

# T(P)ES-0210T

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

Ethernet Switch; 24V / 24TV model

- EN50155 / 61373 / 45545-2 verification
- IEEE802.3at/af up to 30W PoE output (For PoE model)
- Dual power input 9~36V (24V model) compliant with ISO 7637-2; Dual power input 16.8~56V (24TV model)
- 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 (24V model)
- ITxPT\*\* design w/ ignition function (24V-IGN model)



## OVERVIEW

Lantech T(P)ES-0210T is a 10 10/100Base-TX + 2 10/100/1000 Base-T w/8/10 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.

### **E-marking\* certificate; ISO 7637-2 compliant and extended working temperature**

The T(P)ES-0210T 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-0210T 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-0210T 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**

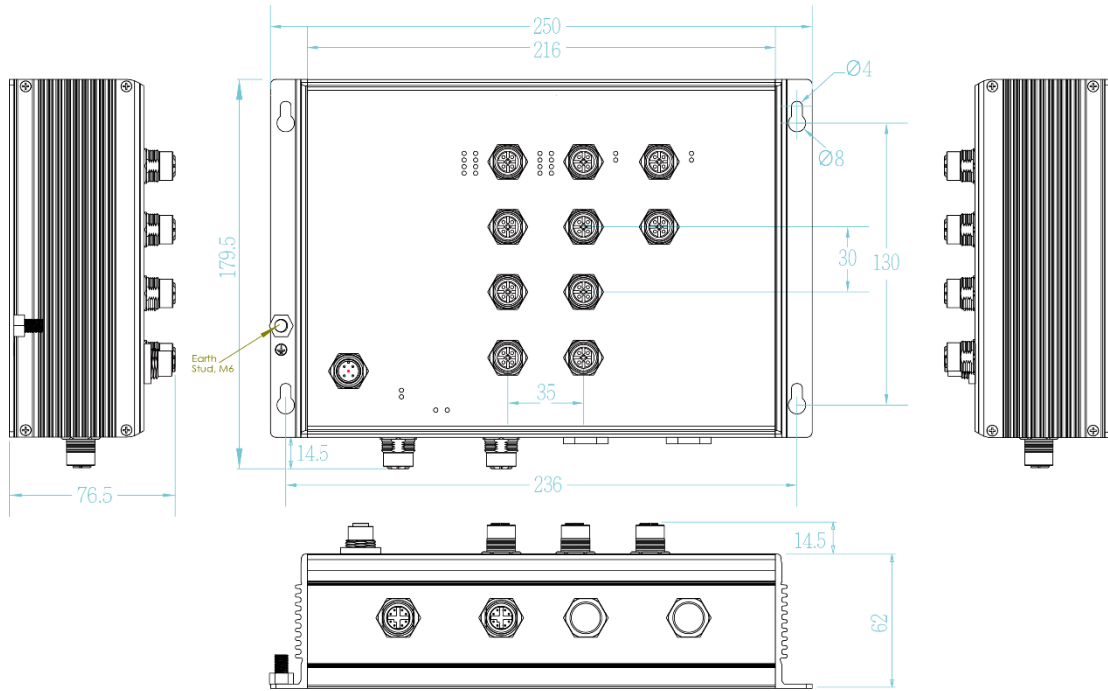
T(P)ES-0210T is designed with ITxPT public transport standards and also compliant with ISO 7637-2 which protects switch from being damaged by high voltage that could be found at vehicle cranky start. (24V-IGN model)

## FEATURES & BENEFITS

- 10 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
- Back-plane (Switching Fabric): 6 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 (24V model)
- ITxPT\*\* design w/ ignition function (24V-IGN model)

**DIMENSIONS (unit=mm)**



**SPECIFICATIONS**

Hardware Specification		LED
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)	Per unit: Power 1 (Green), Power 2 (Green), Ethernet: Link/Activity (Green) PoE: (Green)
Transfer Rate	14,880pps for Ethernet port 148,800pps for Fast Ethernet port	PoE pin assignment
Mac Address	8K MAC address table	M12 port # 1 - # 12 support IEEE 802.3at/af End-point. Per port provides up to 30W
Connector	10/100TX: 10 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 model)	
		Power Supply
		Dual input 9~36VDC (24V model) 16.8~56VDC (24TV model)
		Power Consumption
		Max. 4.3W
		Power Budget
		Total 80W @ 24VDC and above Higher PoE budget can be applied upon request. ** <b>Note: This is a non-PoE galvanic isolated model.</b>
		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)		BS EN61000-4-5, BS EN61000-4-6, BS EN61000-4-8, BS EN55032, BS EN55035
Case Dimension	Aluminum case, IP54 250mm(W)x179.5mm(H)x76.5mm(D)		
Weight	1.8kg	Stability Testing	EN61373 (Shock and Vibration)
Installation	Wall Mount Design	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
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,	Vehicle certificate	E13 marking* (24V model) ITxPT design** (24V-IGN model)
		MTBF	TPES-0210T : 910,056 hours TES-0210T : 1,022,226 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-0210T-8-54-24V-IGN.....P/N: 8350-342**  
10 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
- **TPES-0210T-10-54-24V-IGN.....P/N: 8350-3421**  
10 10/100TX + 2 10/100/1000T IP54 rated w/10 port PoE at/af EN50155 Unmanaged Ethernet Switch w/M12 connectors; -40°C to 75°C; 9~36VDC dual input; w/ignition
- **TPES-0210T-8-54-24V-IGN-BT.....P/N: 8350-34201**  
10 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; with one pair Bypass
- **TPES-0210T-10-54-24V-IGN-BT.....P/N: 8350-34211**  
10 10/100TX + 2 10/100/1000T IP54 rated w/10 port PoE at/af EN50155 Unmanaged Ethernet Switch w/M12 connectors; -40°C to 75°C; 9~36VDC dual input; w/ignition; with one pair Bypass
- **TPES-0210T-8-54-24V.....P/N: 8350-3422**  
10 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
- **TPES-0210T-10-54-24V.....P/N: 8350-3423**  
10 10/100TX + 2 10/100/1000T IP54 rated w/10 port PoE at/af EN50155 Unmanaged Ethernet Switch w/M12 connectors; -40°C to 75°C; 9~36VDC dual input
- **TES-0210T-54-24V-IGN.....P/N: 8350-343**  
10 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
- **TES-0210T-54-24V-IGN-BT.....P/N: 8350-3431**  
10 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; with one pair Bypass
- **TES-0210T-54-24V.....P/N: 8350-3432**  
10 10/100TX + 2 10/100/1000T IP54 rated EN50155 Unmanaged Ethernet Switch w/M12 connectors; -40°C to 75°C; 9~36VDC dual input
- **TPES-0210T-8-54-24TV.....P/N: 8350-34221**  
10 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
- **TPES-0210T-10-54-24TV.....P/N: 8350-34231**  
10 10/100TX + 2 10/100/1000T IP54 rated w/10 port PoE at/af EN50155 Unmanaged Ethernet Switch w/M12 connectors; -40°C to 75°C; 16.8~56VDC dual input
- **TES-0210T-54-24TV.....P/N: 8350-34321**  
10 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

**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

**Lantech Communications Global Inc.**

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