

# CyBox IO MVB

## Interface modules for MVB

- Uses MVBCo2D chip with local traffic memory
- EMD or ESD+ physical interface option
- Read-only support
- SPI host interface
- ELTEC standard interface module format

PRELIMINARY

### III Main Features

- MVB interface (ENm61375)
- Uses MVBCo2D controller
- EMD or ESD+ interface
- Local traffic memory
- Electrically isolated interfaces
- Read-only option inhibits bus writing
- SPI host interface
- -40 to +70 (+85) °C operating temperature
- Integrated firmware for management and configuration

### III Description

The CyBox IO MVB module is an interface to the MVB vehicle bus, standardized under EN 61375. It contains the industry-standard MVB controller ASIC MVBCo2D, widely respected as the de-facto standard for MVB interfaces. The module includes 256 x 16 bit traffic memory, controlled directly by the MVBCo2D.

MVB interfaces are either EMD or ESD+, selectable as an ordering option. Both interface types offer galvanic isolation up to 1500 VDC. And both have separate Sub-D interface connectors for input and output.

Both interface types can be configured to support read-only operation. This is implemented by physically opening the transmit data path to the MVB bus, thus offering a certifiable option not to influence any transaction happening on the MVB. This option is not programmable for security reasons, it is implemented in hardware. This enables regulatory bodies to certify that bus interference cannot happen at all, even by offending software. ELTEC asserts the read-only feature for the modules with a certificate.

The host interface is implemented as an SPI interface, which is fast enough for any MVB transaction.

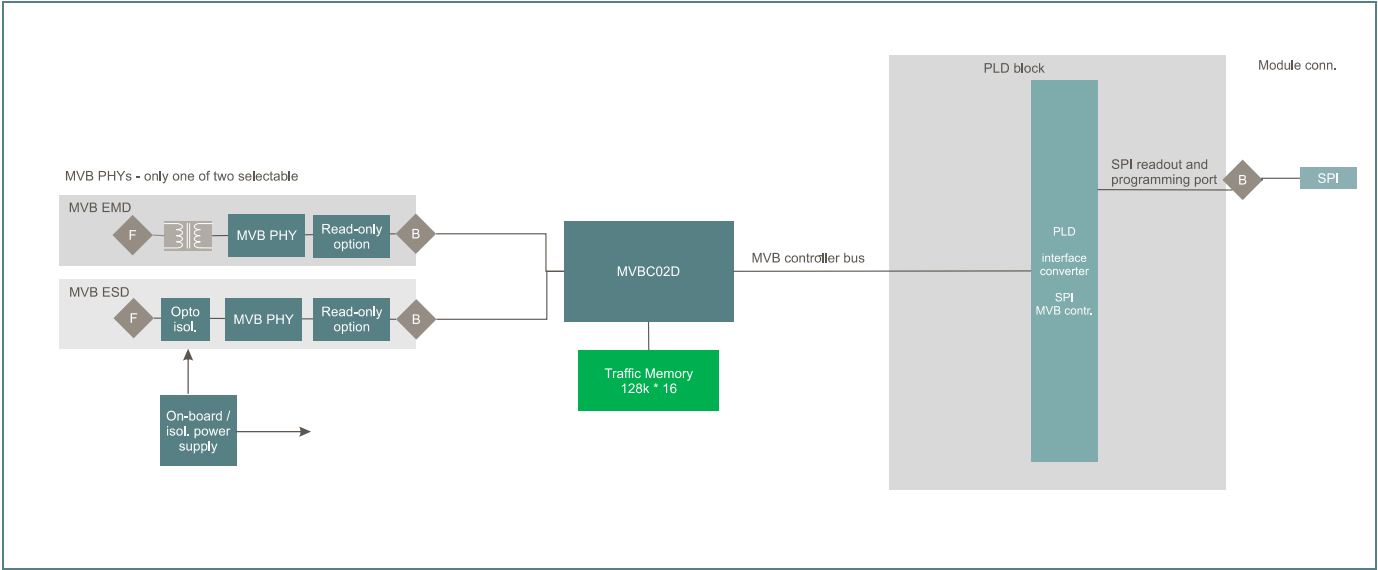
The module is on request supported by a piece of software running under Linux and offering a path to scan MVB data in a scripting language in multiple parallel threads. Thus, the user can implement a Python script that is started automatically, scanning the MVB data stream for any combination of values. This makes it possible to record and later debug communications even with unknown devices. In "production applications", scripting can filter for preventive maintenance needs.

### III ELTEC modules

The form factor and the host interface conform to the ELTEC standard for mezzanine modules for vehicular interfaces. This means that other interfaces, such as CAN, are available in the same format – with more to come.

Connection to the base board is routed via a 30-pin board-board connector carrying SPI, serial signals, I2C and additional side-channel signals. Current implementations use only SPI and power supply lines.

III Block Diagram



III Technical Data

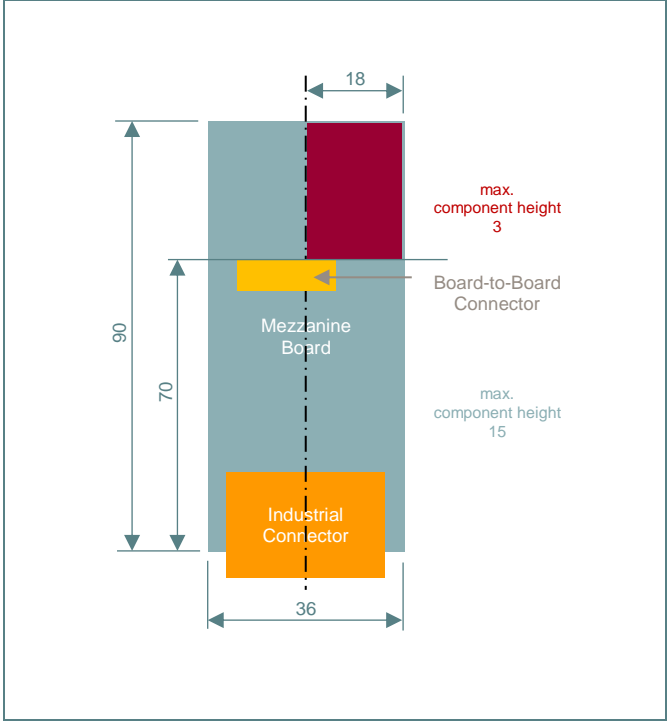
Physical Interfaces

MVB	Sub-D 9-pin in Sub-D 9-pin out Labeled « industrial connectors » below
SPI	On-Board connector ERNI SMC-Q-26-SMD-BA8-23 for SPI and power

Standards

→ EN 50155

Form factor



All dimensions in mm.

### III Specification

#### Mechanical Specifications

Board dimensions: 90 mm x 36 mm

Weight: 50 g typ., 70 g max.

#### Electrical Specifications

5 VDC, 80 mA typ., 250 mA max.

3.3 VDC, 70 mA typ., 250 mA max.

#### Environmental Conditions

Temperature range (operation): -40...+70 (85 short term) °C

Temperature range (storage): -40...+85°C

Relative humidity (operation): max. 95% non-condensing

Relative humidity (storage): max. 95% non-condensing

Altitude: -300 m to + 2,000 m

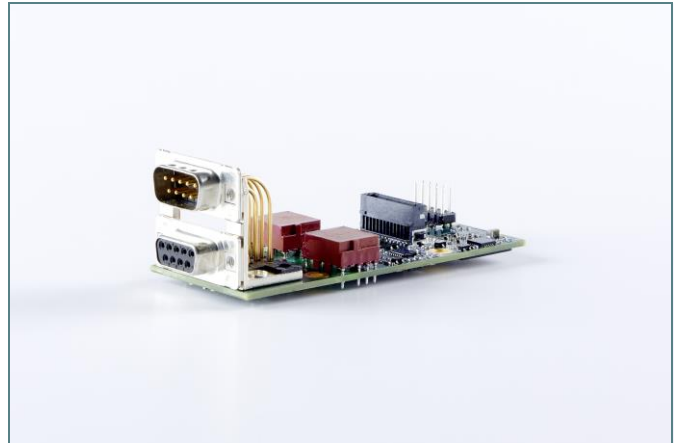
Climatic tests according to EN 60068

Shock and vibration tested according to EN 61373

#### Order numbers

→ CYMEZ-0200Bo with ESD+ interface

→ CYMEZ-0300Bo with EMD interface



Picture may be subject to change

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