

# DRA30 SERIES



AC - DC DIN RAIL MOUNTABLE  
30W CLASS 2 OUTPUT  
INDUSTRIAL CONTROL EQUIPMENT

## FEATURES

- AC/DC POWER MODULE
- UNIVERSAL INPUT 90~265VAC
- HIGH EFFICIENCY UP TO 84%
- SHORT CIRCUIT PROTECTION
- INTERNAL INPUT FILTER
- 2 YEARS WARRANTY

## MODEL LIST

| MODEL NO.            | INPUT VOLTAGE | OUTPUT WATTAGE | OUTPUT VOLTAGE | OUTPUT CURRENT | EFF. (min.) | EFF. (typ.) |
|----------------------|---------------|----------------|----------------|----------------|-------------|-------------|
| Single Output Models |               |                |                |                |             |             |
| DRA30-05             | 90~265 VAC    | 30 WATTS       | + 5 VDC        | 6000 mA        | 78%         | 79%         |
| DRA30-12             | 90~265 VAC    | 30 WATTS       | + 12 VDC       | 2500 mA        | 80%         | 81%         |
| DRA30-24             | 90~265 VAC    | 30 WATTS       | + 24 VDC       | 1250 mA        | 82%         | 84%         |
| DRA30-48             | 90~265 VAC    | 30 WATTS       | + 48 VDC       | 625 mA         | 79%         | 83%         |

## 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             |             | 50    |      |      | KHz    |
| Isolation voltage    |  | Input / Output             |             | 3,000 |      |      | VAC    |
| Isolation resistance |  | Input / Output, @ 500VDC   |             | 100   |      |      | MΩ     |
| Ambient temperature  |  | Operating at Vi nom        |             | -10   |      | + 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             |             |       |      | 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       | 90    |      | 265  | VAC    |
|                      |  |                            | DC in       | 120   |      | 370  | VDC    |
| Line frequency       |  | Vi nom, Io nom             |             | 47    |      | 63   | Hz     |
| Inrush current       |  | Io nom                     | Vi : 115VAC |       |      | 16   | A      |
|                      |  |                            | Vi : 230VAC |       |      | 32   | A      |

## SPECIFICATION

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### OUTPUT SPECIFICATIONS

| Characteristics         | Conditions                 | min.                      | typ. | max.   | unit   |
|-------------------------|----------------------------|---------------------------|------|--------|--------|
| Output voltage accuracy | Vi nom, Io min ...Io nom   |                           |      | ± 2    | %      |
| Minimum load            | Vi nom                     | 0                         |      |        | %      |
| Line regulation         | Io nom, Vi min ...Vi max   |                           |      | ± 1    | %      |
| Load regulation         | Vi nom, Io min ...Io nom   |                           |      | ± 2    | %      |
| Transient recovery time | 50% load, step changed     |                           | 300  |        | μ S    |
| Temperature coefficient | Vi nom, Io min             |                           |      | ± 0.02 | % / °C |
| Ripple & noise          | Vi nom, Io nom, BW = 20MHz |                           |      | 50     | mV     |
| Hold up time            | Vi = 115VAC, Io nom        | 20                        |      |        | ms     |
|                         | Vi = 230VAC, Io nom        | 70                        |      |        | ms     |
| Voltage trim range      | Vi nom, Io nom             | 5V model                  | 5    | 5.5    | VDC    |
|                         |                            | 12V model                 | 12   | 14     | VDC    |
|                         |                            | 24V model                 | 24   | 28     | VDC    |
|                         |                            | 48V model                 | 44   | 55     | VDC    |
| DC ON indicator         | Vi nom, Io nom             | Green LED                 |      |        |        |
| Efficiency              | Vi nom, Io nom, Po / Pi    | Up to 84%, See model list |      |        |        |

### CONTROL AND PROTECTION

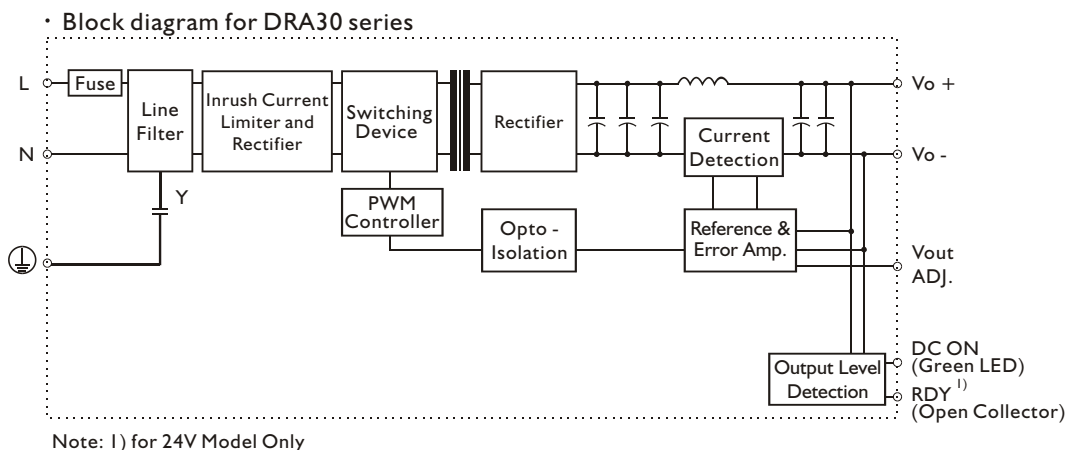
| Characteristics               | Conditions     | min.                  | typ. | max. | unit |
|-------------------------------|----------------|-----------------------|------|------|------|
| Input fuse                    |                | T2A / 250VAC internal |      |      |      |
| Rated over load protection    | Vi nom         | 105                   |      | 125  | %    |
| Power Rdy (24V model only) I) | Threshold      | 20                    | 22   | 24   | VDC  |
| Output short circuit          | Vi nom, Io nom | Hiccup mode           |      |      |      |

Note 1): Pls see fig1 for Rdy connection.

### APPROVALS AND STANDARDS

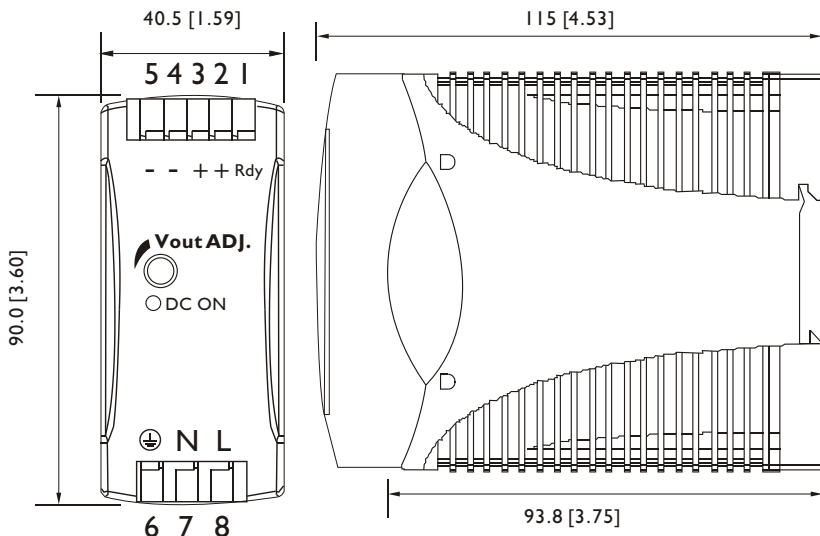
|          |                                                                                        |
|----------|----------------------------------------------------------------------------------------|
| UL / cUL | UL508 Listed<br>UL1310 Class 2 Power Supply ( Only 5V w/o class 2 ), UL1950 Recongized |
| TUV      | EN60950-1                                                                              |
| CE       | EN55022 class B, EN61000-3-2 , EN61000-3-3<br>EN55024                                  |

## CIRCUIT SCHEMATIC



## 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<sup>2</sup> (AWG24-14)  
(use copper conductors only)

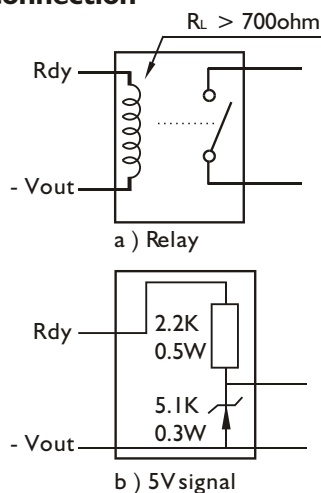
## PHYSICAL CHARACTERISTICS

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

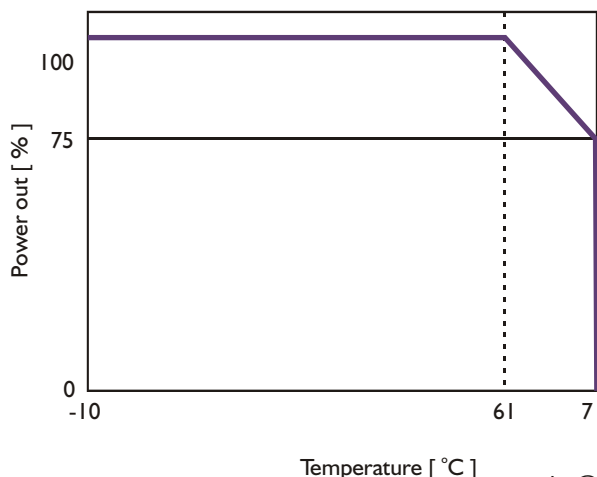
## PIN ASSIGNMENT

| PIN NO. | Designation | Description                                                  |
|---------|-------------|--------------------------------------------------------------|
| 1       | RDY         | DC OK output for relay (not connect except 24V model)        |
| 2       | +           | Positive output terminal                                     |
| 3       | +           | Positive output terminal                                     |
| 4       | -           | Negative output terminal                                     |
| 5       | -           | Negative output terminal                                     |
| 6       | ⊕           | Ground this terminal to minimize high-frequency emissions    |
| 7       | N           | Input terminals (neutral conductor, no polarity at DC input) |
| 8       | L           | Input terminals (phase conductor, no polarity at DC input)   |
|         | Vout ADJ.   | Trimmer-potentiometer for Vout adjustment                    |
|         | DC ON       | Operation indicator LED                                      |

Fig. 1 Rdy connection



## DERATING



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| DRA30-24A            | 90~265 VAC    | 30 WATTS       | + 24 VDC       | 1250 mA        | 82%         | 84%         |
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| Isolation voltage    |  | Input / Output             |             | 3,000 |      |      | VAC    |
| Isolation resistance |  | Input / Output, @ 500VDC   |             | 100   |      |      | MΩ     |
| Ambient temperature  |  | Operating at Vi nom        |             | -10   |      | + 71 | °C     |
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| Relative humidity    |  | Vi nom, Io nom             |             |       |      | 90   | % RH   |
| Dimension            |  | L90 x W40.5 x D115         |             |       |      |      | mm     |
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| Minimum load            | Vi nom                    |           | 0                         |      |        | %      |
| Line regulation         | Io nom, Vi min ...Vi max  |           |                           |      | ± 1    | %      |
| Load regulation         | Vi nom, Io min ...Io nom  |           |                           |      | ± 2    | %      |
| Transient recovery time | 50% load, step changed    |           |                           | 300  |        | µ S    |
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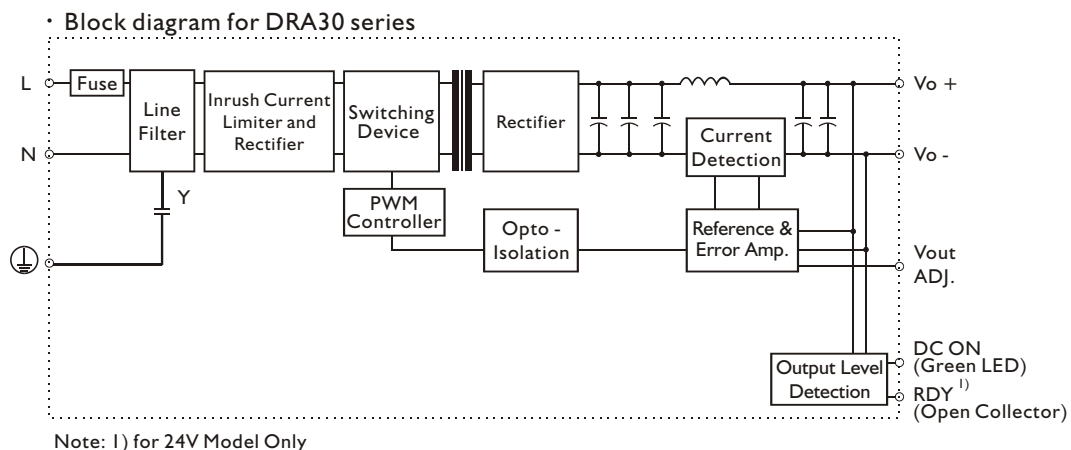
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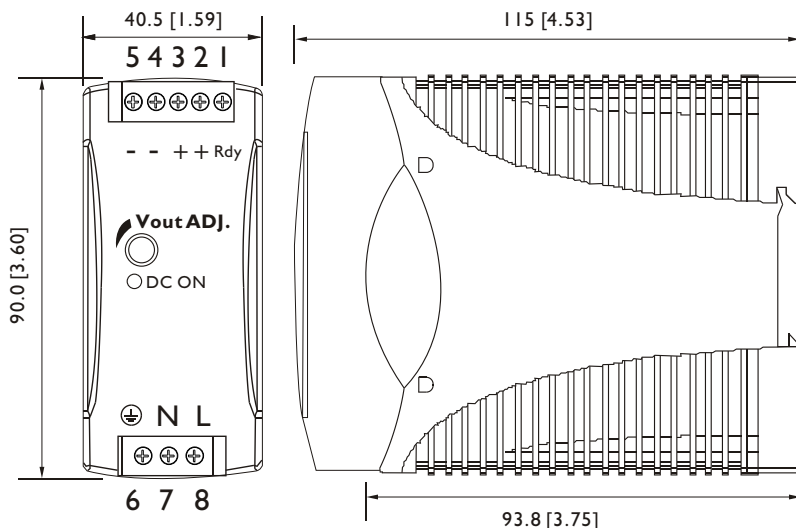
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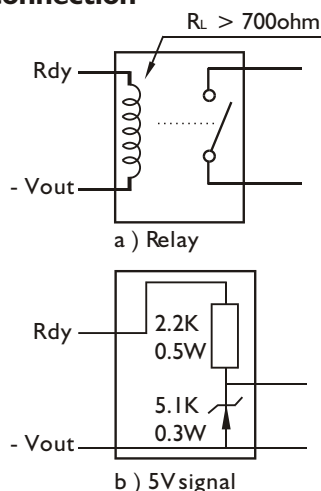
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