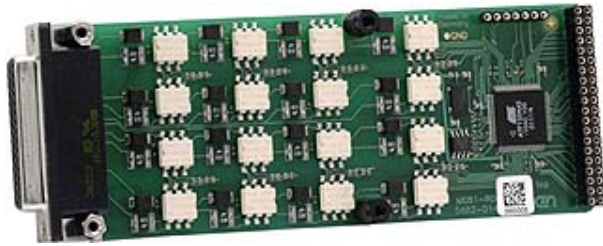*Embedded Solutions*

M81 - 16 Binary Outputs

- **16 opto-relay outputs**
- **0..36V output voltage per channel**
- **500mA output current per channel**
- **Thermal and short-circuit protection**
- **Optical isolation from the system (500VDC)**
- **Optical isolation between the channels (100VDC)**

The M81 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 M81 is a 16-channel fully isolated, fully protected binary output M-Module for industrial applications. The outputs can switch DC as well as AC voltages and can also be used for analog signals. The M81 works with parallel transmission and supports very fast, spike-free switching.

The M81 switches relays, lamps or other loads. Typical I/O applications include automated test equipment, simulators and PLC-like applications.

The M81 is software-compatible with M27.

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Technical Data

Binary Outputs
- Output Voltage: 0..36V
- Output Current
- Max. 500mA per channel
- Switching Times
- Turn-on time: 700µs typ.
- Turn-off time: 40µs typ.

Miscellaneous
- Thermal and short circuit protection
- Outputs are designed for AC and DC operation

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

M-Module Characteristics
- A08, D16, IDENT

Electrical Specifications
- Isolation voltage:
- 500V DC between isolated side and digital side
- All channels are optically isolated
- Supply voltage/power consumption: +5V (4.85V..5.25V), 330mA max.
- MTBF: 600,000h @ 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
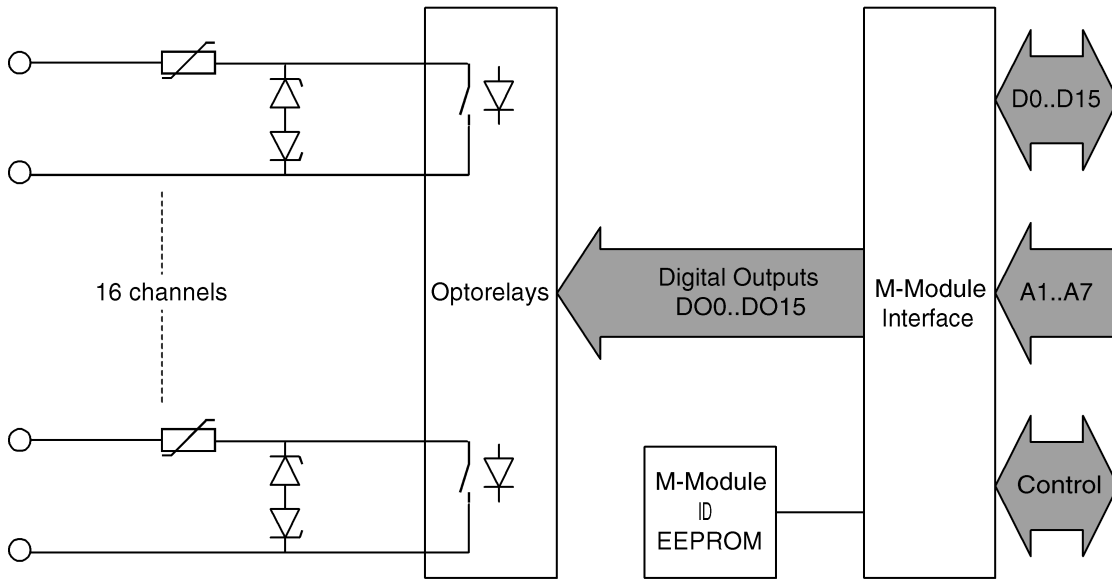- PCB manufactured with a flammability rating of 94V-0 by UL recognized manufacturers

EMC
- Tested according to EN 55022 (radio disturbance), IEC1000-4-2 (ESD) and IEC1000-4-4 (burst) 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

16 channels — Optorelays — Digital Outputs DO0..DO15 — M-Module Interface — D0..D15 — A1..A7 — Control — M-Module ID EEPROM

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Related Products

Standard Hardware

04M081-00	M81, M-Module, 16 binary outputs, 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

13M027-06	MDIS4/2004 low-level driver sources for M27/M28/M81
13M027-70	MDIS4/2004 Windows® NT4/W2K driver for M27/M28/M81

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
20M081-00	M81 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 M81 online data sheet under www.men.de. --> Click here!

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