# DRAN30 SERIES

## FOR DC BACKUP SYSTEM




AC - DC DIN RAIL MOUNTABLE
30W
INDUSTRIAL CONTROL EQUIPMENT

## FEATURES

- COMPACT DESIGN
- SIMPLE IN APPLICATION
- LOW PRICING
- WORKABLE FOR BOTH POWER SUPPLY / DC BACKUP SYSTEM

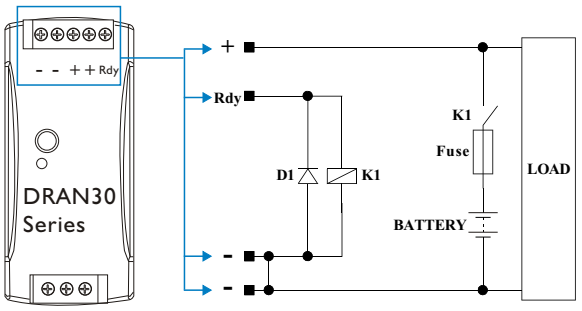
## SELECTION CHART

**DRAN 30 - 24 A ***

- 30 — Wattage
- 12 : 13.6VOUT; 24 : 27.2VOUT; 48 : 54.5VOUT — 24
- A — SCREW TERMINALS
- * — DC Backup System

## MODEL LIST

| MODEL NO. | INPUT VOLTAGE | OUTPUT WATTAGE | OUTPUT VOLTAGE | OUTPUT CURRENT | EFF. (min.) | EFF. (typ.) |
|---|---|---|---|---|---|---|
| **Single Output Models** | | | | | | |
| DRAN30-12A* | 85~264 VAC | 30 WATTS | + 13.6 VDC | 2.2 A | 82% | 84% |
| DRAN30-24A* | 85~264 VAC | 30 WATTS | + 27.2 VDC | 1.1 A | 83% | 86% |
| DRAN30-48A* | 85~264 VAC | 30 WATTS | + 54.5 VDC | 0.55 A | 83% | 86% |




DRAN30 Series For DC Backup System Application

Note：

1. The suffix "*" is part of the model number, which specifies the product is designed and pre-trim for low-cost DC backup power system with external Lead-Acid battery, Relay and Fuse.
2. The manufacturer is liable neither for the external components nor the damage to the power supply causing by external components.
3. The total consumption current including loading and battery charging current should not exceed the maximum rated current of power supply.
4. The operation concept of DC backup power system ：
   A. When AC power alive ：The "Rdy" is close circuit to active the external Relay . The power supply feeds current into the external loads and charges through Relay to the external battery as well.
   B. When AC power interrupted ：The "Rdy" is remain close circuit to maintain the external Relay remain active, the external battery supply current to the external loads.
   C. When Battery power low ：The "Rdy" become open circuit and the external Relay become inactive to disconnect the battery from external loads.

# SPECIFICATION

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

## GENERAL

| Characteristics | Conditions | min. | typ. | max. | unit |
|---|---|---|---|---|---|
| Isolation voltage | Input / Output | 3,000 | | | VAC |
| Isolation resistance | Input / Output, @ 500VDC | 100 | | | MΩ |
| Ambient temperature | Operating at Vi nom | -25 | | + 71 | °C |
| Derating | Vi nom,from +61°C to +71°C | | | 2.5 | % / °C |
| Storage temperature | Non operational | -25 | | + 85 | °C |
| Relative humidity | Vi nom, Io nom | 20 | | 90 | % RH |
| Dimension | L90 x W40.5 x D115 | | | | mm |
| Cooling | Free air convection | | | | |
| Case material | Plastic | | | | |

## INPUT SPECIFICATIONS

| Characteristics | Conditions | | min. | typ. | max. | unit |
|---|---|---|---|---|---|---|
| Rated input voltage | Io nom | | 100 | | 240 | VAC |
| Input voltage range | Ta min ... Ta max, Io nom | AC in | 85 | | 264 | VAC |
| | | DC in | 90 | | 375 | VDC |
| Line frequency | Vi nom, Io nom | | 47 | | 63 | Hz |
| Inrush current | Io nom | Vi : 115VAC | | | 20 | A |
| | | Vi : 230VAC | | | 40 | A |

## OUTPUT SPECIFICATIONS

| Characteristics | Conditions | | min. | typ. | max. | unit |
|---|---|---|---|---|---|---|
| Output voltage accuracy | Vi nom, Io min ...Io nom | | | | ± 1 | % |
| Minimum load | Vi nom | | 0 | | | % |
| Line regulation | Io nom, Vi min ...Vi max | | | | 0.5 | % |
| Load regulation | Vi nom, Io min ...Io nom | | | | 0.5 | % |
| Turn on time | After AC is applied to input at full resistive load | | | | 1,000 | ms |
| Voltage fall time | Io nom, Vo=95% ~ 10% rated voltage | | | | 150 | ms |
| Voltage rise time | At full resistive load | | | | 150 | ms |
| Hold up time | Io nom | Vi : 115VAC | 20 | | | ms |
| | | Vi : 230VAC | 30 | | | ms |
| Ripple & noise | Vi nom, Io nom, BW = 20MHz | | | | 50 | mV |
| Voltage trim range | Vi nom, Wo =30W max | 12V model | 12 | | 14 | VDC |
| | | 24V model | 24 | | 28 | VDC |
| | | 48V model | 48 | | 55 | VDC |
| Rdy on / DC ON indicator threshold at start up | Vi nom, Io nom | 12V model | 10.4 / 9.1 | | 11.4 / 10.1 | VDC |
| | | 24V model | 21.2 / 18.7 | | 22.2 / 19.7 | VDC |
| | | 48V model | 42.8 / 36.5 | | 43.8 / 37.5 | VDC |
| Rdy off threshold after start up | Vi nom, Io nom | 12V model | 10.3 | | 11.3 | VDC |
| | | 24V model | 21.1 | | 22.1 | VDC |
| | | 48V model | 42.7 | | 43.7 | VDC |

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## CONTROL AND PROTECTION

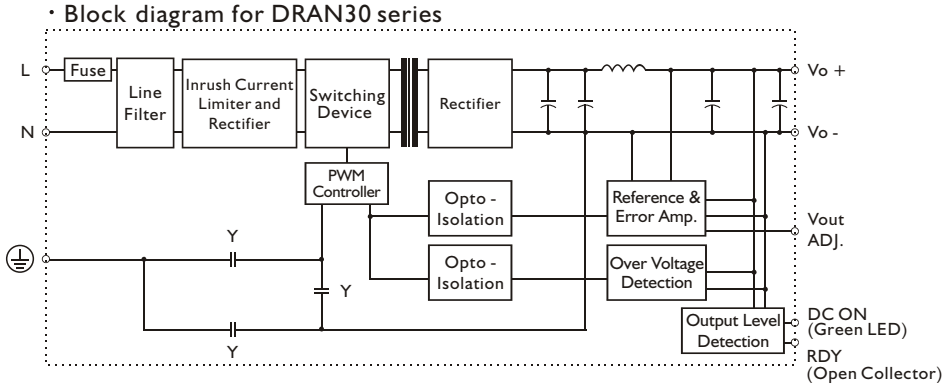
| Characteristics | Conditions | | min. | typ. | max. | unit |
|---|---|---|---|---|---|---|
| Rated over load protection | Vi nom | | 105 | | 125 | % |
| Over voltage protection | Vi nom, Io nom | 12V model | 15 | | 16.5 | VDC |
| | | 24V model | 30 | | 33 | VDC |
| | | 48V model | 60 | | 66 | VDC |
| Output short circuit | Vi nom, Io nom | | Fold forward | | | |

## APPROVALS AND STANDARDS

| | |
|---|---|
| UL / cUL | UL508 Listed |
| | UL1310 Class 2 power supply, UL60950-1 Recognized |
| TUV | EN60950-1 |
| CE | EN61000-6-3, EN55022 Class B |
| | EN61000-3-2, EN61000-3-3 |
| | EN61000-6-2, EN55024, EN61000-4-2, EN61000-4-3, EN61000-4-4, EN61000-4-5, |
| | EN61000-4-6, EN61000-4-8, EN61000-4-11 |

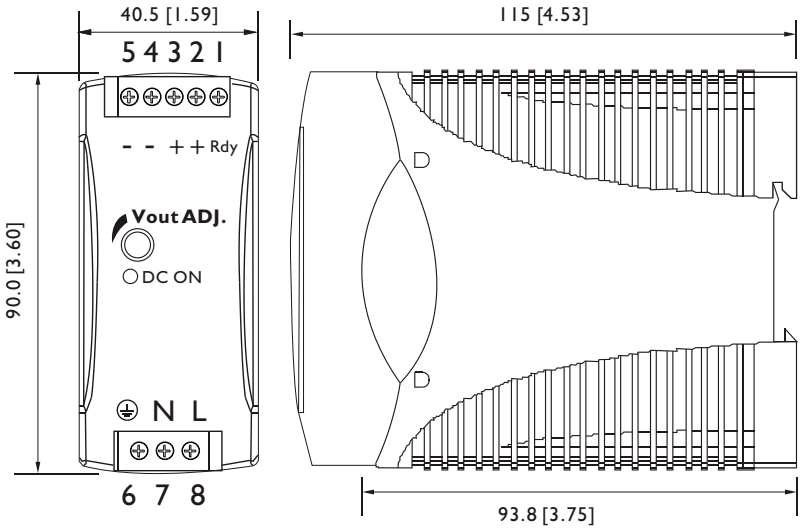
# CIRCUIT SCHEMATIC

• Block diagram for DRAN30 series



## 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; no tools required even to remove*

### INSTALLATION

Ventilation / Cooling
Normal convection
All sides 25mm free space
For cooling recommended
Connector size range
Solid:0.2-2.0mm$^2$(AWG24-14)
(use copper conductors only)

## PHYSICAL CHARACTERISTICS

| | |
|---|---|
| CASE SIZE | 90 x 40.5 x 115 mm 3.6 x 1.59 x 4.53 inches |
| CASE MATERIAL | Plastic |
| WEIGHT | 290g |

## PIN ASSIGNMENT

| PIN NO. | | Designation | Description |
|---|---|---|---|
| 1 | | RDY | DC OK output for relay |
| 2 | OUT | + | Positive output terminal |
| 3 | OUT | + | Positive output terminal |
| 4 | OUT | - | Negative output terminal |
| 5 | OUT | - | Negative output terminal |
| 6 | IN | ⏚ | Ground this terminal to minimize high-frequency emissions |
| 7 | IN | N | Input terminals (neutral conductor, no polarity at DC input) |
| 8 | IN | L | Input terminals (phase conductor, no polarity at DC input) |
| | OTHER | Vout ADJ. | Trimmer-potentiometer for Vout adjustment |
| | OTHER | DC ON | Operation indicator LED |

## DERATING

