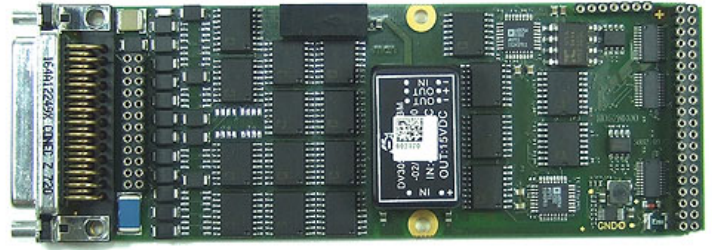


M62N – 16 Analog Outputs

- 16 current or voltage outputs
- 16 bits resolution with voltage outputs
- 15 bits resolution with current outputs
- Typ. 11.5 μ s conversion time
- Electrical isolation (500 V DC)
- -40 to +85°C with qualified components

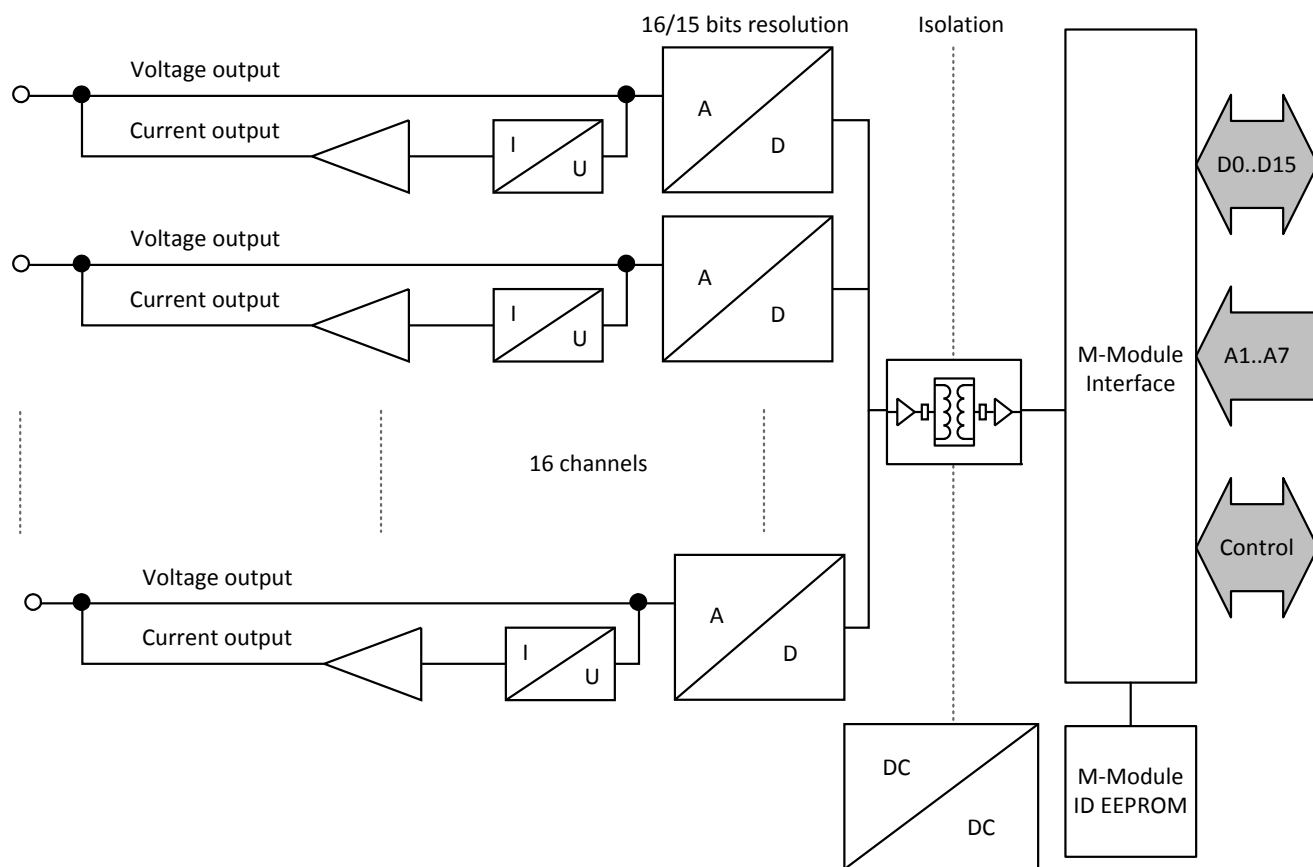


The mezzanine card M62N is an analog output device with as many as 16 channels on one single M-Module™. The isolated supply voltages are generated by an on-board DC/DC converter. The output voltage range is programmable to 0 to 10 V or -10 to +10 V. Alternatively, current outputs are available within a range of 4 to 20 mA. The output load is driven to ground.

For driving more than 6 current outputs at the same time an external supply is needed!

The M62N 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



Technical Data

D/A Conversion	■ 16 channels ■ Resolution: □ 16 bits with voltage outputs (bipolar operation) □ 15 bits with voltage outputs (unipolar operation) □ 15 bits with current outputs ■ Register write to output settle time with ± 1LSB full-scale step max. 13,5μs, typ. <11,5μs ■ D/A-converter relative accuracy (INL) ± 1LSB ■ Reference □ Temperature drift max. 2 ppm/$^{\circ}$C □ Initial error max. 1mV
Voltage Output	■ Output current: 5mA max. ■ Accuracy: $\pm 0.1\%$, ± 1 LSB differential ■ Voltage ranges (programmable): 0..10V; -10V..+10V
Current Output	■ Accuracy: $\pm 0.5\%$ ■ Current range : 4..20mA (other ranges possible on request) ■ Max. output voltage 12.5V (or higher with external power supply) ■ Max. load resistance 500 Ohm (or higher with external power supply)
Possible Configurations	■ 16 voltage outputs ■ 16 current outputs ■ 8 voltage outputs (on request) ■ 8 current outputs (on request)
Peripheral Connections	■ Via front panel on a shielded 25-pin D-Sub receptacle connector ■ Via carrier board (rear I/O)
M-Module™ Characteristics	■ A08, D16, IDENT ■ M-Module™ access time (timing parameter No. 3: /SELECT to /DTACK): 3,3 μs max.
Electrical Specifications	■ Isolation voltage: □ 500V DC between isolated side and digital side □ 500V DC isolation voltage between isolated ground and shield. Voltage between the connector shield and isolated ground is limited by a protective device (varistor); AC coupling between connector shield and isolated ground through 47nF capacitor ■ Supply voltage/power consumption: □ +5V (-3%/+5%), typ. 476 mA (voltage version, idle), typ. 488 mA (voltage version, output +10V), typ. 577 mA (current version, idle), typ. 661 mA (current version, 1 x 20mA) □ Optional external supply : 16V..30V (24V typ.), current drawn depending on operating conditions ■ MTBF: tbd. @ 40°C according to IEC/TR 62380 (RDF 2000)
Mechanical Specifications	■ Dimensions: conforming to M-Module™ Standard ■ Weight: 72g (voltage version)
Environmental Specifications	■ Temperature range (operation): □ -40..+85°C (qualified components) □ 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): 1g/10..150Hz ■ Conformal coating on request
Safety	■ PCB manufactured with a flammability rating of 94V-0 by UL recognized manufacturers
EMC	■ Conforming to 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	Type	Range	Operation Temperature
04M062N00	16	voltage	0..10V, -10..+10V	-40..+85°C
04M062N01	16	current	4..20mA	-40..+85°C

Options

Output Channels	■ 16 or 8 outputs
Type	■ Voltage or current ■ Current ranges □ 4..20mA □ 0..20mA (on request)

Please note that some of these options may only be available for large volumes. Please ask our sales staff for more information.

Ordering Information

Standard M62N Models	04M062N00	16 analog outputs 0..10V, 16 bits resolution, with DC/DC converter, -40..+85°C with qualified components
	04M062N01	16 analog outputs 4..20mA, 15 bits resolution, with DC/DC converter, -40..+85°C with qualified components
Miscellaneous Accessories	05M000-00	M-Module™ cable, 2m, with 25-pin D-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.	
	13M062-06	MDIS4™/2004 low-level driver sources (MEN) for M62 and M62N
Software: Windows®	This product is designed to work under Windows®. See below for potentially available separate software packages from MEN.	
	13M062-70	MDIS4™/2004 Windows® driver (MEN) for M62 and M62N
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.	
	13M062-06	MDIS4™/2004 low-level driver sources (MEN) for M62 and M62N
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.	
	13M062-06	MDIS4™/2004 low-level driver sources (MEN) for M62 and M62N
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.	
	13M062-06	MDIS4™/2004 low-level driver sources (MEN) for M62 and M62N
For operating systems not mentioned here contact MEN sales .		
Documentation	Compare Chart analog I/O M-Modules™ » Download	
	20M062N00	M62N User Manual

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