TN-5308 Series
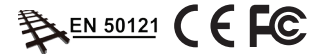
EN 50155 8-port unmanaged Ethernet switches

> M12 connectors and IP40 metal housing
> Supports IEEE 802.3/802.3u/802.3x
> Complies with a portion of EN 50155 specifications
> -40 to 75°C operating temperature range (T models)

EN 50121 CE FC

: Introduction

The ToughNet TN-5308 series M12 unmanaged Ethernet switches are designed for industrial applications in harsh environments. The TN series switches use M12 connectors to ensure tight, robust connections, and guarantee reliable operation against environmental disturbances, such as vibration and shock. The TN-5308 series Ethernet switches provide 8 Fast Ethernet M12 ports, support IEEE 802.3/802.3u/802/3x with 10/100M, full/half-duplex, MDI/MDI-X

auto-sensing, and provide an economical solution for your industrial Ethernet network. Models with an extended operating temperature range of -40 to 75°C are also available. The TN-5308 series Ethernet switches comply with those EN 50155 requirements that make products more suitable for rolling stock applications, including operating temperature, power input voltage, surge, ESD, and vibration, making the switches suitable for a variety of industrial applications.

: Specifications

Technology
Standards:
IEEE 802.3 for 10BaseT
IEEE 802.3u for 100BaseT(X)
IEEE 802.3x for Flow Control
Processing Type: Store and Forward

Interface
M12 Ports: 10/100BaseT(X) auto negotiation speed, F/H duplex mode and auto MDI/MDI-X connection

Power Requirements
Input Voltage:
• TN-5308-LV: 12/24/36/48 VDC
• TN-5308-MV: 72/96/110 VDC
Note: Compliant with EN 50155 on 24/48/72/96/110 VDC
Operating Voltage:
• TN-5308-LV: 8.4 to 60 VDC
• TN-5308-MV: 50.4 to 137.5 VDC
Input Current:
• TN-5308-LV: 0.19 A @ 12 VDC,
  0.10 A @ 24 VDC, 0.054 A @ 48 VDC
• TN-5308-MV: 0.033 A @ 72 VDC,
  0.024 A @ 96 VDC, 0.021 A @ 110 VDC
Connection:
• TN-5308-LV: M12 connector
• TN-5308-MV: M23 connector
Reverse Polarity Protection: Present

Physical Characteristics
Housing: Metal
IP Rating: IP40 protection
Dimensions:
TN-5308-LV: 60 x 216.6 x 36.1 mm (2.36 x 8.53 x 1.42 in)
TN-5308-MV: 60 x 216.6 x 53.8 mm (2.36 x 8.53 x 2.12 in)

Weight:
TN-5308-LV: 485 g (1.07 lb)
TN-5308-MV: 685 g (1.51 lb)
Installation: Panel mounting, DIN-rail mounting (with optional kit: DK-TN-5308)

Environmental Limits
Operating Temperature:
Standard Models: -25 to 60°C (-13 to 140°F)
Wide Temp. Models: -40 to 75°C (-40 to 167°F)
Storage Temperature: -40 to 85°C (-40 to 185°F)
Ambient Relative Humidity: 5 to 95% (non-condensing)

Standards and Certifications
Safety: UL/cUL 508, EN 60950-1 (LVD)
EMI: FCC Part 15 Subpart B Class A, EN 55032 Class A
EMS:
IEC 61000-4-2 ESD: Contact: 6 kV; Air: 8 kV
IEC 61000-4-3 RS: 80 MHz to 1 GHz: 20 V/m
IEC 61000-4-4 EFT: Power: 2 kV; Signal: 2 kV
IEC 61000-4-5 Surge: Power: 2 kV; Signal: 2 kV
IEC 61000-4-6 CS: 10 V
IEC 61000-4-8
Rail Traffic: (for panel mounting installations)
EN 50155*, EN 50121-4, EN 45545-2
*Complies with a portion of EN 50155 specifications.
Shock: EN 50155, IEC 61373
Freefall: IEC 60068-2-32
Vibration: EN 50155, IEC 61373
Note: Please check Moxa's website for the most up-to-date certification status.

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MTBF (mean time between failures)
Time:
TN-5308-LV Series: 2,099,286 hrs
TN-5308-MV Series: 2.590.858 hrs
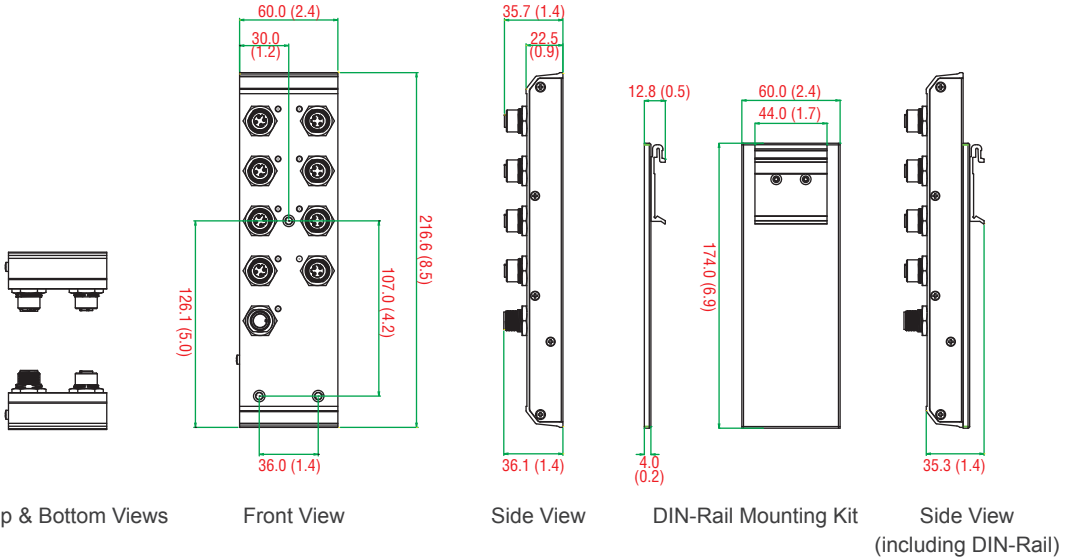**Standard:** Telcordia SR332

Warranty
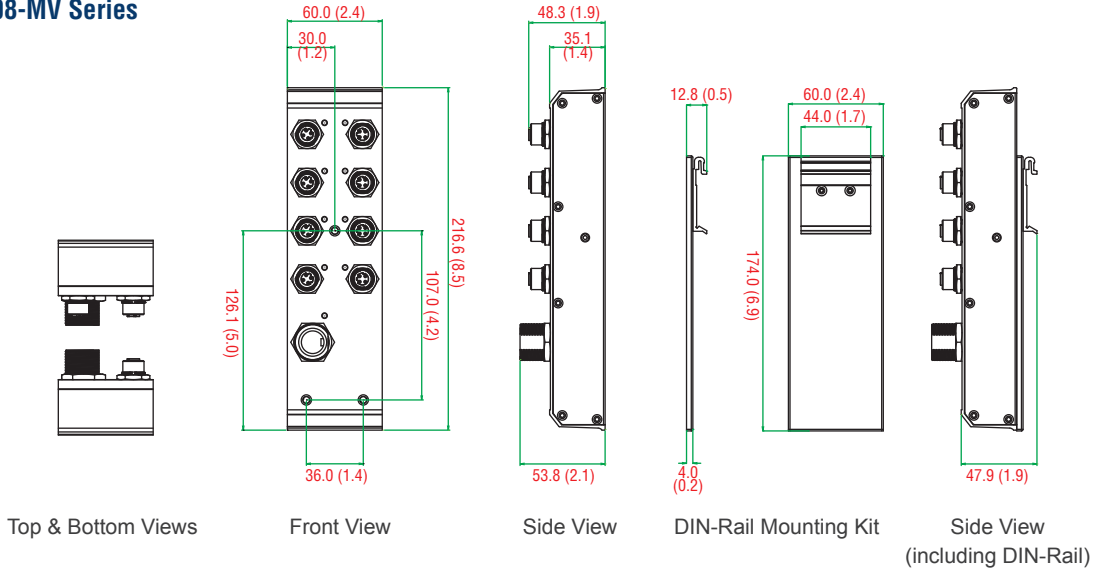**Warranty Period:** 5 years
Details: See www.moxa.com/warranty

Dimensions

Unit: mm (inch)

TN-5308-LV Series

| Top & Bottom Views | Front View | Side View | DIN-Rail Mounting Kit | Side View (including DIN-Rail) |

TN-5308-MV Series

| Top & Bottom Views | Front View | Side View | DIN-Rail Mounting Kit | Side View (including DIN-Rail) |

: Ordering Information

Available Models		Power Interface	Power Supply	
Standard Temperature (-25 to 60°C)	**Wide Temperature (-40 to 75°C)**	**10/100BaseT(X), M12 connector**	**LV** 12/24/36/48 VDC (8.4 to 60 V)	**MV** 72/96/110 VDC (50.4 to 137.5 V)
TN-5308-LV	TN-5308-LV-T	8	1	–
TN-5308-MV	TN-5308-MV-T	8	–	1

Note: Conformal coating is available on request.

Package Checklist
- TN-5308 switch
- Panel-mounting kit
- Hardware installation guide
- Warranty card

Optional Accessories (can be purchased separately)
Power Cords, M12 Connectors, Protective Caps: See the EN 50155 Switch Accessories datasheet for details
DK-TN-5308: DIN-rail mounting kit

EN 50155 Switch Accessories

: M12/M23 Cords

CBL-M12D(MM4P)/RJ45-100 IP67
1-meter M12-to-RJ45 Cat-5C UTP Ethernet cable with
IP67-rated 4-pin male D-coded M12 connector

CBL-M12(FF5P)/OPEN-100 IP67
1-meter M12-to-5-pin power cable with IP67-rated
5-pin female A-coded M12 connector

CBL-M23(FF6P)/Open-BK-100 IP67
1-meter M23-to-6-pin power cable with
IP67-rated 6-pin female M23 connector

CBL-M12XMM8PRJ45-Y-200-IP67
2-meter M12-to-RJ45 Cat-5 UTP Ethernet cable with
IP67-rated 8-pin male X-coded crimp type M12 connector

CBL-M12XMM8P-Y-300-IP67
3-meter M12-to-M12 Cat-5 UTP Ethernet cable with
IP67-rated 8-pin male X-coded crimp type M12 connector

CBL-M12XMM8P-Y-100-IP67
1-meter M12-to-M12 Cat-5 UTP Ethernet cable with
IP67-rated 8-pin male X-coded crimp type M12 connector

: M12 Connectors

M12D-4P-IP68
Field-installable M12 D-coded screw-in
sensor connector, 4-pin male, IP68-rated

M12A-5P-IP68
Field-installable M12 A-coded screw-in
sensor connector, 5-pin female, IP68-rated

M12X-8PMM-IP67-HTG
Field-installable M12 X-coded crimp type,
slim design connector, 8-pin male, IP67-rated
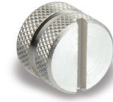
⋮ M12 IP67 Protective Caps

A-CAP-M12F-M

Metal cap for M12 female connector

A-CAP-M12M-M

Metal cap for M12 male connector

⋮ M23 Connectors

A-PLG-WPM23-01

M23 cable connector, 6-pin female, crimp type