Lantech

User Manual (Hardware)

T(P)GS-3208MGT
T(P)ES-3208MGT
T(P)ES-3406T
T(P)GS-3008T
T(P)ES-3008T

Vehicle and EN50155 NAT router switch



V1.08

AUG. 2026

RP-001-31

Notice

Only 24VDC input system is applicable for E-mark approval.

The unmanaged PoE Ethernet switch is equipped with P.S.E capacity. It is designed for data communication within vehicles, to facilitate data transfer and Ethernet connectivity as well as expandability. It’s important to note that these features have no impact on the safety of driving and passenger well-being and the device does not possess any immunity-related functionalities.

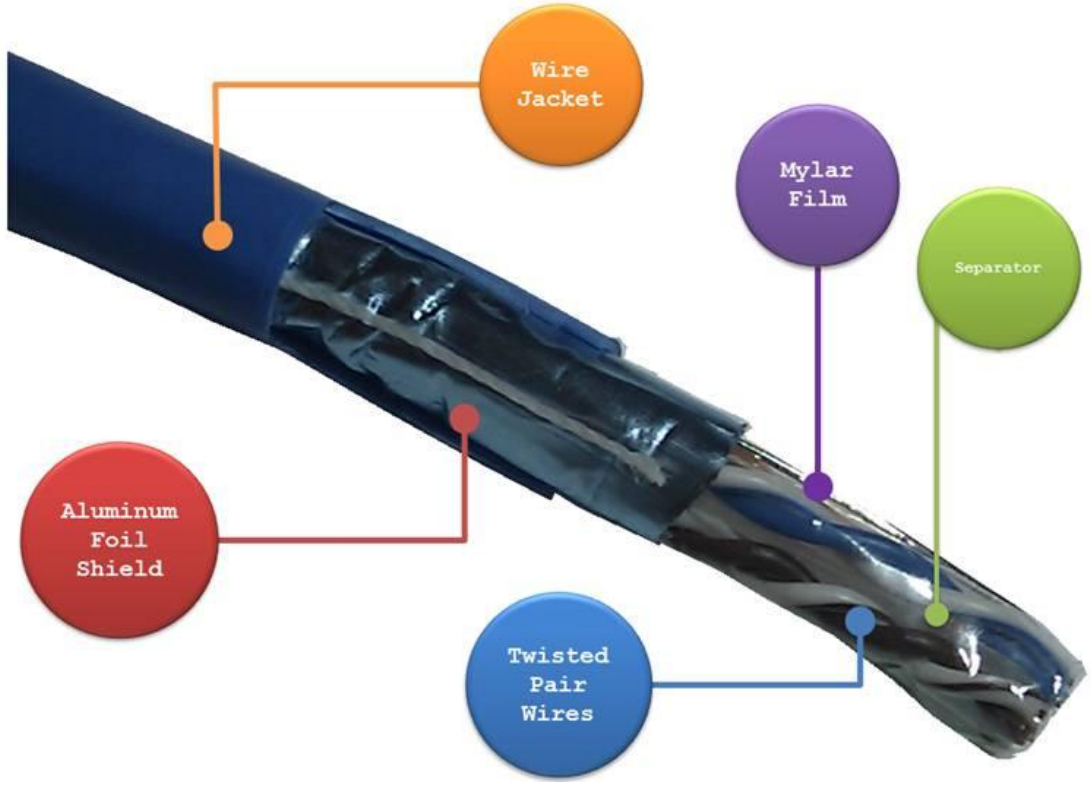
Approval Information

Version 1.08	Name	Title	Date
Author	Greg Tsai	Marketing	2026.08.25
Verifier	Jacky Chou	HW QA	2026.08.25
Approver	Thomas Lee	RD head	2026.08.25

Version	Date	Content of Modification	Author(s)
V1.00	2025.10.02	Modified from “M_Hardware-T(P)GR_T(P)ER-3208T_250218”	Greg Tsai
V1.01	2025.10.28	Added unit conversion to torque guideline: 14 kgf·cm ≈ 1.4 N·m.	Alice Huang
V1.02	2026.02.03	Added the power pin assignment of the IGN model; Updated the front panel drawings; Added the push-pull installation; Added T(P)GS-3008T; Updated dimension drawings (inner lock push pull); Removed the WEB models	Greg Tsai
V1.03	2026.02.06	Add bypass section	Greg Tsai
V1.04	2026.02.26	Update the bypass diagram and distance 25M	Greg Tsai
V1.05	2026.07.02	Add warning wordings regarding the push-pull connector O-ring.	Greg Tsai
V1.06	2026.07.08	Update the bypass diagram	Greg Tsai
V1.07	2026.07.23	Added warning for bypass boot failure	Greg Tsai
V1.08	2026.08.25	Update the PoE warning regarding Class Limit	Greg Tsai

Recommendation for Shielded network cables

STP cables have additional shielding material that is used to reduce external interference. The shield also reduces emissions at any point in the path of the cable. Our recommendation is to deploy an STP network cable in demanding electrical environments. Examples of demanding indoor environments are where the network cable is located in parallel with electrical mains supply cables or where large inductive loads such as motors or contactors are in close vicinity to the camera or its cable. It is also mandatory to use an STP cable where a power device (like an IP camera) is used outdoors or where the network cable is routed outdoors.



Important Notice

Lantech Communications Global, Inc. reserves the right to modify the equipment, its specification or this manual without prior notice, in the interest of improving performance, reliability, or servicing. At the time of publication all data is correct for the operation of the equipment at the voltage and/or temperature referred to. Performance *d*ata indicates typical values related to the particular product.

No part of this documentation or information supplied may be divulged to any third party without the express written consent of Lantech Communications Global Inc. Products offered may contain software which is proprietary to Lantech Communications Global Inc. The offer or supply of these products and services does not include or infer any transfer of ownership.

Interference Issues

This Equipment has been tested and has been found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference in a commercial or industrial installation. This equipment generates, uses, and can radiate radio frequency energy. It may cause harmful interference to radio communications if the equipment is not installed and used in accordance with the instructions.

FCC Warning

This Equipment has been tested and found to comply with the limits for a Class-A digital device, pursuant to Part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy. It may cause harmful interference to radio communications if the equipment is not installed and used in accordance with the instructions. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

CE Mark Warning

This is a Class-A product. In a domestic environment this product may cause radio interference in which case the user may be required to take adequate measures.

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Chapter 1 Hardware Description

Lantech 3208T are high performance OS2PRO IP54 industrial NAT router switches by M12 connectors which provides L2 wire speed and advanced security function for connecting PD network.

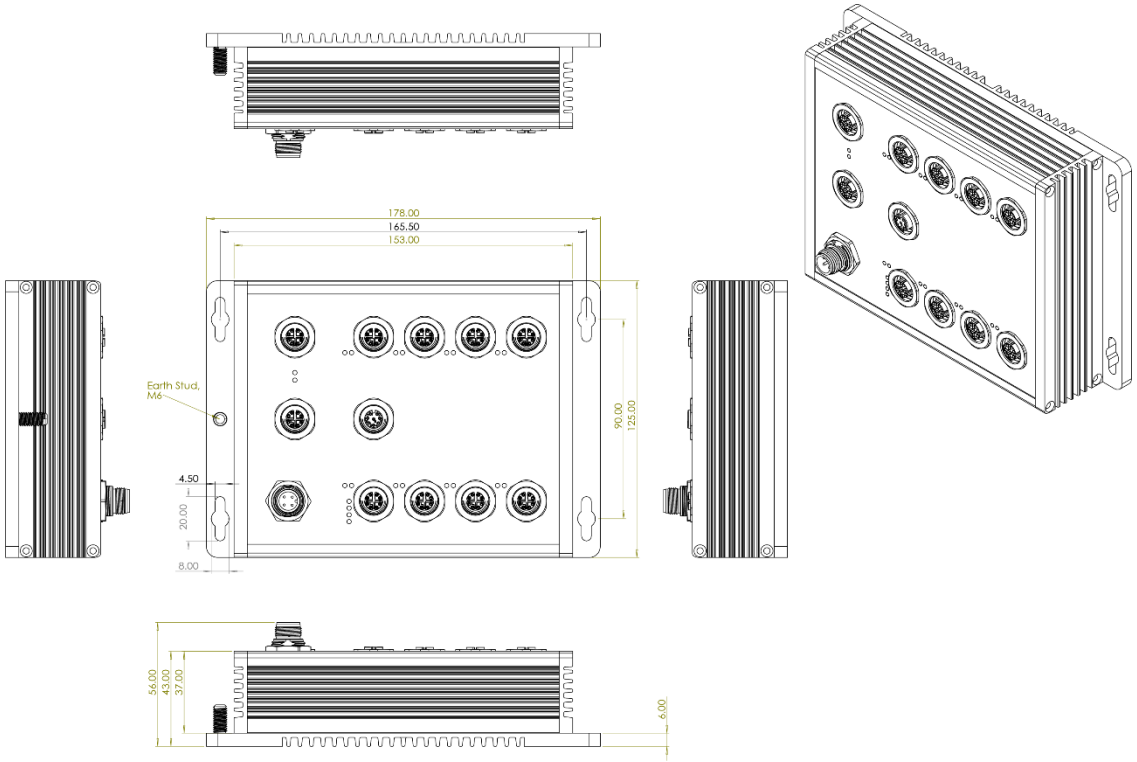
In this paragraph, it will describe the router switch's hardware spec, port, cabling information, and wiring installation.

Model name	10/100TX	10/100/1000T LAN	10/100/1000T LAN/WAN	1G/2.5G	PoE at/af	Ignition
TPGS-3208MGT		**8**		**2**	**8**	**Y (IGN model)**
TGS-3208MGT		**8**		**2**		**Y (IGN model)**
TPGS-3008T		**8**			**8**	**Y (IGN model)**
TGS-3008T		**8**				**Y (IGN model)**
TPES-3208MGT	**8**			**2**	**8**	**Y (IGN model)**
TES-3208MGT	**8**			**2**		**Y (IGN model)**
TPES-3406T	**6**	**4**			**8**	**Y (IGN model)**
TES-3406T	**6**	**4**				**Y (IGN model)**
TPES-3008T	**8**				**8**	**Y (IGN model)**
TES-3008T	**8**					**Y (IGN model)**

1.1 Physical Dimension

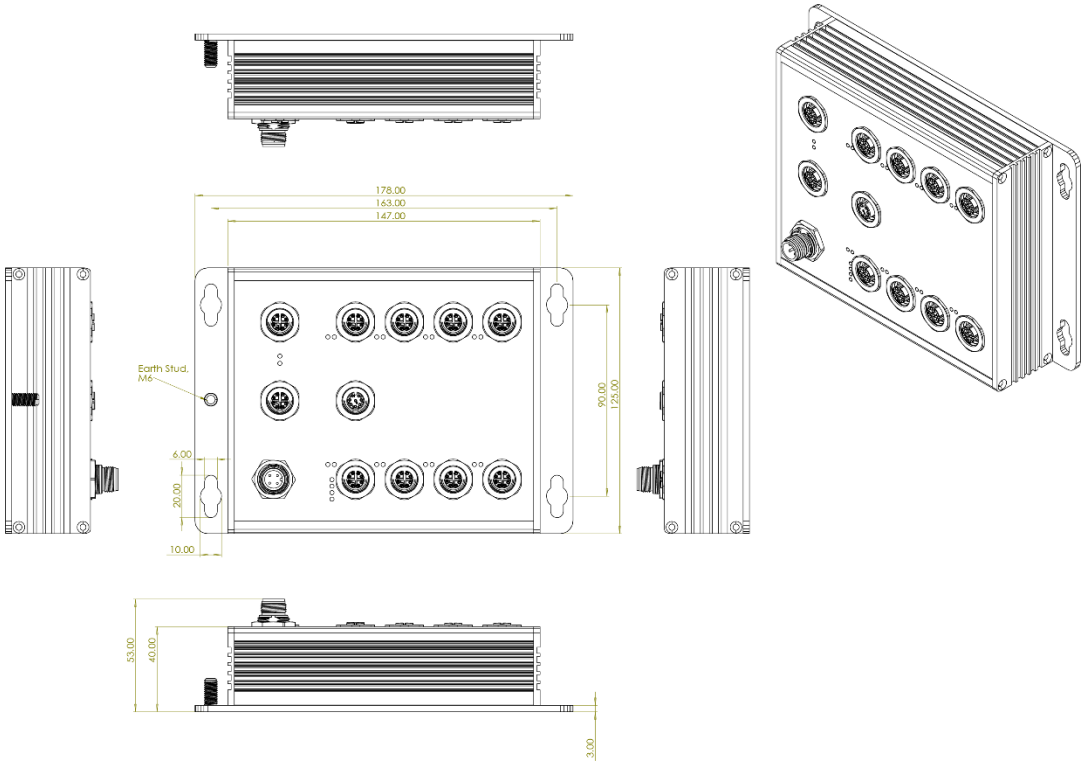
TPGS-3208MGT

Aluminum case. IP67/54, 178 (W) x 125 (D) x 56 (H) mm



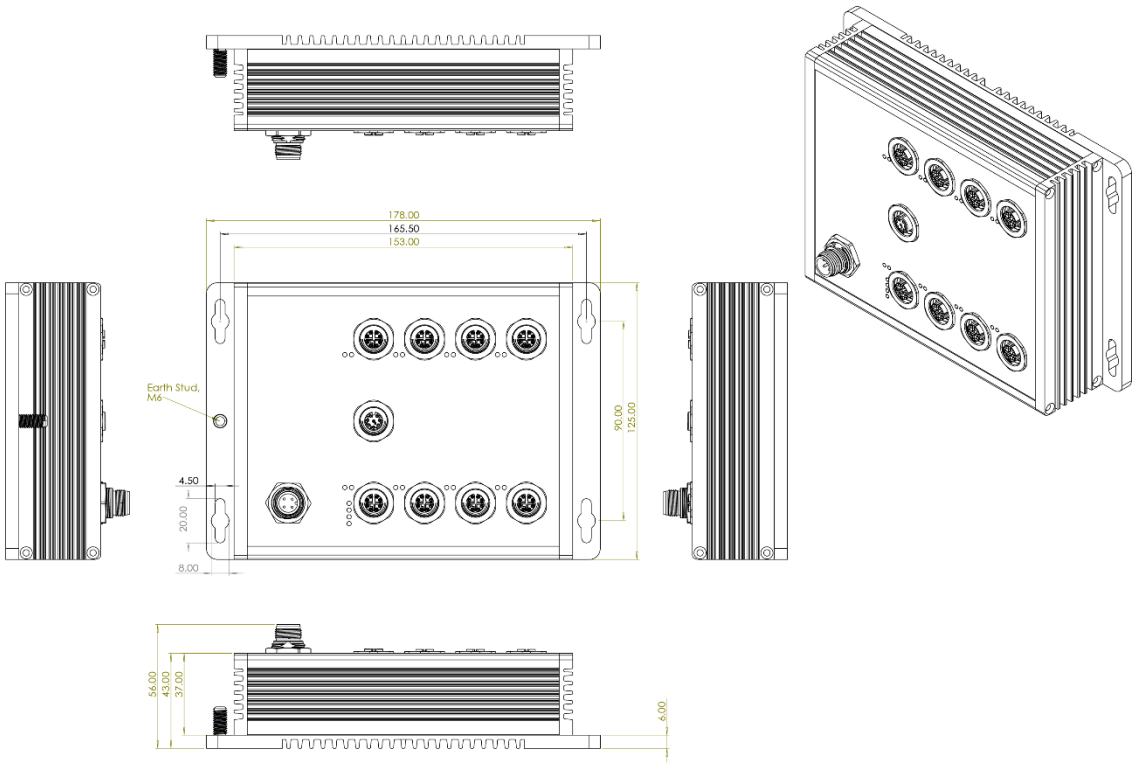
TGS-3208MGT

Aluminum case. IP67/54, 178 (W) x 125 (D) x 53 (H) mm



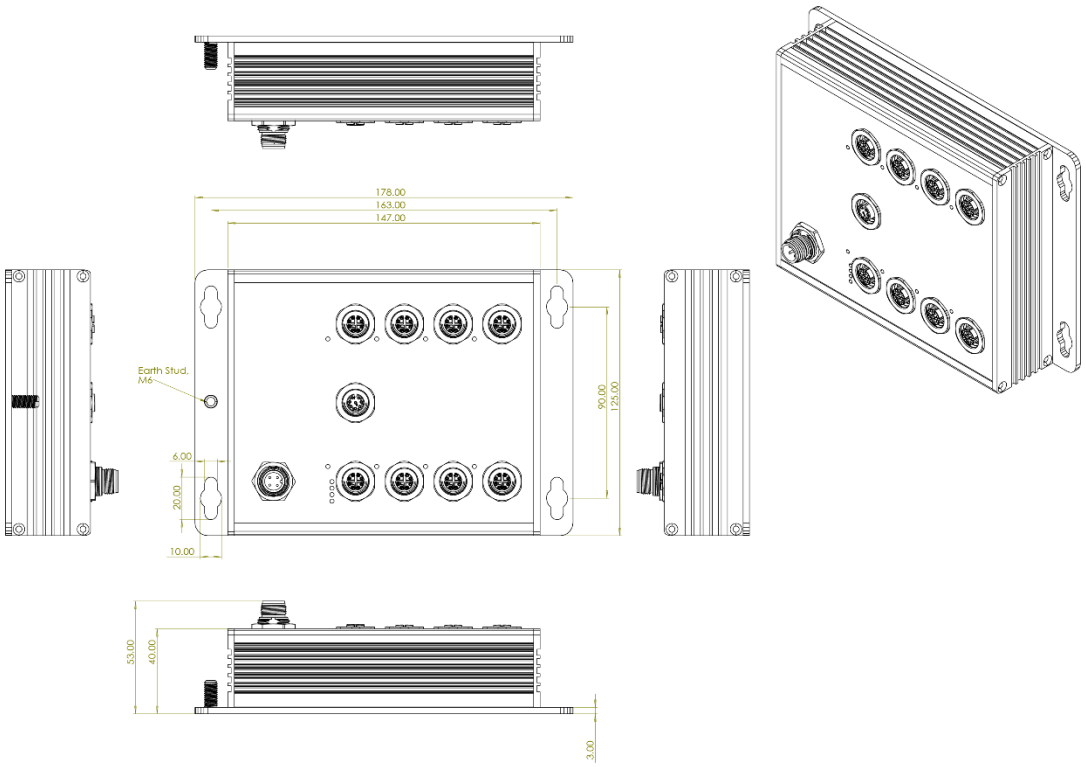
TPGS-3008T

Aluminum case. IP67/54, 178 (W) x 125 (D) x 56 (H) mm



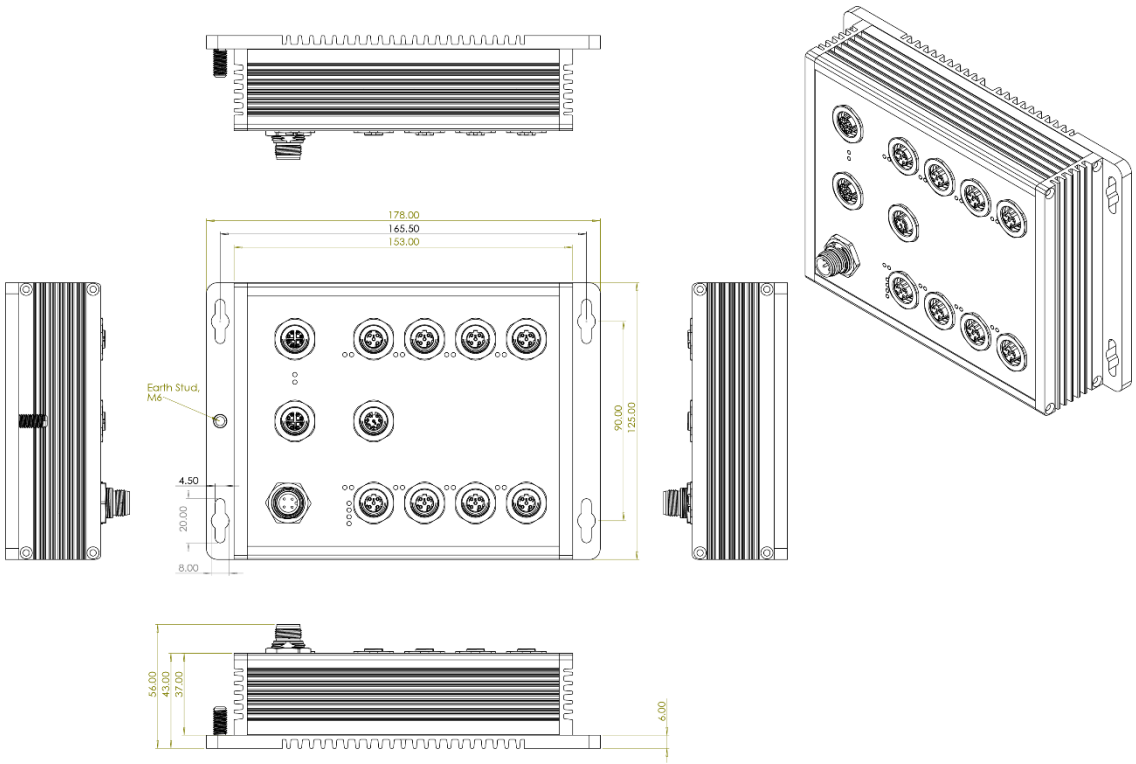
TGS-3008T

Aluminum case. IP67/54, 178 (W) x 125 (D) x 53 (H) mm



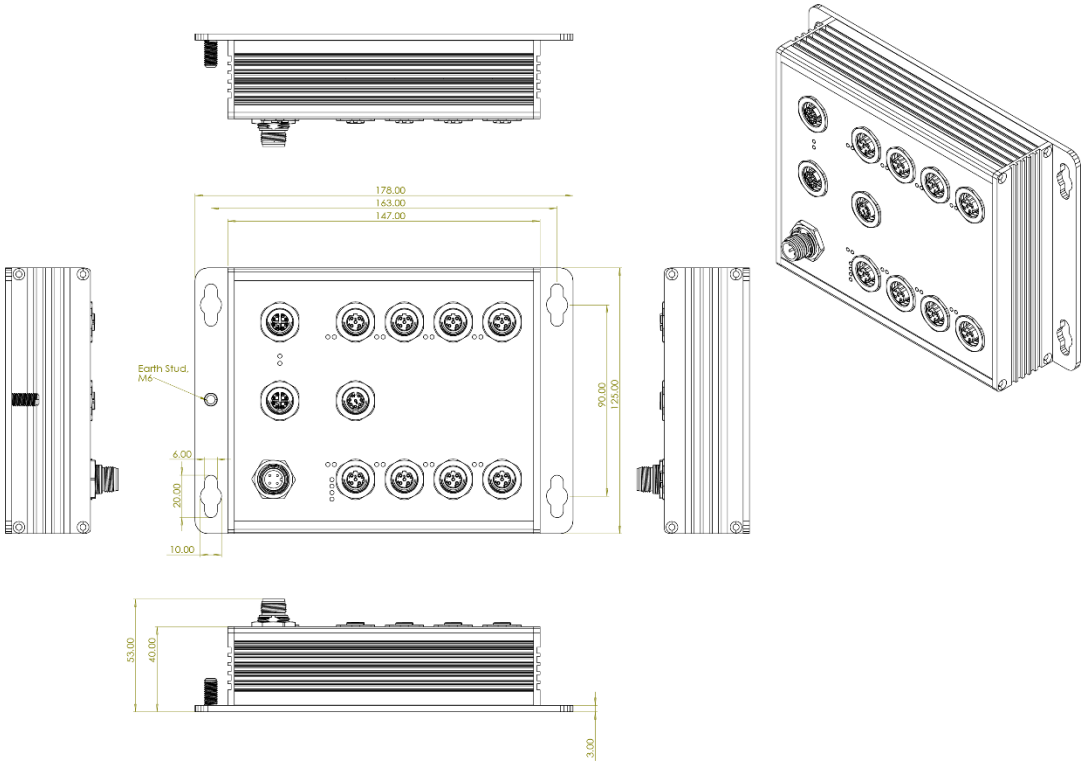
TPES-3208MGT

Aluminum case. IP67/54, 178 (W) x 125 (D) x 56 (H) mm



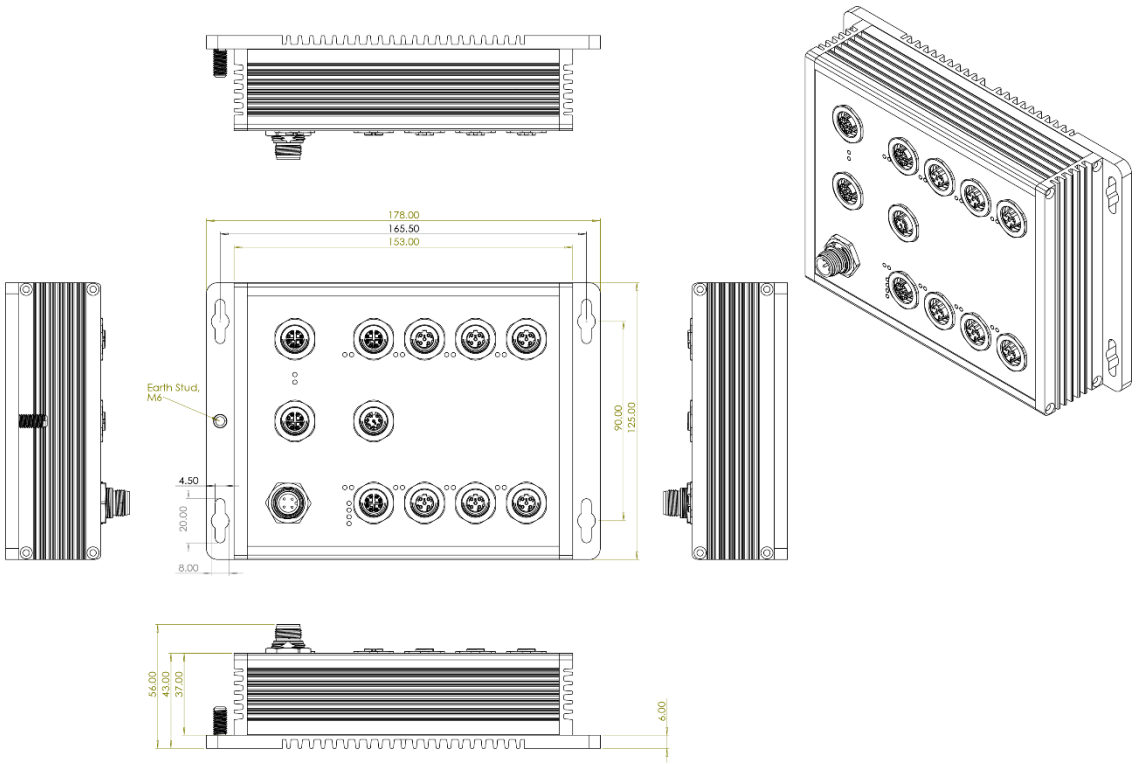
TES-3208MGT

Aluminum case. IP67/54, 178 (W) x 125 (D) x 53 (H) mm



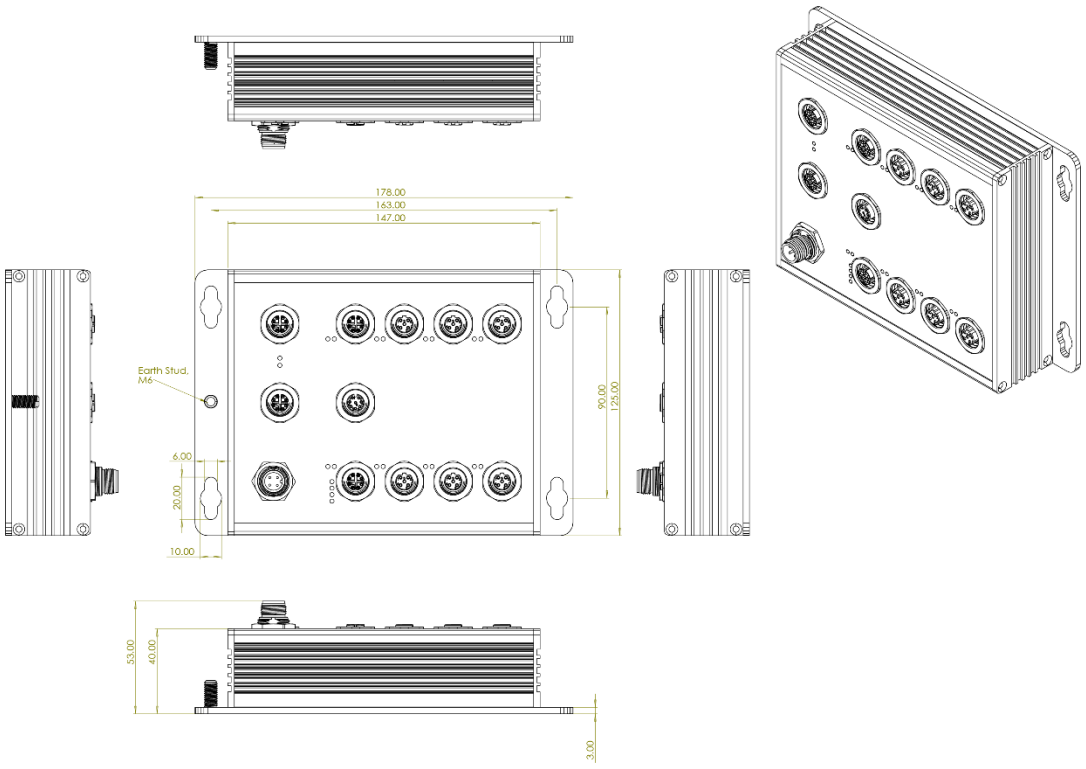
TPES-3406T

Aluminum case. IP67/54, 178 (W) x 125 (D) x 56 (H) mm



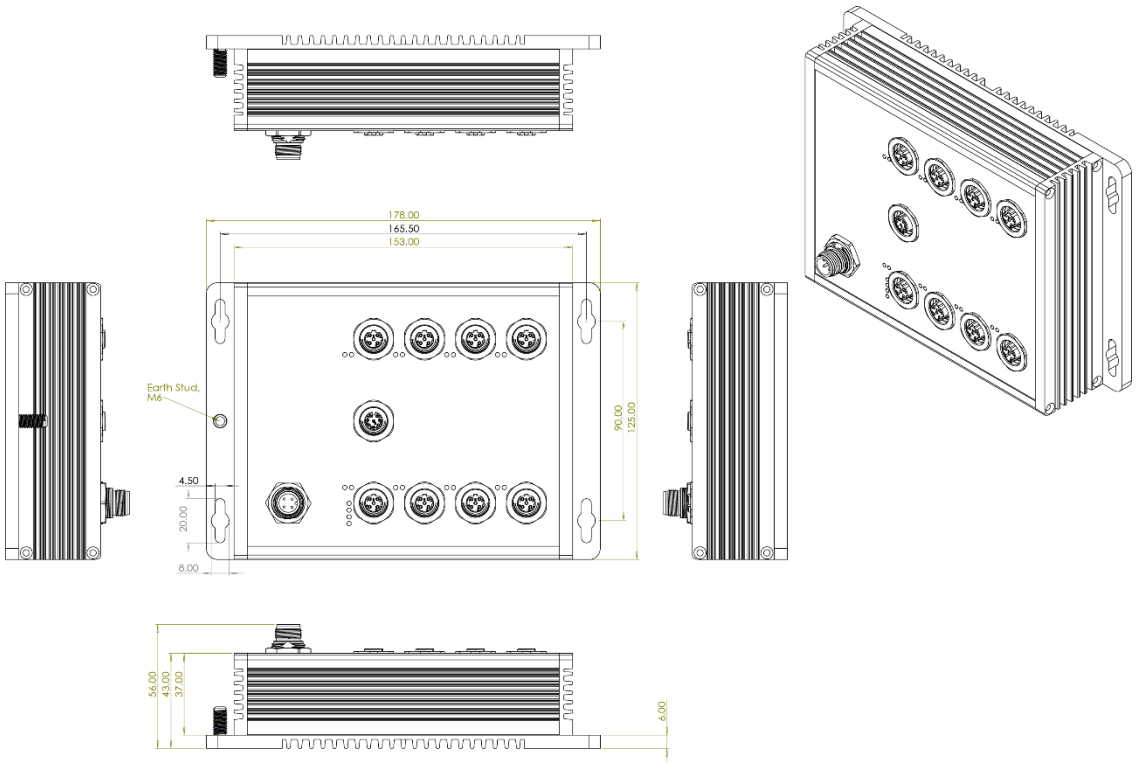
TES-3406T

Aluminum case. IP67/54, 178 (W) x 125 (D) x 53 (H) mm



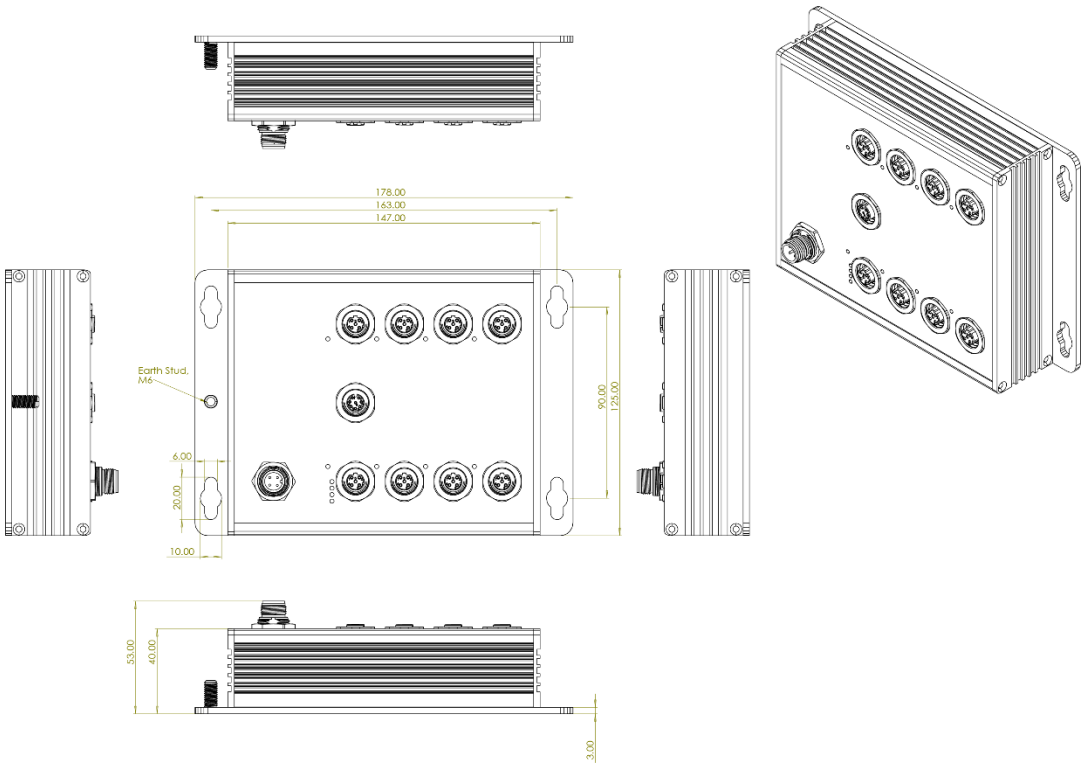
TPES-3008T

Aluminum case. IP67/54, 178 (W) x 125 (D) x 56 (H) mm

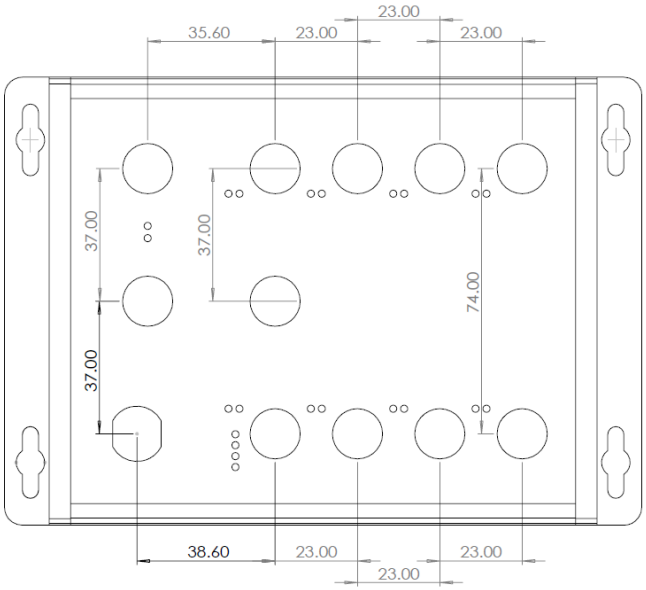


TES-3008T

Aluminum case. IP67/54, 178 (W) x 125 (D) x 53 (H) mm



Distance between ports

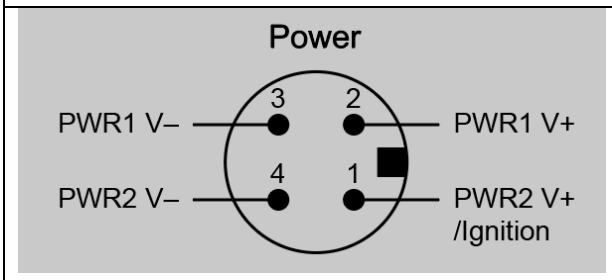
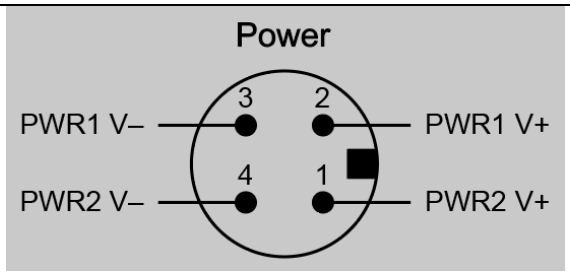


1.2 Package Content:

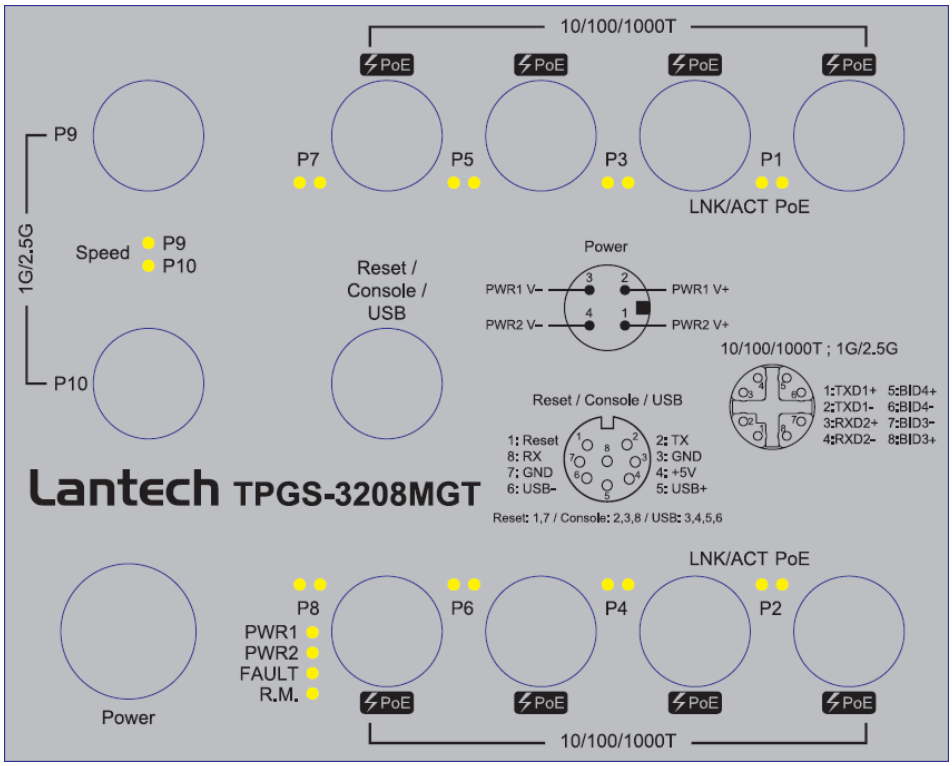
- Product (Router Switch)

1.3 Front Panel

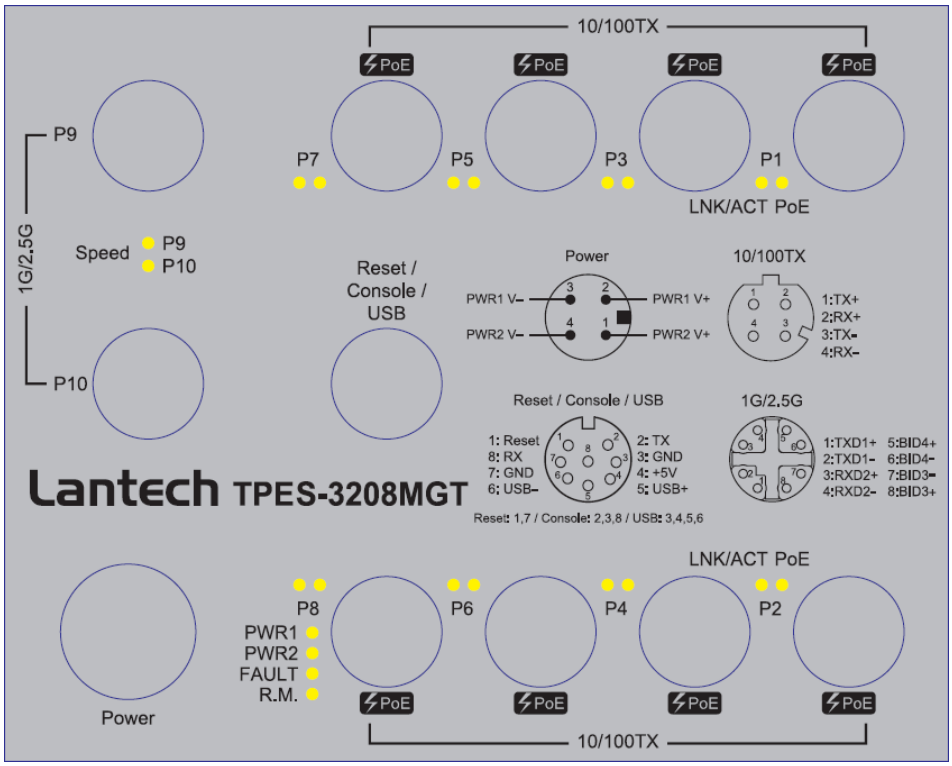
Please note that the power pin assignment may differ between the IGN and non-IGN models.

IGN models	Non IGN models
	

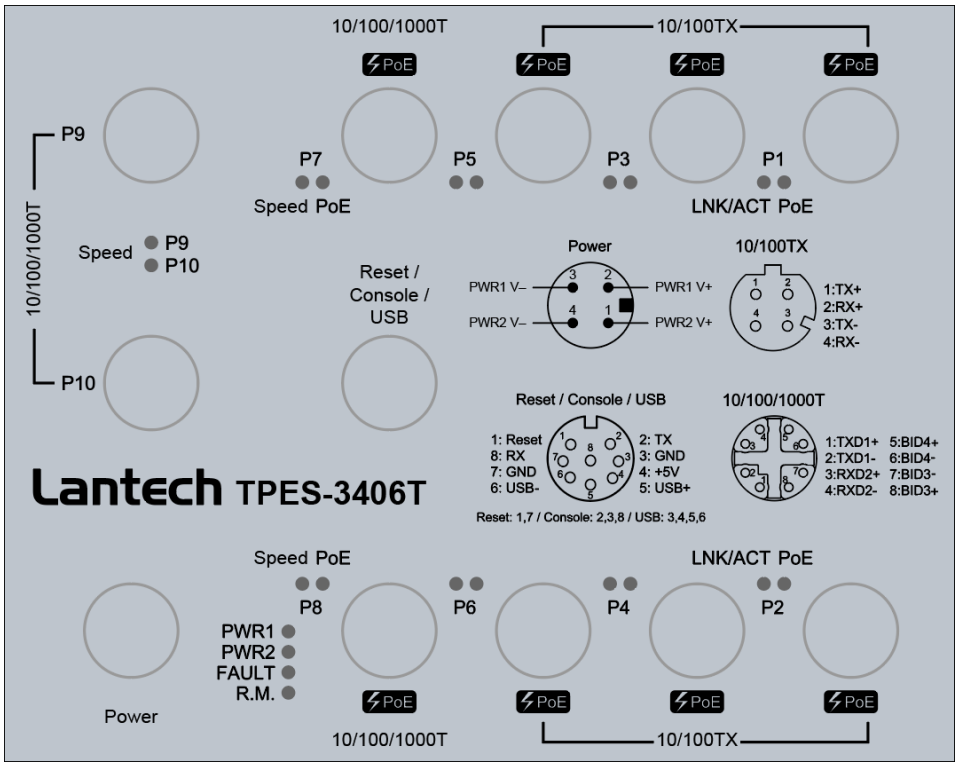
TPGS-3208MGT (For non-PoE model, there will be no PoE LED and PoE icon)



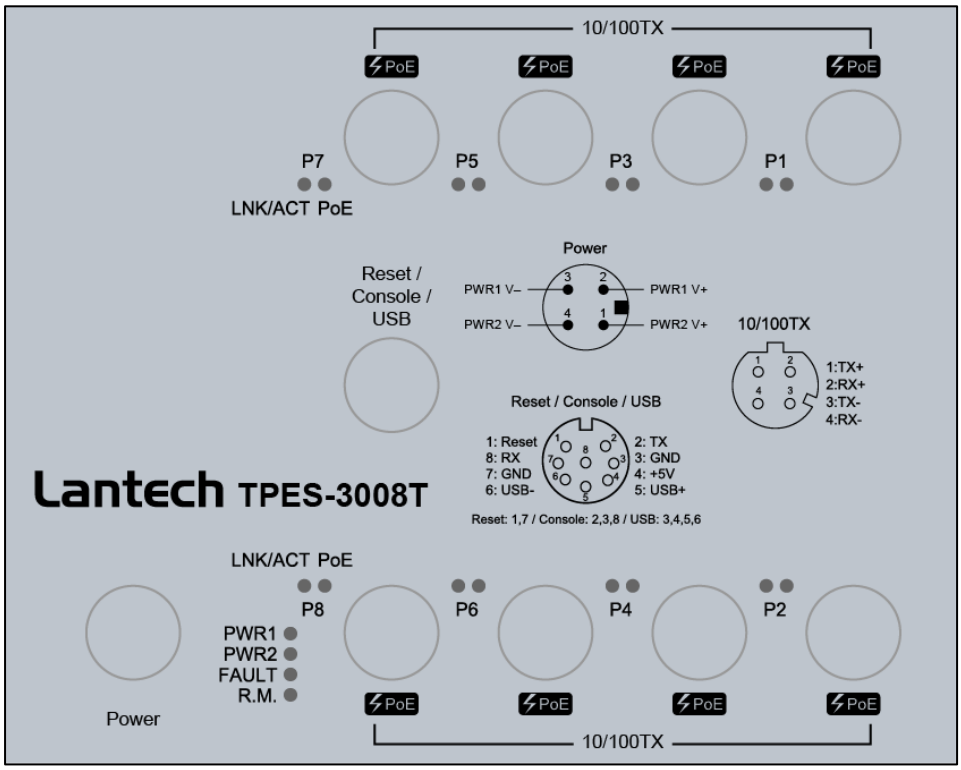
TPES-3208MGT (For non-PoE model, there will be no PoE LED and PoE icon)



TPES-3406T (For non-PoE model, there will be no PoE LED and PoE icon)



TPES-3008T (For non-PoE model, there will be no PoE LED and PoE icon)



1.4 IP Protection

The **IP Code**, **Ingress Protection Rating**, sometimes also interpreted as **International Protection Rating**, classifies and rates the degree of protection provided against the intrusion (including body parts such as hands and fingers), dust, accidental contact, and water in *mechanical casings* and with electrical enclosures. It is published by the International Electrotechnical Commission (IEC)

Solid particle protection

The first digit indicates the level of protection that the enclosure provides against access to hazardous parts (e.g., electrical conductors, moving parts) and the ingress of solid foreign objects.

Level	Object size protected against	Effective against
0	—	No protection against contact and ingress of objects
1	>50 mm	Any large surface of the body, such as the back of a hand, but no protection against deliberate contact with a body part
2	>12.5 mm	Fingers or similar objects
3	>2.5 mm	Tools, thick wires, etc.
4	>1 mm	Most wires, screws, etc.
5	Dust protected	Ingress of dust is not entirely prevented, but it must not enter in sufficient quantity to interfere with the satisfactory operation of the equipment; complete protection against contact
6	Dust tight	No ingress of dust; complete protection against contact

Liquid ingress protection

The second digit indicates the level of protection that the enclosure provides against harmful ingress of water.

Level	Protected against	Testing for	Details
0	Not protected	—	—
1	Dripping water	Dripping water (vertically falling drops) shall have no harmful effect.	Test duration: 10 minutes Water equivalent to 1 mm rainfall per minute
2	Dripping water when tilted up to 15°	Vertically dripping water shall have no harmful effect when the enclosure is tilted at an angle up to 15° from its normal position.	Test duration: 10 minutes Water equivalent to 3 mm rainfall per minute
3	Spraying water	Water falling as a spray at any angle up to 60° from the vertical shall have no harmful effect.	Test duration: 5 minutes Water volume: 0.7 litres per minute Pressure: 80–100 kPa
4	Splashing of water	Water splashing against the enclosure from any direction shall have no harmful effect.	Test duration: 5 minutes Water volume: 10 litres per minute Pressure: 80–100 kPa
5	Water jets	Water projected by a nozzle (6.3 mm) against enclosure from any direction shall have no harmful effects.	Test duration: at least 15 minutes Water volume: 12.5 litres per minute Pressure: 30 kPa at distance of 3 m

6	Powerful water jets	Water projected in powerful jets (12.5 mm nozzle) against the enclosure from any direction shall have no harmful effects.	Test duration: at least 3 minutes Water volume: 100 litres per minute Pressure: 100 kPa at distance of 3 m
7	Immersion up to 1 m	Ingress of water in harmful quantity shall not be possible when the enclosure is immersed in water under defined conditions of pressure and time (up to 1 m of submersion).	Test duration: 30 minutes Immersion at depth of at least 1 m measured at bottom of device, and at least 15 cm measured at top of device
8	Immersion beyond 1 m	The equipment is suitable for continuous immersion in water under conditions which shall be specified by the manufacturer. Normally, this will mean that the equipment is hermetically sealed. However, with certain types of equipment, it can mean that water can enter but only in such a manner that it produces no harmful effects.	Test duration: continuous immersion in water Depth specified by manufacturer
9	Powerful high temperature water jets	Protected against close-range high pressure, high temperature spray downs.	—

1.5 LED Indicators

The diagnostic LEDs that provide real-time information of system and optional status are located on the front panel of the industrial switch. The following table provides the description of the LED status and their meanings for the switch.

LED	Color	Status	Meaning
R.M	Green	On	The switch unit is owner switch of ITU-Ring
		Off	The switch is not owner switch
PWR1	Green	On	Power 1 is active
		Off	Power 1 is inactive
PWR2	Green	On	Power 2 is active
		Off	Power 2 is inactive
FAULT	Red	On	Power or port failure
		Off	No failure
Link/Act	Green	On	A network device is detected.
		Blinking	The port is transmitting or receiving packets from the TX device.
		Off	No device attached
PoE (PoE model)	Green	On	The port is operating in PoE mode.
		Off	The port is not operating in PoE mode.
Speed	Green / Orange	Green	A network device is detected.
		Blinking	The port is transmitting or receiving packets from the TX device.

		Orange	Connected to network at speed of 1000Mbps (for 3406T) Connected to network at speed of 2.5G (for 3208MGT)
		Off	No device attached

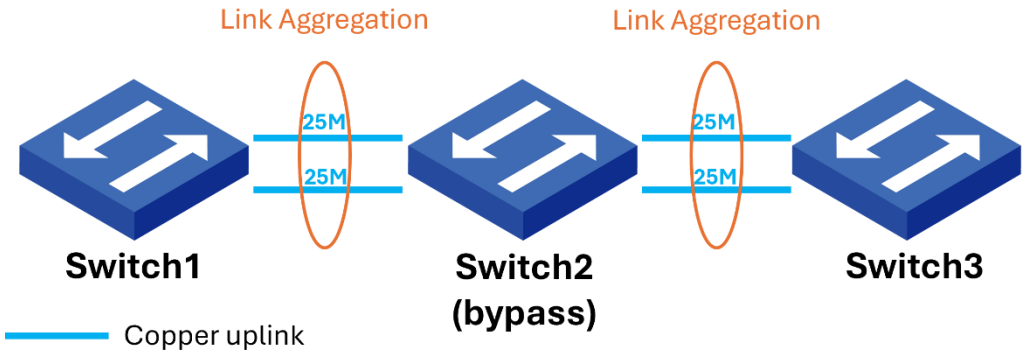
1.6 Bypass design

(Available on -BT/-BBT models; Maximum copper uplink by-pass port distance is 25m)

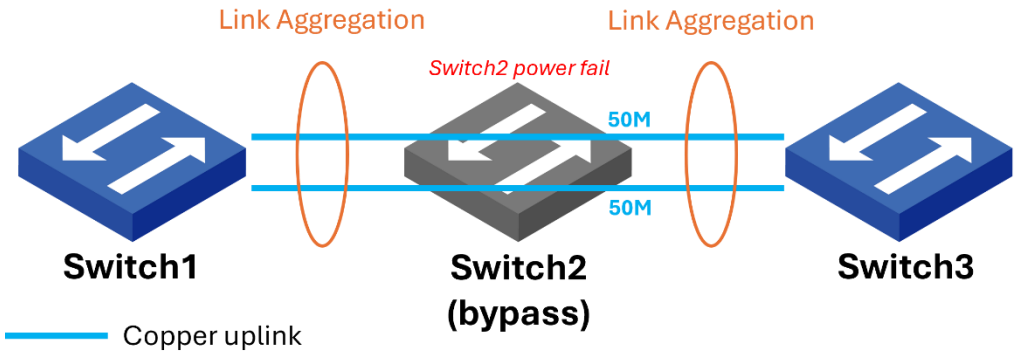
The bypass module is like an alarm relay but it has default position – close. When system finish booting procedures, CPU will ask bypass module change position from close to open and keep in open status. That's why when switch loss the power, bypass module will be active, because CPU has no ability to ask bypass module keep in open status then bypass will be restored to default position – close.

There is another condition will trigger bypass module -- CPU hang. When CPU is hang, it also loss ability to ask bypass module keep in open status. But at this time, watch dog chipset will force to reset CPU then system will reboot. The CPU will back to normal status after rebooting then ask bypass module to keep in open status.

Bypass mechanism in open status:



Bypass mechanism in close status:



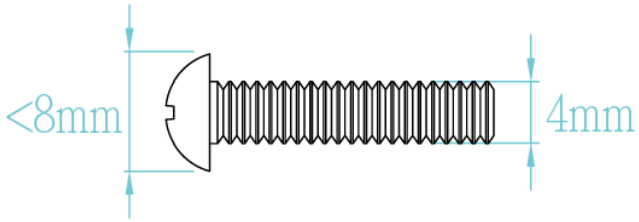
⚠ **Warning:** If the switch enters bypass mode immediately after powering on, it indicates a boot failure (boot incomplete). This is an abnormal condition. Please connect the console line, reboot the switch, and check the boot messages. If the issue persists, please contact technical support.

Chapter 2 Hardware Installation

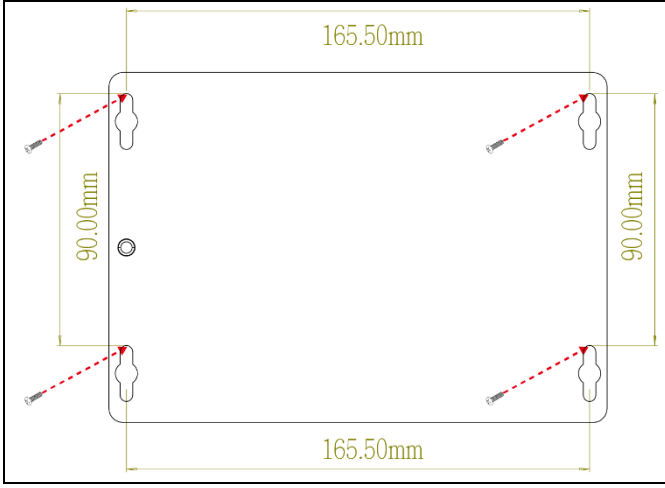
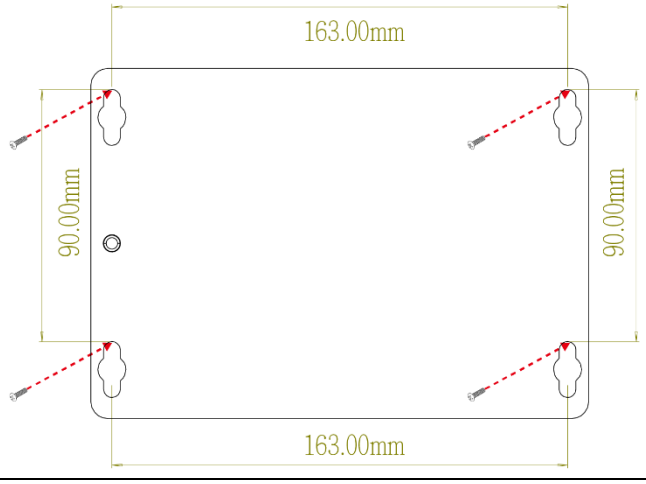
There are no mechanically active moving parts in the switch, to fix the switch into an installation position, please use M4 size screw and corresponding nut and standard M4 screwdriver to install switch in the field.

2.1 Wall mount installation

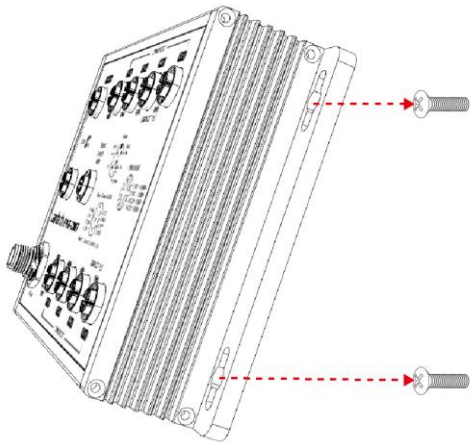
1. Please make sure the screw diameter is M4.



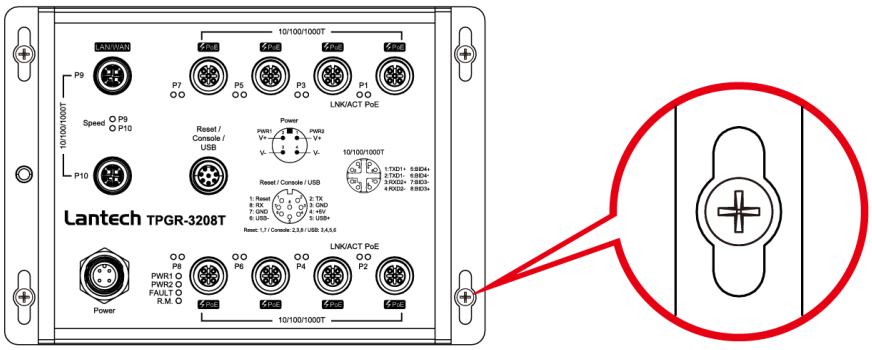
2. Check all 4 fix holes on the switch and find corresponding position in the wall .Use the appropriate tool to drill 4 holes onto the corresponding position, make sure the diameter of holes is compatible with the M4 screws, fix the 4 screws into these 4 holes but don't screw tightly, in order to have enough space to mount the switch.

PoE models	Non-PoE models
	

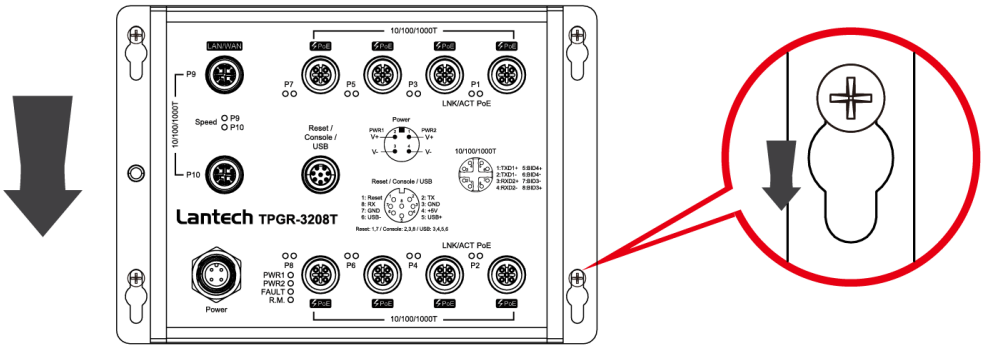
3. Mount switch in wall with 4 fixed screws.



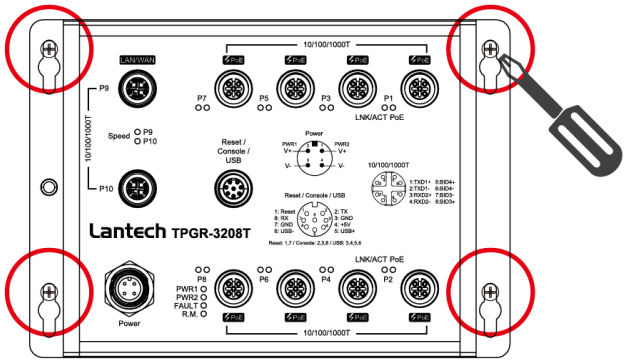
4. Attach switch in wall with 4 screws



5. Move down



6. Tighten 4 screws



Chapter 3 Connect Cable

⚠Notice

Correctly connecting the grounding cable is crucial to lightning protection and EMI protection. To avoid damages caused by surge or EFT, using STP cable is highly suggested.

Alert! PoE Budget for Managed POE Switch Model

This managed PoE switch controls power output via Class Limit. To ensure safety, when a PD load exceeds the maximum power allocated for its specific Class, the managed switch will immediately cut off power to prevent overloading.

Please be aware of the total PoE power budget limitations. To prevent ports from being shut down due to insufficient power budget, carefully calculate and plan the required PoE budget for each active port. Once earlier ports exhaust the available PoE power budget, remaining ports will be unable to supply power to connected devices.

After the hardware installation is complete, please connect the cable to the switch. All the external interfaces use M12 connector design and follow IEC 61076 standard.

3.1 Power input M12 connector.

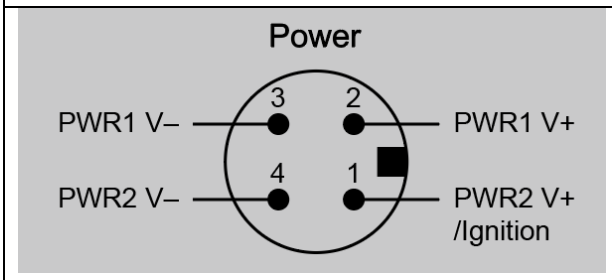
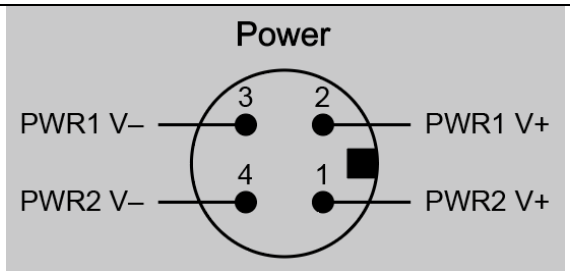
Note: Please check the power connector has been connected to the switch correctly before you turn on the power resource.

Spec. of power input

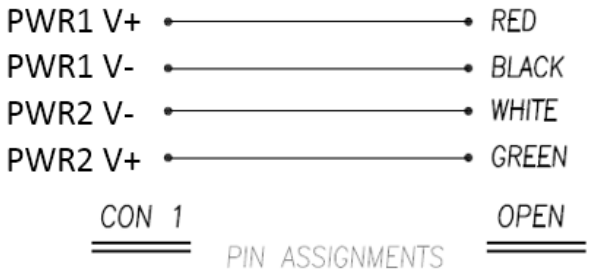
- Voltage of Power Input:
  Dual DC input, 9-36VDC (24VI model); 16.8-56VDC (24TVI model)

- Total PoE budget: 80W@24V
  Please make sure that the external power supply unit can satisfy the total power consumption in field.

- Pin assignment of power input

IGN models	Non IGN models
	

- Pin assignment of optional power cable ECONM12-4P(F)1.5M



*The color is based on the optional power cable of Lantech.

M12 4 PIN A-code to MCP connector



Case 1: Non-IGN model

PIN	Signal
1	V+, PWR2
2	V+, PWR1

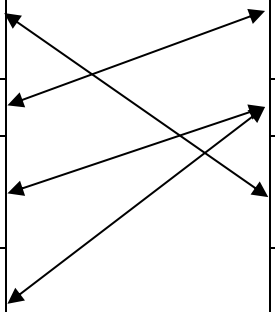
PIN	Signal
1	24V after Manual Switch
2	Ground

3	V-, PWR1
4	V-, PWR2

3	24V after Ignition Switch
4	Full power available
5	Reserved
6	24V after Main Switch

Case 2: IGN model, using the ignition function

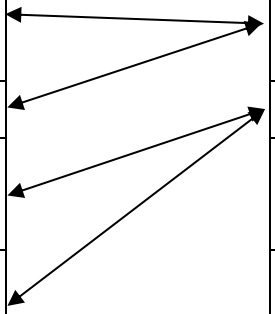
PIN	Signal
1	V+, PWR2, Ignition
2	V+, PWR1
3	V-, PWR1
4	V-, PWR2



PIN	Signal
1	24V after Manual Switch (mandatory)
2	Ground (mandatory)
3	24V after Ignition Switch (mandatory)
4	Full power available (optional)
5	Reserved
6	24V after Main Switch (optional)

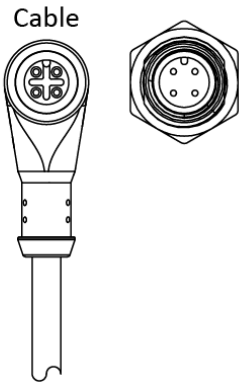
Case 3: IGN model, not using the ignition function

PIN	Signal
1	V+, PWR2 **(mandatory)**
2	V+, PWR1
3	V-, PWR1
4	V-, PWR2

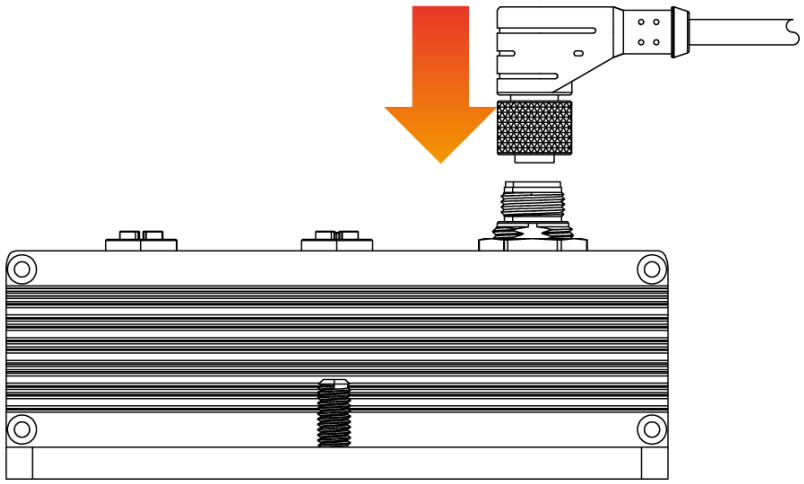


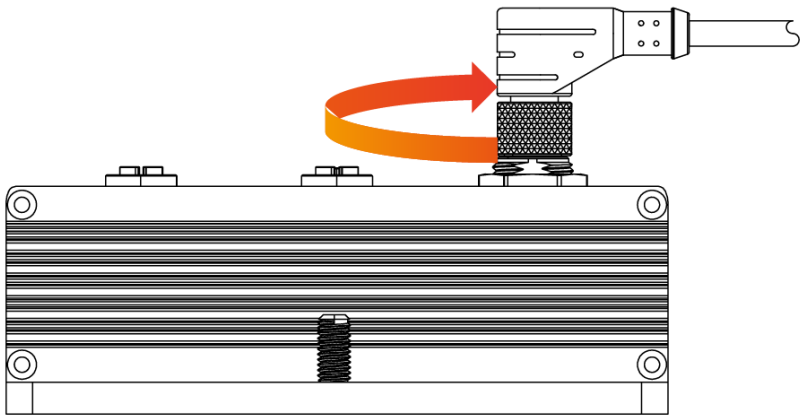
PIN	Signal
1	24V after Manual Switch (mandatory)
2	Ground (mandatory)
3	24V after Ignition Switch
4	Full power available (optional)
5	Reserved
6	24V after Main Switch (optional)

- Make sure the direction of connector is correct before you connect it.



- Plug power connector and screw in clockwise direction to fix it.





3.2 Ignition (IGN model)

When the vehicle has been stalled by the driver, some equipment in the car may still need to run for a while. With Lantech ignition switch, even if the engine of the vehicle has been turned off by driver, the switch can still offer power to the equipment via PoE connection from the battery. (The duration time of power off can be set via web UI)



PIN	Signal
1	V+, PWR2, Ignition
2	V+, PWR1
3	V-, PWR1
4	V-, PWR2

PIN	Signal
1	24V after Manual Switch (mandatory)
2	Ground (mandatory)
3	24V after Ignition Switch (mandatory)
4	Full power available (optional)
5	Reserved
6	24V after Main Switch (optional)

ECONM12-04A(F) to MCP 6P-20CM CABLE
(Optional power cable for IGN models)

- Power supply interfaces shall be of MCP type, even in cases where the module makes use of PoE to ensure that the correct power control inputs are present (adapters on the module side are acceptable). MCP type connectors with 6 pins shall be used for power supply interfaces, such as TYCO reference: 1-965641-1 Blue Code A (vehicle side) or TYCO reference: 8-968970-1 Blue Code A

(module side):

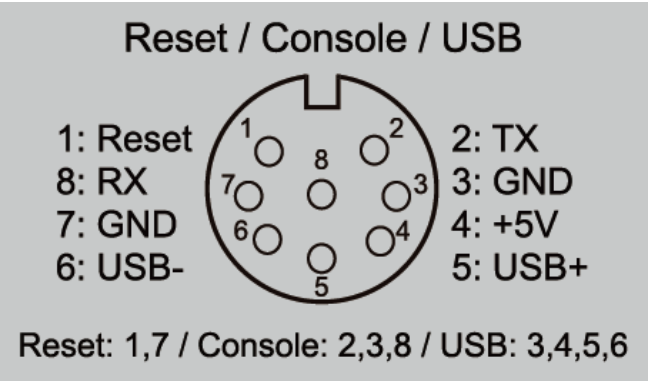
 1-965641-1 Blue Code A	 8-968970-1 Blue Code A

⚠ Warning ⚠

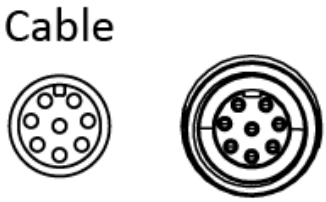
The use of O-rings on cable connectors is not mandatory. Connectors equipped with O-rings may not lock properly, which can lead to assembly issues. If locking difficulties occur, it is recommended to remove the O-ring from the cable connector before installation to ensure smooth assembly and prevent operational problems. Since the board-side connector is already equipped with an O-ring, the product's IP protection level will not be affected even if the cable-side connector does not have one. This approach is also widely adopted across the industry.

3.3 Console & USB dongle M12 connector

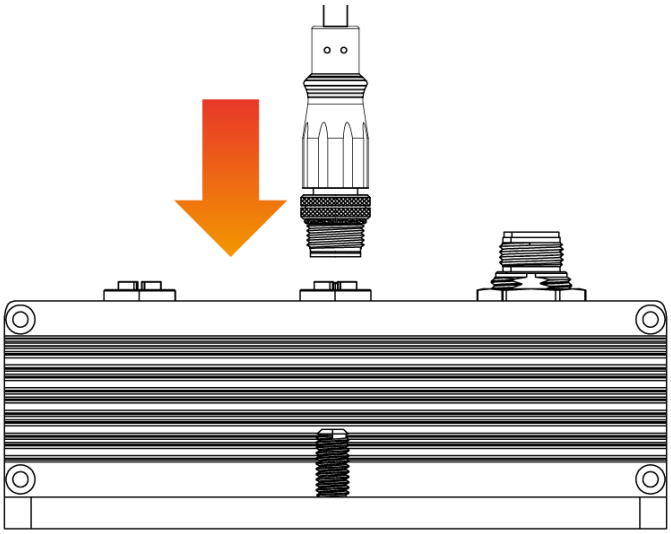
- Pin assignment of console & USB dongle

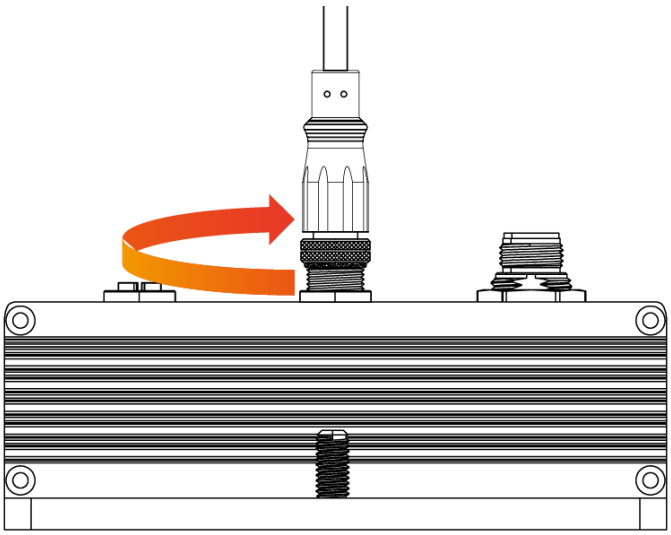


- Make sure the connector is the right direction before you connect it.



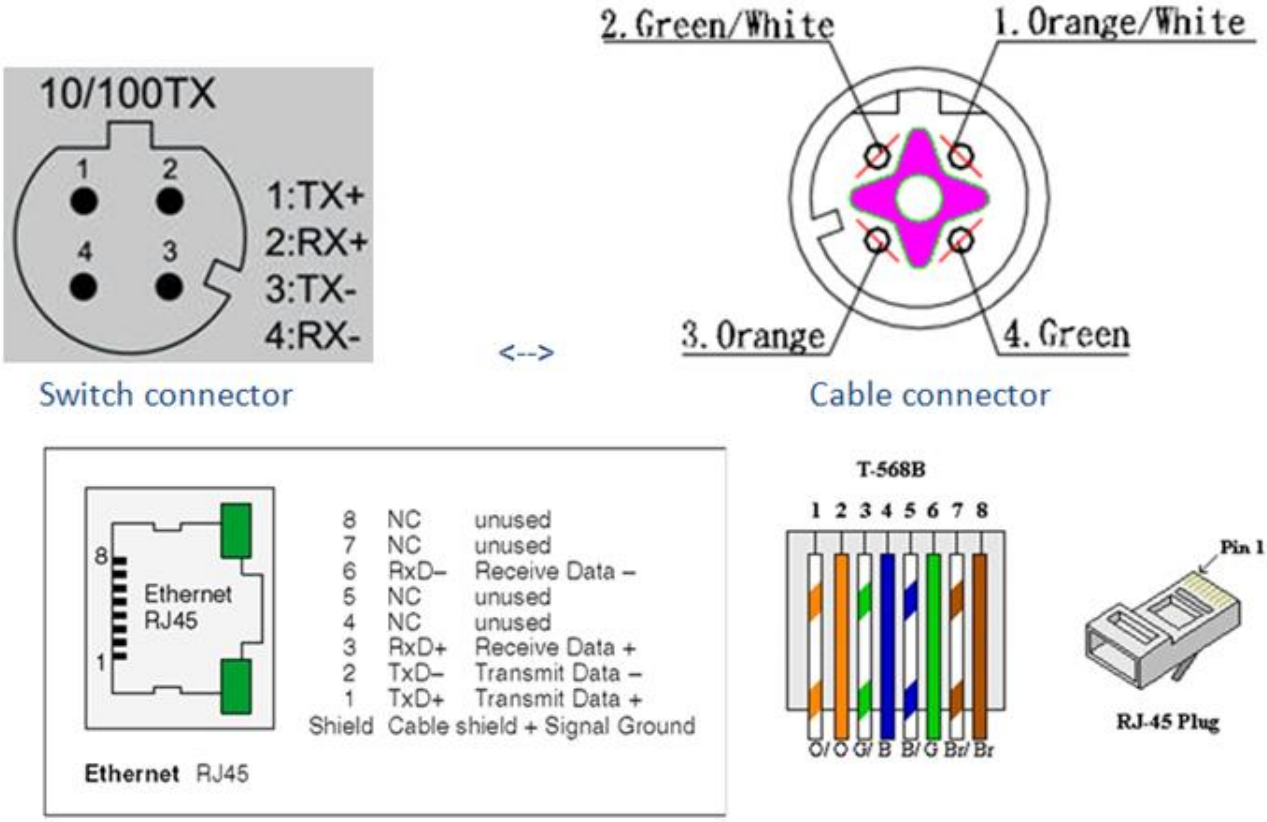
- Plug the console connector into the M12 interface. For Push-Pull operation: insert firmly until it clicks into place. For Traditional operation: screw clockwise to secure the connector.



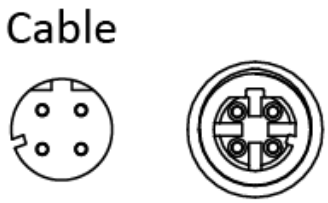


3.4 10/100TX interface M12 connector

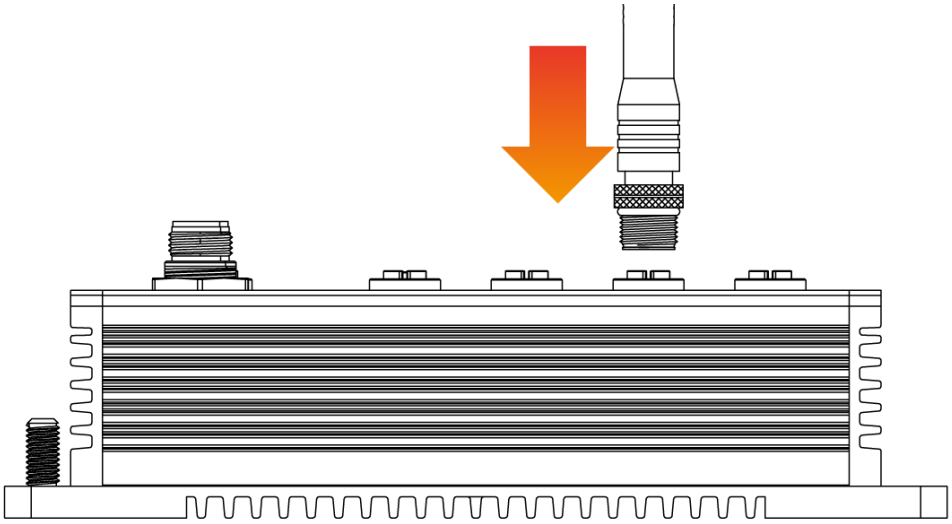
- Pin assignment of the 10/100TX port

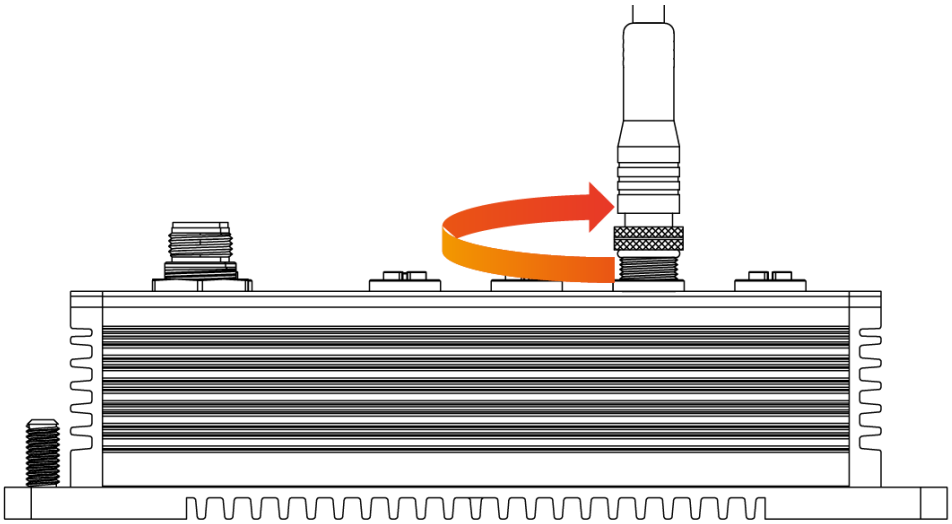


- Make sure the direction of connector is correct before you connect it.



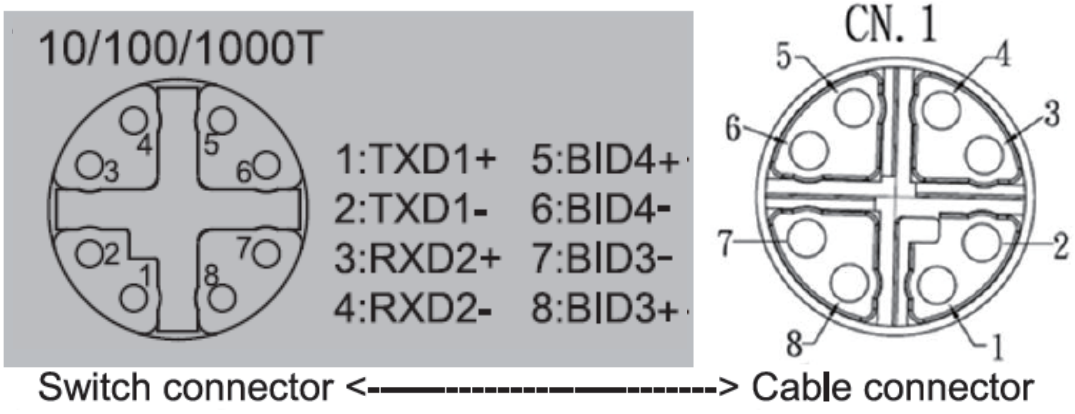
- Plug the 10/100TX connector into the M12 interface. For Push-Pull operation: insert firmly until it clicks into place. For Traditional operation: screw clockwise to secure the connector.



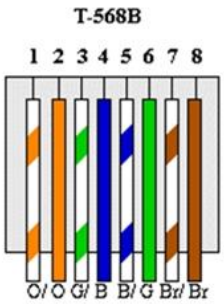


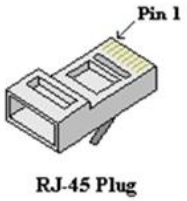
3.5 10/100/1000T interface M12 connector

- Pin assignment of the 10/100/1000T port

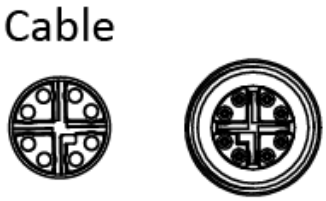


Shell	Gnd	Shell	
1	Orange/ White	1	TWIST
2	Orange	2	
3	Green/ White	3	TWIST
4	Green	6	
5	Brown/ White	7	TWIST
6	Brown	8	
7	Blue/ White	5	TWIST
8	Blue	4	
CN. 1	Wire Color	CN. 2	
PIN OUT			

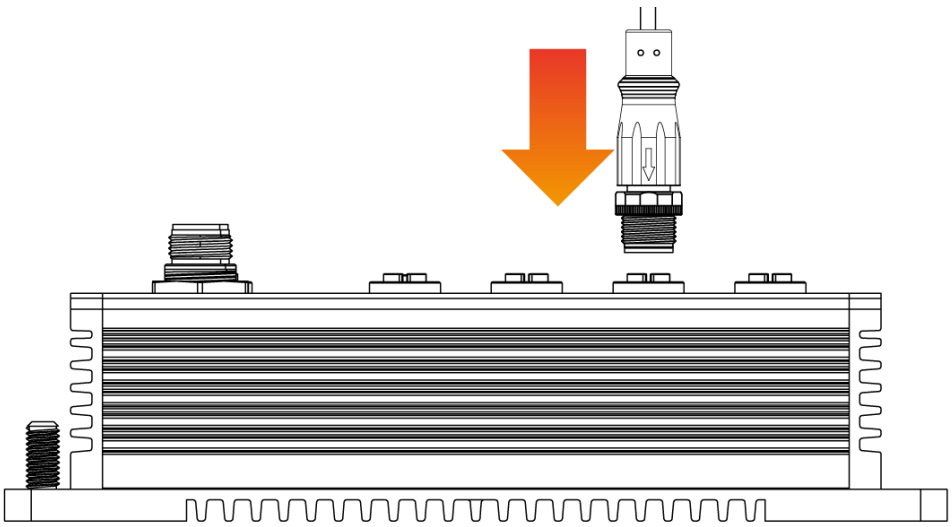


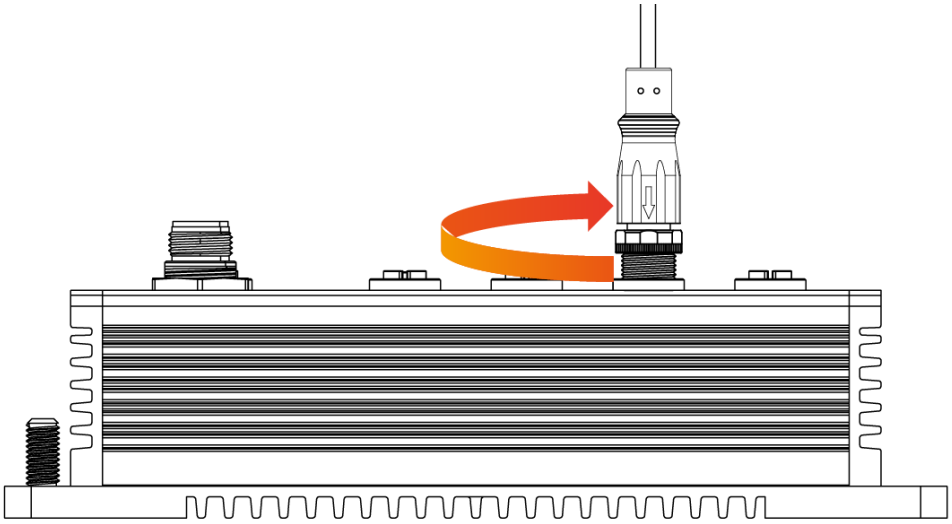


- Make sure the direction of connector is correct before you connect it.



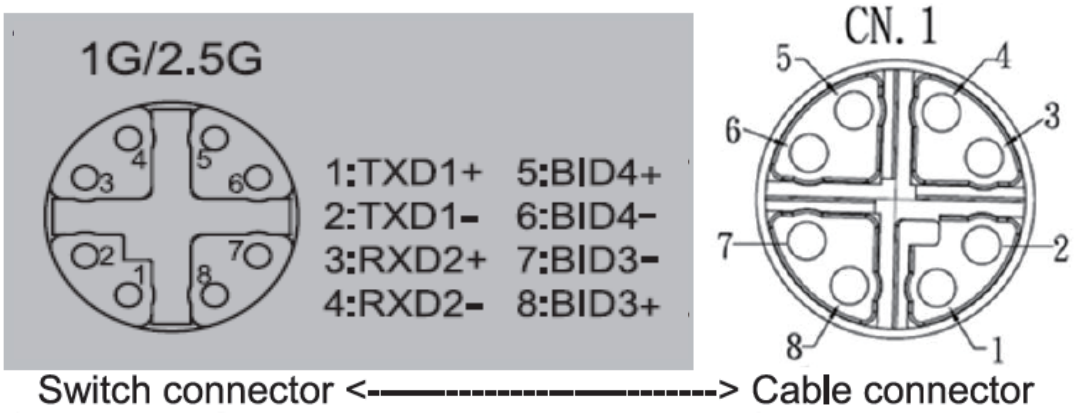
- Plug the 10/100/1000T connector into the M12 interface. For Push-Pull operation: insert firmly until it clicks into place. For Traditional operation: screw clockwise to secure the connector.



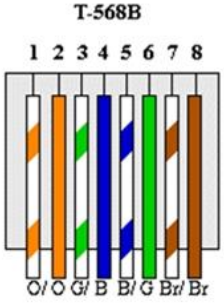


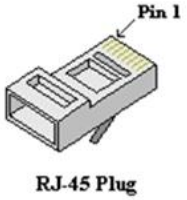
3.6 1G/2.5G interface M12 connector

- Pin assignment of the 1G/2.5G port

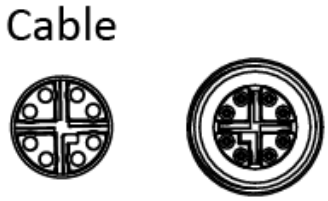


Shell	Gnd	Shell	
1	Orange/ White	1	TWIST
2	Orange	2	
3	Green/ White	3	TWIST
4	Green	6	
5	Brown/ White	7	TWIST
6	Brown	8	
7	Blue/ White	5	TWIST
8	Blue	4	
CN. 1	Wire Color	CN. 2	
PIN OUT			

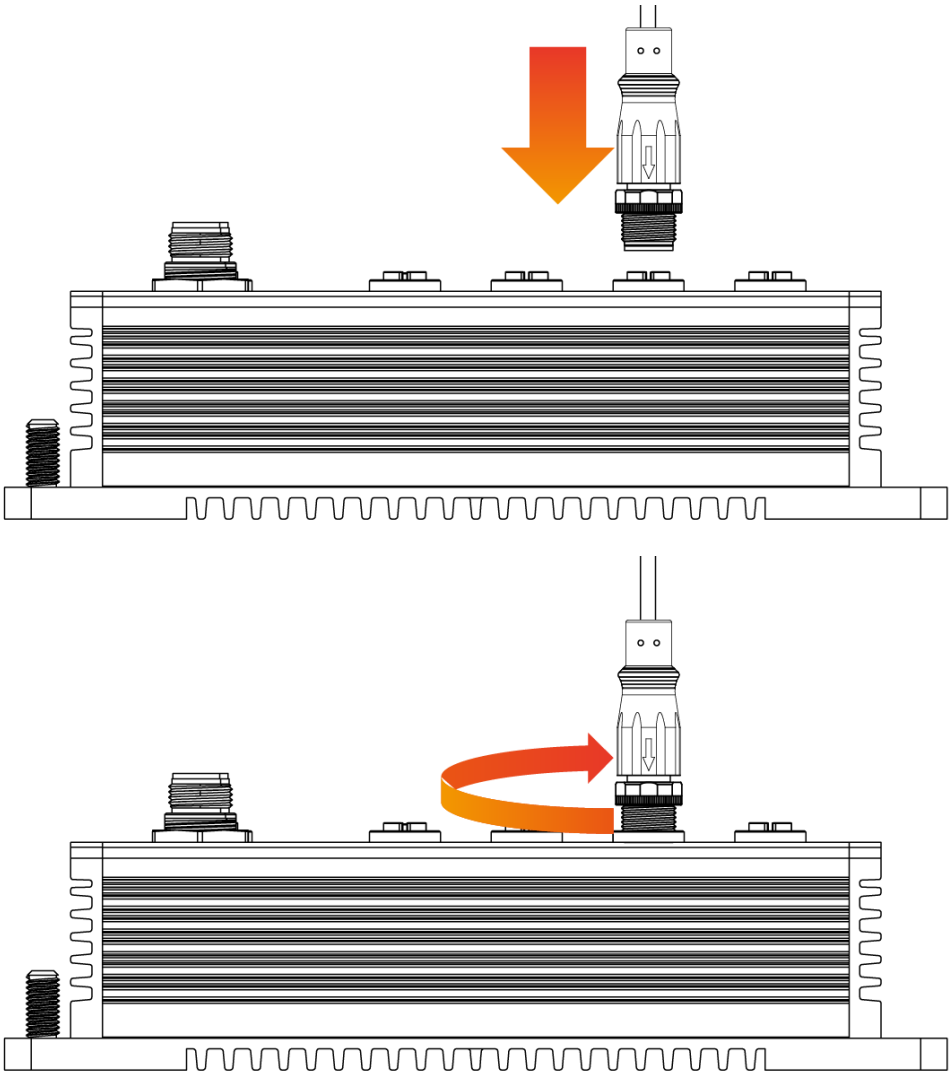




- Make sure the direction of connector is correct before you connect it.



- Plug the 1G/2.5G connector into the M12 interface. For Push-Pull operation: insert firmly until it clicks into place. For Traditional operation: screw clockwise to secure the connector.



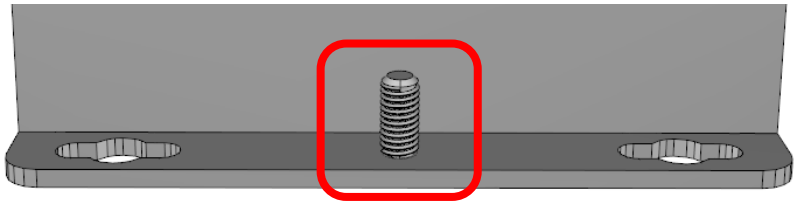
3.7 Ground interface M6 connector

Ground

The chassis is grounded via a separate grounding nut (M6).

Use toothed locking washers for a good electrical connection.

Note: The torque should not exceed **14 kilogram-force centimeters (kgf·cm)**, which is approximately **1.4 newton-meters (N·m)**. Applying torque beyond this limit may cause damage to the grounding components.



Ground screw of the switch

Chapter 4 Maintenance

1 Check each switch connection and make sure they are all screwed correctly.

2 Keep the anti-dust cap on all un-used switch interface

3 Access switch via web browser and check the below points:

3.1 Compare the physical connection of the switch port with the switch icon on the web user interface to make sure the connecting status match each other.

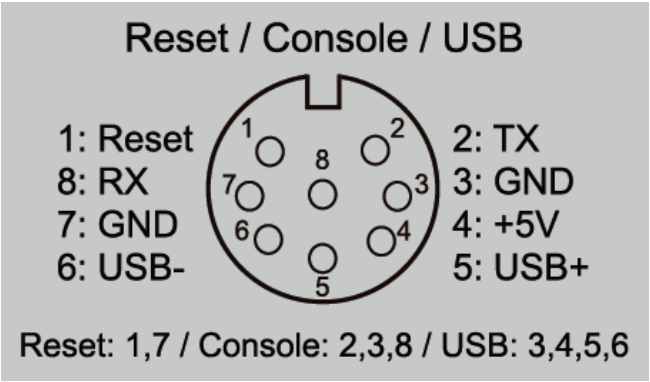
3.2 Check the information on the hardware monitor to make sure all conditions are in normal status.

3.3 Check event log to see if there are any abnormal events.

Chapter 5 Console Management

5.1 Connecting to the Console Port

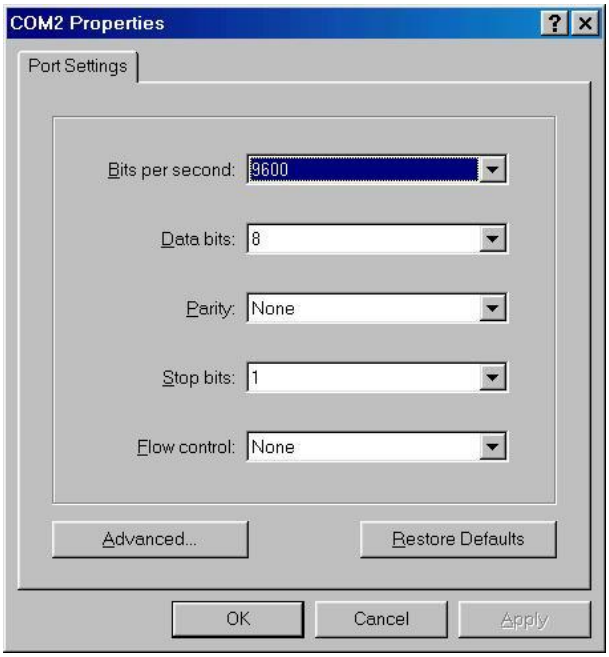
The supplied cable has one M12 4-pole connector end and another RS-232 connector end. Attach the RS-232 connector end to a PC or terminal and the other M12 connector end to the console port of the switch. The connected terminal or PC must support the terminal emulation program.



5.2 Login in to the Console Interface

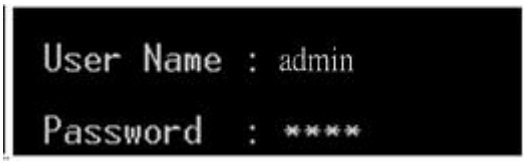
When the connection between Switch and PC is ready, turn on the PC and run a terminal emulation program or **Hyper Terminal** and configure the **communication parameters** to match the following default characteristics of the console port:

Baud Rate:115200 bps
Data Bits: 8
Parity: none
Stop Bit: 1
Flow control: None



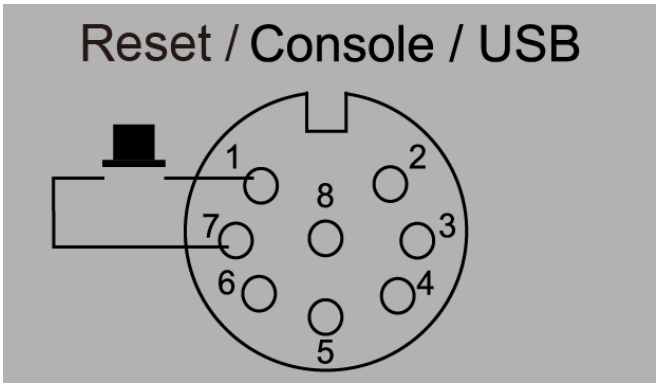
The settings of communication parameters

Having finished setting up the parameters, click '**OK**'. When the blank screen shows up, press the Enter key to have the login prompt appear. Key in '**admin**' (default value) for both User name and Password (use **Enter** key to switch), then press Enter and the Main Menu of console management should appear. Please see below figure for login screen.



Console login interface

Chapter 6 Reset the Switch



You can reset the Ethernet switch to default configuration by making pin1 and pin7 short for more than 5 seconds.

==========Notice==========

For web-based management, please refer to our “Software Management Manual”. Please contact us for more information.