

TN-5900 系列

EN 50155 16 埠 NAT 路由器



特色與優點

- 專為軌道車輛骨幹網路所設計
- 雙旁路繼電器
- 隔離式電源輸入範圍介於 24 至 110 VDC
- 符合所有 EN 50155 強制性測試項目¹
- -40 至 75°C 工作溫度範圍
- Turbo Ring 及 RSTP/STP 網路備援

認證



EN 50155



EN 50121-4



簡介

ToughNet TN-5900 系列路由器專為軌道車輛主幹網路所設計，是一款具有四個旁路繼電器骨幹連接埠的高效能 M12 路由器。此系列路由器支援 NAT 和路由功能，便於用戶在網路上部署應用程式。TN-5900 系列路由器採用 M12 和其他圓形連接器，可確保緊密、耐用的連線能力，在環境干擾 (例如振動和衝擊) 下能夠保證穩定性。

TN-5900 系列路由器提供 24 至 110 VDC 的寬電源輸入範圍。TN-5900 系列交換器在 -40 至 75°C 的更寬工作溫度範圍內運作，並符合 EN 50155/50121-4 的強制要求，因此適合多種工業應用。

其他特色與優點

- 路由功能可將大型網路分成階層式子網路，便於資料和資訊在網路間進行傳輸
- NAT 使 IP 管理更加容易，因為不同車廂的終端設備可以使用相同 IP 位址
- 領先業界的 EN 50155 乙太網路路由器，適用於軌道車輛應用
- Turbo Ring 及 RSTP/STP 網路備援
- IGMP V1/V2 窺探用於篩選多點傳送流量
- IEEE 802.1Q VLAN 可輕鬆規劃網路
- QoS (IEEE 802.1p/1Q 和 TOS/DiffServ) 提高可靠性
- 面板安裝或 DIN 軌道安裝能力
- SNMPv3、HTTPS 及 SSH 加強網路安全性
- SNMP v1/v2c/v3 適用不同層級的網路管理
- 連接埠鏡像可用於線上偵錯
- 發生例外狀況時透過電子郵件和繼電器輸出自動發出警告
- 線路交換快速恢復
- 自動恢復連線設備的 IP 位址
- LLDP 適用於在網路管理軟體中進行自動拓撲探索
- 可透過網頁瀏覽器、Telnet/序列主控台、CLI 和 Windows 公共程式進行設定

規格

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

1. 本產品適用於鐵路應用，符合 EN 50155 標準的定義。如需更詳細的聲明，請按一下此處：www.moxa.com/doc/specs/EN_50155_Compliance.pdf

Ethernet Interface

10/100BaseT(X) Ports (M12 D-coded 4-pin female connector)	12
10/100BaseT(X) Ports (M12 D-coded 4-pin female connector with bypass relay)	4
Standards	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 802.3ad for Static Port Trunk IEEE 802.3u for 100BaseT(X) IEEE 802.3x for flow control

Ethernet Software Features

Configuration Options	Command Line Interface (CLI), Command Line Interface (CLI) through Serial/Telnet/SSH, Web Browser (HTTP/HTTPS), Windows Utility
Filter	802.1Q, IGMP v1/v2, Static Multicast
Management	Back Pressure Flow Control, DHCP server, Flow control, HTTP, IPv4, LLDP, Port Mirror, QoS/CoS/ToS, RARP, SMTP, SNMP Inform, SNMP Trap, SNMPv1/v2c/v3, Syslog, Telnet, TFTP, Account Management
MIB	RFC1213
Redundancy Protocols	Link Aggregation, RSTP, Static Port Trunk, STP, Turbo Ring v2
Routing Redundancy	VRRP
Security	Broadcast storm protection ² , HTTPS/SSL, Local Account Accessibility, TACACS+ ² , Port Lock, SSH
Time Management	NTP Server/Client, SNTP
Unicast Routing	Static Route, RIPV1/V2

Switch Properties

IGMP Groups	256
MAC Table Size	8 K
Max. No. of VLANs	16
VLAN ID Range	VID 1 to 4094

LED Interface

LED Indicators	STATE, PWR1, PWR2, FAULT, 10/100M
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NAT

Features	1-to-1, N-to-1, Port forwarding
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Serial Interface

Console Port	M12 A-coded male connector
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Power Parameters

Input Current	0.85 A @ 24 VDC, 0.17 A @ 110 VDC
Input Voltage	24/36/48/72/96/110 VDC, Redundant dual inputs, No. of power inputs: 2

2. 不支援 FW v1.2.

Operating Voltage	16.8 to 137.5 VDC
Overload Current Protection	Supported
Power Connector	M23 connector
Reverse Polarity Protection	Supported

Physical Characteristics

Housing	Metal
IP Rating	IP54
Dimensions	250 x 175.8 x 116.3 mm (9.84 x 6.92 x 4.58 in)
Weight	4,030 g (8.88 lb)
Installation	DIN-rail mounting (optional), Wall mounting
Protection	TN-5916-WV-CT-T: PCB conformal coating

Environmental Limits

Operating Temperature	-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

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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MTBF

Time	556,025 hrs
Standards	Telcordia SR332

Warranty

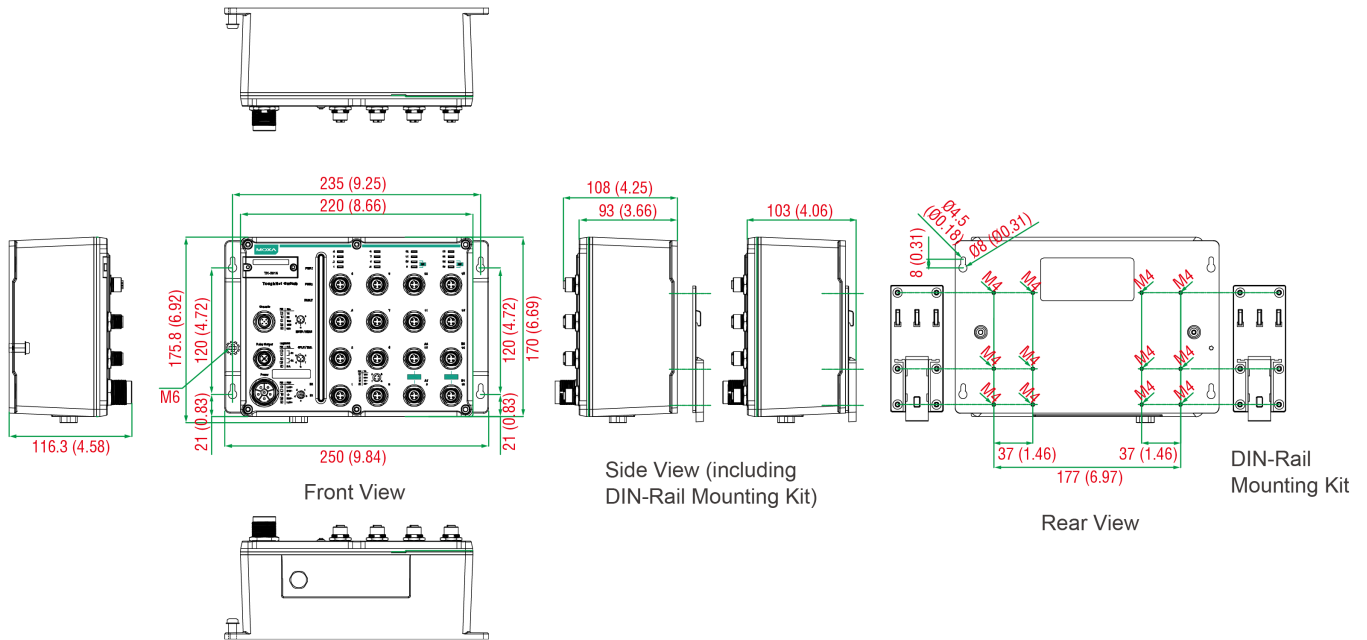
Warranty Period	5 years
Details	See www.moxa.com/tw/warranty

Package Contents

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

尺寸

單位：公釐 (英寸)



訂購資訊

Model Name	10/100BaseT(X) Ports M12 D-Coded 4-Pin Female Connector	10/100BaseT(X) Ports M12 D-Coded 4-Pin Female Connector with Bypass Relay	Conformal Coating
TN-5916-WV-T	12	4	-
TN-5916-WV-CT-T	12	4	P

配件 (選購)

Storage Kits

ABC-01-M12	Configuration backup and restoration tool with M12 connector for managed Ethernet switches and wireless APs/Bridges/Clients, 0 to 60°C operating temperature
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Cables

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

CBL-M12DMM4PM12DMM4P-BK-100-IP67	M12-to-M12 Cat-5E STP Ethernet cable, 4-pin D-coded M12 connector, IP67, 1 m
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Connectors

M12A-5P-IP68	A-coded screw-in sensor connector, female, IP68, 4.05 cm
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

DIN-Rail Mounting Kits

DK-DC50131-01	DIN-rail mounting kit, 6 screws
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M12 Connector Caps

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

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