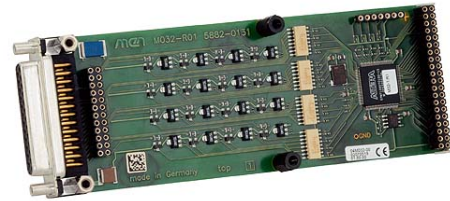


# M32

## Mezzanine Card with 16 Digital Inputs, Low-Side Switching M-Module

- » 16 inputs 0 V to 155 V
- » Constant current inputs
- » Debouncing circuit
- » Interrupt generation
- » Load on supply voltage
- » Optical isolation
- » -40 °C to +85 °C



### 16-Bit Digital Input M-Module

The mezzanine card M32 is a 16-bit digital input M-Module with latching capabilities for industrial applications. The inputs are optically isolated with a high isolation voltage of 500 V DC.

A current limit for each input guarantees a wide input voltage range of 0 V to 155 V.

Each input signal edge generates a maskable interrupt for each channel.

The signals of mechanical switches are debounced by a digital circuit with the precision debouncing time of 300 ns to 14 ms.

### Low-Side Switching

The M32 has its input load on supply voltage which means that switching an input to ground activates the respective optocoupler.

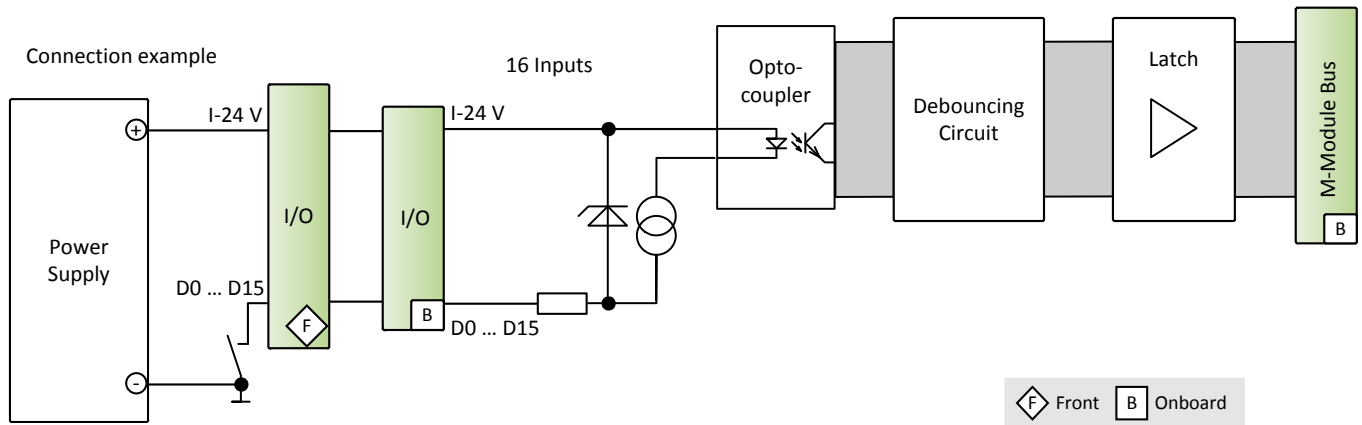
### Based on ANSI Standard

The M32 is based on the M-Module ANSI mezzanine standard. It can be used as an I/O extension in any type of bus system, i.e. CPCI, VME or on any type of stand-alone SBC.

Appropriate M-Module carrier cards in 3U, 6U and other formats are available from MEN or other manufacturers.

### Reliable and Robust

The M32 can operate in a -40 °C to +85 °C temperature range. The board withstands shock and vibration for reliable operation.



## Digital Inputs

- Input load on supply voltage
- FET constant current source inputs
- Input voltage: Logical low max. 1 V
- Input voltage: Logical low min. 0 V
- Input current: Logical low max. 0.2 mA
- Input current: Logical low min. 0 mA
- Input voltage: Logical high max. 40 V
- Input voltage: Logical high max. 155 V (M-Module version for extended temperature range)
- Input voltage: Logical high min. 5 V
- Input current: Logical high max. 3.5 mA
- Input current: Logical high min. 2.5 mA
- Switching time for input change: 3  $\mu$ s typ.
- Debouncing time: 14 ms (defined by PLD programming)

## Interfaces

- Digital I/O
  - 16x digital input, isolated, D-Sub, 25-pin, receptacle
  - 16x digital input, isolated, board to board
- M-Module
  - 1x A08/D16/INTA/INTB/IDENT, board to board

## Product Standard

- M-Module: ANSI/VITA 12-1997 (S2012)

## Electrical Specifications

- Supply voltage
  - +5 V (-3 % / +5 %)
- Power consumption
  - 0.25 W typ.
- Isolation voltage
  - 500 V DC between isolated side and digital side
  - Voltage between the connector shield and isolated ground is limited to 180 V using a varistor; AC coupling between connector shield and isolated ground through 47 nF capacitor

## Mechanical Specifications

- Dimensions standard: M-Module: (W) 149 mm, (D) 53 mm
- Weight: 67.5 g

## Environmental Specifications

- Operating temperature
  - 0 °C to +60 °C, or
  - -40 °C to +85 °C
  - Airflow: min. 10 m<sup>3</sup>/h
- Storage temperature: -40 °C to +85 °C
- Relative humidity (operation): max. 95% non-condensing
- Relative humidity (storage): max. 95% non-condensing
- Altitude: -300 m to +3000 m
- Shock: 15 g / 11 ms
- Bump: 10 g / 16 ms
- Vibration (sinusoidal): 2 g / 10 Hz to 150 Hz

## Reliability

- MTBF: 3 050 296 h predicted @ 40 °C according to IEC/TR 62380 (RDF 2000)

## Safety

- Flammability (PCBs)
  - UL 94 V-0

## EMC

- EN 55022 (radio disturbance)
- IEC 61000-4-2 (ESD)
- IEC 61000-4-4 (burst)

## ***Software Support***

- Linux
- Windows
- VxWorks
- QNX
- OS-9
- For more information on supported operating system versions and drivers see Software.

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### **Up-to-date information, documentation and ordering information:**

[www.men.de/products/m32/](http://www.men.de/products/m32/)

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