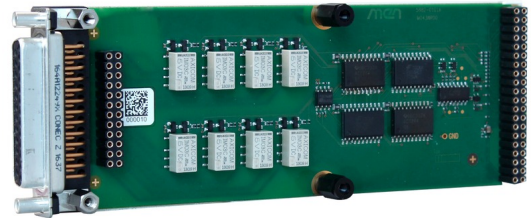


# M43N

## 8 Relay Outputs

### M-Module

- » 8 relay outputs
- » 1 A switching power per relay
- » One throw-over contact per relay
- » Output voltage range max. 48 V
- » No separate supply voltage
- » -40°C to +85°C (screened)



### Multiple Relay Outputs

The mezzanine card M43N is a relay output M-Module for free potential switching of eight signals. The status of each relay can be read out via "read-modify-write" access. The relays implemented guarantee highest reliability and long life. The board is based on the M-Module ANSI mezzanine standard and 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.

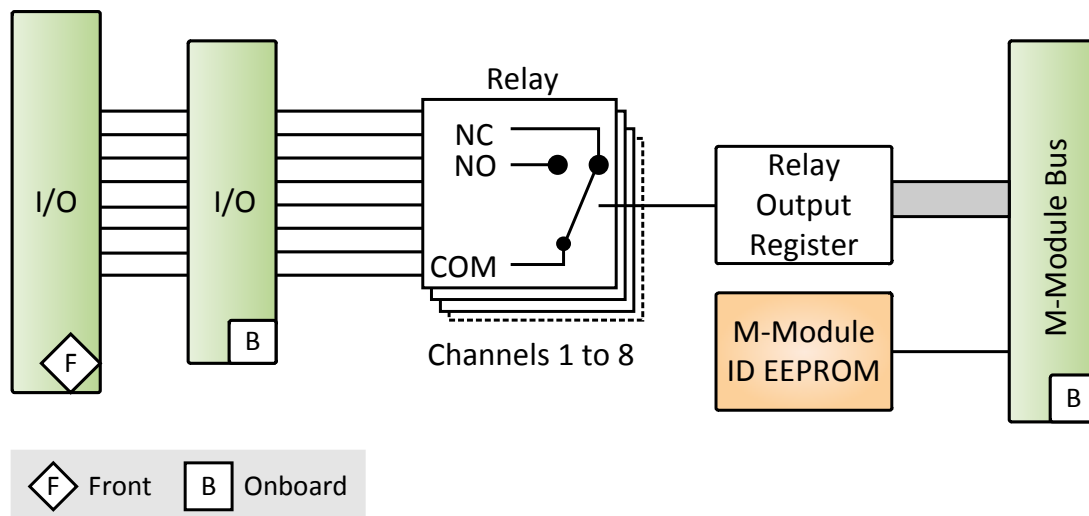
### Flexible and Cost Saving

The M43N is fully compatible to the predecessor M-Module M43 which means no changes in application design are necessary. Appropriate M-Module carrier cards in 3U, 6U and other formats are available from MEN or other manufacturers.

### Robustness and Long-Term Availability

The rugged board withstands shock and vibration for reliable operation and a longer product life-time. Therefore, it is also suited for use in rail and public transportation as well as in industrial process I/O applications.

With a guaranteed standard life-time of 7 years from product start, M43N facilitates the client's life-cycle management by making the overall system available at least for this period of time.



**Relay Outputs**

- Eight outputs as throw-over contacts
- NO (normally open), NC (normally closed) and common contacts
- Switching voltage: 48 V max.
- Switching current: 3 A max.
- Operation current: 1 A max.
- Switching power: 60 W max.
- Switching Time: 2 ms typ. for NO and NC

**Front Interfaces**

- Relay outputs
  - Eight relay outputs on one 25-pin D-Sub connector

**Onboard Interfaces**

- Relay outputs
  - Eight relay outputs on one 24-pin I/O connector
- M-Module Bus
  - One 40-pin M-Module bus connector

**Mezzanine Module Standard**

- Compliant with M-Module standard ANSI/VITA 12-1997 (S2012)
- A08, D08, IDENT

**Electrical Specifications**

- Supply voltage
  - +5 V (-3%/+5%)
- Power consumption
  - 3.5 W typ. (all relays active)
- Isolation voltage
  - 500 V DC against relay
  - 1000 V DC against shield

**Mechanical Specifications**

- Dimensions: conforming to M-Module standard
- Weight
  - 72 g (model 04M43N00)

**Environmental Specifications**

- Temperature range (operation)
  - 0°C to +60°C, or
  - -40°C to +85°C (screened), compliant with EN 50155, class TX (model 04M43N05)
- Temperature range (storage): -40°C to +85°C
- Cooling concept
  - Air-cooled, airflow 1.0 m/s min.
- Relative humidity (operation): max. 95% non-condensing
- Relative humidity (storage): max. 95% non-condensing
- Humidity
  - EN 50155:2007 (+25°C/+55°C, 90-100%) (Railway)
  - EN 60068-2-30:2005-Db (+25°C/+55°C, 90-100%) (Automation)
- Altitude: -300 m to +3000 m
- Shock: EN 61373:2010 (category 1 class B)
- Vibration: EN 61373:2010 (category 1 class B)
- Conformal coating: optional

**Reliability**

- MTBF: 1 000 000 h @ 40°C according to IEC/TR 62380 (RDF 2000) (model 04M43N00)

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## **Safety**

- Electrical Safety
    - EN 50155:2007 (Railway)
    - EN 50153:2014 (Railway)
    - EN 50124-1:2001 + A1:2003 + A2:2005 (Railway)
    - EN 62368-1:2014 + AC:2015 (Automation)
  - Flammability (PCBs)
    - UL 94 V-0
  - Fire Protection
    - EN 45545:2015
- 

## **EMC (Automation)**

- Radiated Emission: EN 61000-6-4:2007 + A1:2011
  - Conducted Emission: EN 61000-6-4:2007 + A1:2011
  - Immunity: EN 61000-6-2:2005
- 

## **EMC (Railway)**

- Radiated Emission: EN 50121-3-2:2015
  - Conducted Emission: EN 50121-3-2:2015
  - Immunity: EN 50121-3-2:2015
- 

## **Software Support**

- Windows
- Linux
- VxWorks
- OS-9
- QNX
- For more information on supported operating system versions and drivers see [Software](#).

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### **Up-to-date information, documentation and ordering information:**

[www.men.de/products/m43n/](http://www.men.de/products/m43n/)

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