



LED



Industrial



Test



Comm



Broadcast

## Single Output Industrial Power Supplies

| Features                      | Benefits                  |
|-------------------------------|---------------------------|
| • Limited Lifetime Warranty   | • Lower Cost of Ownership |
| • High Efficiency (up to 91%) | • Easier System Cooling   |
| • Wide Range AC Input         | • Supports Global Use     |



| Specification                      |       |                                                                                  |                |                 |               |               |
|------------------------------------|-------|----------------------------------------------------------------------------------|----------------|-----------------|---------------|---------------|
| Model                              |       | HWS15A/A                                                                         | HWS30A/A       | HWS50A/A        | HWS100A/A     | HWS150A/A     |
| Input Voltage Range                | -     | 85 - 265VAC (47 - 63Hz) Withstands 300VAC for 5s or 120 - 370VDC*                |                |                 |               |               |
| Input Current (Typ) (1)            | A     | 0.35 / 0.2                                                                       | 0.65 / 0.4     | 0.65 / 0.35     | 1.3 / 0.65    | 1.9 / 0.95    |
| Inrush Current (1)                 | A     | 14 / 28                                                                          |                |                 |               |               |
| Power Factor                       | -     | Meets EN61000-3-2                                                                |                |                 |               |               |
|                                    |       | -                                                                                | -              | 0.97/0.91       | 0.98/0.93     | 0.98/0.93     |
| Temperature Coefficient            | %/°C  | <0.02%/°C                                                                        |                |                 |               |               |
| Overcurrent Protection             | %     | >105%                                                                            |                |                 |               |               |
| Overvoltage Protection             | V     | Yes (see table)                                                                  |                |                 |               |               |
| Hold Up Time (Typ)                 | ms    | 20                                                                               |                |                 |               |               |
| Leakage Current (max)              | mA    | <0.5mA (Typ 0.2mA at 100VAC, 0.4mA at 230VAC)                                    |                |                 |               |               |
| Remote Sense                       | -     | No                                                                               |                |                 | Yes           |               |
| Indicator                          | -     | Green LED = ON                                                                   |                |                 |               |               |
| Operating Temperature (with cover) | °C    | -10°C to +70°C, derate from 50°C to 70°C (2)                                     |                |                 |               |               |
| Storage Temperature                | °C    | -30 to +85°C                                                                     |                |                 |               |               |
| Humidity (non condensing)          | %RH   | Operating: 30 - 90%RH, Non operating 10 - 95%RH                                  |                |                 |               |               |
| Cooling                            | -     | Convection                                                                       |                |                 |               |               |
| Withstand Voltage                  | VAC   | Input to Ground 2kVAC, Input to Output 3kVAC, Output to Ground 500VAC for 1 min. |                |                 |               |               |
| Isolation Resistance               | MΩ    | >100M at 25°C & 70%RH, Output to Ground 500VDC                                   |                |                 |               |               |
| Vibration (non operating)          | -     | 10 - 55Hz (1 minute sweep), 19.6m/s² constant X, Y, Z 1 hour                     |                |                 |               |               |
| Shock                              | m/s²  | < 196.1 m/s²                                                                     |                |                 |               |               |
| Safety Agency Approvals            | -     | UL60950-1, CSA60950-1, EN60950-1, EN50178, UL508, 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, -3, -4, -5, -6, -8, -11; IEC61000-6-2                              |                |                 |               |               |
| Weight (Typ)                       | g     | 190                                                                              | 240            | 300             | 470           | 520           |
| Size (HxWxD) (with cover)          | mm    | 31.5 x 82 x 80                                                                   | 31.5 x 82 x 95 | 31.5 x 82 x 120 | 33 x 82 x 160 | 42 x 82 x 160 |
| MTBF (3)                           | hours | 12,116,851                                                                       | 8,169,868      | 3,726,622       | 2,963,512     | 2,676,081     |
| Warranty                           | -     | Limited Lifetime Warranty (See TDK-Lambda's terms and conditions)                |                |                 |               |               |

### Notes:

\* Safety certified for AC input only

(1) 100/200VAC.

(2) Derating varies with model. Please refer to individual model specification for derating graphs.

(3) According to Telcordia document SR-332, issue 3, "Reliability Prediction Procedure for Electronic Equipment"  
Conditions: ambient temp. 25deg C, 230Vac input, full load (figures shown for 24V models)

| Model Selector |             |                  |                 |               |               |                   |                  |                    |
|----------------|-------------|------------------|-----------------|---------------|---------------|-------------------|------------------|--------------------|
| Model          | Voltage (V) | Adjust Range (V) | Max Current (A) | Load Reg (mV) | Line Reg (mV) | Ripple Noise (mV) | Over Voltage (V) | Efficiency (typ) % |
| HWS15A-3/A     | 3.3V        | 2.97 - 3.96      | 3               | 40            | 20            | 120               | 4.13-4.95        | 70/71              |
| HWS30A-3/A     | 3.3V        | 2.97 - 3.96      | 6               | 40            | 20            | 120               | 4.13-4.95        | 75/77              |
| HWS50A-3/A     | 3.3V        | 2.97 - 3.96      | 10              | 40            | 20            | 120               | 4.13-4.95        | 76/78              |
| HWS100A-3/A    | 3.3V        | 2.97 - 3.96      | 20              | 40            | 20            | 120               | 4.13-4.95        | 82/84              |
| HWS150A-3/A    | 3.3V        | 2.97 - 3.96      | 30              | 40            | 20            | 120               | 4.13-4.95        | 82/84              |
| HWS15A-5/A     | 5V          | 4.0 - 6.0        | 3               | 40            | 20            | 120               | 6.25-7.25        | 77/79              |
| HWS30A-5/A     | 5V          | 4.0 - 6.0        | 6               | 40            | 20            | 120               | 6.25-7.25        | 80/82              |
| HWS50A-5/A     | 5V          | 4.0 - 6.0        | 10              | 40            | 20            | 120               | 6.25-7.25        | 82/84              |
| HWS100A-5/A    | 5V          | 4.0 - 6.0        | 20              | 40            | 20            | 120               | 6.25-7.25        | 84/86              |
| HWS150A-5/A    | 5V          | 4.0 - 6.0        | 30              | 40            | 20            | 120               | 6.25-7.25        | 85/87              |
| HWS15A-12/A    | 12V         | 9.6 - 14.4       | 1.3             | 96            | 48            | 150               | 15-17.4          | 80/83              |
| HWS30A-12/A    | 12V         | 9.6 - 14.4       | 2.5             | 96            | 48            | 150               | 15-17.4          | 84/86              |
| HWS50A-12/A    | 12V         | 9.6 - 14.4       | 4.3             | 96            | 48            | 150               | 15-17.4          | 83/85              |
| HWS100A-12/A   | 12V         | 9.6 - 14.4       | 8.5             | 96            | 48            | 150               | 15-17.4          | 86/88              |
| HWS150A-12/A   | 12V         | 9.6 - 14.4       | 13              | 96            | 48            | 150               | 15-17.4          | 85/88              |
| HWS15A-15/A    | 15V         | 12.0 - 18.0      | 1               | 120           | 60            | 150               | 18.8-21.8        | 81/84              |
| HWS30A-15/A    | 15V         | 12.0 - 18.0      | 2               | 120           | 60            | 150               | 18.8-21.8        | 85/87              |
| HWS50A-15/A    | 15V         | 12.0 - 18.0      | 3.5             | 120           | 60            | 150               | 18.8-21.8        | 83/86              |
| HWS100A-15/A   | 15V         | 12.0 - 18.0      | 7               | 120           | 60            | 150               | 18.8-21.8        | 86/88              |
| HWS150A-15/A   | 15V         | 12.0 - 18.0      | 10              | 120           | 60            | 150               | 18.8-21.8        | 86/89              |
| HWS15A-24/A    | 24V         | 19.2 - 28.8      | 0.65            | 150           | 96            | 150               | 30-34.8          | 82/85              |
| HWS30A-24/A    | 24V         | 19.2 - 28.8      | 1.3             | 150           | 96            | 150               | 30-34.8          | 86/88              |
| HWS50A-24/A    | 24V         | 19.2 - 28.8      | 2.2             | 150           | 96            | 150               | 30-34.8          | 84/87              |
| HWS100A-24/A   | 24V         | 19.2 - 28.8      | 4.5             | 150           | 96            | 150               | 30-34.8          | 87/89              |
| HWS150A-24/A   | 24V         | 19.2 - 28.8      | 6.5             | 150           | 96            | 150               | 30-34.8          | 88/90              |
| HWS15A-48/A    | 48V         | 38.4 - 52.8      | 0.33            | 240           | 192           | 200               | 55.2-64.8        | 80/80              |
| HWS30A-48/A    | 48V         | 38.4 - 52.8      | 0.65            | 240           | 192           | 200               | 55.2-64.8        | 82/83              |
| HWS50A-48/A    | 48V         | 38.4 - 52.8      | 1.1             | 240           | 192           | 200               | 55.2-64.8        | 84/86              |
| HWS100A-48/A   | 48V         | 38.4 - 52.8      | 2.1             | 240           | 192           | 200               | 55.2-64.8        | 88/90              |
| HWS150A-48/A   | 48V         | 38.4 - 52.8      | 3.3             | 240           | 192           | 200               | 55.2-64.8        | 89/91              |

| Options |                                                                                                                           |
|---------|---------------------------------------------------------------------------------------------------------------------------|
| Suffix  | Description                                                                                                               |
| Blank   | No Cover                                                                                                                  |
| / A     | Cover                                                                                                                     |
| / R     | Remote on/off<br>(available 50W, 100W & 150W models)                                                                      |
| / HD    | See HWS/HD datasheet for details.<br>-40°C start up and PCB coating ( <b>not available on HWS15A</b> )                    |
| / ME    | See HWS/ME datasheet for details of available models<br>IEC/EN60601-1 medical approval ( <b>not available on HWS15A</b> ) |