

## Single Output Medical Power Supplies

### Features

- ◆ Limited Lifetime Warranty
- ◆ Medical Certifications<sup>2</sup>
- ◆ Universal Input (85 - 265VAC)
- ◆ High Efficiency
- ◆ Broad 30W to 1500W product range



### Key Market Segments & Applications



Medical



RoHS

| Specifications   |       |   |                               |   |               |                                   |
|--|-------|---|-------------------------------|---|---------------|-----------------------------------|
| Model  |       | HWS30A<br>HWS50A  | HWS100A<br>HWS150A            | HWS300                                      | HWS600        | HWS1000<br>HWS1500                |
| Input Voltage range (47-63Hz)                                  | -     | 85 - 265VAC (47 - 63Hz)<br>or 120 - 370VDC*   |                               | 85 - 265VAC (47 - 63Hz)<br>or 120 - 330VDC* |               | 85 - 265VAC<br>(47 - 63Hz)        |
| Input Current (Typ) (1)  | A     | 0.65 / 0.4<br>0.65 / 0.35   | 1.3 / 0.65<br>1.9 / 0.95      | 4.1 / 2.1                                   | 8.1 / 3.9     | 13.5 / 7.0<br>19 / 10             |
| Inrush Current (1)   | A     | 14 / 28   |                               | 20 / 40                                     |               |                                   |
| Power Factor / Flicker   | -     | Meets EN61000-3-2, EN61000-3-3  |                               |   |               |                                   |
| 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  |                               |   |               |                                   |
| 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   |               |                                   |
| Voltage Programming  | -     | No  |                               |   | Yes           |                                   |
| Operating Temperature and Derating                             | °C    | HWS30A-150A: -10°C to +70°C, (See website for derating above 50°C)<br>HWS300-1500: -10°C to +70°C, (-10 - +50°C: 100%, derate linearly to 50% load from +50 to +70°C) |                               |   |               |                                   |
| Storage Temperature  | °C    | -30 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 (3)  | -     | Input to Ground 2kVAC, Input to Output 3kVAC, Output to Ground 500VAC,<br>Output to Remote On/Off 100VAC for 1 min.   |                               |   |               |                                   |
| Isolation Resistance   | -     | >100M at 25°C & 70%RH, Output to Ground 500VDC, >10M Output to remote on/off 100VDC   |                               |   |               |                                   |
| Vibration (non operating)                                      | -     | 10 - 55Hz (1 min sweep), 19.6m/s <sup>2</sup> constant, X, Y, Z axis, one hour each   |                               |   |               |                                   |
| Shock (in packaging)   | -     | < 196.1m/s <sup>2</sup>   |                               |   |               |                                   |
| Safety Agency Certifications (2)                               | -     | ES60601-1, EN60601, CSA-C22.2 No601.1-M90 (C-UL) (basic insulation), CE Mark  |                               |   |               |                                   |
| Line Dip   | -     | Complies with SEMI F47 (200VAC line only)   |                               |   |               |                                   |
| Conducted & Radiated EMI                                       | -     | EN55011 / EN55032-B, FCC-B, VCCI-B (HWS600, 1000 & 1500 Class A)  |                               |   |               |                                   |
| Immunity   | -     | IEC61000-4-2, -3, -4, -5, -6, -8, -11, IEC61000-6-2, IEC60601-1-2 Ed.4***   |                               |   |               |                                   |
| Weight (Typ)   | g     | 200<br>260  | 420<br>470                    | 1000  | 1600          | 3200<br>3800                      |
| Size (WxHxD)   | in    | 1.04x3.23x3.74<br>1.04x3.23x4.72  | 1.1x3.23x6.3<br>1.46x3.23x6.3 | 2.4x3.23x6.5                                | 3.94x3.23x6.5 | 4.98x3.23x9.45<br>4.98x3.23x11.02 |
| MTBF - Telcordia SR-332 issue 3**                              | hours | 8,169,868   | 2,963,512                     | 2,145,809                                   | 1,998,996     | 1,087,031                         |
| Warranty   | yrs   | 3,726,622   | 2,676,081                     | 2,145,809                                   | 1,998,996     | 1,152,309                         |
| Limited lifetime warranty (See website for terms & conditions) |       |   |                               |   |               |                                   |

(1) 100/200VAC input

(2) See clause 19.5DV.2 of UL60601 for equipment in proximity of patient

(3) HWS300-600 2.5kVAC Input to ground

\* Safety certified for AC input only

\*\* 24V output model, 25°C ambient, full load, 230VAC input

\*\*\* HWS30A-150A/ME only (See immunity data on website)

| Output Ratings |         |              |   |   |              |              |                  |                 |                                   |  |
|----------------|---------|--------------|---|---|--------------|--------------|------------------|-----------------|-----------------------------------|--|
| Model          | Voltage | Adjust Range | Max Current (A)                               | Max Power (W)                                       | Load Reg(mV) | Line Reg(mV) | Ripple Noise(mV) | Overvoltage (V) | Efficiency (typ) % <sup>(1)</sup> |  |
| HWS30A-5/ME    | 5V      | 4.0 - 6.0    | 6   | 30  | 40           | 20           | 120              | 6.25-7.25       | 80/82                             |  |
| HWS50A-5/ME    | 5V      | 4.0 - 6.0    | 10  | 50  | 40           | 20           | 120              | 6.25-7.25       | 82/84                             |  |
| HWS100A-5/ME   | 5V      | 4.0 - 6.0    | 20  | 100   | 40           | 20           | 120              | 6.25-7.25       | 84/86                             |  |
| HWS150A-5/ME   | 5V      | 4.0 - 6.0    | 30  | 150   | 40           | 20           | 120              | 6.25-7.25       | 85/87                             |  |
| HWS600-5/ME    | 5V      | 4.0 - 6.0    | 120   | 600   | 30           | 20           | 120              | 6.25-7.25       | 80/83                             |  |
| HWS30A-12/ME   | 12V     | 9.6 - 14.4   | 2.5   | 30  | 96           | 48           | 150              | 15-17.4         | 84/86                             |  |
| HWS50A-12/ME   | 12V     | 9.6 - 14.4   | 4.3   | 51.6  | 96           | 48           | 150              | 15-17.4         | 83/85                             |  |
| HWS100A-12/ME  | 12V     | 9.6 - 14.4   | 8.5   | 102   | 96           | 48           | 150              | 15-17.4         | 86/88                             |  |
| HWS150A-12/ME  | 12V     | 9.6 - 14.4   | 13  | 156   | 96           | 48           | 150              | 15-17.4         | 85/88                             |  |
| HWS300-12/ME   | 12V     | 9.6 - 14.4   | 27  | 324   | 72           | 48           | 150              | 15-17.4         | 80/83                             |  |
| HWS600-12/ME   | 12V     | 9.6 - 14.4   | 53  | 636   | 72           | 48           | 150              | 15-17.4         | 80/83                             |  |
| HWS30A-15/ME   | 15V     | 12.0 - 18.0  | 2   | 30  | 120          | 60           | 150              | 18.8-21.8       | 85/87                             |  |
| HWS50A-15/ME   | 15V     | 12.0 - 18.0  | 3.5   | 52.5  | 120          | 60           | 150              | 18.8-21.8       | 83/86                             |  |
| HWS100A-15/ME  | 15V     | 12.0 - 18.0  | 7   | 105   | 120          | 60           | 150              | 18.8-21.8       | 86/88                             |  |
| HWS150A-15/ME  | 15V     | 12.0 - 18.0  | 10  | 150   | 120          | 60           | 150              | 18.8-21.8       | 86/89                             |  |
| HWS300-15/ME   | 15V     | 12.0 - 18.0  | 22  | 330   | 90           | 60           | 150              | 18.8-21.8       | 80/83                             |  |
| HWS600-15/ME   | 15V     | 12.0 - 18.0  | 43  | 645   | 90           | 60           | 150              | 18.8-21.8       | 81/84                             |  |
| HWS30A-24/ME   | 24V     | 19.2 - 28.8  | 1.3   | 31.2  | 150          | 96           | 150              | 30-34.8         | 86/88                             |  |
| HWS50A-24/ME   | 24V     | 19.2 - 28.8  | 2.2   | 52.8  | 150          | 96           | 150              | 30-34.8         | 84/87                             |  |
| HWS100A-24/ME  | 24V     | 19.2 - 28.8  | 4.5   | 108   | 150          | 96           | 150              | 30-34.8         | 87/89                             |  |
| HWS150A-24/ME  | 24V     | 19.2 - 28.8  | 6.5   | 156   | 150          | 96           | 150              | 30-34.8         | 88/90                             |  |
| HWS300-24/ME   | 24V     | 19.2 - 28.8  | 14 (16.5 pk) <sup>(4)</sup>                   | 336, (396 pk) <sup>(4)</sup>                        | 144          | 96           | 150              | 30-34.8         | 82/85                             |  |
| HWS600-24/ME   | 24V     | 19.2 - 28.8  | 27 (31 pk) <sup>(4)</sup>                     | 648, (744 pk) <sup>(4)</sup>                        | 144          | 96           | 150              | 30-34.8         | 82/85                             |  |
| HWS1000-24/ME  | 24V     | 19.2 - 28.8  | 46 (58.5 pk) <sup>(4)</sup>                   | 1104, (1404 pk) <sup>(4)</sup>                      | 150          | 96           | 150              | 30-34.8         | 85/87                             |  |
| HWS1500-24/ME  | 24V     | 19.2 - 28.8  | 65/70 <sup>(1)</sup> (105 pk) <sup>(4)</sup>  | 1560/1680 <sup>(1)</sup> , (2520 pk) <sup>(4)</sup> | 144          | 96           | 200              | 30-34.8         | 84/88                             |  |
| HWS1000-36/ME  | 36V     | 28.8 - 43.2  | 30.7 (39 pk) <sup>(4)</sup>                   | 1104, (1404 pk) <sup>(4)</sup>                      | 150          | 144          | 200              | 45-49.7         | 85/88                             |  |
| HWS1500-36/ME  | 36V     | 28.8 - 43.2  | 42/46.5 <sup>(1)</sup> (70 pk) <sup>(4)</sup> | 1512/1674 <sup>(1)</sup> , (2520 pk) <sup>(4)</sup> | 150          | 144          | 200              | 45-49.7         | 84/88                             |  |
| HWS30A-48/ME   | 48V     | 38.4 - 52.8  | 0.65  | 31.2  | 240          | 192          | 200              | 55.2-64.8       | 86/87                             |  |
| HWS50A-48/ME   | 48V     | 38.4 - 52.8  | 1.1   | 52.8  | 240          | 192          | 200              | 55.2-64.8       | 84/86                             |  |
| HWS100A-48/ME  | 48V     | 38.4 - 52.8  | 2.1   | 100.8   | 240          | 192          | 200              | 55.2-64.8       | 88/90                             |  |
| HWS150A-48/ME  | 48V     | 38.4 - 52.8  | 3.3   | 158.4   | 240          | 192          | 200              | 55.2-64.8       | 89/91                             |  |
| HWS300-48/ME   | 48V     | 38.4 - 52.8  | 7   | 336   | 288          | 192          | 350              | 55.2-64.8       | 82/85                             |  |
| HWS600-48/ME   | 48V     | 38.4 - 52.8  | 13  | 624   | 288          | 192          | 350              | 55.2-64.8       | 83/86                             |  |
| HWS1000-48/ME  | 48V     | 38.4 - 52.8  | 23 (29.2 pk) <sup>(4)</sup>                   | 1104, (1404 pk) <sup>(4)</sup>                      | 300          | 192          | 200              | 55.2-60.8       | 86/88                             |  |
| HWS1500-48/ME  | 48V     | 38.4 - 52.8  | 32  | 1536  | 288          | 192          | 200              | 55.2-64.8       | 86/90                             |  |

(1) 100/200VAC input

(2) See clause 19.5DV.2 of UL60601 for equipment in proximity of patient

(3) HWS300-600 2.5kVAC Input to ground

(4) Peak load at 200VAC input for 10s maximum on time, 35% duty cycle

(5) Using voltage programming input - see installation manual for details

| Options |   |
|---------|---|
| Suffix  | Description                               |
| /ME     | No Cover (HWS30A-150A/ME Only)            |
|         | HWS300-1500/ME the cover is always fitted |
| /MEA    | With Cover (HWS30A-150A/ME only)          |

| Other Medical Products |                                      |
|------------------------|--------------------------------------|
| NV Series              | 175 to 700W single & multiple output |
| Vega Series            | 450 to 900W single & multiple output |
| Alpha Series           | 1000W single and multiple output     |

For Additional Information, please visit  
<https://product.tdk.com/info/en/products/power/index.html>





Компания «ЭлектроПласт» предлагает заключение долгосрочных отношений при поставках импортных электронных компонентов на взаимовыгодных условиях!

Наши преимущества:

- Оперативные поставки широкого спектра электронных компонентов отечественного и импортного производства напрямую от производителей и с крупнейших мировых складов;
- Поставка более 17-ти миллионов наименований электронных компонентов;
- Поставка сложных, дефицитных, либо снятых с производства позиций;
- Оперативные сроки поставки под заказ (от 5 рабочих дней);
- Экспресс доставка в любую точку России;
- Техническая поддержка проекта, помощь в подборе аналогов, поставка прототипов;
- Система менеджмента качества сертифицирована по Международному стандарту ISO 9001;
- Лицензия ФСБ на осуществление работ с использованием сведений, составляющих государственную тайну;
- Поставка специализированных компонентов (Xilinx, Altera, Analog Devices, Intersil, Interpoint, Microsemi, Aeroflex, Peregrine, Syfer, Eurofarad, Texas Instrument, Miteq, Cobham, E2V, MA-COM, Hittite, Mini-Circuits, General Dynamics и др.);

Помимо этого, одним из направлений компании «ЭлектроПласт» является направление «Источники питания». Мы предлагаем Вам помощь Конструкторского отдела:

- Подбор оптимального решения, техническое обоснование при выборе компонента;
- Подбор аналогов;
- Консультации по применению компонента;
- Поставка образцов и прототипов;
- Техническая поддержка проекта;
- Защита от снятия компонента с производства.



#### Как с нами связаться

**Телефон:** 8 (812) 309 58 32 (многоканальный)

**Факс:** 8 (812) 320-02-42

**Электронная почта:** [org@eplast1.ru](mailto:org@eplast1.ru)

**Адрес:** 198099, г. Санкт-Петербург, ул. Калинина, дом 2, корпус 4, литера А.