



## Single Output 200 to 250W Medical & ITE Power Supplies

| Features   | Benefits  |
|--|---|
| • IEC 60601-1 (2x MOPP) & IEC 60950-1 Approvals                      | • Suitable for B & BF type Medical and ITE Applications |
| • 200W Convection cooled rating                                      | • No fan noise, good for noise-sensitive environments   |
| • Low profile (34 mm), Standard 3"x5" format                         | • Space saving & easy system integration                |
| • 5V Standby power supply on board                                   | • No additional circuitry needed, saves cost            |
| • Operating Altitude up to 5000m                                     | • Supports global use & global sales of equipment       |
| • High Efficiency up to 94 %, Low off-load power consumption (<0.5W) | • Excellent "environmental footprint"                   |



| Specification                   |      | CUS200M  |
|---------------------------------|------|--|
| <b>Model</b>                    |      | <b>CUS200M</b>   |
| AC Input Voltage                | VAC  | 85 - 265VAC (1)  |
| Input Frequency                 | Hz   | 47 - 63Hz  |
| Inrush Current (cold start)     | A    | 35A at 115VAC, 70A at 230VAC   |
| Power Factor                    | -    | Meets EN61000-3-2 Class A (Typical PF 0.99/0.95) (2)   |
| Input Current (115/230VAC)      | A    | 200W output: 2.2 / 1.1A; 250W output: 3.0 / 1.5A   |
| Off-load Power Consumption (3)  | W    | <0.5W at 230VAC  |
| Temperature Coefficient         | %/°C | <0.02%/°C  |
| Overcurrent Protection          | -    | 12V: >17.2A, 18V: > 14.7A, 24V: > 11A, 36V: > 7.4A, 48V: > 5.5A  |
| Overvoltage Protection (4)      | V    | 12V: 13.2 - 16.2V, 18V: 19.8 - 24.3V, 24V: 26.4 - 32.4V, 36V: 39.6 - 48.6V, 48V: 52.8 - 64.8V  |
| Hold Up Time (115 / 230V input) | ms   | 16ms at 200W output, 12ms at 250W  |
| Leakage Current                 | mA   | <0.3mA at 265VAC, 60Hz   |
| Remote On/Off                   | -    | Apply voltage to isolated terminals to shut unit down  |
| Power Good                      | -    | Isolated transistor, On = Good. Gives >5ms warning of AC power loss  |
| Standby Voltage                 | -    | 5V 0.6A (convection), 1A (forced air)  |
| Operating Temperature           | °C   | -20°C to +70°C. Derate linearly to 50% load from +50°C to +70°C  |
| Storage Temperature             | °C   | -40°C to +85°C   |
| Humidity (non condensing)       | %RH  | 10 - 95%RH (Operating & Storage)   |
| Cooling                         | -    | Convection or Forced Air Cooled (1.5m/s across terminals)  |
| Withstand Voltage               | -    | Input to Ground 2kVAC (1xMOPP), Input to Output 4kVAC (2xMOPPs), Output to Ground 1.5kVAC (1xMOPP) Suitable for B and BF rated medical equipment |
| Isolation Resistance            | Ω    | >100MΩ at 25°C & 70%RH, Output to Ground 500VDC  |
| Vibration (non operating)       | -    | 10 - 55Hz: 19.6m/s <sup>2</sup> constant sweep 1 min X, Y, Z for 1 hour  |
| Shock                           | -    | < 196.1 m/s <sup>2</sup> (20G)   |
| Immunity                        | -    | IEC61000-4-2 (lv 2, 3), -3 (lv3), -4 (lv 3), -5 (lv3, 4), -6 (lv 3), -8 (lv 4), -11, EN60601-1-2:2015 (Ed4)                                      |
| Safety Agency Certifications    | -    | EN/IEC/UL/ES/CSA 60601-1, EN/IEC/UL/CSA60950-1, CE Mark  |
| Conducted & Radiated EMI        | -    | EN55011-B, FCC Class B   |
| Weight (Typ)                    | g    | 350  |
| Size (LxWxH)                    | mm   | 127 x 76.2 x 34  |
| Warranty                        | yrs  | 3  |

**Notes:**

- (1) Derate linearly to 80% load from 115 to 85VAC input
- (2) 115 / 230VAC input
- (3) Refers to input power during remote off and standby 5V in at no load condition
- (4) Cycle AC to reset

## Model Selector

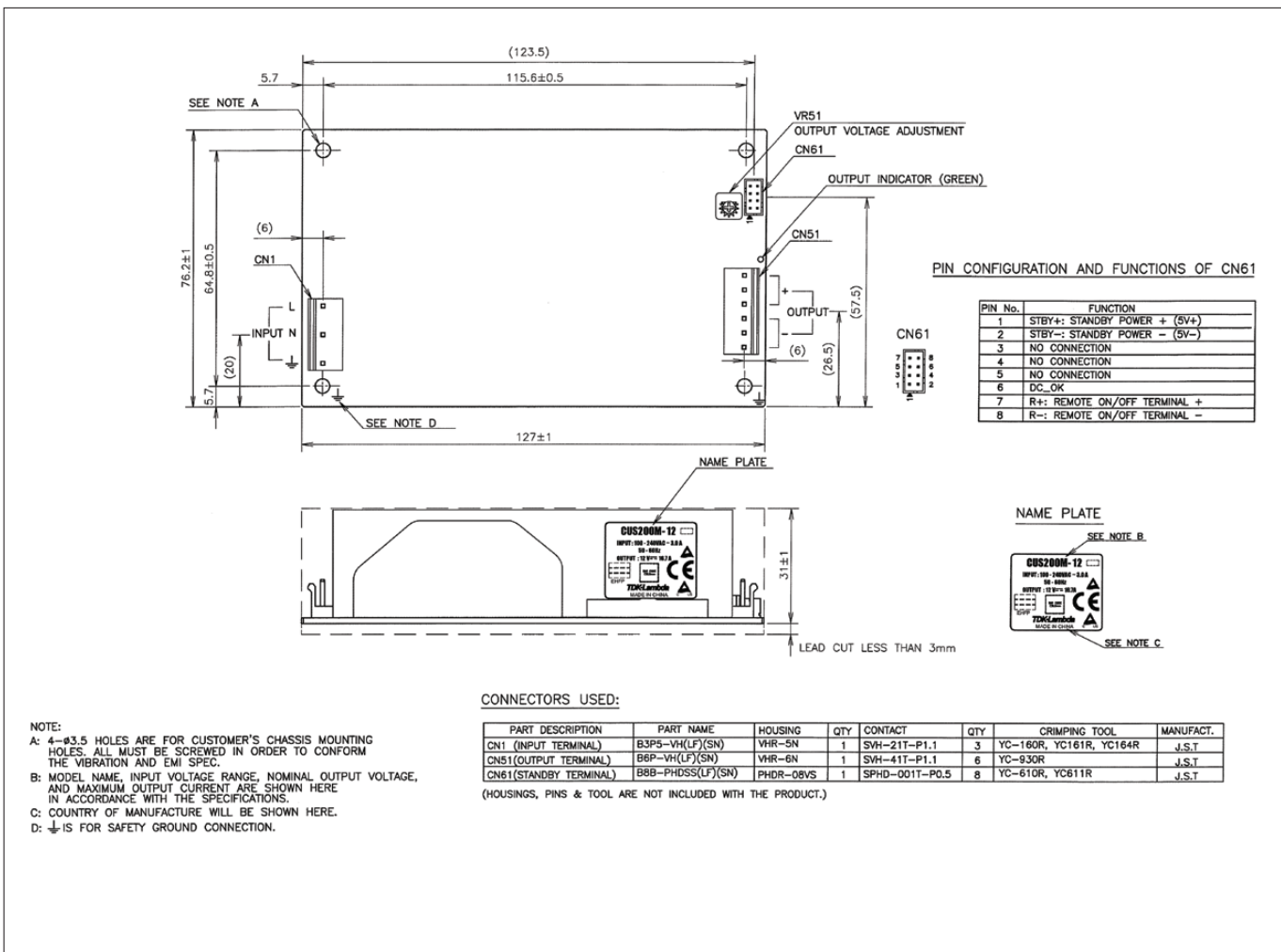
| Model      | Voltage | Adjust Range (V) | Max Current Conv (A) | Max Current Forced Air (A) | Max Power Forced Air (W) | Load Reg (mV) | Line Reg (mV) | Ripple Noise (mV) | Efficiency (typical) % <sup>(5)</sup> |
|------------|---------|------------------|----------------------|----------------------------|--------------------------|---------------|---------------|-------------------|---------------------------------------|
| CUS200M-12 | 12V     | 11.7 - 12.6      | 16.7                 | 16.7                       | 200.4                    | 120           | 60            | 180               | 92 / 93                               |
| CUS200M-18 | 18V     | 17.6 - 18.9      | 11.2                 | 14.0                       | 252.0                    | 180           | 90            | 180               | 92 / 94                               |
| CUS200M-24 | 24V     | 23.5 - 25.2      | 8.4                  | 10.5                       | 252.0                    | 240           | 120           | 240               | 92 / 94                               |
| CUS200M-36 | 36V     | 35.2 - 37.8      | 5.5                  | 7.0                        | 252.0                    | 360           | 180           | 360               | 92 / 94                               |
| CUS200M-48 | 48V     | 47 - 50.4        | 4.2                  | 5.3                        | 254.4                    | 480           | 240           | 480               | 92 / 94                               |

Notes:(5) 115 / 230VAC input with convection cooling

## Options (available on request)

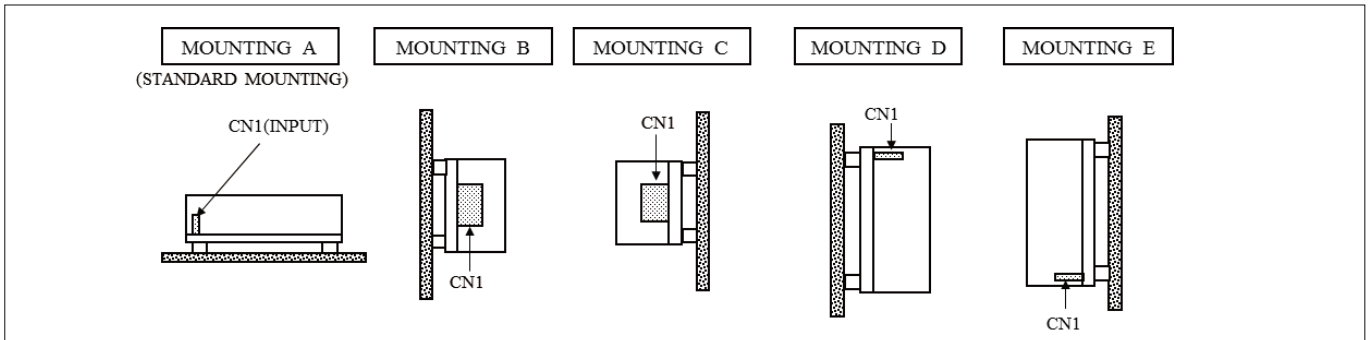
|             |                                  |
|-------------|----------------------------------|
| blank       | Standard model                   |
| Suffix "/A" | Cased model with chassis & cover |
| Suffix "/L" | L bracket, no cover              |

## Outline Drawing CUS200M Series



Notes: For detailed Instruction Manual, Cooling, Reliability Data, Electrolytic capacitor Lifetime data, Application advice like Mounting options, relevant Derating curves etc. please refer to "Technical Downloads" or contact factory for support

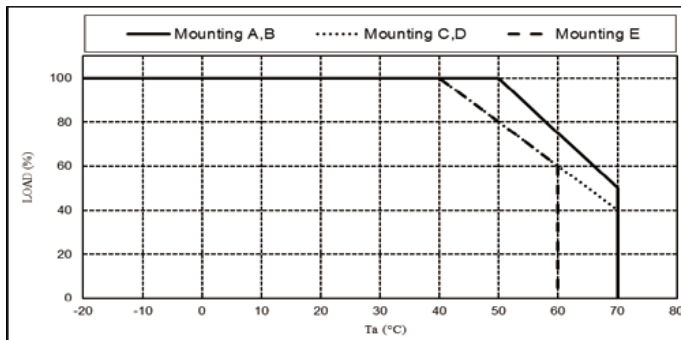
## Output Derating according to the Mounting Direction



## Output Derating CUS200M-12

MODEL: CUS200M-12

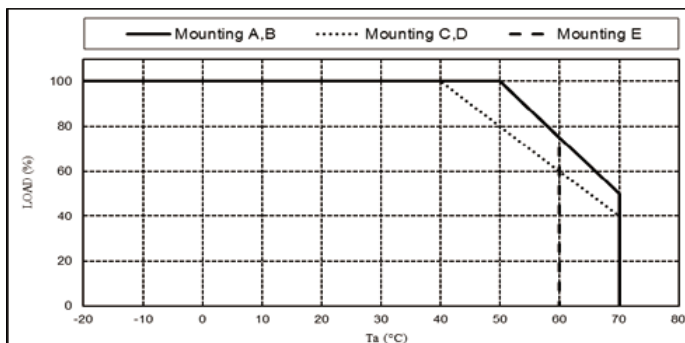
| Ta (°C)   | MOUNTING A,B | MOUNTING C,D | MOUNTING E (NOTE1) |
|-----------|--------------|--------------|--------------------|
|           | LOAD (%)     | LOAD (%)     | LOAD (%)           |
| -20 - +40 | 100          | 100          | 100                |
| 50        | 100          | 80           | 80                 |
| 60        | 75           | 60           | 60                 |
| 65        | 63           | 50           | -                  |
| 70        | 50           | 40           | -                  |



## Output Derating CUS200M-18, CUS200M-24, CUS200M-36, CUS200M-48

MODEL: CUS200M-18, CUS200M-24, CUS200M-48

| Ta (°C)   | MOUNTING A,B | MOUNTING C,D | MOUNTING E (NOTE1) |
|-----------|--------------|--------------|--------------------|
|           | LOAD (%)     | LOAD (%)     | LOAD (%)           |
| -20 - +40 | 100          | 100          | 100                |
| 50        | 100          | 80           | 100                |
| 60        | 75           | 60           | 75                 |
| 65        | 63           | 50           | -                  |
| 70        | 50           | 40           | -                  |

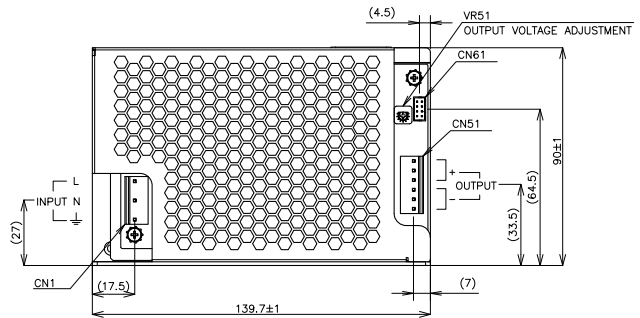
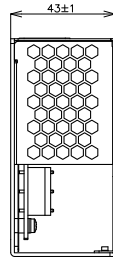
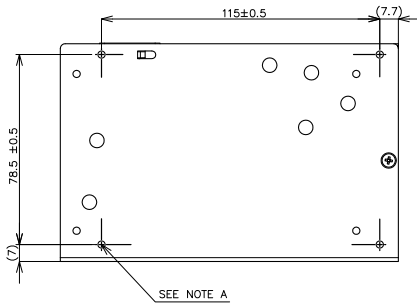
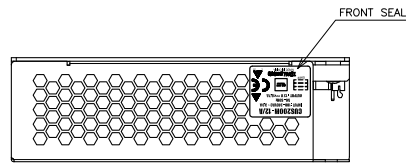


## Outline Drawing CUS200M/A Series

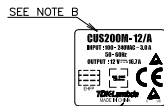
CONNECTORS USED:

| PART DESCRIPTION        | PART NAME        | HOUSING   | QTY | CONTACT        | QTY | CRIMPING TOOL           | MANUFACT. |
|-------------------------|------------------|-----------|-----|----------------|-----|-------------------------|-----------|
| CN1 (INPUT TERMINAL)    | B3PS-VH(LF)(SN)  | VHR-5N    | 1   | SVH-21T-P1.1   | 3   | YC-160R, YC161R, YC164R | J.S.T     |
| CN51 (OUTPUT TERMINAL)  | B6P-VH(LF)(SN)   | VHR-6N    | 1   | SVH-41T-P1.1   | 6   | YC-930R                 | J.S.T     |
| CN61 (STANDBY TERMINAL) | B8B-PHDS(LF)(SN) | PHDR-08VS | 1   | SPHD-001T-P0.5 | 8   | YC-610R, YC611R         | J.S.T     |

(HOUSINGS, PINS & TOOL ARE NOT INCLUDED WITH THE PRODUCT.)



FRONT SEAL  
SCALE 1:1



PIN CONFIGURATION AND FUNCTIONS OF CN61



| PIN No. | FUNCTION                     |
|---------|------------------------------|
| 1       | STBY+: STANDBY POWER + (5V+) |
| 2       | STBY-: STANDBY POWER - (5V-) |
| 3       | NO CONNECTION                |
| 4       | NO CONNECTION                |
| 5       | NO CONNECTION                |
| 6       | DC_OK                        |
| 7       | R+: REMOTE ON/OFF TERMINAL + |
| 8       | R-: REMOTE ON/OFF TERMINAL - |

NOTE:

A: 4-M3 TAPPED HOES ARE FOR CUSTOMER'S CHASSIS MOUNTING HOLES. ALL MUST BE SCREWED IN ORDER TO CONFORM THE VIBRATION AND EMI SPEC. (SCREW PENETRATION DEPTH 4mm MAX.)

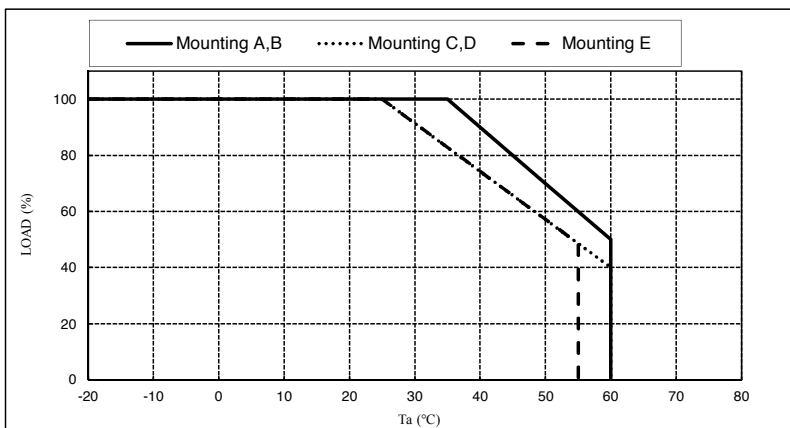
B: MODEL NAME, INPUT VOLTAGE RANGE, NOMINAL OUTPUT VOLTAGE, AND MAXIMUM OUTPUT CURRENT ARE SHOWN HERE IN ACCORDANCE WITH THE SPECIFICATIONS.

C: COUNTRY OF MANUFACTURE WILL BE SHOWN HERE.  
⊕ IS FOR SAFETY GROUND CONNECTION.

| (unit : mm)       |           |
|-------------------|-----------|
| MODEL NAME        | CUS200M/A |
| <b>TDK-Lambda</b> |           |
| CAB11-02-01/A-A   |           |

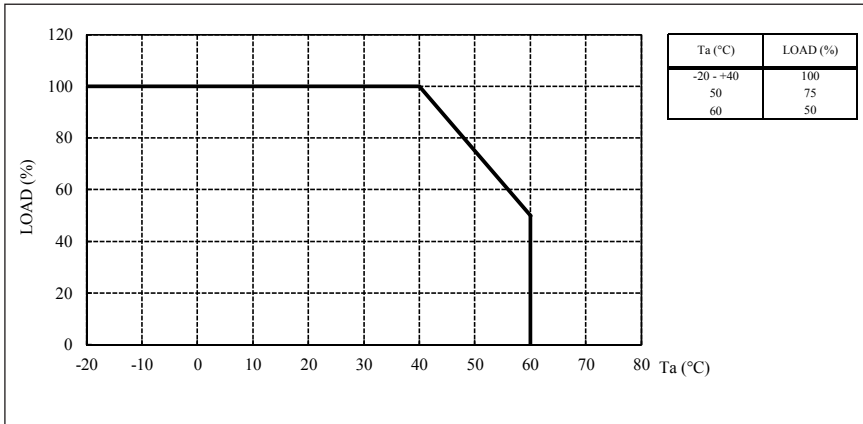
## Output Derating CUS200M/A

| Ta (°C)   | MOUNTING A,B | MOUNTING C,D | MOUNTING E |
|-----------|--------------|--------------|------------|
|           | LOAD (%)     | LOAD (%)     | LOAD (%)   |
| -20 ~ +25 | 100          | 100          | 100        |
| 35        | 100          | 82           | 82         |
| 45        | 80           | 65           | 65         |
| 50        | 70           | 57           | 57         |
| 55        | 60           | 48           | 48         |
| 60        | 50           | 40           | -          |

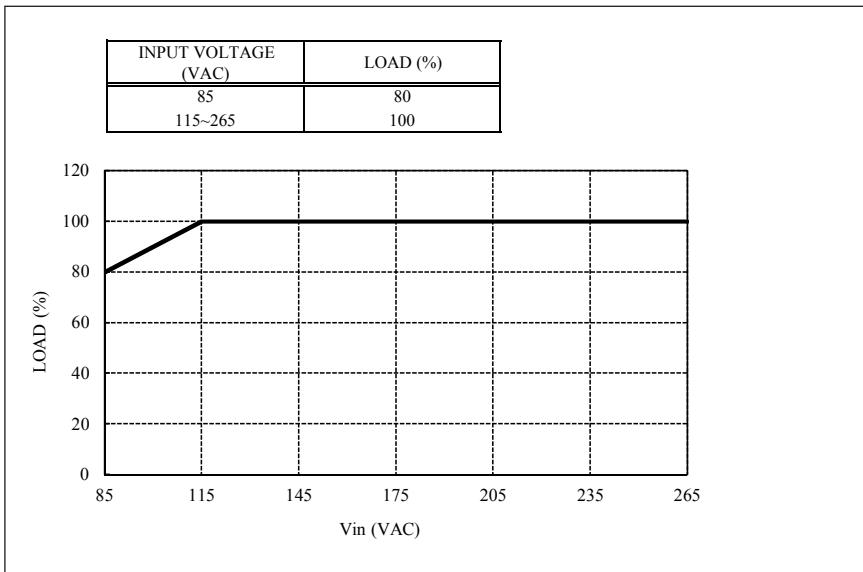


## Output Derating versus Operating Ambient Temp (Ta) CUS200M/A

\* Cooling: Forced Air Cooling for all Mounting and all Models



## Output Derating versus Input Voltage (all Models)





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