

EN 50155 8-port unmanaged Ethernet switches



Features and Benefits

- M12 connectors and IP40 metal housing
- Up to 8 IEEE 802.3af compliant PoE and Ethernet combo ports
- Supports IEEE 802.3/802.3u/802.3x
- Complies with all EN 50155 mandatory test items¹
- -40 to 75°C operating temperature range (-T models)

Certifications



EN 50155



EN 50121-4



Introduction

The ToughNet TN-5308 Series M12 unmanaged Ethernet switches are designed for industrial applications in harsh environments. TN-5308 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. TN-5308 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. TN-5308 PoE Ethernet switches provide 4 or 8 IEEE 802.3af compliant PoE ports. These switches are classified as power source equipment (PSE) and provide up to 15.4 watts of power per port.

Specifications

Ethernet Interface

10/100BaseT(X) Ports (M12 D-coded 4-pin female connector)	TN-5308 Series non-PoE models: 8
PoE Ports (10/100BaseT(X), M12 D-coded 4-pin female connector)	TN-5308-4PoE Series: 4 TN-5308-8PoE Series: 8
Standards	IEEE 802.3 for 10BaseT IEEE 802.3u for 100BaseT(X) IEEE 802.3x for flow control TN-5308 Series PoE models: IEEE 802.3af for PoE

Power Parameters

Input Current	TN-5308-LV Series: 0.19 A @ 12 VDC, 0.10 A @ 24 VDC, 0.05 A @ 48 VDC TN-5308-MV Series: 0.033 A @ 72 VDC, 0.024 A @ 96 VDC, 0.021 A @ 110 VDC TN-5308-4PoE Series: 1.6 A @ 48 VDC TN-5308-8PoE Series: 2.9 A @ 48 VDC
Input Voltage	TN-5308-LV Series: 12 to 48 VDC TN-5308-MV Series: 72 to 110 VDC PoE models: 48 VDC
Max. PoE Power Output per Port	TN-5308 Series PoE models: 15.4 W
No. of Power Inputs	1

1. This product is suitable for rolling stock railway applications, as defined by the EN 50155 standard. For a more detailed statement, click here: www.moxa.com/doc/specs/EN_50155_Compliance.pdf

Operating Voltage	TN-5308-LV Series: 8.4 to 60 VDC TN-5308-MV Series: 50.4 to 137.5 VDC TN-5308 Series PoE models: 46 to 50 VDC
Power Connector	TN-5308-LV Series and TN-5308 Series PoE models: M12 A-coded male connector TN-5308-MV Series: M23 connector

Physical Characteristics

Housing	Metal
IP Rating	IP40
Dimensions	TN-5308-LV Series: 60 x 216.6 x 36.1 mm (2.36 x 8.53 x 1.42 in) TN-5308-MV Series: 60 x 216.6 x 53.8 mm (2.36 x 8.53 x 2.12 in) TN-5308-4PoE Series: 60 x 216.6 x 48.7 mm (2.36 x 8.53 x 1.91 in) TN-5308-8PoE Series: 60 x 216.6 x 52.9 mm (2.36 x 8.53 x 2.1 in)
Weight	TN-5308-LV Series: 485 g (1.07 lb) TN-5308-MV Series: 685 g (1.51 lb) TN-5308-4PoE Series: 675 g (1.49 lb) TN-5308-8PoE Series: 970 g (2.14 lb)
Installation	DIN-rail mounting (with optional kit), Wall mounting
Protection	TN-5308 Series -CT models: PCB conformal coating

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 (package included)	-40 to 85°C (-40 to 185°F)
Ambient Relative Humidity	5 to 95% (non-condensing)
Altitude	2000 m

Standards and Certifications

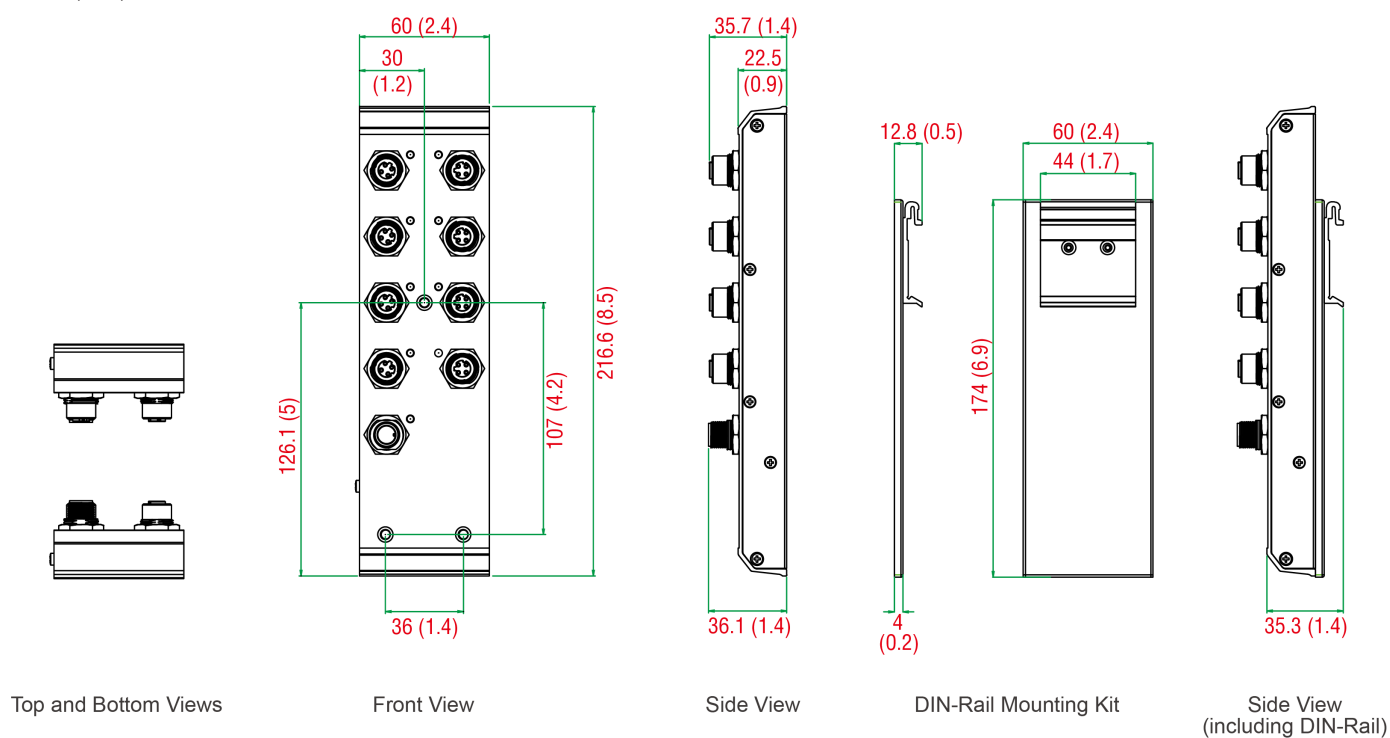
Freefall	IEC 60068-2-32
EMC	EN 55032/24
EMI	CISPR 32, FCC Part 15B Class A
EMS	IEC 61000-4-2 ESD: Contact: 6 kV; Air: 8 kV IEC 61000-4-3 RS: 80 MHz to 1 GHz: 20 V/m IEC 61000-4-4 EFT: Power: 2 kV; Signal: 2 kV IEC 61000-4-5 Surge: Power: 2 kV; Signal: 2 kV IEC 61000-4-6 CS: 10 V IEC 61000-4-8 PFMF
Environmental Testing	IEC 60068-2-1, EN 50155 IEC 60068-2-14, EN 50155 IEC 60068-2-2, EN 50155 IEC 60068-2-30, EN 50155
International Approval	RCM
Railway	EN 50121-4, EN 50155
Railway Fire Protection	EN 45545-2
Safety	EN 60950-1, UL 508
Salt Spray Test	IEC 60068-2-11, EN 50155

Shock	IEC 60068-2-27, IEC 61373, EN 50155
Vibration	IEC 60068-2-64, IEC 61373, EN 50155
Declaration	
Green Product	RoHS, CRoHS, WEEE
MTBF	
Time	TN-5308-LV Series: 2,099,286 hrs TN-5308-MV Series: 2,590,858 hrs TN-5308-4PoE Series: 252,075 hrs TN-5308-8PoE Series: 308,392 hrs
Standards	Telcordia SR332
Warranty	
Warranty Period	5 years
Details	See www.moxa.com/warranty
Package Contents	
Device	1 x TN-5308 Series switch
Installation Kit	1 x panel-mounting kit
Documentation	1 x quick installation guide 1 x warranty card

Dimensions

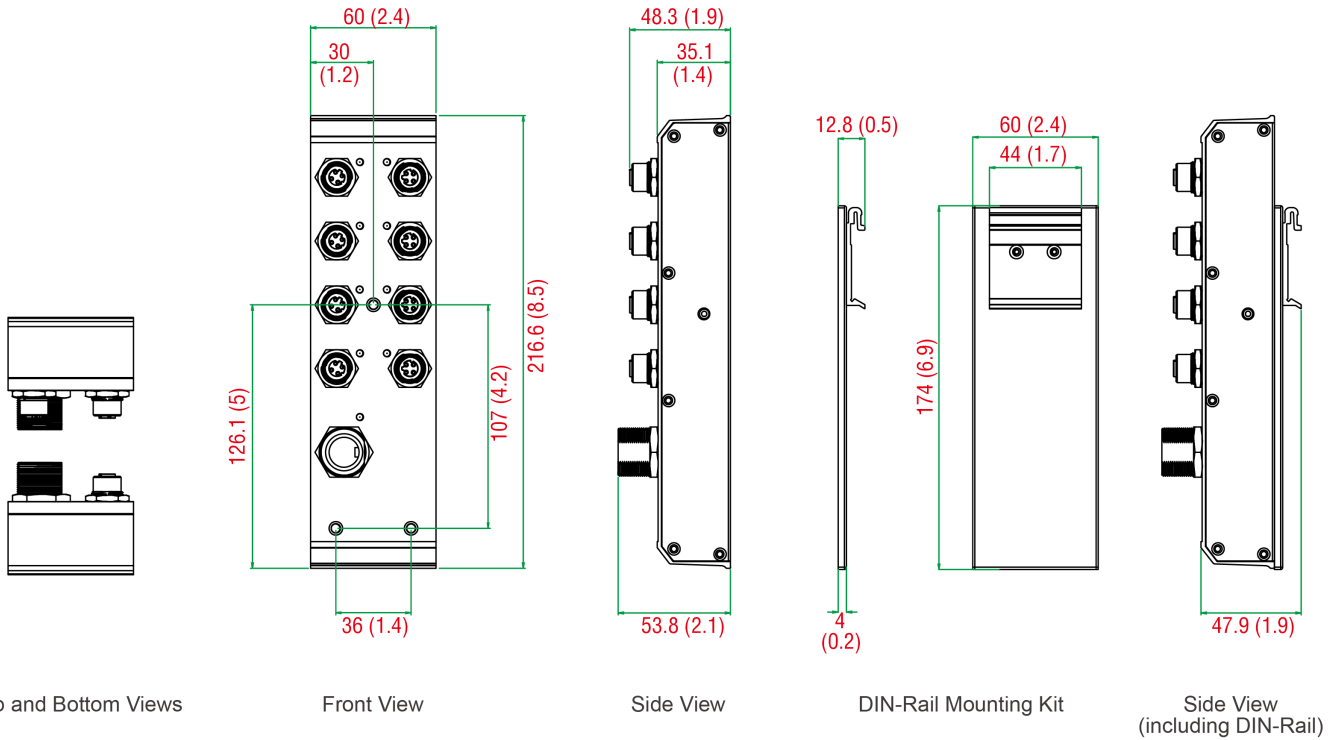
TN-5308-LV Series

Unit: mm (inch)



TN-5308-MV Series

Unit: mm (inch)



Ordering Information

Model Name	PoE, 10/100BaseT(X) Ports, M12 D-Coded Female Connector	10/100BaseT(X) Ports, M12 D-Coded Female Connector	Power Input	Input Voltage	Operating Temp.	Conformal Coating
TN-5308-LV	–	8	Single input	12/24/36/48 VDC	-25 to 60°C	–
TN-5308-LV-CT	–	8	Single input	12/24/36/48 VDC	-25 to 60°C	✓
TN-5308-LV-T	–	8	Single input	12/24/36/48 VDC	-40 to 75°C	–
TN-5308-LV-CT-T	–	8	Single input	12/24/36/48 VDC	-40 to 75°C	✓
TN-5308-MV	–	8	Single input	72/96/110 VDC	-25 to 60°C	–
TN-5308-MV-CT	–	8	Single input	72/96/110 VDC	-25 to 60°C	✓
TN-5308-MV-T	–	8	Single input	72/96/110 VDC	-40 to 75°C	–
TN-5308-MV-CT-T	–	8	Single input	72/96/110 VDC	-40 to 75°C	✓
TN-5308-4PoE-48	4	4	Single input	48 VDC	-25 to 60°C	–
TN-5308-4PoE-48-CT	4	4	Single input	48 VDC	-25 to 60°C	✓
TN-5308-4PoE-48-T	4	4	Single input	48 VDC	-40 to 75°C	–
TN-5308-4PoE-48-CT-T	4	4	Single input	48 VDC	-40 to 75°C	✓
TN-5308-8PoE-48	8	–	Single input	48 VDC	-25 to 60°C	–
TN-5308-8PoE-48-CT	8	–	Single input	48 VDC	-25 to 60°C	✓
TN-5308-8PoE-48-T	8	–	Single input	48 VDC	-40 to 75°C	–
TN-5308-8PoE-48-CT-T	8	–	Single input	48 VDC	-40 to 75°C	✓

Accessories (sold separately)

Cables

CBL-M12(FF5P)/Open-100 IP67	A-coded M12-to-5-pin power cable, IP67-rated 5-pin female M12 connector, 1 m Applicable Models: TN-5308-LV TN-5308-LV-T TN-5308-LV-CT-T TN-5308-MV-CT-T TN-5308-4PoE-48 TN-5308-4PoE-48-T TN-5308-8PoE-48 TN-5308-8PoE-48-T
CBL-M12D(MM4P)/RJ45-100 IP67	M12-to-RJ45 cable, IP67-rated, 1 m
CBL-M23(FF6P)/OPEN-BK-100 IP67	M23 to 6-pin power cable, IP67-rated female 6-pin M23 connector, IP67, 1 m Applicable Models: TN-5308-MV TN-5308-MV-T
CBL-M12DMM4PM12DMM4P-BK-100-IP67	M12-to-M12 Cat-5E STP Ethernet cable, 4-pin D-coded M12 connector, IP67, 1 m

M12 Connector Caps

A-CAP-M12F-M	Metal cap for M12 female connector
A-CAP-M12M-M	Metal cap for M12 male connector

Connectors

M12D-4PMM-IP67	M12 D-coded connector, QUICKON type, 4-pin male, IP67
M12D-4P-IP68	M12 D-coded screw-in sensor connector, male, IP68
A-PLG-WPM23-01-IP67	M23 cable connector, female 6-pin, crimp type, IP67 Applicable Models: TN-5308-MV TN-5308-MV-T

DIN-Rail Mounting Kits

DK-TN-5308	DIN-rail mounting kit for the TN-5308 Series
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