

## DESCRIPTION

## PRODUCT COVERED:

- \* USL/CNL - Open type, Switching Mode Power Supply, Models DRB120-24-1, DRB120-24-1/RV, DRJ120-24-1 and DRJ120-24-1/E, may be followed by "-", "/" or any alphanumeric characters, may be followed by CO, CO2 or any alphanumeric characters.

## GENERAL:

These devices are open type, switching type power supply modules intended for din rail mounting and to be used in combination with Industrial Control Equipment. The output circuit is isolated from the primary circuit by a switch mode design transformer and optical isolators. These devices are suitable for field wiring and for use in a pollution degree 2 environment / controlled environment.

## ELECTRICAL RATINGS:

| Series   | Load Condition          | Input Ratings                  | Output Ratings                    |
|--|-------------------------|--------------------------------|-----------------------------------|
| *DRB120-24-1<br>DRB120-24-1/RV<br>DRJ120-24-1<br>DRJ120-24-1/E | <b>Normal (#1)</b>      | 100-240 Vac,<br>1.5 A, 50/60Hz | 24-28 Vdc, 5-4.3 A,<br>Max. 120 W |
|  | <b>Peak Output (#2)</b> |                                | <b>24-28 Vdc, 6-5.14 A</b>        |

## Note:

#1 - The derating curve explaining the characteristics between the permissible load and the surrounding air temperature shown in ILL. 10 is the part of the Output ratings.

#2 - The peak output ratings which allow to consume variable output current value up to 6 A, the first up to 10 seconds with the Duty cycle of 35% shown in ILL. 11 is the part of the Output ratings.

## ENVIRONMENTAL RATINGS:

Max Surrounding Air Temperature: 70°C (#3)

Pollution Degree: 2

## Note:

#3 - The permissible max. surrounding air temperature rating is specified in the derating curve related to the permissible load and the mounting orientation, shown in ILL. 10.

## NOMENCLATURE:

Example: DRB120-24-1/RY/xyz

|     |     |   |     |   |    |   |    |           |            |
|-----|-----|---|-----|---|----|---|----|-----------|------------|
| DRB | 120 | - | 24  | - | 1  | / | RY | /         | xyz        |
| I   | II  |   | III |   | IV |   | V  | <b>VI</b> | <b>VII</b> |

I - Product Series Name

DRB: Block Terminal type

II - Output Power

120: 120 Watts

III - Output Voltage

24: 24-28 Vdc

IV - Phase

1: Single

V - "DC OK" signal Method

Blank: Photo Coupler

RY: Photo MOS

**VI - May be followed by "-", "/" or any alphanumeric characters.****\*VII - Option Code****CO: with thin coating on one side of PWB****CO2: with thin coating on both side of PWB**

\* **Any alphanumeric characters:** This code means the product is differed from the standard model. The differences are within the extent of the non-critical part.

## NOMENCLATURE:

Example: DRJ120-24-1/E/xyz

|     |            |   |     |   |    |   |   |           |            |
|-----|------------|---|-----|---|----|---|---|-----------|------------|
| DRJ | <b>120</b> | - | 24  | - | 1  | / | E | /         | xyz        |
| I   | II         |   | III |   | IV |   | V | <b>VI</b> | <b>VII</b> |

I - Product Series Name

DRJ: European terminal type

II - Output Power

120: 120 Watts

III - Output Voltage

24: 24-28 Vdc

IV - Phase

1: Single

V - Terminal Block

Blank: Emuden Corp.

E: Tianli Electrical Machinery (Ningbo) Co., Ltd.

**VI - May be followed by "-", "/" or any alphanumeric characters.****\*VII - Option Code****CO: with thin coating on one side of PWB****CO2: with thin coating on both side of PWB**\* **Any alphanumeric characters:** This code means the product is differed from the standard model. The differences are within the extent of the non-critical part.

## TECHNICAL CONSIDERATIONS (NOT FOR FIELD REPRESENTATIVE'S USE):

Special Considerations - The following items are considerations that were used when evaluating this product.

USL: Indicates investigation to the U.S. Standard UL 508, 17<sup>th</sup> Ed.

CNL: Indicates investigation to the CAN/CSA C22.2 No. 107.1-16, 4<sup>th</sup> Ed.

## CONSTRUCTION DETAILS:

Printed Wiring Boards - Unless otherwise specified, all printed wiring boards are R/C (ZPMV2), rated min. 130°C, min. V-2, and comply with the direct support requirements and provide Comparative Tracking Index (CTI) of min. 175, suitable for direct support in accordance with UL 796 and are used within their Recognized soldering and cladding specifications.

Spacings - Clearance and creepage distance are between uninsulated live metal parts of opposite polarity, and between uninsulated live metal parts and dead metal parts. They have been evaluated to the required spacings in the below tables.

| Location                              | Spacing           | Standard  | Required    |               |
|---------------------------------------|-------------------|---|-------------|---------------|
|                                       |                   |   | Volts (rms) | Required (mm) |
| all circuit except for terminal block | Clearance         | UL 840, 3rd Edition, Table 8.1, OVC III, PD 2                       | 240         | 2.4           |
|                                       | Creepage distance | UL 840, 3rd Edition, Table 9.1, PD 2, Material Group IIIb           | 250         | 2.5           |
| Terminal block                        | Clearance         | UL 508, 17th Edition, Table 36.4, Pollution Degree 2                | 0-50        | 3.2           |
|                                       |                   |   | 51-250      | 6.4           |
|                                       | Creepage distance | UL 508, 17th Edition, Table 36.4, Pollution Degree 2                | 0-50        | 3.2           |
|                                       |                   |   | 51-250      | 6.4           |
| all circuit except for terminal block | Clearance         | CSA C22.2 No. 0.2-16, 2nd Edition, Table 2, OVC III, PD 2           | 50          | 0.2           |
|                                       |                   |   | 240         | 2.4           |
|                                       | Creepage distance | CSA C22.2 No. 0.2-16, 2nd Edition, Table 4, OVC III, PD 2           | 32          | 0.53          |
| Terminal block                        | Clearance         | CSA C22.2 No. 107-16, 4th Edition, Table 6, Controlled Environments | 0-50        | 6.4           |
|                                       |                   |   | 151-300     | 6.4           |
|                                       | Creepage distance | CSA C22.2 No. 107-16, 4th Edition, Table 6, Controlled Environments | 0-50        | 6.4           |
|                                       |                   |   | 151-300     | 6.4           |