# YMC15 SERIES 15W



PENDING

YMC15 series is super small size up to 1.87*1.06 inch,
adopting the full range:85-305VAC/100-430VDC input
The series has extremely low no-load power consumption
High efficiency to reduce power loss

The series cost-effective,, high reliability,operates from
-40 ~85℃ . A variety ofappearance sizes
are available for easy installation and use.

These converfers offer excellent EMC
performance and meet internation standards ,
they are widely used in areas of iIndustrial design, household
appliances, communications, testing instruments.

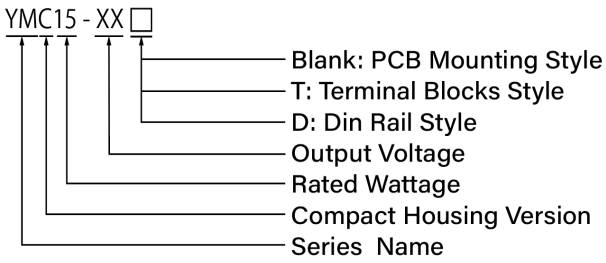
## Features

- Ultra-wide voltage input range
- Super Small Design
- Low no-load power consumption
- Low Ripple & Noise, high efficiency
- Protection:Short Circuit/Over Current/ Over Voltage
- Three Years Warranty

## Model Information

| Yingjiao Part Number | DC Voltage | Rated Current | Rated Power | Max.Capacitive Load |
|---|---|---|---|---|
| YMC15-3.3☐ | 3.3V | 4A | 13.2W | 6600uF |
| YMC15-5☐ | 5V | 3A | 15W | 5000uF |
| YMC15-9☐ | 9V | 1.67A | 15.03W | 3000uF |
| YMC15-12☐ | 12V | 1.25A | 15W | 2000uF |
| YMC15-15☐ | 15V | 1A | 15W | 1500uF |
| YMC15-24☐ | 24V | 0.625A | 15W | 680uF |

## Model Encoding




## Input

| | | |
|---|---|---|
| VOLTAGE RANGE | 85-305VAC | |
| | 100-430VDC | |
| FREQUENCY RANGE | 47-63Hz | |
| AVERAGE EFFICIENCY(Typ.) | 82.0% | YMC15-3.3☐ |
| | 85.0% | YMC15-5☐ |
| | 84.0% | YMC15-9☐ |
| | 85.0% | YMC15-12☐ |
| | 85.0% | YMC15-15☐ |
| | 86.0% | YMC15-24☐ |
| AC CURRENT(Typ.) | 0.45A/115VAC | |
| | 0.30A/230VAC | |
| INRUSH CURRENT(Typ.) | Cold Start 30A/115VAC | |
| | Cold Start 60A/230VAC | |
| LEAKAGE CURRENT | <0.1mA/277VAC,50Hz | |

## Output

| | | |
|---|---|---|
| RIPPLE & NOSE(max.) | 70mVp-p | ALL SERIES |
| VOLTAGE TOLERANCE | ±2.0% | ALL SERIES |
| LINE REGULATION | ±0.5% | ALL SERIES |
| LOAD REGULATION | ±1.0% | ALL SERIES |
| NO LOAD POWER CONSUMPTION(Typ.) | 0.1W/230VAC | YMC15-3.3/5/9/12/15☐ |
| | 0.12W/230VAC | YMC15-24☐ |
| SETUP,RISE TIME | 1000ms, 30ms/230VAC at full load | |
| | 1000ms, 30ms/115VAC at full load | |
| HOLD UP TIME (Typ.) | 55ms/230VAC at full load | |
| | 10ms/115VAC at full load | |

## Protection

| | |
|---|---|
| OVER CURRENT | ≥110% Rated Output current |
| | Protection type: Shut down O/P voltage, |
| | recovers automatically after current goes down |
| SHORT CIRCUIT | Protection type: Hiccup mode, allowing long short circuit mode, |
| | re-power on to recover |
| OVER VOLTAGE | YMC15-3.3□: ≤7.5VDC |
| | YMC15-5□: ≤7.5VDC |
| | YMC15-9□: ≤15VDC |
| | YMC15-12□: ≤20VDC |
| | YMC15-15□: ≤20VDC |
| | YMC15-24□: ≤30VDC |
| | Protection type: Output voltage clamp or Hiccup mode |

## Environment

| | |
|---|---|
| WORKING TEMP. | -40 ℃ to +85 ℃ (Refer to "Derating Curve") |
| WORKING HUMIDITY | 20 ~ 95% RH Non-Condensing |
| STORAGE TEMP, HUMIDITY | - 40℃~+85℃,10 ~ 95% RH non-condensing |
| TEMP. COEFFICIENT | ± 0.02%/℃(0~50℃) |
| MTBF | > 3200K hrs min. MIL-HDBK-217F (25℃) |
| PROJECTED LIFETIME | > 130Kh/220VAC,25℃ at full load |
| | > 20Kh/220VAC,55℃ at full load |
| | > 27Kh/220VAC,55℃ at 80%load |
| ALTITUDE APPLICATION | 5000m |

## SAFETY & EMC

| | |
|---|---|
| SAFETY STANDARDS | IEC/EN/BS EN62368-1, EN61558-1, EN60335-1 |
| | CONFORM TO UL62368-1,IEC/EN60601-1,ANSI/AAMI ES60601-1 |
| WITHSTAND VOLTAGE | I/P-O/P:4.00KVAC |
| ISOLATION RESISTANCE | I/P-O/P, I/P-FG, O/P-FG:100M Ohms/ 500VDC/25 ℃/70% RH |
| EMC EMISSION | EN55032(CISPR32) Class B, CISPR11(EN55011) CLASS B, EN55014-1 |
| EMC IMMUNITY | IEC/EN55014-2 IEC/EN61000-4-2,3,4,5,6,11 |

## Note

1. All parameters without special description are measured under the conditions of input 230VAC, rated load, ambient temperature 25 ° C,and ambient humidity less than 75%.
2.Ripple&noise are measured from peak to peak with band width limit of 20MHz(0.1uf and 47uf /50V parallel capacitor under DC output full load, AC nominal input 25 ℃ ambient temperature).
3.Tolerance :includes set up tolerance, line regulation and load regulation.
4.Derating may be needed under low input voltages. Please check the derating curve for more details.
5.The power supply is considered a component which will be installed into a final equipment. The final equipment must be re-confirmed that it still meets EMC directives. For guidance on how to perform these EMC tests, please refer to"EMI testing of component power supplies."
6.The ambient temperature derating of 3.5℃/1000m is needed for operating altitude greater than 2000m(6500ft).

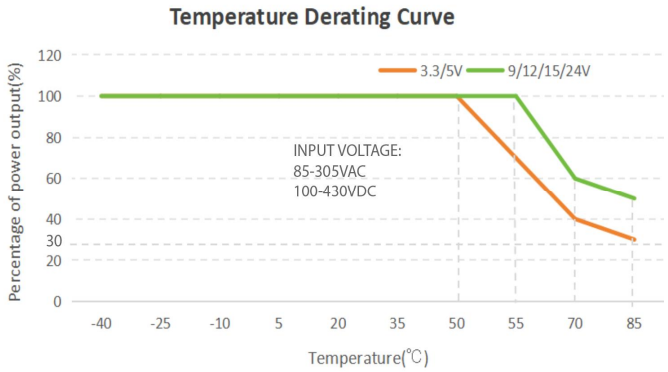
## PHYSICAL PROPERTY

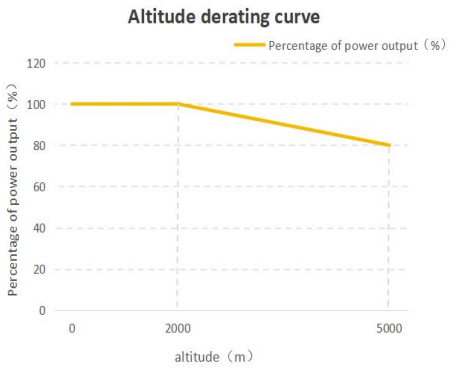
| | |
|---|---|
| LENGTH*WIDTH*HEIGHT: | 47.4*26.8*23.5mm PCB Mounting Style |
| | 76.0*31.5*32.3mm Terminal Blocks Style |
| | 76.0*31.5*36.9mm Din Rail Style |
| WEIGHT: | 48.0g(PCB Mounting Style) |
| | 68.0g(Terminal Blocks Style) |
| | 88.0g(Din Rail Style) |
| COOLING METHOD: | Natural Air Cooling |
| TEXTURE: | Black flame retardant and heat resistant plastic |

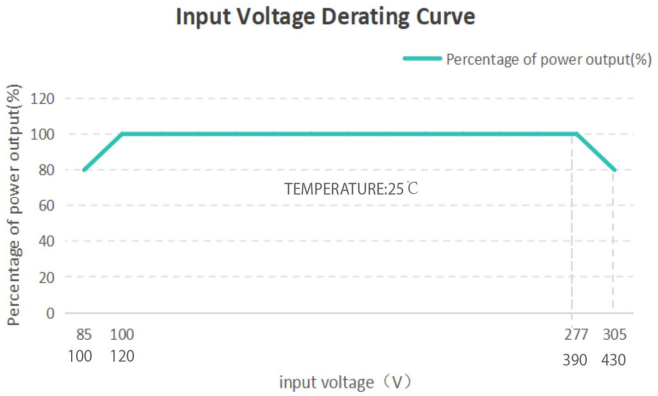
## Packing

| | |
|---|---|
| Carton Size: | 28 × 15 x 24 CM |
| | 11 x 5.9 x9.44 in |
| Master Carton Quantities: | 200pcs/Carton(PCB Mounting Style) |
| | 72pcs/Carton(Terminal Blocks Style) |
| | 72pcs/Carton(Din Rail Style) |

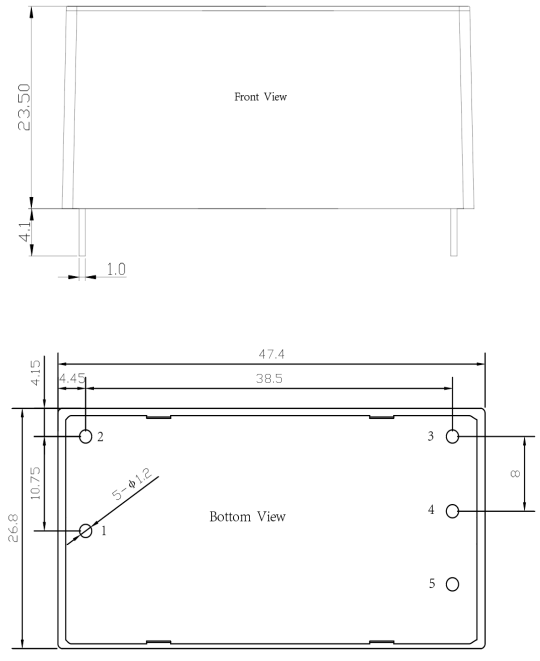
## Curve

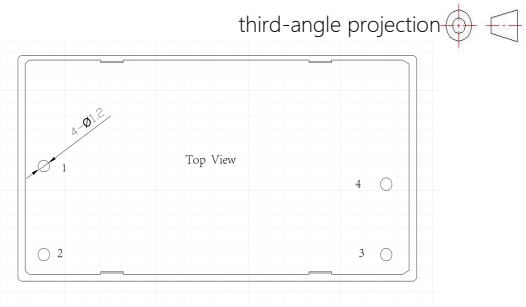



## Dimensions and Installation



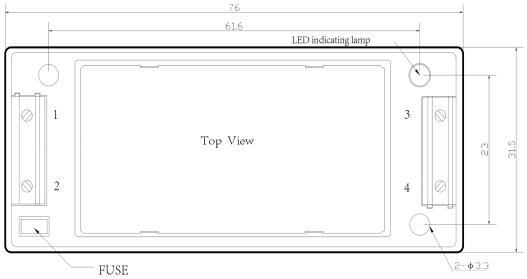




| Pin-Out | |
|---|---|
| Pin | Function |
| 1 | AC/L |
| 2 | AC/N |
| 3 | -VO |
| 4 | +VO |
| 5 | No Pin |

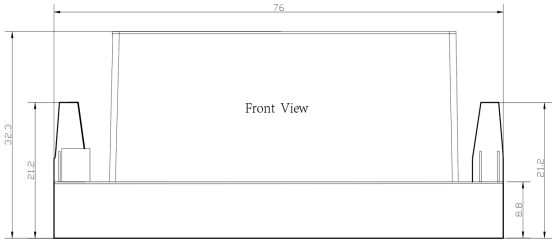
annotation:
unit of size:mm
Pin diameter tolerances:±0.10 [±0.004]
General tolerances:±0.50 [±0.020]

## Terminal Blocks Style External Dimension

third-angle projection



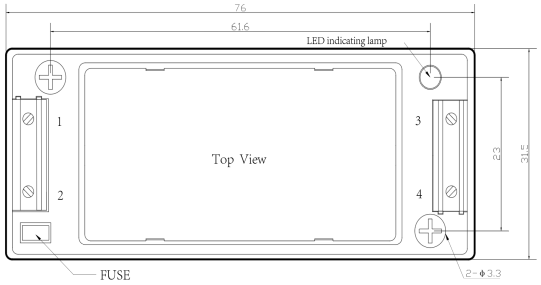

| Pin Mode | |
|---|---|
| Pin | Function |
| 1 | AC/N |
| 2 | AC/L |
| 3 | +VO |
| 4 | -VO |



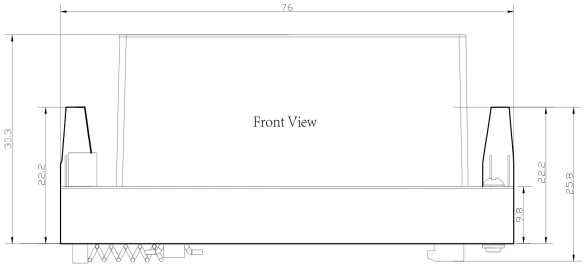

annotation:
unit of size:mm
Connection wire diameter:24-12AWG
tightening torque:Max 0.4 N*m
Unmarked tolerance:±1.00 [±0.039]

## Din Rail Style External Dimension

third-angle projection




| Pin Mode | |
|---|---|
| Pin | Function |
| 1 | AC/N |
| 2 | AC/L |
| 3 | +VO |
| 4 | -VO |




annotation:
unit of size:mm
Connection wire diameter:24-12AWG
tightening torque:Max 0.4 N.m
Guide type:TS35,Guide rails need to be grounded
Unmarked tolerance:±1.00 [±0.039]

## Typical application circuit

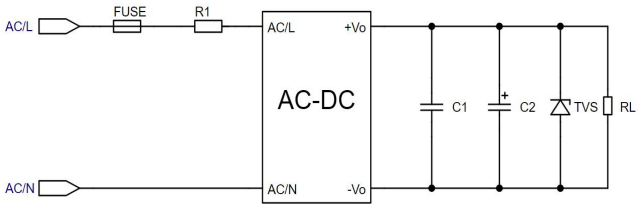



Figure 1:Typical application circuit

| MODEL | FUSE | R1 | C1 | C2 | TVS |
|---|---|---|---|---|---|
| YMC15-3.3□ | 3.15A/300V, Slow fuse, must be connected | 6.8Ω /3W(Wire wound resistor, must be connected) | 1uF/50V | 220uF/16V | SMBJ7.0A |
| YMC15-5□ | | | | 220uF/16V | SMBJ7.0A |
| YMC15-9□ | | | | 100uF/25V | SMBJ12A |
| YMC15-12□ | | | | 100uF/25V | SMBJ20A |
| YMC15-15□ | | | | 100uF/25V | SMBJ20A |
| YMC15-24□ | | | | 100uF/35V | SMBJ30A |

## EMC Solution - Recommended circuit

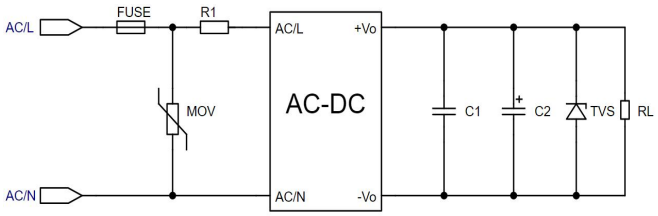



Figure 2:EMC Recommended circuits for higher requirements

| Component Type | Recommended Value |
|---|---|
| MOV | 14D561K |

## EMC Solution - Recommended circuit

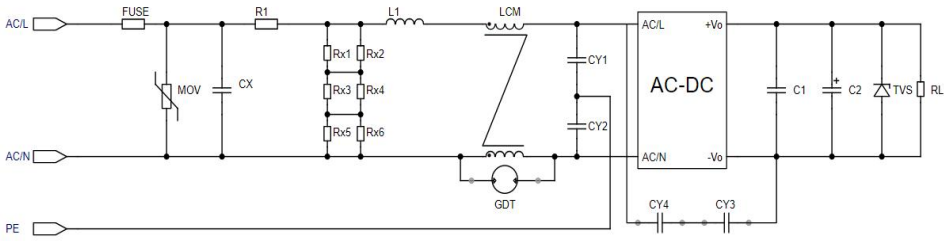



Figure 3 : category Ⅰ device recommendation circuit
(Recommended when the output end of the product needs to be connected to PE or connected to PE through a Y cap

| Component Type | Recommended Value |
|---|---|
| FUSE | 3.15A/300V Slow fuse, must be connected |
| MOV | 14D561K |
| CX | 334K/305VAC |
| R1 | 12Ω/5W(Winding resistor ,must be connected) |
| L1 | 1.2mH/0.5A |
| CY1/CY2 | 2.2nF/400VAC |
| GDT | 300V/1KA |
| LCM | 20mH |

annotation:Rx1/Rx2/Rx3/Rx4/Rx5/Rx6 is the bleed resistance of CX, the recommended resistance value is 1.5MΩ /150VDC