

## Single Output Industrial Power Supplies

### Features

- ◆ Limited Lifetime Warranty
- ◆ UL508 approved
- ◆ SEMI F47 Compliant (high line AC)
- ◆ Universal Input (85 - 265VAC)
- ◆ High Efficiency
- ◆ Wide Range AC Input



### Key Market Segments & Applications



| Specifications                   |       | HWS15  | HWS30          | HWS50          | HWS100       | HWS150        |
|----------------------------------|-------|--|----------------|----------------|--------------|---------------|
| Input Voltage range              | -     | 85 - 265VAC (47 - 63Hz) or 120 - 370VDC  |                |                |              |               |
| Input Current (Typ)              | (1) A | 0.4 / 0.2  | 0.8 / 0.4      | 0.7 / 0.35     | 1.3 / 0.65   | 1.9 / 0.95    |
| Inrush Current                   | (1) A | 14 / 28  |                |                |              |               |
| Power Factor                     | -     | Meets EN61000-3-2  |                |                |              |               |
| Temperature Coefficient          | -     | <0.02%/°C  |                |                |              |               |
| Overcurrent Protection           | -     | >104%  |                |                |              |               |
| Overvoltage Protection           | V     | Yes (See page 2)   |                |                |              |               |
| Hold Up Time (Typ)               | ms    | 20   |                |                |              |               |
| Leakage Current (max)            | mA    | <0.5mA (Typ 0.3mA at 100VAC, 0.5mA at 230VAC)                                    |                |                |              |               |
| Remote Sense                     | -     | No   |                | Yes            |              |               |
| Indicator                        | -     | Green LED = ON   |                |                |              |               |
| Operating Temperature (no cover) | °C    | -10°C to +70°C, derate linearly to 20% load from 50°C to 70°C <sup>(2)</sup>     |                |                |              |               |
| Storage Temperature              | °C    | -30 to +85°C   |                |                |              |               |
| Humidity (non condensing)        | -     | Operating: 30 - 90%RH, Non operating 10 - 95%RH                                  |                |                |              |               |
| Cooling                          | -     | Convection   |                |                |              |               |
| Withstand Voltage                | -     | Input to Ground 2kVAC, Input to Output 3kVAC, Output to Ground 500VAC for 1 min. |                |                |              |               |
| Isolation Resistance             | -     | >100M at 25°C & 70%RH, Output to Ground 500VDC                                   |                |                |              |               |
| Vibration (non operating)        | -     | 10 - 55Hz (1 minute sweep), 19.6m/s <sup>2</sup> constant X, Y, Z 1 hour         |                |                |              |               |
| Shock                            | -     | < 196.1m/s <sup>2</sup>  |                |                |              |               |
| Safety Agency Certifications     | -     | UL60950-1, CSA60950-1, EN60950-1, EN50178, UL508, CE Mark <sup>(3)</sup>         |                |                |              |               |
| Line Dip                         | -     | Complies with SEMI F47 (200VAC line only)  |                |                |              |               |
| Conducted & Radiated EMI         | -     | EN55011 / EN55022-B, FCC-B, VCCI-B   |                |                |              |               |
| Recommended EMI Filter           | -     | RSEL-2001W   |                |                | RSEL-2002W   | RSEL-2003W    |
| Immunity                         | -     | IEC61000-4-2 (Level 3,2), -3, -4, -5, -6 (Level 3), -8, -11 (Level 4)            |                |                |              |               |
| Weight (Typ)                     | g     | 180  | 220            | 280            | 450          | 500           |
| Size (WxHxD)                     | in    | 1.04x3.23x3.15   | 1.04x3.23x3.74 | 1.04x3.23x4.72 | 1.1x3.23x6.3 | 1.46x3.23x6.3 |
| Size (WxHxD) /A version          |       | 1.24x3.23x3.15   | 1.24x3.23x3.74 | 1.24x3.23x4.72 | 1.3x3.23x6.3 | 1.65x3.23x6.3 |
| Warranty                         | yrs   | Limited lifetime warranty (See Lambda's terms & conditions)                      |                |                |              |               |

(1) 100/200VAC

(2) -40°C Start up, see options table

(3) UL60601-1, EN60601-1, see options table

Not Recommended For New Designs

**Output Ratings**

| Model       | Voltage | Adjust Range | Max Curr. A | Load Reg mV | Line Reg mV | Ripple Noise mV | Over voltage V | Eff. typ % (1) |
|-------------|---------|--------------|-------------|-------------|-------------|-----------------|----------------|----------------|
| HWS15-3/A   | 3.3V    | 2.97 - 3.96  | 3           | 40          | 20          | 120             | 4.13-4.95      | 68/71          |
| HWS30-3/A   | 3.3V    | 2.97 - 3.96  | 6           | 40          | 20          | 120             | 4.13-4.95      | 70/73          |
| HWS50-3/A   | 3.3V    | 2.97 - 3.96  | 10          | 40          | 20          | 120             | 4.13-4.95      | 76/78          |
| HWS100-3/A  | 3.3V    | 2.97 - 3.96  | 20          | 40          | 20          | 120             | 4.13-4.95      | 78/81          |
| HWS150-3/A  | 3.3V    | 2.97 - 3.96  | 30          | 40          | 20          | 120             | 4.13-4.95      | 78/81          |
| HWS15-5/A   | 5V      | 4.0 - 6.0    | 3           | 40          | 20          | 120             | 6.25-7.25      | 77/79          |
| HWS30-5/A   | 5V      | 4.0 - 6.0    | 6           | 40          | 20          | 120             | 6.25-7.25      | 77/80          |
| HWS50-5/A   | 5V      | 4.0 - 6.0    | 10          | 40          | 20          | 120             | 6.25-7.25      | 82/84          |
| HWS100-5/A  | 5V      | 4.0 - 6.0    | 20          | 40          | 20          | 120             | 6.25-7.25      | 83/86          |
| HWS150-5/A  | 5V      | 4.0 - 6.0    | 30          | 40          | 20          | 120             | 6.25-7.25      | 83/86          |
| HWS15-12/A  | 12V     | 9.6 - 14.4   | 1.3         | 96          | 48          | 150             | 15-17.4        | 80/81          |
| HWS30-12/A  | 12V     | 9.6 - 14.4   | 2.5         | 96          | 48          | 150             | 15-17.4        | 81/83          |
| HWS50-12/A  | 12V     | 9.6 - 14.4   | 4.3         | 96          | 48          | 150             | 15-17.4        | 81/83          |
| HWS100-12/A | 12V     | 9.6 - 14.4   | 8.5         | 96          | 48          | 150             | 15-17.4        | 83/86          |
| HWS150-12/A | 12V     | 9.6 - 14.4   | 13          | 96          | 48          | 150             | 15-17.4        | 83/86          |
| HWS15-15/A  | 15V     | 12.0 - 18.0  | 1           | 120         | 60          | 150             | 18.8-21.8      | 80/81          |
| HWS30-15/A  | 15V     | 12.0 - 18.0  | 2           | 120         | 60          | 150             | 18.8-21.8      | 81/83          |
| HWS50-15/A  | 15V     | 12.0 - 18.0  | 3.5         | 120         | 60          | 150             | 18.8-21.8      | 81/83          |
| HWS100-15/A | 15V     | 12.0 - 18.0  | 7           | 120         | 60          | 150             | 18.8-21.8      | 83/86          |
| HWS150-15/A | 15V     | 12.0 - 18.0  | 10          | 120         | 60          | 150             | 18.8-21.8      | 83/86          |
| HWS15-24/A  | 24V     | 19.2 - 28.8  | 0.65        | 192         | 96          | 200             | 30-34.8        | 82/83          |
| HWS30-24/A  | 24V     | 19.2 - 28.8  | 1.3         | 192         | 96          | 200             | 30-34.8        | 83/86          |
| HWS50-24/A  | 24V     | 19.2 - 28.8  | 2.2         | 192         | 96          | 150             | 30-34.8        | 82/84          |
| HWS100-24/A | 24V     | 19.2 - 28.8  | 4.5         | 192         | 96          | 150             | 30-34.8        | 84/87          |
| HWS150-24/A | 24V     | 19.2 - 28.8  | 6.5         | 192         | 96          | 150             | 30-34.8        | 85/88          |
| HWS15-48/A  | 48V     | 38.4 - 52.8  | 0.33        | 384         | 192         | 200             | 55.2-64.8      | 80/80          |
| HWS30-48/A  | 48V     | 38.4 - 52.8  | 0.65        | 384         | 192         | 200             | 55.2-64.8      | 82/83          |
| HWS50-48/A  | 48V     | 38.4 - 52.8  | 1.1         | 384         | 192         | 200             | 55.2-64.8      | 83/85          |
| HWS100-48/A | 48V     | 38.4 - 52.8  | 2.1         | 384         | 192         | 200             | 55.2-64.8      | 84/87          |
| HWS150-48/A | 48V     | 38.4 - 52.8  | 3.3         | 384         | 192         | 200             | 55.2-64.8      | 85/88          |

**Options**

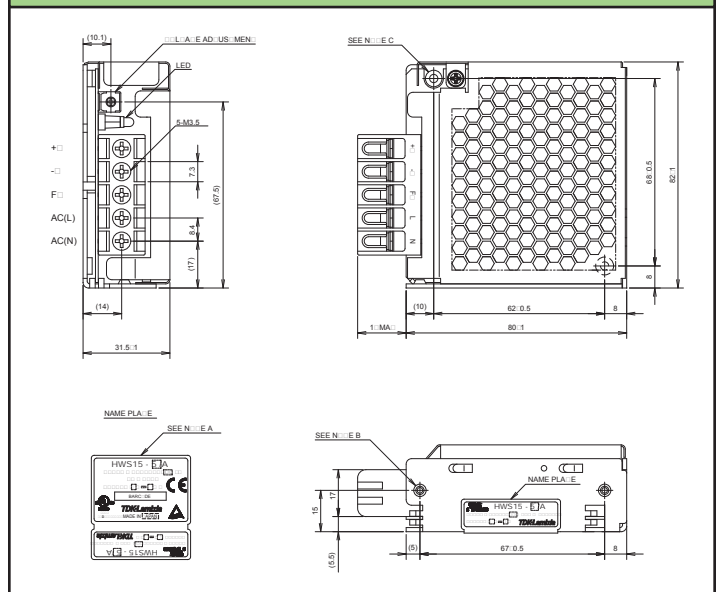
| Suffix | Description  |
|--------|--|
| Blank  | Screw terminals, no cover  |
| /A     | Screw terminals, cover   |
| /R     | Remote on/off (50-150W only)   |
| /HD    | See HWS50-1500/HD Datasheet for details. -40 to +71(74)°C operation, conformally coated PCBs |
| /ME    | See HWS30-1500/ME Datasheet for details. UL60601-1, EN60601-1 medical approvals              |

Example: HWS50-24/RA

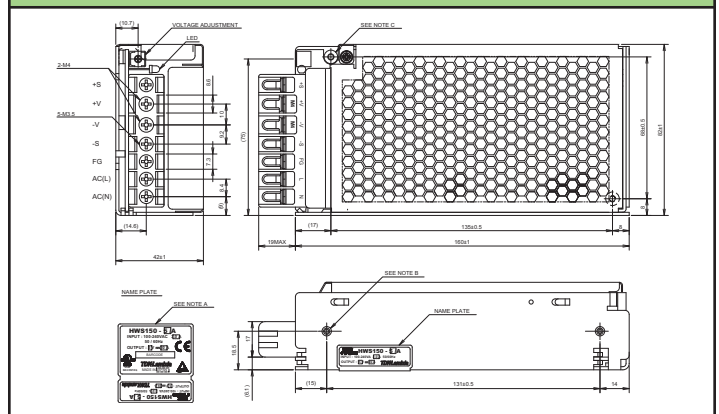
**Other Industrial Products**

|                |                             |
|----------------|-----------------------------|
| HWS300-1800    | 300 to 1800W                |
| LZSA           | 500W to 1500W Single output |
| DPP, DLP & DSP | 10W to 480W DIN Rail Mount  |

**HWS15 Outline Drawing**



**HWS150 Outline Drawing**



For Additional Information, please visit [us.tdk-lambda.com/lp/products/hws-series.htm](http://us.tdk-lambda.com/lp/products/hws-series.htm)



**Not Recommended For New Designs**

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