



### ■ Features :

- Universal AC input / Full range
- Built-in active PFC function, PF>0.95
- High efficiency up to 89%
- Withstand 300VAC surge input for 5 seconds
- Protections: Short circuit / Overload / Over voltage / Over temperature
- Cooling by free air convection
- Built-in constant current limiting circuit
- 1U low profile 38mm
- Medical safety approved (MOOP level)
- Built-in remote ON-OFF control
- Standby 5V@0.3A
- Built-in remote sense function
- No load power consumption<0.5W (Note.6)
- 5 years warranty

User's Manual



### ■ GTIN CODE

MW Search: <https://www.meanwell.com/serviceGTIN.aspx>

### SPECIFICATION

| MODEL                                 |                                                                                         | MSP-200-3.3                                                                                                                                                                              | MSP-200-5  | MSP-200-7.5 | MSP-200-12   | MSP-200-15 | MSP-200-24   | MSP-200-36   | MSP-200-48   |
|---------------------------------------|-----------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|-------------|--------------|------------|--------------|--------------|--------------|
| OUTPUT                                | DC VOLTAGE                                                                              | 3.3V                                                                                                                                                                                     | 5V         | 7.5V        | 12V          | 15V        | 24V          | 36V          | 48V          |
|                                       | RATED CURRENT                                                                           | 40A                                                                                                                                                                                      | 35A        | 26.7A       | 16.7A        | 13.4A      | 8.4A         | 5.7A         | 4.3A         |
|                                       | CURRENT RANGE                                                                           | 0 ~ 40A                                                                                                                                                                                  | 0 ~ 35A    | 0 ~ 26.7A   | 0 ~ 16.7A    | 0 ~ 13.4A  | 0 ~ 8.4A     | 0 ~ 5.7A     | 0 ~ 4.3A     |
|                                       | RATED POWER                                                                             | 132W                                                                                                                                                                                     | 175W       | 200.3W      | 200.4W       | 201W       | 201.6W       | 205.2W       | 206.4W       |
|                                       | RIPPLE & NOISE (max.) <small>Note.2</small>                                             | 80mVp-p                                                                                                                                                                                  | 90mVp-p    | 100mVp-p    | 120mVp-p     | 150mVp-p   | 150mVp-p     | 250mVp-p     | 250mVp-p     |
|                                       | VOLTAGE ADJ. RANGE                                                                      | 2.8 ~ 3.8V                                                                                                                                                                               | 4.3 ~ 5.8V | 6.8 ~ 9V    | 10.2 ~ 13.8V | 13.5 ~ 18V | 21.6 ~ 28.8V | 28.8 ~ 39.6V | 40.8 ~ 55.2V |
|                                       | VOLTAGE TOLERANCE <small>Note.3</small>                                                 | ±2.0%                                                                                                                                                                                    | ±2.0%      | ±2.0%       | ±1.0%        | ±1.0%      | ±1.0%        | ±1.0%        | ±1.0%        |
|                                       | LINE REGULATION                                                                         | ±0.5%                                                                                                                                                                                    | ±0.5%      | ±0.5%       | ±0.3%        | ±0.3%      | ±0.2%        | ±0.2%        | ±0.2%        |
|                                       | LOAD REGULATION                                                                         | ±1.5%                                                                                                                                                                                    | ±1.0%      | ±1.0%       | ±0.5%        | ±0.5%      | ±0.5%        | ±0.5%        | ±0.5%        |
|                                       | SETUP, RISE TIME                                                                        | 1000ms, 50ms/230VAC      2500ms, 50ms/115VAC at full load                                                                                                                                |            |             |              |            |              |              |              |
| HOLD UP TIME (Typ.)                   | 16ms/230VAC      16ms/115VAC at full load                                               |                                                                                                                                                                                          |            |             |              |            |              |              |              |
| INPUT                                 | VOLTAGE RANGE <small>Note.5</small>                                                     | 85 ~ 264VAC      120 ~ 370VDC                                                                                                                                                            |            |             |              |            |              |              |              |
|                                       | FREQUENCY RANGE                                                                         | 47 ~ 63Hz                                                                                                                                                                                |            |             |              |            |              |              |              |
|                                       | POWER FACTOR (Typ.)                                                                     | PF>0.95/230VAC      PF>0.99/115VAC at full load                                                                                                                                          |            |             |              |            |              |              |              |
|                                       | EFFICIENCY (Typ.)                                                                       | 80%                                                                                                                                                                                      | 84%        | 86%         | 88%          | 88%        | 88%          | 89%          | 89%          |
|                                       | AC CURRENT (Typ.)                                                                       | 2.2A/115VAC      1.1A/230VAC                                                                                                                                                             |            |             |              |            |              |              |              |
|                                       | INRUSH CURRENT (Typ.)                                                                   | 35A/115VAC      70A/230VAC                                                                                                                                                               |            |             |              |            |              |              |              |
| LEAKAGE CURRENT <small>Note.7</small> | Earth leakage current < 300 $\mu$ A/264VAC , Touch leakage current < 100 $\mu$ A/264VAC |                                                                                                                                                                                          |            |             |              |            |              |              |              |
| PROTECTION                            | OVERLOAD                                                                                | 105 ~ 135% rated output power<br>Protection type : Constant current limiting, recovers automatically after fault condition is removed                                                    |            |             |              |            |              |              |              |
|                                       | OVER VOLTAGE                                                                            | 3.96 ~ 4.62V    6 ~ 7V      9.4 ~ 10.9V    14.4 ~ 16.8V    18.8 ~ 21.8V    30 ~ 34.8V    41.4 ~ 48.6V    57.6 ~ 67.2V<br>Protection type : Shut down o/p voltage, re-power on to recover |            |             |              |            |              |              |              |
|                                       | OVER TEMPERATURE                                                                        | Shut down o/p voltage, recovers automatically after temperature goes down                                                                                                                |            |             |              |            |              |              |              |
|                                       | 5V STANDBY                                                                              | 5VSB : 5V@0.3A ; tolerance ±5%, ripple : 50mVp-p(max.)                                                                                                                                   |            |             |              |            |              |              |              |
| FUNCTION                              | REMOTE CONTROL                                                                          | RC+/RC- : 4 ~ 10V or open = power on ; 0 ~ 0.8V or short = power off                                                                                                                     |            |             |              |            |              |              |              |
| ENVIRONMENT                           | WORKING TEMP.                                                                           | -40 ~ +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                                                                               | 10 ~ 500Hz, 5G 10min./1cycle, 60min. each along X, Y, Z axes                                                                                                                             |            |             |              |            |              |              |              |
|                                       | SAFETY STANDARDS                                                                        | ANSI/AAMI ES60601-1, IEC60601-1, EAC TP TC 004 approved, Design refer to BS EN/EN60601-1, BS EN/EN62368-1                                                                                |            |             |              |            |              |              |              |
|                                       | ISOLATION LEVEL                                                                         | Primary-Secondary: 2×MOOP, Primary-Earth: 1×MOOP                                                                                                                                         |            |             |              |            |              |              |              |
|                                       | WITHSTAND VOLTAGE                                                                       | I/P-O/P:4KVAC    I/P-FG:2KVAC    O/P-FG:0.5KVAC                                                                                                                                          |            |             |              |            |              |              |              |
|                                       | ISOLATION RESISTANCE                                                                    | I/P-O/P, I/P-FG, O/P-FG:100M Ohms / 500VDC / 25℃ / 70% RH                                                                                                                                |            |             |              |            |              |              |              |
| OTHERS                                | EMC EMISSION                                                                            | Compliance to BS EN/EN55011 (CISPR11) Class B, BS EN/EN61000-3-2, -3, EAC TP TC 020                                                                                                      |            |             |              |            |              |              |              |
|                                       | EMC IMMUNITY                                                                            | Compliance to BS EN/EN61000-4-2,3,4,5,6,8,11, BS EN/EN55035, BS EN/EN60601-1-2, EAC TP TC 020                                                                                            |            |             |              |            |              |              |              |
|                                       | MTBF                                                                                    | 1609.5K hrs min.    Telcordia SR-332 (Bellcore) ; 186.2K hrs min.    MIL-HDBK-217F (25℃)                                                                                                 |            |             |              |            |              |              |              |
| OTHERS                                | DIMENSION                                                                               | 199*98*38mm (L*W*H)                                                                                                                                                                      |            |             |              |            |              |              |              |
|                                       | PACKING                                                                                 | 0.77Kg; 18pcs/14.9Kg/0.87CUFT                                                                                                                                                            |            |             |              |            |              |              |              |

**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. All the EMC tests are been executed by mounting the unit on a 360mm\*360mm metal plate with 1mm of thickness. The final equipment must be re-confirmed that it still meets EMC directives. For guidance on how to perform these EMC tests, please refer to "EMI testing of component power supplies." (as available on <http://www.meanwell.com>)
5. Derating may be needed under low input voltages. Please check the derating curve for more details.
6. No load power consumption<0.5W when RC+ & RC- (CN100 pin1,2) 0 ~ 8V or short.
7. Touch current was measured from primary input to DC output.
8. The ambient temperature derating of 3.5°C/1000m with fanless models and of 5°C/1000m with fan models for operating altitude higher than 2000m(6500ft).

※ Product Liability Disclaimer : For detailed information, please refer to <https://www.meanwell.com/serviceDisclaimer.aspx>

## Mechanical Specification

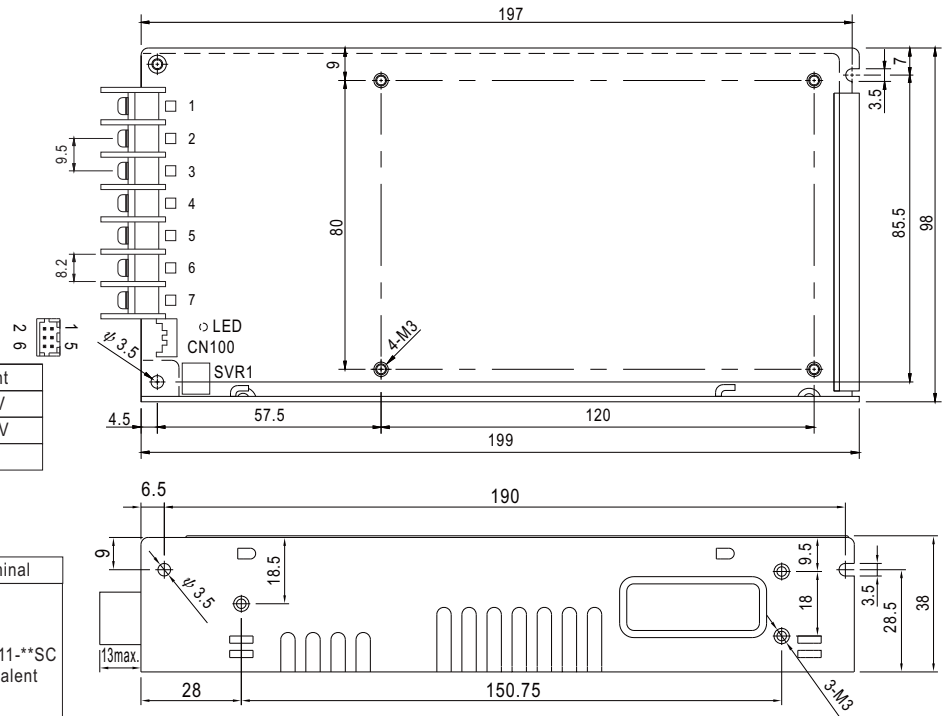
Case No.902E Unit:mm

### Terminal Pin No. Assignment

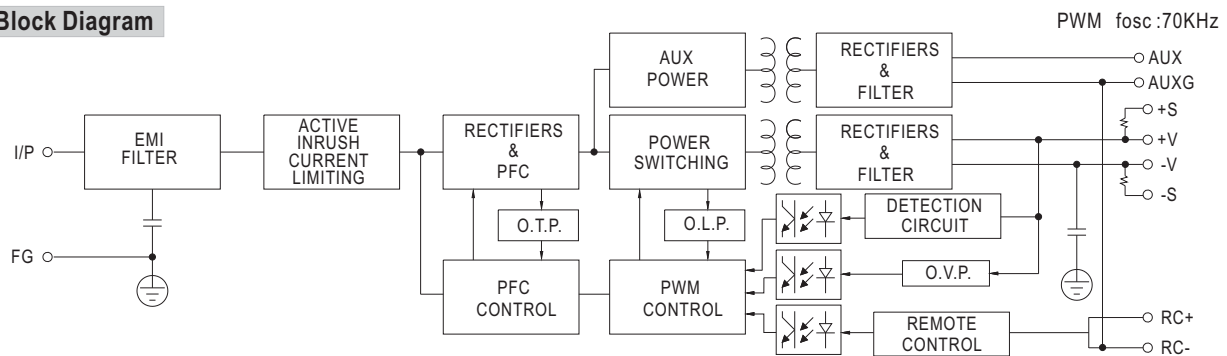
| Pin No. | Assignment | Pin No. | Assignment   |
|---------|------------|---------|--------------|
| 1       | AC/L       | 4,5     | DC OUTPUT -V |
| 2       | AC/N       | 6,7     | DC OUTPUT +V |
| 3       | FG $\perp$ |         |              |

### Connector Pin No. Assignment (CN100) : HRS DF11-6DP-2DS or equivalent

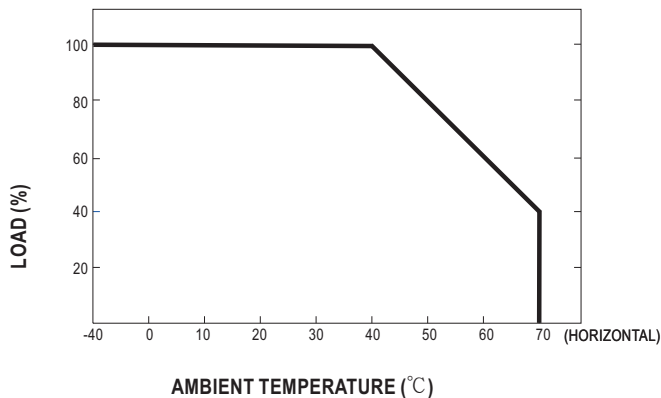
| Pin No. | Assignment | Mating Housing                | Terminal                        |
|---------|------------|-------------------------------|---------------------------------|
| 1       | RC+        | HRS DF11-6DS<br>or equivalent | HRS DF11-**-SC<br>or equivalent |
| 2       | RC-        |                               |                                 |
| 3       | AUX        |                               |                                 |
| 4       | AUXG       |                               |                                 |
| 5       | +S         |                               |                                 |
| 6       | -S         |                               |                                 |



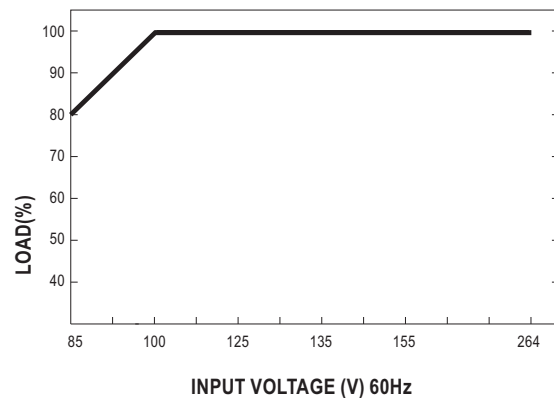
## Block Diagram



## Derating Curve



## Output Derating VS Input Voltage



## Function Description of CN100

| Pin No. | Function | Description                                                                                                                                                                                                           |
|---------|----------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1       | RC+      | Turns the output on and off by electrical or dry contact between pin 2 (RC-). Short: Power OFF, Open: Power ON.                                                                                                       |
| 2       | RC-      | Remote control ground.                                                                                                                                                                                                |
| 3       | AUX      | Auxiliary voltage output, 4.75~5.25V, reference to pin 4(AUXG). The maximum load current is 0.3A. This output has the built-in oring diodes and is not controlled by the "remote ON/OFF control".                     |
| 4       | AUXG     | Auxiliary voltage output ground. The signal return is isolated from the output terminals (+V & -V).                                                                                                                   |
| 5       | +S       | Positive sensing. The +S signal should be connected to the positive terminal of the load. The +S and -S leads should be twisted in pair to minimize noise pick-up effect. The maximum line drop compensation is 0.5V. |
| 6       | -S       | Negative sensing. The -S signal should be connected to the negative terminal of the load. The -S and +S leads should be twisted in pair to minimize noise pick-up effect. The maximum line drop compensation is 0.5V. |

## Function Manual

### 1.Remote Control

The PSU can be turned ON/OFF by using the "Remote ON/OFF" function

| Between RC-(pin2) and RC+(pin1) | Output Status |
|---------------------------------|---------------|
| SW ON (Short)                   | OFF           |
| SW OFF (Open)                   | ON            |

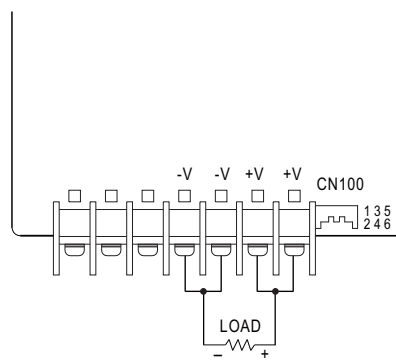
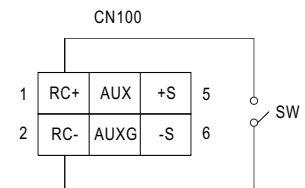


Fig 1.1



### 2.Remote Sense

The remote sensing compensates voltage drop on the load wiring up to 0.5V.

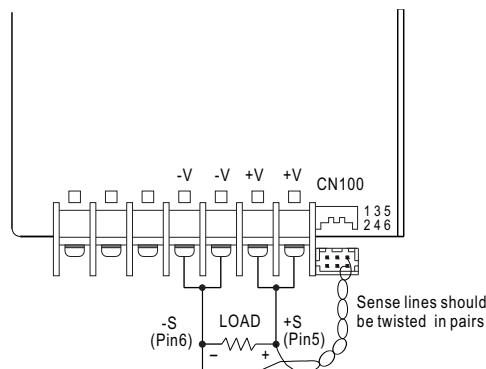


Fig 2.1

