

HWS150A/RA

SPECIFICATIONS

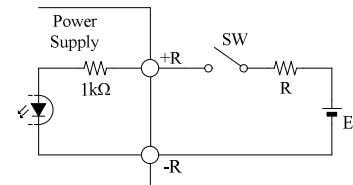
A259-01-01/RA-B

| ITEMS | | MODEL | HWS150A -3/RA | HWS150A -5/RA | HWS150A -12/RA | HWS150A -15/RA | HWS150A -24/RA | HWS150A -48/RA | |
|-------|--------------------------------|------------|---|------------------|-------------------|-------------------|-------------------|-------------------|-----|
| 1 | Nominal Output Voltage | V | 3.3 | 5 | 12 | 15 | 24 | 48 | |
| 2 | Maximum Output Current | A | 30 | 30 | 13 | 10 | 6.5 | 3.3 | |
| 3 | Maximum Output Power | W | 99.0 | 150.0 | 156.0 | 150.0 | 156.0 | 158.4 | |
| 4 | Efficiency (Typ.) (*1) | 100VAC | % | 82 | 85 | 85 | 86 | 88 | 89 |
| | | 200VAC | % | 84 | 87 | 88 | 89 | 90 | 91 |
| 5 | Input Voltage Range (*2)(*3) | - | 85 - 265VAC (47 - 63Hz) or 120 - 370VDC | | | | | | |
| 6 | Input Current (Typ.) (*1) | A | 1.3/0.65 | 1.9/0.95 | | | | | |
| 7 | Inrush Current (Typ.) (*1)(*4) | - | 14A at 100VAC, 28A at 200VAC, Ta=25°C, Cold Start | | | | | | |
| 8 | PFHC | - | Designed to meet IEC61000-3-2 | | | | | | |
| 9 | Power Factor (Typ.) (*1) | - | 0.96/0.89 | 0.98/0.93 | | | | | |
| 10 | Output Voltage Range | V | 2.97 - 3.96 | 4.0 - 6.0 | 9.6 - 14.4 | 12.0 - 18.0 | 19.2 - 28.8 | 38.4 - 52.8 | |
| 11 | Maximum Ripple & Noise (*5) | 0≤Ta≤70°C | mV | 120 | 120 | 150 | 150 | 150 | 200 |
| | | -10≤Ta<0°C | mV | 160 | 160 | 180 | 180 | 180 | 240 |
| 12 | Maximum Line Regulation (*6) | mV | 20 | 20 | 48 | 60 | 96 | 192 | |
| 13 | Maximum Load Regulation (*7) | mV | 40 | 40 | 96 | 120 | 150 | 240 | |
| 14 | Temperature Coefficient | - | Less than 0.02% / °C | | | | | | |
| 15 | Over Current Protection (*8) | A | 31.5 ≤ | 31.5 ≤ | 13.6 ≤ | 10.5 ≤ | 6.82 ≤ | 3.46 ≤ | |
| 16 | Over Voltage Protection (*9) | V | 4.13 - 4.95 | 6.25 - 7.25 | 15.0 - 17.4 | 18.8 - 21.8 | 30.0 - 34.8 | 55.2 - 64.8 | |
| 17 | Hold-up Time (Typ.) (*1) | - | 20ms | | | | | | |
| 18 | Leakage Current (*10) | - | Less than 0.5mA. 0.2mA (Typ) at 100VAC / 0.4mA (Typ) at 230VAC | | | | | | |
| 19 | Remote Sensing | - | Possible | | | | | | |
| 20 | Remote ON/OFF Control (*11) | - | Possible | | | | | | |
| 21 | Parallel Operation | - | - | | | | | | |
| 22 | Series Operation | - | Possible | | | | | | |
| 23 | Operating Temperature (*12) | - | -10 to +70°C (-10 to +50°C:100%, +60°C:60%, +70°C:20%) | | | | | | |
| 24 | Operating Humidity | - | 30 to 90%RH (No Condensing) | | | | | | |
| 25 | Storage Temperature | - | -30 to +85°C | | | | | | |
| 26 | Storage Humidity | - | 10 to 95%RH (No Condensing) | | | | | | |
| 27 | Cooling | - | Convection Cooling | | | | | | |
| 28 | Withstand Voltage | - | Input - FG : 2kVAC (20mA), Input - Output : 3kVAC (20mA) Output - FG : 500VAC (20mA) for 1min | | | | | | |
| 29 | Isolation Resistance | - | More than 100MΩ at 25°C and 70%RH Output - FG : 500VDC | | | | | | |
| 30 | Vibration | - | At no operating, 10 - 55Hz (Sweep for 1min) 19.6m/s ² Constant, X,Y,Z 1hour each. | | | | | | |
| 31 | Shock | - | Less than 196.1m/s ² | | | | | | |
| 32 | Safety | - | Approved by UL/CSA/EN62368-1, EN62477-1 (OVCI)(24V only), UL/CSA60950-1, EN60950-1 (Expire date of 60950-1 : 20/12/2020), UL508, CSA C22.2 No.107.1-01. Designed to meet Den-an Appendix 8 at 100VAC only. | | | | | | |
| 33 | Line DIP | - | Designed to meet SEMI-F47 (200VAC Line only) | | | | | | |
| 34 | Conducted Emission (*13) | - | Designed to meet EN55011/EN55032-B, FCC-B, VCCI-B | | | | | | |
| 35 | Radiated Emission (*13) | - | Designed to meet EN55011/EN55032-B, FCC-B, VCCI-B | | | | | | |
| 36 | Immunity (*13) | - | Designed to meet IEC61000-6-2 IEC61000-4-2, -3, -4, -5, -6, -8, -11 | | | | | | |
| 37 | Weight (Typ) | - | 520g | | | | | | |
| 38 | Size (W x H x D) | mm | 42 x 82 x 160 (Refer to Outline Drawing) | | | | | | |

*Read instruction manual carefully, before using the power supply unit.

=NOTES=

- *1. At 100VAC/200VAC, Ta=25°C, nominal output voltage and maximum output power.
- *2. For cases where conformance to various safety specs (UL, CSA, EN) are required, to be described as 100 - 240VAC(50 - 60Hz).
- *3. Output derating needed when input voltage less than 90VAC. Refer to OUTPUT DERATING CURVE (A259-01-02/A-).
- *4. Not applicable for the inrush current to Noise Filter for less than 0.2ms.
- *5. Measure with JEITA RC-9131B probe, Bandwidth of scope : 100MHz.
- *6. 85 - 265VAC, constant load.
- *7. No load-Full load, constant input voltage.
- *8. Constant current limit and Hiccup with automatic recovery. Avoid to operate at over load or short circuit condition.
- *9. OVP circuit will shut down output, manual reset (Re power on).
- *10. Measured by the each measuring method of UL, CSA, EN and Den-an (at 60Hz), Ta=25°C.
- *11. As for ON/OFF control mode, see the right figure.
- *12. Output Derating
 - Derating at standard mounting. Refer to OUTPUT DERATING CURVE (A259-01-02/A-).
 - Load (%) is percent of maximum output power or maximum output current, do not exceed its derating of maximum load.
- *13. The power supply is considered a component which will be installed into a final equipment. The final equipment should be re-evaluated that it meets EMC directives.



The control mode is shown below.

| +R & -R terminal condition | Output condition |
|----------------------------|------------------|
| SW ON (Higher than 4.5V) | ON |
| SW OFF (Lower than 0.8V) | OFF |

| External voltage level : E | External resistance : R |
|----------------------------|-------------------------|
| 4.5 ~ 12.5VDC | No required |
| 12.5 ~ 24.5VDC | 1.5kΩ |