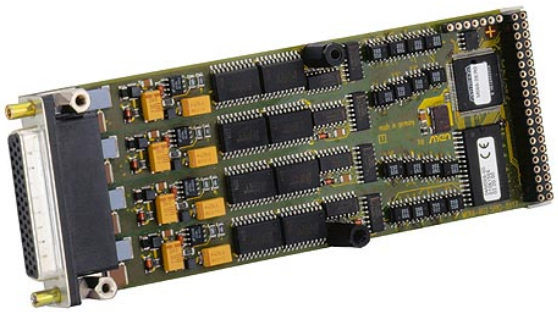
M66 – 32 Binary Inputs/Outputs

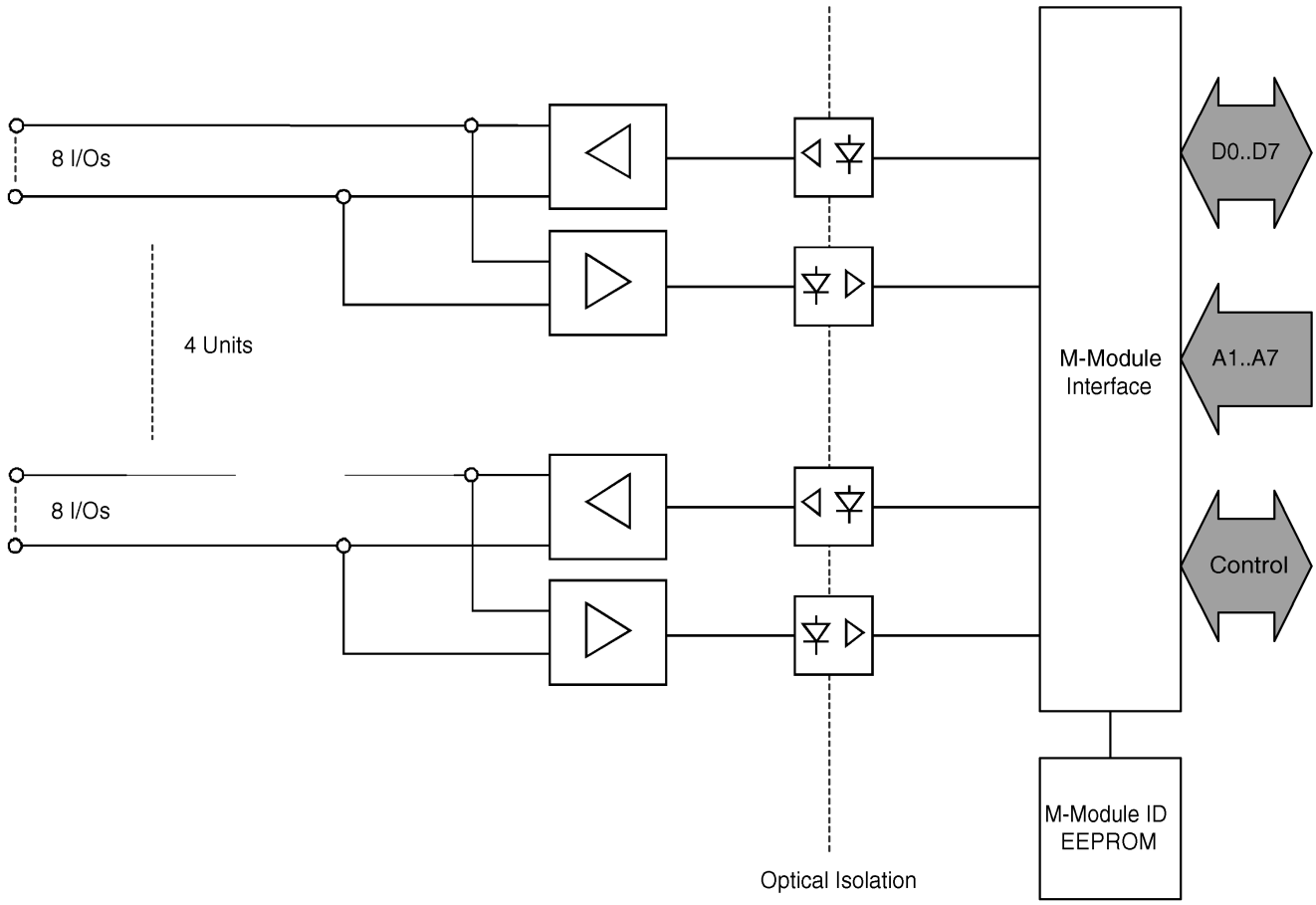
- **32 inputs 0..32 V or**
- **32 outputs 12..32 V or**
- **Mixed I/O in groups of 4**
- **1.9 A output current per channel**
- **16 A switching power on one M66**
- **Load on ground**
- **Optical isolation**
- **-40 to +85°C screened versions**



The mezzanine card M66 provides 32 binary process signals on one single M-Module, which is the largest number of binary channels ever seen on a mezzanine board. This allows a total of 128 signals with four M-Modules on a double Eurocard (i.e. in one slot of a VME or CPCI system). With its extremely high output current of 1.9 A per channel, optical isolation and its over-current and over-temperature protection mechanisms, the M66 is the M-Module of choice for advanced industrial and automotive applications.

The M66 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


8 I/Os
4 Units
8 I/Os
M-Module
Interface
D0..D7
A1..A7
Control
M-Module ID
EEPROM
Optical Isolation

Technical Data

Binary I/Os	■ 32 binary signals □ 4 optically isolated units □ 8 channels for each unit ■ Individual use of each channel as input or output ■ Individual edge-triggered interrupts ■ Input/output load on ground ■ High-side output switches ■ High output current □ Max. 1.9A per channel □ Max. 4A per unit ■ Over-current and over-temperature protection
Output Characteristics	■ Output voltage range: 12V..32V ■ Output current log. 0: max. 10µA ■ Output current log. 1: max. 1.9A ■ Switching time for output change: 200µs typ. ■ Isolation voltage (optocoupler): 500V DC
Input Characteristics	■ Input voltage min.: 0V ■ Input voltage max. external supply voltage (12..32V) ■ Voltage level log. 0: 0V..6V or open ■ Voltage level log. 1: 12V..32V ■ Input current log. 1: 4.4mA @ 24V ■ Switching threshold: 9.2V @ 0.78mA typ. ■ Switching time for input change: 200µs typ. ■ Excess voltage protection: ± 50V
Peripheral Connections	■ Via front panel on a shielded 44-pin HD-Sub receptacle connector
M-Module Characteristics	■ A08, D08, INTA, IDENT
Electrical Specifications	■ Isolation voltage: □ 500V DC between isolated side and digital side □ 180V DC between the channels □ Voltage between the connector shield and isolated ground is limited to 180V using a varistor; AC coupling between connector shield and isolated ground through 47nF capacitor ■ Supply voltage/power consumption: □ +5V (4.85V..5.25V), 200mA typ. □ +24V (external supply voltage 12..32V), 46mA typ. ■ MTBF: 45,000h @ 50°C (derived from MIL-HDBK-217F)
Mechanical Specifications	■ Dimensions: conforming to M-Module Standard ■ Weight: 110g
Environmental Specifications	■ Temperature range (operation): □ 0..+60°C or -40..+70°C □ -40..+85°C with an airflow of 1.0 m/s ■ Temperature range (storage): -40..+85°C ■ Relative humidity range (operation): max. 95% without condensation ■ Relative humidity range (storage): max. 95% without condensation ■ 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)

Technical Data

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.

Configuration & Options

Standard Configurations

Article No.	Channels	Operation Temperature
04M066-00	32 in/out	0..+60°C
04M066-02	32 in	0..+60°C
04M066-03	32 in/out	-40..+85°C

Options

Channels	■ 32 in or 32 in/out
Operating Temperature	■ 0..+60°C ■ -40..+70°C ■ -40..+85°C (with an airflow of 1.0 m/s)

Ordering Information

Standard M66 Models	**04M066-00**	32 binary inputs and/or outputs, 0..+60°C
	04M066-02	32 binary inputs, 0..+60°C
	04M066-03	32 binary inputs and/or outputs, -40..+85°C screened
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
	05M000-25	M-Module cable, 2m, with 44-pin half-pitch D-Sub plug/housing to 50-pin D-Sub receptacle/housing, (connecting 1:1)
	05M066-01	M66 cable, 44-pin HD D-Sub plug to 44-pin HD D-Sub receptacle assembled on PCI-card front panel, 1:1
Software: Linux	This product is designed to work under Linux. See below for potentially available separate software packages from MEN.	
	13M066-06	MDIS5 low-level driver sources (MEN) for M66, A302 and D302
Software: Windows®	This product is designed to work under Windows®. See below for potentially available separate software packages from MEN.	
	13M066-70	MDIS4/2004 / MDIS5 Windows® driver (MEN) for M66, A302 and D302
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.	
	13M066-06	MDIS5 low-level driver sources (MEN) for M66, A302 and D302
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.	
	13M066-06	MDIS5 low-level driver sources (MEN) for M66, A302 and D302
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.	
	13M066-06	MDIS5 low-level driver sources (MEN) for M66, A302 and D302

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
	20M066-00	M66 User Manual

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