# T(P)GS-L5408MGFTA

## 8 GT (w/PoE) + 2 1G/2.5G Copper + 2 1G/2.5G Fiber Q-ODC OM3 OS3 EN50155 Managed Ethernet Switch; WVI / 24VI / 24TVI input



## OVERVIEW

Lantech T(P)GS-L5408MGFTA is a high performance OS3 switch with 8 10/100/1000T + 2 1G/2.5G Copper + 2 1G/2.5G Fiber Q-ODC OM3. PoE model has 8 PoE 802.3af/at ports which provides advanced security function for network aggregation deployment.

***Up to 8 PoE at/af ports w/advanced PoE management and PoE galvanic isolation; Ethernet power input galvanic isolation***

Compliant with 802.3af/at standard, the PoE model is able to feed each PoE port up to 30 Watt at each PoE port for various IP PD devices. It supports advanced PoE management including PoE detection and scheduling. PoE detection can detect if the connected PD hangs then restart the PD; PoE scheduling is to allow pre-set power feeding schedule upon routine time table. Each PoE ports can be Enabled/disabled, get the voltage, current, Watt, and temperature info displayed on WebUI.

Galvanic isolation between power input and Ethernet power system, also the PoE galvanic isolation provides insulation between the power input to PoE Ethernet ports, preventing cabling and grounding incidents from damaging the Ethernet switch. The efficiency of the galvanically decoupled voltage converters can reach above 90%.

***Sleep Mode & efficient PoE timer under Ignition-Off State on IGN model***

The PoE-IGN model supports network operation for up to 60 minutes before entering Sleep Mode (0.048W), preventing unnecessary reboots when power is restored. It also includes a configurable PoE timer, with a default delay of 10 minutes after ignition-off.

The Ignition timer allows flexible configuration of both individual PoE port shutdown delays and system shutdown

(Sleep Mode), ranging from 30 seconds to 60 minutes (default: 60 minutes). This design eliminates the need for additional relay wiring and enables remote PoE timer configuration anytime, from anywhere.

***Lantech OS3 Platform with complete L2 management and upgradable optional L3 & communication protocols***

The switch runs Lantech OS3 platform which is powerful with complete Layer 2 management features and optional upgradable for future expansion, such as Layer 3 Lite, Layer 3, IEC61375-2-5 (ETBN), etc. To learn more about the Lantech OS3 Platform, please refer to **Lantech OS3/OS4 Software Datasheet**

***Enhanced cybersecurity features with IEC 62443-4-1 certification***

Lantech OS3 platform is designed with high standard of cybersecurity to prevent the threats from network attack such as DDoS attacks. To ensure the safety and reliability of communication networks, Lantech develops our products under strict international security standard and is certified with IEC 62443-4-1 network security standard. To learn more about Lantech cybersecurity software solution, please refer to **Lantech OS3/OS4 Software Datasheet**

***Miss-wiring avoidance, node failure protection, Loop protection***

The switch also embedded several features for strong and reliable network protection in an easy and intuitive way. When the pre-set ring configuration failed or looped by miss-wiring, the switch being able to alert with the LED indicator and disable ring automatically. Node failure protection ensures the switches in a ring to survive after power breakout is back. The status can be shown in NMS when each switch is back. Loop protection is also available to prevent the generation of broadcast storm when a dumb switch is inserted in a closed loop connection.

***User friendly GUI, Auto topology drawing, Enhanced Environmental Monitoring***

The user-friendly UI, innovative auto topology drawing and topology demo makes the switch much easier to get hands-on. The complete CLI enables professional engineer to configure setting by command line. It supports enhanced environmental monitoring for actual input voltage, current, ambient temperature and total power load.

***Built-in IEC 61375-3-4 ECN (Ethernet Consist Network) to work with IEC61375-2-5 TBN***

Lantech OS3 Ethernet switches comply with IEC 61375-3-4 (ECN) standard. The support of Ethernet Consist Network allows interconnection between end devices located in single consist of train and interoperability with IEC61375-2-5 (TBN).

***Editable configuration file; USB port for import/export configuration***

The configuration file of the switch can be imported and edited with word processor for the following switches to configure with ease. The USB port can import/export the configuration from/to USB dongle and also to upgrade firmware from USB dongle. TFTP/HTTP firmware upgrade is supported.

***Event log & message; 2DI + 2DO; Factory default pin***

The switch provides 2DI and 2DO. When disconnection of the specific port was detected; DO will activate the signal LED to alarm. DI can integrate the sensors for events and DO will trigger the outside alarm and switch will send alert information to IP network with with traps and traps. The factory reset pin can restore the setting back to factory default.

***Optional smart bypass protection on dual 1G/2.5G copper ports***

The bypass relay is set to bypass the switch to the next one when power is off to prevent network disruption. Lantech bypass caters to remain in bypass mode until the switch is completely booting up when power is back to avoid another network lost. Optional smart bypass (one pair) can be activated when switch encounters power failure. (-BT model)

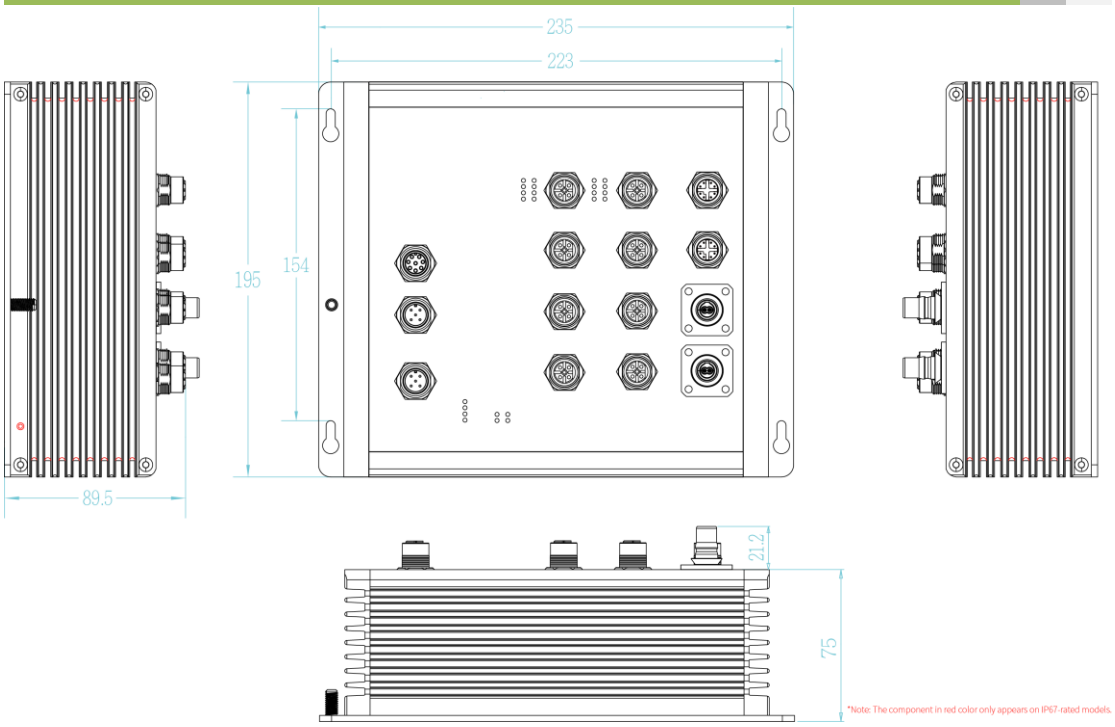
***Dual WVI / 24VI / 24TVI input with max PoE budget and Inrush current protection***

The switch accept 16.8~137.5VDC (WVI model) ; 9~36VDC (24VI model) ; 16.8~56VDC (24TVI model) dual input with Ethernet and PoE galvanic isolation and PoE model can feed 54V output for PoE feeding with 80W budget. The inrush current on initial power up can be limited lower than 10 x nominal current.

***EN50155, EN45545-2; EN61373 compliance; Rugged design with high ESD protection***

The switch is designed to meet with critical network environment with IP54/IP67 aluminum enclosure and M12 connectors for water proof. The switch passed serious tests under extensive Industrial EMI and Safety standards. With EN45545-2 Fire & Smoke and EN50155 verification, it is best switch for railway on-board/track side, vehicle, and mining applications. For more usage flexibilities, the switch supports wide operating temperature from -40°C to 70°C (85°C operation for 10min), which is compliant with the EN50155 Operating Temperature Range Requirement Class OT4.

## DIMENSIONS (unit=mm)

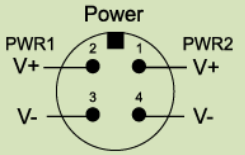



## SPECIFICATIONS

### Hardware Specification

| | |
|---|---|
| Standards | IEEE802.3 10Base-T Ethernet<br>IEEE802.3u 100Base-TX<br>IEEE802.3ab 1000Base-T<br>IEEE802.3x Flow Control and Back Pressure<br>IEEE802.3ad Port trunk with LACP<br>IEEE802.1d Spanning Tree<br>IEEE802.1w Rapid Spanning Tree<br>IEEE802.1s Multiple Spanning Tree<br>IEEE802.3ad Link Aggregation Control Protocol (LACP)<br>IEEE802.1AB Link Layer Discovery Protocol (LLDP)<br>IEEE802.1X User Authentication (Radius)<br>IEEE802.1p Class of Service<br>IEEE802.1Q VLAN Tag<br>IEEE802.3at/af Power over Ethernet |

| | |
|---|---|
| Switch Architecture | Back-plane (Switching Fabric): 36Gbps |
| Mac Address | 16K MAC address table |
| Jumbo frame | 10KB |
| Connectors | 10/100/1000T: 8 x M12 8-pole X-coded with Auto MDI/MDI-X function<br>1G/2.5G Copper: 2 x M12 8-pole X-coded with Auto MDI/MDI function<br>1G/2.5G Dual Speed Fiber: 2 x Q-ODC OM3 connector for single-mode or multi-mode type fiber cable<br>Power Input connector :<br>1x M12 4-pole A-coded Male (WVI model) |

| | |
|---|---|
| | <br>Reset/Console/USB : 1 x M12 8-pole A-coded<br>DIDO: 1 x M12 5-pole A-coded |
| Network Cable | 10Base-T: 4-pair STP Cat3 cable<br>100Base-TX: 4-pair STP Cat3/5 cable<br>1000Base-T: 4-pair STP Cat5/5e cable;<br>2.5G Copper: 4-pair STP Cat5e cable<br><br>**1G/2.5G fiber:**<br>Multi-mode: 0 to 300 m, 850 nm (62.5/125 μm);<br>Single-mode: 0 to 2 km, 1310 nm (9/125 μm) |
| LED | Per unit: Power 1 (Green), Power 2 (Green), FAULT (Red); RM(Green)<br>10/100/1000T Ethernet port: Link/Activity (Green)<br>1G/2.5G copper: Link/Act (Yellow)<br>1G/2.5G fiber: Link/Act (Orange)<br>PoE : Link/Act (Green) (PoE model) |
| DI/DO | 2 Digital Input (DI) :<br>Level 0: -30~2V / Level 1: 10~30V<br>Max. input current:8mA<br>2 Digital Output(DO): Open collector to 80 VDC, 50mA |
| PoE Budget (PoE model) | 80W@24VDC<br>Higher PoE budget can be applied upon request. ** |
| PoE pin assignment (PoE model) | M12 port #1~#8; support IEEE 802.3at/af End-point, Alternative A mode<br>End-point. Per port provides up to 30W |
| Operating Humidity | 5% ~ 95% (Non-condensing) |
| Operating Temperature | -40°C~70°C / -40°F~158°F (85°C operation for 10min.) |
| Storage Temperature | -40°C~85°C / -40°F~185°F |
| Power Supply | Dual DC input<br>16.8~137.5VDC (WVI model) ;<br>9~36VDC (24VI model) ;<br>16.8~56VDC (24TVI model)<br>(PoE galvanic isolation for PoE models;<br>Ethernet galvanic isolation for all models) |
| Power Consumption | Max. 36.9W exclude PoE load |
| Case Dimension | IP54/IP67 model: Aluminum case<br>235mm(W)x195mm(H)x96.2mm(D) |
| Weight | 2.65kgs |
| Installation | Wall Mount Design |
| EMI & EMS | FCC Part 15 Class A,<br>IEC/EN61000-6-2<br>CE EN55032 Class A<br>CE EN55024<br>CE EN61000-4-2 (ESD) Level 3<br>CE EN61000-4-3 (RS) Level 3<br>CE EN61000-4-4 (EFT) Level 3<br>CE EN61000-4-5 ED3 (Surge) Level 3<br>CE EN61000-4-6 (CS) Level 3<br>CE EN61000-4-8 (Magnetic field) Level 3 |
| Verifications | EN50155/EN50121-3-2/EN50121-4/IEC61373; EMV06;EN55032; EN45545-1, EN 45545-2 Fire & Smoke verification |
| Stability Testing | EN61373 (Shock and Vibration) |
| MTBF | TBC (standards: IEC 62380) |
| Bypass** | One pair Bypass module on 1G/2.5G Copper ports to pass to next switch in case of power failure |
| **Software Specification** | |
| Lantech OS3 Platform | **Download Software Datasheet** |

*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. For one pair bypass add –BT to model names. Optional ignition feature add -IGN to model names.

- **TPGS-L5408MGFTA-8-QMM-54-WVI.....P/N: 8361-539**
  8 10/100/1000T w/8 PoE at/af + 2 1G/2.5G Copper M12 X-coded + 2 1G/2.5G Fiber Multimode Q-ODC 300M EN50155 IP54 OS3 Managed Ethernet Switch; 16.8~137.5V input; -40°C to 70°C ; IP54 housing w/ PoE galvanic isolation
- **TPGS-L5408MGFTA-8-QSM-54-WVI.....P/N: 8361-5391**
  8 10/100/1000T w/8 PoE at/af + 2 1G/2.5G Copper M12 X-coded + 2 1G/2.5G Fiber Single mode Q-ODC 2KM EN50155 IP54 OS3 Managed Ethernet Switch ; 16.8~137.5V input ; -40°C to 70°C ; IP54 housing w/ PoE galvanic isolation
- **TGS-L5408MGFTA-QMM-54-WVI.....P/N: 8361-5394**
  8 10/100/1000T + 2 1G/2.5G Copper M12 X-coded + 2 1G/2.5G Fiber Multimode Q-ODC 300M; EN50155 IP54 OS3 Managed Ethernet Switch ; 16.8~137.5V input ; -40°C to 70°C ; IP54 housing w/ galvanic isolation
- **TGS-L5408MGFTA-QSM-54-WVI.....P/N: 8361-5395**
  8 10/100/1000T + 2 1G/2.5G Copper M12 X-coded + 2 1G/2.5G Fiber Single mode Q-ODC 2KM; EN50155 IP54 OS3 Managed Ethernet Switch ; 16.8~137.5V input ; -40°C to 70°C ; IP54 housing w/ galvanic isolation
- **TPGS-L5408MGFTA-8-QMM-67-WVI.....P/N: 8361-5396**
  8 10/100/1000T w/8 PoE at/af + 2 1G/2.5G Copper M12 X-coded + 2 1G/2.5G Fiber Multimode Q-ODC 300M EN50155 IP67 OS3 Managed Ethernet Switch ; 16.8~137.5V input ; -40°C to 70°C ; IP67 housing w/ PoE galvanic isolation
- **TPGS-L5408MGFTA-8-QSM-67-WVI.....P/N: 8361-5397**
  8 10/100/1000T w/8 PoE at/af + 2 1G/2.5G Copper M12 X-coded + 2 1G/2.5G Fiber Single mode Q-ODC 2KM EN50155 IP67 OS3 Managed Ethernet Switch ; 16.8~137.5V input ; -40°C to 70°C ; IP67 housing w/ PoE galvanic isolation
- **TGS-L5408MGFTA-QMM-67-WVI.....P/N: 8361-53944**
  8 10/100/1000T + 2 1G/2.5G Copper M12 X-coded + 2 1G/2.5G Fiber Multimode Q-ODC 300M; EN50155 IP67 OS3 Managed Ethernet Switch ; 16.8~137.5V input ; -40°C to 70°C ; IP67 housing w/ galvanic isolation
- **TGS-L5408MGFTA-QSM-67-WVI.....P/N: 8361-53954**
  8 10/100/1000T + 2 1G/2.5G Copper M12 X-coded + 2 1G/2.5G Fiber Single mode Q-ODC 2KM; EN50155 IP67 OS3 Managed Ethernet Switch ; 16.8~137.5V input ; -40°C to 70°C ; IP67 housing w/ galvanic isolation

- **TPGS-L5408MGFTA-8-QMM-54-24VI.....P/N: 8361-53901**
  8 10/100/1000T w/8 PoE at/af + 2 1G/2.5G Copper M12 X-coded + 2 1G/2.5G Fiber Multimode Q-ODC 300M EN50155 IP54 OS3 Managed Ethernet Switch ; 9~36V input ; -40°C to 70°C ; IP54 housing w/ PoE galvanic isolation
- **TPGS-L5408MGFTA-8-QSM-54-24VI.....P/N: 8361-53911**
  8 10/100/1000T w/8 PoE at/af + 2 1G/2.5G Copper M12 X-coded + 2 1G/2.5G Fiber Single mode Q-ODC 2KM EN50155 IP54 OS3 Managed Ethernet Switch ; 9~36V input ; -40°C to 70°C ; IP54 housing w/ PoE galvanic isolation
- **TGS-L5408MGFTA-QMM-54-24VI.....P/N: 8361-53941**
  8 10/100/1000T + 2 1G/2.5G Copper M12 X-coded + 2 1G/2.5G Fiber Multimode Q-ODC 300M; EN50155 IP54 OS3 Managed Ethernet Switch ; 9~36V input ; -40°C to 70°C ; IP54 housing w/ galvanic isolation
- **TGS-L5408MGFTA-QSM-54-24VI.....P/N: 8361-53951**
  8 10/100/1000T + 2 1G/2.5G Copper M12 X-coded + 2 1G/2.5G Fiber Single mode Q-ODC 2KM; EN50155 IP54 OS3 Managed Ethernet Switch ; 9~36V input ; -40°C to 70°C ; IP54 housing w/ galvanic isolation
- **TPGS-L5408MGFTA-8-QMM-67-24VI.....P/N: 8361-53961**
  8 10/100/1000T w/8 PoE at/af + 2 1G/2.5G Copper M12 X-coded + 2 1G/2.5G Fiber Multimode Q-ODC 300M EN50155 IP67 OS3 Managed Ethernet Switch ; 9~36V input ; -40°C to 70°C ; IP67 housing w/ PoE galvanic isolation
- **TPGS-L5408MGFTA-8-QSM-67-24VI.....P/N: 8361-53971**
  8 10/100/1000T w/8 PoE at/af + 2 1G/2.5G Copper M12 X-coded + 2 1G/2.5G Fiber Single mode Q-ODC 2KM EN50155 IP67 OS3 Managed Ethernet Switch ; 9~36V input ; -40°C to 70°C ; IP67 housing w/ PoE galvanic isolation
- **TGS-L5408MGFTA-QMM-67-24VI.....P/N: 8361-53942**
  8 10/100/1000T + 2 1G/2.5G Copper M12 X-coded + 2 1G/2.5G Fiber Multimode Q-ODC 300M; EN50155 IP67 OS3 Managed Ethernet Switch ; 9~36V input ; -40°C to 70°C ; IP67 housing w/ galvanic isolation
- **TGS-L5408MGFTA-QSM-67-24VI.....P/N: 8361-53952**
  8 10/100/1000T + 2 1G/2.5G Copper M12 X-coded + 2 1G/2.5G Fiber Single mode Q-ODC 2KM; EN50155 IP67 OS3 Managed Ethernet Switch ; 9~36V input ; -40°C to 70°C ; IP67 housing w/ galvanic isolation
- **TPGS-L5408MGFTA-8-QMM-54-24TVI.....P/N: 8361-53902**
  8 10/100/1000T w/8 PoE at/af + 2 1G/2.5G Copper M12 X-coded + 2 1G/2.5G Fiber Multimode Q-ODC 300M EN50155 IP54 OS3 Managed Ethernet Switch ; 16.8~56V input ; -40°C to 70°C ; IP54 housing w/ PoE galvanic isolation
- **TPGS-L5408MGFTA-8-QSM-54-24TVI.....P/N: 8361-53912**
  8 10/100/1000T w/8 PoE at/af + 2 1G/2.5G Copper M12 X-coded + 2 1G/2.5G Fiber Single mode Q-ODC 2KM EN50155 IP54 OS3 Managed Ethernet Switch ; 16.8~56V input ; -40°C to 70°C ; IP54 housing w/ PoE galvanic isolation
- **TGS-L5408MGFTA-QMM-54-24TVI.....P/N: 8361-53943**
  8 10/100/1000T + 2 1G/2.5G Copper M12 X-coded + 2 1G/2.5G Fiber Multimode Q-ODC 300M; EN50155 IP54 OS3 Managed Ethernet Switch ; 16.8~56V input ; -40°C to 70°C ; IP54 housing w/ galvanic isolation
- **TGS-L5408MGFTA-QSM-54-24TVI.....P/N: 8361-53953**
  8 10/100/1000T + 2 1G/2.5G Copper M12 X-coded + 2 1G/2.5G Fiber Single mode Q-ODC 2KM; EN50155 IP54 OS3 Managed Ethernet Switch ; 16.8~56V input ; -40°C to 70°C ; IP54 housing w/ galvanic isolation
- **TPGS-L5408MGFTA-8-QMM-67-24TVI.....P/N: 8361-53962**
  8 10/100/1000T w/8 PoE at/af + 2 1G/2.5G Copper M12 X-coded + 2 1G/2.5G Fiber Multimode Q-ODC 300M EN50155 IP67 OS3 Managed Ethernet Switch ; 16.8~56V input ; -40°C to 70°C ; IP67 housing w/ PoE galvanic isolation
- **TPGS-L5408MGFTA-8-QSM-67-24TVI.....P/N: 8361-53972**
  8 10/100/1000T w/8 PoE at/af + 2 1G/2.5G Copper M12 X-coded + 2 1G/2.5G Fiber Single mode Q-ODC 2KM EN50155 IP67 OS3 Managed Ethernet Switch ; 16.8~56V input ; -40°C to 70°C ; IP67 housing w/ PoE galvanic isolation
- **TGS-L5408MGFTA-QMM-67-24TVI.....P/N: 8361-53945**
  8 10/100/1000T + 2 1G/2.5G Copper M12 X-coded + 2 1G/2.5G Fiber Multimode Q-ODC 300M; EN50155 IP67 OS3 Managed Ethernet Switch ; 16.8~56V input ; -40°C to 70°C ; IP67 housing w/ galvanic isolation
- **TGS-L5408MGFTA-QSM-67-24TVI.....P/N: 8361-53955**
  8 10/100/1000T + 2 1G/2.5G Copper M12 X-coded + 2 1G/2.5G Fiber Single mode Q-ODC 2KM; EN50155 IP67 OS3 Managed Ethernet Switch ; 16.8~56V input ; -40°C to 70°C ; IP67 housing w/ galvanic isolation

*For all detailed part nos. and model names, please refer to

https://www.lantechcom.tw/global/eng/download/datasheet/P-T(P)GS-L5408MGFTA.pdf

## 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 |
| **ECONM12-08A(M)-180** | 8 pin M12 (Male) A-coded 180 degree crimp type connector for reset/console/USB |
| **ECONM12-05A(M)-C-180** | 5 pin M12 (Male) A-coded 180 degree crimp type connector for DI/DO |
| **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 |

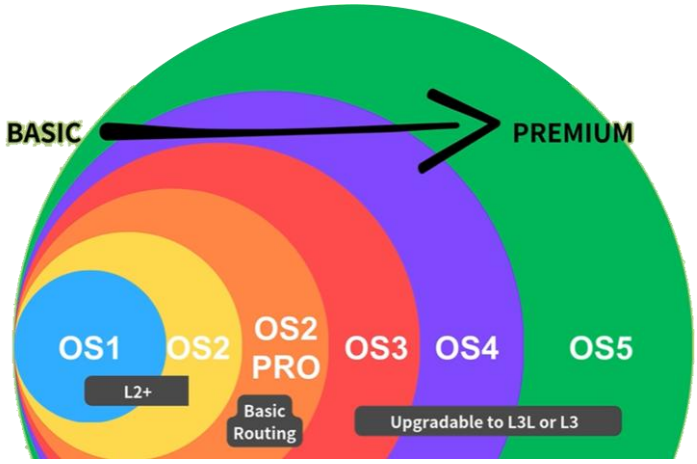
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|---|---|
| **ECONM12-08M2-CONSOLE** | 8 pin M12 (Male) A-coded 180 degree to RS232 cable for console, 150cm |
| **ECABM12X83MSTP** | 8 pin M12 (Male) X-coded 180 degree RJ45 STP cable for data, shielded, 300cm |
| **ECABMO02-QOP2-3.0-MM-OM3** | Q-ODC 2 plug/LC multi-mode fiber, MM-OM3, 300cm |
| **ECABMO02-QOP2-3.0-SM-OS2** | Q-ODC 2 plug/LC single-mode fiber, SM-OS2, 300cm |

**Others**

| | |
|---|---|
| **M12 to USB interface adapter** | 8 pin M12 (Male) A-coded 180 degree M12 to USB 2.0 interface adapter, 8cm |
| **USB 2.0 Ethernet Adapter** | USB 2.0 to RJ45 Ethernet Adapter |
| **ECONM12-08(M) TO DB9+USB2.0-1.5M CABLE** | 8 pin M12 (Male) A-coded 180 degree M12 to USB2.0 to DB9 (Female) cable, 150cm |

## Managed Switch OS Generations

We offer a comprehensive range of managed switches, from OS1 and OS2 with rich L2+ management features, to OS2 PRO with basic routing functionality, and OS3, OS4, and OS5, which can be upgraded with optional Layer 3 Lite or Layer 3 capabilities to meet diverse customer needs. Note: Model differences include both software features and hardware specifications.




**[LEARN MORE]**

→ OS2PRO Generation

→ OS3/OS4 Generation

→ OS5 Generation

**[CHECK THE DIFFERENCES]**

→ Generation Comparison Table

**Lantech Communications Global Inc.**
www.lantechcom.tw
info@lantechcom.tw

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