



■ Features

- Support 1+1 and N+1 redundancy system
- 2 channels input and 1 output
- Suitable for redundancy operation of 5V/12V/24V/48V system
- Output current up to 20A
- Cooling by free air convection
- -40~+80°C ultra-wide operating temperature (>+60°C derating)
- Built-in 2 channels DC OK signal and alarm relay contact
- 3 years warranty

■ Applications

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

■ GTIN CODE

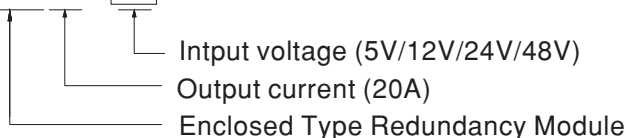
MW Search: <https://www.meanwell.com/serviceGTIN.aspx>

■ Description

The ERDN20 series is a 20A redundancy module that can be used with a power supply to improve overall system operation reliability. Product key features include: 5V/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.

■ Model Encoding

ERDN20 - 24

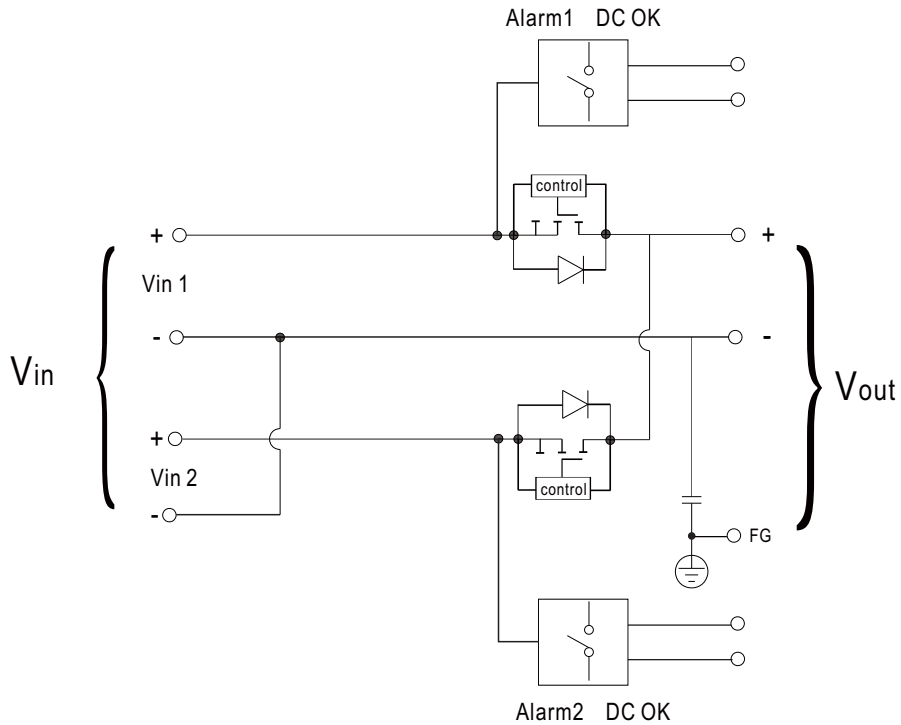




SPECIFICATION

| | | | | | |
|--------------------------------------|---|--|--|--------------------|----------------------|
| MODEL | | ERDN20-□ | | | |
| | | □ =5V, 12V, 24V, 48V | | | |
| INPUT | NUMBER OF INPUT | 2 Channels | | | |
| | DC NORMAL VOLTAGE | 5Vdc | 12Vdc | 24Vdc | 48Vdc |
| | DC VOLTAGE RANGE | 4, 5~6Vdc | 9~14Vdc | 19~29Vdc | 36~60Vdc |
| | RATED CURRENT | 0~20A per input Continuous | | | |
| | VOLTAGE DROP (Vin-Vout) (max.) | 0.2V | | | |
| | PEAK CURRENT | 0~30A per input 5Sec. | | | |
| | EFFICIENCY (Typ.) | 97% | 98% | 98% | 98% |
| | INPUT REVERSE CURRENT (max.) | 1mA | | | |
| OUTPUT | INPUT REVERSE VOLTAGE (max.) | 15Vdc | 40Vdc | 40Vdc | 65Vdc |
| | RATED CURRENT | 0~20A, Continuous | | | |
| | PEAK CURRENT (max.) | 30A, 5Sec. | | | |
| | CAPACITANCE(Typ.) | 320uF | | | |
| PROTECTION | STANDBY POWER LOSSES(Typ.) | 1.5W | | | |
| | OVERLOAD | <30A, 5Sec. No damage | | | |
| FUNCTION | SHORT CIRCUIT | <30A, 5Sec. No damage | | | |
| | REDUNDANCY | For 1+1 redundancy ,and support N+1 redundancy | | | |
| | BOTH INPUTS VOLTAGE ALARM | <4V or >6.5V (±5%) | <8.5V or >14.7V (±5%) | <18V or >31V (±5%) | <34.2V or >63V (±5%) |
| | RELAY | 30Vdc/1A resistive load | | | |
| ENVIRONMENT | LED STATUS DISPLAY | Green LED OK | | | |
| | COOLING | Free air convection | | | |
| | WORKING TEMP. <small>Note.2</small> | -40 ~ +80°C (Refer to "Derating Curve") | | | |
| | WORKING HUMIDITY | 5 ~ 95% RH non-condensing | | | |
| | STORAGE TEMP. | -40 ~ +85°C | | | |
| | TEMP. COEFFICIENT | ±0.03%/°C (0 ~ 60°C) | | | |
| | VIBRATION | Component:10 ~ 500Hz, 5G 10min./1cycle, 60min. each along X, Y, Z axes; Mounting: Compliance to IEC61373 | | | |
| SAFETY & EMC <small>(Note.4)</small> | OPERATING ALTITUDE <small>Note.3</small> | 5000 meters/OVC II | | | |
| | SAFETY STANDARDS | IEC62368-1, UL62368-1, EAC TP TC 004 approved, Design refer to BS EN/EN62368-1 | | | |
| | 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°C / 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 | ----- | ----- | |
| | EMC IMMUNITY | Harmonic Current | ----- | ----- | |
| | | 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 | 1853.5K hrs min. Telcordia SR-332 (Bellcore) ; 378.7K hrs min. MIL-HDBK-217F (25°C) | | | |
| | DIMENSION | 82*99*36mm (W*D*H) | | | |
| | PACKING | 0.206Kg;45psc/10.3Kg/0.76CUFT | | | |
| NOTE | <p>1. All parameters NOT specially mentioned are measured at normal input (5V/12V/24V/48V) , rated load and 25°C of ambient temperature.</p> <p>2. Derating may be needed over high ambient temperature. Please check the derating curve for more details.</p> <p>3. The ambient temperature derating of 3.5°C/1000m with fanless models and of 5°C/1000m with fan models for operating altitude higher than 2000m(6500ft).</p> <p>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)</p> <p>※ Product Liability Disclaimer : For detailed information, please refer to https://www.meanwell.com/serviceDisclaimer.aspx</p> | | | | |

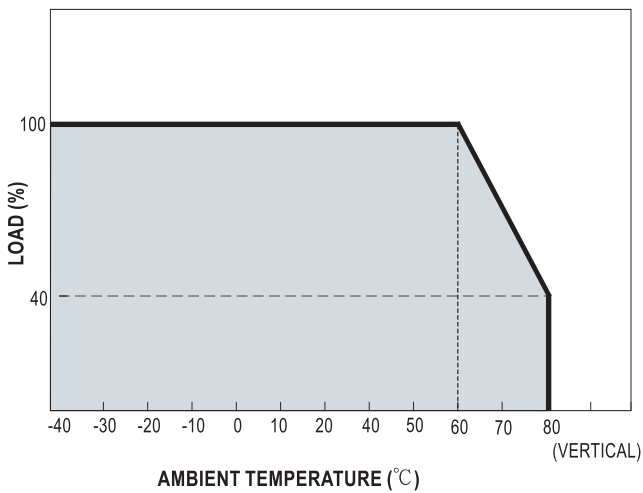
Block Diagram



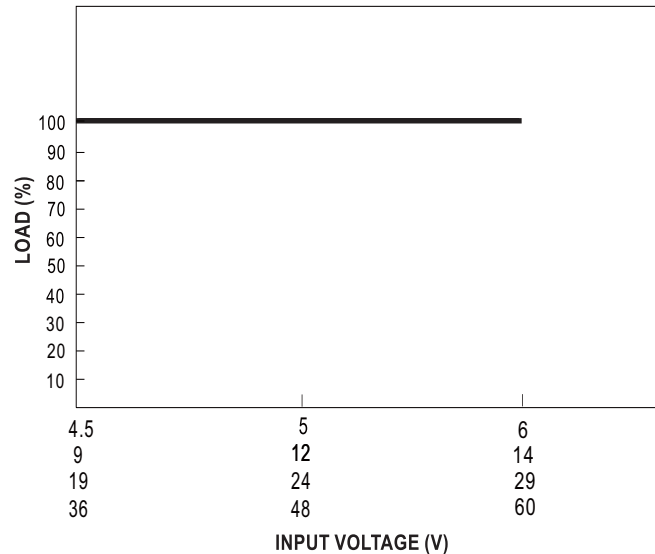
DC OK Relay Contact

| | |
|------------------------|---|
| 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



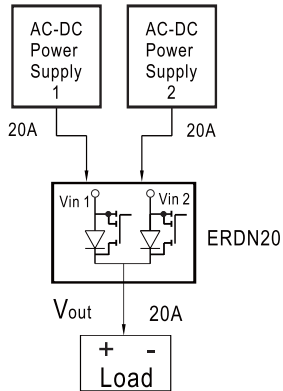
Output Derating VS Input Voltage



Typical Application Notes

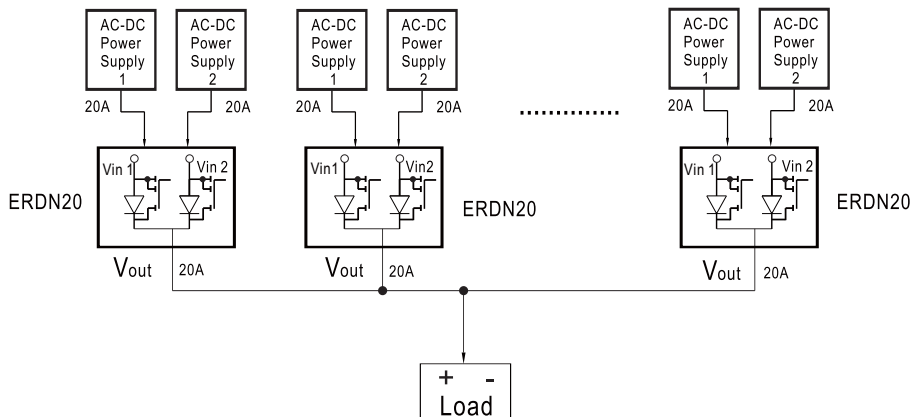
1. 1+1 Redundancy:

Using 1 more PSU as the redundant unit



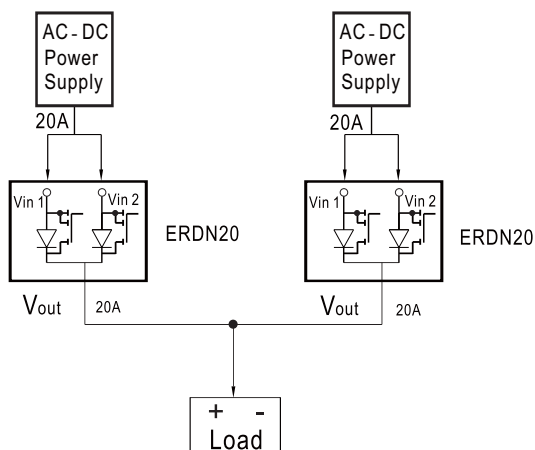
2. 1+N Redundancy:

Using more PSUs as the redundant units to increase the reliability



3. Single Use:

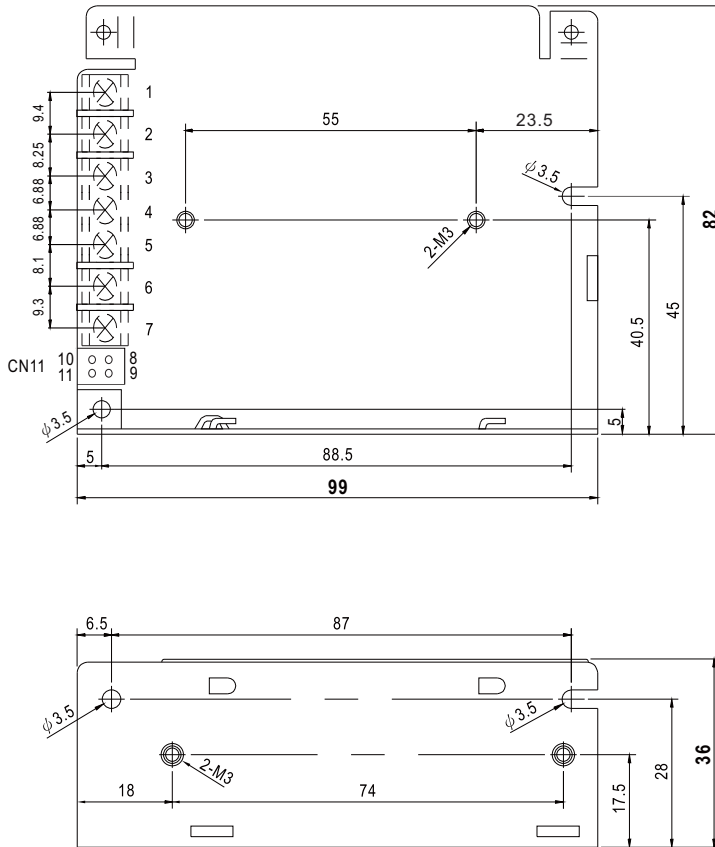
Connecting only one PSU to one ERDN20 to reduce the stress of the MOSFET and hence increase the reliability



Mechanical Specification

(Unit: mm , tolerance ± 1 mm)

Case No.932D



Terminal Pin No. Assignment

| Pin No. | Assignment |
|---------|----------------|
| 1 | FG |
| 2 | output+ |
| 3 | output- |
| 4,5 | DC input -Vin |
| 6 | DC input +Vin1 |
| 7 | DC input +Vin2 |

Function Connector(CN11): TKP DH21-2X2 or equivalent

| Pin No. | Assignment | Mating Housing | Terminal |
|---------|--------------|--------------------------|----------------------|
| 8,9 | Alarm1 DC OK | TKP DH2 or equivalent | TKP or equivalent |
| 10,11 | Alarm2 DC OK | | |

Installation Manual

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