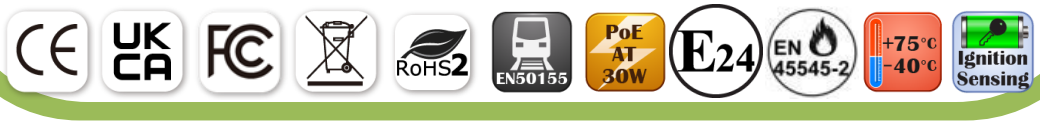
T(P)ES-0212MGT

12 FE + 2 2.5G (PoE) M12 Unmanaged Ethernet Switch

- *IEEE802.3at/af up to 30W PoE output (for PoE model)*
- *Dual power inputs 9~36V (24VI model) or 16.8~56V (24TVI model); with galvanic isolation between input power, PoE (for PoE model) and all Ethernet ports*
- *Wide Operating Temperature from -40℃ to 75℃ (-E;-24TVI model)*
- *Efficient PoE timer when ignition off*
- *Inrush current prevention; polarity reverse protection*
- *IP54 Aluminum housing for best heat dissipation and preventing moist ingress*
- *EN50155/50121-3-2/50121-4 and EN45545-2 Fire & Smoke verification*
- *E-mark* certificate for vehicle (24VI model)*
- *ITxPT* labeled w/ignition function (24VI-IGN model)*



OVERVIEW

Lantech T(P)ES-0212MGT is a 12 10/100 Base-TX and 2 1G/2.5G Copper with M12-connectors unmanaged Ethernet switch with IP54-rated protection which meets the high-reliability requirements demanded by industrial rolling stock applications.

Redundant dual 24VI/24TVI input with max PoE budget; inrush current prevention and polarity reverse protection

The T(P)ES-0212MGT 24VI model accepts 9~36VDC dual input and 24TVI model accepts 16.8~56VDC with galvanic isolation between input power to PoE and all Ethernet ports. PoE feeding with 120W budget from internal power. The redundant power input design prevents inrush current and safeguards against polarity reversal.

Efficient PoE timer when ignition off (-IGN model)

Supports PoE feeding OFF timer (default set as 10mins) and system OFF timer default set as 60mins at ignition off mode to prevent car battery drain-out. (-IGN model)

E-marking* certificate, ITxPT*; ISO 7637-2 compliant and extended working temperature

The T(P)ES-0212MGT is designed to meet with a critical network environment with IP54 enclosure and M12 connectors for protection against dust and water. It has passed harsh environmental testing to comply with Industrial EMI and Safety standards as well as stability testing such as Free fall, Shock, and vibration. It is labeled with ITxPT* public transport standards and also compliant with ISO 7637-2 which protects switch from being damaged by high voltage that could be found at vehicle cranky start.

For greater flexibility in application, the T(P)ES-0212MGT supports an extended operating temperature range from -40°C to 75°C. (-IGN-E; -24TVI model)

The E-marking* certificate makes it the most suitable switch for bus, carriage, other vehicle applications as well as for industrial areas where the power source is limited with 12V or 24V but has demand of IP surveillance or VoIP applications.

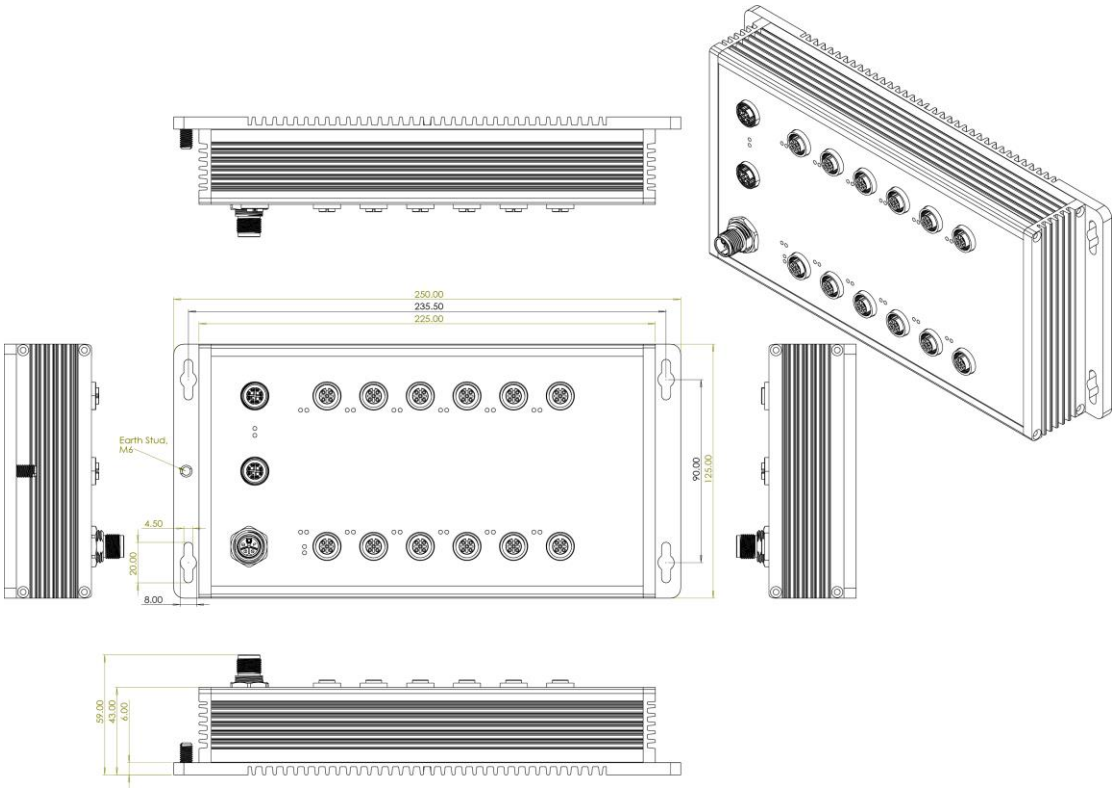
FEATURES & BENEFITS

- **12 10/100TX + 2 1G/2.5GT Unmanaged EN50155 Ethernet Switch with M12 connectors and IP54 rated protection**
- **Supports IEEE802.3at/af feeding power up to 30W per PoE port (for PoE model), total PoE budget 120W**
- **Back-plane (Switching Fabric): 12.4 Gbps**

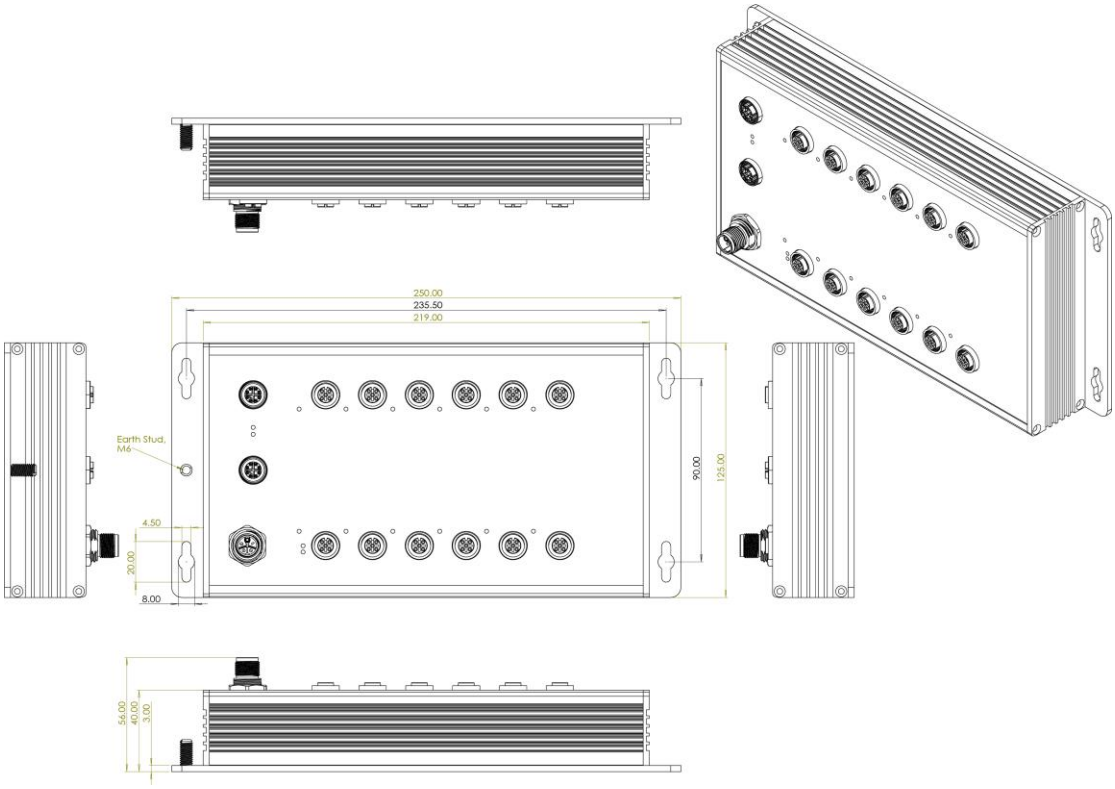
- 8K MAC address table
- Wide Operating Temperature (-40°C ~75°C) (-E; -24TVI model)
- Wall mount design
- E-mark* certificate for vehicle (24VI model)
- EN50155*/50121-3-2/50121-4 and EN45545-2 Fire & Smoke verification
- Inrush current prevention; polarity reverse protection
- ITxPT* labeled w/ ignition function (24VI-IGN model)

DIMENSIONS (unit=mm)

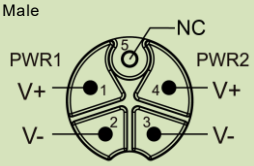
PoE model

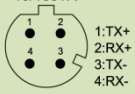


Non-PoE model



SPECIFICATIONS

Hardware Specification	
IEEE Standard	IEEE802.3 10BASE-T Ethernet IEEE802.3u 100BASE-T Ethernet IEEE802.3ab 1000Base-T Ethernet IEEE802.3x Flow Control and Back Pressure IEEE802.3at/af Power over Ethernet (For PoE Model)
Transfer Rate	14,880pps for Ethernet port 148,800pps for Fast Ethernet port
Mac Address	8K MAC address table
Connector	10/100TX: 12 x M12, 4-pole D-coded, Female with auto MDI/MDI-X function 1G/2.5G: 2 x M12, 8-pole X-coded, Female with auto MDI/MDI-X function Power connector: 1 x M12, 5-pole K coded, Male 
LED	Per unit: Power 1 (Green), Power 2 (Green), Ethernet: Link/Activity (Green) PoE: (Green)
PoE pin assignment	M12 port # 1~ # 12 support IEEE 802.3at/af End-point. Per port provides up to 30W

	
Power Supply	Dual input 9~36VDC (24VI model) 16.8~56VDC (24TVI model)
Power Consumption	7.5W without PoE
Power Budget	Total 120W @ 24VDC
Operating Humidity	5% to 95% (Non-condensing)
Operating Temperature	-40°C ~ 75°C (-40°F ~ 167°F) (-IGN-E; -24TVI model) -20°C ~ 60°C (-4°F ~ 140°F) (-IGN model)
Storage Temperature	-40°C ~ 85°C (-40°F ~ 185°F)
Case Dimension	Aluminum case, IP54 rated 250mm(W)x125mm(H)x59mm(D) (PoE models) 250mm(W)x125mm(H)x56mm(D) (Non-PoE models)
Weight	TBC
Installation	Wall Mount Design
EMC	FCC Part 15, Subpart B ICES-003 Issue 7, EN 55035:2017/A11:2020, EN 55032:2015/A11:2020, IEC 61000-4-2:2008, IEC 61000-4-3:2020, IEC 61000-4-4:2012, IEC 61000-4-5:2014+AMD1:2017 CSV, IEC 61000-4-6:2023,

	IEC 61000-4-8:2009, IEC 61000-6-2:2016, IEC 61000-6-4:2018, EN IEC 61000-6-2:2019, EN IEC 61000-6-4:2019, BS EN 55035:2017+A11:2020, BS EN 55032:2015+A11:2020
Stability Testing	EN 61373:2010 (Shock and Vibration)
Verifications & Report	EN 50155*:2021, EN 50121-4:2016/A1:2019,
	EN 50121-3-2:2016/A1:2019, EN 50124-1:2017, EN 45545-1, EN 45545-2 Fire & Smoke verification
Vehicle certificate	E24 marking* (24VI model) ITxPT* labeled (24VI-IGN model)
MTBF	347,682 hrs (standards: IEC 62380)
Warranty	5 years

*Future release
**Optional

ORDERING INFORMATION

All model packages include M12 caps and wall mount brackets. All standard models are non-coating, optional coating models are available with –C model name.

- **TPES-0212MGT-54-24VI-IGN-E……..P/N: 8361-041**
  12 10/100TX PoE at/af + 2 1G/2.5G IP54 rated unmanaged Ethernet Switch w/M12 connectors; -40°C to 75°C; 9~36VDC dual input w/ PoE & Ethernet galvanic isolation; w/ignition
- **TES-0212MGT-54-24VI-IGN-E……..P/N: 8361-0411**
  12 10/100TX + 2 1G/2.5G IP54 rated unmanaged Ethernet Switch w/M12 connectors; -40°C to 75°C; 9~36VDC dual input w/ Ethernet galvanic isolation; w/ignition
- **TPES-0212MGT-54-24VI-IGN……..P/N: 8361-0412**
  12 10/100TX PoE at/af + 2 1G/2.5G IP54 rated unmanaged Ethernet Switch w/M12 connectors; -20°C to 60°C; 9~36VDC dual input w/ PoE & Ethernet galvanic isolation; w/ignition
- **TES-0212MGT-54-24VI-IGN……..P/N: 8361-0413**
  12 10/100TX + 2 1G/2.5G IP54 rated unmanaged Ethernet Switch w/M12 connectors; -20°C to 60°C; 9~36VDC dual input w/ Ethernet galvanic isolation; w/ignition
- **TPES-0212MGT-54-24TVI……..P/N: 8361-0414**
  12 10/100TX PoE at/af + 2 1G/2.5G IP54 rated EN50155 Ethernet Switch w/M12 connectors; -40°C to 75°C; 16.8~56VDC dual input w/ PoE & Ethernet galvanic isolation
- **TES-0212MGT-54-24TVI……..P/N: 8361-0415**
  12 10/100TX + 2 1G/2.5G IP54 rated EN50155 Ethernet Switch w/M12 connectors; -40°C to 75°C; 16.8~56VDC dual input w/ Ethernet galvanic isolation

OPTIONAL ACCESSORIES

M12 Connector & Cable

Connector

- **4106-00000097-001 ECONM12-05K(F)-S-180** — 5 pin M12 (Female) K-coded 180 degrees screw 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

- **4106-00000096-001 ECABM12-05K(F)-90-1.5M** — 5 pin M12 (Female) K-coded 90 degrees 1.5M cable for power supply
- **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
- **ECONM12-05K(F) to MCP 6P-20CM CABLE** — 5 pin M12 (Female) K-coded 180 degree to 6 pin MCP power cable, 20cm (For ignition models)

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