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# DRDN20 series

## Redundancy Module



INDUSTRIAL CONTROL SYSTEMS

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# 20A DIN Rail Type Redundancy Module DRDN20

User's Manual Click Me

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UL62368-1 IEC62368-1 TPTC004

Automate Industrial Security Network Telecom

## Features

- Support 1+1 and N+1 redundancy system
- 2 channels input and 1 output
- Suitable for redundancy operation of 12V/24V/48V system
- Output current up to 20A
- Cooling by free air convection
- -40~+80°C ultra-wide operating temperature ( >+60°C derating)
- 32mm slim width
- Built-in 2 channels DC OK signal and alarm relay contact
- Installed on DIN Rail TS35/7.5 or 15
- 3 years warranty

## Applications

- Industrial control system
- Semiconductor fabrication equipment
- Factory automation
- Electro-mechanical apparatus

## GTIN CODE

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

## Description

The DRDN20 series is a 20A redundancy module that can be used with a power supply to improve overall system operation reliability. Product key features include:12V/24V/48V input voltage for selection, support N+1 and 1+1 redundancy systems,built-in two rails DC input contacts and single output. The MOSFET technology implemented can reduce heat loss and reduce the voltage difference between the input and output voltages, built-in 2 channels DC OK relay contacts for monitoring output status, ultra-wide operating temperature of -40 to +80°C and narrow width (32mm).

## Model Encoding

**DRDN20 - 24**

- 24 — Intput voltage (12V/24V/48V)
- DRDN20 — Output current (20A)
- DRDN20 — DIN Rail Redundancy Module

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# 20A DIN Rail Type Redundancy Module DRDN20

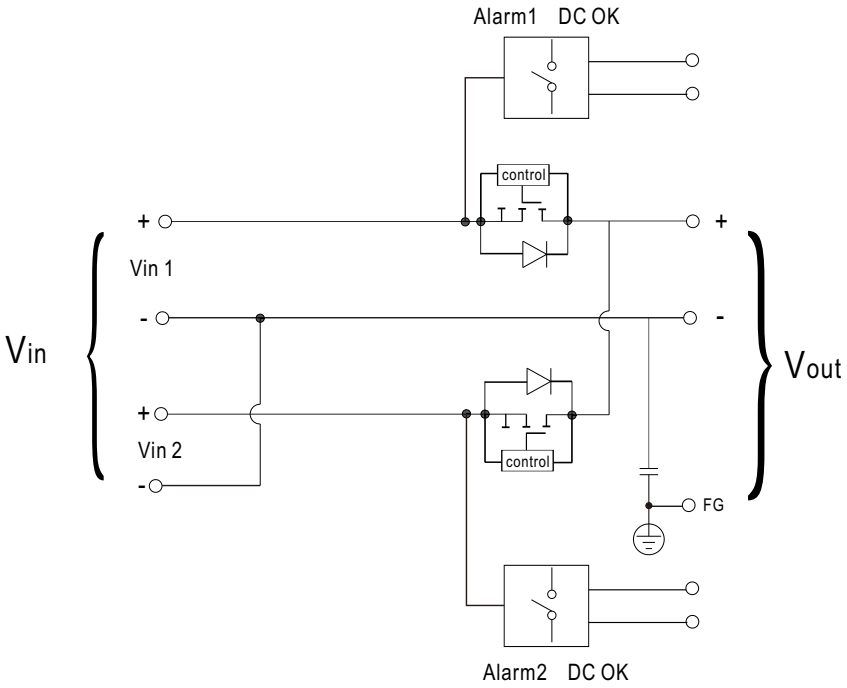
## SPECIFICATION

| MODEL | | DRDN20-□ | | |
|---|---|---|---|---|
| | | □ =12V, 24V, 48V | | |
| INPUT | NUMBER OF INPUT | 2 Channels | | |
| | DC NORMAL VOLTAGE | 12Vdc | 24Vdc | 48Vdc |
| | DC VOLTAGE RANGE | 9~14Vdc | 19~29Vdc | 36~60Vdc |
| | RATED CURRENT | 0~20A per input Continuous | | |
| | VOLTAGE DROP (Vin-Vout) (max.) | 0.25V | | |
| | PEAK CURRENT | 0~30A per input 5Sec. | | |
| | EFFICIENCY (Typ.) | 98% | | |
| | INPUT REVERSE CURRENT (max.) | 1mA | | |
| | INPUT REVERSE VOLTAGE (max.) | 40Vdc | 40Vdc | 65Vdc |
| OUTPUT | RATED CURRENT | 0~20A, Continuous | | |
| | PEAK CURRENT (max.) | 30A, 5Sec. | | |
| | CAPACITANCE(Typ.) | 320uF | | |
| | STANDBY POWER LOSSES(Typ.) | 1.5W | | |
| PROTECTION | OVERLOAD | <30A,5Sec. No damage | | |
| | SHORT CIRCUIT | <30A,5Sec. No damage | | |
| FUNCTION | REDUNDANCY | For 1+1 redundancy ,and support N+1 redundancy | | |
| | BOTH INPUTS VOLTAGE ALARM | <8.5V or >14.7V (±5%) | <18V or >31V (±5%) | <34.2V or >63V (±5%) |
| | RELAY | 30Vdc/1A resistive load | | |
| | LED STATUS DISPLAY | Green LED OK | | |
| ENVIRONMENT | COOLING | Free air convection | | |
| | WORKING TEMP. Note.2 | -40 ~ +80℃ (Refer to "Derating Curve") | | |
| | WORKING HUMIDITY | 5 ~ 95% RH non-condensing | | |
| | STORAGE TEMP. | -40 ~ +85℃ | | |
| | TEMP. COEFFICIENT | ±0.03%/℃ (0 ~ 60℃) | | |
| | VIBRATION | Component:10 ~ 500Hz, 5G 10min./1cycle, 60min. each along X, Y, Z axes; Mounting: Compliance to IEC61373 | | |
| | OPERATING ALTITUDE Note.3 | 5000 meters/OVC II | | |
| SAFETY & EMC (Note.4) | SAFETY STANDARDS | IEC62368-1, UL62368-1, EAC TP TC 004 approved | | |
| | WITHSTAND VOLTAGE | IP/OP - Chassis : 0.5KVac ; IP/OP- Relay : 0.5KVac ; Relay - Chassis : 0.5KVac | | |
| | ISOLATION RESISTANCE | IP/OP - Chassis, IP/OP- Relay, Relay - Chassis:>100M Ohms / 500Vdc / 25℃/ 70% RH | | |
| | EMC EMISSION | **Parameter** | **Standard** | **Test Level / Note** |
| | | Conducted | BS EN/EN55032(CISPR32) | Class B |
| | | Radiated | BS EN/EN55032(CISPR32) | Class B |
| | | Voltage Flicker | ----- | ----- |
| | | Harmonic Current | ----- | ----- |
| | EMC IMMUNITY | BS EN/EN55035, BS EN/EN61000-6-2(BS EN/EN50082-2) | | |
| | | **Parameter** | **Standard** | **Test Level / Note** |
| | | ESD | BS EN/EN61000-4-2 | Level 4, 15KV air ; Level 3, 8KV contact; criteria A |
| | | Radiated | BS EN/EN61000-4-3 | Level 3, 10V/m ; criteria A |
| | | EFT / Burst | BS EN/EN61000-4-4 | Level 3, 2KV ; criteria A |
| | | Surge | BS EN/EN61000-4-5 | Level 3, 1KV/Line-Line ;Level 3, 2KV/Line-Line-Chassis ;criteria A |
| | | Conducted | BS EN/EN61000-4-6 | Level 3, 10V ; criteria A |
| | | Magnetic Field | BS EN/EN61000-4-8 | Level 4, 30A/m ; criteria A |
| OTHERS | MTBF | 1836.0K hrs min. Telcordia SR-332 (Bellcore) ; 482.1K hrs min. MIL-HDBK-217F (25℃) | | |
| | DIMENSION | 32*125.2*102mm (W*H*D) | | |
| | PACKING | 0.35Kg;28psc/10.8Kg/1.23CUFT | | |
| NOTE | 1. All parameters NOT specially mentioned are measured at normal input (12V/24V/48V), rated load and 25℃ of ambient temperature.<br>2. Derating may be needed over high ambient temperature. Please check the derating curve for more details.<br>3. 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).<br>4. The power supply is considered as an independent unit, but the final equipment still need to re-confirm that the whole system complies with the 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 )<br>※ Product Liability Disclaimer : For detailed information, please refer to https://www.meanwell.com/serviceDisclaimer.aspx | | | |

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# 20A DIN Rail Type Redundancy Module DRDN20

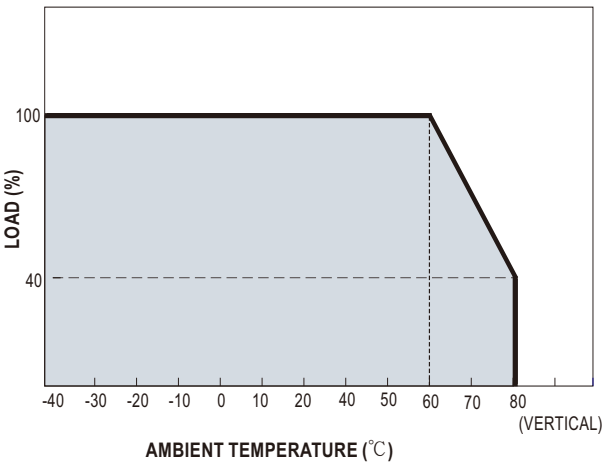
## ■ Block Diagram



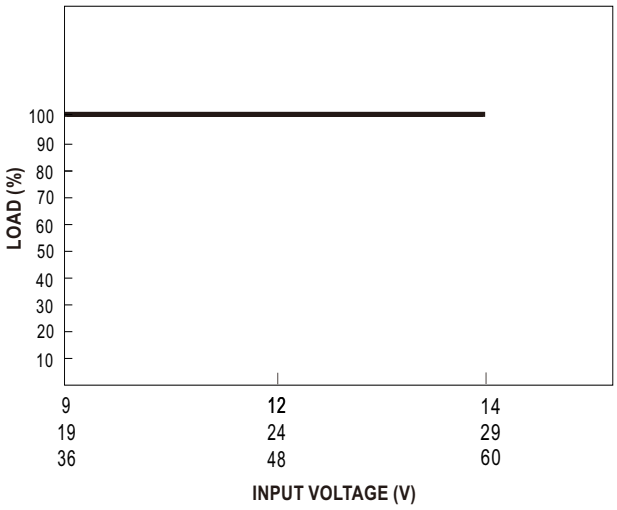

## ■ DC OK Relay Contact

| | |
|---|---|
| Contact Ratings (max.) | 30V/1A resistive load |
| Contact Close(DC OK) | PSU turns on |
| Contact Open(DC Fail) | PSU turns off / over or under input voltage |

## ■ Derating Curve




## ■ Output Derating VS Input Voltage



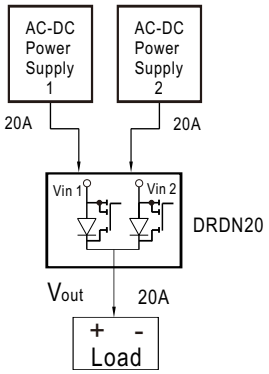
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## ■ Typical Application Notes

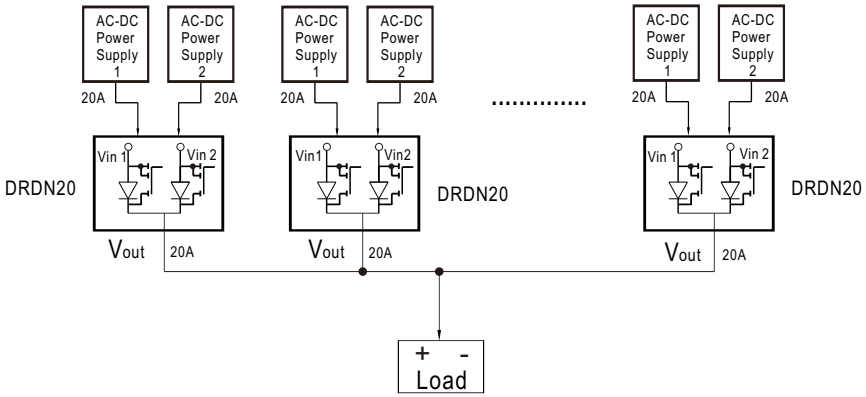
### 1. 1+1 Redundancy:

Using 1 more PSU as the redundant unit



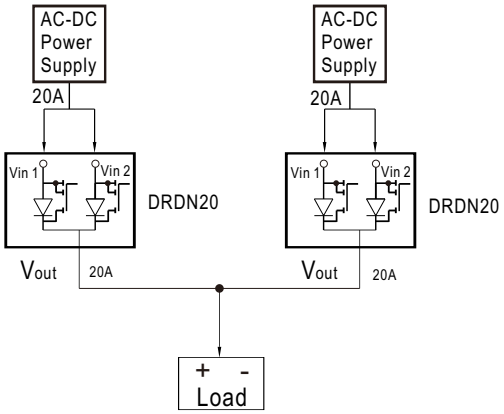

### 2. 1+N Redundancy:

Using more PSUs as the redundant units to increase the reliability




### 3. Single Use:

Connecting only one PSU to one DRDN20 to reduce the stress of the MOSFET and hence increase the reliability



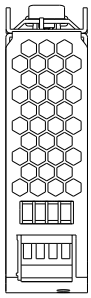
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# 20A DIN Rail Type Redundancy Module DRDN20

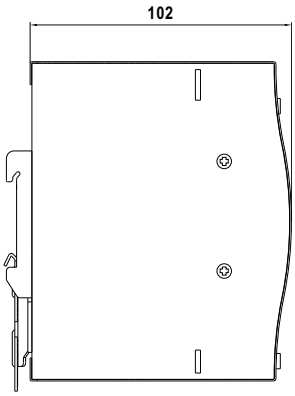
## ■ Mechanical Specification

(Unit: mm , tolerance ± 1mm)

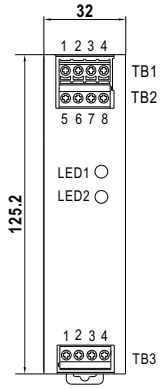
Case No.221D



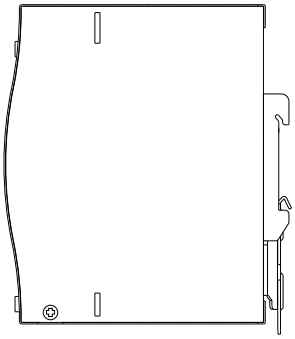
Top View



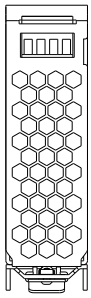

Side View




Front View



Side View



Bottom View

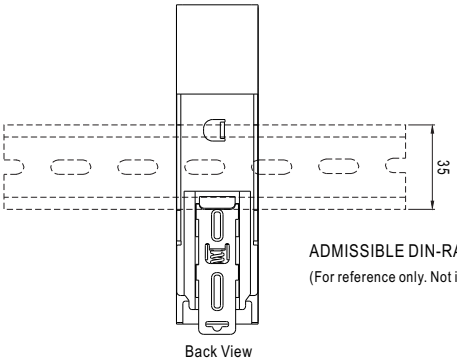
Terminal Pin No. Assignment (TB1,TB2)

| Pin No. | Assignment |
|---|---|
| 1,2 | Alarm1 DC OK |
| 3,4 | Alarm2 DC OK |
| 5 | FG |
| 6,7 | DC output +Vout |
| 8 | DC output -Vout |

Terminal Pin No. Assignment (TB3)

| Pin No. | Assignment |
|---|---|
| 1 | DC input +Vin1 |
| 2 | DC input -Vin1 |
| 3 | DC input +Vin2 |
| 4 | DC input -Vin2 |

## ■ Installation Instruction




Back View

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