

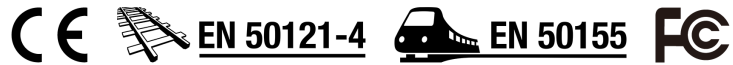
TN-5900-ETBN Series

EN 50155 ETBN routers



- IEC 61375-2-3 and IEC 61375-2-5
- -40 to 75°C operating temperature range
- Dual bypass relay
- Isolated power input range from 24 to 110 VDC
- Turbo Ring and RSTP/STP for network redundancy
- Complies with all EN 50155 mandatory test items¹

Certifications



Introduction

The ToughNet TN-5900-ETBN Series, designed for rolling stock backbone networks, are high-performance M12 routers with four bypass relay backbone ports. They support NAT and routing functionality to facilitate the deployment of applications across networks. The TN-5900-ETBN 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-5900-ETBN Series routers provide a wide power input range of 24 to 110 VDC. TN-5900-ETBN Series switches operate in an extended operating temperature range of -40 to 75°C and are compliant with the mandatory requirements of EN 50155/50121-4, making them suitable for a variety of industrial applications.

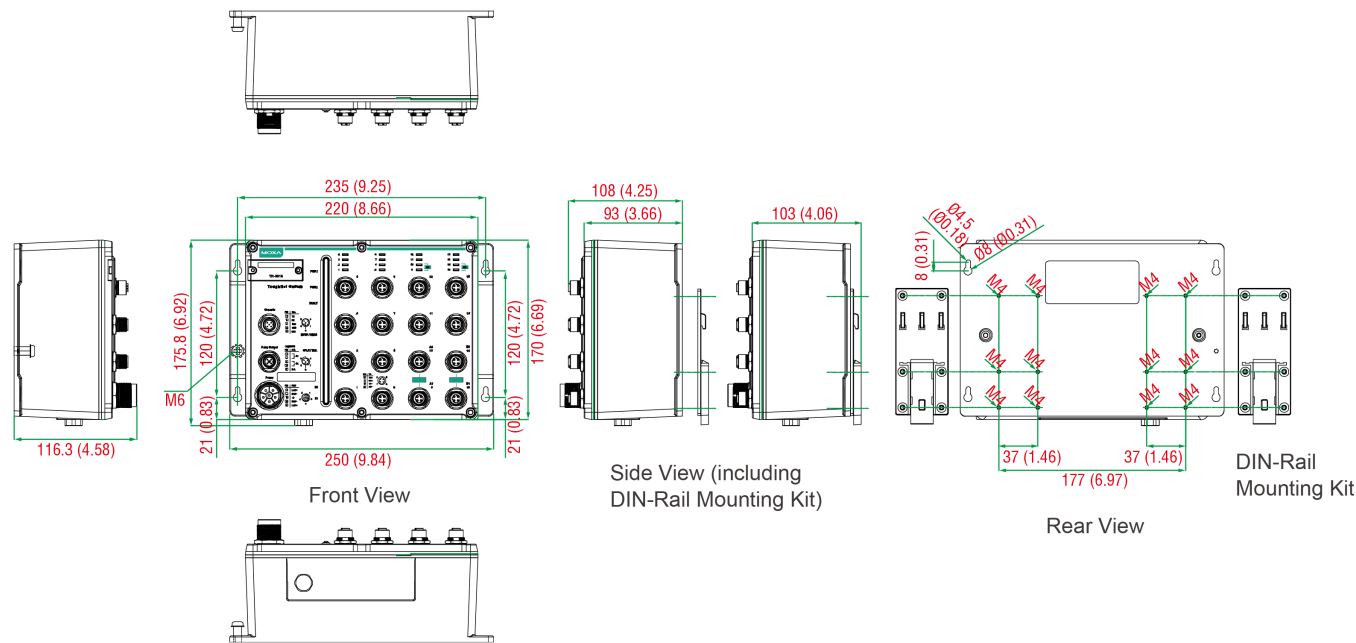
Additional Features and Benefits

- Routing functionality to divide a large network into hierarchical subnets and allow data and information to communicate across networks
- NAT makes IP management easier, since 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
- IGMP V1/V2 snooping for filtering multicast traffic
- IEEE 802.1Q VLAN to ease network planning
- QoS (IEEE 802.1p/1Q and TOS/DiffServ) to improve reliability
- Panel mounting or DIN-rail mounting installation capability
- SNMPv3, HTTPS, and SSH to enhance network security
- SNMP v1/v2c/v3 for different levels of network management
- Port mirroring for online debugging
- Automatic warning by exception through email and relay output
- Line-swap fast recovery
- Automatic recovery of connected device's IP addresses
- LLDP for automatic topology discovery in network management software
- Configurable by web browser, Telnet/serial console, and CLI Windows utility

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

Dimensions

Unit: mm (inch)



Specifications

Input/Output Interface

Alarm Contact Channels	2 x relay output in one M12 A-coded 5-pin male connector with current carrying capacity of 1 A @ 30 VDC
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Ethernet Interface

10/100BaseT(X) Ports (M12 D-coded 4-pin female connector)	12
Standards	IEC 61375-2-3 IEC 61375-2-5 IEEE 802.3ad for Static Port Trunk IEEE 802.1D-2004 for Spanning Tree Protocol IEEE 802.1p for Class of Service IEEE 802.1Q for VLAN Tagging IEEE 802.1w for Rapid Spanning Tree Protocol IEEE 802.3 for 10BaseT IEEE 802.3x for flow control IEEE 802.3u for 100BaseT(X)
10/100BaseT(X) Ports (M12 D-coded 4-pin female connector with bypass relay)	4

LED Interface

LED Indicators	STATE, PWR1, PWR2, FAULT, 10/100M
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Serial Interface

Console Port	M12 A-coded male connector
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Physical Characteristics

Protection	TN-5916-ETBN-WV-CT-T: PCB conformal coating
Dimensions	250 x 175.8 x 116.3 mm (9.84 x 6.92 x 4.58 in)
Housing	Metal
Installation	DIN-rail mounting (optional)

	Wall mounting
IP Rating	IP54
Weight	4,030 g (8.88 lb)

Environmental Limits

Altitude	2000 m
Ambient Relative Humidity	5 to 95% (non-condensing)
Operating Temperature	-40 to 75°C (-40 to 167°F)
Storage Temperature (package included)	-40 to 85°C (-40 to 185°F)

Standards and Certifications

EMC	EN 55032/24
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
Freefall	IEC 60068-2-31
Radio Frequency	FCC
Railway	EN 50121-4 EN 50155 IEC 60571
Railway Fire Protection	EN 45545-2
Safety	IEC 60950-1 UL 61010-2-201
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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Warranty

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

Package Contents

Cable	1 x M12-to-DB9 console port
Device	1 x TN-5900-ETBN Series router
Documentation	1 x document and software CD 1 x quick installation guide 1 x warranty card
Installation Kit	2 x cap, female, metal, for M12 port 1 x wall-mounting kit

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