# 180W Single Output with Battery Charger(UPS Function) DRC-180 series

User's Manual
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UL62368-1 BS EN/EN62368-1 TPTC004 AS/NZS 62368.1 IEC62368-1

Automate Industrial Security Network Telecom

## Features

- Universal AC input / Full range
- Built-in active PFC function
- Alarm signal for AC OK and Battery Low(Via Relay)
- Protections: Short circuit / Overload / Over voltage / Over temperature
- Battery low protection / Battery reverse polarity protection by fuse
- Cooling by free air convection
- -20 ~ +70℃ wide operating temperature
- Can be installed on DIN rail TS-35/7.5 or 15
- DC output voltage adjustable (+20%)
- LED indication for Power on
- Operating altitude up to 5000 meters (Note.6)
- 3 years warranty

## Applications

- Security system
- Emergency lighting system
- Alarm system
- UPS system
- Central monitoring system
- Access systems

## GTIN CODE

MW Search: https://www.meanwell.com/serviceGTIN.aspx

## Description

DRC-180 is a 180W AC/DC DIN rail type security power supply series. In addition to the primary output, there is a charger output with a smaller rated current, enabling the backup power supply application the security access systems require. DRC-180 accepts the universal input between 90VAC and 264VAC, and supplies 13.8VDC and 27.6VDC at output, respectively. With the efficiency up to 90%, it can operate with air convection cooling under -20℃ through 70℃. In addition to the key protection features such as overload protection,over voltage protection, battery low cut off, and battery reverse polarity protection (by fuse), the alarm signal for AC OK and battery low signaling is provided, via relay contact output, to facilitate the system design.

## Model Encoding

DRC- 180 A

- A: Output voltage(A: 13.8V , B: 27.6V)
- 180: Rated wattage
- DRC-: Series name



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## SPECIFICATION

| MODEL | | DRC-180A | | DRC-180B | |
|---|---|---|---|---|---|
| OUTPUT | OUTPUT NUMBER | CH1 | CH2 | CH1 | CH2 |
| | DC VOLTAGE | 13.8V | 13.8V | 27.6V | 27.6V |
| | RATED CURRENT | 9A | 4A ( Battery charger ) | 4.5A | 2A ( Battery charger ) |
| | CURRENT RANGE | 0 ~ 13A | -------- | 0 ~ 6.5A | -------- |
| | RATED POWER | 179.4W | | 179.4W | |
| | RIPPLE & NOISE (max.) Note.2 | 150mVp-p | -------- | 240mVp-p | -------- |
| | VOLTAGE ADJ. RANGE | CH1: 12 ~ 15V | | CH1: 24 ~ 29V | |
| | VOLTAGE TOLERANCE Note.3 | ±1.0% | -------- | ±1.0% | -------- |
| | LINE REGULATION | ±0.5% | -------- | ±0.5% | -------- |
| | LOAD REGULATION | ±0.5% | -------- | ±0.5% | -------- |
| | SETUP, RISE TIME Note.4 | 2000ms, 30ms/230VAC 2000ms, 30ms/115VAC at full load | | | |
| | HOLD UP TIME (Typ.) | 20ms/230VAC 20ms/115VAC at full load | | | |
| INPUT | VOLTAGE RANGE | 90 ~ 264VAC 127 ~ 370VDC | | | |
| | FREQUENCY RANGE | 47 ~ 63Hz | | | |
| | POWER FACTOR (Typ.) | PF≧0.95/230VAC PF≧0.98/115VAC at full load | | | |
| | EFFICIENCY (Typ.) | 88% | | 90% | |
| | AC CURRENT (Typ.) | 2.5A/115VAC 1.5A/230VAC | | | |
| | INRUSH CURRENT (Typ.) | COLD START 35A/115VAC 70A/230VAC | | | |
| | LEAKAGE CURRENT | <2mA / 240VAC | | | |
| PROTECTION | OVERLOAD | 105 ~ 150% rated output power | | | |
| | | Protection type : Hiccup mode, recovers automatically after fault condition is removed | | | |
| | OVER VOLTAGE | CH1:15.8 ~ 19.5V | | CH1:30.5 ~ 37.7V | |
| | | Protection type : Shut down o/p voltage, re-power on to recover | | | |
| | OVER TEMPERATURE | Shut down o/p voltage, re-power on to recover | | | |
| | BATTERY CUT OFF | 10±0.5V | | 20±1V | |
| ALARM FUNCTION | AC OK Note.5 | Relay contact output, Closed : AC OK ; Open : AC Fail ; Max. rating : 30V / 1A | | | |
| | BATTERY LOW | Relay contact output, Open : Battery OK ; Closed : Battery Low ; Max. rating : 30V / 1A | | | |
| | | Battery low voltage : < 11V | | Battery low voltage : < 22V | |
| ENVIRONMENT | WORKING TEMP. | -20 ~ +70℃ (Refer to "Derating Curve") | | | |
| | WORKING HUMIDITY | 20 ~ 90% RH non-condensing | | | |
| | STORAGE TEMP., HUMIDITY | -20 ~ +85℃, 10 ~ 95% RH non-condensing | | | |
| | TEMP. COEFFICIENT | ±0.03%/℃ (0~40℃) on CH1 output | | | |
| | VIBRATION | 10 ~ 500Hz, 2G 10min./1cycle, 60min. each along X, Y, Z axes | | | |
| | OPERATING ALTITUDE Note.6 | 5000 meters / OVC Ⅱ | | | |
| | OVER VOLTAGE CATEGORY | Ⅱ; According to Dekra BS EN/EN62368-1; altitude up to 5000 meters | | | |
| SAFETY & EMC (Note 7) | SAFETY STANDARDS | UL62368-1, Dekra BS EN/EN62368-1, EAC TP TC 004, AS/NZS 62368.1 approved | | | |
| | WITHSTAND VOLTAGE | I/P-O/P:3KVAC I/P-FG:2.0KVAC O/P-FG:0.5KVAC | | | |
| | ISOLATION RESISTANCE | I/P-O/P, I/P-FG, O/P-FG:100M Ohms / 500VDC / 25℃ / 70% RH | | | |
| | EMC EMISSION | **Parameter** | **Standard** | **Test Level / Note** | |
| | | Radiated | BS EN/EN55032(CISPR32) | Class B | |
| | | Conducted | BS EN/EN55032(CISPR32) | Class B | |
| | EMC IMMUNITY | BS EN/EN55024 | | | |
| | | **Parameter** | **Standard** | **Test Level / Note** | |
| | | ESD | BS EN/EN61000-4-2 | Level 3, 8KV air ; Level 2, 4KV contact ; criteria A | |
| | | Radiated | BS EN/EN61000-4-3 | Level 2, 3V/m ; criteria A | |
| | | EFT / Burst | BS EN/EN61000-4-4 | Level 2, 1KV ; criteria A | |
| | | Surge | BS EN/EN61000-4-5 | Level 3, 1KV/Line-Line 2KV/Line-Earth ; criteria A | |
| | | Conducted | BS EN/EN61000-4-6 | Level 2, 3V ; criteria A | |
| | | Magnetic Field | BS EN/EN61000-4-8 | Level 1, 1A/m ; criteria A | |
| | | Voltage Dips and Interruptions | BS EN/EN61000-4-11 | >95% dip 0.5 periods, 30% dip 25 periods, >95% interruptions 250 periods | |
| OTHERS | MTBF | 1536.3K hrs min. Telcordia SR-332 (Bellcore); 245.6K hrs min. MIL-HDBK-217F (25℃) | | | |
| | DIMENSION | 63*125.2*115mm (W*H*D) | | | |
| | PACKING | 0.71Kg; 12pcs/10.5Kg/1.02CUFT | | | |

**NOTE**

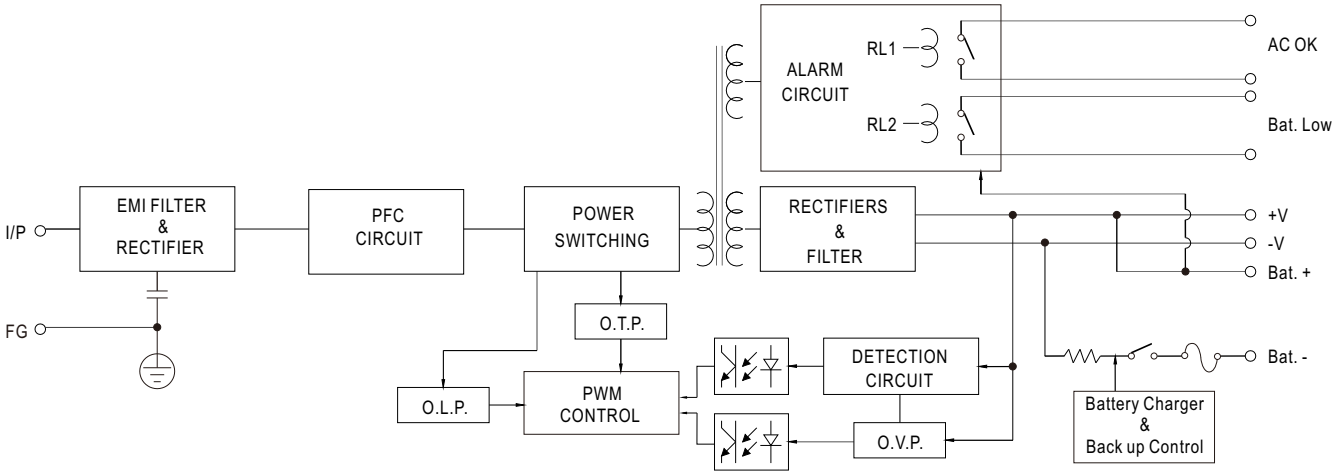
1. All parameters NOT specially mentioned are measured at 230VAC input, rated load and 25℃ of ambient temperature.
2. Ripple & noise are measured at 20MHz of bandwidth by using a 12" twisted pair-wire terminated with a 0.1 μF & 47 μF parallel capacitor.
3. Tolerance : includes set up tolerance, line regulation and load regulation.
4. Length of set up time is measured at first cold start. Turning ON/OFF the power supply may lead to increase of the set up time.
5. Please refer to suggested Application 2.(2)、(3) in page 4.
6. The ambient temperature derating of 3.5℃/1000m with fanless models and of 5℃/1000m with fan models for operating altitude higher than 2000m(6500ft).
7. 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.” (as available on https://www.meanwell.com//Upload/PDF/EMI_statement_en.pdf )
8. The battery voltage is lower than the CUTOFF voltage and cannot perform AC reset charging.

※ Product Liability Disclaimer : For detailed information, please refer to https://www.meanwell.com/serviceDisclaimer.aspx

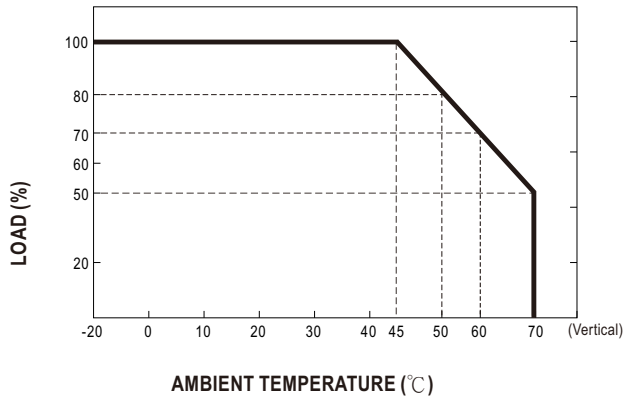


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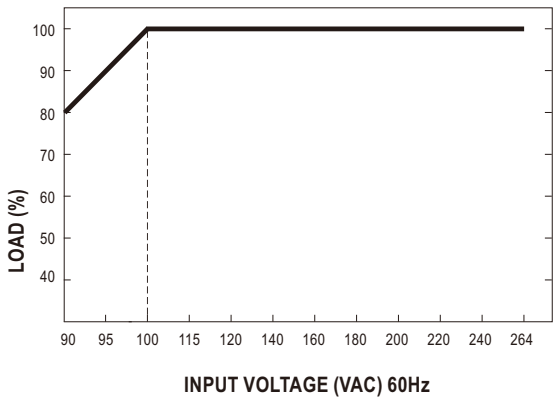
## ■ Block Diagram




## ■ Output Derating




## ■ Output Derating VS Input Voltage






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## ■ Suggested Application

### 1.Backup connection for AC interruption

(1) Please refer to the Fig1.1 for suggested connection.

The power supply charges the battery and provides energy to the load at the same time when the AC main is OK.

The battery starts to supply power to the load when the AC mains fails.

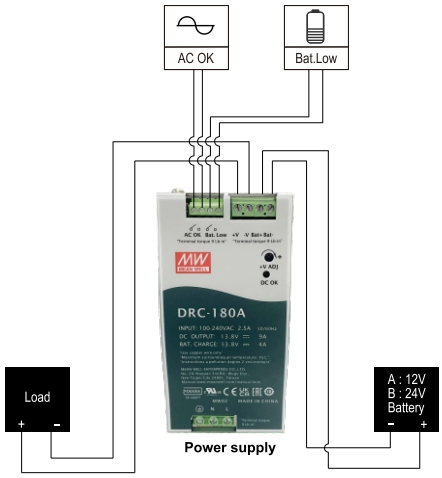



Fig 1.1 Suggested system connection

### 2.Alarm signal for AC OK and Battery Low

(1) Alarm signal is sent out through " AC OK " & " Battery Low " pins.(relay contact type)

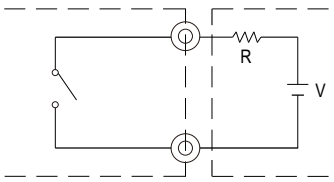
(2) An external voltage source is required for this function. The maximum applied voltage is 30V and the maximum sink current is 1A.

(3) Table2.1 explains the alarm function built in the power supply

| Function | Description | Output of Alarm |
|---|---|---|
| AC OK | when the power supply turns ON | Closed |
| | when the power supply turns OFF | Open |
| Battery Low | when the voltage of battery is under A:11V, B:22V | Closed |
| | when the voltage of battery is above A:11V, B:22V | Open |

Table 2.1 Explanation of Alarm Signal

AC OK (Battery Low)
TB3 Pin1(Pin3)




TB3 Pin2(Pin4)

External voltage source (V)
and resistor (R)
(The max. Sink is 1A and 30V)

Fig 2.2 Internal circuit of AC OK (Battery Low)

(4) RL1 (AC OK)signal will go into hiccup mode when the overload protection is activating.

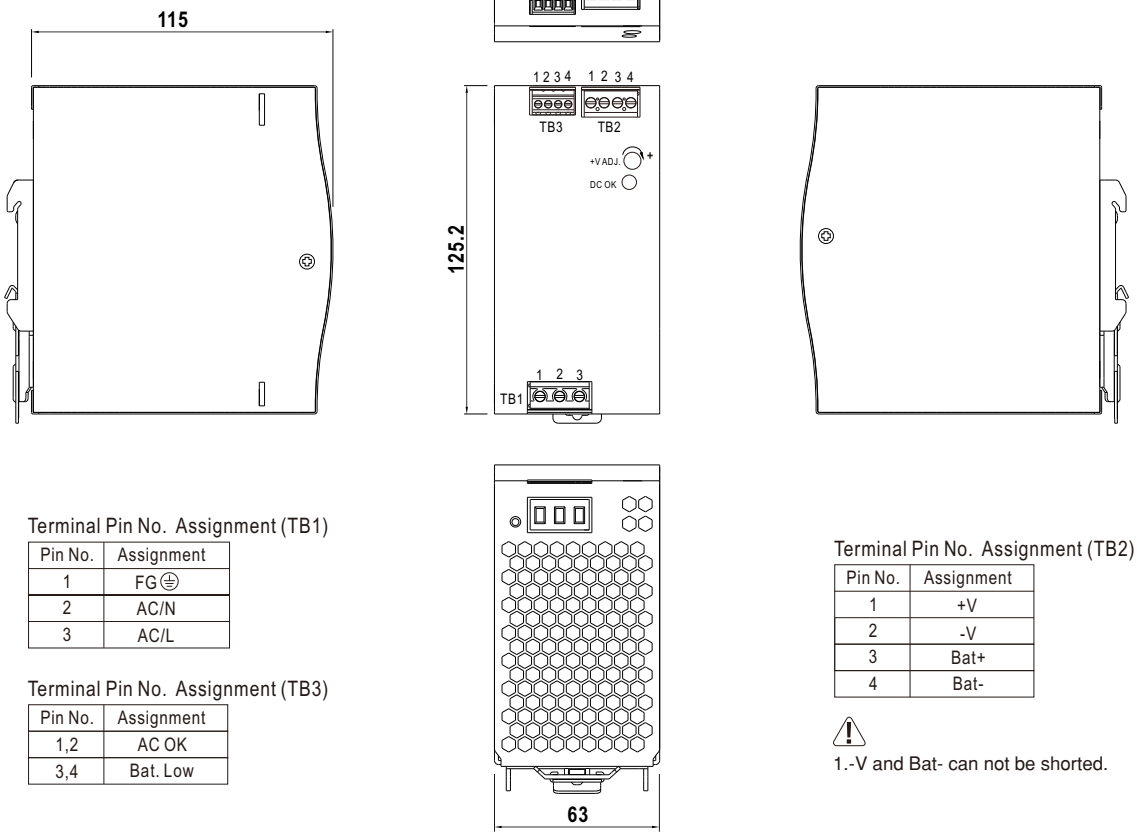


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## ■ Mechanical Specification

(Unit: mm , tolerance ± 1mm)

Case No. 979G




Terminal Pin No. Assignment (TB1)

| Pin No. | Assignment |
|---|---|
| 1 | FG ⏚ |
| 2 | AC/N |
| 3 | AC/L |

Terminal Pin No. Assignment (TB3)

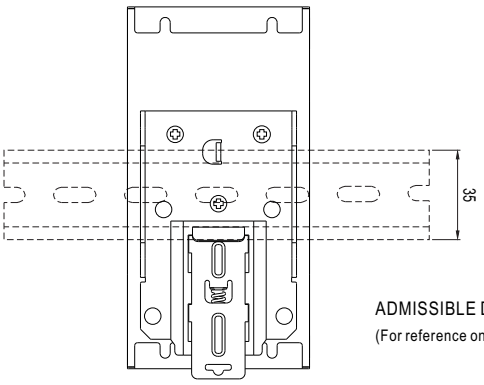
| Pin No. | Assignment |
|---|---|
| 1,2 | AC OK |
| 3,4 | Bat. Low |

Terminal Pin No. Assignment (TB2)

| Pin No. | Assignment |
|---|---|
| 1 | +V |
| 2 | -V |
| 3 | Bat+ |
| 4 | Bat- |

⚠ 1.-V and Bat- can not be shorted.

## ■ Installation Instruction




ADMISSIBLE DIN-RAIL:TS35/7.5 OR TS35/15
(For reference only. Not included with unit.)

This series fits DIN rail TS35/7.5 or TS35/15.
For installation details, please refer to the Instruction manual.

## ■ Installation Manual

Please refer to : http://www.meanwell.com/manual.html



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