



#### ■ 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

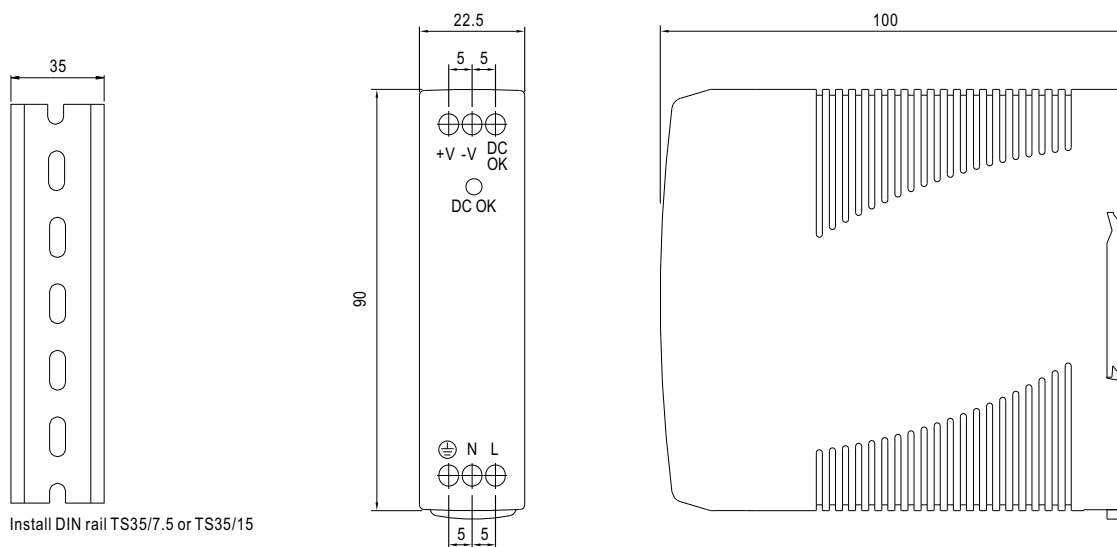


#### SPECIFICATION

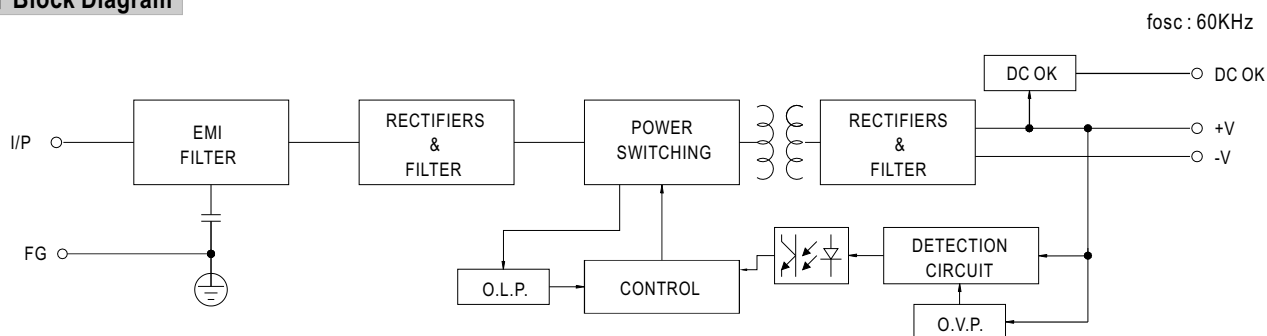
| MODEL                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | MDR-10-5                                                                                                                | MDR-10-12        | MDR-10-15           | MDR-10-24       |
|--------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------|------------------|---------------------|-----------------|
| OUTPUT                   | DC VOLTAGE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 5V                                                                                                                      | 12V              | 15V                 | 24V             |
|                          | RATED CURRENT                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 2A                                                                                                                      | 0.84A            | 0.67A               | 0.42A           |
|                          | CURRENT RANGE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 0 ~ 2A                                                                                                                  | 0 ~ 0.84A        | 0 ~ 0.67A           | 0 ~ 0.42A       |
|                          | RATED POWER                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | 10W                                                                                                                     | 10W              | 10W                 | 10W             |
|                          | RIPPLE & NOISE (max.) Note.2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | 80mVp-p                                                                                                                 | 120mVp-p         | 120mVp-p            | 150mVp-p        |
|                          | VOLTAGE TOLERANCE Note.3                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | ±5.0%                                                                                                                   | ±3.0%            | ±3.0%               | ±2.0%           |
|                          | LINE REGULATION                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | ±1.0%                                                                                                                   | ±1.0%            | ±1.0%               | ±1.0%           |
|                          | LOAD REGULATION                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | ±5.0%                                                                                                                   | ±3.0%            | ±3.0%               | ±2.0%           |
|                          | SETUP, RISE TIME Note.5                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 500ms, 30ms/230VAC      1000ms, 30ms/115VAC at full load                                                                |                  |                     |                 |
|                          | HOLD UP TIME (Typ.)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 120ms/230VAC      25ms/115VAC at full load                                                                              |                  |                     |                 |
| INPUT                    | VOLTAGE RANGE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 85 ~ 264VAC      120 ~ 370VDC                                                                                           |                  |                     |                 |
|                          | FREQUENCY RANGE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | 47 ~ 63Hz                                                                                                               |                  |                     |                 |
|                          | EFFICIENCY (Typ.)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | 77%                                                                                                                     | 81%              | 81%                 | 84%             |
|                          | AC CURRENT (Typ.)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | 0.33A/115VAC      0.21A/230VAC                                                                                          |                  |                     |                 |
|                          | INRUSH CURRENT (Typ.)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | COLD START 35A/115VAC      70A/230VAC                                                                                   |                  |                     |                 |
|                          | LEAKAGE CURRENT                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | <1mA / 240VAC                                                                                                           |                  |                     |                 |
| PROTECTION               | OVERLOAD                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Above 105% rated output power<br>Protection type : Hiccup mode, recovers automatically after fault condition is removed |                  |                     |                 |
|                          | OVER VOLTAGE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | 5.75 ~ 6.75V                                                                                                            | 13.8 ~ 16.2V     | 17.25 ~ 20.25V      | 27.6 ~ 32.4V    |
|                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | Protection type : Shut down o/p voltage, re-power on to recover                                                         |                  |                     |                 |
| FUNCTION                 | DC OK ACTIVE SIGNAL (max.)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 3.75 ~ 6V / 50mA                                                                                                        | 9 ~ 13.5V / 40mA | 11.5 ~ 16.5V / 40mA | 18 ~ 27V / 20mA |
| ENVIRONMENT              | WORKING TEMP.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | -20 ~ +70℃ (Refer to "Derating Curve")                                                                                  |                  |                     |                 |
|                          | WORKING HUMIDITY                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 20 ~ 90% RH non-condensing                                                                                              |                  |                     |                 |
|                          | STORAGE TEMP., HUMIDITY                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | -40 ~ +85℃, 10 ~ 95% RH                                                                                                 |                  |                     |                 |
|                          | TEMP. COEFFICIENT                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | ±0.03%/℃ (0 ~ 50℃ )                                                                                                     |                  |                     |                 |
| SAFETY & EMC<br>(Note 4) | VIBRATION                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Component:10 ~ 500Hz, 2G 10min./1cycle, 60min. each along X, Y, Z axes; Mounting: Compliance to IEC60068-2-6            |                  |                     |                 |
|                          | 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℃ / 70% RH                                                               |                  |                     |                 |
|                          | EMC EMISSION                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Compliance to EN55011, EN55022 (CISPR22), EN61204-3 Class B, EN61000-3-2,-3                                             |                  |                     |                 |
| OTHERS                   | EMC IMMUNITY                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Compliance to EN61000-4-2, 3, 4, 5, 6, 8, 11, EN55024,EN61000-6-1,EN61204-3, light industry level, criteria A           |                  |                     |                 |
|                          | MTBF                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 584K hrs min.    MIL-HDBK-217F (25℃)                                                                                    |                  |                     |                 |
|                          | DIMENSION                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 22.5*90*100mm (W*H*D)                                                                                                   |                  |                     |                 |
|                          | PACKING                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 0.17Kg; 72pcs/13.2Kg/0.91CUFT                                                                                           |                  |                     |                 |
| NOTE                     | 1. All parameters NOT specially mentioned are measured at 230VAC input, rated load and 25℃ of ambient temperature.<br>2. Ripple & noise are measured at 20MHz of bandwidth by using a 12" twisted pair-wire terminated with a 0.1uf & 47uf parallel capacitor.<br>3. Tolerance : includes set up tolerance, line regulation and load regulation.<br>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.<br>5. Length of set up time is measured at cold first start. Turning ON/OFF the power supply may lead to increase of the set up time. |                                                                                                                         |                  |                     |                 |

## Mechanical Specification

Case No. 956 Unit:mm

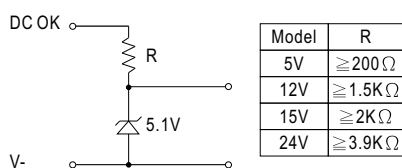


## Block Diagram

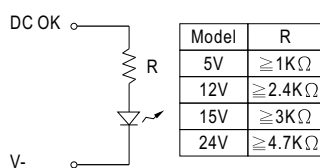


## Application of DC OK Active Signal

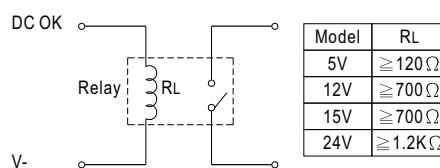
### (a) 5V signal



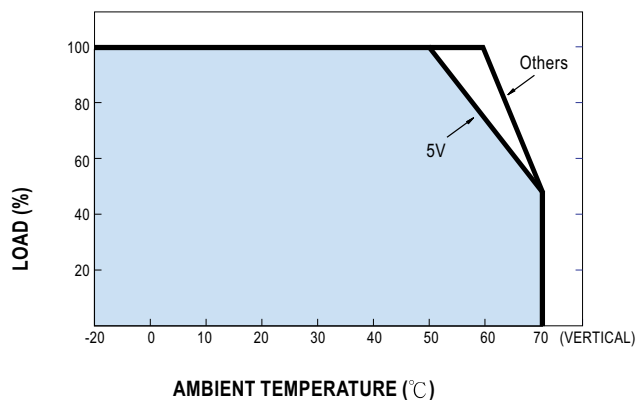
### (b) LED



### (c) Relay



## Derating Curve



## Output Derating VS Input Voltage

