



CAN Fiber Optic Router EtherCAN-FX

Special Features

- Optical fiber based Ethernet/CAN router for the connection of CAN subnetworks
- Powerful 32 bit ARM7 microcontroller Nuvoton W90N740
- Abrogation of the extension/data rate restrictions of the CAN bus
- The CAN typical error handling mechanisms are preserved
- Optical fiber extensions up to 15/40 km possible (2 different device types)
- Adaptation to higher layer protocols (e.g. SafetyBus p, CANopen) using specific firmware
- Rail mountable

Description

EtherCAN-FX transmits data between CAN networks using optical fiber. To achieve the connection two devices are linked back-to-back. The transmission protocol used on the optical fiber is the reliable TCP/IP protocol. The use of TCP/IP abrogates the length/data rate restrictions, the typical error handling mechanisms of CAN are preserved within the single subnets. Depending on the type of the device, extensions up to 15 km or 40 km are possible.

EtherCAN-FX includes a Nuvoton W90N740 with 80 Mhz clock and a Linux operating system. In addition, the device has 16 MB SDRAM and 2 MB Flash. The connection to the CAN bus is done by a CAN controller of type NXP SJA1000 which supports the CAN protocols 2.0A and 2.0B.

The use of Embedded Linux as operating system allows the development of application specific software for EtherCAN-FX, an application development kit is separately available.

Safety-related applications with SafetyBUS p are supported by the version SBR-FX.

Technical Data

Layout and Connection

EtherCAN-FX includes a CAN segment connected by a D-Sub9 male plug. The power supply of the device is achieved by plugable terminals with 4 contacts. For configuration purposes a RS232 interface is provided.

A pair of single mode optical fibers (9 μm) are connected by LC plugs.

Limiting Values

Parameter	Minimal	Maximal	Unit
Storage temperature	-25	+70	°C
Operating temperature	0	+50	°C
Supply voltage	-100	+35	V
Voltage on bus connections	-30	+30	V

Any (also temporary) stress in excess of the limiting values may cause permanent damage on EtherCAN-FX 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)	-	80	200	mA
Supply voltage	20	24	30	V
Optical damping (EtherCAN-FX15000/RMD)	-	13	-	db
Optical damping (EtherCAN-FX40000/RMD)	4	28	-	db
Admissible fiber length (EtherCAN-FX15000/RMD)	-	15000	-	m
Admissible fiber length (EtherCAN-FX40000/RMD)	-	40000	-	m

All values, unless otherwise specified, refer to a supply voltage of 24 V and an environmental temperature of 20°C. Fiber length specifications are valid for fiber damping of 0,55 dB/km without additional patch panels.

Scope of Delivery

- CAN fiber optic router EtherCAN-FX or SBR-FX
- User manual