



# HWS50-1500/HD

## Single Output Industrial Power Supplies



- ◆ 5 Year Warranty
- ◆ -10 to +71°C Operation (-40°C start up)
- ◆ Universal Input (85 - 265VAC)
- ◆ Conformally coated pcbs
- ◆ RoHS Compliant design

### Key Market Segments & Applications

Factory Automation      Test & Measurement  
LED Displays

## HWS Features and Benefits

### Feature

- ◆ 5 Year Warranty
- ◆ Conformally coated pcbs
- ◆ Wide range AC Input

### Benefit

- ◆ Lower Cost of Ownership
- ◆ Operation in harsh environments
- ◆ Supports global use

## Specifications

| MODELS                                                                    |       | HWS50                                                                                                                                                                                                                                                                  | HWS100       | HWS150        | HWS300                               | HWS600        | HWS1500   |
|---------------------------------------------------------------------------|-------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|---------------|--------------------------------------|---------------|-----------|
| ITEMS                                                                     |       |                                                                                                                                                                                                                                                                        |              |               |                                      |               |           |
| Input Voltage range                                                       |       | 85-265VAC (47 - 63Hz) or 120 - 370VDC (330VDC max for HWS300 & 600, N/A for HWS1500)                                                                                                                                                                                   |              |               |                                      |               |           |
| Input Current (Typ)                                                       | (1) A | 0.7 / 0.35                                                                                                                                                                                                                                                             | 1.3 / 0.65   | 1.9 / 0.95    | 4.1 / 2.1                            | 8.1 / 3.9     | 19 / 10   |
| Inrush Current                                                            | (1) A | 14 / 28                                                                                                                                                                                                                                                                |              |               | 20 / 40                              |               |           |
| Power Factor                                                              | -     | Meets EN61000-3-2                                                                                                                                                                                                                                                      |              |               |                                      |               |           |
| Temperature Coefficient                                                   | -     | <0.02%/°C                                                                                                                                                                                                                                                              |              |               |                                      |               |           |
| Overcurrent Protection                                                    | -     | >104%                                                                                                                                                                                                                                                                  |              |               |                                      |               |           |
| Overvoltage Protection                                                    | V     | Yes (See table on page 2)                                                                                                                                                                                                                                              |              |               |                                      |               |           |
| Hold Up Time (Typ)                                                        | ms    | 20                                                                                                                                                                                                                                                                     |              |               |                                      |               |           |
| Leakage Current (60Hz)                                                    | mA    | <0.5mA                                                                                                                                                                                                                                                                 |              |               | <0.75mA                              |               | ≤1.5mA    |
| Remote Sense                                                              | -     | No                                                                                                                                                                                                                                                                     | Yes          |               |                                      |               |           |
| Indicator                                                                 | -     | Green LED = ON                                                                                                                                                                                                                                                         |              |               |                                      |               |           |
| Remote On/Off                                                             | -     | No                                                                                                                                                                                                                                                                     |              |               | Yes (Isolated from output)           |               |           |
| Parallel operation                                                        | -     | No                                                                                                                                                                                                                                                                     |              |               | Single wire connection (5 units max) |               |           |
| DC Good                                                                   | -     | No                                                                                                                                                                                                                                                                     |              |               | Yes                                  |               |           |
| Operating Temperature and Derating (operation to +74°C - contact factory) |       | HWS50-150: -10°C to +71°C, (-10 ~+50°C: 100%, +60°C: 60%, +71°C: 20%)<br>HWS300-1500: -10°C to +71°C, (-10 ~+50°C: 100%, derate linearly to 50% load from +50 to +71°C)<br>Guaranteed start up at -40°C (see specification sheets on website for details and derating) |              |               |                                      |               |           |
| Storage Temperature                                                       |       | -40 to +85°C                                                                                                                                                                                                                                                           |              |               |                                      |               |           |
| Humidity (non condensing)                                                 |       | Operating: 30 - 90%RH (10 -90% on HWS300-1500), Non operating 10 - 95%RH                                                                                                                                                                                               |              |               |                                      |               |           |
| Cooling                                                                   | -     | Convection                                                                                                                                                                                                                                                             |              |               | Internal fan                         |               |           |
| Withstand Voltage (2)                                                     | -     | Input to Ground 2kVAC, Input to Output 3kVAC, Output to Ground 500VAC for 1 min.                                                                                                                                                                                       |              |               |                                      |               |           |
| Isolation Resistance                                                      | -     | >100MΩ at 25°C & 70%RH, Output to Ground 500VDC, >10M Output to remote on/off 100VDC                                                                                                                                                                                   |              |               |                                      |               |           |
| Vibration (non operating)                                                 | -     | MIL-STD-810F 514.5 Category 4, 10 (HWS1500 Cat 4, figure 514.5C-1)                                                                                                                                                                                                     |              |               |                                      |               |           |
| Shock (in packaging)                                                      | -     | MIL-STD-810F 516.5 Category I, VI (HWS1500 <196.1m/s²)                                                                                                                                                                                                                 |              |               |                                      |               |           |
| Safety Agency Approvals                                                   | -     | UL60950-1, CSA60950-1, EN60950-1, EN50178, CE Mark                                                                                                                                                                                                                     |              |               |                                      |               |           |
| Line Dip                                                                  | -     | Complies with SEMI F47 (200VAC line only)                                                                                                                                                                                                                              |              |               |                                      |               |           |
| Conducted & Radiated EMI                                                  | -     | EN55011 / EN55022-B, FCC-B, VCCI-B                                                                                                                                                                                                                                     |              |               |                                      |               |           |
| Immunity                                                                  |       | IEC61000-4-2 (Level 2,3), -3, -4, -6, (Level 3), -5, -8 (Level 4), -11                                                                                                                                                                                                 |              |               |                                      |               |           |
| Weight (Typ)                                                              | g     | 280                                                                                                                                                                                                                                                                    | 450          | 500           | 1000                                 | 1600          | 3800      |
| Size (WxHxD)                                                              | in    | 1.04x3.23x4.72                                                                                                                                                                                                                                                         | 1.1x3.23x6.3 | 1.46x3.23x6.3 | 2.4x3.23x6.5                         | 3.94x3.23x6.5 | 5x3.25x11 |
| Warranty                                                                  | yr    | Five Years                                                                                                                                                                                                                                                             |              |               |                                      |               |           |

(1) 100/200VAC input

(2) HWS300-600 2.5kVAC Input to ground



# HWS50-1500/HD

## Output Ratings

| Model         | Voltage | Adjust Range | Min Curr(A) <sup>3</sup> | Max Curr(A) <sup>4</sup>      | Max Power(W)           | Load Reg(mV) | Line Reg(mV) | Ripple Noise(mV) | Overvoltage (V) | Efficiency (typ)% <sup>1</sup> |
|---------------|---------|--------------|--------------------------|-------------------------------|------------------------|--------------|--------------|------------------|-----------------|--------------------------------|
| HWS50-3/HD    | 3.3V    | 2.97 - 3.96  | 0.1                      | 10                            | 33                     | 40           | 20           | 120              | 4.13-4.95       | 76/78                          |
| HWS100-3/HD   | 3.3V    | 2.97 - 3.96  | 0.2                      | 20                            | 66                     | 40           | 20           | 120              | 4.13-4.95       | 78/81                          |
| HWS150-3/HD   | 3.3V    | 2.97 - 3.96  | 0.3                      | 30                            | 99                     | 40           | 20           | 120              | 4.13-4.95       | 78/81                          |
| HWS300-3/HD   | 3.3V    | 2.64 - 3.96  | 0.0                      | 60                            | 198                    | 30           | 20           | 120              | 4.13-4.95       | 74/77                          |
| HWS600-3/HD   | 3.3V    | 2.64 - 3.96  | 0.0                      | 120                           | 396                    | 30           | 20           | 120              | 4.13-4.95       | 75/78                          |
| HWS50-5/HD    | 5V      | 4.0 - 6.0    | 0.1                      | 10                            | 50                     | 40           | 20           | 120              | 6.25-7.25       | 82/84                          |
| HWS100-5/HD   | 5V      | 4.0 - 6.0    | 0.2                      | 20                            | 100                    | 40           | 20           | 120              | 6.25-7.25       | 83/86                          |
| HWS150-5/HD   | 5V      | 4.0 - 6.0    | 0.3                      | 30                            | 150                    | 40           | 20           | 120              | 6.25-7.25       | 83/86                          |
| HWS300-5/HD   | 5V      | 4.0 - 6.0    | 0.0                      | 60                            | 300                    | 30           | 20           | 120              | 6.25-7.25       | 79/82                          |
| HWS600-5/HD   | 5V      | 4.0 - 6.0    | 0.0                      | 120                           | 600                    | 30           | 20           | 120              | 6.25-7.25       | 80/83                          |
| HWS50-12/HD   | 12V     | 9.6 - 14.4   | 0.04                     | 4.3                           | 51.6                   | 96           | 48           | 150              | 15-17.4         | 81/83                          |
| HWS100-12/HD  | 12V     | 9.6 - 14.4   | 0.09                     | 8.5                           | 102                    | 96           | 48           | 150              | 15-17.4         | 83/86                          |
| HWS150-12/HD  | 12V     | 9.6 - 14.4   | 0.1                      | 13                            | 156                    | 96           | 48           | 150              | 15-17.4         | 83/86                          |
| HWS300-12/HD  | 12V     | 9.6 - 14.4   | 0.0                      | 27                            | 324                    | 72           | 48           | 150              | 15-17.4         | 80/83                          |
| HWS600-12/HD  | 12V     | 9.6 - 14.4   | 0.0                      | 53                            | 636                    | 72           | 48           | 150              | 15-17.4         | 80/83                          |
| HWS1500-12/HD | 12V     | 9.6 - 14.4   | 0.0                      | 125                           | 1500                   | 72           | 48           | 150              | 15-17.4         | 82/85                          |
| HWS50-15/HD   | 15V     | 12.0 - 18.0  | 0.04                     | 3.5                           | 52.5                   | 120          | 60           | 150              | 18.8-21.8       | 81/83                          |
| HWS100-15/HD  | 15V     | 12.0 - 18.0  | 0.07                     | 7                             | 105                    | 120          | 60           | 150              | 18.8-21.8       | 83/86                          |
| HWS150-15/HD  | 15V     | 12.0 - 18.0  | 0.1                      | 10                            | 150                    | 120          | 60           | 150              | 18.8-21.8       | 83/86                          |
| HWS300-15/HD  | 15V     | 12.0 - 18.0  | 0.0                      | 22                            | 330                    | 90           | 60           | 150              | 18.8-21.8       | 80/83                          |
| HWS600-15/HD  | 15V     | 12.0 - 18.0  | 0.0                      | 43                            | 645                    | 90           | 60           | 150              | 18.8-21.8       | 81/84                          |
| HWS1500-15/HD | 15V     | 12.0 - 18.0  | 0.0                      | 100                           | 1500                   | 90           | 60           | 150              | 18.7-21.8       | 83/87                          |
| HWS50-24/HD   | 24V     | 19.2 - 28.8  | 0.02                     | 2.2                           | 52.8                   | 192          | 96           | 150              | 30-34.8         | 82/84                          |
| HWS100-24/HD  | 24V     | 19.2 - 28.8  | 0.05                     | 4.5                           | 108                    | 192          | 96           | 150              | 30-34.8         | 84/87                          |
| HWS150-24/HD  | 24V     | 19.2 - 28.8  | 0.07                     | 6.5                           | 156                    | 192          | 96           | 150              | 30-34.8         | 85/88                          |
| HWS300-24/HD  | 24V     | 19.2 - 28.8  | 0.0                      | 14 (16.5 pk)                  | 336                    | 144          | 96           | 150              | 30-34.8         | 82/85                          |
| HWS600-24/HD  | 24V     | 19.2 - 28.8  | 0.0                      | 27 (31 pk)                    | 648                    | 144          | 96           | 150              | 30-34.8         | 82/85                          |
| HWS1500-24/HD | 24V     | 19.2 - 28.8  | 0.0                      | 65/70 (-/105pk) <sup>1</sup>  | 1560/1680 <sup>1</sup> | 144          | 96           | 200              | 30-34.8         | 84/88                          |
| HWS1500-36/HD | 36V     | 28.8 - 43.2  | 0.0                      | 42/46.5 (-/70pk) <sup>1</sup> | 1512/1674 <sup>1</sup> | 150          | 144          | 200              | 45-49.7         | 84/88                          |
| HWS50-48/HD   | 48V     | 38.4 - 52.8  | 0.01                     | 1.1                           | 52.8                   | 384          | 192          | 200              | 55.2-64.8       | 83/85                          |
| HWS100-48/HD  | 48V     | 38.4 - 52.8  | 0.02                     | 2.1                           | 100.8                  | 384          | 192          | 200              | 55.2-64.8       | 84/87                          |
| HWS150-48/HD  | 48V     | 38.4 - 52.8  | 0.03                     | 3.3                           | 158.4                  | 384          | 192          | 200              | 55.2-64.8       | 85/88                          |
| HWS300-48/HD  | 48V     | 38.4 - 52.8  | 0.0                      | 7                             | 336                    | 288          | 192          | 350              | 55.2-64.8       | 82/85                          |
| HWS600-48/HD  | 48V     | 38.4 - 52.8  | 0.0                      | 13                            | 624                    | 288          | 192          | 350              | 55.2-64.8       | 83/86                          |
| HWS1500-48/HD | 48V     | 38.4 - 52.8  | 0.0                      | 32                            | 1536                   | 288          | 192          | 200              | 55.2-64.8       | 86/90                          |

- (3) Minimum load for maximum stability at -40°C start up  
(4) Peak load for 10s maximum on time, 35% duty cycle

## Options

| Suffix | Description                                                                                                  |
|--------|--------------------------------------------------------------------------------------------------------------|
| Blank  | No Cover (HWS50-150 Only)<br>HWS300-1500 the cover is fitted as standard                                     |
| /A     | The cover option for HWS50-150 is NOT available on /HD series<br>HWS300-1500 the cover is fitted as standard |

## Other Lambda Industrial Products

|                |                             |
|----------------|-----------------------------|
| LZS            | 250W to 1500W Single output |
| JFS            | 500W to 2000W Single output |
| DPP, DLP & DHP | 15W to 480W DIN Rail Mount  |

For Additional Information, please visit  
[www.lambdapower.com/products/hws-series.htm](http://www.lambdapower.com/products/hws-series.htm)