TN-4900 Series

EN 50155 Gigabit Security Router



Features and Benefits

- · 8 Gigabit ports and up to 12 PoE ports
- IEC 61375 ETBN functionality (ETBN models)
- Dual bypass relay
- Isolated power input range from 24 to 110 VDC
- Complies with all EN 50155 mandatory test items¹
- -40 to 70°C operating temperature range
- Complies with IEC 62443-4-2:2019²

Certifications





Introduction

The ToughNet TN-4900 Series, designed for rolling stock Ethernet networks, is a set of high-performance M12 routers with 8 Gigabit ports and up to four bypass relay ports. These routers feature firewall, ETBN, and routing functionality to facilitate the deployment of applications across networks. The TN-4900 Series routers use M12 and other circular connectors to ensure tight, robust connections that guarantee reliability against environmental disturbances, such as vibration and shock.

The TN-4900 Series supports a wide power input range of 24 to 110 VDC and can operate in temperatures of -40 to 70°C for extended periods of time. Furthermore, these routers are compliant with the mandatory requirements of EN 50155, making them suitable for a variety of industrial applications.

Additional Features and Benefits

- IEC 61375-2-3, 61375-2-5-compliant ETBN
- IEC 62443-4-2:2019-compliant cybersecurity features
- Firewall to protect the network and filter untrusted network traffic
- Routing functionality to divide a large network into hierarchical subnets and allow data and information to communicate across networks
- · NAT makes IP management easier as end devices in different carriages can use the same IP addresses
- Leading EN 50155 Ethernet router for rolling stock applications
- · Turbo Ring and RSTP/STP for network redundancy
- Panel mounting installation
- · Line-swap fast recovery
- · Automatic recovery of connected device's IP addresses
- LLDP for automatic topology discovery in network management
- · Configurable by web browser, Telnet/serial console, and CLI Windows utility

Specifications

Ethernet Interface

10/100/1000BaseT(X) Ports (M12 X-coded 8-pin female connector)	TN-4908 Series non-PoE non-ETBN models: 8 TN-4908 Series non-PoE ETBN models: 4 TN-4908 Series PoE non-ETBN models: 4 TN-4916 Series PoE non-ETBN models: 4
10/100/1000BaseT(X) Ports (M12 X-coded 8-pin female connector with bypass relay)	TN-4908 Series ETBN models: 4 TN-4916 Series ETBN models: 4
PoE Ports (10/100BaseT(X), M12 D-coded 4-pin female connector)	TN-4916 Series PoE models: 8

Expected to be ready by the end of Q4, 2021.



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

PoE Ports (100/1000BaseT(X), M12 X-coded 8-pin female connector)	TN-4908 Series PoE models: 4 TN-4916 Series PoE models: 4
Standards	IEEE 802.1Q for VLAN Tagging IEEE 802.1w for Rapid Spanning Tree Protocol IEEE 802.3af/at for PoE/PoE+ output IEEE 802.3ab for 1000BaseT(X) IEEE 802.1X for authentication IEEE 802.1D-2004 for Spanning Tree Protocol IEEE 802.3x for flow control IEEE 802.3u for 100BaseT(X) IEEE 802.1p for Class of Service IEEE 802.3 for 10BaseT
Ethernet Software Features	
Configuration Options	Command Line Interface (CLI) through Serial/Telnet/SSH, Web Console (HTTP/HTTPS), Windows Utility
Filter	IGMP v1/v2, Static Multicast, 802.1Q
Management	Back Pressure Flow Control, SNMP Inform, LLDP, Syslog, HTTP, Flow control, SMTP, QoS/CoS/ToS, Port Mirror, SNMP Trap, SNMPv1/v2c/v3, IPv4, Telnet, DHCP server, TFTP, RARP, Account Management
Redundancy Protocols	RSTP, Static Port Trunk, Turbo Ring v2, STP
Routing Redundancy	VRRP
Security	Port Lock, SSH, Broadcast storm protection, TACACS+, Local Account Accessibility, HTTPS/SSL
Time Management	SNTP, NTP Server/Client
Unicast Routing	RIPV1/V2, OSPF, Static Route
Multicast Routing	Static Route
DoS and DDoS Protection	
Technology	NMAP-ID Scan, ARP-Flood, SYN/FIN Scan, Null Scan, ICMP-Death, FIN Scan, SYN-Flood, NEWWithout-SYN Scan, Xmas Scan, NMAP-Xmas Scan, SYN/RST Scan
Firewall	
Filter	ICMP, MAC address, Ethernet protocols, Ports, IP address, DDoS
Quick Automation Profiles	Telnet, HTTP, RADIUS, PROFINET, EtherCAT, IPsec, SSH, PPTP, IEC 60870-104, FOUNDATION Fieldbus, L2TP, EtherNet/IP, LonWorks, DNP, Modbus TCP, FTP
Stateful Inspection	Router firewall Transparent (bridge) firewall
Throughput	Max. 500,000 packets per second
Switch Properties	
IGMP Groups	256
MAC Table Size	16 K
Max. No. of VLANs	16
VLAN ID Range	VID 1 to 4094
LED Interface	
LED Indicators	STATE, PWR1, PWR2, FAULT, 10/100/1000M, PoE



Features 1-10-1, Port forwarding, N-to-1 Serial Interface Console Port RS-232 [M12 B-coded 5-pin female connector) W12 Connector M12 Connector M12 Connector M12 Connector M12 Connector M12 Connector M12 Connector Power Parameters Input Current TM-4098 Series non-PoE models: 58 A 6 24 V Input Voitage 24/38/48/7298/110 VDC, Redundant dual inputs, No. of power inputs: 2 Operating Voltage 16.8 to 137.5 VDC Overfoad Current Protection Supported Reverse Polarity Protection M12 - Rowspan="2">M12 - Row	NAT	
Console Port RS-232 (M12 B-coded 5-pin female connector) USB Interface M12 Connector M12 A-coded 5-pin female (for ABC-02 USB storage) Power Parameters Input Current TN-4908 Series non-PoE models: 0.65 A № 24 V TN-4908 Series FoE models: 3.4 A № 24 V TN-4908 Series FoE models: 5.3 A № 24 V TN-4908 Series FoE models: 5.5 A № 24 V TN-4908 Series F	Features	1-to-1, Port forwarding, N-to-1
USB Interface M12 A-coded 5-pin female (for ABC-02 USB storage)	Serial Interface	
M12 A-coded 5-pin female (for ABC-02 USB storage) Power Parameters Input Current TN-4008 Series nor-PoE models: 0.85 A @ 24 V TN-4916 Series PoE models: 0.85	Console Port	RS-232 (M12 B-coded 5-pin female connector)
Power Parameters Input Current TN-4908 Series non-PoE models: 0.65 A @ 24 V TN-4908 Series PoE models 5.3 A @ 24 V TN-4908 Series PoE models 5.3 A @ 24 V TN-4908 Series PoE models 5.3 A @ 24 V TN-4908 Series PoE models 5.3 A @ 24 V Input Voltage 24/36/48/72/96/110 VDC, Redundant dual inputs, No. of power inputs: 2 Operating Voltage 16.8 to 137.5 VDC Overload Current Protection Supported Power Connector M12 K-coded 5-pin male connector Reverse Polarity Protection Supported Physical Characteristics Housing Metal Dimensions Metal Dimensions TN-4908 Series non-PoE models: 160 x 115 x 70 mm (6.30 x 4.53 x 2.76 in) TN-4908 Series PoE models: 160 x 115 x 70 mm (6.30 x 4.53 x 2.76 in) TN-4908 Series PoE models: 160 x 115 x 100 mm (6.30 x 4.53 x 3.94 in) TN-4908 Series PoE models: 260 x 115 x 100 mm (8.30 x 4.53 x 3.94 in) TN-4908 Series PoE models: 120 g (2.47 lib) TN-4908 Series PoE models: 140 g (3.62 lib) TN-4908 Series PoE models: 1909 g (4.39 lib) Installation Wall mounting Protection Optional PCB conformal coating Environmental Limits Operating Temperature (package included) -40 to 85°C (-40 to 185°F) Storage Temperature (package included) -40 to 85°C (-40 to 185°F) Ambient Relative Humidity Storage Temperature (package included) -40 to 85°C (-40 to 185°F) Storage Temperature (package included) -40 to 85°C (-40 to 185°F) Storage Temperature (package included) -40 to 85°C (-40 to 185°F) Storage Temperature (package included) -40 to 85°C (-40 to 185°F) Storage Temperature (package included) -40 to 85°C (-40 to 185°F) Storage Temperature (package included) -40 to 85°C (-40 to 185°F) Storage Temperature (package included) -40 to 85°C (-40 to 185°F) Storage Temperature (package included) -40 to 85°C (-40 to 185°F) Storage Temperature (package included) -40 to 85°C (-40 to 185°F) Storage Temperature (package included) -40 to 85°C (-40 to 185°F) Storage Temperature (package included) -40 to 85°C (-40 to 185°F) Storage Temperature (package included) -40 to 85°C (-40 to 185°F) Storage Temperature (pa	USB Interface	
Input Current TN-4908 Series non-PoE models: 0.65 A @ 24 V TN-4908 Series PoE models: 3.4 A @ 24 V TN-4908 Series PoE models: 3.4 A @ 24 V TN-4908 Series PoE models: 3.5 A @ 24 V TN-4908 Series PoE models: 3.5 A @ 24 V TN-4908 Series PoE models: 3.5 A @ 24 V TN-4908 Series PoE models: 3.5 A @ 24 V TN-4908 Series PoE models: 1.6 The TN-4908 Series PoE models: 1.6 T	M12 Connector	M12 A-coded 5-pin female (for ABC-02 USB storage)
TN-4908 Series PCE models: 3.9 A @ 24 V TN-4916 Series PCE models: 5.9 A @ 24 V Tn-4916 Series PCE models: 5.9 A @ 24 V Tn-4916 Series PCE models: 5.9 A @ 24 V Tn-4916 Series PCE models: 5.9 A @ 24 V Tn-4916 Series PCE models: 5.9 A @ 24 V Tn-4916 Series PCE models: 5.9 A @ 24 V Tn-4916 Series PCE models: 5.9 A @ 24 V Tn-4916 Series PCE models: 5.9 A @ 24 V Tn-4916 Series PCE models: 5.9 C Tn-4908 Series non-POE models: 160 x 115 x 70 mm (6.30 x 4.53 x 2.76 in) Tn-4908 Series POE models: 160 x 115 x 100 mm (6.30 x 4.53 x 2.76 in) Tn-4908 Series POE models: 160 x 115 x 100 mm (6.30 x 4.53 x 3.94 in) Tn-4916 Series POE models: 160 x 115 x 100 mm (8.10 x 4.53 x 3.94 in) Tn-4916 Series POE models: 140 g (3.62 lb) Tn-4908 Series POE models: 140 g (3.62 lb) Tn-4908 Series POE models: 1900 g (4.39 lb) Installation Wall mounting Protection Optional PCB conformal coating Environmental Limits Operating Temperature	Power Parameters	
Operating Voltage 16.8 to 137.5 VDC Overload Current Protection Supported Power Connector M12 K-coded 5-pin male connector Reverse Polarity Protection Supported Physical Characteristics Housing Metal Dimensions TN-4908 Series non-PoE models: 160 x 115 x 70 mm (6.30 x 4.53 x 2.76 in) TN-4908 Series PoE models: 160 x 115 x 100 mm (8.30 x 4.53 x 3.94 in) TN-4918 Series PoE models: 206 x 115 x 100 mm (8.10 x 4.53 x 3.94 in) TN-4918 Series PoE models: 1900 g (4.47 lb) TN-4908 Series PoE models: 1900 g (4.39 lb) TN-4918 Series PoE models: 1900 g (4.39 lb) Weight Wall mounting Protection Optional PCB conformal coating Environmental Limits Optional PCB conformal coating Environmental Limits 40 to 70°C (-40 to 185°F) Storage Temperature (package included) -40 to 85°C (-40 to 185°F) Storage Temperature (package included) -5 to 95% (non-condensing) Standards and Certifications EM 55932, EN 55935 EMS IEC 61000-4-2 RS, 80 MHz to 1 GHz; 20 V/m IEC 61000-4-2 RS, 80 GHz; 24 V/m IEC 61000-4-2 RS, 80 GHz; 24 V/m IEC 61000-4-3 RS, 80 GHz; 24 V/m IEC 61000-4-4 RS, 80 GHz; 24 V/m IEC 61000-4-6 RPMF Freefall IEC 60068-2-31 Radio Frequency FCC	Input Current	TN-4908 Series PoE models: 3.4 A @ 24 V
Overload Current Protection Supported M12 K-coded 5-pin male connector Reverse Polarity Protection Supported Metal Dimensions Metal Dimensions Metal Dimensions TN-4908 Series non-PoE models: 160 x 115 x 70 mm (6.30 x 4.53 x 2.76 in) TN-4908 Series PoE models: 160 x 115 x 100 mm (6.30 x 4.53 x 3.94 in) TN-4918 Series PoE models: 206 x 115 x 100 mm (6.30 x 4.53 x 3.94 in) IP Rating IP40 Weight TN-4908 Series PoE models: 206 x 115 x 100 mm (8.10 x 4.53 x 3.94 in) IP Rating Weight TN-4908 Series non-PoE models: 1120 g (2.47 lb) TN-4908 Series PoE models: 1990 g (4.39 lb) Installation Wall mounting Protection Optional 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) Standards and Certifications EMC EN 55032, EN 55035 EMC EN 55032, EN 55035 EMS EMS EMS EC 61000-4-3 RS: 80 MHz to 1 GHz: 20 V/m (EC 61000-4-4 BFT; Power: 2 kV; Signal: 2 kV (EC 61000-4-4 BFT; Power: 2 kV; Signal: 2 kV (EC 61000-4-4 BFMF) Freefall Radio Frequency FCC	Input Voltage	24/36/48/72/96/110 VDC, Redundant dual inputs, No. of power inputs: 2
Power Connector Reverse Polarity Protection Supported Physical Characteristics Housing Metal Dimensions TN-4908 Series non-PoE models: 160 x 115 x 70 mm (6.30 x 4.53 x 2.76 in) TN-4908 Series PoE models: 160 x 115 x 100 mm (6.30 x 4.53 x 3.94 in) TN-4916 Series PoE models: 206 x 115 x 100 mm (8.10 x 4.53 x 3.94 in) TN-4916 Series PoE models: 206 x 115 x 100 mm (8.10 x 4.53 x 3.94 in) IP Rating IP Rating IP40 Weight TN-4908 Series PoE models: 1120 g (2.47 lb) TN-4908 Series PoE models: 190 g (4.39 lb) Installation Wall mounting Protection Optional PCB conformal coating Environmental Limits Operating Temperature -40 to 70°C (-40 to 186°F) Storage Temperature (package included) -40 to 85°C (-40 to 185°F) Storage Temperature (package included) Standards and Certifications EMC EN 55032, EN 55035 EMC EN 55032, EN 55035 EMS EGC 61000-4-2 ESD: Contact: 6 kV; Air. 8 kV IEC 61000-4-2 ESD: Contact: 6 kV; Air. 8 kV	Operating Voltage	16.8 to 137.5 VDC
Reverse Polarity Protection Physical Characteristics Housing Metal Dimensions TN-4908 Series non-PoE models: 160 x 115 x 70 mm (6.30 x 4.53 x 3.94 in) TN-4916 Series PoE models: 160 x 115 x 100 mm (6.30 x 4.53 x 3.94 in) TN-4916 Series PoE models: 206 x 115 x 100 mm (8.10 x 4.53 x 3.94 in) TN-4916 Series PoE models: 1120 g (2.47 lb) TN-4916 Series PoE models: 1120 g (2.47 lb) TN-4916 Series PoE models: 1640 g (3.62 lb) TN-4916 Series PoE models: 1990 g (4.39 lb) Installation Wall mounting Protection Optional 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) Storage Temperature (package included) **En Series PoE models: 1990 g (4.39 lb) Standards and Certifications EMC EN 55032, EN 55035 EMS IEC 61000-4-3 RS: 80 MHz to 1 GHz: 20 V/m IEC 61000-4-2 ESD: Contact: 6 N; Air. 8 kV IEC 61000-4-2 ESD: Contact: 6 N; Air. 8 kV IEC 61000-4-3 PFNP Freefall EC 60068-2-31 Radio Frequency FCC	Overload Current Protection	Supported
Physical Characteristics Housing Metal Dimensions TN-4908 Series non-PoE models: 160 x 115 x 70 mm (6.30 x 4.53 x 3.94 in) TN-4908 Series PoE models: 206 x 115 x 100 mm (6.30 x 4.53 x 3.94 in) TN-4916 Series PoE models: 206 x 115 x 100 mm (8.10 x 4.53 x 3.94 in) TN-4916 Series PoE models: 206 x 115 x 100 mm (8.10 x 4.53 x 3.94 in) IP Rating IP40 Weight TN-4908 Series non-PoE models: 1120 g (2.47 lb) TN-4908 Series PoE models: 1640 g (3.62 lb) TN-4908 Series PoE models: 1640 g (3.62 lb) TN-4908 Series PoE models: 1640 g (3.62 lb) TN-4908 Series PoE models: 1990 g (4.39 lb) Installation Wall mounting Protection Optional 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) Standards and Certifications EMC EN 55032, EN 55035 EMS IEC 61000-42 SB: 80 MHz to 1 GHz: 20 V/m IEC 61000-42 ESD: Contact: 6 kV; Air: 8 kV IEC 61000-42 ESD: Contact: 6 kV; Air: 8 kV IEC 61000-42 ESD: Contact: 6 kV; Air: 8 kV IEC 61000-42 ESD: Contact: 6 kV; Air: 8 kV IEC 61000-44 EFT: Power: 2 kV; Signal: 2 kV IEC 61000-44 EFT: Power: 2 kV; Signal: 2 kV IEC 61000-49 CS: 10 V IEC	Power Connector	M12 K-coded 5-pin male connector
Housing Metal Dimensions TN-4908 Series non-PoE models: 160 x 115 x 70 mm (6.30 x 4.53 x 2.76 in) TN-4908 Series PoE models: 160 x 115 x 100 mm (6.30 x 4.53 x 3.94 in) TN-4908 Series PoE models: 206 x 115 x 100 mm (6.30 x 4.53 x 3.94 in) TN-4916 Series PoE models: 206 x 115 x 100 mm (8.10 x 4.53 x 3.94 in) IP Rating IP40 Weight TN-4908 Series non-PoE models: 1120 g (2.47 lb) TN-4908 Series PoE models: 1540 g (3.62 lb) TN-4916 Series PoE models: 1990 g (4.39 lb) Installation Wall mounting Protection Optional PCB conformal coating Environmental Limits Operating Temperature Operating Temperature (package included) -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) Standards and Certifications EMC EN 55032, EN 55035 EMS IEC 61000-4-3 RS: 80 MHz to 1 GHz: 20 V/m IEC 61000-4-2 ESD: Contact 6 kV; Air. 8 kV IEC 61000-4-2 ESD: Contact 6 kV; Air. 8 kV IEC 61000-4-3 EV; Certification 2 kV; EC 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 EG: 100 V IEC 61000-4-7 EFT: Power: 2 kV; Signal: 2 kV IEC 61000-4-8 EFT: Power: 2 kV; Signal: 2 kV IEC 61000-4-8 EFT: Power: 2 kV; Signal: 2 kV IEC 61000-4-8 EFT: Power: 2 kV; Signal: 2 kV IEC 61000-4-7 EFT: Power: 2 kV; Signal: 2 kV IEC 61000-4-7 EFT: Power: 2 kV; Signal: 2 kV IEC 61000-4-7 EFT: Power: 2 kV; Signal: 2 kV IEC 61000-4-7 EFT: Power: 2 kV; Signal: 2 kV IEC 61000-4-7 EFT: Power: 2 kV; Signal: 2 kV IEC 61000-4-7 EFT: Power: 2 kV;	Reverse Polarity Protection	Supported
Dimensions	Physical Characteristics	
TN-4908 Series PoE models: 160 x 115 x 100 mm (6:30 x 4.53 x 3.94 in) TN-4916 Series PoE models: 206 x 115 x 100 mm (8:10 x 4.53 x 3.94 in) TN-4916 Series PoE models: 120 g (2.47 lb) TN-4908 Series non-PoE models: 1120 g (2.47 lb) TN-4908 Series PoE models: 1640 g (3.62 lb) TN-4908 Series PoE models: 1990 g (4.39 lb) Installation Wall mounting Protection Optional 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) Standards and Certifications EMC EN 55032, EN 55035 EMS IEC 61000-4-3 RS: 80 MHz to 1 GHz: 20 V/m IEC 61000-4-2 ESD: Contact: 6 kV; Air: 8 kV IEC 61000-4-2 ESD: Contact: 6 kV; Air: 8 kV IEC 61000-4-8 EFT: Power: 2 kV; Signal: 2 kV IEC 61000-4-8 PFMF Freefall IEC 60068-2-31 Radio Frequency FCC	Housing	Metal
Weight TN-4908 Series non-PoE models: 1120 g (2.47 lb) TN-4908 Series PoE models: 1640 g (3.62 lb) TN-4916 Series PoE models: 1990 g (4.39 lb) Installation Wall mounting Protection Optional 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) Standards and Certifications EMC EN 55032, EN 55035 EMS IEC 61000-4-3 RS: 80 MHz to 1 GHz: 20 V/m IEC 61000-4-3 EFT: Power: 2 kV; Signal: 2 kV IEC 61000-4-5 Surge: Power: 2 kV; Signal: 2 kV IEC 61000-4-5 CS: 10 V IEC 61000-4-5 PFMF Freefall Radio Frequency FCC	Dimensions	TN-4908 Series PoE models: 160 x 115 x 100 mm (6.30 x 4.53 x 3.94 in)
Installation Wall mounting Protection Optional 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) Standards and Certifications EMC EN 55032, EN 55035 EMS IEC 61000-4-3 RS: 80 MHz to 1 GHz: 20 V/m IEC 61000-4-2 ESD: Contact: 6 kV; Air. 8 kV IEC 61000-4-3 EFT: Power: 2 kV; Signal: 2 kV IEC 61000-4-8 PFMF Freefall IEC 6000-4-8 PFMF Freefall IEC 6008-2-31 Radio Frequency FCC	IP Rating	IP40
Protection Optional 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) Standards and Certifications EMC EN 55032, EN 55035 EMS IEC 61000-4-3 RS: 80 MHz to 1 GHz: 20 V/m IEC 61000-4-2 ESD: Contact: 6 kV; Air: 8 kV IEC 61000-4-4 EFT: Power: 2 kV; Signal: 2 kV IEC 61000-4-8 CS: 10 V IEC 61000-4-8 PFMF Freefall IEC 60068-2-31 Radio Frequency FCC	Weight	TN-4908 Series PoE models: 1640 g (3.62 lb)
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) Standards and Certifications EMC EN 55032, EN 55035 EMS IEC 61000-4-3 RS: 80 MHz to 1 GHz: 20 V/m IEC 61000-4-2 ESD: Contact: 6 kV; Air: 8 kV IEC 61000-4-5 Surge: Power: 2 kV; Signal: 2 kV IEC 61000-4-6 CS: 10 V IEC 61000-4-8 PFMF Freefall IEC 60068-2-31 Radio Frequency FCC	Installation	Wall mounting
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) Standards and Certifications EMC EN 55032, EN 55035 EMS IEC 61000-4-3 RS: 80 MHz to 1 GHz: 20 V/m IEC 61000-4-2 ESD: Contact: 6 kV; Air: 8 kV 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 Freefall IEC 60068-2-31 Radio Frequency FCC	Protection	Optional PCB conformal coating
Storage Temperature (package included) -40 to 85°C (-40 to 185°F) Ambient Relative Humidity 5 to 95% (non-condensing) Standards and Certifications EMC EN 55032, EN 55035 EMS IEC 61000-4-3 RS: 80 MHz to 1 GHz: 20 V/m IEC 61000-4-2 ESD: Contact: 6 kV; Air: 8 kV IEC 61000-4-4 EFT: Power: 2 kV; Signal: 2 kV IEC 61000-4-5 Surge: Power: 2 kV; Signal: 2 kV IEC 61000-4-8 PFMF Freefall IEC 60068-2-31 Radio Frequency FCC	Environmental Limits	
Ambient Relative Humidity Standards and Certifications EMC EN 55032, EN 55035 EMS IEC 61000-4-3 RS: 80 MHz to 1 GHz: 20 V/m IEC 61000-4-2 ESD: Contact: 6 kV; Air: 8 kV IEC 61000-4-5 Surge: Power: 2 kV; Signal: 2 kV IEC 61000-4-6 CS: 10 V IEC 61000-4-8 PFMF Freefall IEC 60068-2-31 Radio Frequency FCC	Operating Temperature	-40 to 70°C (-40 to 158°F)
Standards and Certifications	Storage Temperature (package included)	-40 to 85°C (-40 to 185°F)
EMC EN 55032, EN 55035 EMS IEC 61000-4-3 RS: 80 MHz to 1 GHz: 20 V/m IEC 61000-4-2 ESD: Contact: 6 kV; Air: 8 kV 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 Freefall IEC 60068-2-31 Radio Frequency FCC	Ambient Relative Humidity	5 to 95% (non-condensing)
EMS IEC 61000-4-3 RS: 80 MHz to 1 GHz: 20 V/m IEC 61000-4-2 ESD: Contact: 6 kV; Air: 8 kV 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 IEC 60068-2-31	Standards and Certifications	
IEC 61000-4-2 ESD: Contact: 6 kV; Air: 8 kV 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 Freefall	EMC	EN 55032, EN 55035
Radio Frequency FCC	EMS	IEC 61000-4-2 ESD: Contact: 6 kV; Air: 8 kV 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
	Freefall	IEC 60068-2-31
Railway EN 50121-4, EN 50155, IEC 60571	Radio Frequency	FCC
	Railway	EN 50121-4, EN 50155, IEC 60571



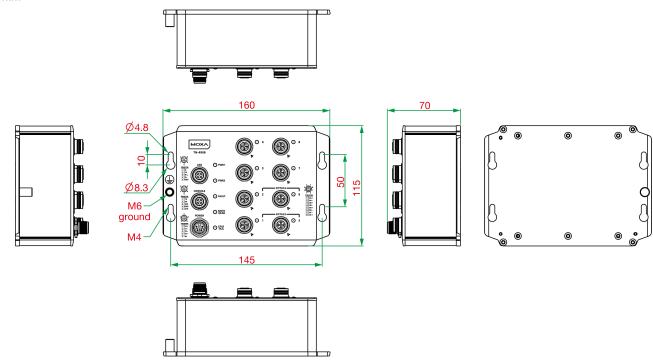
Railway Fire Protection	EN 45545-2
Safety	IEC 62368, UL 62368
Shock	IEC 60068-2-27, IEC 61373, EN 50155
Vibration	IEC 60068-2-64, IEC 61373, EN 50155
Declaration	
Green Product	RoHS, CRoHS, WEEE
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Time	TN-4908 Series non-PoE models: 795,840 hrs TN-4908 Series non-PoE ETBN models: 648,903 hrs TN-4908 Series PoE models: 644,898 hrs TN-4908 Series PoE ETBN models: 545,021 hrs TN-4916 Series PoE models: 550,148 hrs TN-4916 Series PoE ETBN models: 472,578 hrs
Standards	Telcordia SR332
Warranty	
Warranty Period	5 years
Details	See www.moxa.com/warranty
Package Contents	
Device	1 x TN-4900 Series router
Installation Kit	2 x cap, male, metal, for M12 port (Console and USB storage ports, fixed on switch) 4/8 x cap, male, metal, for M12 port (Ethernet ports, fixed on switch) 1 x wall-mounting kit
Documentation	1 x quick installation guide 1 x warranty card



Dimensions

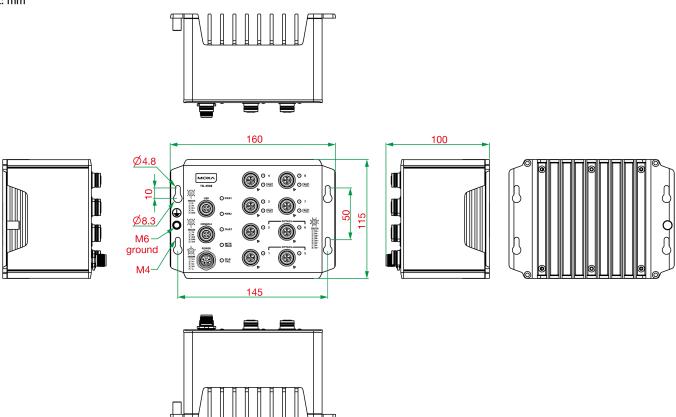
TN-4908 Non-PoE Models

Unit: mm



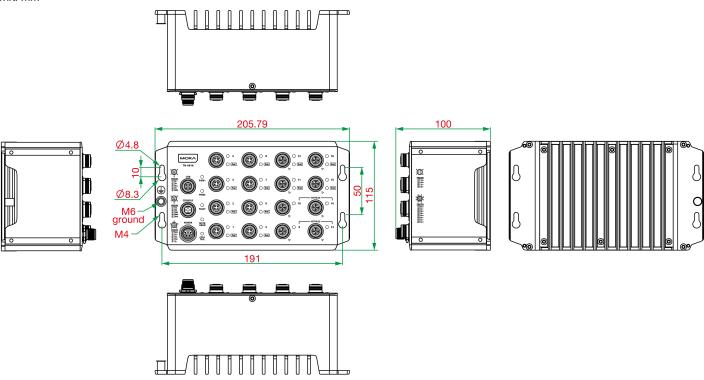
TN-4908 PoE Models

Unit: mm



TN-4916 PoE Models

Unit: mm



Ordering Information

Model Name	Firewall	ЕТВМ	10/100BaseT(X) PoE Ports, M12 D-coded 4-pin Female Connector	10/100/ 1000BaseT(X) Ports, M12 X- coded Female Connector	100/ 1000BaseT(X) Ports, M12 X- coded 8-pin Female Connector With Bypass Relay	10/100/ 1000BaseT(X) PoE Ports, M12 X-coded 8-pin Female Connector	Conformal Coating
TN-4908-8GTX-WV-T	✓	-	-	8	-	-	-
TN-4908-8GTX-WV-CT-T	✓	-	-	8	-	-	✓
TN-4908-ETBN-4GTX- 4GTXBP-WV-T	-	✓	-	4	4	-	-
TN-4908-ETBN-4GTX- 4GTXBP-WV-CT-T	-	✓	-	4	4	-	✓
TN-4908-ETBN-F-4GTX- 4GTXBP-WV-T	✓	✓	-	4	4	-	-
TN-4908-ETBN-F-4GTX- 4GTXBP-WV-CT-T	√	✓	-	4	4	-	✓
TN-4908-4GPoE-4GTX- WV-T	✓	-	-	4	-	4	-
TN-4908-4GPoE-4GTX- WV-CT-T	✓	-	-	4	-	4	✓
TN-4908-ETBN-4GPoE- 4GTXBP-WV-T	-	✓	-	-	4	4	-
TN-4908-ETBN-4GPoE- 4GTXBP-WV-CT-T	-	✓	-	-	4	4	✓
TN-4908-ETBN-F- 4GPoE-4GTXBP-WV-T	✓	✓	-	-	4	4	-
TN-4908-ETBN-F- 4GP0E-4GTXBP-WV- CT-T	√	✓	-	+	4	4	√

Model Name	Firewall	ETBN	10/100BaseT(X) PoE Ports, M12 D-coded 4-pin Female Connector	10/100/ 1000BaseT(X) Ports, M12 X- coded Female Connector	100/ 1000BaseT(X) Ports, M12 X- coded 8-pin Female Connector With Bypass Relay	10/100/ 1000BaseT(X) PoE Ports, M12 X-coded 8-pin Female Connector	Conformal Coating
TN-4916-8PoE-4GPoE- 4GTX-WV-T	-	-	8	4	-	4	-
TN-4916-8PoE-4GPoE- 4GTX-WV-CT-T	-	-	8	4	-	4	✓
TN-4916-ETBN-8PoE- 4GPoE-4GTXBP-WV-T	-	✓	8	-	4	4	-
TN-4916-ETBN-8PoE- 4GPoE-4GTXBP-WV- CT-T	-	✓	8	-	4	4	✓
TN-4916-ETBN-F-8PoE- 4GPoE-4GTXBP-WV-T	✓	✓	8	-	4	4	-
TN-4916-ETBN-F-8PoE- 4GPoE-4GTXBP-WV- CT-T	✓	✓	8	+	4	4	✓

Accessories (sold separately)

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	
M12X-8PMM-IP67-HTG	X-coded screw-in Gigabit Ethernet connector, 8-pin male M12 connector, IP67
Cables	
Cables	
CBL-M12XMM8P-Y-300-IP67	M12-to-M12 Cat-5 UTP Ethernet cable, 8-pin male X-coded crimp type M12 connector, IP67, 3 m
CBL-M12XMM8PRJ45-Y-200-IP67	M12-to-RJ45 Cat-5 UTP Ethernet cable, 8-pin male X-coded crimp type M12 connector, IP67, 2 m
CBL-M12XMM8P-Y-100-IP67	M12-to-M12 Cat-5 UTP Ethernet cable, 8-pin male X-coded crimp type M12 connector, IP67, 1 m
CBL-M12BMM5PF9-BK-150-IP68	B-coded male M12-to-5-pin DB9 console cable, IP68-rated, 1.5 m
CBL-M12KFF5POPEN-O-150-IP67	K-coded female M12-to-5-pin open wire M12 power cable, IP67-rated, 1.5 m
Chavana Kita	
Storage Kits	
ABC-02-P-USB-M12-CT-T	USB-based configuration backup and restoration tool with M12 connector for Moxa's ToughNet series of managed Ethernet switches and wireless APs/bridges/clients, -40 to 75°C operating temperature, conformal coating

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