T(P)ES-0105T

5 FE + 1 GE (POE) M12 Unmanaged Ethernet Switch

OVERVIEW

Lantech T(P)ES-0105T is an unmanaged Ethernet switch featuring 5 × 10/100 Base-TX and 1 × 10/100/1000 Base-T ports, including 5 PoE 802.3af/at ports. Built with M12 connectors and IP44-rated protection, it ensures secure connections and durability. Designed to meet EN50155 standards, T(P)ES-0105T fulfills the stringent reliability requirements of industrial rolling stock applications.

PoE model supports up to 5 PoE at/af ports and PoE galvanic isolation PoE model; Inrush current protection

Complying with IEEE 802.3af/at standards, the PoE model to supply up to 30W per port with a total PoE budget of 55W for various IP PD devices. PoE galvanic isolation up to 1.5KVDC ensures insulation between the power input and PoE Ethernet ports, preventing cabling or grounding incidents from damaging the switch.

TPES-0105T supports dual power inputs: 9–36VDC (24VI) or 16.8–56VDC (24TVI), with startup inrush current limited to less than 10 times nominal.

Sleep Mode & efficient PoE timer under Ignition-Off State

Compliant with ITxPT standards, the -IGN model features a 60-minute standby mode after ignition-off, maintaining network operation before entering sleep mode(0.048W)—preventing unnecessary reboots when power is restored.

The PoE ignition model also supports a configurable PoE timer, with a default delay of 10 minutes after ignition-off.

E-marking certificate, ISO 16750-2 P5A compliance (24VI model); ITxPT* (24VI-IGN model)

T(P)ES-0105T complies with ISO 16750-2 P5A (12V system DC 14V 87V/0.5Ω/400ms; 24V system DC 28V 174V/2Ω/350ms), safeguarding it from high-voltage damage commonly encountered during vehicle crank starts.

Certified with E-marking, this switch is ideal for buses, carriages, trams, and other onboard networks, as well as industrial environments with limited 12V or 24V power sources requiring IP surveillance or other applications.

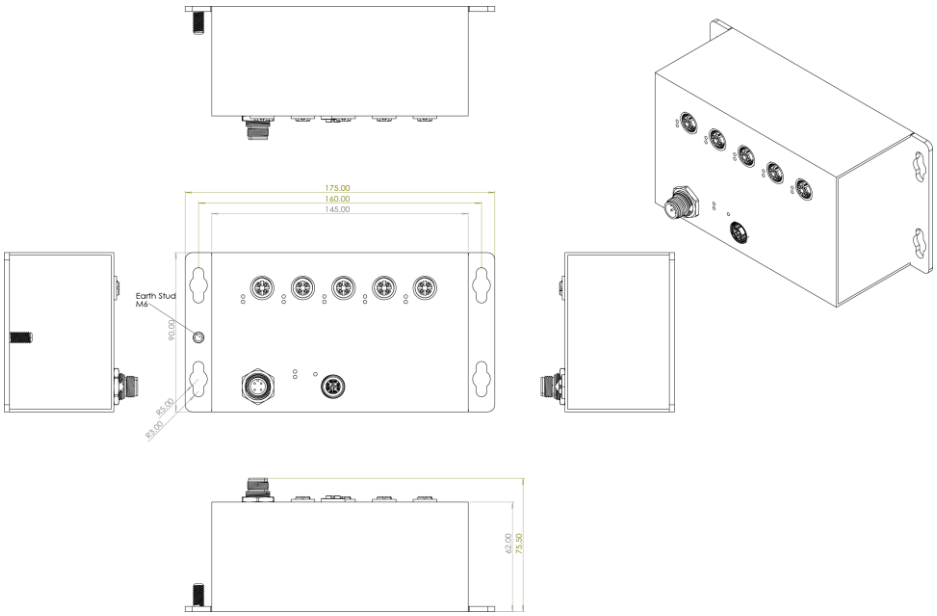
It is also compliant with ITxPT public transport standards (24VI-IGN model).

For enhanced application flexibility, T(P)ES-0105T supports an extended operating temperature range from -40°C to 70°C (Standard Model).

EN50155, EN45545-2; EN61373 compliance; High ESD protection

T(P)ES-0105T passed serious tests under extensive Industrial EMI and Safety standards. With EN45545-2 Fire & Smoke and EN50155 verification, the -TVI model is suitable for railway on-board/track side and mining applications.

IMENSIONS (unit=mm)



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 (PoE model)
Transfer Rate	14,880pps for Ethernet port 148,800pps for Fast Ethernet port
Mac Address	8K MAC address table
Connector	10/100TX: 5 x M12, 4-pole D-coded push-pull connectors with auto MDI/MDI-X function 10/100/1000T: 1 x M12, 8-pole X-coded push-pull connectors with auto MDI/MDI-X function Power connector: 1 x M12, 4-pole A coded, Male
LED	Per unit: Power 1 (Green), Power 2 (Green), Ethernet: Link/Activity (Green) PoE: (Green, PoE model)
PoE pin assignment (PoE model)	M12 port # 1~ # 5 support IEEE 802.3at/af End-point. Per port provides up to 30W 10/100TX 1:TX+ 2:RX+ 3:TX- 4:RX- PoE pin assignment: P1,3: V+ P2,4: V-
Power Supply	Dual input 9~36VDC (24VI model)

	16.8~56VDC (24TVI model)
Minimum/Maximal current	Minimum current: 0.15A at 24Vdc power input voltage without PoE load Maximal current: 2.5A at 24Vdc power input voltage with 55W PoE load
Power Budget (PoE model)	Total 55W @ 24VDC and above
Operating Humidity	5% to 95% (Non-condensing)
Operating Temperature	-40°C~70°C / -40°F~158°F (-E;-24TVI model)
Storage Temperature	-40˚C ~ 85˚C (-40˚F ~ 185˚F)
Case Dimension	Aluminum case, 175mm(W)x75.5mm(H)x90mm(D)
Weight	600g
Installation	Wall Mount Design
EMC	FCC Part 15, Subpart B ICES-003 Issue7 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 BS EN 55035:2017+A11:2020 BS EN 55032:2015+A11:2020
Railway compliance	EN 50155:2021 EN 50121-4:2016/A1:2019 EN 50121-3-2:2016/A1:2019 EN 61373:2010
Fire Safety	EN45545-2
Vehicle certificate	E24 marking (24VI model),R118 ITxPT** labeled (24VI-IGN model)
MTBF	520,000 hrs (standards: IEC 62380)

*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-0105T-5-44-24VI-E …….P/N: 8351-1369**
  5 10/100TX + 1 10/100/1000T w/5 PoE at/af EN50155 M12 Ethernet Switch w/ PoE galvanic isolation; 9~36VDC dual input; -40°C to 70°C; IP44 rated
- **TPES-0105T-5-44-24VI-IGN-E ……P/N: 8351-13692**
  5 10/100TX + 1 10/100/1000T w/5 PoE at/af EN50155 M12 Ethernet Switch w/ PoE galvanic isolation & ignition; 9~36VDC dual input; -40°C to 70°C; IP44 rated w/ignition
- **TPES-0105T-5-44-24TVI-E …….P/N: 8351-13694**
  5 10/100TX + 1 10/100/1000T w/5 PoE at/af EN50155 M12 Ethernet Switch w/ PoE galvanic isolation; 16.8~56VDC dual input; -40°C to 70°C; IP44 rated
- **TES-0105T-44-24VI-E …….P/N: 8351-1368**
  5 10/100TX + 1 10/100/1000T EN50155 M12 Ethernet Switch w/ galvanic isolation; 9~36VDC dual input; -40°C to 70°C; IP44 rated
- **TES-0105T-44-24VI-IGN-E……P/N: 8351-13682**
  5 10/100TX + 1 10/100/1000T EN50155 M12 Ethernet Switch w/ galvanic isolation & ignition; 9~36VDC dual input; -40°C to 70°C; IP44 rated; w/ignition
- **TES-0105T-44-24TVI-E …….P/N: 8351-13684**
  5 10/100TX + 1 10/100/1000T EN50155 M12 Ethernet Switch w/ galvanic isolation; 16.8~56VDC dual input; -40°C to 70°C; IP44 rated

OPTIONAL ACCESSORIES

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

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

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