

- Limited Lifetime Warranty
- -10°C to +71°C Operation (-40°C start up)
- Universal Input (85 - 265VAC)
- Conformally coated PCB's
- RoHS Compliant Design

HWS30-1500/HD Series

Single Output Industrial Power Supplies

Key Market Segments & Applications

- Factory Automation
- Test & Measurement
- LED Displays

HWS30-1500/HD Features and Benefits

Features

- Limited Lifetime Warranty
- Conformally coated PCB's
- Wide Range AC Input

Benefits

- Lower Cost of Ownership
- Operates in Harsh Environments
- Supports Global Use

Specifications

| ITEMS | MODELS | | HWS30 | HWS100 | HWS300 | HWS600 | HWS1000 | HWS1500 |
|---|--------|----|--|---------------|--------------------------------------|-----------------------------|------------------|------------------|
| | | | HWS50 | HWS150 | | | | |
| Input Voltage range (47-63Hz) | | | 85 - 265VAC or 120 - 370VDC | | | 85 - 265VAC or 120 - 330VDC | | |
| Input Current (Typ) (1) | (1) | A | 0.8 / 0.4 | 1.3 / 0.65 | 4.1 / 2.1 | 8.1 / 3.9 | 13.5 / 7.0 | 19 / 10 |
| | | - | 0.7 / 0.35 | 1.9 / 0.95 | | | | |
| Inrush Current (1) | (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 | | <1.2mA | ≤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 & Derating (operation to +74°C - contact factory) | | | HWS30-150: -10°C to +71°C, (-10 to +50°C: 100%, +60°C: 60%, +71°C: 20%) HWS300-1500: -10°C to +71°C, (-10 to +50°C: 100%, derate linearly to 50% load from +50 to +71°C) Guaranteed start up at -40°C (see specification sheets on website for details and derating) | | | | | |
| Storage Temperature | | | -40°C 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) | (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 | | | | | |
| Shock (in packaging) | | - | MIL-STD-810F 516.5 Procedure I, VI (<196.1m/s ²) | | | | | |
| Safety Agency Approvals (3) | (3) | - | IEC/EN/UL/CSA 60950-1 and 62368-1, EN50178, CE Mark | | | | | |
| Line Dip | | - | Complies with SEMI F47 (200VAC line only) | | | | | |
| Conducted & Radiated EMI | | - | EN55011 / EN55022-B, FCC-B, VCCI-B (Curve A for HWS1500) | | | | | |
| Immunity | | - | IEC61000-4-2 (Level 2,3), -3, -4, -6, (Level 3), -5, -8 (Level 4), -11 | | | | | |
| Weight (Typ) | | g | 220 | 450 | 1000 | 1600 | 3200 | 3800 |
| | | | 280 | 500 | | | | |
| Size (WxHxD) | | mm | 26.5 x 82 x 95 | 28 x 82 x 160 | 61 X 82 X 165 | 100 X 82 X 165 | 126.5 X 82 X 240 | 126.5 X 82 X 280 |
| | | | 26 x 82 x 120 | 37 x 82 x 160 | | | | |
| Warranty | | | Limited Lifetime Warranty | | | | | |

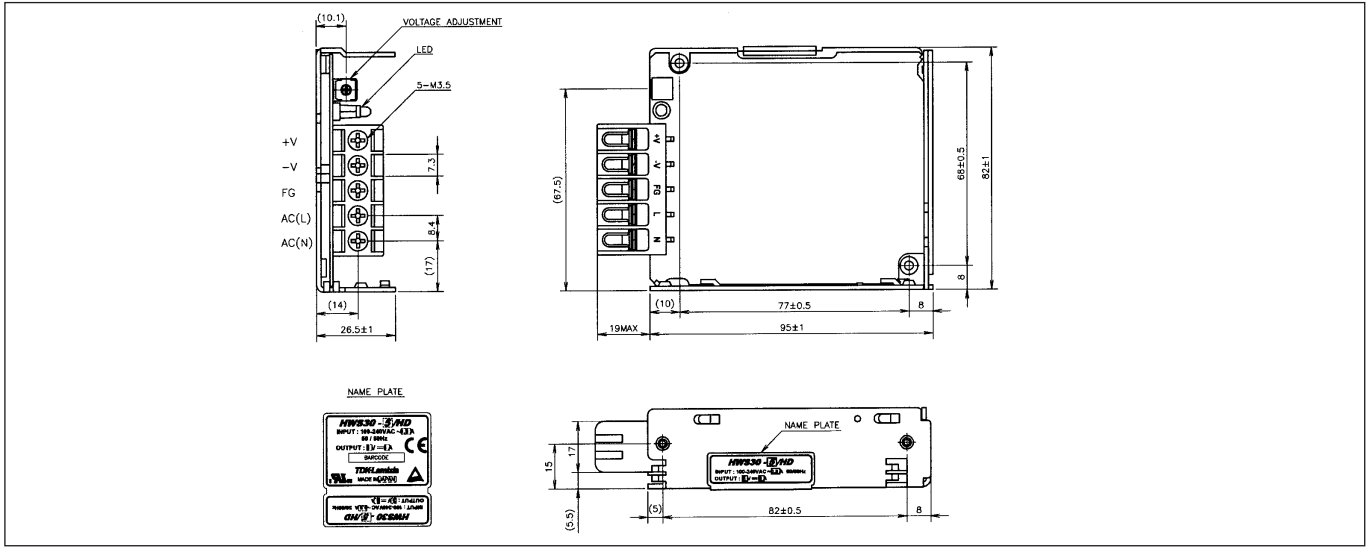
Notes: (1) 100/200VAC input (2) HWS300-600 2.5kVAC Input to ground (3) Consult Sales Office for use under DC Input conditions

| Model Selector | | | | | | | | | | | | |
|----------------|-------------|------------------|---------------|-------------------------------|----------------|-------------------------------|---------------|---------------|-------------------|------------------|---------------------------------|--|
| Model | Voltage (V) | Adjust Range (V) | Max Curr. (A) | Peak ⁽³⁾ Curr. (A) | Max. Power (W) | Peak ⁽³⁾ Power (W) | Load Reg (mV) | Line Reg (mV) | Ripple Noise (mV) | Over voltage (V) | Efficiency ⁽¹⁾ typ % | |
| HWS50-3/HD | 3.3 | 2.97 - 3.96 | 6 | | 20 | | 40 | 20 | 120 | 4.13 - 4.95 | 70/73 | |
| HWS50-3/HD | 3.3 | 2.97 - 3.96 | 10 | | 33 | | 40 | 20 | 120 | 4.13 - 4.95 | 76/78 | |
| HWS100-3/HD | 3.3 | 2.97 - 3.96 | 20 | | 66 | | 40 | 20 | 120 | 4.13 - 4.95 | 78/81 | |
| HWS150-3/HD | 3.3 | 2.97 - 3.96 | 30 | | 99 | | 40 | 20 | 120 | 4.13 - 4.95 | 78/81 | |
| HWS300-3/HD | 3.3 | 2.64 - 3.96 | 60 | | 198 | | 30 | 20 | 120 | 4.13 - 4.95 | 74/77 | |
| HWS600-3/HD | 3.3 | 2.64 - 3.96 | 120 | | 396 | | 30 | 20 | 120 | 4.13 - 4.95 | 75/78 | |
| HWS1000-3/HD | 3.3 | 2.64 - 3.96 | 200 | | 660 | | 40 | 20 | 120 | 4.12 - 4.62 | 71/73 | |
| HWS1500-3/HD | 3.3 | 2.64 - 3.96 | 300 | | 990 | | 60 | 36 | 200 | 4.12 - 4.62 | 72/75 | |
| HWS30-5/HD | 5 | 4.0 - 6.0 | 6 | | 30 | | 40 | 20 | 120 | 6.25 - 7.25 | 77/80 | |
| HWS50-5/HD | 5 | 4.0 - 6.0 | 10 | | 50 | | 40 | 20 | 120 | 6.25 - 7.25 | 82/84 | |
| HWS100-5/HD | 5 | 4.0 - 6.0 | 20 | | 100 | | 40 | 20 | 120 | 6.25 - 7.25 | 83/86 | |
| HWS150-5/HD | 5 | 4.0 - 6.0 | 30 | | 150 | | 40 | 20 | 120 | 6.25 - 7.25 | 83/86 | |
| HWS300-5/HD | 5 | 4.0 - 6.0 | 60 | | 300 | | 30 | 20 | 120 | 6.25 - 7.25 | 79/82 | |
| HWS600-5/HD | 5 | 4.0 - 6.0 | 120 | | 600 | | 30 | 20 | 120 | 6.25 - 7.25 | 80/83 | |
| HWS1000-5/HD | 5 | 4.0 - 6.0 | 200 | | 1000 | | 30 | 20 | 120 | 6.25 - 7.0 | 76/78 | |
| HWS1500-5/HD | 5 | 4.0 - 6.0 | 300 | | 1500 | | 60 | 36 | 200 | 6.25 - 7.0 | 77/81 | |
| HWS1000-6/HD | 6 | 4.8 - 7.2 | 167 | | 1002 | | 30 | 20 | 150 | 7.5 - 8.4 | 79/81 | |
| HWS1500-6/HD | 6 | 4.8 - 7.2 | 250 | 300 | 1500 | 1800 | 60 | 36 | 200 | 6.25 - 7.0 | 79/82 | |
| HWS1000-7/HD | 7.5 | 6.0 - 9.0 | 134 | 160 | 1005 | 1200 | 30 | 20 | 150 | 9.37 - 10.5 | 80/82 | |
| HWS1500-7/HD | 7.5 | 6.0 - 9.0 | 200 | 240 | 1500 | 1800 | 60 | 40 | 200 | 9.37 - 10.5 | 81/83 | |
| HWS30-12/HD | 12 | 9.6 - 14.4 | 2.5 | | 30 | | 96 | 48 | 150 | 15.0 - 17.4 | 81/83 | |
| HWS50-12/HD | 12 | 9.6 - 14.4 | 4.3 | | 51.6 | | 96 | 48 | 150 | 15 - 17.4 | 81/83 | |
| HWS100-12/HD | 12 | 9.6 - 14.4 | 8.5 | | 102 | | 96 | 48 | 150 | 15 - 17.4 | 83/86 | |
| HWS150-12/HD | 12 | 9.6 - 14.4 | 13 | | 156 | | 96 | 48 | 150 | 15 - 17.4 | 83/86 | |
| HWS300-12/HD | 12 | 9.6 - 14.4 | 27 | | 324 | | 72 | 48 | 150 | 15 - 17.4 | 80/83 | |
| HWS600-12/HD | 12 | 9.6 - 14.4 | 53 | | 636 | | 72 | 48 | 150 | 15 - 17.4 | 80/83 | |
| HWS1000-12/HD | 12 | 9.6 - 14.4 | 88 | 100 | 1056 | 1200 | 72 | 48 | 150 | 15 - 17.4 | 82/85 | |
| HWS1500-12/HD | 12 | 9.6 - 14.4 | 125 | | 1500 | | 72 | 48 | 150 | 15 - 17.4 | 82/85 | |
| HWS30-15/HD | 15 | 12.0 - 18.0 | 2 | | 30 | | 120 | 60 | 150 | 18.8 - 21.8 | 81/84 | |
| HWS50-15/HD | 15 | 12.0 - 18.0 | 3.5 | | 52.5 | | 120 | 60 | 150 | 18.8 - 21.8 | 81/83 | |
| HWS100-15/HD | 15 | 12.0 - 18.0 | 7 | | 105 | | 120 | 60 | 150 | 18.8 - 21.8 | 83/86 | |
| HWS150-15/HD | 15 | 12.0 - 18.0 | 10 | | 150 | | 120 | 60 | 150 | 18.8 - 21.8 | 83/86 | |
| HWS300-15/HD | 15 | 12.0 - 18.0 | 22 | | 330 | | 90 | 60 | 150 | 18.8 - 21.8 | 80/83 | |
| HWS600-15/HD | 15 | 12.0 - 18.0 | 43 | | 645 | | 90 | 60 | 150 | 18.8 - 21.8 | 81/84 | |
| HWS1000-15/HD | 15 | 12.0 - 18.0 | 70 | 80 | 1050 | 1200 | 90 | 60 | 150 | 18.7 - 21.8 | 83/85 | |
| HWS1500-15/HD | 15 | 12.0 - 18.0 | 100 | | 1500 | | 90 | 60 | 150 | 18.7-21.8 | 83/87 | |
| HWS30-24/HD | 24 | 19.2 - 28.8 | 1.3 | | 31.2 | | 192 | 96 | 200 | 30 - 34.8 | 83/86 | |
| HWS50-24/HD | 24 | 19.2 - 28.8 | 2.2 | | 52.8 | | 192 | 96 | 150 | 30 - 34.8 | 82/84 | |
| HWS100-24/HD | 24 | 19.2 - 28.8 | 4.5 | | 108 | | 192 | 96 | 150 | 30 - 34.8 | 84/87 | |
| HWS150-24/HD | 24 | 19.2 - 28.8 | 6.5 | | 156 | | 192 | 96 | 150 | 30 - 34.8 | 85/88 | |
| HWS300-24/HD | 24 | 19.2 - 28.8 | 14 | 16.5 | 336 | 396 | 144 | 96 | 150 | 30 - 34.8 | 82/85 | |
| HWS600-24/HD | 24 | 19.2 - 28.8 | 27 | 31 | 648 | 744 | 144 | 96 | 150 | 30 - 34.8 | 82/85 | |
| HWS1000-24/HD | 24 | 19.2 - 28.8 | 46 | 58.5 | 1104 | 1404 | 144 | 96 | 150 | 30 - 34.8 | 85/87 | |
| HWS1500-24/HD | 24 | 19.2 - 28.8 | 65/70 | 105 | 1560/1680 | 2520 ⁽¹⁾ | 144 | 96 | 200 | 30 - 34.8 | 84/88 | |
| HWS1000-36/HD | 36 | 28.8 - 43.2 | 30.7 | 39 | 1104 | 1404 | 150 | 144 | 200 | 45 - 49.7 | 85/88 | |
| HWS1500-36/HD | 36 | 28.8 - 43.2 | 42/46.5 | 70 | 1512/1674 | 2520 ⁽¹⁾ | 150 | 144 | 200 | 45 - 49.7 | 84/88 | |
| HWS30-48/HD | 48 | 38.4 - 52.8 | 0.65 | | 31.2 | | 384 | 192 | 200 | 55.2 - 64.8 | 82/83 | |
| HWS50-48/HD | 48 | 38.4 - 52.8 | 1.1 | | 52.8 | | 384 | 192 | 200 | 55.2 - 64.8 | 83/85 | |
| HWS100-48/HD | 48 | 38.4 - 52.8 | 2.1 | | 100.8 | | 384 | 192 | 200 | 55.2 - 64.8 | 84/87 | |
| HWS150-48/HD | 48 | 38.4 - 52.8 | 3.3 | | 158.4 | | 384 | 192 | 200 | 55.2 - 64.8 | 85/88 | |
| HWS300-48/HD | 48 | 38.4 - 52.8 | 7 | | 336 | | 288 | 192 | 350 | 55.2 - 64.8 | 82/85 | |
| HWS600-48/HD | 48 | 38.4 - 52.8 | 13 | | 624 | | 288 | 192 | 350 | 55.2 - 64.8 | 83/86 | |
| HWS1000-48/HD | 48 | 38.4 - 52.8 | 23 | 29.2 | 1104 | 1404 | 288 | 192 | 200 | 55.2 - 60.0 | 86/88 | |
| HWS1500-48/HD | 48 | 38.4 - 52.8 | 32 | | 1536 | | 288 | 192 | 200 | 55.2 - 64.8 | 86/90 | |
| HWS1000-60/HD | 60 | 48.0 - 66 | 18.4 | 23.4 | 1104 | 1404 | 360 | 240 | 400 | 69.0 - 75.0 | 85/88 | |
| HWS1500-60/HD | 60 | 48.0 - 66 | 28 | 42 | 1536 | 2520 | 360 | 240 | 400 | 69.0 - 75.0 | 86/90 | |

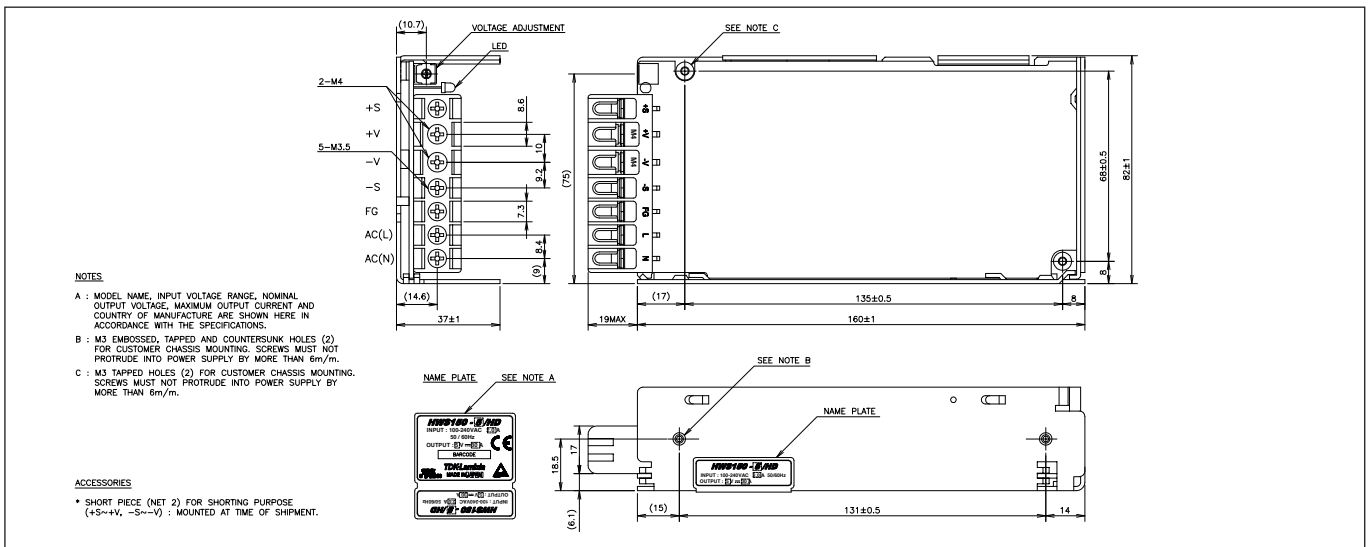
| Options | |
|---------|--|
| Suffix | Description |
| Blank | No cover (except HWS300-1500 cover fitted as standard) |
| /A | Cover fitted (eg HWS100-24/HDA) Deratings apply |

Notes: (3) Peak load for 10s maximum on time, 35% duty cycle at >200V input

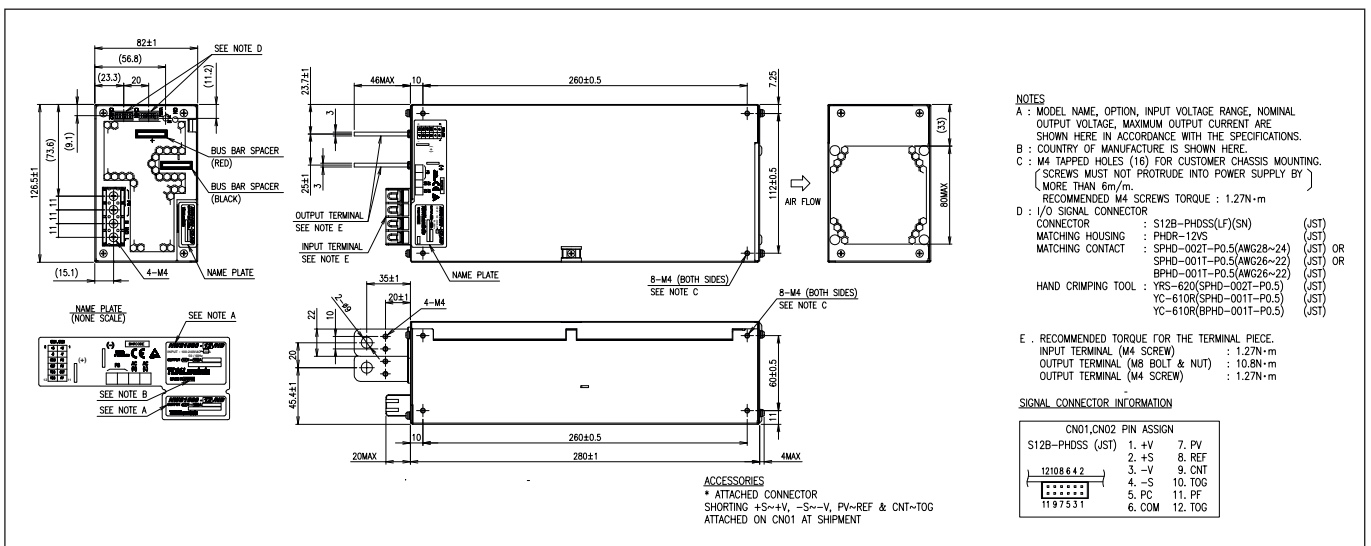
Outline Drawing HWS30 Series



Outline Drawing HWS150 Series



Outline Drawing HWS1500 Series





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