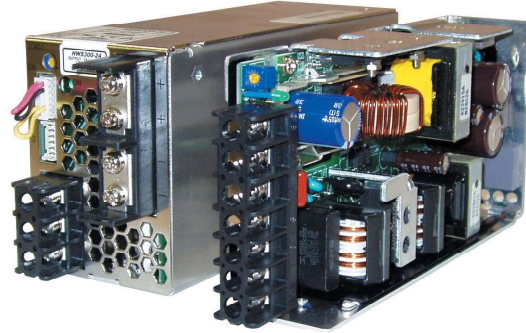


## Single Output Medical Power Supplies

### 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<br>3,726,622                                                                                                                                                | 2,963,512<br>2,676,081               | 2,145,809                                   | 1,998,996     | 1,087,031<br>1,152,309            |
| Warranty                           | yrs   | 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               |                                               |                                                      |              |              |                  |                 |                                   |
|               |         | 4.8 - 28.8 <sup>(5)</sup> | 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               |                                               |                                                      |              |              |                  |                 |                                   |
|               |         | 4.8 - 28.8 <sup>(5)</sup> | 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               |                                               |                                                      |              |              |                  |                 |                                   |
|               |         | 7.2 - 43.2 <sup>(5)</sup> | 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               |                                               |                                                      |              |              |                  |                 |                                   |
|               |         | 7.2 - 43.2 <sup>(5)</sup> | 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               |                                               |                                                      |              |              |                  |                 |                                   |
|               |         | 9.6 - 52.8 <sup>(5)</sup> | 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               |                                               |                                                      |              |              |                  |                 |                                   |
|               |         | 9.6 - 52.8 <sup>(5)</sup> | 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>



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### Офис по работе с юридическими лицами:

105318, г.Москва, ул.Щербаковская д.3, офис 1107, 1118, ДЦ «Щербаковский»

Телефон: +7 495 668-12-70 (многоканальный)

Факс: +7 495 668-12-70 (доб.304)

E-mail: [info@moschip.ru](mailto:info@moschip.ru)

Skype отдела продаж:

moschip.ru

moschip.ru\_4

moschip.ru\_6

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