



# RDU20G-200

## Installation manual



### *GMT-Fused Rackmount Distribution Unit*





RDU-20G Series is a Rackmount Distribution Unit in 19" 1U form factor that provides independent dual bus capability for redundant or mixed-voltage system. Each bus is rated at 100A max input and provides 10 GMT-fuse protected outputs. Load protection up to 15A is determined by fuse rating. Front panel LED indicators provide input power and fuse status for each bus. Independent Form C alarm contact is available for each bus for easy integration to an existing monitoring system. All inputs and outputs are isolated from the frame.

# Index

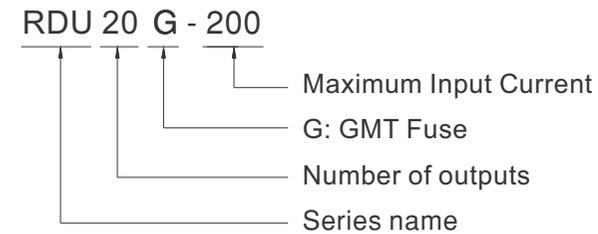
1. Safety Guidelines	1
2. Introduction	2
2.1 Model Encoding	2
2.2 Features	2
2.3 Specification	3
2.4 Static Characteristics	4
2.5 Derating Curve	4
2.6 Mechanical Specification	5
3. Installation and Wiring	6
3.1 Precautions	6
3.2 Wiring	6
3.3 DC Cable Size Selection	7
3.4 Fuse Installation	7
3.5 Fuse Selection	7
4. Panel and LED Indicators	8
4.1 Front Panel	8
4.2 Back Panel	9
4.3 LED Indicators	11
5. Operation	12
5.1 Input Voltage Range	12
5.2 Current Ratings	12
5.3 Form C Contact	13
6. Warranty	14
7. Environmental Declaration	15

## 1. Safety Guidelines

- Risk of electrical shock and energy hazard, all failure should be examined by a qualified technician. Please do not remove the case form the unit by yourself.
- Please do not change any component on the unit or make any modification to it.
- Please do not install the unit in places with high moisture, high ambient temperature, or under direct sunlight.
- The operating voltage of the unit is 10-60Vdc. Please do not connect the unit to DC voltage outside the operating range.

## 2. Introduction

### 2.1 Model Encoding



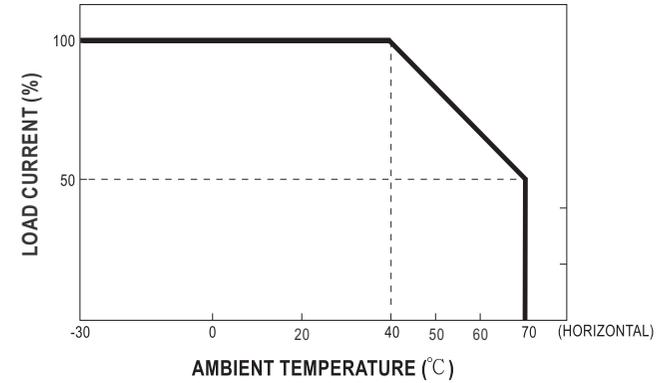
### 2.2 Features

- Wide operating voltage range  $\pm 10-60\text{VDC}$
- Two independent buses support mixed-voltage operation
- Supports two independent inputs for redundant system
- 10 GMT-fuse protected outputs per bus / 20 system total
- 100A max input current per bus / 200A system total
- 15A max load protection determined by fuse rating
- Front panel LED indicators for input power and fuse status
- One form C alarm contact per bus

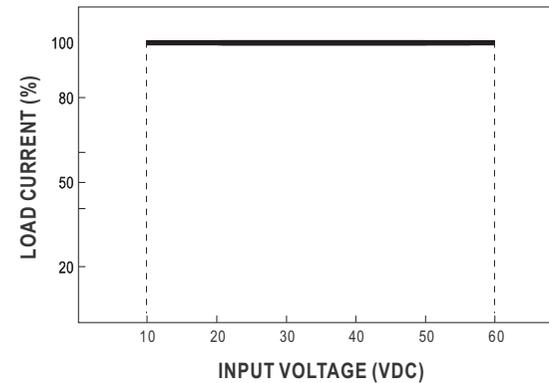
## 2.3 Specification

<b>MODEL</b>		RDU-20G-200		
<b>INPUT</b>	OPERATING VOLTAGE RANGE	±10-60VDC		
	RATED INPUT CURRENT PER BUS	100A peak, 2 buses total		
	TOTAL SYSTEM INPUT CURRENT	200A peak		
<b>OUTPUT</b>	RATED CURRENT PER CHANNEL	15A continuous		
	VOLTAGE DROP AT MAX LOAD	≤ 450mV		
	POWER DRAIN AT NO LOAD	≤ 350mV		
<b>PROTECTION</b>	PROTECTION TYPE AND LEVEL (NOTE 1)	GMT fuse, fuse size up to 15A		
<b>ENVIRONMENT</b>	WORKING TEMPERATURE	-30 ~ +70°C (Refer to "Derating Curve")		
	WORKING HUMIDITY	20 ~ 95% RH non-condensing		
<b>FUNCTION</b>	INPUT POWER LED INDICATOR	Green, one per bus ON: input power available OFF: input power absent		
	FUSE STATUS LED INDICATOR	Red, one per bus ON: any fuse open on bus OFF: all fuses on bus in normal operation		
	FORM C RELAY	NO/COM/NC connections, one set per bus OFF (relay energized): input okay AND all fuses on bus in normal operation ON (relay de-energized): in input OR any fuse on bus open Relay contact rating: 24VDC/1A		
<b>EMC</b>	EMC EMISSION	Parameter	Standard	Test Level / Note
		Radiated	EN55032	Class A
			FCC part 15B	Class A
	EMC EMISSION	Parameter	Standard	Test Level / Note
		ESD	EN61000-4-2	Level 3, 8KV air, 4KV contact
		RF Immunity	EN61000-4-3	Passed, details TBA
Magnetic Field		EN61000-4-6	Passed, details TBA	
<b>OTHER</b>	DIMENSIONS	Rack 228.6*431.8**44mm (9*17*1.74in, L*W*H with mounting bracket)		
	PACKING	3.88Kg; Packing TBA		
<b>NOTE</b>	1. Compatible fuse brand/model: Eaton Bussmann GMT Series Fast-acting Indicating Fuse AND Littelfuse 481 Series Alarm Indicating Fuse			

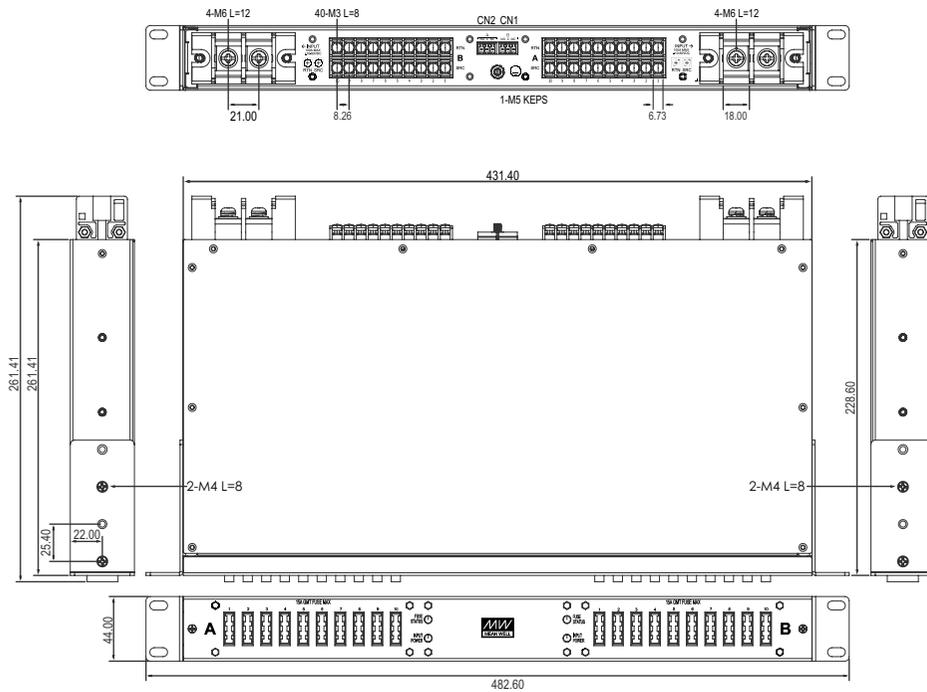
## 2.4 Static Characteristics



## 2.5 Derating Curve



## 2.6 Mechanical Specification



## 3. Installation and Wiring

### 3.1 Precautions

- The RDU20G-200 is designed for DC voltage from  $\pm 10-60V$ . Make sure the application voltage is within the rated range to avoid damage to the distribution unit.
- Only one voltage should be used per bus, allowing operation at up to two different voltages. Avoid connection between systems operating at different voltages.
- The RDU20G-200 should be secured to a 19" rack before attempting wiring.
- Always make sure power is completely disconnected before attempting to wire or service the unit.

### 3.2 Wiring

- Choose the right and suitable cable size for connection between the RDU20G-200 and the sources and loads. Please refer to 3.3 DC cable size selection.
- When connecting the input and output connections make sure there is no reverse polarity or short-circuit on the connection. Be mindful of the correct wiring configuration for positive or negative operating voltage.
- For positive voltage operation, connect the positive polarity wires of the source and load to the SRC terminals on the distribution unit and connect the negative polarity wires to the RTN terminals on the distribution unit.
- For negative voltage operation, connect the negative polarity wires of the source and load to the SRC terminals on the distribution unit and connect the positive polarity wires to the RTN terminals on the distribution unit.

### 3.3 DC Cable Size Selection

Cable connections should be as short as possible and make sure that suitable cables are chosen based on safety requirement and rating of current. Small cross section will result in lower efficiency, less output power and the cables may also become overheated and cause danger. For selection, please refer to table 3-1.

Table 3-1 cable recommendations

AWG	16	14	12	10	8	6	4
Rated Current of System (Amp)	6-10A	10-16A	16-25A	25-32A	32-40A	40-55A	55-70A
Cross-section of Lead (mm <sup>2</sup> )	1.00	1.5	2.5	4	6	16	25

Note: Current each wire carries should be de-rated to 80% of current suggested above when using 5 or more wires connected to the terminal.

### 3.4 Fuse Installation

- Make sure power is completely disconnected before installing, removing, or servicing fuses
- Make sure the fuse is full seated in the fuse holder to ensure proper connection.
- Up to 10 fuses can be installed per bus, 1 per output.

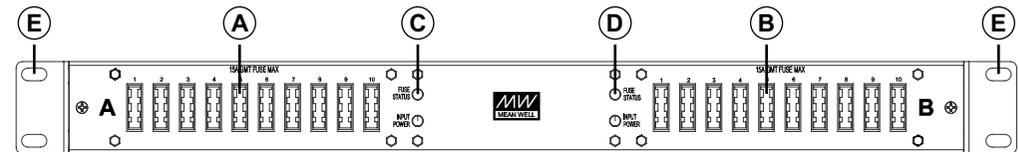
### 3.5 Fuse Selection

- Supports fuses with ratings up to 15A.
- Compatible fuse brand/model: Eaton Bussmann GMT Series Fast-acting Indicating Fuse AND Littelfuse 481 Series Alarm Indicating Fuse

## 4. Panel and LED Indicators

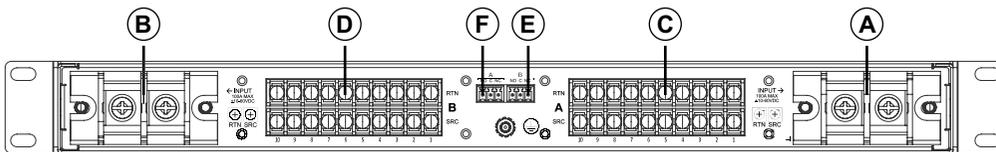
### 4.1 Front Panel

- (A) **Bus A fuse holders**
- (B) **Bus B fuse holders**
- (C) **Bus A LED indicators:**  
Indicate the status of the input and the fuses for bus A. See 4.3 LED indicator for details.
- (D) **Bus B LED indicators:**  
Indicate the status of the input and the fuses for bus A. See 4.3 LED indicator for details.
- (E) **Rack Mounting brackets:**  
Allows the distribution unit to be securely mounted on a standard 19" rack.

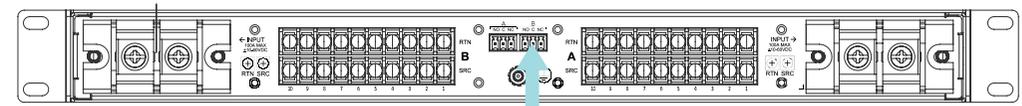


## 4.2 Back Panel

- (A) **Bus A DC input terminals:**  
Recommended torque: 25.5 kgf-cm.
- (B) **Bus A DC input terminals:**  
Recommended torque: 25.5 kgf-cm.
- (C) **Bus A DC output terminals:**  
Recommended torque: 11.5 kgf-cm.
- (D) **Bus B DC output terminals:**  
Recommended torque: 11.5 kgf-cm.
- (E) **Bus A alarm relay port (CN1):**  
Provides access to alarm relay signals for Bus A, please refer to section 4.2.1.
- (F) **Bus B alarm relay port (CN1):**  
Provides access to alarm relay signals for Bus B, please refer to section 4.2.1.



### 4.2.1 Connector Pin No. Assignment CN1:

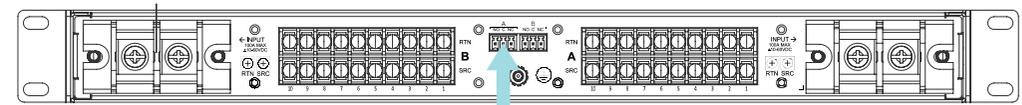


1	NO-A	3	NC-A
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Mating Connector BCP-381-3 or equivalent

Pin No.	Function	Description
1	NO-A	Normally open form C alarm relay contact for Bus A. Maximum applied voltage 24VDC, maximum sink current 1A.
2	COM-A	Common for Bus A alarm relays.
3	NC-A	Normally closed form C alarm relay contact for Bus A. Maximum applied voltage 24VDC, maximum sink current 1A.

### 4.2.2 Connector Pin No. Assignment Cn2:



1	NO-B	3	NC-B
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Mating Connector BCP-381-3 or equivalent

Pin No.	Function	Description
1	NO-A	Normally open form C alarm relay contact for Bus B.. Maximum applied voltage 24VDC, maximum sink current 1A.
2	COM-B	Common for Bus B alarm relays.
3	NC-B	Normally closed form C alarm relay contact for Bus B. Maximum applied voltage 24VDC, maximum sink current 1A.

### 4.3 LED Indicators

Fuse Status LED	
LED	Description
Red ●	Any fuse on bus open
Off ●	Normal operation, all fuses intact

Input Power LED	
LED	Description
Green ●	Normal operation, input power present
Off ●	Input power absent

## 5. Operation

### 5.1 Input Voltage Range

- The input voltage range is DC±10~60V.
- To insure proper operation, DC input should be within the pre-specified range. A wrong input voltage will cause the distribution unit to operate improperly, even damaging the unit in the worst-case scenario.

### 5.2 Current Ratings

- The maximum rated current of the distribution unit overall is 200A.
- The maximum rated current of each bus is 100A.
- To insure proper operation, ensure the current for the unit overall and each bus does not exceed the maximum rating. Excess current will cause the distribution unit to operate improperly, even damaging the unit in the worst-case scenario.
- The maximum rated current of each output is determined by the installed fuse. Fuses up to 15A may be installed for each output channel.

## 5.3 Form C Contact

- Alarm signal is connected through NC/COM/NO terminals, one set per bus.
- An external voltage source is required for this function. The maximum applied voltage is 24Vdc and the maximum sink current is 1A. Please refer to Fig 5-1.

OPERATING CONDITIONS	A-Side Form C Contact		B-Side Form C Contact	
	NC(1)-COM(3)	NO(2)-COM(3)	NC(1)-COM(3)	NO(2)-COM(3)
A-side input okay AND all fuses normal	closed	open	-	-
A-side input absent OR any fuses open	open	closed	-	-
B-side input okay AND all fuses normal	-	-	closed	open
B-side input absent OR any fuses open	-	-	open	closed

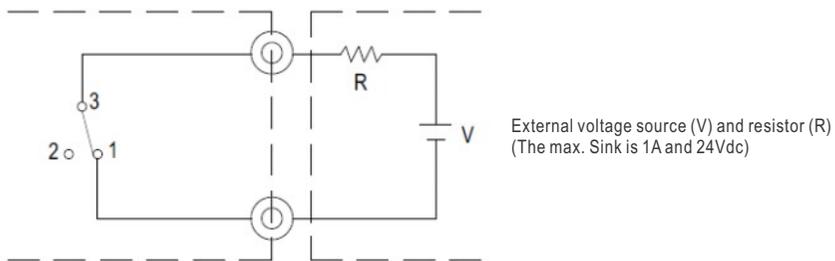


Fig 5-1 circuit of alarm signal via relay contact

## 6. Warranty

This product provides a three-year warranty under normal use. In order to keep the warranty valid, do not replace any parts or modify the product in any way.

※ MEAN WELL possesses the right to adjust the content of this manual.

## 7. Environmental Declaration Information

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**MEAN WELL POWER SOLUTIONS, INC.**

6655 Troost Ave., Kansas City, MO, 64131, United States

TEL: +1-816-601-4034

<http://www.meanwellusa.com>

E-mail: [info@meanwellusa.com](mailto:info@meanwellusa.com)