



Main Features

- ▶ Completely transparent to all Ethernet protocols
- ▶ Full or half duplex communication (restriction to 2 ports)
- ▶ Full 10 Mbit or 100 Mbit bandwidth (unlike “Ethernet extenders”)
- ▶ Customer specific port configurations for Auto Negotiation and Auto Crossing possible
- ▶ Nominal battery voltage input (up to 110 V) eliminates the need for an external power supply

Overview

The D512 is a compact 2-port Ethernet repeater for railway applications that is completely transparent to all Ethernet protocols and offers full 10 Mbit/100 Mbit bandwidth in full or half duplex mode. It allows the integration of any remote device or sub-network into an Ethernet network, and with its low latency, it is ideal to bridge long distances in redundant ring topologies.

Optionally it is available with bypass relays. In the case of bypass relays, there is a digital status output pin available.

The D512 is intended to enable 10BASE-TX or 100BASE-TX connections of more than 100 meters (for connections with a high number of connectors and/or long patch cables the limit is even less than 100 meters).

The two Ethernet ports support 10BASE-TX or 100BASE-TX, Auto-Crossover and Auto-Negotiation. They are equipped with M12 connectors to guarantee a reliable connection.

The D512 is powered directly from the train battery (24 V to 110 V) or from PoE (IEEE 802.3af).

As an option, the repeater can be ordered with a customer defined configuration for the Ethernet ports (default: Auto-Negotiation and Auto-Crossing on).

The D512 is designed for harsh rolling stock environment and fully compliant to EN50155, IEC61375 and IEEE802.3., e.g. by:

- -40 to +85 °C operating temperature
- coating against humidity
- enhanced EMI and vibration robustness

Technical Specification

PHYSICAL DATA

Fast Ethernet connectors	M12, female, D-coded
Maintenance port connector	JTAG (Socket, 10-pin)
Visual indicators (LEDs)	Ethernet: link, activity; System Status and Initialization
Power supply voltage range	24 – 110 VDC
Power consumption	<3 W
Overall dimensions	120 x 106 x 31.6 mm

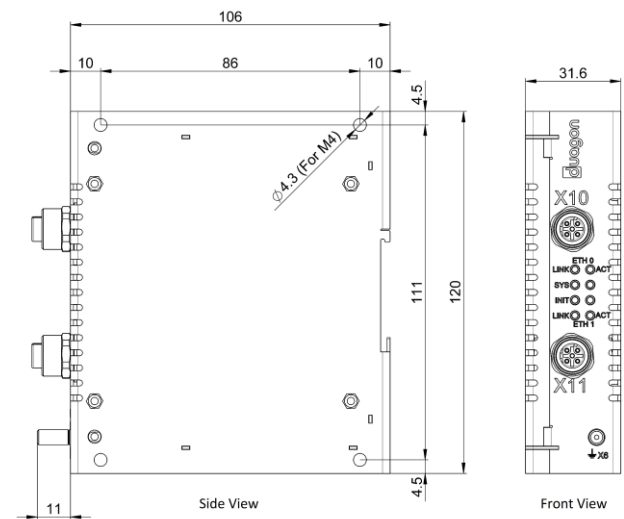
Weight	415 g (may vary depending on selected configuration)
Ingress Protection	IP30
Operating temperature	-40 to +70 °C, according to EN 50155; Class OT4
Storage temperature	-40 °C to +85 °C
Relative humidity	yearly average ≤75 %, 95 % for 30 consecutive days max. (EN 50155)
Useful life	20 years, according 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 802.3u	Fast Ethernet (FE)

Dimensions

Dimensions [mm] only for reference



Ordering Information

Product:

D512 - **F** - **HV** - **G**

Example: D512-F-HV-G¹⁾

ETH Link configuration

Fixed 100 Mbit FD	F
Auto	
Fixed 100 Mbit HD *	FH
Fixed 10 Mbit FD	F10
Fixed 10 Mbit HD *	F10H

Bypass Relays

Without	
With bypass relays	BY

Power Supply

Nominal battery voltage:	HV
48 V, 72 V, 96 V, 110 V	
Nominal battery voltage:	LV
24 V, 36 V	
Power over Ethernet *	PoE

Grounding Bolt

M5 grounding bolt	G
No grounding bolt (default)	

¹⁾ default ordering options

* Contact duagon for availability and lead times