## Features:
- Universal AC input/Full range
- Protections: Short circuit / Overload / Over voltage
- Cooling by free air convection
- Can be installed on DIN rail TS-35/7.5 or 15
- NEC class 2 / LPS compliant
- Built in DC OK active signal
- LED indicator for power on
- No load power consumption<0.75W
- 100% full load burn-in test
- 3 years warranty

### SPECIFICATION

<table>
<thead>
<tr>
<th>MODEL</th>
<th>DC VOLTAGE</th>
<th>RATED CURRENT</th>
<th>CURRENT RANGE</th>
<th>RATED POWER</th>
<th>RIPPLE &amp; NOISE (max.)</th>
<th>VOLTAGE ADJ. RANGE</th>
<th>VOLTAGE TOLERANCE</th>
<th>LINE REGULATION</th>
<th>LOAD REGULATION</th>
<th>SETUP, RISE TIME</th>
<th>HOLD UP TIME (Typ.)</th>
<th>VOLTAGE RANGE</th>
<th>FREQUENCY RANGE</th>
<th>EFFICIENCY (Typ.)</th>
<th>AC CURRENT (Typ.)</th>
<th>INRUSH CURRENT (Typ.)</th>
<th>LEAKAGE CURRENT</th>
<th>OVERLOAD</th>
<th>PROTECTION TYPE</th>
<th>OVER VOLTAGE</th>
<th>FUNCTION</th>
<th>DC OK ACTIVE SIGNAL (max.)</th>
<th>ENVIRONMENT</th>
</tr>
</thead>
<tbody>
<tr>
<td>MDR-20-5</td>
<td>5V</td>
<td>3A</td>
<td>0 ~ 3A</td>
<td>15W</td>
<td>80mVp-p</td>
<td>4.75 ~ 5.5V</td>
<td>±2.0%</td>
<td>±1.0%</td>
<td>±1.0%</td>
<td>500ms, 30mA</td>
<td>50mA</td>
<td>85 ~ 264VAC</td>
<td>47 ~ 63Hz</td>
<td>76%</td>
<td>0.55A/115VAC</td>
<td>COLD START 20A/115VAC</td>
<td>&lt;1mA / 240VAC</td>
<td>105 ~ 160%</td>
<td>Constant current limiting</td>
<td>5.75 ~ 6.75V</td>
<td>DC 6V/50mA</td>
<td>0.75 ~ 11.5V</td>
<td>0.03%/°C (0 ~ 50°C)</td>
</tr>
<tr>
<td>MDR-20-12</td>
<td>12V</td>
<td>1.67A</td>
<td>0 ~ 1.67A</td>
<td>20W</td>
<td>120mVp-p</td>
<td>10.8 ~ 13.2V</td>
<td>±1.0%</td>
<td>±1.0%</td>
<td>±1.0%</td>
<td>1000ms, 30mA</td>
<td>20mA</td>
<td>120 ~ 370VDC</td>
<td></td>
<td>81%</td>
<td>0.35A/230VAC</td>
<td>40A/230VAC</td>
<td></td>
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</tr>
<tr>
<td>MDR-20-15</td>
<td>15V</td>
<td>1.34A</td>
<td>0 ~ 1.34A</td>
<td></td>
<td>120mVp-p</td>
<td>13.5 ~ 16.5V</td>
<td>±1.0%</td>
<td>±1.0%</td>
<td>±1.0%</td>
<td></td>
<td>115VAC at full load</td>
<td></td>
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</tr>
<tr>
<td>MDR-20-24</td>
<td>24V</td>
<td>1A</td>
<td>0 ~ 1A</td>
<td></td>
<td>150mVp-p</td>
<td>21.6 ~ 26.4V</td>
<td>±1.0%</td>
<td>±1.0%</td>
<td>±1.0%</td>
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</tbody>
</table>

### OUTPUT

- **Ripple & Noise (max.)**
  - Note 2

### ENVIRONMENT

- **Working Temperatures**
  - -20 ~ +70°C (Refer to "Derating Curve")
- **Working Humidity**
  - 20 ~ 90% RH non-condensing
- **Storage Temp., Humidity**
  - -40 ~ +85°C, 10 ~ 95% RH
- **Temp. Coefficient**
  - ±0.03%/°C (0 ~ 50°C)

### SAFETY & EMC (Note 4)

- **Safety Standards**
  - UL508, TUV EN60950-1 approved, NEC class 2 / LPS compliant
- **Withstand Voltage**
  - I/P-O/P:3kVAC / I/P-FG:1.5kVAC / O/P-FG:0.5kVAC
- **Isolation Resistance**
  - I/P-O/P, I/P-FG, O/P-FG:100M Ohms / 500VDC / 25°C / 70% RH
- **EMC Emission**
  - Compliance to EN55011, EN55022 (CISPR22), EN61204-3
- **EMC Immunity**
  - Compliance to EN61000-4-2, 3, 4, 5, 6, 8, 11, EN55024,EN61000-6-1,EN61204-3, light industry level, criteria A

### OTHERS

- **MTBF**
  - 236.9Khrs min. / MIL-HDBK-217F (25°C)
- **Dimension**
  - 22.5"x90"x100mm (W*H*D)
- **Packaging**
  - 0.19Kg; 72pcs/14.7Kg/0.91CUFT

### NOTE

1. All parameters NOT specially mentioned are measured at 230VAC input, rated load and 25°C of ambient temperature.
2. Ripple & noise are measured at 20MHz of bandwidth by using a 12" twisted pair-wire terminated with a 0.1uf & 47uf parallel capacitor.
3. Tolerance: includes set up tolerance, line regulation and load regulation.
4. The power supply is considered a component which will be installed into a final equipment. The final equipment must be re-confirmed that it still meets EMC directives.
5. Length of setup time is measured at cold first start. Turning ON/OFF the power supply may lead to increase of the set up time.

---

File Name: MDR-20 SPEC 2011-05-24
20W Single Output Industrial DIN Rail Power Supply

MDR-20 series

### Mechanical Specification

![Mechanical Specification Diagram]

Install DIN rail TS35/7.5 or TS35/15

### Block Diagram

![Block Diagram]

fosc : 60KHz

### Application of DC OK Active Signal

(a) 5V signal

Model | DC OK | R
---|---|---
5V | ≥ 200Ω | 5.1V
12V | ≥ 1.5KΩ |
15V | ≥ 2KΩ |
24V | ≥ 3.9KΩ |

(b) LED

Model | DC OK | R
---|---|---
5V | ≥ 1KΩ |
12V | ≥ 2.4KΩ |
15V | ≥ 3KΩ |
24V | ≥ 4.7KΩ |

(c) Relay

Model | DC OK | RL
---|---|---
5V | ≥ 125Ω |
12V | ≥ 700Ω |
15V | ≥ 700Ω |
24V | ≥ 1.3KΩ |

### Derating Curve

![Derating Curve Diagram]

### Output Derating VS Input Voltage

![Output Derating VS Input Voltage Diagram]

File Name: MDR-20-SPEC 2011-05-24