

NM11

Smart Managed 8-Port Rugged Ethernet Switch with PoE IP40 Industrial Stand-Alone Device

- » Smart managed 8-port rugged Ethernet switch
- » PoE+ Power Sourcing Equipment (PSE), up to 61.6 W output power
- » M12 D, A or X-coded connectors on the front panel
- » 10/100 (Fast) or 10/100/1000 Mbit/s variants
- » Fanless and maintenance-free design
- » Ultra wide range power supply input (14.4 to 154 VDC) with interruption class S2
- » -40°C to +85°C with qualified components
- » Compliant to EN 50155 (railways)



Maintenance Free and Extremely Rugged

The NM11 family is a range of fanless and maintenance-free Power over Ethernet switches, which have been specifically designed for use in rolling stock applications operating in extremely rugged environmental conditions.

Versatile Application Possibilities

The NM11 range of switches provide eight channels at the front panel, accessible through M12 connectors, and cover different application requirements including Power over Ethernet (PoE), IEEE802.3at type 1 and type 2 (previously af and at) compliant, and either 100 Mb or 1 Gb Ethernet interfaces.

Compliant to Railway Standards

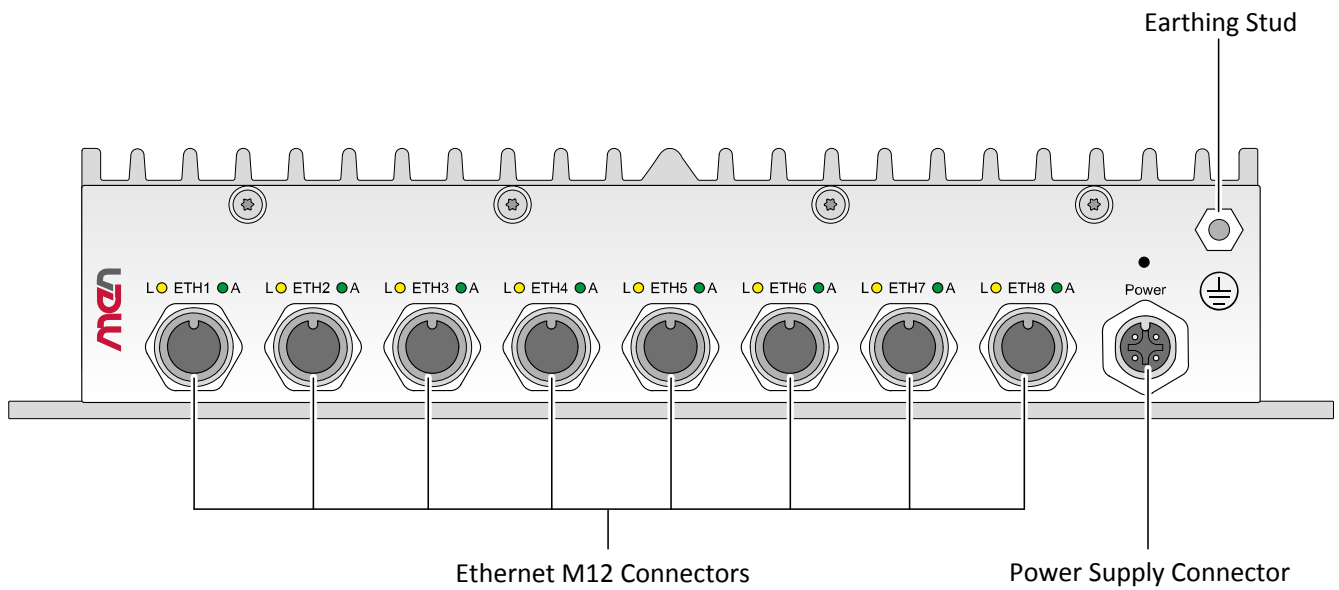
The voltage supply for the NM11 Ethernet Switch is designed for maximum flexibility and supports wide range input supply voltages from 14.4 to 154 VDC, and meets all EN 50155 requirements for voltages ranging from 24 to 110 VDC.

Conduction Cooled

The NM11 Power over Ethernet Switch is designed for fanless operation at temperatures ranging from -40 to +70°C. The NM11 features IP40 protection when surface-mounted and cooling fins which serve as a heatsink for the internal electronics, and in this way provides conduction cooling.

Familiar Family Concept

As a member of MEN's family of extremely rugged industrial network boxes, the NM11 provides the same flexibility and scalability, as well as a look and feel which is common to the family.



Supported Port Types

- The following configurations are available:
 - 8x 10/100BASE-T smart managed switch with D-coded connectors, 8x PoE + PSE with 61.6 W total output power (Model: 09NM11-01)
 - 8x 10/100/1000BASE-T smart managed switch with A-coded connectors, 8x PoE + PSE with 61.6 W total output power (Model: 09NM11-03)
 - 8x 10/100/1000BASE-T smart managed switch with X-coded connectors, 8x PoE + PSE with 61.6 W total output power (Model: 09NM11-05)

Protocols and Functionality

- Throughput
 - Dual-speed 10/100 Mbit/s smart managed switch (Model: 09NM11-01)
 - Tri-speed 10/100/1000 Mbit/s smart managed switch (Models: 09NM11-03 and 09NM11-05)
- MAC tables
 - 8192 MAC addresses
- Processing
 - Store-and-Forward
- Energy Efficient Ethernet (IEEE 802.3az) on all ports

Power Over Ethernet Features

- Power over Ethernet functions on all ports
 - PSE (Power Sourcing Equipment) function
 - Up to 61.6 W total output power
- Derating
 - > 55°C: 0.9W/K

Front Interfaces

- Ethernet
 - Eight M12 connectors
- Ethernet LEDs
- Power supply
 - One M12 connector for ultra wide range power
- Power status LED
 - Indicates power supply stability or range validity

Electrical Specifications

- Supply voltage
 - 14.4 VDC to 154 VDC
 - Nominal voltages 24, 36, 48, 72, 96 and 110 VDC, according to EN 50155
 - Power interruption class S2 (10 ms)
- Power consumption
 - +85 W Max. with 61.6 W PoE Max.

Mechanical Specifications

- Dimensions: Height 44.1 mm x Width 220 mm x Length 164 mm
- Weight: Less than 1.5 kg (depending on configuration)

Environmental Specifications

- IP protection
 - IP40 when surface mounted
- Temperature range (operation)
 - -40°C to 70°C (screened), with up to 85°C for 10 minutes according to class Tx (EN 50155)
 - Fanless operation
- Temperature range (storage): -40°C to +85°C
- Relative humidity (operation): max. 95% non-condensing
- Relative humidity (storage): max. 95% non-condensing
- Altitude: -300 m to +3000 m
- Shock: 50 m/s², 30 ms (EN 61373)
- Vibration (function): 1 m/s², 5 Hz to 150 Hz (EN 61373)
- Vibration (lifetime): 7.9 m/s², 5 Hz to 150 Hz (EN 61373)
- Conformal coating of internal components

Reliability

- MTBF: 511.624 h @ 40°C according to IEC/TR 62380 (RDF 2000)

Technical Data



Safety

- Flammability
 - UL 94V-0
- Fire Protection
 - EN 45545-1:2013 HL3
- Electrical Safety
 - EN 50153:2014 / EN 50155:2007

EMC Conformity (Railway)

- EN 50121-3-2:2015

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

www.men.de/products/nm11/

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