T(P)ES-3208MGT-WEB

8 FE + 2 2.5GE L2+ (w/8 PoE at/af) Vehicle Web Managed NAT Router Switch

OVERVIEW

The Lantech T(P)ES-3208MGT-WEB (OS2 Pro platform) is a compact router switch with a PoE budget of 80W, designed for rail, metro, and vehicle 24V input Ethernet switch systems. It features 8 10/100TX + 2 1G/2.5G ports, along with 8 PoE 802.3af/at Ethernet ports (PoE model) with push-pull lock connectors for secure and fast installation. The switch offers Layer 2 management, NAT, Ignition PoE timer off, unique AUTO-FEED configuration, MQTT, advanced security functions and Health diagnostic snapshot maintenance to ensure reliable and easy onboard network deployment. It's WebGUI make configuration straightforward for all skill levels. Additionally, the OPEN API document format enhances central management efficiency, making it ideal for fleet management and AIoT applications. Compliance with ITxPT*, and E-marking* certifications rest assured the product meets world-class standards for vehicle, rail onboard performance and reliability.

Redundant dual power input design (24VI model); polarity reverse protection; E-marking* & ITxPT* certificate; ISO 16750-2 compliant

T(P)ES-3208MGT-WEB is designed with dual power inputs that accept 9V~36V DC for 24VI vehicle use and is capable of withstanding EMI/RFI interference in the onboard network as well as environmental shocks and vibrations. The redundant power input design integrates inrush current protection also protect against polarity reversal. Additionally, the galvanic isolation feature shields the system from power transients often present in onboard networks. The switch complies with ITxPT* public transport standards and E-marking*. It also meets the requirements of ISO 16750-2 P5A (24V system DC 174V/8Ω/350ms), reducing the impact of high-frequency pulse voltage that could be incurred by motor applications.

PoE budget up to 80W for 8 Ports with PD detection, auto PD reboot, scheduling and Ethernet power input galvanic isolation with partial ports for PoE galvanic isolation

T(P)ES-3208MGT-WEB supports maximum PoE budget of 80W with advanced PoE management features, including PoE auto-detection and scheduling. The PoE detection function can identify if a connected Powered Device (PD) becomes unresponsive and then auto-restart the PD. Moreover, PoE scheduling allows for a pre-set power feeding schedule based on a routine timetable. Each PoE port can be enabled or disabled, and it provides information on voltage, current, power (W), and temperature.

There is galvanic isolation between the power input and the Ethernet power system. The PoE galvanic isolation on

PoE at/af ports provides insulation between the power input and the PoE Ethernet ports, preventing cabling and grounding incidents from damaging the Ethernet switch.

DDoS Security to Protect Switches and Servers

The Lantech OS2Pro platform is designed with robust security methods to prevent network threats, such as DDoS attack prevention, 802.1X security authentication, Dynamic ARP Inspection, IP Source Guard, and Port Security.

Lantech OS2 PRO Platform with advanced L2 management and L3 routing protocols incl. OSPF and RIP V1&V2

The switch developed on Lantech OS2 Pro platform is equipped with Layer 2 management and some Layer 3 routing protocols, including interVLAN Routing, OSPF and RIP V2. Engineered for diverse vehicle applications, this platform also supports a range of features such as NAT, Port forwarding, multiple Static IP address, DHCP server/option/client/port based, VLAN, DHCP over VLAN, IGMP, RSTP/ G.8032 enhanced ring recovery, LACP etc.

Support Open API document for Restful API for better switch performance

The switch supports an OPEN API that uses JSON format to access and manipulate data using GET, PUT, POST, and DELETE methods, thereby avoiding the CPU utilization associated with traditional SNMP management.

mDNS (Multicast DNS) and DNS server/client feature and MQTT-role of Publisher or Broker

It supports mDNS (Multicast DNS) which enables hosts in the LAN to discover and communicate with devices each other in compliance with the DNS protocol, without requiring a traditional DNS server. The switch can act as MQTT Publisher or Broker that can send data to the broker then broker distributors the “payload” to the subscribers all in a very lightweight protocol.

User-friendly GUI, Auto topology drawing, Editable configuration text file, Enhanced Environmental Monitoring, CPU watchdog, Snapshot switch information for trouble-shooting analysis

The user-friendly UI, innovative auto topology drawing, and topology demo make the Lantech switch much easier to use. The configuration file can be exported as a text file, allowing it to be easily edited and reconfigured for mass deployment. It supports enhanced environmental monitoring of actual input voltage, current, ambient temperature, and total power load where user can set threshold to trigger an alert or event log. The built-in watchdog design can automatically reboot the switch if the CPU becomes unresponsive. With the distinctive Snapshot feature, the switch can gather data, including port statistics, system core information, configuration, and event logs, either at a specific point in time or by scheduling, to address switch issues and analyze the root cause promptly.

OPTIONAL FEATURES

Optional Sleep Mode, Ignition timer; ITxPT Xstatus, DNS-SD and MQTT protocol on IGN model

To meet ITxPT specifications, the -IGN model supports Sleep Mode, in which no network features are active and remains the device's power consumption below 0.048W.
In addition, the switch supports the ITxPT Xstatus, DNS-SD and MQTT protocol for comprehensive remote monitoring of Ethernet switch status.
The -IGN model also includes the Ignition timer to configure both individual PoE port shutdown delays (PoE model) and system shutdown (entering Sleep Mode) from 30 seconds up to 60 minutes (system off timer default: 60 minutes). This eliminates the need for additional relay wiring and supports remote PoE timer configuration anytime, from anywhere.

Optional LantechView for Lantech devices maintenance

LantechView** can automatically discover Lantech devices on the network, providing seamless configuration management across multiple IP subnets and VLAN areas (single device and batch). It also supports firmware

management, allowing single and batch verification and simultaneous upgrades to the latest firmware versions. To learn more about Lantech LantechView** software solutions, please refer to https://www.lantechcom.tw/global/eng/download/datasheet/D-LantechView.pdf

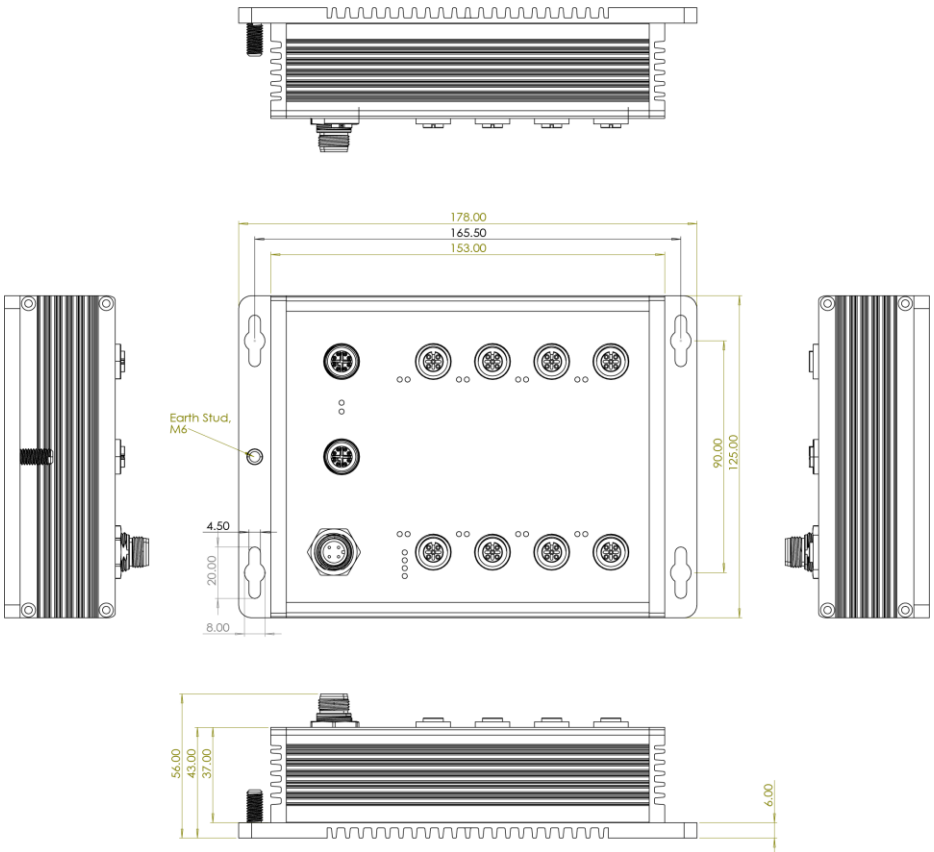
OS2 Pro Web-managed vs. OS2 Pro Standard models comparison

	OS2 Pro Web-managed	OS2 Pro Standard
Management	Web UI/Telnet	Web UI/Telnet Complete CLI command line
IEC 62443 Cyber Security	NA	Y
Hardware Environmental Monitoring	NA	Y
Bypass	NA	Y
Boot up time	Within 60sec.	Within 60sec. (for Cyber security -IEC model around 90sec.)

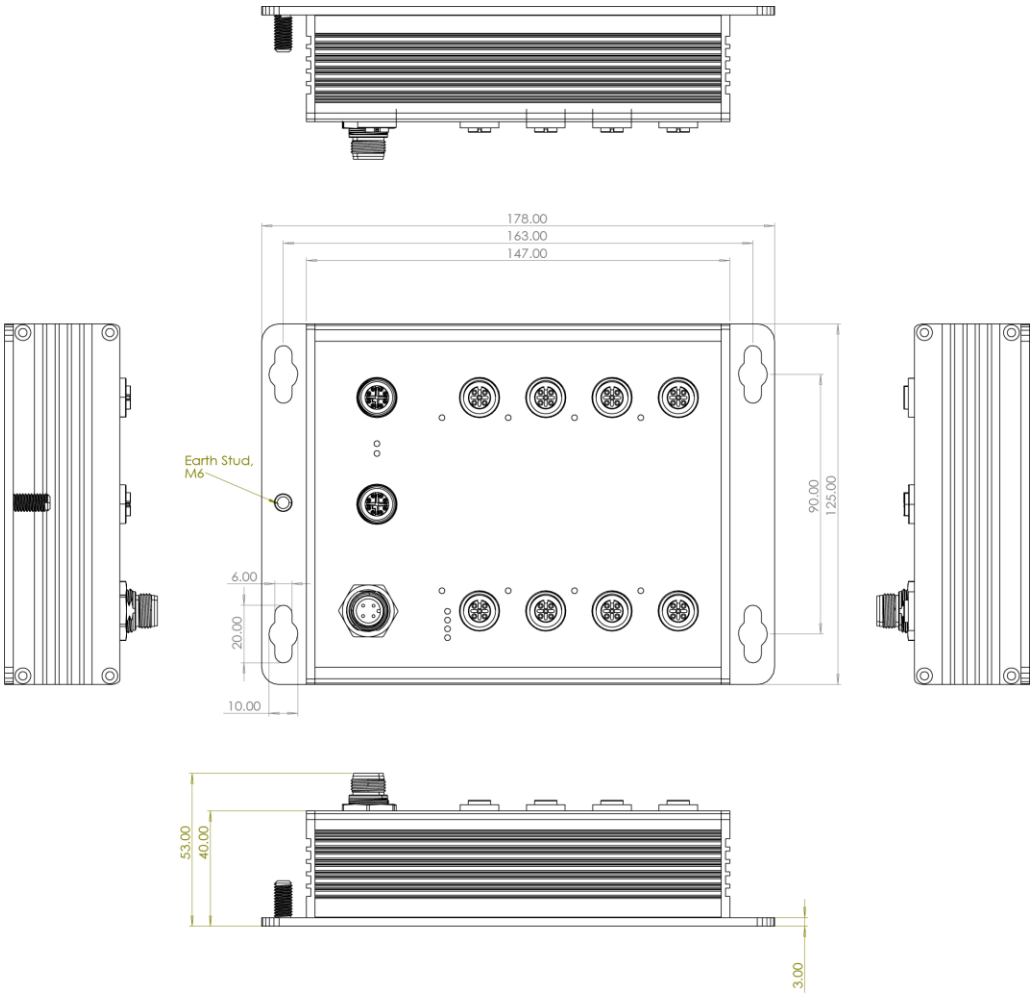
(Note: OS2 Pro Web-managed is only available on 24VI models)

DIMENSIONS (unit=mm)

PoE model



Non-PoE model



SPECIFICATIONS

Hardware Specification

Standards	IEEE802.3 10Base-T Ethernet IEEE802.3u 100Base-TX IEEE802.3ab 1000Base-T Ethernet IEEE802.3x Flow Control and Back Pressure IEEE802.3ad Port trunk with LACP IEEE802.1d Spanning Tree IEEE802.1w Rapid Spanning Tree IEEE802.1s Multiple Spanning Tree IEEE802.3ad Link Aggregation Control Protocol (LACP) IEEE802.1AB Link Layer Discovery Protocol (LLDP) IEEE802.1X User Authentication (Radius) IEEE802.1p Class of Service IEEE802.1Q VLAN Tag IEEE802.3at/af Power over Ethernet (PoE model)
Switch Architecture	Back-plane (Switching Fabric): 11.6Gbps
Transfer Rate	14,880pps for Ethernet port 148,800pps for Fast Ethernet port 1,488,000pps for Gigabit Ethernet port
Mac Address	16K MAC address table
Jumbo frame	10KB
Connectors	10/100TX: 8 x M12 4-pole D-coded Push-Pull (Router/LAN configurable) 1G/2.5G: 2 x M12 8-pole X-coded Push-Pull (Router/LAN configurable) Power Input connector: 1 x M12 4-pole Male A-coded Reset/Console/USB: 1 x M12 8-pole A-code Push-Pull
Network Cable	10Base-T: 2-pair UTP/STP Cat. 3, 4, 5/ 5E/ 6 cable EIA/TIA-568 100-ohm (100m) 100Base-TX: 2-pair UTP/STP Cat. 5/ 5E/ 6 cable EIA/TIA-568 100-ohm (100m) 1000Base-TX: 2-pair UTP/STP Cat. 5/ 5E/ 6 cable EIA/TIA-568 100-ohm (100m)
LED	Per unit: Power 1 (Green), Power 2 (Green), FAULT (Red); RM(Green) Ethernet port: Link/Activity (Green), Speed (Amber) PoE: Link/Act (Green)
Operating Humidity	5% ~ 95% (Non-condensing)
Operating Temperature	-40°C~70°C / -40°F~158°F (-24VI-IGN-E) -20°C~60°C / -4°F~140°F (-IGN)
Storage Temperature	-40°C~85°C / -40°F~185°F
Power Supply	9-36VDC (24VI)
PoE Budget (PoE model)	80W at 24VDC

PoE pin assignment (PoE model)	M12 port #1-#8 supports IEEE 802. 3at/af End-point. Per port provides up to 30W
Power Consumption	7W (w/o PoE load)
Case Dimension	IP54: Aluminum case 178mm(W)x125mm(H)x56mm(D) (PoE models) 178mm(W)x125mm(H)x53mm(D) (Non-PoE models)
Weight	1.05kgs
Installation	Wall Mount
EMI & EMS	FCC Class A,

	CE EN55032 Class A, CE EN55024, CE EN61000-4-2, CE EN61000-4-3, CE EN61000-4-4, CE EN61000-4-5, CE EN61000-4-6, CE EN61000-4-8, CE EN61000-6-2, CE EN61000-6-4
Vehicle Certificate	E24 marking* (UN ECE R10) ITxPT labeled*
MTBF	351,801 hrs

Software Specification

Lantech OS2 PRO Platform	Download Software Datasheet

*Future release
**Optional

ORDERING INFORMATION

All model packages include M12 caps. For coating add –C to model names.

- **TPES-3208MGT-WEB-54-24VI-IGN-E-PP …..…….…... P/N: 8351-15001**
  8 10/100TX + 2 1G/2.5G Copper w/8 PoE at/af L2+ Web-managed NAT router Switch w/PoE & Ethernet galvanic isolation; 9~36VDC dual input; -40°C to 70°C; IP54 rated w/ignition
- **TES-3208MGT-WEB-54-24VI-IGN-E-PP …..…….…....P/N: 8351-15021**
  8 10/100TX + 2 1G/2.5G Copper L2+ Web-managed NAT router Switch w/ Ethernet galvanic isolation; 9~36VDC dual input; -40°C to 70°C; IP54 rated w/ignition

OPTIONAL ACCESSORIES

Software package

Please refer to the software datasheet

M12 Connector & Cable

Connector

ECONM12-04A(F)-C-180	4 pin M12 (Female) A-coded 180 degree crimp type connector for power supply
ECONM12-04D(M)-C-180	4 pin M12 (Male) D-coded 180 degree crimp type connector for data
ECONM12-08X(M)-SPEEDCON	8 pin M12 (Male) X-coded 180 degree crimp type connector for data, Ethernet CAT6A (10G), shielded, SPEEDCON

Cable

ECONM12-4P(F)1.5M CABLE	4 pin M12 (Female) A-coded 90 degree cable for power supply, 150cm
ECAB124030MJS	4 pin M12 (Male) D-coded 180 degree RJ45 STP cable for data, 300cm
ECABM12X83MSTP	8 pin M12 (Male) X-coded 180 degree RJ45 STP cable for data, shielded, 300cm

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