



FEATURES

- Universal 85 - 264VAC or 120 - 373VDC Input voltage
- Accepts AC or DC input (dual-use of same terminal)
- Operating ambient temperature range: -30°C to +70°C
- Low standby power consumption, high efficiency
- High I/O isolation test voltage up to 4000VAC
- Low ripple & noise
- Output short circuit, over-current, over-voltage protection
- Safety according to IEC/EN/UL62368, EN60335, GB4943
- Withstand 300VAC surge input for 5s
- Over-voltage class III (designed to meet EN61558)
- Operating up to 5000m altitude

LM100-20Bxx 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, low no load power consumption, 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 | LM100-20B05 | 90 | 5V/18A | 4.5-5.5 | 86 | 10000 |
| | LM100-20B12 | 102 | 12V/8.5A | 10.2-13.8 | 87.5 | 6800 |
| | LM100-20B15 | 105 | 15V/7.0A | 13.5-18 | 87.5 | 3300 |
| | LM100-20B24 | 108 | 24V/4.5A | 21.6-28.8 | 90 | 2200 |
| | LM100-20B36 | 100.8 | 36V/2.8A | 32.4-39.6 | 90 | 1000 |
| | LM100-20B48 | 110.4 | 48V/2.3A | 43.2-52.8 | 91 | 470 |

Note: *Use suffix "Q" for conformal coating, which are CE/CCC pending.

| Input Specifications | | | | | | | |
|-------------------------|----------------------|--|-------------|------|------|------|----|
| Item | Operating Conditions | | Min. | Typ. | Max. | Unit | |
| Input Voltage Range | AC input | | 85 | -- | 264 | VAC | |
| | DC input | | 120 | -- | 373 | VDC | |
| Input Voltage Frequency | | | 47 | -- | 63 | Hz | |
| Input Current | 115VAC | | -- | -- | 3 | A | |
| | 230VAC | | -- | -- | 1.5 | | |
| Inrush Current | 115VAC | | Cold start | -- | 35 | | -- |
| | 230VAC | | | -- | 65 | | -- |
| Leakage Current | 240VAC | | <0.75mA | | | | |
| Hot Plug | | | Unavailable | | | | |

| Output Specifications | | | | | | |
|-------------------------|----------------------|--|---------------------|------|------|------|
| Item | Operating Conditions | | Min. | Typ. | Max. | Unit |
| Output Voltage Accuracy | Full load range | | 5V | ±2 | -- | % |
| | | | 12V/15V/24V/36V/48V | ±1 | -- | |
| Line Regulation | Rated load | | -- | ±0.5 | -- | |
| Load Regulation | 0% - 100% load | | 5V | ±1 | -- | |
| | | | 12V/15V/24V/36V/48V | ±0.5 | -- | |

| | | | | | | |
|---|--|----------------|--|-------|-----|------|
| Output Ripple & Noise* | 20MHz bandwidth (peak-to-peak value) | 5V | -- | 100 | -- | mV |
| | | 12V/15V | -- | 120 | -- | |
| | | 24V | -- | 150 | -- | |
| | | 36V/48V | -- | 200 | -- | |
| Temperature Coefficient | | | -- | ±0.03 | -- | %/°C |
| Minimum Load | | | 0 | -- | -- | % |
| Stand-by Power Consumption | 230VAC | 5V/12V/15V/24V | -- | -- | 0.3 | W |
| | | 36V/48V | -- | -- | 0.5 | |
| Hold-up Time | 115VAC | | 5 | 10 | -- | ms |
| | 230VAC | | 45 | 55 | -- | |
| Short Circuit Protection | Recovery time <5s after the short circuit disappear. | | Hiccup, continuous, self-recovery | | | |
| Over-current Protection | | | 110%-160% Io, self-recovery | | | |
| Over-voltage Protection | 5V | | ≤7.5VDC (Output voltage turn off re-power on for recovery) | | | |
| | 12V | | ≤19.2VDC (Output voltage clamp) | | | |
| | 15V | | ≤24VDC (Output voltage clamp) | | | |
| | 24V | | ≤38.4VDC (Output voltage clamp) | | | |
| | 36V | | ≤57.6VDC (Output voltage clamp) | | | |
| | 48V | | ≤60VDC (Output voltage turn off re-power on for recovery) | | | |
| Note: *The "Tip and barrel method" is used for ripple and noise test, please refer to AC-DC Converter Application Notes for specific information. | | | | | | |

General Specifications

| Item | Operating Conditions | | Min. | Typ. | Max. | Unit | |
|-----------------------|--------------------------------|---|------------------------------------|------|------|-------|--------|
| Isolation Test | Input - \perp | Electric strength test for 1min., leakage current <10mA | 2000 | -- | -- | VAC | |
| | Input - Output | | 4000 | -- | -- | | |
| | Output - \perp | | 1250 | -- | -- | | |
| Insulation Resistance | Input - \perp | At 500VDC | 100 | -- | -- | MΩ | |
| | Input - Output | | 100 | -- | -- | | |
| | Output - \perp | | 100 | -- | -- | | |
| Operating Temperature | | | -30 | -- | +70 | °C | |
| Storage Temperature | | | -40 | -- | +85 | °C | |
| Storage Humidity | Non-condensing | | 10 | -- | 95 | %RH | |
| Switching Frequency | | | -- | 65 | -- | kHz | |
| Power Derating | Operating temperature derating | 5V output | +45°C to +70°C | 1.6 | -- | -- | % / °C |
| | | Other output | +50°C to +70°C | 2.0 | -- | -- | |
| | Input voltage derating | 85VAC-115VAC | 0.67 | -- | -- | %/VAC | |
| Safety Standard | | | Meet IEC/EN/UL62368/EN60335/GB4943 | | | | |
| Safety Class | | | CLASS I | | | | |
| MTBF | MIL-HDBK-217F@25°C | | >30,000 h | | | | |

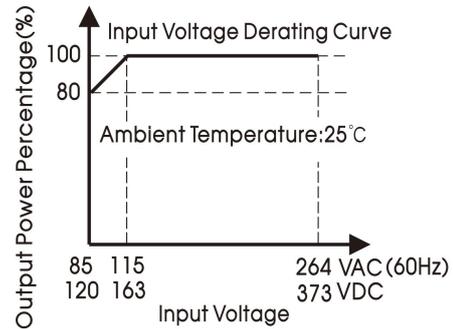
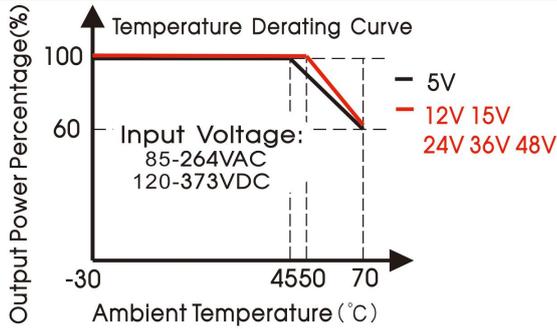
Mechanical Specifications

| | | |
|----------------|--------------------------|---------------------|
| Case Material | Metal (AL1100, SGCC) | |
| Dimensions | 129.00 x 97.00 x 30.00mm | |
| Weight | 350g (Typ.) | 5V |
| | 330g (Typ.) | 12V/15V/24V/36V/48V |
| Cooling Method | Free air convection | |

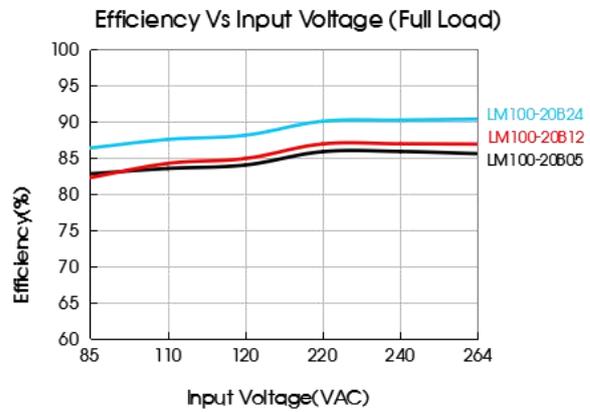
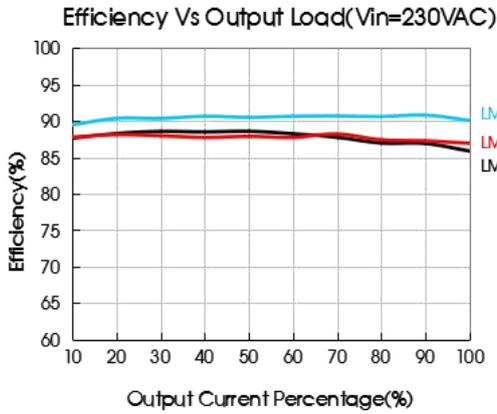
Electromagnetic Compatibility (EMC)

| | | | | |
|-----------|--|-------------------------|---------------------------------------|------------------|
| Emissions | CE | CISPR32/EN55032 CLASS B | | |
| | RE | CISPR32/EN55032 CLASS B | | |
| | Harmonic current | IEC/EN61000-3-2 CLASS A | | |
| Immunity | ESD | IEC/EN 61000-4-2 | Contact ±6KV /Air ±8KV | Perf. Criteria A |
| | RS | IEC/EN 61000-4-3 | 10V/m | perf. Criteria A |
| | EFT | IEC/EN 61000-4-4 | ±2KV | perf. Criteria A |
| | Surge | IEC/EN 61000-4-5 | line to line ±2KV/line to ground ±4KV | perf. Criteria A |
| | CS | IEC/EN61000-4-6 | 10 Vr.m.s | perf. Criteria A |
| | Voltage dips, short interruptions and voltage variations | IEC/EN61000-4-11 | 0%, 70% | perf. Criteria B |

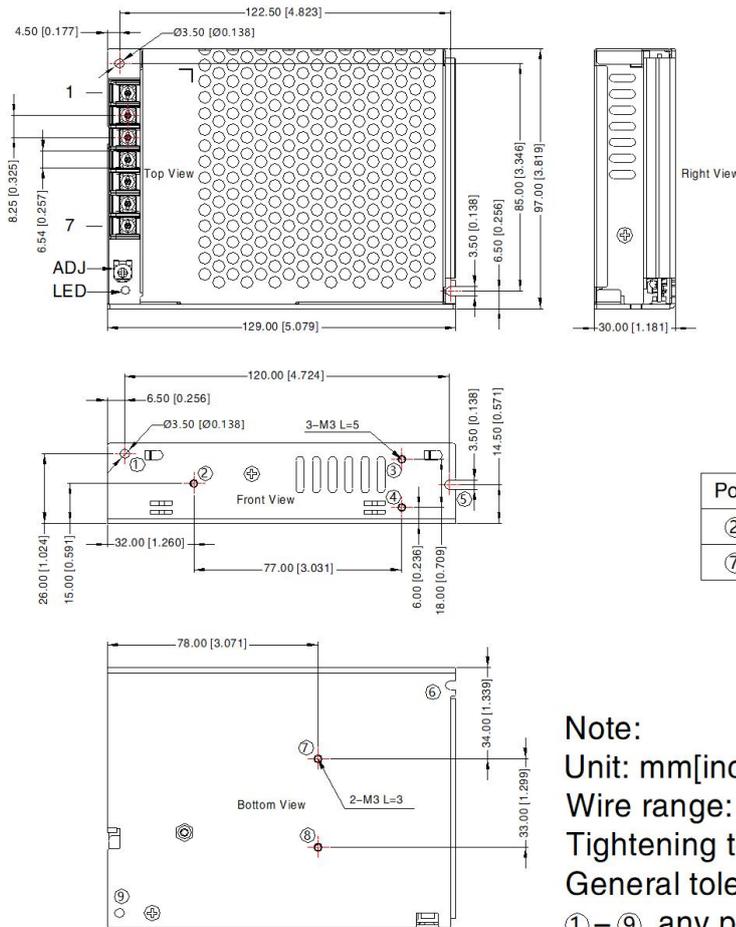
Product Characteristic Curve



Note: ①With an input voltage between 85-115VAC and a DC input between 120-163VDC the output power must be derated as per the temperature derating curves;
②This product is suitable for applications using natural air cooling; for applications in closed environment please consult Mornsun FAE.



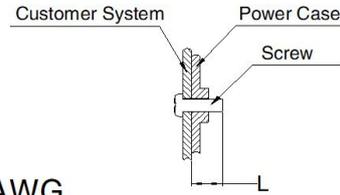
Dimensions and Recommended Layout



THIRD ANGLE PROJECTION

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

| Position | Screw Spec. | L(max) | Torque(max) |
|----------|-------------|--------|-------------|
| ② - ④ | M3 | 5mm | 0.4N·m |
| ⑦ - ⑧ | M3 | 3mm | 0.4N·m |



Note:
Unit: mm[inch]
Wire range: 22-14AWG
Tightening torque: M3, 0.5N·m
General tolerances: $\pm 1.00 [\pm 0.039]$
① - ⑨ any position must be connected to PE

Note:

- For additional information on Product Packaging please refer to www.mornsun-power.com. Packaging bag number: 58220065;
- 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;
- The ambient temperature derating of $5^\circ\text{C}/1000\text{m}$ is needed for operating altitude greater than 2000m;
- All index testing methods in this datasheet are based on our company corporate standards;
- 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;
- We can provide product customization service, please contact our technicians directly for specific information;
- Products are related to laws and regulations: see "Features" and "EMC";
- The out case needs to be connected to PE(⏏) of system when the terminal equipment in operating;
- Our products shall be classified according to ISO14001 and related environmental laws and regulations, and shall be handled by qualified units.
- The power supply is considered a component which will be installed into a final equipment. All EMC tests should be confirmed with the final equipment. Please consult our FAE for EMC test operation instructions.

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