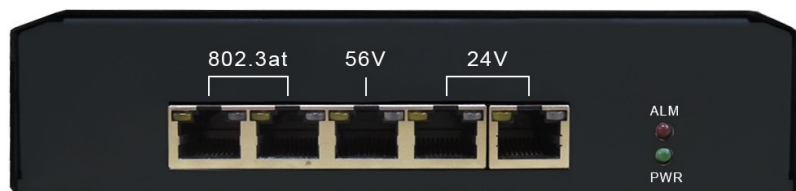


# PSE-SW5G2TB0HM

5 Port PoE Switch

Combo 56V+24V output

## USER'S MANUAL



MSTRONIC CO., LTD.

# 1. General Information

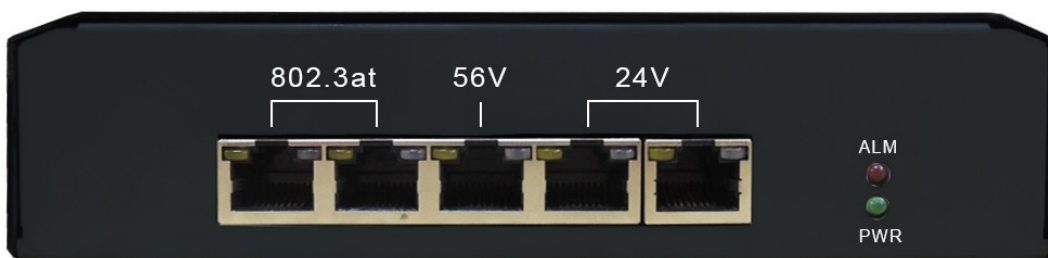
The 24VDC input PoE (Power Over Ethernet) Switch provide five 10M/100M/1000M TX ports, two with standard 802.3at PSE function, one with 56V 60W passive PoE function and two with 24V 24W PoE PSE function, the model deliver both of Ethernet data and DC power through the traditional UTP or STP cable.

# 2. Hardware Description

## \*LED Indicator

There are 12 LEDs on the PoE switch to indicate the status of power and signal. The following section describes the functions of each LED indicator.

Front panel detail



## \*POWER LED

| LED   | STATUS | Description  |
|-------|--------|--|
| Power | Green  | LED ON when DC power input has valid power supplied.   |
|       | Red    | LED ON when the following warning happens.<br>*24V power output under voltage (Vout<16V)<br>*24V power output over voltage (Vout>33V)<br>*24V PoE over current (1.25A/per port)<br>*56V passive PoE output alarm |
|       | Off    | No power supplied.   |

**\*SWITCH LED (the right indicator on RJ45)**

| LED               | STATUS             | Description  |
|-------------------|--------------------|--|
| P1~P5<br>Link/Act | Green              | A network device is detected (1000Mbps), but no communication activity is detected.          |
|                   | Green<br>Blinking  | This port is transmitting to, or receiving package from another device at 1000Mbps.          |
|                   | Yellow             | A network device is detected (10Mbps or 100Mbps), but no communication activity is detected. |
|                   | Yellow<br>Blinking | This port is transmitting to, or receiving package from another device at 10Mbps or 100Mbps. |
|                   | Off                | No device is detected.   |

**\*PoE LED (the left indicator on RJ45)**

|                      |        |  |
|----------------------|--------|--|
| P1~P2<br>802.3at PoE | Yellow | A valid Powered Device (PD) is detected and delivering power on this port. |
|                      | Off    | No PD is detected on this port.  |
| P3<br>56V PoE        | Yellow | 56V power output   |
|                      | Off    | No power output  |
| P4~P5<br>24V PoE     | Yellow | 24V power output   |
|                      | Off    | No power output  |

**\*Power wiring**

For PoE operation, make sure your power supply may offer at least 200W for PoE port. Total power of PoE is 35W x2 (802.3at), 60W x1 (56V/1.07A) and 24W x2 (24V/1A).

Please note green connector is capable of 12A max. If more current is required, use 4 pin DIN connector for up to 15A.

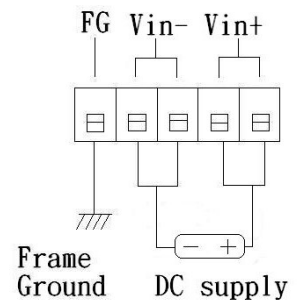
Ports 1,2,4,5 will deliver DC power over the Ethernet cable as Mode B detailed as below:

- \* Data pair A on line 1 and 2
- \* Data pair B on line 3 and 6
- \* Data pair C plus V+ on line 4 and 5
- \* Data pair D plus V- on line 7 and 8

Ports 3 will deliver DC 56V power over the Ethernet cable as Mode A+B detailed as below:

- \* Data pair A plus V+ on line 1 and 2
- \* Data pair B plus V- on line 3 and 6
- \* Data pair C plus V+ on line 4 and 5
- \* Data pair D plus V- on line 7 and 8

The terminal block on rear panel should be wiring as:



| Model          | Input Voltage (REAR) | Output Voltage (Port 1~3) | Output voltage (Port4~5) | 802.3af/at     | Isolated |
|----------------|----------------------|---------------------------|--------------------------|----------------|----------|
| PSE-SW5G2TB0HM | 18-32VDC             | 56VDC (regulated)         | 24VDC (regulated)        | Yes (port 1~2) | No       |

### \*Ethernet Port Wiring

The PoE switch supports one RJ-45 uplink (port 1 with 802.3at PSE) and four RJ-45 ports (port 2 with 802.3at PSE, port3 with 56V passive PSE and port4-5 with 24V PSE) with automatic MDI/MDI-X crossover, auto-sense the speed and duplex for 10Base-T, 100Base-TX or 1000Base-T connection. Automatic MDI/MDI-X crossover allows you to connect to other devices (switches, hubs, or workstations etc.), without regard to using straight-through or crossover cabling.

The ports 1,2,4,5 deliver power over spare pairs. Port 3 delivers power over spare and active pairs (4 pair).

The following tables describe the wiring diagram of straight-through and crossover cabling. That crossover cables simply cross-connect the transmit lines at each end to the receive lines at the opposite end.

| Straight-through Cabling |       |
|--------------------------|-------|
| Pin 1                    | Pin 1 |
| Pin 2                    | Pin 2 |
| Pin 3                    | Pin 3 |
| Pin 6                    | Pin 6 |
| Pin 4                    | Pin 4 |
| Pin 5                    | Pin 5 |
| Pin 7                    | Pin 7 |
| Pin 8                    | Pin 8 |

| Cross-over Cabling |       |
|--------------------|-------|
| Pin 1              | Pin 3 |
| Pin 2              | Pin 6 |
| Pin 3              | Pin 1 |
| Pin 6              | Pin 2 |
| Pin 4              | Pin 7 |
| Pin 5              | Pin 8 |
| Pin 7              | Pin 4 |
| Pin 8              | Pin 8 |

Connect an Ethernet cable into any switch port and connect the other side to your attached device. The Link/Act LED (green or yellow) will light up when the cable is correctly connected. Refer to the **LED Indicator** section for descriptions of each LED indicator.

If a port LED is off, go back and check for connectivity problems between that port and the network device connected.

The maximum cable length for 10/100/1000BaseT with Cat 5 twisted pair cables is typically 100m (328 ft).

### \*PD Device Wiring

Port 1 to 5 provide PoE inject function to power up the powered device use the straight-through or cross-over Ethernet cable.

The PoE switch follows the IEEE802.3af/at Alternative B mode connector assignment. The following table shows pin assignment of alternative A and B for the Power Source Equipment.

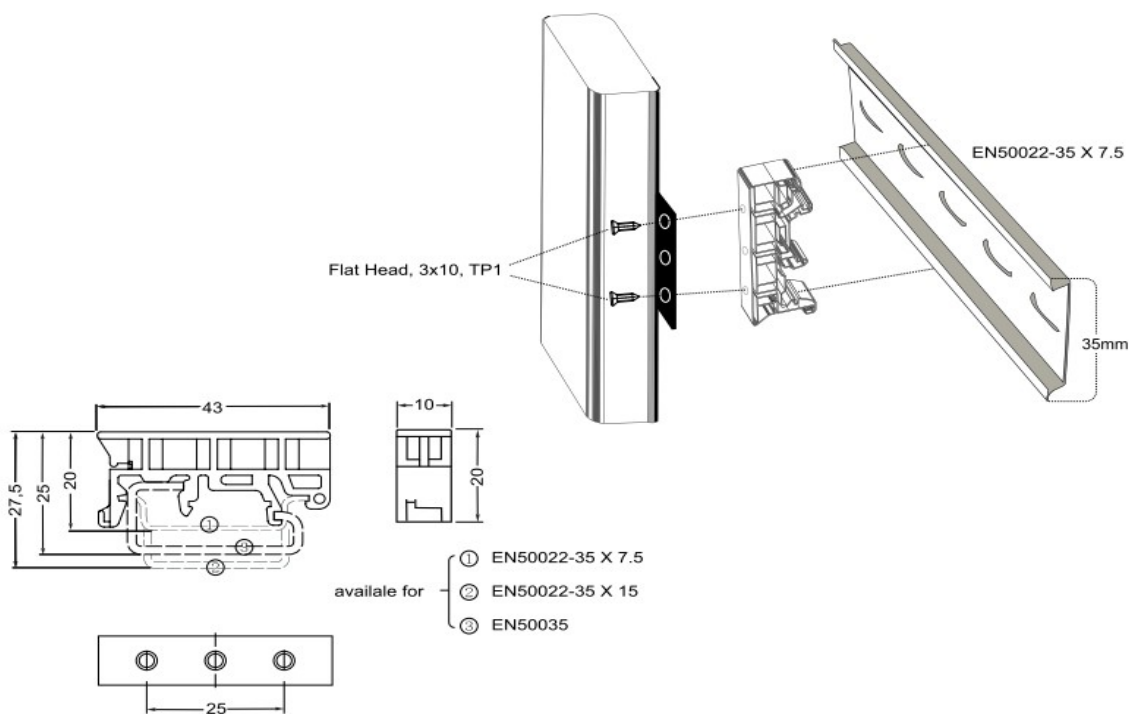
| Conductor | Alternative A (MDI-X) | Alternative A (MDI) | Alternative B (All) |
|-----------|-----------------------|---------------------|---------------------|
| 1         | Negative Vport        | Positive Vport      |                     |
| 2         | Negative Vport        | Positive Vport      |                     |
| 3         | Positive Vport        | Negative port       |                     |
| 4         |                       |                     | Positive Vport      |
| 5         |                       |                     | Positive Vport      |
| 6         | Positive Vport        | Negative Vport      |                     |
| 7         |                       |                     | Negative Vport      |
| 8         |                       |                     | Negative Vport      |

Be sure the twisted pair cable is bound with the standard RJ-45 pin, especially the pin 1, 2, 3 and 6. If the RJ-45 is bound with the wrong pin number, PoE switch will not recognize the PD and won't deliver DC power to PD. The yellow PoE LED will light up when the cable is correctly connected. Refer to the **LED Indicator** section for descriptions of each LED indicator. If a port LED is off, go back and check for connectivity problems between that port and the network device connected.

### 3. Technical Specifications

|                        |  |
|------------------------|--|
| Standards              | IEEE802.3/IEEE802.3u standards/IEEE802.3ab (10 base-T/100base-TX/1000base-T)   |
| Ports                  | 5 ports with PoE output , support auto-crossover & auto-polarity   |
| Transmission speed     | 1000Mbps (1000base-T).100 Mbps (100base-TX), 10 Mbps(10base-T)<br>Auto-negotiation   |
| Switch technology      | store-and-forward  |
| Protocols              | CSMA/CD  |
| Flow control           | IEEE802.3x (full-duplex), back pressure (half-duplex)  |
| Data transmission rate | 1488000pps for1000base-T, 148800pps for 100base-T, 14880pps for 10base-T   |
| Address table          | 1K MAC address table, self-learning  |
| Connect                | RJ-45  |
| PoE port               | Port 1-2, 56V PSE auto power management (Alt B)<br>Port 3, 56V 60W passive PoE (Alt A MDI+B)<br>Port 4-5, 24V power output (Alt B) |
| Maximum PoE power      | Port 1-2: IEEE802.3at – 35W(802.3at 2 event classification)<br>Port 3: 56V 1.07A (60W)<br>Port 4-5: 24V 1A (24W)                   |
| PSE disconnect mode    | DC disconnect  |
| PoE auto detection     | IEEE802.3af & IEEE802.3at (2 event classification signaling)   |
| PoE protection         | Over-temperature, over-current, over/under voltage   |

|                       |  |
|-----------------------|--|
| LEDs                  | <p>*Link/Activity (Green ON/ Green Blinking @1000Mbps,<br/>Yellow/Yellow Blinking @10M/100Mbps)</p> <p>*PoE (Yellow): port 1-2 ON - PD detect, port3 ON – 56V output<br/>port 4-5 ON – 24V output</p> <p>*POWER: Green-normal, Red-24V/56V passive PSE alarm</p> |
| Power input           | 18V~32VDC input @ rear terminal  |
| Power consumption     | <5W without PD loading   |
| Power efficiency      | 85% at full load (@24V typical)  |
| Operating temperature | -40°C ~ +70°C  |
| Operation humidity    | 90% relative humidity, non-condensing  |
| Storage temperature   | -40°C ~ +85°C  |
| Dimension             | 40mm(H)x180mm(W)x150mm(D)  |





RATING TEMPERATURE LIMITS AND OUTPUT POWER RANGE

MODEL : PSE-SW5G2TB0HM & PSE-SW5G2280HM

