

100W, AC/DC DIN-Rail Power Supply



## FEATURES

- Universal 85-264VAC or 120-370VDC input voltage
- Accepts AC or DC input (dual-use of same terminal)
- Operating ambient temperature range: -40°C to +70°C
- High I/O isolation test voltage up to 4000VAC (Input - output)
- Industrial product technology design
- Over-voltage class III (Designed to meet EN61558 standards)
- Low standby power consumption, high efficiency
- Low ripple & noise
- Output short circuit, over-current, over-voltage protection
- Withstand 300VAC surge input for 5s
- EN62368 safety approval

LI100-20BxxPR2 is Mornsun's AC-DC series featuring a cost-effective, energy efficient solution for standard DIN-rail mounting. The products offer a high level of stability and immunity to noise, compliant with international IEC62368 standards for EMC are safety approved to IEC/EN61000-4, CISPR32, EN55032, UL62368, IEC62368 and EN62368. These light weight AC-DC converters also have an extremely compact design for space saving and are ideal for applications such as industrial control equipment machinery and all kinds of applications in a harsh environment.

## Selection Guide

| Certification | Part No.       | Output Power (W) | Nominal Output Voltage and Current (Vo/Io) | Output Voltage Adjustable Range(V) (50% Load) | Efficiency at 230VAC (%) Typ. | Capacitive Load (μF)Max. |
|---------------|----------------|------------------|--|---|-------------------------------|--------------------------|
| CE            | LI100-20B12PR2 | 90               | 12V/7.5A                                   | 12.0 - 13.8                                   | 88                            | 10000                    |
|               | LI100-20B15PR2 | 97.5             | 15V/6.5A                                   | 13.5 - 18.0                                   | 89                            | 6400                     |
|               | LI100-20B24PR2 | 100.8            | 24V/4.2A                                   | 21.6 - 29.0                                   | 90                            | 2500                     |
|               | LI100-20B48PR2 | 100.8            | 48V/2.1A                                   | 43.2 - 55.2                                   | 90                            | 1100                     |

## Input Specifications

| Item                | Operating Conditions | Min.           | Typ. | Max. | Unit |
|---------------------|----------------------|----------------|------|------|------|
| Input Voltage Range | AC Input             | 85             | --   | 264  | VAC  |
|                     | DC Input             | 120            | --   | 370  | VDC  |
| Input Frequency     |                      | 47             | --   | 63   | Hz   |
| Input Current       | 115VAC               | --             | --   | 3    | A    |
|                     | 230VAC               | --             | --   | 1.6  |      |
| Inrush Current      | 115VAC               | --             | 35   | --   |      |
|                     | 230VAC               | --             | 70   | --   |      |
| Leakage Current     | 240VAC/50Hz          | 0.5mA RMS Max. |      |      |      |
| Hot Plug            |                      | Unavailable    |      |      |      |

## Output Specifications

| Item                    | Operating Conditions                 | Min.       | Typ.  | Max. | Unit |
|-------------------------|--------------------------------------|------------|-------|------|------|
| Output Voltage Accuracy | 0% - 100% load                       | --         | ±2    | --   | %    |
| Line Regulation         | Rated load                           | --         | ±0.5  | --   |      |
| Load Regulation         | 230VAC                               | --         | ±1.5  | --   |      |
| Output Ripple & Noise*  | 20MHz bandwidth (peak-to-peak value) | 12V Output | --    | 120  | mV   |
|                         |                                      | 15V Output | --    | 120  |      |
|                         |                                      | 24V Output | --    | 150  |      |
|                         |                                      | 48V Output | --    | 240  |      |
| Temperature Coefficient |                                      | --         | ±0.03 | --   | %/°C |

|                            |                                   |                |      |    |      |    |
|----------------------------|-----------------------------------|----------------|------|----|------|----|
| Stand-by Power Consumption | 230VAC Input                      | 12V/15V Output | --   | -- | 0.30 | W  |
|                            |                                   | 24V Output     | --   | -- | 0.35 |    |
|                            |                                   | 48V Output     | --   | -- | 0.40 |    |
| Short Circuit Protection   | Hiccup, continuous, self-recovery |                |      |    |      |    |
| Over-current Protection    | 110% - 200% Io, self-recovery     |                |      |    |      |    |
| Over-voltage Protection    | 12V Output                        |                | ≤20V |    |      |    |
|                            | 15V Output                        |                | ≤25V |    |      |    |
|                            | 24V Output                        |                | ≤35V |    |      |    |
|                            | 48V Output                        |                | ≤60V |    |      |    |
| Min. Load                  |                                   |                | 0    | -- | --   | %  |
| Start-up Time              |                                   |                | --   | -- | 3    | s  |
| Hold-up Time               | 230VAC                            |                | --   | 30 | --   | ms |

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-output   | Electric Strength Test for 1min.,<br>leakage current < 5mA | 4000 | --   | --   | VAC   |
| Operating Temperature |                |  | -40  | --   | +70  | ℃     |
| Storage Temperature   |                |  | -40  | --   | +85  |       |
| Storage Humidity      |                |  | --   | --   | 95   | %RH   |
| Operating Altitude    |                |  | --   | --   | 2000 | m     |
| Switching Frequency   |                |  | --   | 65   | --   | kHz   |
| Power Derating        | -40℃ to -30℃   | 12V /48V Output  | 3.00 | --   | --   | % /℃  |
|                       |                | 24V Output   | 7.00 | --   | --   |       |
|                       |                | 15V Output   | 8.00 | --   | --   |       |
|                       | +45℃ to +70℃   |  | 2.00 | --   | --   |       |
|                       | 85VAC - 115VAC |  | 0.67 | --   | --   | %/VAC |
| Safety Standard       |                | UL62368/EN62368/IEC62368                                   |      |      |      |       |
| Safety Certification  |                | EN62368  |      |      |      |       |
| Safety Class          |                | CLASS II   |      |      |      |       |
| MTBF                  |                | MIL-HDBK-217F@25℃ > 300,000 h                              |      |      |      |       |

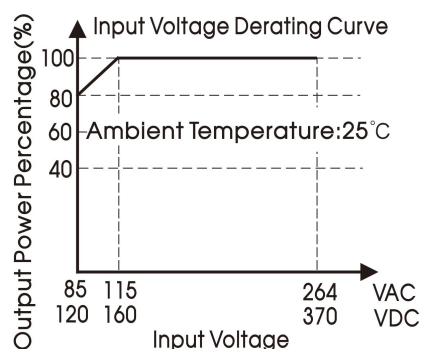
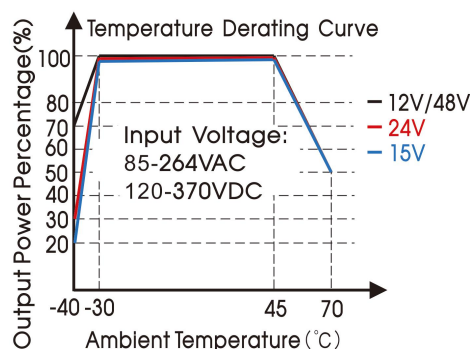
### Mechanical Specifications

|                    |                                   |
|--------------------|-----------------------------------|
| Case Material      | Plastic, heat-resistant (UL94V-0) |
| Package Dimensions | 70.00 x 92.66 x 58.00 mm          |
| Weight             | 235g (Typ.)                       |
| Cooling method     | Free air convection               |

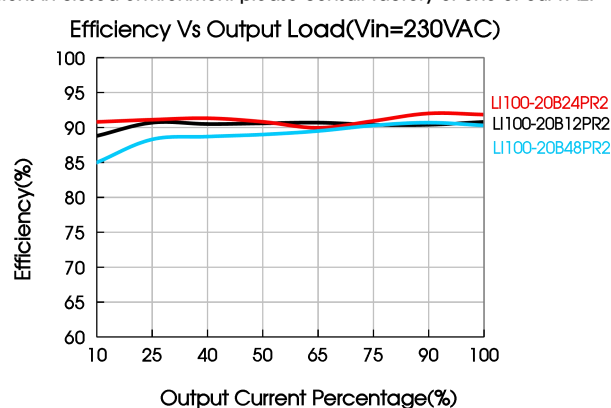
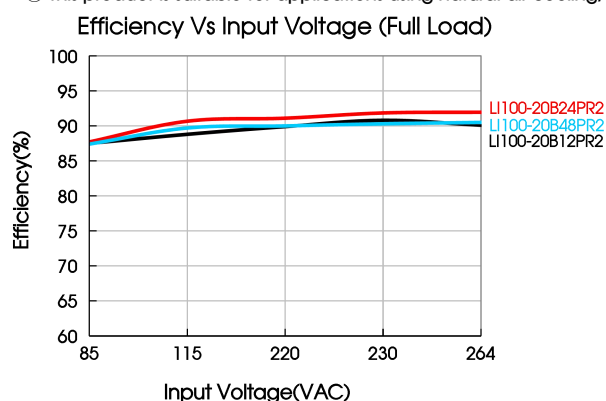
### Electromagnetic Compatibility (EMC)

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

### Product Characteristic Curve

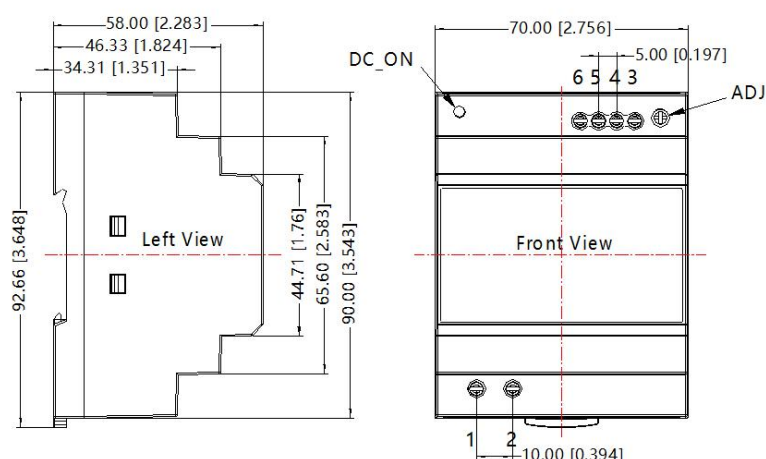


Note: ① With an AC input between 85-115VAC and a DC input between 120-160VDC, the output power must be derated as per temperature derating curves;  
 ② This product is suitable for applications using natural air cooling; for applications in closed environment please consult factory or one of our FAE.



### Dimensions and Recommended Layout

THIRD ANGLE PROJECTION



| Pin-Out |           |
|---------|-----------|
| Pin     | LI100-20B |
| 1       | AC(L)     |
| 2       | AC(N)     |
| 3       | +Vo       |
| 4       | +Vo       |
| 5       | -Vo       |
| 6       | -Vo       |

Note:

Unit: mm[inch]

ADJ : adjustable resistance to change output voltage

Wire range: 24-12 AWG

Tightening torque: Max 0.4 N·m

Mounting rail: TS35

General tolerances: ±1.00[±0.039]

Note:

1. For additional information on Product Packaging please refer to [www.mornsun-power.com](http://www.mornsun-power.com). Packaging bag number: 58220079;
2. Unless otherwise specified, parameters in this datasheet were measured under the conditions of  $T_a=25^{\circ}\text{C}$ , humidity<75% with nominal input voltage and rated output load;
3. All index testing methods in this datasheet are based on our company corporate standards;
4. We can provide product customization service, please contact our technicians directly for specific information;
5. Specifications are subject to change without prior notice;
6. Products are related to laws and regulations: see "Features" and "EMC";
7. Our products shall be classified according to ISO14001 and related environmental laws and regulations, and shall be handled by qualified units.

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