

AC - DC DIN RAIL MOUNTABLE POWER SUPPLY INDUSTRIAL CONTROL EQUIPMENT



FEATURES

- UNIVERSAL INPUT 85~264VAC
- SHORT CIRCUIT PROTECTION
- INTERNAL INPUT FILTER
- HIGH EFFICIENCY UP TO 89%
- HIGH AVERAGE EFFICIENCY MEET ErP (except 12V model)
- LOW STANDBY POWER CONSUMPTION
- 3 YEARS WARRANTY



MODEL LIST

DRS4- 24 x

12 : 12V OUT
24 : 24V OUT
48 : 48V OUT

BLANK : SPRING TERMINAL TYPE
A : SCREW TERMINAL TYPE

MODEL LIST

| MODEL NO. | INPUT VOLTAGE | OUTPUT WATTAGE | OUTPUT VOLTAGE | OUTPUT CURRENT | EFF. (min.) | EFF. (typ.) | EFF. (avg.) |
|-----------------------------|---------------|----------------|----------------|----------------|-------------|-------------|-------------|
| Single Output Models | | | | | | | |
| DRS4-12(A) | 85~264 VAC | 90 WATTS | + 12 VDC | 7.5 A | 84% | 86% | 86% |
| DRS4-24(A) | 85~264 VAC | 100 WATTS | + 24 VDC | 4.2 A | 86% | 88% | 87% |
| DRS4-48(A) | 85~264 VAC | 100 WATTS | + 48 VDC | 2.1 A | 87% | 89% | 88% |

SPECIFICATION

All Specifications Typical At Nominal Line, Full Load, 25°C Unless Otherwise Noticed

| GENERAL | | | | | | | |
|-------------------------------|---|-----|------------------|---------|--------|-----------|--|
| Characteristics | Conditions | | min. | typ. | max. | unit | |
| Switching frequency | Vi nom, Io nom | | | | 100 | KHz | |
| Isolation voltage | Input-Output | | 3,000 / 4,242 | | | VAC / VDC | |
| | Input-FG | | 1,500 / 2,121 | | | VAC / VDC | |
| | Output-FG | | 500 / 710 | | | VAC / VDC | |
| Isolation resistance | Input-Output, @ 500VDC | | 100 | | | MΩ | |
| Ambient temperature | Operating at Vi nom | | -25 | | + 71 | °C | |
| Derating (see derating curve) | Vi nom, from +46°C to +71°C | | | | 2.5 | % / °C | |
| Storage temperature | Non operational | | -40 | | + 85 | °C | |
| Relative humidity | Vi nom, Io nom | | 20 | | 95 | % RH | |
| Temperature coefficient | Vi nom, Io min | | | | ± 0.03 | % / °C | |
| MTBF | Bellcore Issue 6 @40°C, GB | 12V | | 470,000 | | Hours | |
| | | 24V | | 521,000 | | Hours | |
| | | 48V | | 545,000 | | Hours | |
| Altitude during operation | EN 62368-1 | | | | 5,000 | m | |
| Dimension | Spring & Screw terminal type | | L90 x W54 x D100 | | | mm | |
| Cooling | Free air convection | | | | | | |
| Installation position | Vertical (other direction may derating using) | | | | | | |
| Pollution degree | | | | 2 | | | |

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INPUT SPECIFICATIONS

| Characteristics | Conditions | | min. | typ. | max. | unit |
|---------------------------|------------------------------|-------|------|------------|---------|------|
| Rated input voltage | Io nom | | 100 | | 240 | VAC |
| Absolute input max. range | Ta min ... Ta max, Io nom | AC in | 85 | | 264 | VAC |
| | | DC in | 120 | | 375 | VDC |
| Input current | Vi : 115 / 230 VAC, Io nom | | | 1800 / 900 | | mA |
| Rated input current | Vi : 85 VAC, Io nom | | | | 2300 | mA |
| Line frequency | Vi nom, Io nom | | 47 | | 63 | Hz |
| Inrush current | Vi : 115 / 230 VAC , Io nom | | | | 40 / 60 | A |
| Power dissipation | Vi : 230 VAC, Io nom | 12V | | 18 | | W |
| | | 24V | | 17 | | W |
| | | 48V | | 16 | | W |
| Leakage current | Input-Output | | | | 0.25 | mA |
| | Input-FG | | | | 3.5 | mA |
| Standby power consumption | Vi nom, Io = 0A | | | | 0.5 | W |

OUTPUT SPECIFICATIONS

| Characteristics | Conditions | | min. | typ. | max. | unit |
|---|--------------------------------------|----------|--|------|-------|------|
| Output voltage accuracy (Adjusted before shipment) | Vi nom, Io max | | 0 | | + 1 | % |
| Minimum load | Vi nom | | 0 | | | % |
| Line regulation | Io nom, Vi min ... Vi max | | | | ± 1 | % |
| Load regulation | Vi nom, Io min ... Io nom | | | | ± 1 | % |
| Voltage trim range | Vi nom, 0.8 Io nom | 12V | 11.4 | | 15.6 | V |
| | | 24V | 22.5 | | 28.5 | V |
| | | 48V | 47 | | 52.8 | V |
| Rated continuous loading | Vi nom | 12V | 7.5 A @ 12Vdc / 6 A @ 15 Vdc | | | |
| | | 24V | 4.2 A @ 24Vdc / 3.5 A @ 28.5 Vdc | | | |
| | | 48V | 2.1 A @ 48Vdc / 1.85 A @ 52.8 Vdc | | | |
| Hold up time | Vi : 115 / 230 VAC , Io nom | | 20 / 70 | | | ms |
| Turn on time | Vi nom, Io nom | | | | 1,500 | ms |
| | Vi nom, Io nom → With Capacitor load | | | | 2,000 | ms |
| Rise time | Vi nom, Io nom | | | | 150 | ms |
| | Vi nom, Io nom → With Capacitor load | | | | 500 | ms |
| Fall time | Vi nom, Io nom | | | | 150 | ms |
| Transient recovery time | Vi nom, I ~ 0.5 Io nom | | | | 2 | ms |
| Ripple & noise | Vi nom, Io nom, BW = 20MHz | | | | 100 | mV |
| Power back immunity | Vi nom, Io nom 1 second | 12V | 22 | | | VDC |
| | | 24V | 35 | | | VDC |
| | | 48V | 63 | | | VDC |
| Capacitor load | Vi nom, Io nom | 12V, 24V | | | 3,500 | μF |
| | | 48V | | | 1,200 | μF |
| | | | | | | |
| DC ON indicator threshold at start up (Green LED) | Vi nom, Io nom | 12V | 9.6 | | 10.8 | VDC |
| | | 24V | 19.2 | | 21.6 | VDC |
| | | 48V | 38.4 | | 43.2 | VDC |
| Efficiency | Vi nom, Io nom, Po / Pi | | Up to 88%, See model list and typ efficiency curve | | | |

CONTROL AND PROTECTION

| Characteristics | Conditions | | min. | typ. | max. | unit |
|-----------------------------------|--|-----|--------------------------|------|------|------|
| Input fuse | | | T3.15A / 250VAC internal | | | |
| Internal surge voltage protection | IEC 61000-4-5 | | Varistor | | | |
| Rated over load protection | Vi nom (see typ current limited curve) | | 130 | | | % |
| Over voltage protection | Vi nom, 0.8 Io nom (Auto Recovery) | 12V | 16.2 | | 18 | VDC |
| | | 24V | 28.8 | | 32.4 | VDC |
| | | 48V | 57.6 | | 62.4 | VDC |
| Output short circuit | | | Hiccup mode | | | |
| Degree of protection | | | IP20 | | | |

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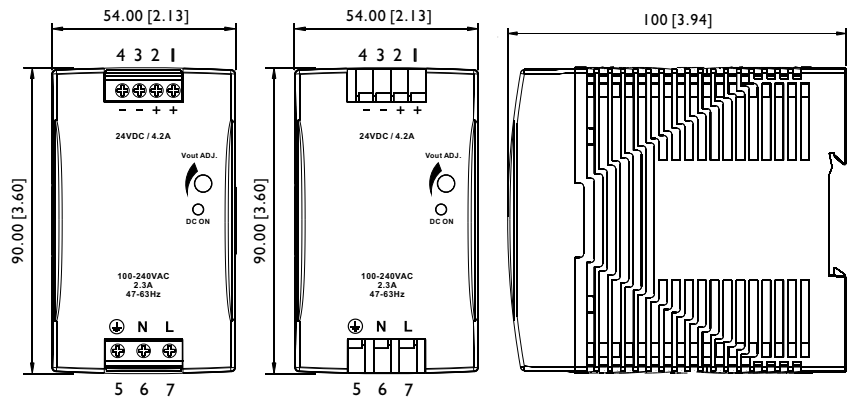
| APPROVALS AND STANDARDS | |
|-------------------------|--|
| UL / cUL | UL 508 Listed |
| cTUVus | UL 62368-I |
| TUV | EN 62368-I |
| CE | EN 61000-6-3, EN 55032 Class B, EN 61000-3-2, EN 61000-3-3 EN 61000-6-2, EN 55024, EN 61000-4-2 Level 4, EN 61000-4-3 Level 3 EN 61000-4-4 Level 4, EN 61000-4-5 L-N Level 3, L / N-FG Level 4 EN 61000-4-6 Level 3, EN 61000-4-8 Level 4, EN 61000-4-11 ENV 50204 Level 2, EN 61204-3 |
| Vibration resistance | meet IEC 60068-2-6 (Mounting on rail : 10-500 Hz, 2G, along X, Y, Z each Axis, 60 min for each Axis) |
| Shock resistance | meet IEC 60068-2-27 (15G, 11ms, 3 Axis, 6 Faces, 3 times for each Face) |

PHYSICAL CHARACTERISTICS

| | |
|---------------|---|
| Case size | 90 x 54 x 100 mm (3.6 x 2.13 x 3.94 inches) |
| Case material | Plastic |
| Weight | 350 g |
| Packing | 0.40 kg ; 32 pcs / 14 kg / 1.85 CUFT |

MECHANISM & PIN CONFIGURATION

mm [inch]



CONSTRUCTION

Easy snap-on mounting onto the DIN-Rail (TS35/7.5 or TS35/15), unit sits safely and firmly on the rail.

INSTALLATION

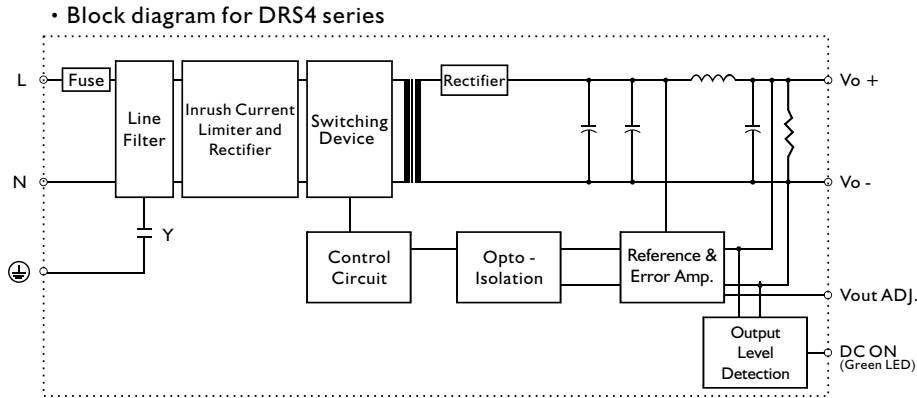
Ventilation / Cooling
Normal convection
All sides 25mm free space
For cooling recommended
Connector size range
Spring terminal:
AWG24-14 (0.2~2mm²) flexible / solid cable, 10 m/m stripping at cable end recommends
Screw terminal:
AWG26-12 (0.2~2.5mm²) flexible / solid cable, connector can withstand torque at maximum 5 pound-inches.
4-5 m/m stripping at cable end recommends
Use copper conductors only, 60 / 75°C

| GENERAL TOLERANCE | |
|----------------------------|-------------|
| 0.00[0.00] - 30.00[1.18] | ±0.30[0.01] |
| 30.00[1.18] - 120.00[4.72] | ±0.50[0.02] |

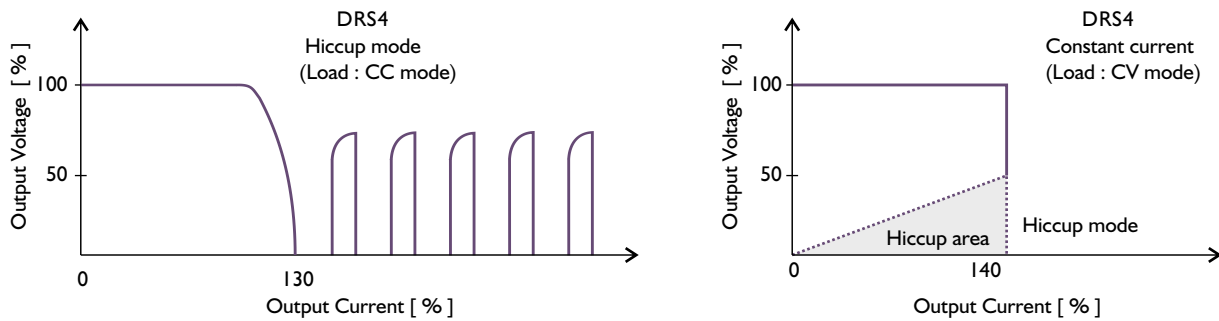
PIN ASSIGNMENT

| PIN NO. | Designation | | Description |
|---------|-------------|-----------|--|
| 1, 2 | OUT | V + | Positive output terminal |
| 3, 4 | | V - | Negative output terminal |
| 5 | | ⊕ | Ground this terminal to minimize high-frequency emissions |
| 6 | IN | N | Input terminals (neutral conductor, no polarity at DC input) |
| 7 | | L | Input terminals (phase conductor, no polarity at DC input) |
| | OTHER | Vout ADJ. | Trimmer-potentiometer for Vout adjustment |
| | | DC ON | Operation indicator LED |

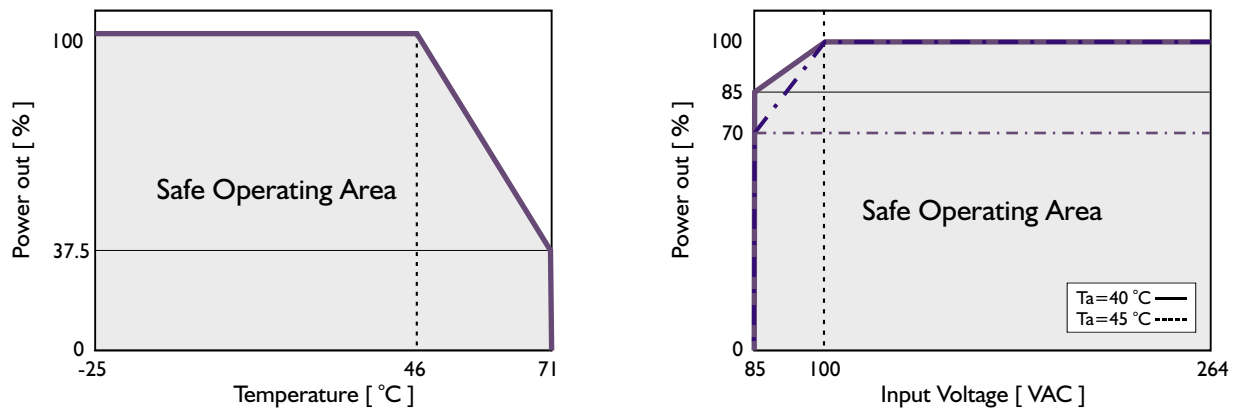
CIRCUIT SCHEMATIC



TYP. CURRENT LIMITED CURVE



DERATING CURVE



TYP. EFFICIENCY CURVE

