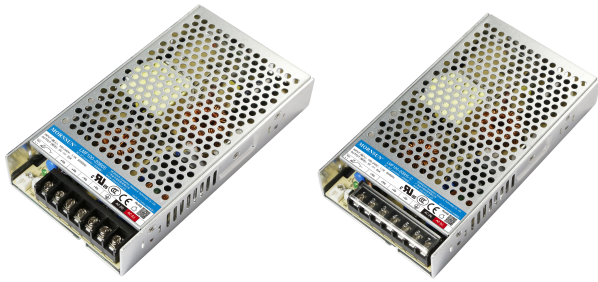


AC/DC 100W Enclosed Switching Power Supply

LMF100-20Bxx, LMF100-20Bxx-C, LMF100-20Bxx-Q Series

MORNSUN®



FEATURES

- Universal 85 - 264V AC or 120 - 370VDC Input voltage
- Accepts AC or DC input (dual-use of same terminal)
- Operating temperature range: -30°C to +70°C
- Built-in active PFC function
- High I/O isolation test voltage up to 4000VAC
- Low ripple & noise
- Output short circuit, over-current, over-voltage, over-temperature protection (Built-in constant current limiting circuit)
- Remote ON-OFF control
- IEC/EN/UL62368, EN60335, GB4943 safety approved
- Over-voltage class III (designed to meet EN61558)
- Emissions meets CISPR32/EN55032 CLASS B without extra components

LMF100-20Bxx series is one of Mornsun's enclosed AC-DC switching power supply. It features universal AC input and at the same time accepts DC input voltage, cost-effective, built-in active PFC function, high efficiency and high reliability. These converters offer excellent EMC performance and meet IEC/EN61000-4, CISPR32/EN55032, IEC/UL/EN62368, EN60335, GB4943 standards and they are widely used in areas of industrial, LED, street light control, electricity, security, telecommunications, smart home etc.

Selection Guide

| Certification | Part No.* | Output Power (W) | Nominal Output Voltage and Current (Vo/Io) | Output Voltage Adjustable Range (V) | Efficiency at 230VAC (%) Typ. | Max. Capacitive Load (µF) |
|---------------|--------------|------------------|--|-------------------------------------|-------------------------------|---------------------------|
| CE/CCC/UL | LMF100-20B05 | 100 | 5V/20A | 4.75-5.5 | 86 | 5000 |
| | LMF100-20B12 | 102 | 12V/8.5A | 11.4-13.2 | 86 | 5000 |
| | LMF100-20B15 | 100.5 | 15V/6.7A | 14.3-16.5 | 87 | 5000 |
| | LMF100-20B24 | 100.8 | 24V/4.2A | 22.8-26.4 | 87 | 4200 |
| | LMF100-20B48 | 100.8 | 48V/2.1A | 45.6-52.8 | 88 | 2200 |

Note: *Use suffix "C" for terminal with protective cover and suffix "Q" for conformal coating.

Input Specifications

| Item | Operating Conditions | Min. | Typ. | Max. | Unit | |
|-------------------------|----------------------|--------------|------|------|------|----|
| Input Voltage Range | AC input | 85 | -- | 264 | VAC | |
| | DC input | 120 | -- | 370 | VDC | |
| Input Voltage Frequency | | 47 | -- | 63 | Hz | |
| Input Current | 85VAC | -- | -- | 1.7 | A | |
| | 115VAC | -- | -- | 1.3 | | |
| | 230VAC | -- | -- | 0.7 | | |
| Inrush Current | 115VAC | Cold start | | -- | 25 | -- |
| | 230VAC | -- | 45 | -- | -- | |
| Power Factor | 115VAC | At full load | | 0.97 | 0.98 | -- |
| | 230VAC | 0.92 | 0.93 | -- | -- | |
| Leakage Current | 240VAC | <2mA | | | | |
| Hot Plug | | Unavailable | | | | |

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



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Output Specifications

| Item | Operating Conditions | | Min. | Typ. | Max. | Unit |
|------------------------------|--|-----------------|---|-------|------|------|
| Output Voltage Accuracy | Full load range | 5V/12V/15V | -- | ±2 | -- | |
| | | 24V/48V | -- | ±1 | -- | |
| Line Regulation | Rated load | | -- | ±0.5 | -- | % |
| Load Regulation | 0% - 100% load | 5V | -- | ±1 | -- | |
| | | 12V/15V/24V/48V | -- | ±0.5 | -- | |
| Output Ripple & Noise* | 20MHz bandwidth (peak-to-peak value) | 5V/12V/15V | -- | -- | 100 | mV |
| | | 24V | -- | -- | 150 | |
| | | 48V | -- | -- | 250 | |
| Temperature Coefficient | | | -- | ±0.05 | -- | %/°C |
| Minimum Load | | | 0 | -- | -- | % |
| Hold-up Time | 230VAC | | 16 | -- | -- | ms |
| Stand-by Power Consumption | 230VAC | | -- | -- | 8.0 | W |
| Short Circuit Protection | Recovery time <3s after the short circuit disappear. | | Constant current, continuous, self-recovery | | | |
| Over-current Protection | | | 105%-150% I _o , self-recovery | | | |
| Over-voltage Protection | 5V | | ≤7.5V (Output voltage turn off, re-power on for recovery) | | | |
| | 12V | | ≤16.8V (Output voltage turn off, re-power on for recovery) | | | |
| | 15V | | ≤20.25V (Output voltage turn off, re-power on for recovery) | | | |
| | 24V | | ≤32.4V (Output voltage turn off, re-power on for recovery) | | | |
| | 48V | | ≤60V (Output voltage turn off, re-power on for recovery) | | | |
| Over-temperature Protection* | Over-temperature Protection Activation | | -- | -- | 85 | °C |
| | Over-temperature Protection Deactivation | | 50 | -- | -- | |
| Remote Control | 0-0.8VDC Power ON | | 0 | -- | 0.8 | VDC |
| | 4-10VDC Power OFF | | 4 | -- | 10 | |

Note: 1.*The "Tip and barrel method" is used for ripple and noise test, output parallel 47uF electrolytic capacitor and 0.1uF ceramic capacitor, please refer to Enclosed Switching Power Supply Application Notes for specific information;
2.*Over-temperature Protection needs to be tested under rated full load conditions.

General Specifications

| Item | Operating Conditions | | Min. | Typ. | Max. | Unit |
|-----------------------|--|---|------|------|------|--------|
| Isolation Test | Input -  | Electric Strength Test for 1min., leakage current <10mA | 2000 | -- | -- | VAC |
| | Input - output | | 4000 | -- | -- | |
| | output -  | Electric Strength Test for 1min., leakage current <5mA | 500 | -- | -- | |
| Insulation Resistance | Input -  | Environment Temperature: 25±5°C, Relative Humidity: < 95%RH, non-condensing Testing Voltage: 500VDC | 100 | -- | -- | MΩ |
| | Input - output | | 100 | -- | -- | |
| | output -  | | 100 | -- | -- | |
| Operating Temperature | | | -30 | -- | +70 | °C |
| Storage Temperature | | | -40 | -- | +85 | °C |
| Storage Humidity | Non-condensing | | 10 | -- | 95 | %RH |
| Operating Humidity | | | 20 | -- | 90 | |
| Switching Frequency | | | -- | -- | -- | kHz |
| Power Derating | Operating Temperature Derating | All series +50°C to +70°C | 2 | -- | -- | % / °C |
| | | All series -30°C to +50°C | 0 | -- | -- | |
| | Input Voltage Derating | 85VAC-100VAC | 1.33 | -- | -- | %/VAC |

| | | | | | |
|----------------------|--------------------|---------------|------------------------------------|----|----|
| | | 100VAC-264VAC | 0 | -- | -- |
| Safety Standard | | | Meet IEC/EN/UL62368/EN60335/GB4943 | | |
| Safety Certification | | | IEC/EN/UL62368/EN60335/GB4943 | | |
| Safety Class | | | CLASS I | | |
| MTBF | MIL-HDBK-217F@25°C | | >300,000 h | | |

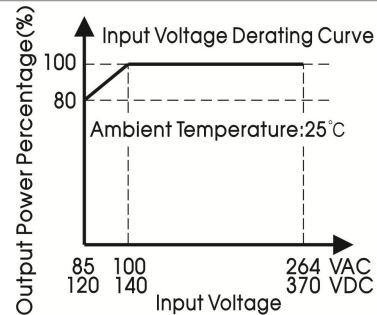
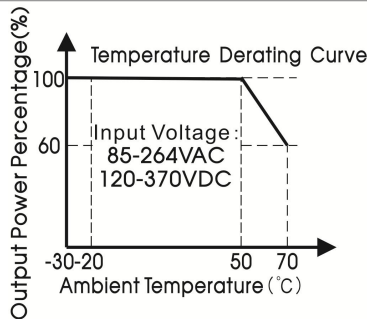
Mechanical Specifications

| | |
|----------------|--------------------------|
| Case Material | Metal (AL1100, SGCC) |
| Dimensions | 179.00 × 99.00 × 30.00mm |
| Weight | 530g (Typ.) |
| Cooling Method | Free air convection |

Electromagnetic Compatibility (EMC)

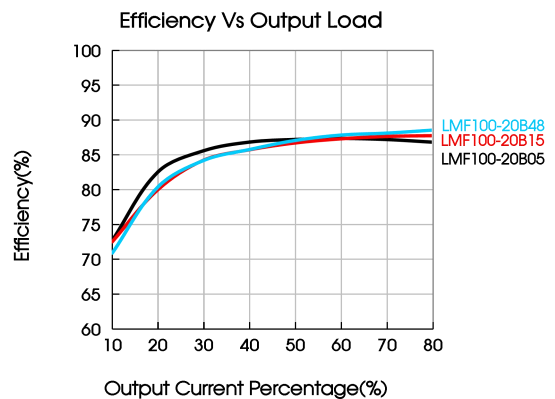
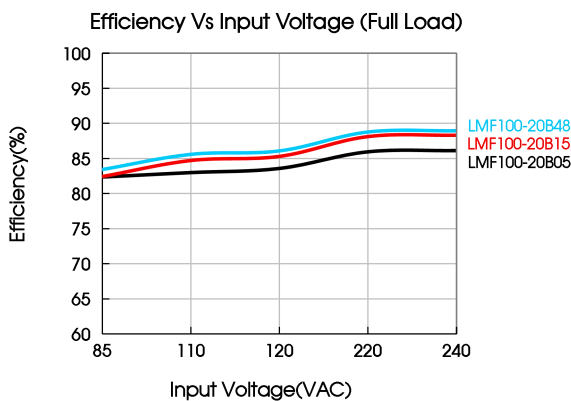
| | | | | |
|-----------|------------------|------------------|-----------------------|------------------|
| Emissions | CE | CISPR32/EN55032 | CLASS B | |
| | RE | CISPR32/EN55032 | CLASS B | |
| | Harmonic Current | IEC/EN61000-3-2 | | |
| | Voltage Flicker | IEC/EN61000-3-3 | | |
| Immunity | ESD | IEC/EN 61000-4-2 | Contact ±6KV/Air ±8KV | perf. Criteria A |
| | RS | IEC/EN 61000-4-3 | 3V/m | perf. Criteria B |
| | EFT | IEC/EN 61000-4-4 | ±2KV | perf. Criteria A |
| | Surge | IEC/EN 61000-4-5 | ±1KV/±2KV | perf. Criteria A |
| | CS | IEC/EN61000-4-6 | 10 Vr.m.s | perf. Criteria A |
| | DIP | IEC/EN61000-4-11 | 0%, 70% | perf. Criteria B |

Product Characteristic Curve



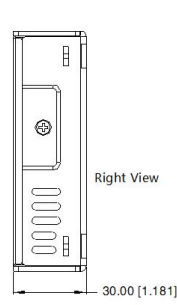
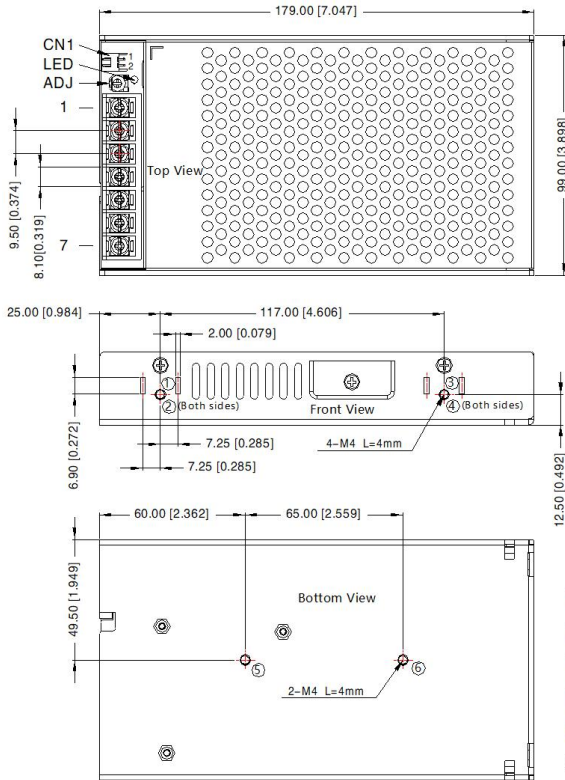
Note: 1. With an AC input voltage between 85-100VAC and a DC input between 120-140VDC the output power must be derated as per the temperature derating curves;

2. This product is suitable for applications using natural air cooling; for applications in closed environment please consult Mornsun FAE.



Dimensions and Recommended Layout

LMF100-20Bxx, LMF100-20Bxx-Q Series



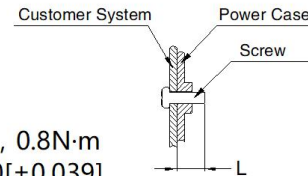
THIRD ANGLE PROJECTION

| Pin-Out | |
|---------|----------|
| Pin | Function |
| 1 | +Vo |
| 2 | +Vo |
| 3 | -Vo |
| 4 | -Vo |
| 5 | ⊥ |
| 6 | AC(N) |
| 7 | AC(L) |

CN1:KANGDAO TJC3-NAWD-2P or the same spec.

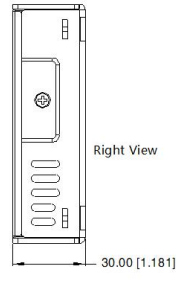
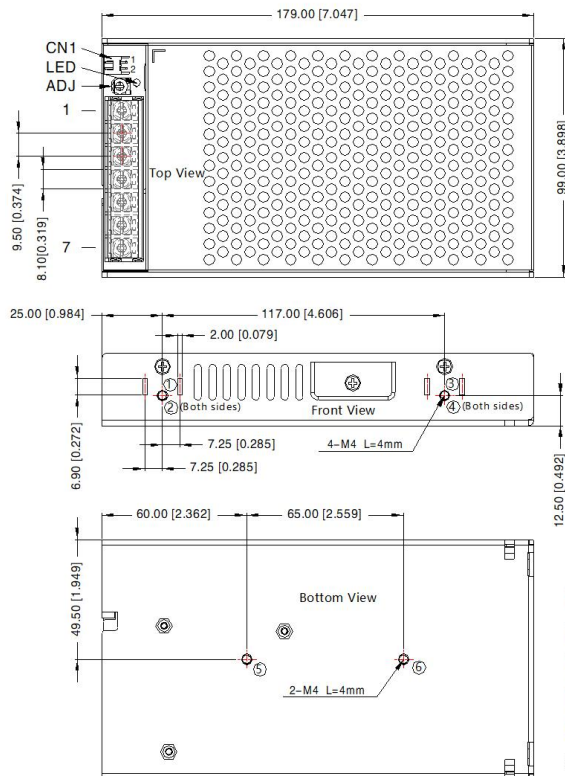
| Pin | Function | Connector | Terminal |
|-----|----------|--------------------------------------|-------------------------------------|
| 1 | RC+ | KANGDAO XH25001-2Y or the same spec. | KANGDAO XH2.54-TE or the same spec. |
| 2 | RC- | | |

| Position | Screw Spec. | L(max) | Torque(max) |
|----------|-------------|--------|-------------|
| ① - ⑥ | M4 | 4mm | 0.9N·m |



Note:
Unit: mm[inch]
Wire range: 22-12AWG
Tightening torque: M3.5 , 0.8N·m
General tolerances: ±1.00[±0.039]
①- ⑥ any position must be connected to PE

LMF100-20Bxx-C Series



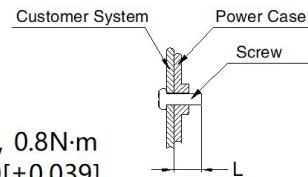
THIRD ANGLE PROJECTION

| Pin-Out | |
|---------|----------|
| Pin | Function |
| 1 | +Vo |
| 2 | +Vo |
| 3 | -Vo |
| 4 | -Vo |
| 5 | ⊥ |
| 6 | AC(N) |
| 7 | AC(L) |

CN1:KANGDAO TJC3-NAWD-2P or the same spec.

| Pin | Function | Connector | Terminal |
|-----|----------|--------------------------------------|-------------------------------------|
| 1 | RC+ | KANGDAO XH25001-2Y or the same spec. | KANGDAO XH2.54-TE or the same spec. |
| 2 | RC- | | |

| Position | Screw Spec. | L(max) | Torque(max) |
|----------|-------------|--------|-------------|
| ① - ⑥ | M4 | 4mm | 0.9N·m |



Note:
Unit: mm[inch]
Wire range: 22-12AWG
Tightening torque: M3.5 , 0.8N·m
General tolerances: ±1.00[±0.039]
①- ⑥ any position must be connected to PE

Note:

1. For additional information on Product Packaging please refer to www.mornsun-power.com. Packaging bag number: 58220068;
2. Unless otherwise specified, parameters in this datasheet were measured under the conditions of $T_a=25^{\circ}\text{C}$, humidity<75%RH with nominal input voltage and rated output load;
3. All index testing methods in this datasheet are based on our company corporate standards;
4. In order to improve the efficiency at high input voltage, there will be audible noise generated, but it does not affect product performance and reliability;
5. We can provide product customization service, please contact our technicians directly for specific information;
6. Products are related to laws and regulations: see "Features" and "EMC";
7. The out case needs to be connected to PE (\perp) of system when the terminal equipment in operating;
8. Our products shall be classified according to ISO14001 and related environmental laws and regulations, and shall be handled by qualified units;
9. The power supply is considered a component which will be installed into a terminal equipment. All EMC tests should be confirmed with the final equipment. Please consult our FAE for EMC test operation instructions.

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