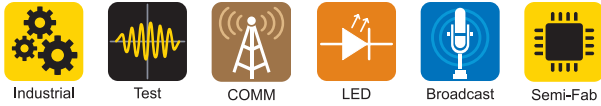


## 10-150W Single Output Industrial Power Supplies

<https://product.tdk.com/en/power/hws-a>  
[www.emea.lambda.tdk.com/hws-a](http://www.emea.lambda.tdk.com/hws-a)



The ultra reliable, conservatively rated HWS-A series of 10W to 150W AC-DC power supplies has a limited lifetime warranty <sup>(1)</sup>, unique to the industry. The series accepts a wide range 85 to 265Vac (300Vac peak for 5s) input with output voltages from 3.3V to 48V. The products are certified to IEC 62368-1, UL 508 and EN 62477-1 OVC III (HWS150A) and are SEMI F47 compliant . They also meet Class B conducted and radiated emissions without additional filtering or shielding. Models with push-in wire terminals are available for systems utilizing cost-saving automated and robotic assembly techniques.

| Features                                           | Benefits                                    |
|----------------------------------------------------|---------------------------------------------|
| • Limited Lifetime Warranty <sup>(1)</sup>         | • Low Cost of Ownership                     |
| • Very Conservative Electrolytic Capacitor Ratings | • Long Service Life                         |
| • Class B Conducted and Radiated EMI               | • Easier System EMC Compliance              |
| • Low Off-Load Power Consumption                   | • Energy Saving                             |
| • UL 508 Certified                                 | • Suitable For Industrial Control Equipment |

### Model Selector

| Model        | Output Voltage (V) | Adjustment Range (V) | Maximum Current(A) | Maximum Output Power (W) | Line Reg (mV) | Load Reg (mV) | Overvoltage (V) | Efficiency (115/230Vac)(%) |
|--------------|--------------------|----------------------|--------------------|--------------------------|---------------|---------------|-----------------|----------------------------|
| HWS15A-3/A   | 3.3                | 2.97 - 3.96          | 3                  | 10                       | 20            | 120           | 4.13 - 4.95     | 70 / 71                    |
| HWS30A-3/A   | 3.3                | 2.97 - 3.96          | 6                  | 20                       | 20            | 120           | 4.13 - 4.95     | 75 / 77                    |
| HWS50A-3/A   | 3.3                | 2.97 - 3.96          | 10                 | 33                       | 20            | 120           | 4.13 - 4.95     | 76 / 78                    |
| HWS100A-3/A  | 3.3                | 2.97 - 3.96          | 20                 | 66                       | 20            | 120           | 4.13 - 4.95     | 82 / 84                    |
| HWS150A-3/A  | 3.3                | 2.97 - 3.96          | 30                 | 99                       | 20            | 120           | 4.13 - 4.95     | 82 / 84                    |
| HWS15A-5/A   | 5                  | 4.0 - 6.0            | 3                  | 15                       | 20            | 120           | 6.25 - 7.25     | 77 / 79                    |
| HWS30A-5/A   | 5                  | 4.0 - 6.0            | 6                  | 30                       | 20            | 120           | 6.25 - 7.25     | 80 / 82                    |
| HWS50A-5/A   | 5                  | 4.0 - 6.0            | 10                 | 50                       | 20            | 120           | 6.25 - 7.25     | 82 / 84                    |
| HWS100A-5/A  | 5                  | 4.0 - 6.0            | 20                 | 100                      | 20            | 120           | 6.25 - 7.25     | 84 / 86                    |
| HWS150A-5/A  | 5                  | 4.0 - 6.0            | 30                 | 150                      | 20            | 120           | 6.25 - 7.25     | 85 / 87                    |
| HWS15A-12/A  | 12                 | 9.6 - 14.4           | 1.3                | 16                       | 48            | 150           | 15 - 17.4       | 80 / 83                    |
| HWS30A-12/A  | 12                 | 9.6 - 14.4           | 2.5                | 30                       | 48            | 150           | 15 - 17.4       | 84 / 86                    |
| HWS50A-12/A  | 12                 | 9.6 - 14.4           | 4.3                | 52                       | 48            | 150           | 15 - 17.4       | 83 / 85                    |
| HWS100A-12/A | 12                 | 9.6 - 14.4           | 8.5                | 102                      | 48            | 150           | 15 - 17.4       | 86 / 88                    |
| HWS150A-12/A | 12                 | 9.6 - 14.4           | 13                 | 156                      | 48            | 150           | 15 - 17.4       | 85 / 88                    |
| HWS15A-15/A  | 15                 | 12.0 - 18.0          | 1                  | 15                       | 60            | 150           | 18.8 - 21.8     | 81 / 84                    |
| HWS30A-15/A  | 15                 | 12.0 - 18.0          | 2                  | 30                       | 60            | 150           | 18.8 - 21.8     | 85 / 87                    |
| HWS50A-15/A  | 15                 | 12.0 - 18.0          | 3.5                | 53                       | 60            | 150           | 18.8 - 21.8     | 83 / 86                    |
| HWS100A-15/A | 15                 | 12.0 - 18.0          | 7                  | 105                      | 60            | 150           | 18.8 - 21.8     | 86 / 88                    |
| HWS150A-15/A | 15                 | 12.0 - 18.0          | 10                 | 150                      | 60            | 150           | 18.8 - 21.8     | 86 / 89                    |
| HWS15A-24/A  | 24                 | 19.2 - 28.8          | 0.65               | 16                       | 96            | 150           | 30 - 34.8       | 82 / 85                    |
| HWS30A-24/A  | 24                 | 19.2 - 28.8          | 1.3                | 31                       | 96            | 150           | 30 - 34.8       | 86 / 88                    |
| HWS50A-24/A  | 24                 | 19.2 - 28.8          | 2.2                | 53                       | 96            | 150           | 30 - 34.8       | 84 / 87                    |
| HWS100A-24/A | 24                 | 19.2 - 28.8          | 4.5                | 108                      | 96            | 150           | 30 - 34.8       | 87 / 89                    |
| HWS150A-24/A | 24                 | 19.2 - 28.8          | 6.5                | 156                      | 96            | 150           | 30 - 34.8       | 88 / 90                    |
| HWS15A-48/A  | 48                 | 38.4 - 52.8          | 0.33               | 16                       | 192           | 200           | 55.2 - 64.8     | 80 / 80                    |
| HWS30A-48/A  | 48                 | 38.4 - 52.8          | 0.65               | 31                       | 192           | 200           | 55.2 - 64.8     | 82 / 83                    |
| HWS50A-48/A  | 48                 | 38.4 - 52.8          | 1.1                | 53                       | 192           | 200           | 55.2 - 64.8     | 84 / 86                    |
| HWS100A-48/A | 48                 | 38.4 - 52.8          | 2.1                | 101                      | 192           | 200           | 55.2 - 64.8     | 88 / 90                    |
| HWS150A-48/A | 48                 | 38.4 - 52.8          | 3.3                | 158                      | 192           | 200           | 55.2 - 64.8     | 89 / 91                    |

| HWS150A                        | -                                                                                   | 3                                             | / | A                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |    |       |       |          |     |                                                                       |     |                                                                |      |                                                                                     |      |                                                                                   |    |                                               |
|--------------------------------|-------------------------------------------------------------------------------------|-----------------------------------------------|---|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----|-------|-------|----------|-----|-----------------------------------------------------------------------|-----|----------------------------------------------------------------|------|-------------------------------------------------------------------------------------|------|-----------------------------------------------------------------------------------|----|-----------------------------------------------|
| Series and nominal power level |                                                                                     | Output voltage<br>3 (3.3V), 5, 12, 15, 24, 48 |   | <table><tr><td>/A</td><td>Cover</td></tr><tr><td>blank</td><td>No cover</td></tr><tr><td>/HD</td><td><a href="#">See HWS/HD datasheet.</a><br/>-40°C start up &amp; pcb coating</td></tr><tr><td>/ME</td><td><a href="#">See HWS/ME datasheet.</a><br/>Medical certification</td></tr><tr><td>/EHA</td><td><a href="#">Horizontal push-in wire connectors</a><br/>(12-48V 50W/100W/150W models)</td></tr><tr><td>/EVA</td><td><a href="#">Vertical push-in wire connectors</a><br/>(12-48V 50W/100W/150W models)</td></tr><tr><td>/R</td><td>Remote on/off<br/>(HWS50A, 100A and 150A only)</td></tr></table> | /A | Cover | blank | No cover | /HD | <a href="#">See HWS/HD datasheet.</a><br>-40°C start up & pcb coating | /ME | <a href="#">See HWS/ME datasheet.</a><br>Medical certification | /EHA | <a href="#">Horizontal push-in wire connectors</a><br>(12-48V 50W/100W/150W models) | /EVA | <a href="#">Vertical push-in wire connectors</a><br>(12-48V 50W/100W/150W models) | /R | Remote on/off<br>(HWS50A, 100A and 150A only) |
| /A                             | Cover                                                                               |                                               |   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |    |       |       |          |     |                                                                       |     |                                                                |      |                                                                                     |      |                                                                                   |    |                                               |
| blank                          | No cover                                                                            |                                               |   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |    |       |       |          |     |                                                                       |     |                                                                |      |                                                                                     |      |                                                                                   |    |                                               |
| /HD                            | <a href="#">See HWS/HD datasheet.</a><br>-40°C start up & pcb coating               |                                               |   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |    |       |       |          |     |                                                                       |     |                                                                |      |                                                                                     |      |                                                                                   |    |                                               |
| /ME                            | <a href="#">See HWS/ME datasheet.</a><br>Medical certification                      |                                               |   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |    |       |       |          |     |                                                                       |     |                                                                |      |                                                                                     |      |                                                                                   |    |                                               |
| /EHA                           | <a href="#">Horizontal push-in wire connectors</a><br>(12-48V 50W/100W/150W models) |                                               |   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |    |       |       |          |     |                                                                       |     |                                                                |      |                                                                                     |      |                                                                                   |    |                                               |
| /EVA                           | <a href="#">Vertical push-in wire connectors</a><br>(12-48V 50W/100W/150W models)   |                                               |   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |    |       |       |          |     |                                                                       |     |                                                                |      |                                                                                     |      |                                                                                   |    |                                               |
| /R                             | Remote on/off<br>(HWS50A, 100A and 150A only)                                       |                                               |   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |    |       |       |          |     |                                                                       |     |                                                                |      |                                                                                     |      |                                                                                   |    |                                               |
| Preferred Option               |                                                                                     |                                               |   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |    |       |       |          |     |                                                                       |     |                                                                |      |                                                                                     |      |                                                                                   |    |                                               |

| Specifications                     |     |                                                                                                           |            |             |            |            |
|------------------------------------|-----|-----------------------------------------------------------------------------------------------------------|------------|-------------|------------|------------|
| Model                              |     | HWS15A                                                                                                    | HWS30A     | HWS50A      | HWS100A    | HWS150A    |
| <b>Input</b>                       |     |                                                                                                           |            |             |            |            |
| Input Voltage Range (Operating)    | Vac | 85 - 265                                                                                                  |            |             |            |            |
| Nominal Input Voltage Range        | Vac | 100 - 240 (Note: Safety certified for 90-264Vac)                                                          |            |             |            |            |
| Input Surge Voltage                | Vac | 300 for 5s                                                                                                |            |             |            |            |
| Input Frequency                    | Hz  | 47 - 63 (Note: Safety certified for 50-60Hz only)                                                         |            |             |            |            |
| DC Input Voltage range             | Vdc | 120 - 370 (Note: Safety certified for AC input only)                                                      |            |             |            |            |
| Input Current (100/200Vac)         | A   | 0.35 / 0.2                                                                                                | 0.65 / 0.4 | 0.65 / 0.35 | 1.3 / 0.65 | 1.9 / 0.95 |
| Inrush Current (100/200Vac)        | A   | 14 / 28 (Typical at cold start)                                                                           |            |             |            |            |
| Leakage Current                    | mA  | >0.5 (Typically 0.2 at 100Vac, 0.4 at 230Vac)                                                             |            |             |            |            |
| Power Factor (100/200Vac)          | -   | -                                                                                                         | -          | 0.97/0.91   | 0.98/0.93  | 0.98/0.93  |
| Harmonic Compliance                | -   | Meets IEC61000-3-2 Class A                                                                                |            |             |            |            |
| No Load Power Consumption          | W   | Between 0.3 and 4.6 (model dependent). See evaluation data on website                                     |            |             |            |            |
| Hold Up Time (typ)                 | ms  | 20                                                                                                        |            |             |            |            |
| Efficiency                         | -   | See Model Selector Table                                                                                  |            |             |            |            |
| Conducted & Radiated EMI           | -   | EN55011 / EN55032-B, FCC-B, VCCI-B                                                                        |            |             |            |            |
| Immunity                           | -   | See immunity table                                                                                        |            |             |            |            |
| Safety Certifications and Markings | -   | IEC/EN/UL/CSA62368-1, IEC/EN62477-1 OVC III (HWS150A & /ExA models only),<br>UL508, CE Mark and UKCA Mark |            |             |            |            |

| Immunity                        |              |                                                              |          |                                                      |
|---------------------------------|--------------|--------------------------------------------------------------|----------|------------------------------------------------------|
| Test                            | Standard     | Test Level                                                   | Criteria | Notes (See IEC61000 immunity test report on website) |
| ESD                             | EN61000-4-2  | Air ± 8kV and contact ± 6kV                                  | B        |                                                      |
| Radiated Susceptibility         | EN61000-4-3  | 80M -1GHz: 10V/m<br>1.4 - 2.0GHz: 3V/m<br>2.0 - 2.7GHz: 1V/m | A        |                                                      |
| Electrical Fast Transient Burst | EN61000-4-4  | ± 2kV                                                        | B        |                                                      |
| Surge                           | EN61000-4-5  | Normal ± 2kV<br>Common ± 4kV                                 | B        |                                                      |
| Conducted Susceptibility        | EN61000-4-6  | 10Vrms                                                       | A        |                                                      |
| Magnetic Fields                 | EN61000-4-8  | 30A/m                                                        | A        |                                                      |
| Voltage Dips                    | EN61000-4-11 | 30% 500ms                                                    | A        |                                                      |
|                                 |              | 60% 200ms                                                    | A        |                                                      |
|                                 |              | 100% 20ms                                                    | A        |                                                      |
|                                 |              | 100% 5000ms                                                  | B        |                                                      |
| SEMI F47 Line Dip               | SEMI F47     | -                                                            | -        | At input voltages > 200Vac                           |

| Specifications                      |        |                                                                                                                               |                      |                    |                        |                   |
|-------------------------------------|--------|-------------------------------------------------------------------------------------------------------------------------------|----------------------|--------------------|------------------------|-------------------|
| Model                               |        | HWS15A                                                                                                                        | HWS30A               | HWS50A             | HWS100A                | HWS150A           |
| Output                              |        |                                                                                                                               |                      |                    |                        |                   |
| Switching Frequency                 | kHz    | HWS15A-50A; 100, HWS100A-150A; 120, PFC converter 65                                                                          |                      |                    |                        |                   |
| Line Regulation                     | mV     | See Model Selector Table                                                                                                      |                      |                    |                        |                   |
| Load Regulation                     | mV     | See Model Selector Table                                                                                                      |                      |                    |                        |                   |
| External Load Capacitance (Maximum) | uF     | 3.3V, 5V: 10,000                                                                                                              | 3.3V, 5V: 10,000     |                    | 3.3V, 5V: 10,000       |                   |
|                                     |        | 12V: 5,000, 15V: 2,000                                                                                                        | 12V, 15V: 5,000      |                    | 12V, 15V: 10,000       |                   |
|                                     |        | 24V: 1,000, 48V: 500                                                                                                          | 24V: 2,000, 48V: 500 |                    | 24V: 5,000, 48V: 1,000 |                   |
| Ripple & Noise                      | mV     | 3.3V, 5V: 120, 12V, 15V, 24V: 150, 48V: 200                                                                                   |                      |                    |                        |                   |
| Temperature Coefficient             | %/°C   | 0.02                                                                                                                          |                      |                    |                        |                   |
| Minimum Load                        | -      | No minimum load required                                                                                                      |                      |                    |                        |                   |
| Overcurrent Protection              | -      | HWS15A-50A; >105%. Hiccup with automatic recovery<br>HWS100A-150A; >105%. Constant current and Hiccup with automatic recovery |                      |                    |                        |                   |
| Overvoltage Protection              | V      | See model selector table. Latching (unit shutdown), cycle AC input to reset                                                   |                      |                    |                        |                   |
| Overtemperature Protection          | -      | -                                                                                                                             |                      |                    |                        |                   |
| Remote Sense                        |        | On HWS100A-150A models only                                                                                                   |                      |                    |                        |                   |
| Remote On/Off                       |        | Optional /R suffix on HWS50A, HWS100A and HWS150A                                                                             |                      |                    |                        |                   |
| Indicators                          | -      | Green LED indicates DC is OK                                                                                                  |                      |                    |                        |                   |
| Parallel Operation                  | -      | Not possible                                                                                                                  |                      |                    |                        |                   |
| Environmental                       |        |                                                                                                                               |                      |                    |                        |                   |
| Operating Temperature               | °C     | HWS15A: -10 to +70, derate linearly to 50% load from 50 to 70                                                                 |                      |                    |                        |                   |
| (Cover models, /A suffix)           |        | HWS30A to 150A: -10 to +70, derate linearly to 20% load from 50 to 70                                                         |                      |                    |                        |                   |
| Storage Temperature                 | °C     | -30 to +85                                                                                                                    |                      |                    |                        |                   |
| Humidity (non condensing)           | %RH    | Operating: 30 - 90, Non operating 10 - 95                                                                                     |                      |                    |                        |                   |
| Cooling                             | -      | Convection                                                                                                                    |                      |                    |                        |                   |
| Altitude                            | m      | 4,000                                                                                                                         |                      |                    |                        |                   |
| Withstand Voltage (For 1 minute)    | Vac    | Input to ground 2,000, Input to output 3,000, Output to ground 500 for 1 minute                                               |                      |                    |                        |                   |
| Isolation Resistance                | MΩ     | >100 at 25°C, 70%RH & 500Vdc                                                                                                  |                      |                    |                        |                   |
| Vibration (Non-operating)           | -      | 10-55Hz (Sweep for 1min.)<br>19.6m/s² Constant X,Y,Z 1 hour each                                                              |                      |                    |                        |                   |
| Shock (Non-operating)               | -      | Less than 196m/s²                                                                                                             |                      |                    |                        |                   |
| Other                               |        |                                                                                                                               |                      |                    |                        |                   |
| Weight (Typ)                        | g      | 190                                                                                                                           | 240                  | 300                | 470                    | 520               |
| Size (WxHxD) (with cover /A)        | mm     | 31.5 x 82 x 80                                                                                                                | 31.5 x 82 x 95       | 31.5 x 82 x 120    | 33.5 x 83 x 160.5      | 42 x 82 x 160     |
| Size (WxHxD) (with cover /A)        | Inches | 1.24 x 3.23 x 3.15                                                                                                            | 1.24 x 3.23 x 3.74   | 1.24 x 3.23 x 4.72 | 1.32 x 3.27 x 6.32     | 1.65 x 3.23 x 6.3 |
| Connectors                          | -      | Screw terminals                                                                                                               |                      |                    |                        |                   |
| Case Material                       | -      | Aluminum                                                                                                                      |                      |                    |                        |                   |
| MTBF - Telcordia SR-332 issue 3*    |        | 12,116,851                                                                                                                    | 8,169,868            | 3,726,622          | 2,963,512              | 2,676,081         |
| Warranty                            | yrs    | Limited lifetime <sup>(1)</sup> or 5 years                                                                                    |                      |                    |                        |                   |

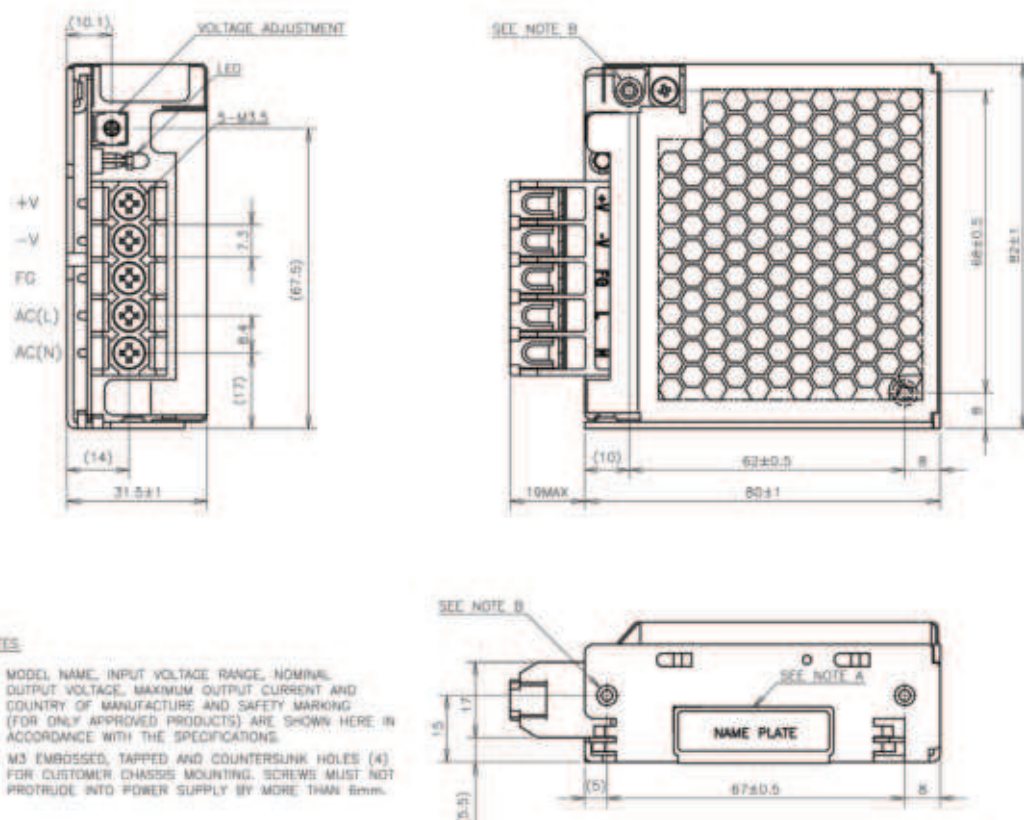
## Notes

See website for detailed specifications, test methods and installation manual

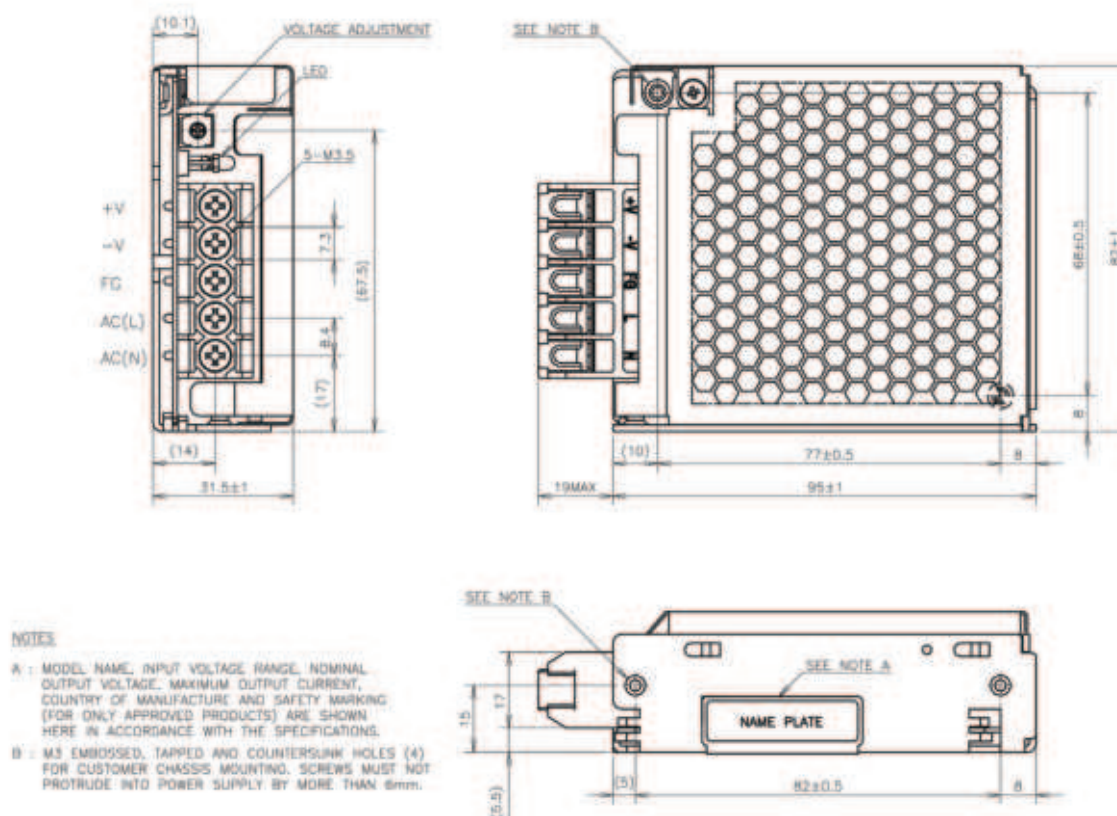
(1) The Americas and EMEA regions: limited lifetime warranty. Other regions: 5 years. See applicable regional terms of sale.

\*24V output model, 55°C ambient, full load, 230Vac input

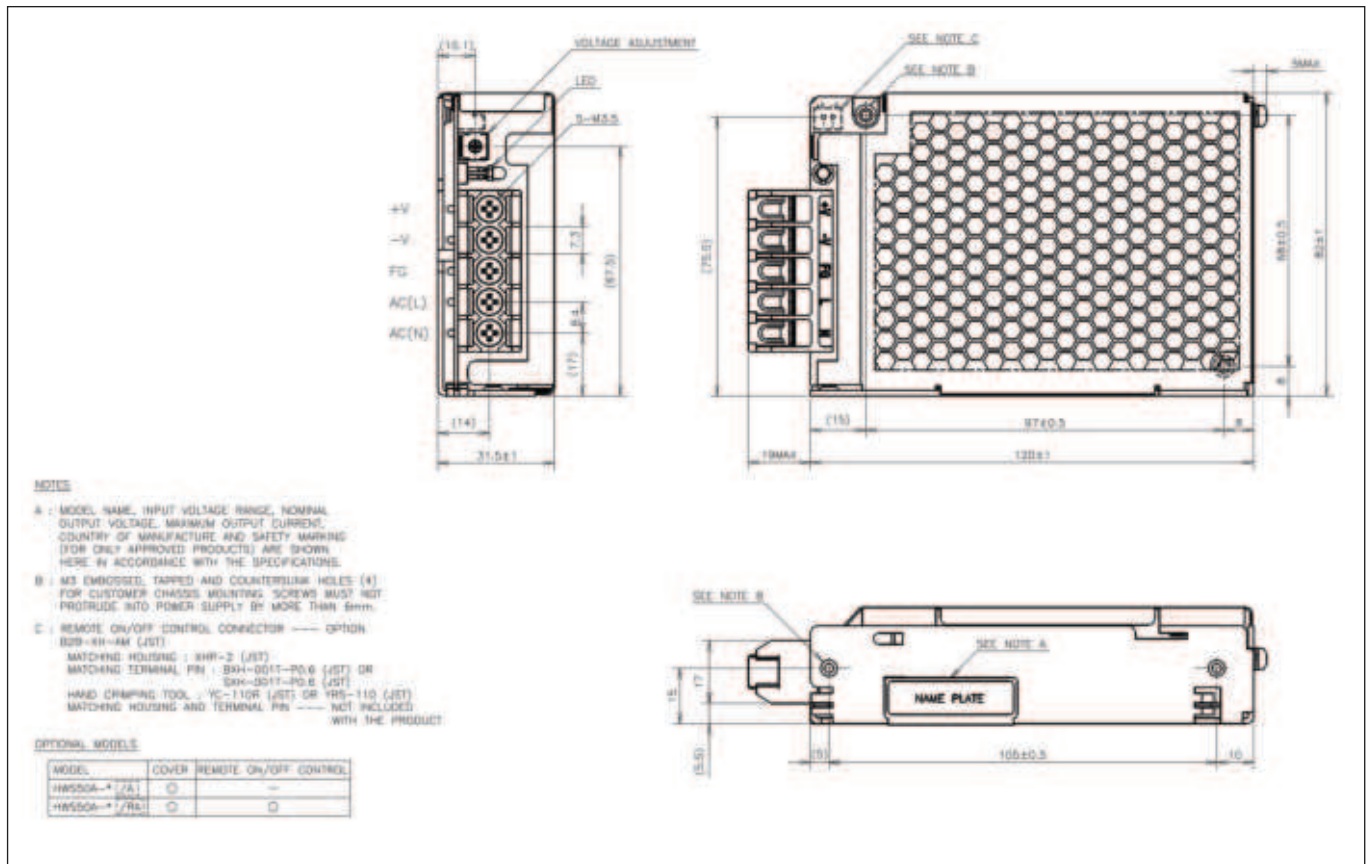
## HWS15A/A Outline Drawing



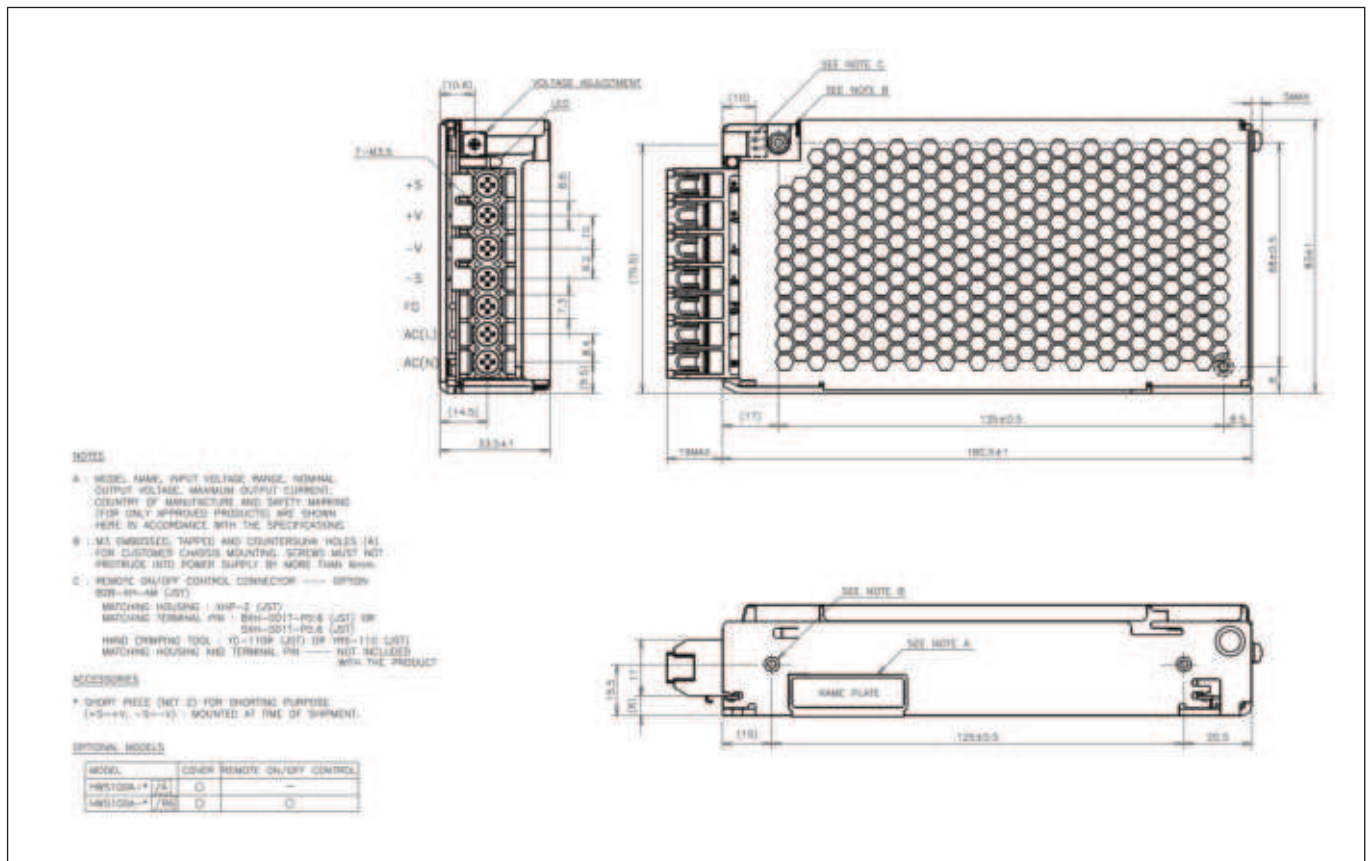
## HWS30A/A Outline Drawing



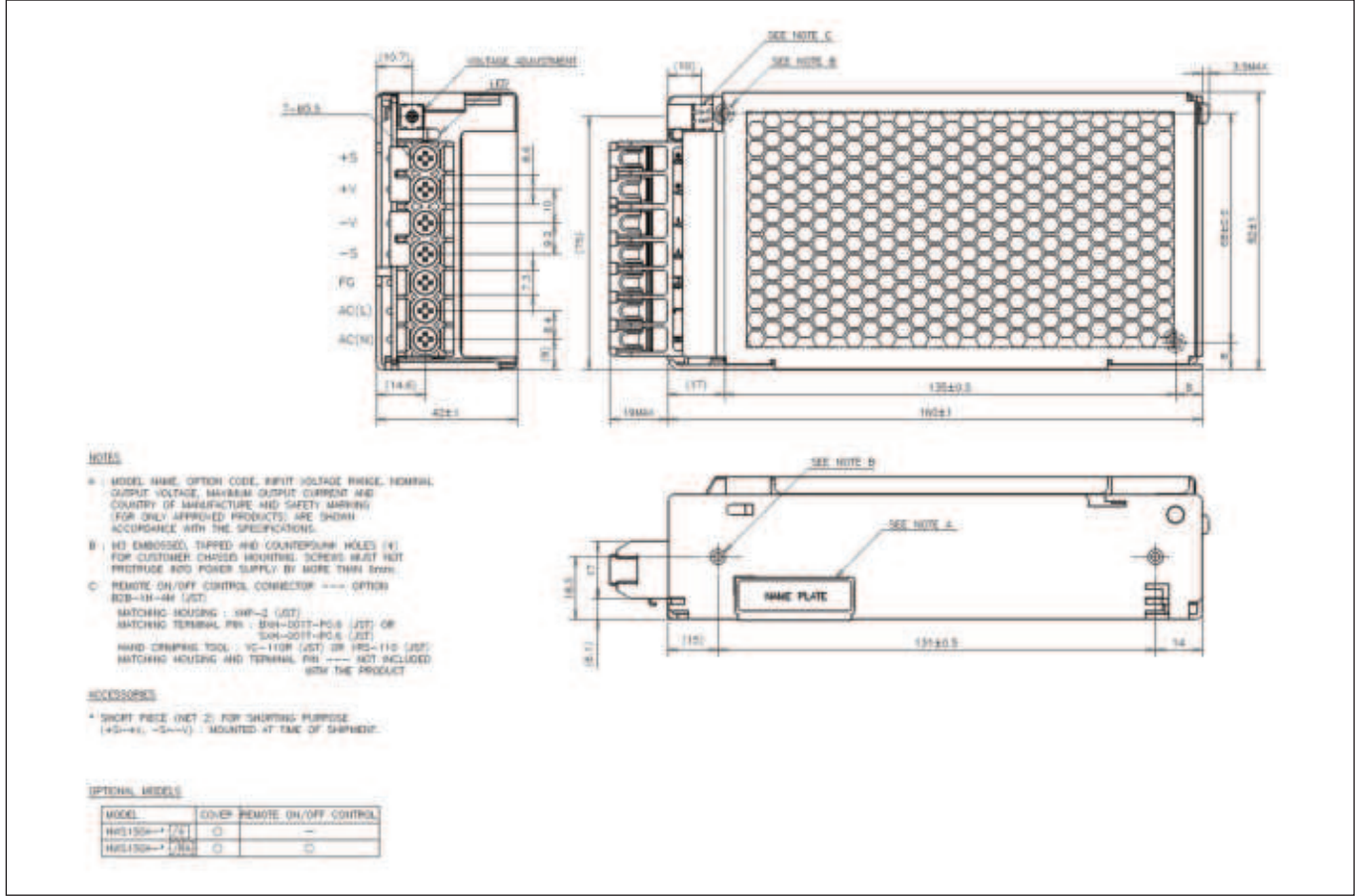
## HWS50A/A Outline Drawing



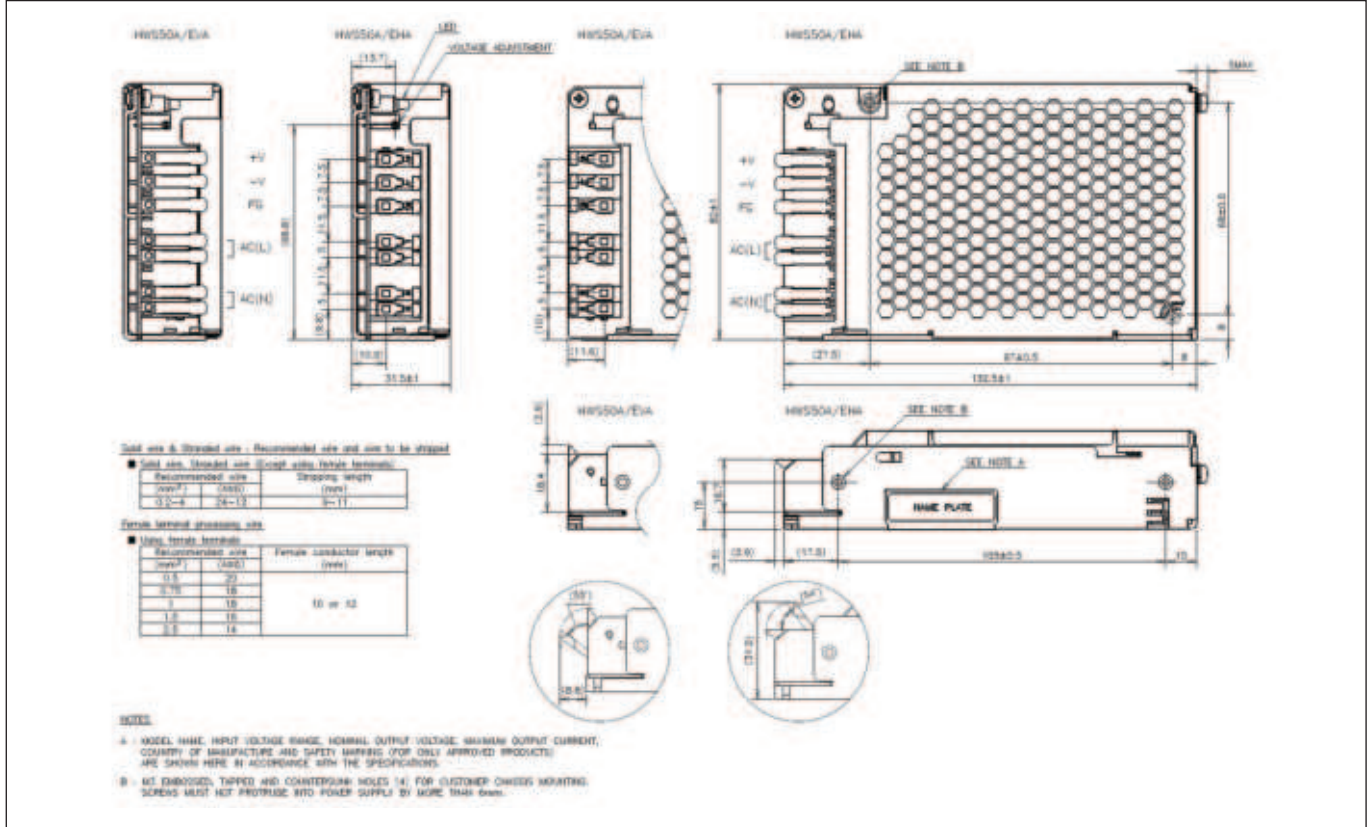
## HWS100A/A Outline Drawing



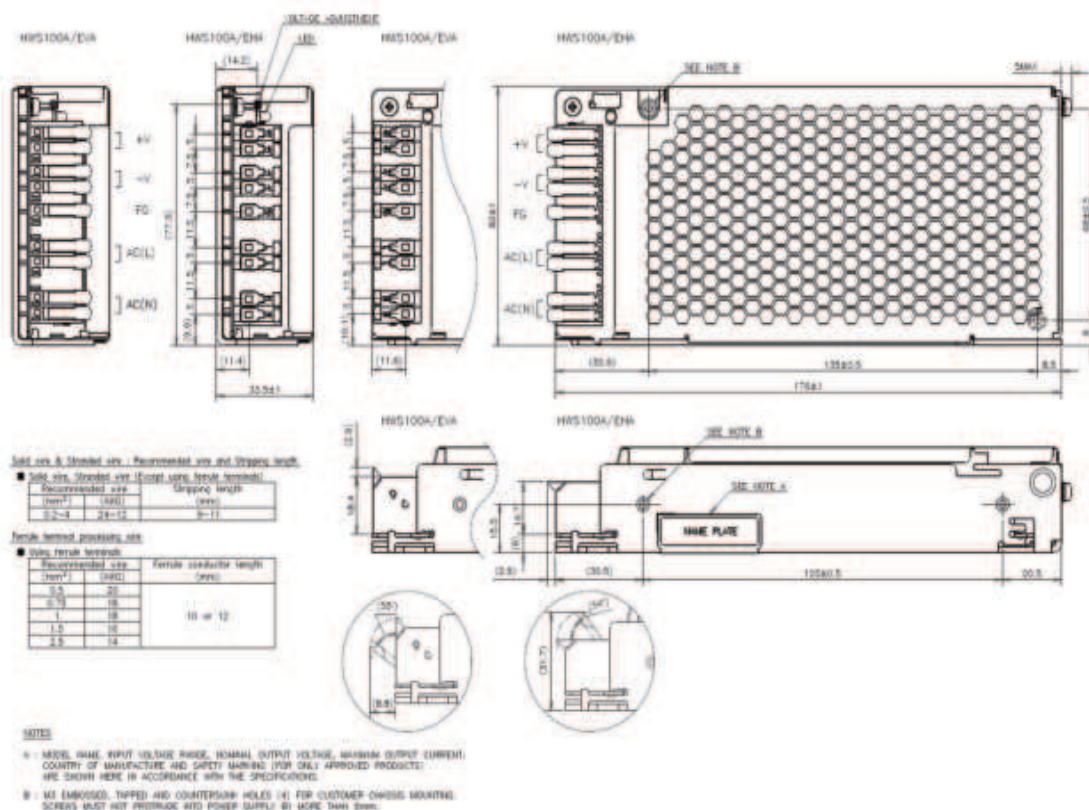
HWS150A/A Outline Drawing



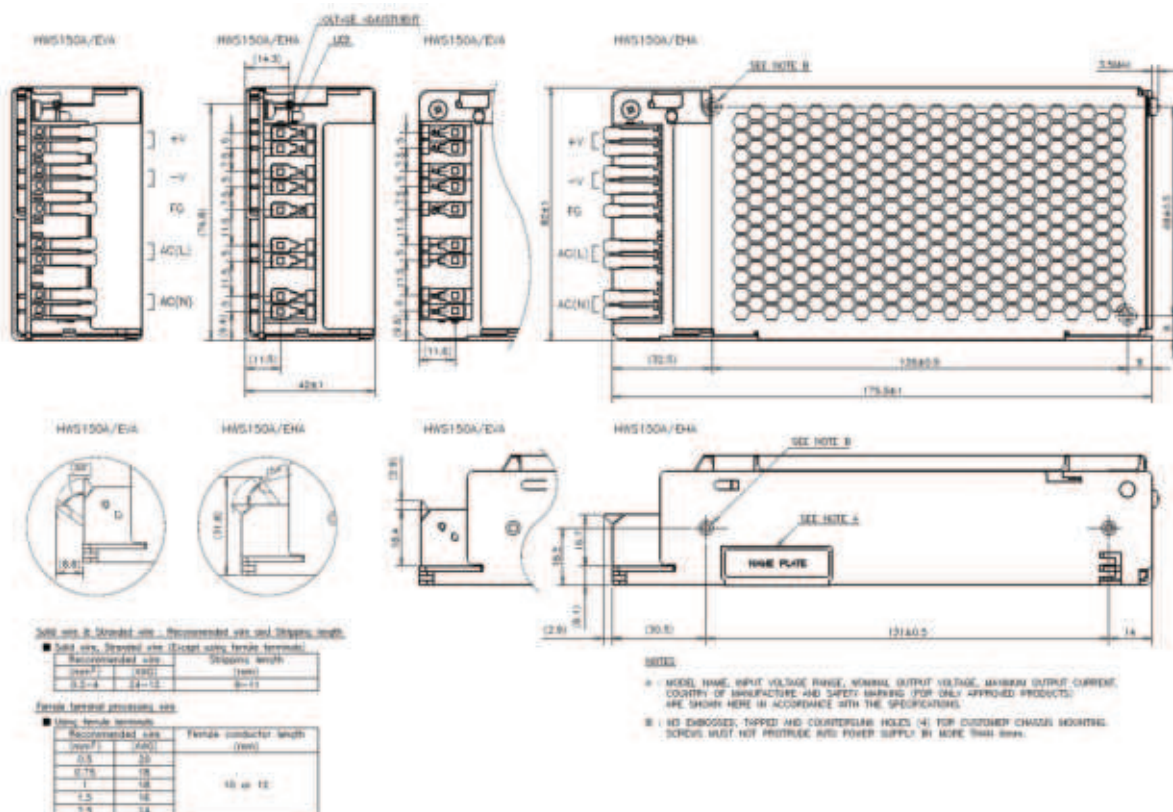
HWS50A/EVA-EHA Outline Drawing



## HWS100A/EVA-EHA Outline Drawing



## HWS150A/EVA-EHA Outline Drawing





## TDK-Lambda France SAS

Tel: +33 1 60 12 71 65  
tlf.fr-powersolutions@tdk.com  
www.emea.lambda.tdk.com/fr



## Italy Sales Office

Tel: +39 02 61 29 38 63  
tlf.it-powersolutions@tdk.com  
www.emea.lambda.tdk.com/it



## Netherlands

tlf.nl-powersolutions@tdk.com  
www.emea.lambda.tdk.com/nl



## TDK-Lambda Germany GmbH

Tel: +49 7841 666 0  
tlg.powersolutions@tdk.com  
www.emea.lambda.tdk.com/de



## Austria Sales Office

Tel: +43 2256 655 84  
tlg.at-powersolutions@tdk.com  
www.emea.lambda.tdk.com/at



## Switzerland Sales Office

Tel: +41 44 850 53 53  
tlg.ch-powersolutions@tdk.com  
www.emea.lambda.tdk.com/ch



## Nordic Sales Office

Tel: +45 8853 8086  
tlg.dk-powersolutions@tdk.com  
www.emea.lambda.tdk.com/dk



## TDK-Lambda UK Ltd.

Tel: +44 (0) 12 71 85 66 66  
tlu.powersolutions@tdk.com  
www.emea.lambda.tdk.com/uk



## TDK-Lambda Ltd.

Tel: +9 723 902 4333  
tli.powersolutions@tdk.com  
www.emea.lambda.tdk.com/il-en



## TDK-Lambda Americas

Tel: +1 800-LAMBDA-4 or 1-800-526-2324  
tla.powersolutions@tdk.com  
www.us.lambda.tdk.com



## TDK Electronics do Brasil Ltda

Tel: +55 11 3289-9599  
sales.br@tdk-electronics.tdk.com  
www.tdk-electronics.tdk.com/en



## TDK-Lambda Corporation

Tel: +81-3-6778-1113  
www.jp.lambda.tdk.com



## TDK-Lambda (China) Electronics Co. Ltd.

Tel: +86 21 6485-0777  
tlc.powersolutions@tdk.com  
www.lambda.tdk.com.cn



## TDK-Lambda Singapore Pte Ltd.

Tel: +65 6251 7211  
tts.marketing@tdk.com  
www.sg.lambda.tdk.com



## TDK India Private Limited, Power Supply Division

Tel: +91 80 4039-0660  
mathew.philip@tdk.com  
www.sg.lambda.tdk.com

