# 150W Railway Single Output DC-DC Converter RSD-150 series

## ■ Features :

- Compliance to EN50155 and EN45545-2 railway standard
- 2:1 wide input range
- Protections: Short circuit / Overload / Over voltage / Over temperature / Input reverse polarity
- 4000VDC I/O isolation
- Cooling by free air convection
- Half encapsulated
- Built-in constant current limiting circuit
- 1U low profile 36mm
- All using 105℃ long life electrolytic capacitors
- LED indicator for power on
- 100% full load burn-in test
- 3 years warranty

CE

## SPECIFICATION

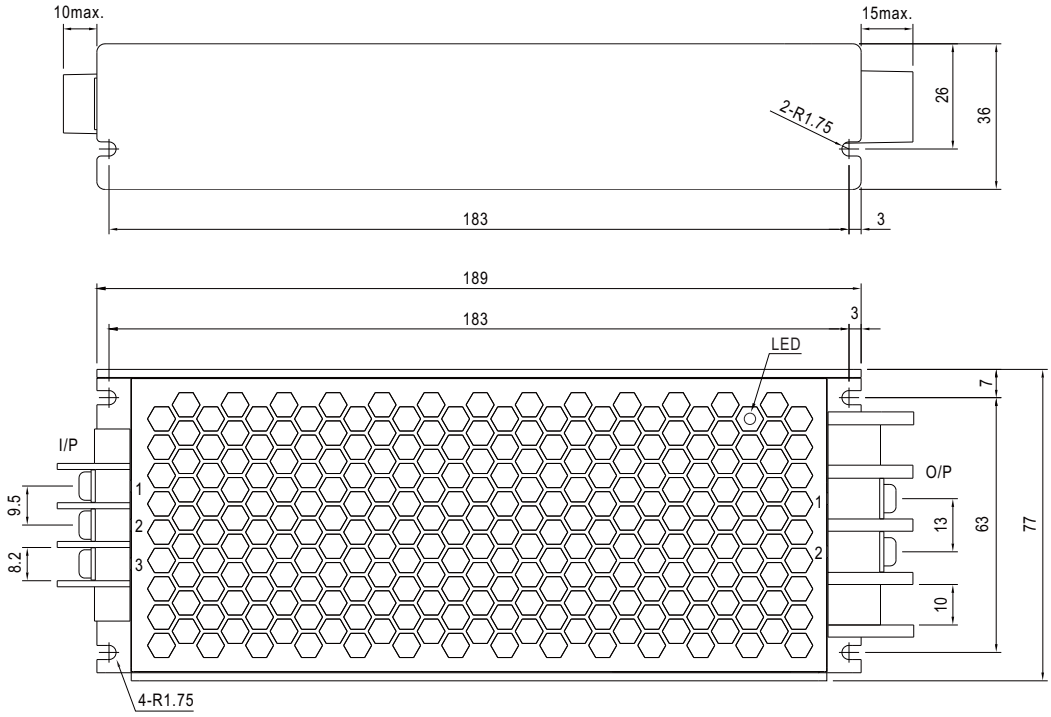
| MODEL | | | RSD-150B-5 | RSD-150B-12 | RSD-150B-24 | RSD-150C-5 | RSD-150C-12 | RSD-150C-24 | RSD-150D-5 | RSD-150D-12 | RSD-150D-24 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| OUTPUT | DC VOLTAGE | | 5V | 12V | 24V | 5V | 12V | 24V | 5V | 12V | 24V |
| | RATED CURRENT | | 30A | 12.5A | 6.3A | 30A | 12.5A | 6.3A | 30A | 12.5A | 6.3A |
| | CURRENT RANGE | | 0 ~ 30A | 0 ~ 12.5A | 0 ~ 6.3A | 0 ~ 30A | 0 ~ 12.5A | 0 ~ 6.3A | 0 ~ 30A | 0 ~ 12.5A | 0 ~ 6.3A |
| | RATED POWER | | 150W | 150W | 151.2W | 150W | 150W | 151.2W | 150W | 150W | 151.2W |
| | RIPPLE & NOISE (max.) Note.2 | | 100mVp-p | 120mVp-p | 150mVp-p | 100mVp-p | 120mVp-p | 150mVp-p | 100mVp-p | 120mVp-p | 150mVp-p |
| | VOLTAGE TOLERANCE Note.3 | | ±2.0% | ±2.0% | ±2.0% | ±2.0% | ±2.0% | ±2.0% | ±2.0% | ±2.0% | ±2.0% |
| | LINE REGULATION | | ±0.5% | ±0.3% | ±0.2% | ±0.5% | ±0.3% | ±0.2% | ±0.5% | ±0.2% | ±0.2% |
| | LOAD REGULATION | | ±1.0% | ±1.0% | ±1.0% | ±1.0% | ±1.0% | ±1.0% | ±1.0% | ±1.0% | ±1.0% |
| | SETUP, RISE TIME | | 800ms, 50ms at full load | | | | | | | | |
| | HOLD UP TIME (Typ.) | | B/C- type comply with S1 level @ full load, comply with S2 level @ 70% load (except RSD-150B-5 @ 60% load) ; D-type comply with S2 level @ full load | | | | | | | | |
| INPUT | VOLTAGE RANGE | CONTINUOUS | 16.8 ~ 31.2VDC | | | 33.6 ~ 62.4VDC | | | 67.2 ~ 143VDC | | |
| | | 1 SEC. | 14.4 ~ 33.6VDC | | | 28.8 ~ 67.2VDC | | | 57.6 ~ 154VDC | | |
| | EFFICIENCY (Typ.) | | 89% | 90% | 90% | 90% | 92% | 91% | 90% | 92% | 91% |
| | DC CURRENT (Typ.) | | 7.3A/24V | 7.3A/24V | 7.3A/24V | 3.6A/48V | 3.6A/48V | 3.6A/48V | 1.5A/110V | 1.5A/110V | 1.5A/110V |
| | INRUSH CURRENT (Typ.) | | 45A/24VDC | | | 45A/48VDC | | | 45A/110VDC | | |
| PROTECTION | OVERLOAD | | 105 ~ 135% rated output power | | | | | | | | |
| | | | Protection type : Constant current limiting, recovers automatically after fault condition is removed | | | | | | | | |
| | OVER VOLTAGE | | 5.75 ~ 7V | 13.8 ~ 16.2V | 27.6 ~ 32.4V | 5.75 ~ 7V | 13.8 ~ 16.2V | 27.6 ~ 32.4V | 5.75 ~ 7V | 13.8 ~ 16.2V | 27.6 ~ 32.4V |
| | | | Protection type : Shut down o/p voltage, re-power on to recover | | | | | | | | |
| | OVER TEMPERATURE | | Shut down o/p voltage, recovers automatically after temperature goes down | | | | | | | | |
| ENVIRONMENT | WORKING TEMP. | | -40 ~ +55℃ (no derating) ; +70℃ @ 60% load by free air convection ; +70℃ no derating with external base plate, TX class compliance | | | | | | | | |
| | WORKING HUMIDITY | | 5 ~ 95% RH non-condensing | | | | | | | | |
| | STORAGE TEMP., HUMIDITY | | -40 ~ +85℃ , 5 ~ 95% RH | | | | | | | | |
| | TEMP. COEFFICIENT | | ±0.03%/℃ (0 ~ 50℃) | | | | | | | | |
| | VIBRATION | | 10 ~ 500Hz, 5G 10min./1cycle, 60min. each along X, Y, Z axes ; Mounting : compliance to IEC61373 | | | | | | | | |
| SAFETY & EMC (Note 4) | SAFETY STANDARDS | | Meet IEC60950-1(LVD) | | | | | | | | |
| | WITHSTAND VOLTAGE | | I/P-O/P:4KVDC I/P-FG:2.5KVDC O/P-FG:2.5KVDC | | | | | | | | |
| | ISOLATION RESISTANCE | | I/P-O/P, I/P-FG, O/P-FG:100M Ohms / 500VDC / 25℃/ 70% RH | | | | | | | | |
| | EMC EMISSION | | Compliance to EN55022 (CISPR22) Conduction Emission: Class A, Radiation Emission: Class B | | | | | | | | |
| | EMC IMMUNITY | | Compliance to EN61000-4-2,3,4,5,6,8, light industry level, criteria A | | | | | | | | |
| | RAILWAY STANDARD | | Meet EN50155 / IEC60571 including IEC61373 for shock & vibration, EN50121-3-2 for EMC ; EN45545-2 for fire protection | | | | | | | | |
| OTHERS | MTBF | | 223.2K hrs min. MIL-HDBK-217F (25℃) | | | | | | | | |
| | DIMENSION | | 189*77*36mm (L*W*H) | | | | | | | | |
| | PACKING | | 0.8Kg; 15pcs/13Kg/0.75CUFT | | | | | | | | |

**NOTE**

1. All parameters NOT specially mentioned are measured at 24,48,110VDC input, rated load and 25℃ of ambient temperature.
2. Ripple & noise are measured at 20MHz of bandwidth by using a 12" twisted pair-wire terminated with a 0.1uf & 47uf parallel capacitor.
3. Tolerance : includes set up tolerance, line regulation and load regulation.
4. The power supply is considered a component which will be installed into a final equipment. All the EMC tests are been executed by mounting the unit on a 360mm*360mm metal plate with 1mm of thickness. 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.” (as available on http://www.meanwell.com)
5. Strongly recommended that external output capacitance should not exceed 5000uF.

## ■ Mechanical Specification

Case No.978A Unit:mm




Input Terminal Pin No. Assignment :

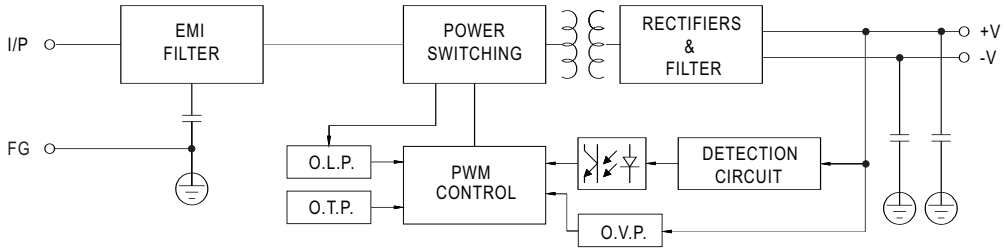
| Pin No. | Assignment |
|---|---|
| 1 | DC INPUT V+ |
| 2 | DC INPUT V- |
| 3 | FG ⏚ |

Output Terminal Pin No. Assignment :

| Pin No. | Assignment |
|---|---|
| 1 | DC OUTPUT -V |
| 2 | DC OUTPUT +V |

## ■ Block Diagram

fosc : 130KHz




## ■ Input Fuse

There is one fuse connected in series to the positive input line, which is used to protect against abnormal surge. Fuse specifications of each model are shown as below.

| Type | Fuse Type | Reference and Rating |
|---|---|---|
| B | Time-Lag | Conquer UDA-A, 15A, 250V |
| C | Time-Lag | Conquer UDA-A, 10A, 250V |
| D | Time-Lag | Conquer UDA-A, 4A, 250V |