



Main Features

- ▶ Support for MVB devices up to class 4, including bus administrator functionality, process and message data.
- ▶ Proprietary high-performance Ethernet communication stack; optimized for cyclic process data.
- ▶ Support for most common real-time Ethernet protocols including TRDP, IPTCom and EtherNet/IP – CIP.
- ▶ Optional redundant Ethernet interface.
- ▶ duagon web server for remote diagnostics and firmware updates; possibility to implement customer-specific web pages

Overview

The D503 is an easy to configure Ethernet-to-MVB gateway. It provides a line redundant MVB interface as well as up to two 10/100 Mb/s Ethernet interfaces (ETH0 / ETH1). The Ethernet connectors comply with IEC 61076-2-101 (D-coded; female).

The Ethernet interfaces comply with IEEE 802.3 supporting 10BASE-T or 100BASE-TX, full duplex mode, auto-negotiation and auto MDI-X. Furthermore, the internal logic supports the "Ethernet on traction vehicles" standard IEC 61375-3-4.

The optional second Ethernet interface ETH1 is intended to be used as a redundant line or as a separate channel for remote diagnostic and maintenance purposes.

duagon offers a cyber security suite to create a protective layer for the host subsystem, which includes basic features like SSH, SFTP, HTTPS and/or IPSec as well as central authentication, event logging, secure firmware update procedures and cryptographic signature services for the gateway.

The MVB interface complies with the TCN standard IEC 61375 and supports devices up to class 4 including process and message data. Optionally, the device may act as a bus administrator.

duagon's gateways are available with two variants – as platform to build a customer-specific application or as gateway with a standard configurable gateway application. Additionally, the D503 can be ordered as a read-only device to guarantee non-retroactivity. The platform variant is accompanied by a development library that enables fast and efficient design of customer-specific applications.

The gateway is integrated in a stainless-steel housing that can be mounted on a DIN rail or using M4 screws. The device can be powered directly from the vehicle battery or by Power over Ethernet (PoE).

The D503 is designed for harsh rolling stock environments and complies with the EN 50155 norm.

Technical Specification

PHYSICAL DATA

Fast Ethernet connectors	M12, female, D-coded
MVB connector	9-pin SUB-D connector
Power connector	1x3-pin Phoenix connector
Maintenance port connector	2x Socket, 10-pin, Serial and JTAG

Visual indicators (LEDs)	Device status Ethernet: link, activity MVB: bus administrator, status
Power supply voltage range	24 Vdc to 110 Vdc
Power consumption	<4 W
Overall dimensions	106 x 120 x 31.6 mm

Weight	415 g
Operating temperature	-40 to +70°C, according to EN 50155; Class OT4
Ingress Protection	IP30
Storage temperature	-40 °C to +85 °C
Relative humidity	yearly average ≤75%, 95% for 30 consecutive days max. (EN 50155)
Useful life	20 years, according to EN 50155 Class L4

COMPLIANCE

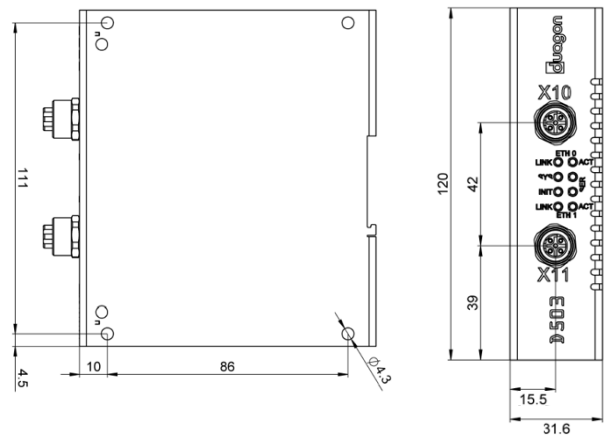
EN 50155	Railway Applications (Electronic equipment used on rolling stock)
EN 50121-3-2	Electromagnetic compatibility rolling stock apparatus
EN 61373	Shock & Vibration
EN 45545-2	Fire protection, HL3
IEC 61375-3-4	Ethernet Consist Network (ECN)
RoHS	Restriction of the Use of Certain Hazardous Substances
REACH	Registration, Evaluation, Authorization and Restriction of Chemicals

IEEE STANDARDS

IEEE 802.3	Ethernet
IEEE 802.3u	Fast Ethernet (FE)
IEEE 802.1X	Port-Based Network Access Control
IEEE 802.1AB	Link Layer Discovery Protocol (LLDP)
IEEE 802.3ad	Link Aggregation Control Protocol (LACP)

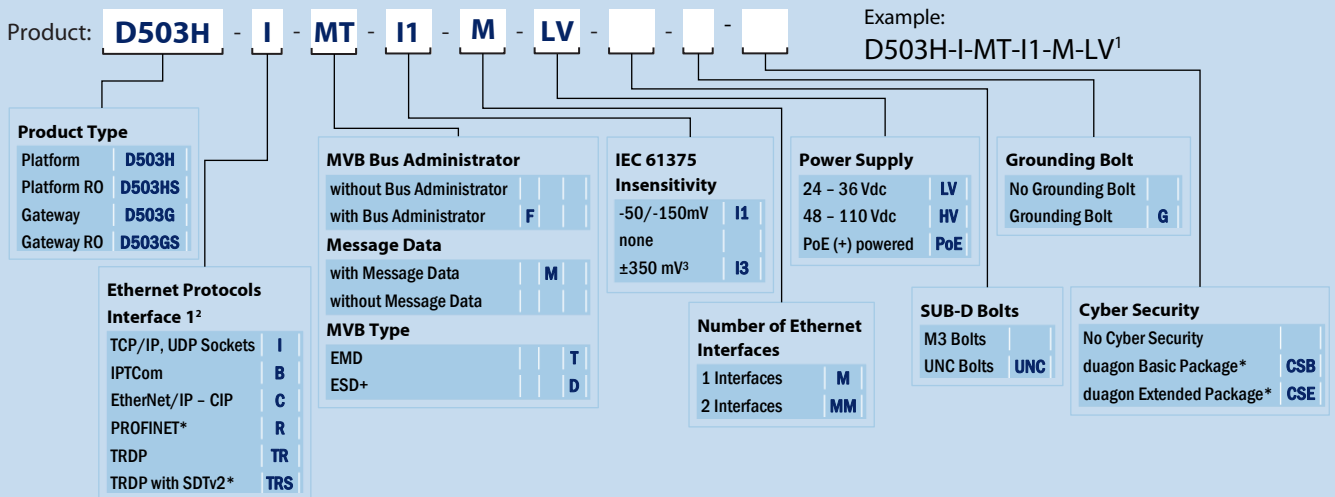
Dimensions

Dimensions [mm] only for reference



Side and Front View

Ordering Information



¹ default order options

² Ethernet "Sockets" is included on all interfaces

³ Insensitivity I3 order option not applicable for ESD+ MVB type

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