

EtherCAN/3-FD

Multifunctional CAN to Ethernet Gateway

Wide Feature Set: Gateway and Bridge for Ethernet to CAN Bus

- Secure and autonomous CAN-to-CAN bridge via encrypted TCP/IP connection by connecting two EtherCAN/3-FDs
- Sophisticated on device CAN ID based filter and forwarding mechanisms to minimize Ethernet bandwidth and/or host CPU usage
- Receive and send CAN data with any network device using the lightweight Ethernet Low Level Socket Interface (ELLSI) protocol
- Monitoring of CAN bus with an arbitrary TCP based server for customized post-processing tasks
- Support for non-interfering CAN bus monitoring

Easy to Use with robust Communication

- Integrated web interface for an easy device configuration without additional configuration software
- Protection via mechanical switch that deactivates the web server to minimize the device's attack surface and to prevent unwanted reconfiguration.
- Robust communication thanks to TCP/IP support

Remote CAN Interface as Virtual Device

- Transparent integration of the remotely connected CAN buses into the esd NTCAN environment on Windows and Linux
- Use of existing NTCAN API based applications, protocol stacks and established CAN tools, such as CANreal on Windows



Usage as Gateway or Bridge

The EtherCAN/3-FD enables remote access to CAN FD or CAN CC buses via Ethernet. Three different modes of operation allow a versatile integration of a CAN bus into a system with LAN connectivity, i.e. EtherCAN mode or platform-independent client or server modes. Furthermore, two EtherCAN/3-FD gateways can operate autonomously in a bridge mode to seamlessly connect two CAN networks via Ethernet.

Ethernet and CAN FD Ports

The EtherCAN/3-FD features one (10/100 Mbit/s) Ethernet port and two galvanically isolated CAN FD ports for bitrates from 10 Kbit/s up to 8 Mbit/s. CAN FD is downward-compatible to the CAN 2.0 A/B standard, so the device can be integrated in any CAN CC based net.

EtherCAN Mode

The EtherCAN technology developed by esd enables the NTCAN API based access to a CAN bus remotely connected via LAN in the same way as the access via a local CAN interface. A single EtherCAN/3-FD can be connected to different hosts and/or different applications on the same host. The EtherCAN mode is supported on Windows® and Linux®.

Platform-independent Server Mode

The EtherCAN/3-FD supports the open, proprietary, UDP and TCP based EtherCAN Low Level Socket Interface (ELLSI) protocol, so a CAN bus can be controlled and accessed from any UDP or TCP capable device.

Example C source code of ELLSI client implementation provided as part of the SDK. S7-300/400 function blocks with ELLSI support on request.

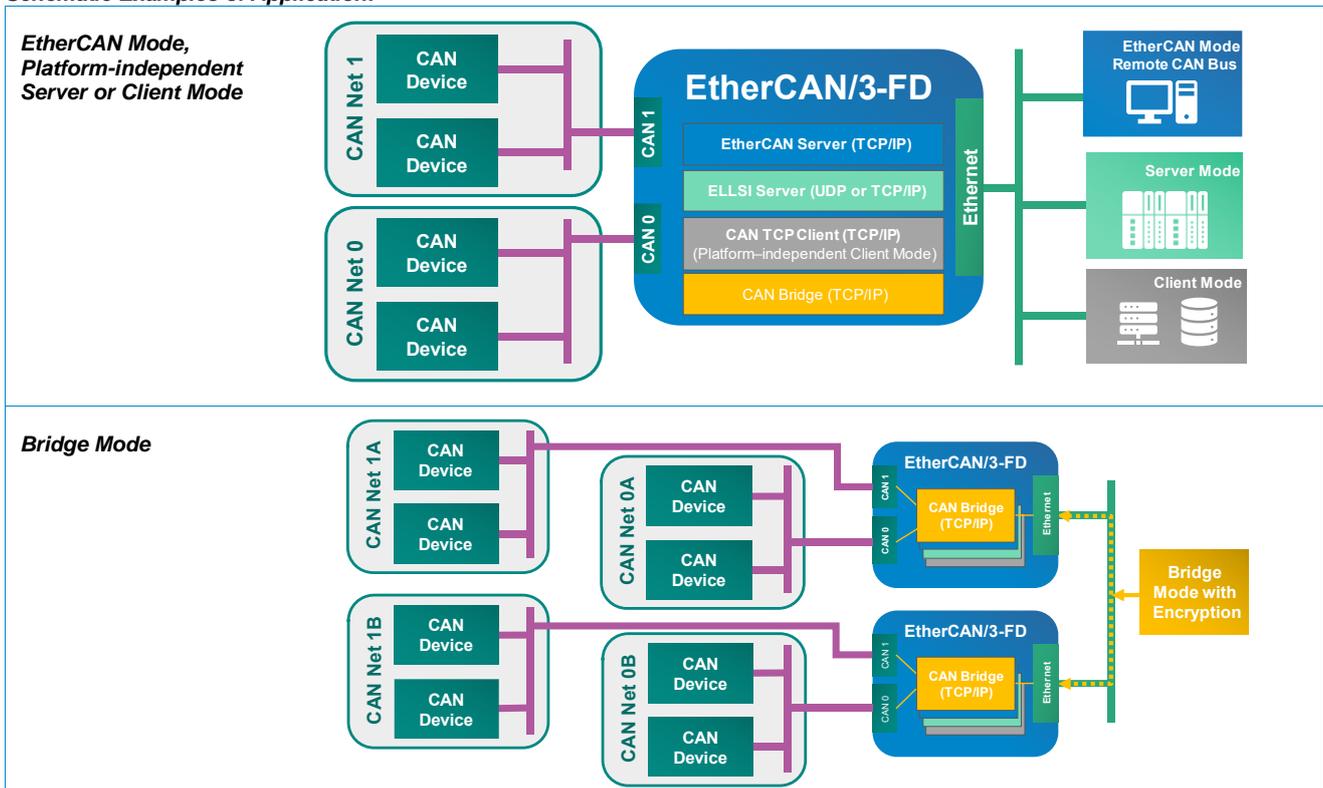
Platform-independent Client Mode

The EtherCAN/3-FD streams all received CAN data to a server for custom storage, post-processing and visualization. The communication is based on an open TCP based network protocol.

Bridge Mode

With two EtherCAN/3-FD modules this operation mode allows to connect two CAN networks via LAN. The data is exchanged via TCP with optional TLS encryption. To minimize the exchanged data the device supports sophisticated filter mechanisms.

Schematic Examples of Application:

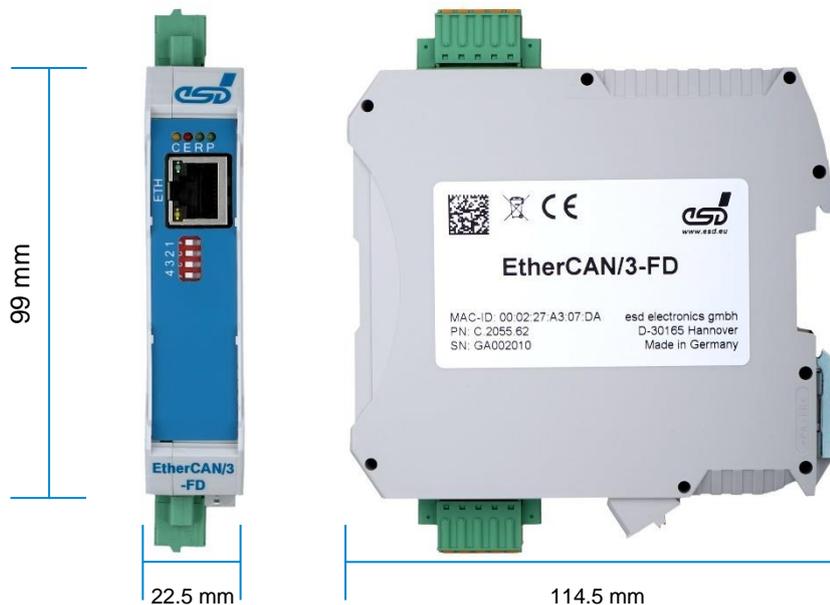


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Housing Details:



Technical Specifications:

Ports:	
Ethernet	100BASE-TX, IEEE802.3
CAN	2 CAN FD ports (CAN0, CAN1), physical layer according to ISO 11898-2, galvanically isolated CAN CC bit rate: 10 kBit/s up to 1 Mbit/s, CAN FD bit rate up to 8 Mbit/s
General:	
Power supply voltage	Nominal: 24 VDC / $I_{MAX, 24V} = 210 \text{ mA}$ Min./max.: 12 VDC / 32 VDC
Power consumption	$P_{MAX} = 5 \text{ W}$
Ambient temperature	-20 °C...70 °C
Relative humidity	Max. 90 % (non-condensing)
Dimensions	22.5 mm x 99 mm x 114.5 mm (without mating connectors)
Housing	Plastic housing (Phoenix MEMAX) for hat rail mounting NS 35/7,5 DIN EN 60715
Protection class	IP20
Connectors	CAN: 2x 5-pin PCB terminal block Phoenix FK-MCP 1,5/5-STF-3,81 PCB connector included in delivery Ethernet: RJ45 socket Power: 4-pin PCB terminal block, Phoenix FKCT 2,5/4-ST PCB connector included in delivery, InRailBus: CAN0 and 24 V power supply optionally connectable via InRailBus card edge connector Use mounting rail connector 5-pos. TBUS connector (accessories).
Weight	Approx. 125 g

Order Information:		
Hardware		Order No.
EtherCAN/3-FD	Multifunctional CAN to Ethernet Gateway, DIN rail-mountable, 100 BASE-TX Ethernet, 2 CAN ports according to ISO 11898-1, galvanically isolated, integrated web interface	C.2055.62
Accessories		
CAN-Cable-S, 0,3m (plug)	CAN-cable 0.3 m, 1x DSUB9 connector with pin contacts	C.1323.03
CAN-Cable-B, 0,3m (socket)	CAN-cable 0.3 m, 1x DSUB9 connector with socket contacts	C.1323.04
CAN-CBX-TBUS	InRailBus connector	C.3000.01
CAN-CBX-TBUS-Connector-Socket	Connector for power supply and CAN to the InRailBus (socket contacts)	C.3000.02
CAN-CBX-TBUS-Connector-Plug	Connector for power supply and CAN to the InRailBus (pin contacts)	C.3000.03
Software Support		
CAN drivers for Windows/Linux are included in delivery free of charge.		
Higher CAN layer protocols ¹ :		
CANopen Stack for Windows/Linux (Object)		C.1101.06
J1939 Stack for Windows (Object)		C.1130.10
J1939 Stack for Linux (Object)		C.1130.11
¹ For detailed information about driver availability for your operating system please contact our sales team.		