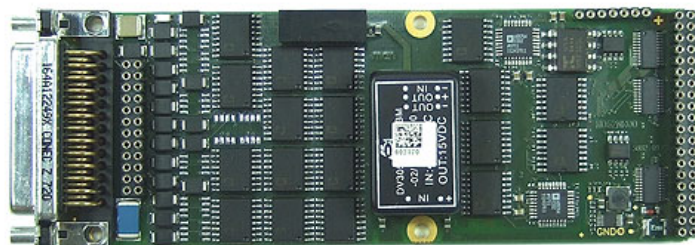


## M62N – 16 Analog Outputs

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

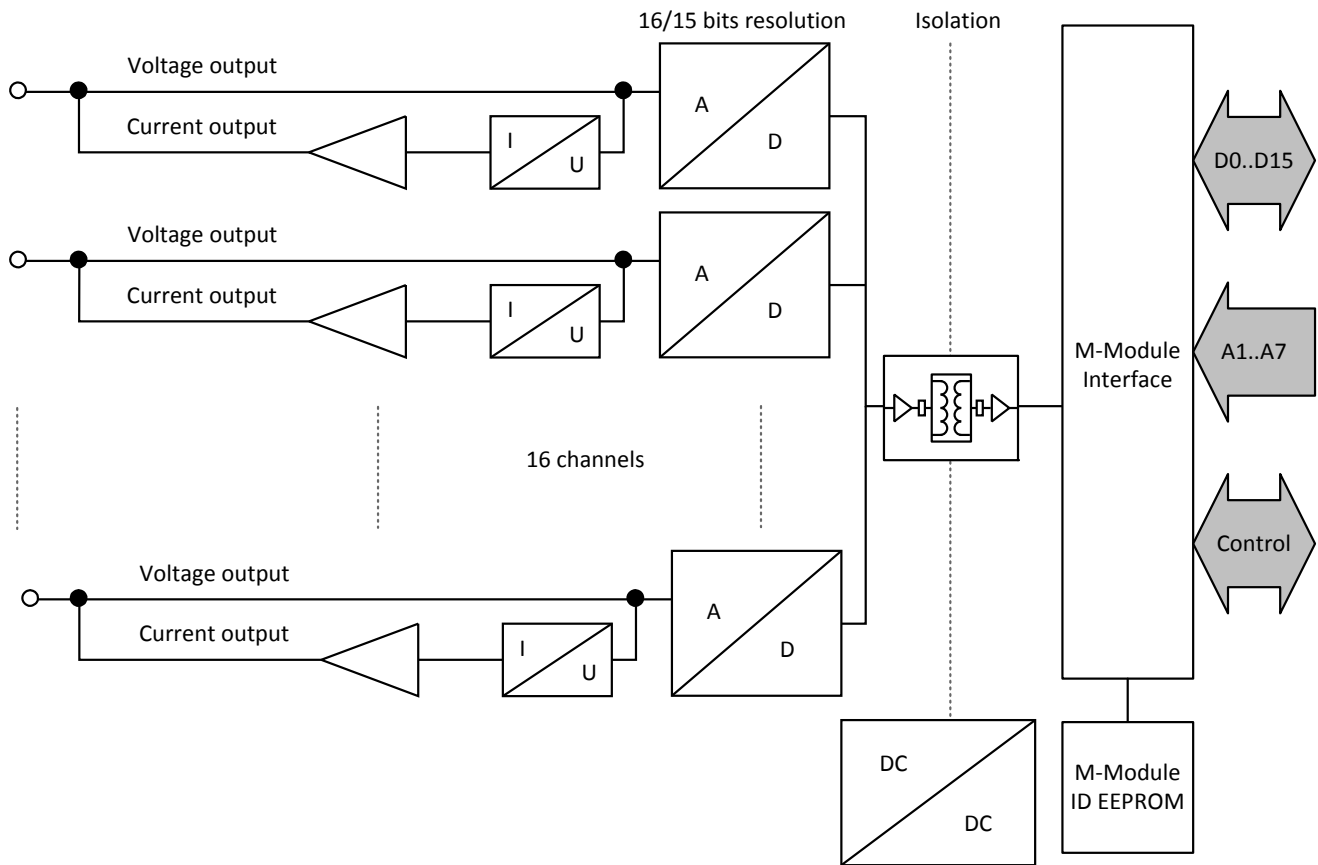


The mezzanine card M62N is an analog output device with as many as 16 channels on one single M-Module. The isolated supply voltages are generated by an on-board DC/DC converter. The output voltage range is programmable to 0 to 10 V or -10 to +10 V. Alternatively, current outputs are available within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

<b>D/A Conversion</b>	<ul style="list-style-type: none"> <li>■ 16 channels</li> <li>■ Resolution: <ul style="list-style-type: none"> <li>□ 16 bits with voltage outputs (bipolar operation)</li> <li>□ 15 bits with voltage outputs (unipolar operation)</li> <li>□ 15 bits with current outputs</li> </ul> </li> <li>■ Register write to output settle time with <math>\pm 1</math>LSB full-scale step max. 13,5<math>\mu</math>s, typ. &lt;11,5<math>\mu</math>s</li> <li>■ D/A-converter relative accuracy (INL) <math>\pm 1</math>LSB</li> <li>■ Reference <ul style="list-style-type: none"> <li>□ Temperature drift max. 2 ppm/<math>^{\circ}</math>C</li> <li>□ Initial error max. 1mV</li> </ul> </li> </ul>
<b>Voltage Output</b>	<ul style="list-style-type: none"> <li>■ Output current: 5mA max.</li> <li>■ Accuracy: <math>\pm 0.1\%</math>, <math>\pm 1</math> LSB differential</li> <li>■ Voltage ranges (programmable): 0..10V; -10V..+10V</li> </ul>
<b>Current Output</b>	<ul style="list-style-type: none"> <li>■ Accuracy: <math>\pm 0.5\%</math></li> <li>■ Current range : 4..20mA (other ranges possible on request)</li> <li>■ Max. output voltage 12.5V (or higher with external power supply)</li> <li>■ Max. load resistance 500 Ohm (or higher with external power supply)</li> </ul>
<b>Possible Configurations</b>	<ul style="list-style-type: none"> <li>■ 16 voltage outputs</li> <li>■ 16 current outputs</li> <li>■ 8 voltage outputs (on request)</li> <li>■ 8 current outputs (on request)</li> </ul>
<b>Peripheral Connections</b>	<ul style="list-style-type: none"> <li>■ Via front panel on a shielded 25-pin D-Sub receptacle connector</li> <li>■ Via carrier board (rear I/O)</li> </ul>
<b>M-Module Characteristics</b>	<ul style="list-style-type: none"> <li>■ A08, D16, IDENT</li> <li>■ M-Module access time (timing parameter No. 3: /SELECT to /DTACK): 3,3 <math>\mu</math>s max.</li> </ul>
<b>Electrical Specifications</b>	<ul style="list-style-type: none"> <li>■ Isolation voltage: <ul style="list-style-type: none"> <li>□ 500V DC between isolated side and digital side</li> <li>□ 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</li> </ul> </li> <li>■ Supply voltage/power consumption: <ul style="list-style-type: none"> <li>□ +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)</li> <li>□ Optional external supply : 16V..30V (24V typ.), current drawn depending on operating conditions</li> </ul> </li> <li>■ MTBF: tbd. @ 40<math>^{\circ}</math>C according to IEC/TR 62380 (RDF 2000)</li> </ul>
<b>Mechanical Specifications</b>	<ul style="list-style-type: none"> <li>■ Dimensions: conforming to M-Module Standard</li> <li>■ Weight: 72g (voltage version)</li> </ul>
<b>Environmental Specifications</b>	<ul style="list-style-type: none"> <li>■ Temperature range (operation): <ul style="list-style-type: none"> <li>□ -40..+85<math>^{\circ}</math>C (qualified components)</li> <li>□ Airflow: min. 10m<sup>3</sup>/h</li> </ul> </li> <li>■ Temperature range (storage): -40..+85<math>^{\circ}</math>C</li> <li>■ Relative humidity range (operation): max. 95% non-condensing</li> <li>■ Relative humidity range (storage): max. 95% non-condensing</li> <li>■ Altitude: -300m to + 3,000m</li> <li>■ Shock: 15g/11ms</li> <li>■ Bump: 10g/16ms</li> <li>■ Vibration (sinusoidal): 1g/10..150Hz</li> <li>■ Conformal coating on request</li> </ul>
<b>Safety</b>	<ul style="list-style-type: none"> <li>■ PCB manufactured with a flammability rating of 94V-0 by UL recognized manufacturers</li> </ul>
<b>EMC</b>	<ul style="list-style-type: none"> <li>■ Conforming to IEC1000-4-2 (ESD) and IEC1000-4-4 (burst)</li> </ul>

## Technical Data

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### 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

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### 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

<b>Standard M62N Models</b>	<b>04M062N00</b>	16 analog outputs 0..10V, 16 bits resolution, with DC/DC converter, -40..+85°C with qualified components
	<b>04M062N01</b>	16 analog outputs 4..20mA, 15 bits resolution, with DC/DC converter, -40..+85°C with qualified components
<b>Miscellaneous Accessories</b>	<b>05M000-00</b>	M-Module cable, 2m, with 25-pin D-Sub plug/housing to pig tail
	<b>05M000-17</b>	25 mounting screw sets to fix M-Modules on carrier boards
<b>Software: Linux</b>	This product is designed to work under Linux. See below for potentially available separate software packages from MEN.	
	<b>13M062-06</b>	MDIS4/2004 / MDIS5 low-level driver sources (MEN) for M62 and M62N
<b>Software: Windows®</b>	This product is designed to work under Windows®. See below for potentially available separate software packages from MEN.	
	<b>13M062-70</b>	MDIS4/2004 / MDIS5 Windows® driver (MEN) for M62 and M62N
<b>Software: VxWorks®</b>	This product is designed to work under VxWorks®. For details regarding supported/unsupported board functions please refer to the corresponding software data sheets.	
	<b>13M062-06</b>	MDIS4/2004 / MDIS5 low-level driver sources (MEN) for M62 and M62N
<b>Software: QNX®</b>	This product is designed to work under QNX®. For details regarding supported/unsupported board functions please refer to the corresponding software data sheets.	
	<b>13M062-06</b>	MDIS4/2004 / MDIS5 low-level driver sources (MEN) for M62 and M62N
<b>Software: OS-9®</b>	This product is designed to work under OS-9®. For details regarding supported/unsupported board functions please refer to the corresponding software data sheets.	
	<b>13M062-06</b>	MDIS4/2004 / MDIS5 low-level driver sources (MEN) for M62 and M62N
For operating systems not mentioned here <a href="#">contact MEN sales</a> .		
<b>Documentation</b>	Compare Chart analog I/O M-Modules » <a href="#">Download</a>	
	<b>20M062N00</b>	M62N User Manual

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