# TDK·Lambda CUS800M, 1000M and 1200M Series

## 1.67"High 800W to 1200W AC-DC Power Supplies

https://product.tdk.com/en/power/cus-m
www.emea.lambda.tdk.com/cus800-1200m



Medical Industrial Test LED Broadcast COMM

The very compact CUS800M, CUS1000M and CUS1200M AC-DC power supplies have a low profile 1.67" (42.5mm) high package and can deliver 800W, 1000W or 1200W with efficiencies up to 95.5%. All models have medical (IEC 60601-1) and audio/video, information and communication technology equipment (IEC 62368-1) certifications. A variable speed fan, 5V 2A standby voltage, remote on/off, remote sense and a Power Good signal is standard.

| Features | Benefits |
|---|---|
| • Medical Certifications (2 x MOPP) | • Generally required for B and BF Type Medical Equipment |
| • ≤0.250mA Leakage Current | • Simpler System Compliance |
| • Class B Conducted and Radiated EMI | • Easier System EMC Compliance |
| • Compact 1.67" Height | • Space Saving in End Equipment |
| • Variable Speed Cooling Fan | • Lower Audible Noise |

### Model Selector

| Model | Nominal Output Voltage (V) | Output Adjustment (V) | Maximum Current (A) | Peak Current (A) | Maximum Power (W) | Maximum Peak Power (W) | Efficiency 115 / 230Vac (%) |
|---|---|---|---|---|---|---|---|
| CUS800M-12 | 12 | 11.7 - 12.6 | 56.7 | 66.7 | 680.4 | 800.4 | 90.8 / 92.5 |
| CUS1000M-12 | 12 | 11.7 - 12.6 | 66.7 | 83.4 | 800.4 | 1000.8 | 92 / 93.6 |
| CUS800M-24 | 24 | 23.4 - 25.9 | 33.4 | - | 801.6 | - | 92 / 94 |
| CUS1000M-24 | 24 | 23.4 - 25.9 | 41.7 | - | 1000.8 | - | 93 / 95 |
| CUS1200M-24 | 24 | 23.4 - 25.2 | 50.0 | - | 1200 | - | 92.5 / 95 |
| CUS800M-36 | 36 | 35.1 - 38.8 | 22.2 | - | 799.2 | - | 92.5 / 94.6 |
| CUS1000M-36 | 36 | 35.1 - 38.8 | 27.8 | - | 1000.8 | - | 93.3 / 95.3 |
| CUS1200M-36 | 36 | 35.1 - 37.8 | 33.3 | - | 1198.8 | - | 93 / 95.5 |
| CUS800M-48 | 48 | 46.8 - 51.8 | 16.7 | - | 801.6 | - | 92.2 / 94 |
| CUS1000M-48 | 48 | 46.8 - 51.8 | 20.9 | - | 1003.2 | - | 93.5 / 95.5 |
| CUS1200M-48 | 48 | 46.8 - 50.4 | 25.0 | - | 1200 | - | 93 / 95.5 |

| CUS1000M | - | 12 |
|---|---|---|
| CUS800M (680 to 800W)<br>CUS1000M (800 to 1000W)<br>CUS1200M (1200W) | | Output voltage<br>12, 24, 36, 48<br>(1200W: 24, 36, 48) |

## Specifications

| Model | | CUS800M | CUS1000M | CUS1200M |
|---|---|---|---|---|
| **Input** | | | | |
| Input Voltage Range (Operating) | Vac | 85 - 265 (Derate linearly to 90% load from 90 to 85) | | |
| Nominal Input Voltage Range | Vac | 100 - 240 (Note: Safety certified for 90-264Vac only) | | |
| Input Frequency | Hz | 47 - 63 | | |
| Input Current at 115 / 230Vac | A | 8.0 / 4.0 | 10.0 / 5.0 | 12.0 / 6.0 |
| Inrush Current at 115 / 230Vac (Cold Start) | A | 25.0 / 50.0 | 25.0 / 50.0 | 30.0 / 50.0 |
| Leakage Current | uA | <250 at 265Vac 60Hz | | |
| Touch Current (Enclosure Leakage) | uA | Not applicable | | |
| Power Factor (115 / 230Vac) | - | 0.99 / 0.95 | | |
| Harmonic Compliance | - | Meets IEC61000-3-2 Class A | | |
| No Load Power Consumption | W | Typically <0.6W at 230Vac (Remote off and no load on 5Vsb). See evaluation data on website | | |
| Hold Up Time (typ) at 115Vac Input | ms | 11 | | |
| Efficiency | - | See model selector | | |
| Conducted & Radiated EMI | - | EN55032, EN55011-B, FCC-B | | |
| Immunity | - | Compliant with EN60601-1-2;2015 (Ed4), IEC61000-4.2, -3, -4, -5, -6, -8, -11 | | |
| Insulation Class | - | Class I | | |
| Safety Certifications and Markings | - | IEC/EN/UL/CSA62368-1, IEC/EN/ES/CSA60601-1. CE Mark and UKCA Mark | | |

## Immunity

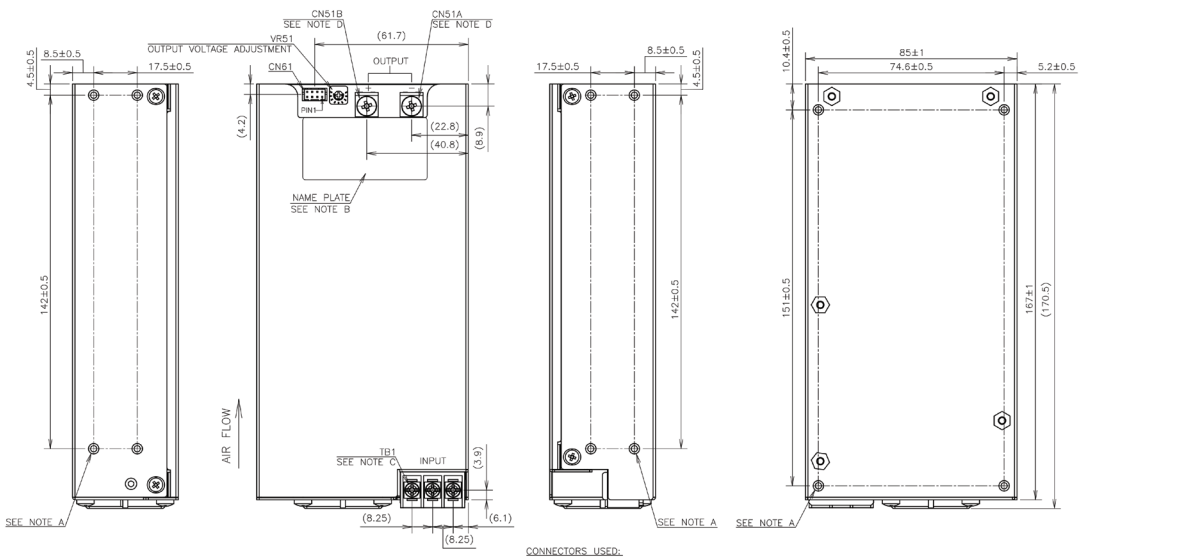
| Test | Standard | Test Level | Criteria | Notes (The power stated below is total power (main output + standby output)) | | |
|---|---|---|---|---|---|---|
| | | | | CUS800M | CUS1000M | CUS1200M |
| ESD | EN61000-4-2 | 1,2,3,4 | A | - | | |
| Radiated Susceptibility | EN61000-4-3 | 3 | A | - | | |
| Electrical Fast Transient Burst | EN61000-4-4 | 4 | A | - | | |
| Surge | EN61000-4-5 | 1,2,3,4 | A | AC input power port | | |
| Conducted Susceptibility | EN61000-4-6 | 3 | A | - | | |
| Magnetic fields | EN61000-4-8 | 4 | A | - | | |
| Voltage Dips and Input Interruptions | EN61000-4-11 Class 3 Industrial, incl EN55024 (100Vac) | 0% for 1/2 cycle | A | | A; < 530W, B; > 530W | A; ≤ 500W, B; > 500W |
| | | 0% for 1 cycle | A/B | A; < 330W, B; > 330W | A; < 400W, B; > 400W | A; ≤ 600W, B; > 600W |
| | | 40% for 10/12 cycles | A/B | A; < 430W, B; > 330W | | |
| | | 70% for 25/30 cycles | A | | | |
| | | 80% for 250/300 cycles | A | | | |
| | | 0% for 250/300 cycles | B | | | |
| | EN61000-4-11 Class 3 Industrial, incl EN55024 (240Vac) | 0% for 1/2 cycle | A | | A; < 530W, B; > 530W | A; ≤ 600W, B; > 600W |
| | | 0% for 1 cycle | A/B | A; < 430W, B; > 430W | | |
| | | 40% for 10/12 cycles | A | | | |
| | | 70% for 25/30 cycles | A | | | |
| | | 80% for 250/300 cycles | A | | | |
| | | 0% for 250/300 cycles | B | | | |
| | EN60601-1-2:2015 (100Vac) | 0% for 1/2 cycle | A | | A; < 530W, B; > 530W | |
| | | 0% for 1 cycle | A/B | A; < 430W, B; > 430W | | |
| | | 70% for 25/30 cycles | A | | | |
| | | 0% for 250/300 cycles | B | | | |
| | EN60601-1-2:2015 (240Vac) | 0% for 1/2 cycle | A | | A; < 530W, B; > 530W | |
| | | 0% for 1 cycle | A/B | A; < 430W, B; > 430W | | |
| | | 70% for 25/30 cycles | A | | | |
| | | 0% for 250/300 cycles | B | | | |
| SEMI F47 Line Dip | SEMI F47 | - | - | At input voltages > 200Vac | | |

## Specifications

| Model | | CUS800M | CUS1000M | CUS1200M |
|---|---|---|---|---|
| **Output** | | | | |
| Switching Frequency | kHz | Primary-secondary converter: LLC resonant 50k to 300kHz | | |
| Line Regulation | mV | 12V: 60, 24V: 120, 36V: 180, 48V: 240 | | 24V: 120, 36V: 180, 48V: 240 |
| Load Regulation | mV | 12V: 120, 24V: 240, 36V: 360, 48V: 480 | | 24V: 240, 36V: 360, 48V: 480 |
| External Load Capacitance | uF | 12 - 36V: 10,000, 48V: 7,000 | | 24 - 36V: 10,000, 48V: 8,000 |
| Ripple & Noise | mV | 12V: 240, 24V: 360, 36V: 480, 48V: 480 | | 24V: 360, 36V: 480, 48V: 480 |
| Temperature Coefficient | %/°C | ±0.02 | | |
| Minimum Load | - | No minimum load required | | |
| Overcurrent Protection(1) | A | CUS800M: 12V: >70.1, 24V: >35.1, 36V: >23.4, 48V >17.6<br>CUS1000M: 12V: >87.6, 24V: >43.8, 36V: >29.2, 48V >22<br>CUS1200M: 24V:>52.5, 36V: >35.0, 48:>26.3 | | |
| Overvoltage Protection | - | CUS800M, CUS1000M: 12V: 13.8 - 16.2, 24V: 27.6 - 32.4, 36V: >41.4 - 48.6, 48V >55.2 - 64.8<br>CUS1200M: 24V: 27.6 - 32.4, 36V: >41.4 - 48.6, 48V >55.2 - 64.8 | | |
| Overtemperature Protection | - | Latching (unit shutdown), cycle AC input to reset | | |
| Remote Sense | - | 0.5V total compensation | | |
| Remote On/Off | - | Opto-isolated. Inhibit: Low = ON, High = OFF | | |
| Power Good | - | Combined AC Fail and DC OK opto isolated signal | | |
| Standby Voltage | - | 5V 2A | | |
| Parallel Operation | - | Not possible | | |
| **Environmental** | | | | |
| Operating Temperature (-25°C start-up) | °C | -20 to +70, derate linearly to 60% load from 40 to 70 (CUS1200M-24:35 to 70) | | |
| Storage Temperature | °C | -40 to +75 | | |
| Humidity (non condensing) | %RH | 10 - 95. Operating and storage | | |
| Cooling | - | Variable speed fan, air exits across output terminals. Typical 30dBA at 20% load, 42dBA at full load | | |
| Altitude | m | 5,000. Operating, transportation and storage | | |
| Withstand Voltage (For 1 minute) | Vac | Input to Ground 2,000 (1xMOPP), Input to Output 4,000 (2xMOPP),<br>Output to Ground 1,500 (1xMOPP) | | |
| Isolation Resistance | MΩ | >100 at 25°C, 70%RH & 500Vdc | | |
| Vibration (Non Operating) | - | 10-55Hz (1 min sweep). Maximum 19.6m/s$^2$, 1 hour each | | |
| Shock | - | <196m/s$^2$ | | |
| **Other** | | | | |
| Weight (Typ) | g | 810 | 850 | 980 |
| Size (LxWxH) | mm | 171 x 85 x 42.5 | 171 x 85 x 42.5 | 187 x 93 x 42.5 |
| Size (LxWxH) | Inches | 6.73 x 3.35 x 1.67 | 6.73 x 3.35 x 1.67 | 7.36 x 3.66 x 1.67 |
| Connectors | - | Screw terminals. Signals: JST B8B PHDSS, Mating connector: PHDR-08VS | | |
| MTBF - Telcordia SR-332(2) | Hours | 452,227 | | 742,196 |
| Warranty | yrs | 5 | | |

Notes:
See website for detailed specifications, test methods and installation manual
Specification parameters apply at 25°C ambient temperature unless otherwise stated.
(1) Hiccup with automatic recovery. If the output is shorted, an AC power reset may be required
(2) 24V full load,115Vac input, 40°C

## CUS800M and 1000M Outline Drawing




CONNECTORS USED:

| PART DESCRIPTION | PART NAME | MANUFACT. | QTY |
|---|---|---|---|
| TB1 | T825-01-03P-KC | TIANLI | 1 |
| CN51A/CN51B | M4 TERMINAL | | 2 |
| CN61 | B8B-PHDSS(LF)(SN) | J.S.T | 1 |

RECOMMENDED MATCHING HOUSINGS, PINS & TOOL
(NOT INCLUDED WITH THE PRODUCT):

| | PART DESCRIPTION | PART NAME | MANUFACT. | QTY |
|---|---|---|---|---|
| CN61 | SOCKET HOUSING | PHDR-08VS | J.S.T | 1 |
| | TERMINAL PINS | SPHD-001T-P0.5 | | 8 |
| | HAND CRIMPING TOOL | YC-610R,YC-611R | | — |

PIN CONFIGURATION AND FUNCTIONS OF CN61

CN61



| PIN No. | FUNCTION |
|---|---|
| 1 | STBY+: STANDBY SUPPLY + (5V+) |
| 2 | STBY−: STANDBY SUPPLY − (5V−) |
| 3 | S+: REMOTE SENSE+ |
| 4 | S−: REMOTE SENSE− |
| 5 | NO CONNECTION |
| 6 | PG: POWER GOOD SIGNAL |
| 7 | R+: REMOTE ON/OFF TERMINAL + |
| 8 | R−: REMOTE ON/OFF TERMINAL − |

NOTE:

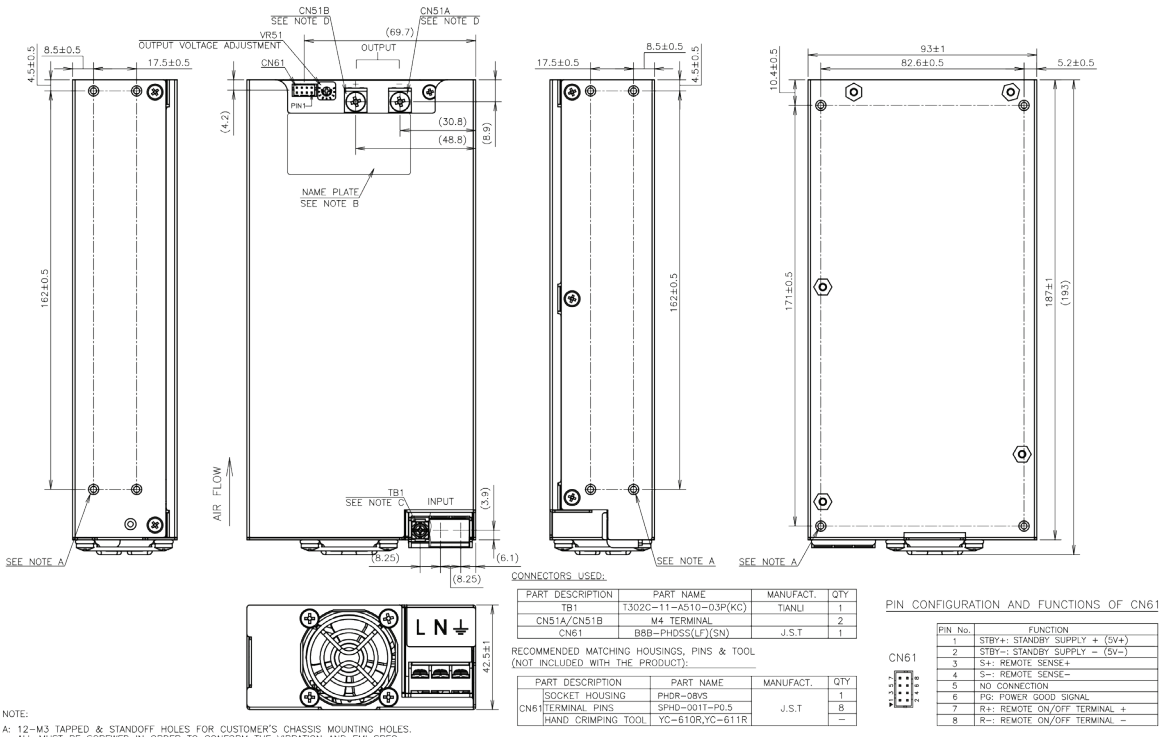
A: 12−M3 TAPPED & STANDOFF HOLES FOR CUSTOMER'S CHASSIS MOUNTING HOLES.
ALL MUST BE SCREWED IN ORDER TO CONFORM THE VIBRATION AND EMI SPEC.
SCREW PENETRATION DEPTH 4.5mm MAX, RECOMMENDED TORQUE : 0.49N•m(5kgf•cm).

B: MODEL NAME, INPUT VOLTAGE RANGE, NOMINAL OUTPUT VOLTAGE,MAXIMUM OUTPUT CURRENT,
SAFETY MARKING(FOR ONLY APPROVED PRODUCTS) AND COUNTRY OF MANUFACTURE
ARE SHOWN HEREIN ACCORDANCE WITH THE SPECIFICATIONS.

C: 3−M3 SCREWS FOR TB1, RECOMMENDED TORQUE: 0.49N•m(5kgf•cm)

D: 2−M4 SCREWS FOR CN51A & CN51B, RECOMMENDED TORQUE: 1.18N•m(12kgf•cm)

## CUS1200M Outline Drawing




CONNECTORS USED:

| PART DESCRIPTION | PART NAME | MANUFACT. | QTY |
|---|---|---|---|
| TB1 | T302C-11-A510-03P(KC) | TIANLI | 1 |
| CN51A/CN51B | M4 TERMINAL | | 2 |
| CN61 | B8B-PHDSS(LF)(SN) | J.S.T | 1 |

RECOMMENDED MATCHING HOUSINGS, PINS & TOOL
(NOT INCLUDED WITH THE PRODUCT):

| | PART DESCRIPTION | PART NAME | MANUFACT. | QTY |
|---|---|---|---|---|
| CN61 | SOCKET HOUSING | PHDR-08VS | J.S.T | 1 |
| | TERMINAL PINS | SPHD-001T-P0.5 | | 8 |
| | HAND CRIMPING TOOL | YC-610R,YC-611R | | — |

PIN CONFIGURATION AND FUNCTIONS OF CN61

CN61



| PIN No. | FUNCTION |
|---|---|
| 1 | STBY+: STANDBY SUPPLY + (5V+) |
| 2 | STBY−: STANDBY SUPPLY − (5V−) |
| 3 | S+: REMOTE SENSE+ |
| 4 | S−: REMOTE SENSE− |
| 5 | NO CONNECTION |
| 6 | PG: POWER GOOD SIGNAL |
| 7 | R+: REMOTE ON/OFF TERMINAL + |
| 8 | R−: REMOTE ON/OFF TERMINAL − |

NOTE:

A: 12−M3 TAPPED & STANDOFF HOLES FOR CUSTOMER'S CHASSIS MOUNTING HOLES.
ALL MUST BE SCREWED IN ORDER TO CONFORM THE VIBRATION AND EMI SPEC.
SCREW PENETRATION DEPTH 4.5mm MAX, RECOMMENDED TORQUE : 0.49N•m(5kgf•cm).

B: MODEL NAME, INPUT VOLTAGE RANGE, NOMINAL OUTPUT VOLTAGE,MAXIMUM OUTPUT CURRENT,
SAFETY MARKING(FOR ONLY APPROVED PRODUCTS) AND COUNTRY OF MANUFACTURE
ARE SHOWN HEREIN ACCORDANCE WITH THE SPECIFICATIONS.

C: 3−M3 SCREWS FOR TB1, RECOMMENDED TORQUE: 0.5N•m~0.8N•m(5.1kgf•cm~8.2kgf•cm)

D: 2−M4 SCREWS FOR CN51A & CN51B, RECOMMENDED TORQUE: 1.18N•m(12kgf•cm)

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For additional information, please visit
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