

TN-5300A Series

EN 50155 5/8-port unmanaged Ethernet switches



Features and Benefits

- Rugged die-cast design for use in harsh environments
- Isolated power input range from 24 to 110 VDC
- Supports regular and push-pull M12 connectors
- Complies with all EN 50155 mandatory test items¹
- -40 to 70°C wide-temperature design

Certifications



EN 50155



EN 50121-4



Introduction

The ToughNet TN-5300A Series M12 unmanaged Ethernet switches are designed for industrial applications in harsh environments. The TN-5300A Series switches use M12 connectors to ensure tight, robust connections, and guarantee reliable resistance against environmental disturbances, such as vibration and shock. The TN-5300A Series Ethernet switches provide 5 or 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.

All TN-5300A Series models support an extended operating temperature range of -40 to 70°C. The TN-5300A Series also comply with all mandatory requirements of the EN 50155 standard including operating temperature, power input voltage, surge, ESD, and vibration, making these switches suitable for rolling stock and a variety of other industrial applications.

The TN-5300A Series features a single power input with overload, reverse polarity, and inrush current protection. Additionally, the TN-5308A PoE models provide 8 IEEE 802.3af/at compliant PoE ports. These switches are classified as power source equipment (PSE) and provide up to 30 watts of power per port and have a total power PoE budget of 50.2 Watts.

Specifications

Ethernet Interface

10/100BaseT(X) Ports (M12 D-coded 4-pin female connector)	TN-5305A Series models: 5 TN-5308A Series non-PoE models: 8
PoE Ports (10/100BaseT(X), M12 D-coded 4-pin female connector)	TN-5308A Series PoE models: 8
Standards	All models: IEEE 802.3 for 10BaseT IEEE 802.3u for 100BaseT(X) IEEE 802.3x for flow control TN-5308A Series PoE models only: IEEE 802.3af/at for PoE/PoE+

LED Interface

LED Indicators	PWR, Ethernet ports, PoE ports
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Switch Properties

Packet Buffer Size	768 kbits
MAC Table Size	2 K

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

Power Parameters

Input Current	TN-5305A Series models: max. 0.1 A @ 24 VDC TN-5308A Series non-PoE models: max. 0.1 A @ 24 VDC TN-5308A Series PoE models: max 3.2 A @ 24 VDC
Input Voltage	24/36/48/72/96/110 VDC
Max. PoE Power Output per Port	TN-5308A Series PoE models: 30 W
Total PoE Power Budget	50.2 W
No. of Power Inputs	1
Operating Voltage	16.8 to 137.5 VDC
Power Connector	M12 A-coded male connector
Overload Current Protection	Supported
Reverse Polarity Protection	Supported

Physical Characteristics

Housing	Metal
IP Rating	IP54
Dimensions	TN-5305A Series models: 62.4 x 125.4 x 37.5 mm (2.46 x 4.94 x 1.48 in) TN-5308A Series non-PoE models: 62.4 x 190.4 x 37.5 mm (2.46 x 7.50 x 1.48 in) TN-5308A Series PoE models: 72.4 x 190.4 x 50.0 mm (2.85 x 7.50 x 1.97 in)
Weight	TN-5305A models: 315 g (0.69 lb) TN-5308A non-PoE models: 455 g (1.00 lb) TN-5308A PoE models: 765 g (1.69 lb)
Installation	Wall mounting DIN-rail mounting (with optional kit)
Protection	TN-5300A Series -CT models: PCB conformal coating

Environmental Limits

Operating Temperature	-40 to 70°C (-40 to 158°F)
Storage Temperature (package included)	-40 to 85°C (-40 to 185°F)
Ambient Relative Humidity	5 to 95% (non-condensing)
Altitude	3000 m

Standards and Certifications

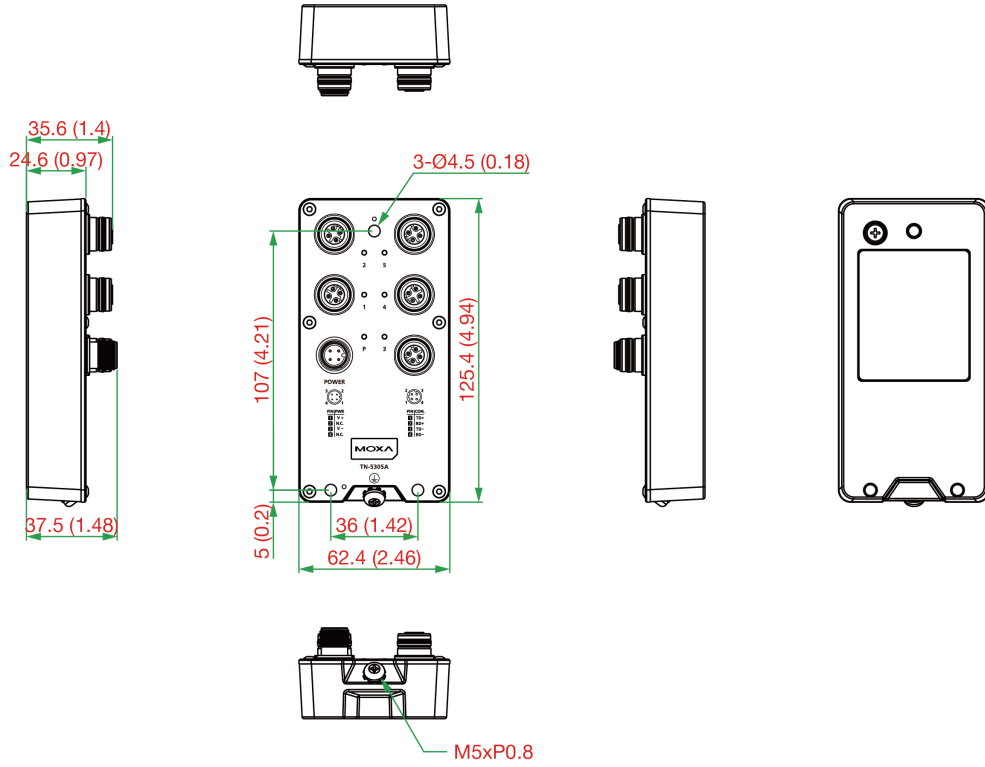
EMC	EN 55032/35
EMI	CISPR 32, FCC Part 15B Class A
EMS	IEC 61000-4-2 ESD: Contact: 6 kV; Air: 8 kV IEC 61000-4-3 RS: 80 MHz to 1 GHz: 20 V/m IEC 61000-4-4 EFT: Power: 2 kV; Signal: 2 kV IEC 61000-4-5 Surge: Power: 2 kV; Signal: 2 kV IEC 61000-4-6 CS: 10 V IEC 61000-4-8 PFMF
Radio Frequency	FCC
Environmental 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 IEC 60068-2-78

Railway	EN 50121-4 EN 50155 IEC 60571
Railway Fire Protection	EN 45545-2
Safety	IEC 62368-1 UL 62368-1 EN 62368-1
Salt Spray Test	EN 50155
Shock	IEC 60068-2-27, IEC 61373, EN 50155
Vibration	IEC 60068-2-64, IEC 61373, EN 50155
Package Vibration Test	ISTA 1A
Package Drop Test	ISTA 1A
Declaration	
Green Product	RoHS, CRoHS, WEEE
MTBF	
Time	TN-5305 models: 6,612,892 hrs TN-5308 non-PoE models: 5,260,454 hrs TN-5308 PoE models: 1,816,546 hrs
Standards	Telcordia SR332 Issue 4
Warranty	
Warranty Period	5 years
Details	See www.moxa.com/warranty
Package Contents	
Device	1 x TN-5300A Series switch
Installation Kit	1 x wall-mounting kit (3 mounting screws included) 2/4 x caps, male, metal, for M12 Ethernet ports (pre-installed on switch)
Documentation	1 x quick installation guide 1 x warranty card

Dimensions

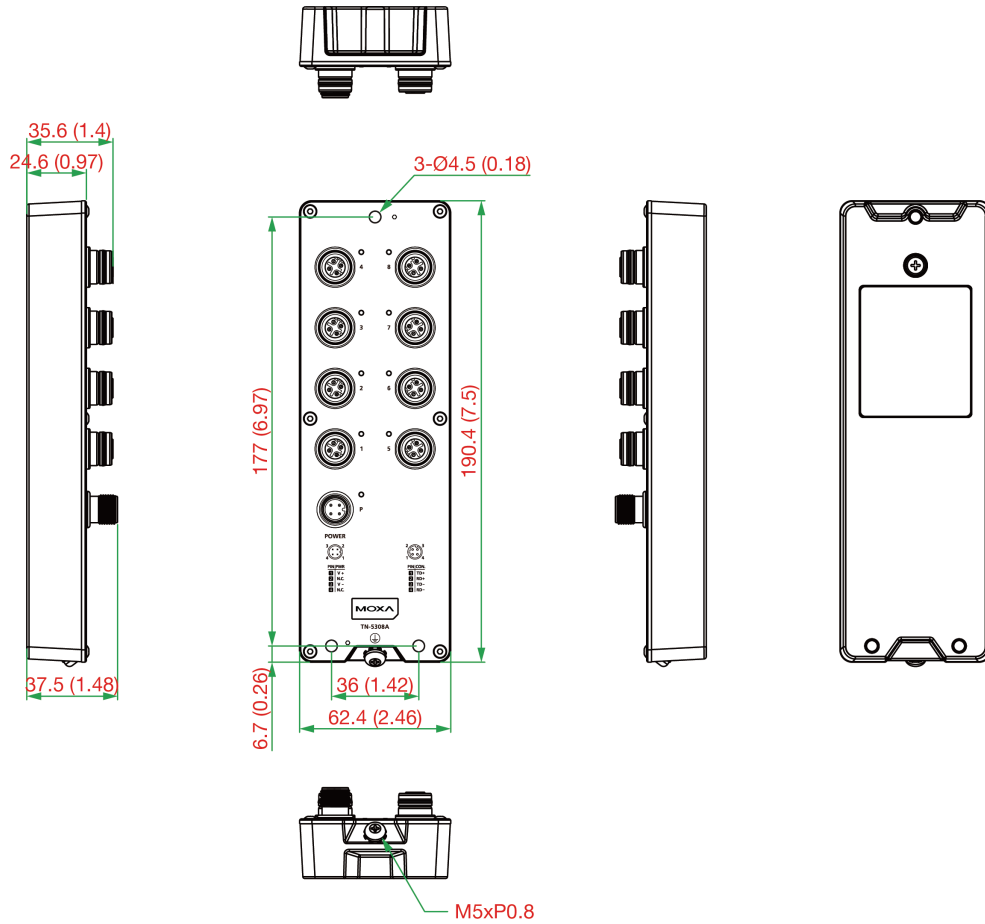
TN-5305A Series Models

Unit: mm (inch)



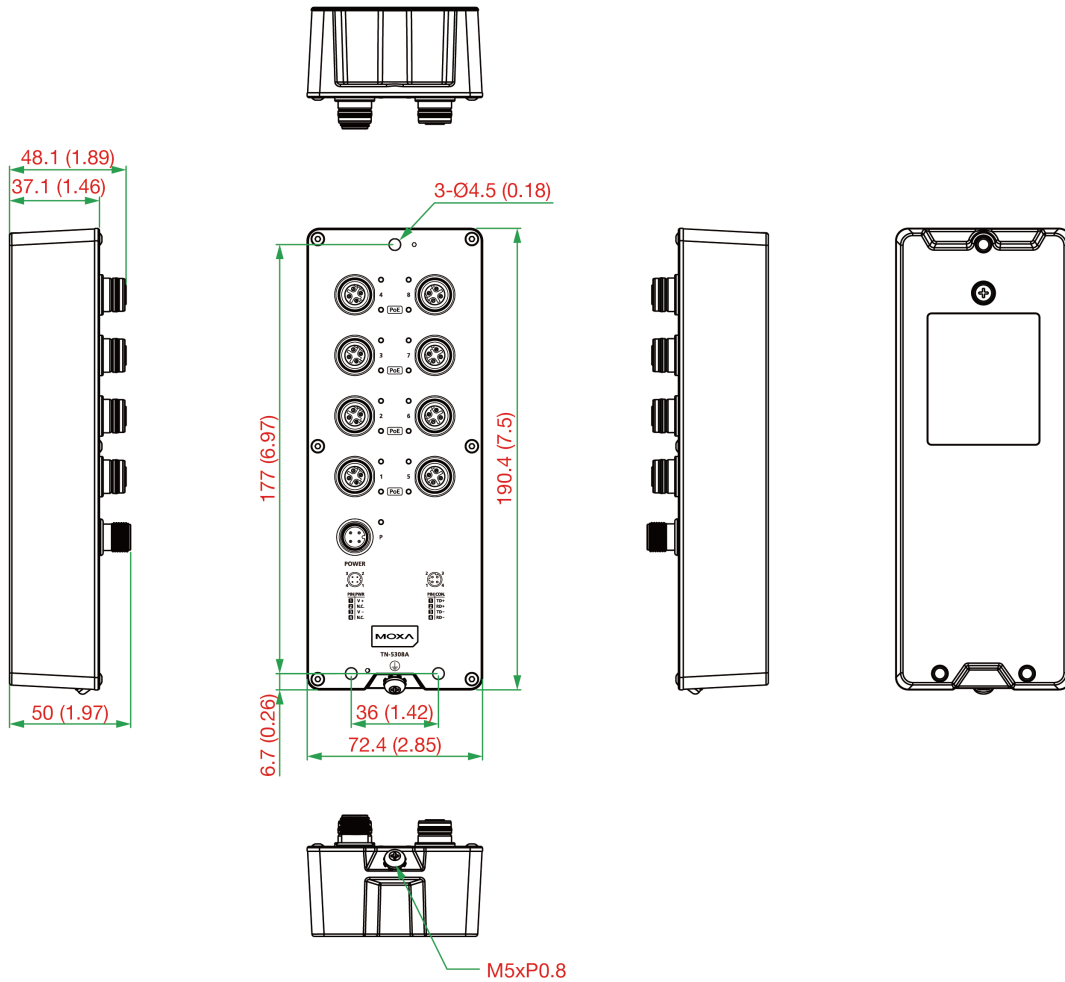
TN-5308A Series Non-PoE Models

Unit: mm (inch)



TN-5308A Series PoE Models

Unit: mm (inch)



Ordering Information

Model Name	10/100BaseT(X) Ports, M12 D-coded 4-pin Female Connector	10/100BaseT(X) PoE Ports, M12 D-coded 4-pin Female Connector	Conformal Coating
TN-5305A-WV-T	5	-	-
TN-5305A-WV-CT-T	5	-	✓
TN-5308A-WV-T	8	-	-
TN-5308A-WV-CT-T	8	-	✓
TN-5308A-8PoE-WV-T	-	8	-
TN-5308A-8PoE-WV-CT-T	-	8	✓

Accessories (sold separately)

Cables

CBL-M12DMM4PM12DMM4P-BK-100-IP67	D-coded male M12-to-D-coded female M12 Ethernet cable, black, IP67-rated, 1 m
CBL-M12D(MM4P)/RJ45-100 IP67	D-coded male M12-to-RJ45 Ethernet cable, black, IP67-rated, 1 m
CBL-M12(FF4P)/Open-BK-100-IP68	A-coded female M12-to-4-pin open cable, black, IP68-rated, 1 m

M12 Connector Caps

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

Connectors

M12D-4P-IP68	Solder type M12 connector, male 4-pin, D-coded, IP68-rated
M12D-4PMM-IP67	IDC type M12 connector, male 4-pin, D-coded, IP67-rated
M12A-5PFF-IP67-HTG (5 Pin)	Crimp type M12 connector, female 5-pin, A-coded, IP67-rated
M12A-5P-IP68	Solder type M12 connector, female 5-pin, A-coded, IP68-rated

DIN-Rail Mounting Kits

DK-TN-5305A	DIN-rail mounting kit with 1 plate, 3 screws for the TN-5305A Series
DK-TN-5308A	DIN-rail mounting kit with 1 plate, 3 screws for the TN-5308A non-PoE Series
DK-TN-5308A-PoE	DIN-rail mounting kit with 1 plate, 3 screws for the TN-5308A PoE Series

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