

General Features

The D503 is a MVB-to-Ethernet gateway with the following interfaces:

- MVB on two 9-pin male/female SUB-D connectors
- up to two Ethernet interfaces ETH0 and ETH1 on M12 connectors

The optional Ethernet interface ETH1 is intended to be used as a redundant line according to the IEC62439 PRP protocol or as a separate channel for configuration.

The Ethernet interfaces comply to IEEE802.3 and the internal logic is prepared for the future "Ethernet on traction vehicles" standard IEC61375-3-4.

The gateway is integrated in a stainless-steel housing that is mounted on a DIN rail or using M4 screws. The device is powered directly from the vehicle battery.

The D503 is designed for harsh traction environment:

-40 °C to 85°C Ambient temperature range.

Tested against:

EN 50155/ EN 50121

IREE 802.3/ EN 61373

IEC 61375 (2007)

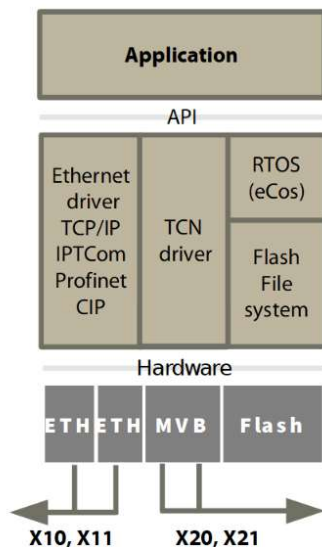
Key Benefits

- Integrated train manufacturer specific webservices
- Hardware prioritisation within the duagon's own Ethernet controller
- Proprietary high-performance UDP Stack (optimised for cyclic process data telegrams)
- Encapsulation of real-time Ethernet protocol stacks
- Fully compliant to EN50128, EN50129, IEEE 802.3, EN 50155, EN 50121, IEC 61373 and IEC 61375

Application Examples

- Generic Ethernet gateway for various real-time protocols

D503 Hardware Architecture



Life Cycle Cost

Total cost of ownership was an important aspect when creating the installation, maintenance and service concept.

Further- more, to avoid service expenses, the gateway has strictly been designed without the usage of electrolytic capacitors.

Technical Data

CPU base System	<ul style="list-style-type: none"> – 32bit softcore CPU running – Programmable in standard C – Flash file system – Webserver for maintenance
Ethernet Interface 1+2	<ul style="list-style-type: none"> – Physical layers acc. IEEE 802.3 100Base-TX – Full duplex mode – M12 (D-Coded) according IEC 61076) – Auto-Negotiation, Auto-Polarity, Auto-Crossing – 1.5KVAC galvanic isolation – up to two connections
Ethernet Protocols	<ul style="list-style-type: none"> – Standard TCP or UDP Sockets – IPTCom – EtherNet/IP - CIP – TRDP – PROFINET¹⁾
MVB Options	<ul style="list-style-type: none"> – Supports EMD or ESD+ – Configurable as Bus Administrator – Configurable for Message Data
Supply Voltage	<ul style="list-style-type: none"> – Single power supply 24 – 110V – Power over Ethernet

Diagnostic/Service	<ul style="list-style-type: none"> – Device status information/identification available through host interface – Firmware update via Ethernet – JTAG and serial line available
Power consumption	<ul style="list-style-type: none"> – Powered directly from battery Pmax = 3W – Interruption Class C2 ceramic capacitor on board, no need to replace capacitors due to aging
Operation conditions	<ul style="list-style-type: none"> – Temperature: -40 to +85 °C (EN 50155 class TX) – Relative humidity 75%, max 95% – For 30 days per year (conformal coating) EN 60 068 – Shock and vibration: According to IEC 61373 – Category 1, class B – EMI: According to EN 50121 and EN 50155
Dimensions/Weight	<ul style="list-style-type: none"> – Housing: Metal, IP30 protection – Dimensions: 120 x 106 x 32 mm – Weight: 415 g
Environment	<ul style="list-style-type: none"> – Fully compliant to RoHS and REACH – 100% 48h cyclic climatic testing

d-023708-036737

Order Code and HW Options

Product Type: **D503H** - [] - [] - [] - [] - [] EXAMPLE: **D503H-I-MT-MM-HV-G**

Product Type	Ethernet Interface	MVB Options	Number of ETH Interfaces	Power Supply	DSUB Bolts	Grounding Bolt		
Platform D503H MVB ReadOnly D503HS	TCP/ UDP Sockets IPTCom EtherNet/IP - CIP TRDP PROFINET ¹⁾	I B C TR R	Bus Administrator With Message Data EMD ESD+	F M T D	1 ETH Interface M 2 ETH Interfaces MM	24 – 36 Vdc LV 48 – 110 Vdc HV PoE (+) powered PoE	UNC Bolts UNC M3 Bolts <empty>	No Bolt <empty> M5 Bolt G

1) For availability check with duagon

Related Documents

Data Sheet D503  d-004090-nnnnnn

Configuration Guide  d-001785-nnnnnn

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