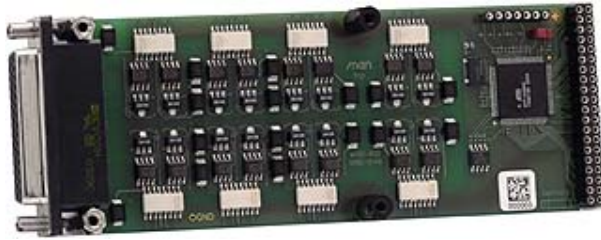*Embedded Solutions*

M82 - 16 Binary Inputs

- **16 fast 20kHz inputs**
- **0..40V input voltage**
- **Constant current inputs**
- **Hysteresis function**
- **Interrupt generation**
- **Optical isolation from the system (500VDC)**
- **Optical isolation between the channels (100VDC)**

The M82 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, PXI, 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.

The M82 is a 16-channel fully isolated input M-Module with latching and comparator capabilities for industrial applications. A current limit for each input guarantees an input voltage range of 0 to 40V. Each input signal edge generates a maskable interrupt for each channel. The voltage-sensitive inputs have a hysteresis function.

Typical I/O applications include automated test equipment, simulators and PLC-like applications with different voltage requirements.

The M82 is software-compatible with the M31.

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Technical Data

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Binary Inputs
- FET constant current source inputs
  □ 5.6mA typ.
- Input voltages and currents:
  □ 0..40V max.
  □ 5.5V, ±0.5V (switching voltage 0) @ 3mA min., 3.3mA typ., 4mA max.
  □ 9.5V, ±0.5V (switching voltage 1) @ 4mA min., 5.6mA typ., 10mA max.
  □ 15.2V, ±0.5V (switching voltage 2) @ 4mA min., 5.6mA typ., 10mA max.
- Switching Times
  □ Rise time: 4.2µs typ.
  □ Fall time: 32µs typ.

Miscellaneous
- Hysteresis function
- Interrupt generation with maskable interrupt

Peripheral Connections
- Via front panel on a shielded 44-pin HD-Sub receptacle connector

M-Module Characteristics
- A08, D16, INTA, INTB, IDENT

Electrical Specifications
- Isolation voltage:
  □ 500V DC between isolated side and digital side
  □ All channels are optically isolated (100V between the channels)
- Supply voltage/power consumption: +5V (4.85V..5.25V), 220mA typ.
- MTBF: 185,000h @ 50°C

Mechanical Specifications
- Dimensions: conforming to M-Module Standard
- Weight: 72g

Environmental Specifications
- Temperature range (operation):
  □ 0..+60°C or -40..+85°C
  □ Airflow: min. 10m³/h
- Temperature range (storage): -40..+85°C
- Relative humidity range (operation): max. 95% non-condensing
- Relative humidity range (storage): max. 95% non-condensing
- Altitude: -300m to + 3,000m
- Shock: 15g/11ms
- Bump: 10g/16ms
- Vibration (sinusoidal): 2g/10..150Hz

Safety
- PCB manufactured with a flammability rating of 94V-0 by UL recognized manufacturers
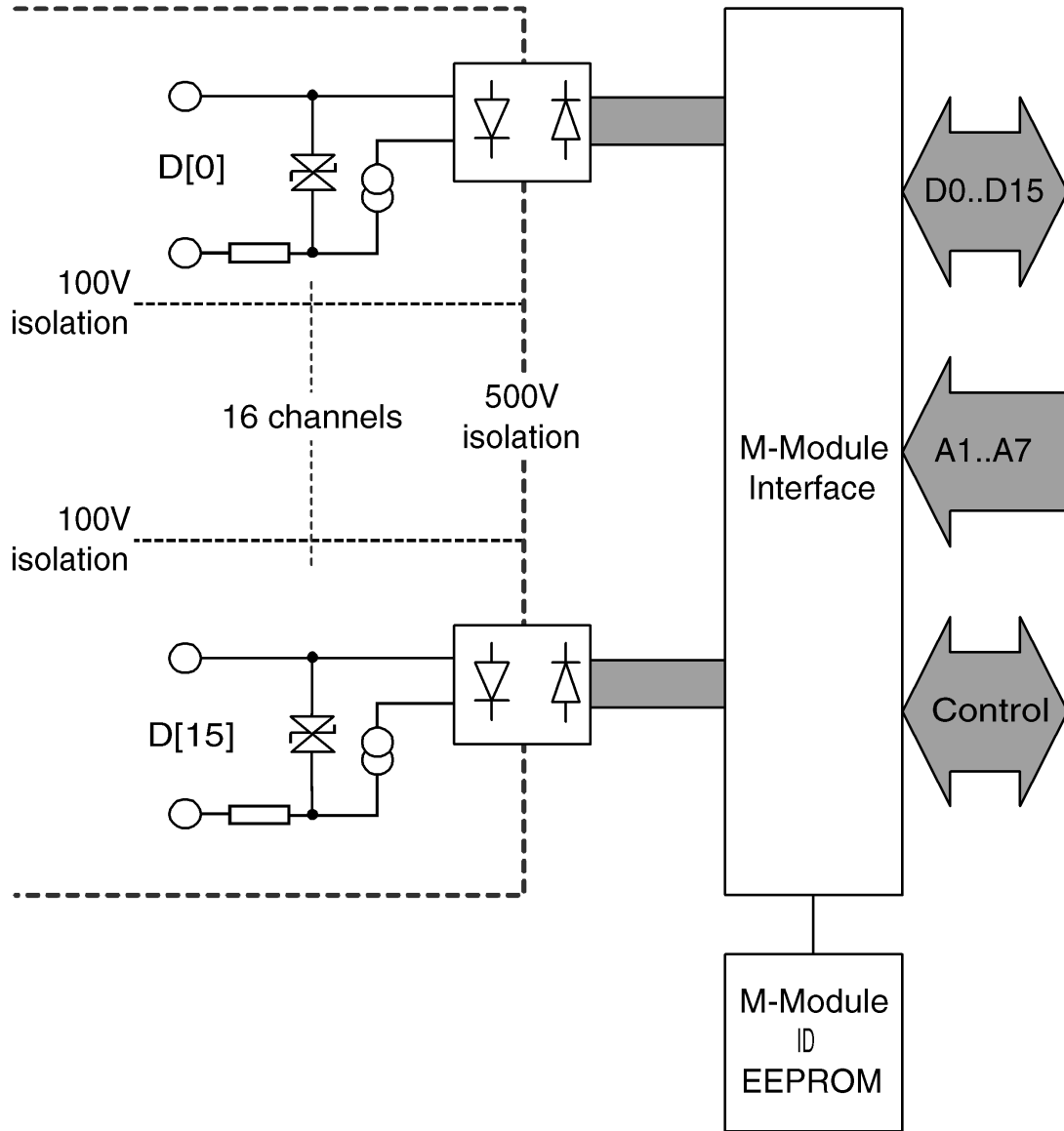
EMC
- Tested according to EN 55022 / 1999-05 (radio disturbance) and EN 55024 / 1999-05 (immunity) with regard to CE conformity

Software Support
- MEN Driver Interface System (MDIS for Windows, Linux, VxWorks, QNX, RTX, OS-9)

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Diagram

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Related Products

Standard Hardware

04M082-00	M82, M-Module, 16 binary inputs, fully isolated, -40..+85°C

Please refer to our M-Module compare chart for a selection of further binary I/O functions.

Accessories

05M000-14	M-Module cable, 2.5m, with 44-pin HD-Sub plug/housing to pig tail
05M000-17	25 mounting screw sets to fix M-Modules on carrier boards
05M000-18	M-Module cable, 2 m, with 44-pin HD-Sub plug/housing to 50-pin D-Sub receptacle/housing
05M000-20	M-Module cable, 2m with 44-pin HD-Sub plug/housing to 44-pin HD-Sub plug/housing, (connecting 1:1)

Software

13M031-06	MDIS4/2004 low-level driver sources for M31/M32/M82
13M031-70	MDIS4/2004 Windows® NT4/W2K driver for M31/M32/M82

To use MDIS4 low-level drivers, you also need one of the MDIS4 system packages available for Windows®, Linux, VxWorks®, QNX®, RTX or OS-9 (MDIS4 = MEN Driver Interface System).

Documentation

20M000-00	M-Module draft specification, Rev. 3.0
20M082-00	M82 user manual
21APPN001	Application Note: MDIS4 under LabWindows®/CVI

For the most up-to-date ordering information and direct links to other data sheets and downloads, see the M82 online data sheet under www.men.de. --> Click here!

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