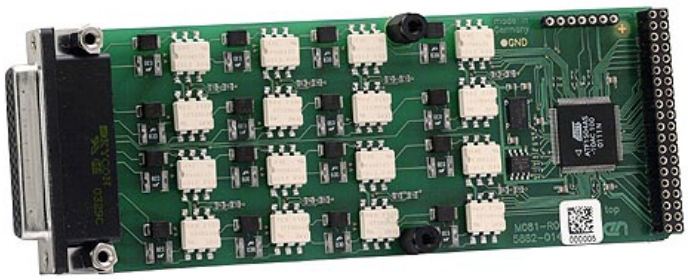
M81 – 16 Binary Outputs

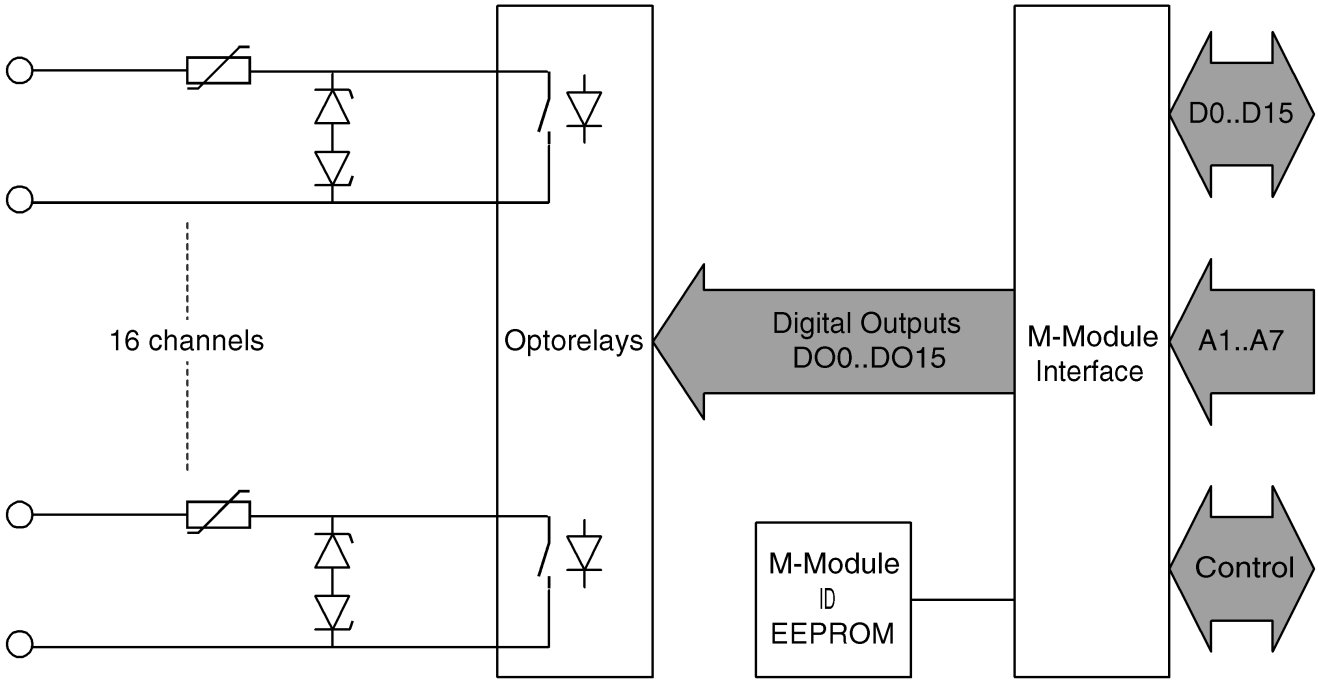
- **16 opto-relay outputs**
- **0..36 V output voltage per channel**
- **500 mA output current per channel**
- **Thermal and short-circuit protection**
- **500 V DC isolation from the system**
- **100 V DC isolation between the channels**
- **-40 to +85°C with qualified components**



The mezzanine card 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.
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, 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.

Diagram


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

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: 1,200,000h @ 40°C (derived from MIL-HDBK-217F)
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 ■ Conformal coating on request
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)
Software Support	■ MEN Driver Interface System (MDIS for Windows®, Linux, VxWorks®, QNX®, OS-9®) ■ For more information on supported operating system versions and drivers see Downloads.

Ordering Information

Standard M81 Models	**04M081-00**	16 binary outputs, fully isolated, -40..+85°C with qualified components
Miscellaneous 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
Software: Linux	This product is designed to work under Linux. See below for potentially available separate software packages from MEN.	
	13M027-06	MDIS5 low-level driver sources (MEN) for M27, M28 and M81
Software: Windows®	This product is designed to work under Windows®. See below for potentially available separate software packages from MEN.	
	13M027-70	MDIS4/2004 / MDIS5 Windows® driver (MEN) for M27, M28 and M81
Software: VxWorks®	This product is designed to work under VxWorks®. For details regarding supported/unsupported board functions please refer to the corresponding software data sheets.	
	13M027-06	MDIS5 low-level driver sources (MEN) for M27, M28 and M81
Software: QNX®	This product is designed to work under QNX®. For details regarding supported/unsupported board functions please refer to the corresponding software data sheets.	
	13M027-06	MDIS5 low-level driver sources (MEN) for M27, M28 and M81
Software: OS-9®	This product is designed to work under OS-9®. For details regarding supported/unsupported board functions please refer to the corresponding software data sheets.	
	13M027-06	MDIS5 low-level driver sources (MEN) for M27, M28 and M81

For operating systems not mentioned here contact MEN sales.

Documentation	Compare Chart binary I/O M-Modules » Download	
	20M000-00	M-Module Draft Specification, Rev. 3.0
	20M081-00	M81 User Manual

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