



# Zhitao Group

ZHITAO GROUP

Industrial Power Supplies

## Product Specifications

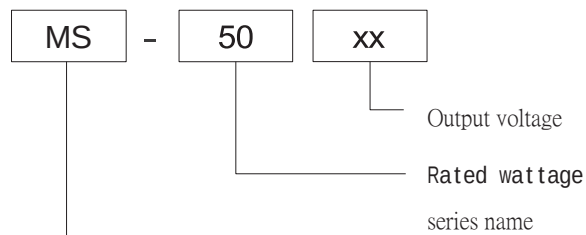
# MS-50

- Product Category: 50w single output power supply
- Version number: ztao3.0
- Release date: 1st May 2025

### Product Overview

MS-50-XX SERIES PRODUCTS FOR A 50W CHASSIS-TYPE INDUSTRIAL POWER SUPPLY, THE OUTPUT VOLTAGE INCLUDING 12V/24V/36V/48V, ETC., CAN BE ADAPTED TO DIFFERENT LOAD APPLICATION REQUIREMENTS TO MEET THE NEEDS OF MOST INDUSTRIAL APPLICATIONS, SELF-COOLING HEAT DISSIPATION, AS WELL AS A FULL RANGE OF PROTECTIONS, TO ENSURE THAT THIS SERIES OF PRODUCTS OF RELIABILITY AND STABILITY.

### Model encoding



### product characteristics

- International full-scope exchange inputs
- Type of protection: short circuit/overload/overvoltage
- Cooling by free air convection
- Power on led indicator
- 100% full load burn-in test
- 3-year warranty

### Areas of Application

Industrial control, mechanical and electrical, electronic instruments, industrial automation, electronic equipment, semiconductor equipment, etc. (except information technology equipment)

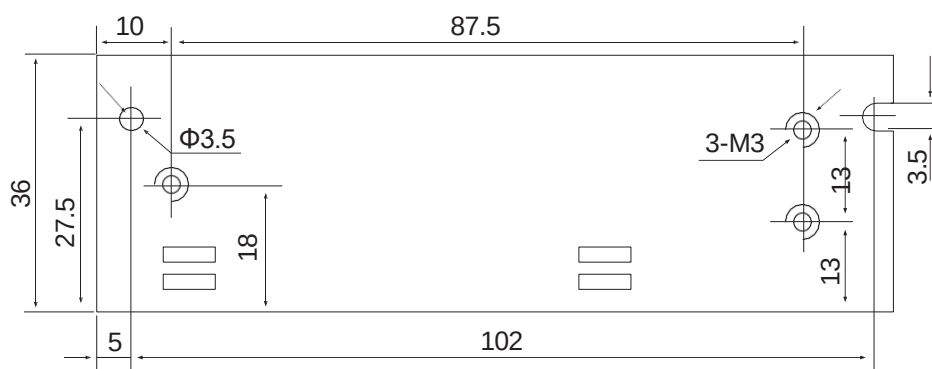
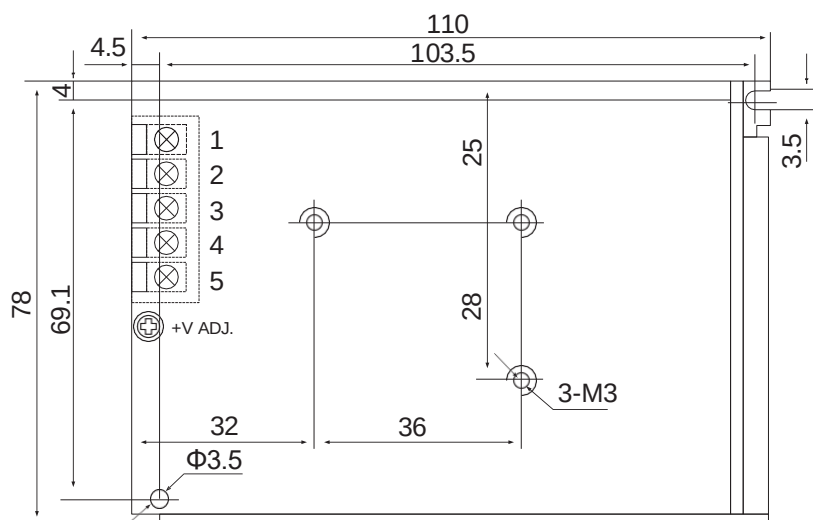


01-01

## Electrical Specifications

| Model       |                              | MS-50-12                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | MS-50-15   | MS-50-24   | MS-50-36   | MS-50-48   |
|-------------|------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|------------|------------|------------|
| Output      | DC output voltage            | 12V                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 15V        | 24V        | 36V        | 48V        |
|             | Rated current                | 4.2A                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 3.4A       | 2.1A       | 1.4A       | 1.1A       |
|             | Current range                | 0~4.2A                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 0~3.4A     | 0~2.1A     | 0~1.4A     | 0~1.1A     |
|             | Rated power                  | 50.4W                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | 51W        | 50.4W      | 50.4W      | 52.8W      |
|             | Ripple & Noise (Max)         | 80mVp-p                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 100mVp-p   | 100mVp-p   | 120mVp-p   | 120mVp-p   |
|             | voltage adjustment range     | 10.2~13.8V                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | 13.5~16.5V | 21.6~26.4V | 32.4~39.6V | 43.2~52.8V |
|             | voltage accuracy             | ±1%                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | ±1%        | ±1%        | ±1%        | ±1%        |
|             | Linear adjustment rate       | ±0.5%                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | ±0.5%      | ±0.5%      | ±0.5%      | ±0.5%      |
|             | Load Adjustment Ratio        | ±0.5%                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | ±0.5%      | ±0.5%      | ±0.5%      | ±0.5%      |
|             | start-up & rise time         | 800ms,30ms/230VAC 1000ms,30ms/115VAC (at full load)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |            |            |            |            |
|             | Holding time                 | 20mS/230VAC 10mS/115VAC (at full load)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |            |            |            |            |
|             |                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |            |            |            |            |
| Input       | Input Voltage                | 95~264 VAC 133~370VDC                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |            |            |            |            |
|             | Input frequency              | 50~60HZ                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |            |            |            |            |
|             | Efficiency                   | 86%                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 86%        | 88%        | 89%        | 89%        |
|             | Input current                | 1.0A/115VAC 0.5A/230VAC                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |            |            |            |            |
|             | Leakage current              | < 1mA/240VAC                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |            |            |            |            |
| Protection  | overload protection          | 120~140% of rated power<br>Protection Mode: VO drops to undervoltage point and automatically recovers when abnormal conditions are removed                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |            |            |            |            |
|             | Overvoltage protection       | 13.8~16.2V                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | 18.7~21.7V | 28.8~33.6V | 41.4~48.6V | 55.2~64.8V |
|             |                              | Protect mode: shut down the output voltage, restart to recover                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |            |            |            |            |
| Environment | Operating temperature        | -20°C ~+65°C                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |            |            |            |            |
|             | Operating humidity           | 20~90%rh No condensation                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |            |            |            |            |
|             | Storage temperature/humidity | -40~+80°C 10~95%rh, no condensation                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |            |            |            |            |
|             | Vibration-resistant          | 10~500HZ, 5G 10 MIN/CYCLE, X, Y, Z 60 MIN EACH                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |            |            |            |            |
| Security    | pressure resistance          | Input to output :1.5kvac; Input to ground :1.5kvac; Output to ground :500vac                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |            |            |            |            |
|             | Insulation impedance         | Input to Output, Input to Ground, Output to Ground :100 Ohms/500VDC/25°C /70%RH                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |            |            |            |            |
| Others      | Product dimensions           | 110*78*32mm (L*W*H)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |            |            |            |            |
|             | Packaging                    | 0.4kg/pcs                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |            |            |            |            |
| Remarks     |                              | 1. All parameters are measured at 230vac input, rated load and 25°C when not specified.<br>2. Ripple and noise voltages were measured on a 20MHz bandwidth oscilloscope with 0.1 $\mu$ and 47 $\mu$ capacitors at the end of a 12-inch twisted pair cable, measured at 20MHZ bandwidth.<br>3. Accuracy: Includes setting error, linear adjustment ratio and load adjustment ratio.<br>4. Linear Adjustment Ratio Measurement Method: Test from low voltage to high voltage at rated load<br>5. Load Adjustment Ratio Measurement Method: From 0% to 100% of rated load<br>6. Start-up time is measured at cold start, fast and frequent switching on and off may increase the start-up time.<br>7. When operating at altitudes higher than 2000 metres (6500ft): the operating environment needs to be reduced by 5°C / 1000 metres |            |            |            |            |

## Outline and Mounting Dimensions (mm)



Terminal Pin No. Assignment

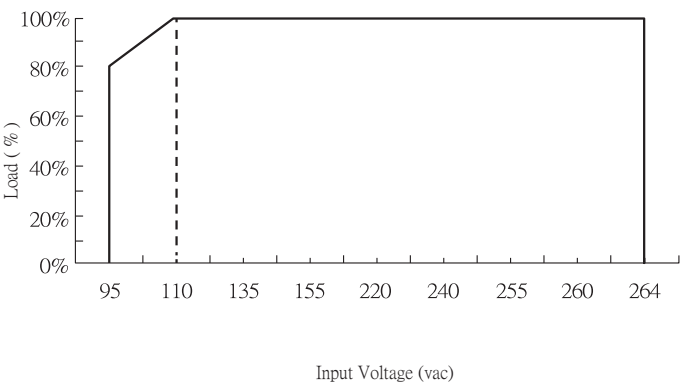
| pin No | Assignment   |
|--------|--------------|
| 1      | AC/L(DC-)    |
| 2      | AC/N(DC+)    |
| 3      | FG $\oplus$  |
| 4      | DC OUTPUT -V |
| 5      | DC OUTPUT +V |

| Pinout   | Function    |                                       |
|----------|-------------|---------------------------------------|
| L        | AC LINE     | Screw:m3*8<br>Torque:8Kgf.cn( 0.8N.m) |
| N        | AC NETURAL  |                                       |
| $\oplus$ | EARTH       |                                       |
| -V       | DC output - | Screw:m3*8<br>Torque:8Kgf.cn( 0.8N.m) |
| +V       | DC output + |                                       |
|          |             |                                       |
|          |             |                                       |
|          |             |                                       |

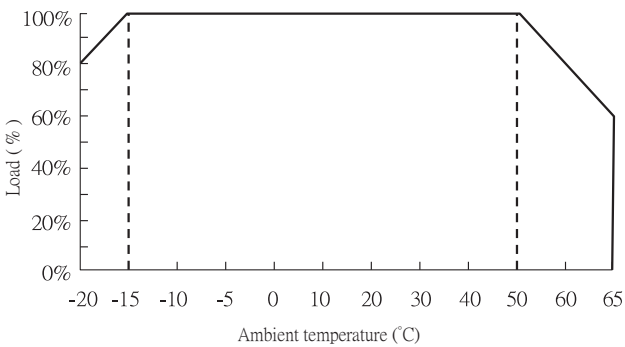
8-m3 Customer system  
mounting holes mounting  
screws:m3  
Installation torque: 8Kgf.cn (0.8N.m)  
screws into the housing is not more  
than 3mm  
Remarks:  
Unit: mm [inch]; unlabelled tolerance  $\pm 0.5$  [ $\pm 0.020$ ]

Characteristic Curve

Input Voltage vs Output Load



Ambient temperature vs. output load



Remarks:

- 1.If you need to know more detailed test data, please contact our technical support to get the application notes of the corresponding products.
- 2.This product is suitable for use in a natural air convection environment, if used in a closed environment, please contact our technical support staff.