



Multifunction Vehicle Bus Interface Module (MVB)

EN 50155
EN 45545
IEC 61375-3-1

MODULE FUNCTIONS

Trainnet® Multifunction Vehicle Bus (MVB) modules are used to create vehicle buses or more comprehensive train communication networks. The Multifunction Vehicle Bus Module implements the MVB link layer functions of the IEC 61375-3-1 Train Communications Network standard. The TCN's real-time protocols and the routing between the MVB and other buses are implemented by the gateway CPU Module.

KEY FEATURES

The Trainnet® Multifunction Vehicle Bus module supports physical cable redundancy and full bus master functionality as specified in the IEC 61375-3-1 standard. Bus administrator redundancy is supported on the Software level.

TCN standard's D-9 type connectors are located on the front panel of the module. Communication to the gateway is conducted through shared memory over the IEC 821 VME back plane bus. The MVB link layer functions are implemented by the MVB module's local processor. Multiple Trainnet® MVB

modules can be controlled by a single Trainnet® CPU to implement physically separated MVB networks.

The Trainnet® MVB module has static shared RAM memory accessible from both the local CPU and the VME Bus interface. A separate memory area is reserved for message data and maintenance messages as well as for Remote Procedure Call type access to the Link Layer primitives.

The MVB module is realised through a highly efficient combination of local microprocessor and FPGA logic. In addition to strict compliance with the IEC 61375-3-1 standard, the MVB module has the capability of carrying out some diagnostic functions.

OPTIONS

Physical interface. The following MVB module physical interfaces are available: Electrical Short Distance with isolation (ESD+) and Electrical Medium Distance (EMD). ESD+ and EMD come with two sub D-9 connectors.

TECHNICAL SPECIFICATIONS

Dimensions (W x H x D)

4 TE x 3 U x 160 mm

Weight

ESD: 160 g / EMD: 220 g

Input Power

5 V DC $\pm 5\%$ (1 A max., 0.5 A typ.)

Temperature Range (operational)

-40 °C...+70 °C

MTBF (40 °C ambient temperature)

1 650 000 h (EMD, MVB1820B, left picture)

1 580 000 h (ESD, MVB2791B, right picture)

Physical Medium

Electrical Medium Distance (EMD, MVB1820B)

Isolated Electrical Short Distance (ESD, MVB2791B)

Rate

1.5 Mbit/s; Manchester encoding

VME Bus (IEC 821) Interface

A24 Slave with D08(EQ)/D16

246 kB SRAM and 512 kB traffic memory for process and message data

Data