



Наличие и актуальные цены на

**HRP-450-36**

<https://www.mean-well.ru/store/HRP-450-36/>



## ■ Features :

- Universal AC input / Full range
- Built-in active PFC function, PF>0.95
- High efficiency up to 89.5%
- Withstand 300VAC surge input for 5 seconds
- Protections: Short circuit / Overload / Over voltage / Over temperature
- Built-in constant current limiting circuit
- Built-in cooling Fan ON-OFF control
- Built-in DC OK signal
- Built-in remote sense function
- 5 years warranty

User's Manual



## ■ GTIN CODE

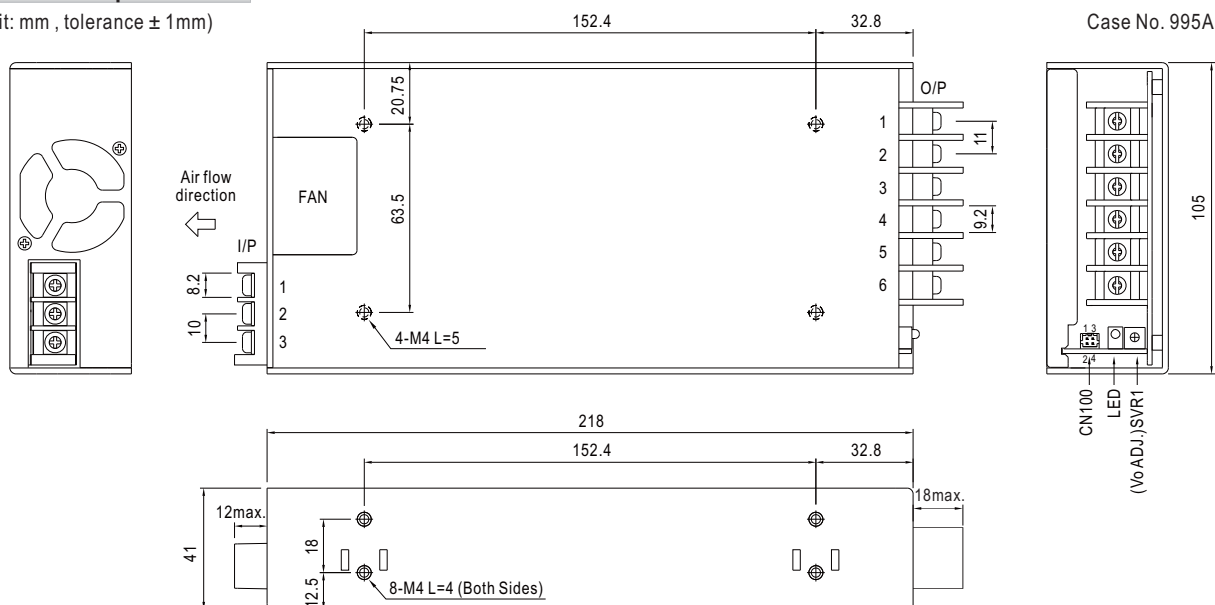
MW Search: <https://www.meanwell.com/serviceGTIN.aspx>


## SPECIFICATION

| MODEL                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | HRP-450-3.3                                                                                                                                                                                        | HRP-450-5  | HRP-450-7.5 | HRP-450-12   | HRP-450-15 | HRP-450-24   | HRP-450-36   | HRP-450-48   |
|-----------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|-------------|--------------|------------|--------------|--------------|--------------|
| OUTPUT                                  | DC VOLTAGE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 3.3V                                                                                                                                                                                               | 5V         | 7.5V        | 12V          | 15V        | 24V          | 36V          | 48V          |
|                                         | RATED CURRENT                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 90A                                                                                                                                                                                                | 90A        | 60A         | 37.5A        | 30A        | 18.8A        | 12.5A        | 9.5A         |
|                                         | CURRENT RANGE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 0 ~ 90A                                                                                                                                                                                            | 0 ~ 90A    | 0 ~ 60A     | 0 ~ 37.5A    | 0 ~ 30A    | 0 ~ 18.8A    | 0 ~ 12.5A    | 0 ~ 9.5A     |
|                                         | RATED POWER                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | 297W                                                                                                                                                                                               | 450W       | 450W        | 450W         | 450W       | 451.2W       | 450W         | 456W         |
|                                         | RIPPLE & NOISE (max.) <small>Note.2</small>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | 80mVp-p                                                                                                                                                                                            | 80mVp-p    | 100mVp-p    | 120mVp-p     | 150mVp-p   | 150mVp-p     | 240mVp-p     | 240mVp-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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | ± 1.0%                                                                                                                                                                                             | ± 1.0%     | ± 1.0%      | ± 0.5%       | ± 0.5%     | ± 0.5%       | ± 0.5%       | ± 0.5%       |
|                                         | SETUP, RISE TIME                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | 1800ms, 100ms/230VAC      3600ms, 100ms/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%                                                                                                                                                                                                | 83%        | 86.5%       | 88%          | 89%        | 88%          | 89%          | 89.5%        |
|                                         | AC CURRENT (Typ.)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | 5A/115VAC      2.4A/230VAC                                                                                                                                                                         |            |             |              |            |              |              |              |
|                                         | INRUSH CURRENT (Typ.)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 35A/115VAC      70A/230VAC                                                                                                                                                                         |            |             |              |            |              |              |              |
| LEAKAGE CURRENT                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | <1.5mA / 240VAC                                                                                                                                                                                    |            |             |              |            |              |              |              |
| 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                                                                                                                          |            |             |              |            |              |              |              |
|                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                                                                                                                                                                                    |            |             |              |            |              |              |              |
| FUNCTION                                | DC OK SIGNAL                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | PSU turn on : 3.3 ~ 5.6V ; PSU turn off : 0 ~ 1V                                                                                                                                                   |            |             |              |            |              |              |              |
|                                         | FAN CONTROL (Typ.)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Load 20 ± 10% or RTH2 ≥ 50°C Fan on                                                                                                                                                                |            |             |              |            |              |              |              |
| ENVIRONMENT                             | WORKING TEMP.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | -40 ~ +70°C (Refer to "Derating Curve")                                                                                                                                                            |            |             |              |            |              |              |              |
|                                         | WORKING HUMIDITY                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | 20 ~ 90% RH non-condensing                                                                                                                                                                         |            |             |              |            |              |              |              |
|                                         | STORAGE TEMP., HUMIDITY                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | -40 ~ +85°C, 10 ~ 95% RH non-condensing                                                                                                                                                            |            |             |              |            |              |              |              |
|                                         | TEMP. COEFFICIENT                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | ± 0.03%/°C (0 ~ 50°C)                                                                                                                                                                              |            |             |              |            |              |              |              |
|                                         | VIBRATION                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 10 ~ 500Hz, 5G 10min./1cycle, 60min. each along X, Y, Z axes                                                                                                                                       |            |             |              |            |              |              |              |
| SAFETY & EMC<br><small>(Note 4)</small> | SAFETY STANDARDS                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | UL62368-1, TUV BS EN/EN62368-1, AS/NZS62368.1, EAC TP TC 004 approved                                                                                                                              |            |             |              |            |              |              |              |
|                                         | WITHSTAND VOLTAGE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | I/P-O/P:3KVAC    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°C / 70% RH                                                                                                                                         |            |             |              |            |              |              |              |
|                                         | EMC EMISSION                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Compliance to BS EN/EN55032 (CISPR32) 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/EN55024, BS EN/EN61000-6-2, heavy industry level, EAC TP TC 020                                                                          |            |             |              |            |              |              |              |
| OTHERS                                  | MTBF                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | 1323.6K hrs min.    Telcordia SR-332 (Bellcore) ; 139.9K hrs min.    MIL-HDBK-217F (25°C)                                                                                                          |            |             |              |            |              |              |              |
|                                         | DIMENSION                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 218*105*41mm (L*W*H)                                                                                                                                                                               |            |             |              |            |              |              |              |
|                                         | PACKING                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 1.19Kg; 12pcs/15.3Kg/0.82CUFT                                                                                                                                                                      |            |             |              |            |              |              |              |
| NOTE                                    | 1. All parameters NOT specially mentioned are measured at 230VAC input, rated load and 25°C of ambient temperature.<br>2. Ripple & noise are measured at 20MHz of bandwidth by using a 12" twisted pair-wire terminated with a 0.1 μ F & 47 μ F 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. 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."<br>(as available on <a href="https://www.meanwell.com/Upload/PDF/EMI_statement_en.pdf">https://www.meanwell.com/Upload/PDF/EMI_statement_en.pdf</a> )<br>5. Derating may be needed under low input voltages. Please check the derating curve for more details.<br>6. Length of set up time is measured at first cold start. Turning ON/OFF the power supply may lead to increase of the set up time.<br>7. 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).<br>※ Product Liability Disclaimer : For detailed information, please refer to <a href="https://www.meanwell.com/serviceDisclaimer.aspx">https://www.meanwell.com/serviceDisclaimer.aspx</a> |                                                                                                                                                                                                    |            |             |              |            |              |              |              |

## ■ Mechanical Specification

(Unit: mm , tolerance  $\pm 1$  mm)



### AC Input Terminal Pin No. Assignment

| Pin No. | Assignment                     |
|---------|--------------------------------|
| 1       | AC/L                           |
| 2       | AC/N                           |
| 3       | FG $\underline{\underline{=}}$ |

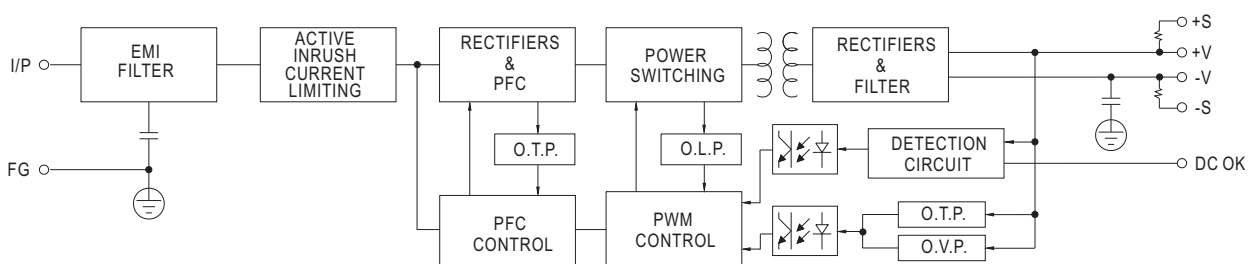
### DC Output Terminal Pin No. Assignment

| Pin No. | Assignment |
|---------|------------|
| 1~3     | -V         |
| 4~6     | +V         |

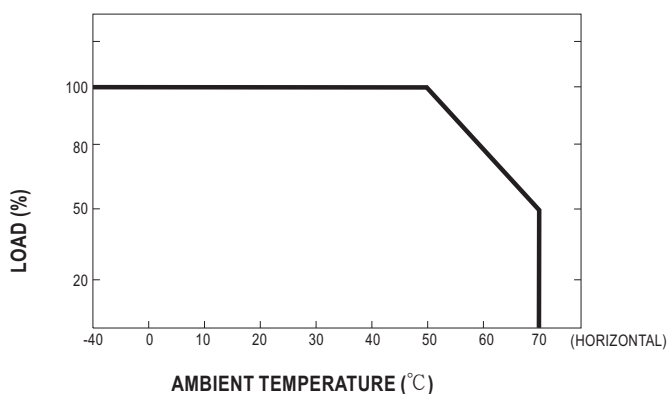
Connector Pin No. Assignment(CN100) : HRS DF11-4DP-2DS or equivalent

| Pin No. | Assignment | Mating Housing                | Terminal                      |
|---------|------------|-------------------------------|-------------------------------|
| 1       | DC-OK      | HRS DF11-4DS<br>or equivalent | HRS DF11-SSC<br>or equivalent |
| 2       | GND        |                               |                               |
| 3       | +S         |                               |                               |
| 4       | -S         |                               |                               |

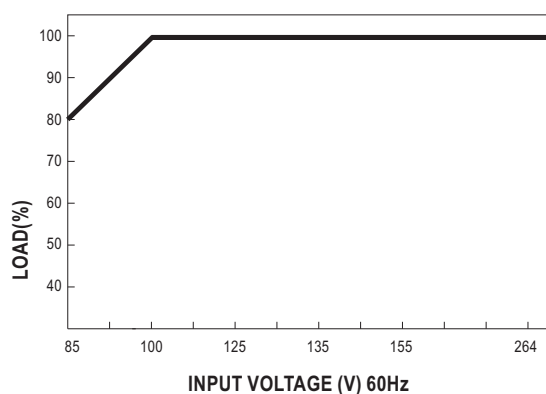
### ■ Block Diagram



### Derating Curve



### ■ Output Derating VS Input Voltage



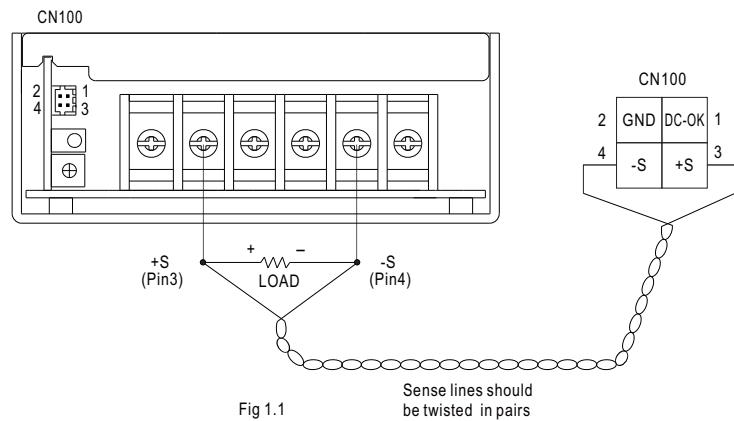
## Function Description of CN100

| Pin No. | Function | Description                                                                                                                                                                                                           |
|---------|----------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1       | DC-OK    | DC-OK Signal is a TTL level signal, referenced to pin2(DC-OK GND). High when PSU turns on.                                                                                                                            |
| 2       | GND      | This pin connects to the negative terminal(-V). Return for DC-OK signal output.                                                                                                                                       |
| 3       | +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. |
| 4       | -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 Sense

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



### 2.DC-OK Signal

DC-OK signal is a TTL level signal. High when PSU turns on.

| Between DC-OK(pin5) and GND(pin6) | Output Status |
|-----------------------------------|---------------|
| 3.3 ~ 5.6V                        | ON            |
| 0 ~ 1V                            | OFF           |

