	GND	GND	Ground line
7	CAN_H	–	CAN_H bus line (dominant high)
9	V+ CAN	V+ CAN	Power supply 24V

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 CTrans OL 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 (250kBit/s, 100% busload)	–	40	–	mA
Supply voltage	10	24	30	V
Propagation delay (per pair of devices)	–	125	300	ns

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