T(P)ES-0212T

12 10/100TX + 2 10/100/1000T X coded w/8/12 PoE at/af EN50155

Ethernet Switch; 24VI / 24TVI model

■ *EN50155/61373/45545-2 verification*

■ *IEEE802.3at/af up to 30W PoE output*

■ *Dual 9~36VDC (24VI model) or 16.8~56VDC (24TVI model) input selection*

■ *Wide Operating Temperature from -40°C to 75°C*

■ *IP54 Aluminum housing for best heat dissipation and preventing moist ingress*

■ *E-mark* certificate for vehicle (24VI model)*

■ *ITxPT** design w/ ignition function (24VI-IGN model)*

OVERVIEW

Lantech T(P)ES-0212T is a 12 10/100Base-TX + 2 10/100/1000 Base-T w/8/12 port 802.3at/af PoE ports with M12-connectors unmanaged EN50155 Ethernet switch with IP54 rated protection which meets the high reliability requirements demanded by industrial rolling stock applications.

Up to @30W PoE+ output with 8/12 PoE ports
The TPES-0212T supports IEEE802.3at/af standard which can feed HI-power up to 30W at each PoE port (8/12 ports in total) for various IP PD devices.

PoE galvanic isolation up to 1.5KVDC to provide power input to PoE Ethernet ports insulation prevents cabling and grounding incidents from damaging the Ethernet switch itself.

E-marking* certificate; ISO 7637-2 compliant and extended working temperature
The T(P)ES-0212T is designed to meet with 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 compliant with ISO 7637-2 which protects switch from being damaged by high voltage that could be found at vehicle cranky start.

For a greater flexibility in application the T(P)ES-0212T supports an extended operating temperature range from -40°C to 75°C.

The E-marking* certificate makes it the most suitable switch for bus, carriage, other vehicles application 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.

EN50155, EN45545-2, EN61373 verification; High ESD protection
Lantech T(P)ES-0212T features high reliability and robustness coping with extensive EMI/RFI phenomenon, environmental vibration and shocks usually found in factory, substation, steel automation, aviation, mining and process control. It is the best solution for Automation, transportation, surveillance, Wireless backhaul, Semi-conductor factory and assembly lines.
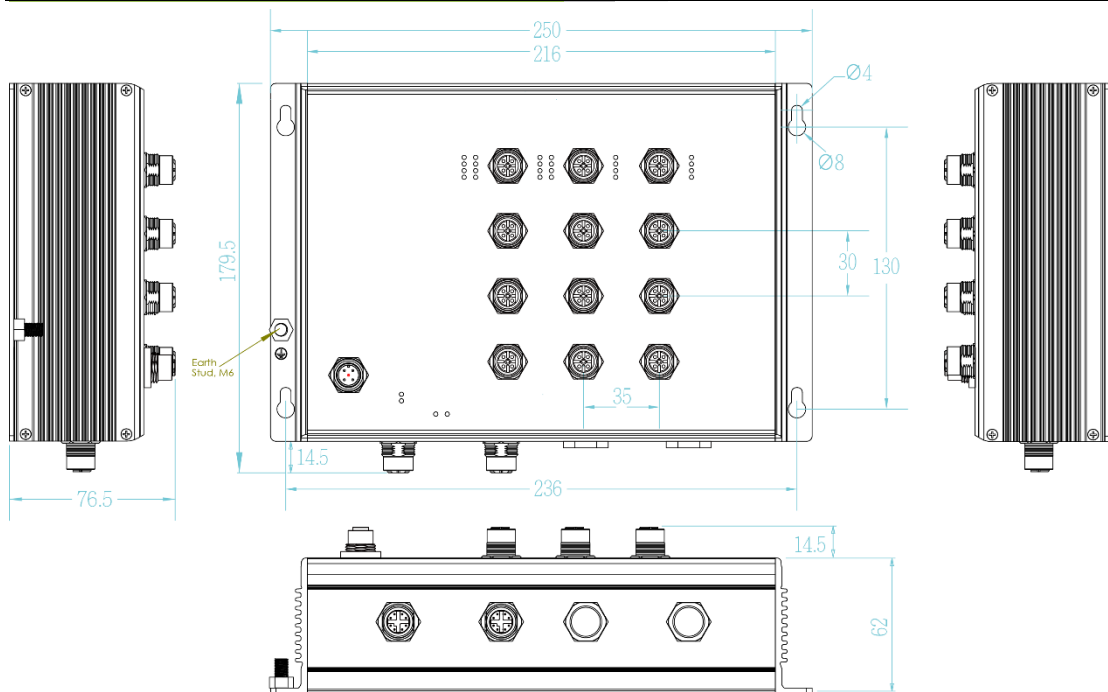
ITxPT** design with Ignition function using software
T(P)ES-0212T is designed with ITxPT public transport standards and also compliant with ISO 7637-2 which protects switch from being damaged by high voltage that could be found at vehicle cranky start. (24V-IGN model)

FEATURES & BENEFITS

- **12 10/100TX + 2 10/100/1000T Unmanaged EN50155 Ethernet Switch with M12 connectors and IP54 rated protection**

- **Supports IEEE802.3at/af feeding power up to 30W per PoE port**

- **Dual power input voltage 9~36VDC for 24VI model and can boost to 54V for PoE 802.3at/af at max 80W budget**

- **Dual power input voltage 16.8~56VDC for 24TVI model and can boost to 54V for PoE 802.3at/af at max 80W**

- budget

- **Back-plane (Switching Fabric): 6.4 Gbps**

- **8K MAC address table**

- **Wide Operating Temperature (-40°C ~75°C)**

- **Din rail** and wall mount design**

- **EN45545-2 Fire & Smoke, EN50155 and EN61373 shock/vibration verification**

- **E-mark* certificate for vehicle (24VI model)**

- **ITxPT** design w/ ignition function (24VI-IGN model)**

DIMENSIONS (unit=mm)

*Note: The component in red color only appears on -IGN models.

SPECIFICATIONS

Hardware Specification

IEEE Standard	IEEE802.3 10BASE-T Ethernet IEEE802.3u 100BASE-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 10/100/1000T: 2 x M12, 8-pole X-coded, Female with auto MDI/MDI-X function Power connector: 1 x M12, 4-pole A-coded,

Male; 1 x M12, 5-pole A-coded, Male (IGN models)

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

10/100TX

1:TX+
2:RX+
3:TX-
4:RX-

Power Supply	24VI: Dual input 9~36VDC 24TVI: Dual input 16.8~56VDC
Power Consumption	Max. 4.3W
Power Budget	Total 80W @ 24VDC and above Higher PoE budget can be applied upon request. **
Operating Humidity	5% to 95% (Non-condensing)
Operating Temperature	-40°C ~ 75°C (-40°F ~ 167°F)
Storage Temperature	-40°C ~ 85°C (-40°F ~ 185°F)
Case Dimension	Aluminum case, IP54 250mm(W)x179.5mm(H)x76.5mm(D)
Weight	1.8kg
Installation	Wall Mount Design
EMC	FCC Class A, CE EN55011, CE EN61000-4-2 (ESD), CE EN61000-4-3 (RS), CE EN61000-4-4 (EFT), CE EN61000-4-5 (Surge),

	CE EN61000-4-6 (CS), CE EN61000-4-8 (Magnetic Field), CE EN61000-6-2, CE EN61000-6-4, CE EN55032, CE EN55035 BS EN61000-4-2, BS EN61000-4-3, BS EN61000-4-4, BS EN61000-4-5, BS EN61000-4-6, BS EN61000-4-8, BS EN55032, BS EN55035
Stability Testing	EN61373 (Shock and Vibration)
Verifications & Report	EN50155/EN50121-3-2/EN50121-4 verification EN45545-2 R13/R22/R23/R24/R25 (EN ISO 4589-2, EN ISO 5659-2, NF X70-100-1 & 2) Fire & Smoke verification
Vehicle certificate	E13 marking* (24VI model) ITxPT design** (24VI-IGN model)
MTBF	TPES-0212T : 900,182 hours TES-0212T : 1,009,784 hours (standards: IEC 62380)
Warranty	5 years

*Future Release
**Optional

ORDERING INFORMATION

All model packages include M12 caps and wall mount bracket. All standard models are non-coating, optional coating models are available with –C model names. Optional bypass models are available with –BT.

- **TPES-0212T-8-54-24VI-IGN…..…………...…..……........P/N: 8360-56791**
  12 10/100TX + 2 10/100/1000T IP54 rated w/8 port PoE at/af EN50155 Unmanaged Ethernet Switch w/M12 connectors; -40°C to 75°C; 9~36VDC dual input; w/ignition & PoE galvanic isolation
- **TPES-0212T-12-54-24VI-IGN…..…………...…..……......P/N: 8360-56796**
  12 10/100TX + 2 10/100/1000T IP54 rated w/12 port PoE at/af EN50155 Unmanaged Ethernet Switch w/M12 connectors; -40°C to 75°C; 9~36VDC dual input; w/ignition & PoE galvanic isolation
- **TPES-0212T-8-54-24VI…..…………....…..……...........P/N: 8360-56792**
  12 10/100TX + 2 10/100/1000T IP54 rated w/8 port PoE at/af EN50155 Unmanaged Ethernet Switch w/M12 connectors; -40°C to 75°C; 9~36VDC dual input w/ PoE galvanic isolation
- **TPES-0212T-12-54-24VI…..…………....…..…............P/N: 8360-56797**
  12 10/100TX + 2 10/100/1000T IP54 rated w/12 port PoE at/af EN50155 Unmanaged Ethernet Switch w/M12 connectors; -40°C to 75°C; 9~36VDC dual input w/ PoE galvanic isolation
- **TES-0212T-54-24VI-IGN…..…………...…..……..............P/N: 8360-5679**
  12 10/100TX + 2 10/100/1000T IP54 rated EN50155 Unmanaged Ethernet Switch w/M12 connectors; -40°C to 75°C; 9~36VDC dual input; w/ignition & galvanic isolation
- **TES-0212T-54-24VI…..…………...…..……..................P/N: 8360-56794**
  12 10/100TX + 2 10/100/1000T IP54 rated EN50155 Unmanaged Ethernet Switch w/M12 connectors; -40°C to 75°C; 9~36VDC dual input w/ galvanic isolation
- **TPES-0212T-8-54-24TVI…..…………...…..…..............P/N: 8360-56798**
  12 10/100TX + 2 10/100/1000T IP54 rated w/8 port PoE at/af EN50155 Unmanaged Ethernet Switch w/M12 connectors; -40°C to 75°C; 16.8~56VDC dual input w/ PoE galvanic isolation
- **TPES-0212T-12-54-24TVI…..…………...…..…..............P/N: 8360-56799**
  12 10/100TX + 2 10/100/1000T IP54 rated w/12 port PoE at/af EN50155 Unmanaged Ethernet Switch w/M12 connectors; -40°C to 75°C; 16.8~56VDC dual input w/ PoE galvanic isolation
- **TES-0212T-54-24TVI…..…………...…..……..................P/N: 8360-56793**
  12 10/100TX + 2 10/100/1000T IP54 rated EN50155 Unmanaged Ethernet Switch w/M12 connectors; -40°C to 75°C; 16.8~56VDC dual input w/ galvanic isolation

OPTIONAL ACCESSORIES

M12 Connector & Cable

Connector

■ **ECON120005PF**   5 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

Cable

■ **ECONM12-5P(F)70CM CABLE**   5 pin M12 (Female) A-coded 90 degree cable for power supply, 70cm

■ **ECAM124030MJS**   4 pin M12 (Male) D-coded 180 degree RJ45 STP cable for data, 300cm

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