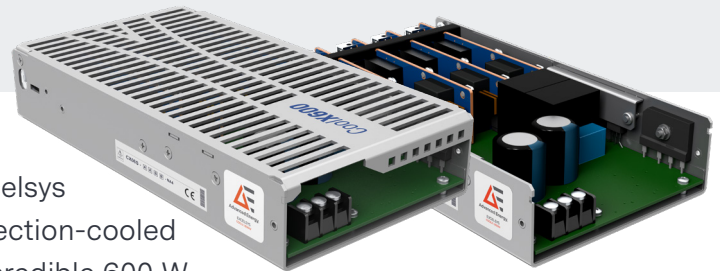


# EXCELSYS COOLX<sup>®</sup> 600 SERIES

FANLESS, NATURAL CONVECTION-COOLED MODULAR POWER SUPPLY



Advanced Energy's CoolX<sup>®</sup>600 series, part of our Excelsys product line, is the world's first fanless, natural convection-cooled modular power supply. The CoolX600 delivers an incredible 600 W without fan-assisted cooling from a very compact package. The CoolX600 offers system designers best-in-class efficiency and reliability in addition to the most comprehensive feature set and specifications available.

## PRODUCT HIGHLIGHTS

### No Fan Featured

- 600 W with 100% natural convection cooling
- No fan plate needed
- No acoustic noise or vibrations

### Reliability

- MTBF > 400,000 hours, 25% better than today's leading solutions
- High input surge protection — 4 kV line to PE for harsh environments
- Reverse energy protection — no blocking diodes required
- 24 W always ON auxiliary power output
- Safety approved to 5000 m altitude
- > 94% efficiency
- Five-year warranty

### Flexibility

- Analog and digital management — PMBus™ monitoring and control capability

- Field-configurable — plug and play power
- Series and parallel outputs — higher voltages/currents
- Mounting options — base/side and DIN-Rail mounting

## TYPICAL APPLICATIONS

### Medical

- Clinical diagnostic equipment, medical lasers, dialysis equipment, radiological imaging, clinical chemistry

### Industrial

- Test and measurement, industrial machines, automation equipment, printing, telecommunications, audio equipment

### Hi Rel

- Harsh industrial electronics, radar (naval- and ground-based), communications, test and measurement

## AT A GLANCE

CX06S CX06M

### Power

600 W 600 W

### Slots

4 4

### Cooling

No fan featured, convection-cooled

### Parameters

215.9 mm x 114.3 mm x 39.1 mm  
(8.5 in x 4.5 in x 1 U)

### Certification and Compliance

#### Medical

- IEC60601-1 3rd edition, IEC60601-1-2 4th edition (EMC)
- Dual fused
- 2 MOPP

#### Industrial

- IEC60950, IEC62368-1
- SEMI F47\*\*

#### Defense/Aero

- MIL-STD-810G

MODULES

| CoolX CoolMods Table                  |         |                            |                      |           |
|---------------------------------------|---------|----------------------------|----------------------|-----------|
| Parameter                             | Vnom(V) | Set Point Adjust Range (V) | I <sub>max</sub> (A) | Power (W) |
| <b>Single Output Modules (1 Slot)</b> |         |                            |                      |           |
| CmA                                   | 5       | 2.5-6.0                    | 21.0                 | 105       |
| CmB <sup>1</sup>                      | 12      | 6.0-15.0 <sup>2</sup>      | 15.0                 | 180       |
| CmC                                   | 24      | 15.0-28.0                  | 8.3                  | 200       |
| CmD                                   | 48      | 28.0-50.4 <sup>3</sup>     | 4.2                  | 200       |
| <b>High Power Modules (3 Slots)</b>   |         |                            |                      |           |
| CmE <sup>4</sup>                      | 24      | 24.0-25.2                  | 25.0                 | 550*      |
| CmF <sup>4</sup>                      | 48      | 48.0-50.4                  | 12.5                 | 550*      |
| <b>Dual Output Modules (1 Slot)</b>   |         |                            |                      |           |
| CmG <sup>5</sup> V1                   | 24      | 3.0-30.0                   | 3.0                  | 90        |
| V2                                    | 24      | 3.0-30.0                   | 3.0                  | 90        |
| CmH <sup>6</sup> V1                   | 5       | 3.0-6.0                    | 6.0                  | 36        |
| V2                                    | 24      | 3.0-30.0                   | 3.0                  | 90        |
| <b>Wide Trim Modules (1 Slot)</b>     |         |                            |                      |           |
| CmA-W01                               | 5       | 1.0-6.0                    | 21.0                 | 105       |
| CmB-W01                               | 12      | 1.0-15.0 <sup>2</sup>      | 15.0                 | 180       |
| CmC-W01                               | 24      | 2.0-28.0                   | 8.3                  | 200       |
| CmD-W01                               | 48      | 3.0-58.0 <sup>3</sup>      | 4.2                  | 200       |
| <b>High Voltage Modules (1 Slot)</b>  |         |                            |                      |           |
| CmK <sup>7</sup>                      | 200     | 175-205                    | 0.6                  | 132       |

<sup>1</sup> Full dynamic specifications may not be met at full load when output voltage is trimmed above 13 V.

<sup>2</sup> Max Trim 14 V when used with High Power Module

<sup>3</sup> Max Trim 56 V when used with High Power Module

<sup>4</sup> a) Only one High Power module (CmE or CmF) can be used per CoolPac.

b) During load transients starting from 0% load on the High Power modules, other modules in the CoolPac may experience an output voltage dynamic during the load change.

Contact applications support for details or support.

<sup>5</sup> For the CmG module the max combined power of both outputs is 120 W.

<sup>6</sup> For the CmH module the max combined power of both outputs is 100 W.

\* Max Power of coolPac is 550 W when High Power Module is used.

\*\*SEMI F47 compliant at input voltages > 180 VAC. Consult Advanced Energy for details.

<sup>7</sup> CmK module cannot be used in the same pack as a CmE or CmF module.

ELECTRICAL SPECIFICATIONS

| Input                       |                           |      |     |     |       |
|-----------------------------|---------------------------|------|-----|-----|-------|
| Parameter                   | Conditions/Description    | Min  | Nom | Max | Units |
| AC Operating Input Range    |                           | 85   | —   | 264 | VAC   |
| Nominal Input Voltage Range | Universal Input 47-440 Hz | 100  | —   | 240 | VAC   |
| Extended AC Operating Range | Maximum for 5 seconds     | —    | —   | 300 | VAC   |
| DC Input Voltage Range      |                           | 120  | —   | 300 | VDC   |
| Input Current               | 90 VAC @ 420 W            | —    | 6   | —   | A     |
| Inrush Current              | 230 VAC @ 600 W           | —    | —   | 25  | A     |
| Power Factor                | 120 VAC @ 500 W           | 0.98 | —   | —   | —     |
| Undervoltage Lockout        | Shutdown                  | 65   | —   | 74  | VAC   |

## ELECTRICAL SPECIFICATIONS (CONTINUED)

|                                       |  |            |            |            |              |
|---------------------------------------|--|------------|------------|------------|--------------|
| Input Fuses Rating                    | Dual Fused (Line and Neutral) 250 VAC                            | —          | 8          | —          | A            |
| Efficiency                            | 230 VAC, 600 W with 3 x CmC CoolMods                             | —          | 93         | —          | %            |
|                                       | 230 VAC, 550 W with 1 x CmE CoolMod                              | —          | 94         | —          | %            |
| <b>Output</b>                         |  |            |            |            |              |
| <b>Parameter</b>                      | <b>Conditions/Description</b>                                    | <b>Min</b> | <b>Nom</b> | <b>Max</b> | <b>Units</b> |
| <b>Single Output Modules (1 Slot)</b> |  |            |            |            |              |
| Line Regulation                       | From minimum to maximum rated voltage                            | —          | —          | ±0.2       | %            |
| Load Regulation                       | For 0 to 100% load change  | —          | —          | ±0.4       | %            |
| Transient Response                    | For 25% to 75% load change, 0.5 A/μs: voltage deviation          | —          | —          | ±6         | %            |
|                                       | For 25% to 75% load change, 0.5 A/μs: settling time              | —          | —          | 500        | μs           |
| Ripple and Noise                      | Peak-Peak, 20 MHz BW, 100 mV or % of nominal                     | —          | —          | 1.25       | %            |
| Overvoltage Protection                | Tracking OVP (autorecovery, % of setpoint)                       | 103        | —          | 125        | %            |
|                                       | Latching OVP (% of maximum voltage)                              | 107        | —          | 160        | %            |
| Remote Sense                          | Maximum cable drop compensation                                  | —          | —          | 0.5        | VDC          |
| Rise Time                             | Monotonic  | —          | —          | 5          | ms           |
| Turn-On Delay                         | From AC in   | —          | —          | 1000       | ms           |
|                                       | From Global Enable   | —          | —          | 12         | ms           |
|                                       | From CoolMod Enable  | —          | —          | 12         | ms           |
| Hold-Up Time                          | For nominal output voltage at full load                          | 16         | —          | —          | ms           |
| Overcurrent Protection                | Straight line current limit with hiccup protection at 35% Vo nom | 105        | —          | 130        | %            |
| Short Circuit Protection              | Hiccup, Autorecovery   | —          | —          | —          | —            |
| Overtemperature Protection            | Autorecovery   | —          | —          | —          | —            |
| Capacitive Load                       |  | —          | —          | 2.5        | mF           |
| <b>Dual Output Modules (1 Slot)</b>   |  |            |            |            |              |
| Line Regulation                       | From minimum to maximum rated voltage                            | —          | —          | ±0.5       | %            |
| Load Regulation                       | For 0 to 100% load change  | —          | —          | ±2         | %            |
| Transient Response                    | For 25% to 75% load change, 0.5 A/μs: voltage deviation          | —          | —          | ±10        | %            |
|                                       | For 25% to 75% load change, 0.5 A/μs: settling time              | —          | —          | 1000       | μs           |
| Ripple and Noise                      | Peak-Peak, 20 MHz BW, 100 mV or % of nominal                     | —          | —          | 2          | %            |
| Overvoltage Protection                | Latching OVP (% of maximum voltage)                              | 110        | —          | 130        | %            |
| Rise Time                             | Monotonic  | —          | —          | 20         | ms           |
| Turn-On Delay                         | From AC in   | —          | —          | 1000       | ms           |
|                                       | From Global Enable   | —          | —          | 100        | ms           |
|                                       | From CoolMod Enable  | —          | —          | 100        | ms           |
| Hold-Up Time                          | For nominal output voltage at full load                          | 16         | —          | —          | ms           |
| Overcurrent Protection                | Hiccup, Autorecovery   | 165        | —          | 335        | %            |
| Short Circuit Protection              | Hiccup, Autorecovery   | —          | —          | —          | —            |
| Overtemperature Protection            | Latch off  | —          | —          | —          | —            |
| Capacitive Load                       |  | —          | —          | 270        | μF           |
| <b>High Power Modules (3 Slots)</b>   |  |            |            |            |              |
| Line Regulation                       | From minimum to maximum rated voltage                            | —          | —          | ±0.5       | %            |
| Load Regulation                       | For 0 to 100% load change  | —          | —          | ±3.5       | %            |
| Transient Response                    | For 25% to 75% load change, 0.5 A/μs: voltage deviation          | —          | —          | ±4         | %            |
|                                       | For 25% to 75% load change, 0.5 A/μs: settling time              | —          | —          | 1000       | μs           |
| Ripple and Noise                      | Peak-Peak, 20 MHz BW, 100 mV or % of nominal                     | —          | —          | 3.5        | %            |

**ELECTRICAL SPECIFICATIONS (CONTINUED)**

|   |  |     |   |       |     |
|---|--|-----|---|-------|-----|
| Overvoltage Protection                  | Tracking OVP (autorecovery, % of setpoint)                       | 102 | — | 120   | %   |
|   | Latching OVP (% of maximum voltage)                              | 107 | — | 130   | %   |
| Remote Sense                            | Maximum cable drop compensation                                  | —   | — | 0.5   | VDC |
| Rise Time                               | Monotonic  | —   | — | 8     | ms  |
| Turn-On Delay                           | From AC in   | —   | — | 1000  | ms  |
|   | From Global Enable   | —   | — | 20    | ms  |
|   | From CoolMod Enable  | —   | — | 20    | ms  |
| Hold-Up Time                            | For nominal output voltage at full load                          | 16  | — | —     | ms  |
| Overcurrent Protection                  | Straight line current limit with hiccup protection at 35% Vo nom | 105 | — | 130   | %   |
| Short Circuit Protection                | Hiccup, Autorecovery   | —   | — | —     | —   |
| Overtemperature Protection              | Autorecovery   | —   | — | —     | —   |
| Capacitive Load                         |  | —   | — | 10    | mF  |
| <b>Wide Trim Power Modules (1 Slot)</b> |  |     |   |       |     |
| Line Regulation                         | From minimum to maximum rated voltage                            | —   | — | ±0.25 | %   |
| Load Regulation                         | For 0 to 100% load change  | —   | — | ±0.4  | %   |
| Transient Response                      | For 25% to 75% load change, 0.5 A/μs: voltage deviation          | —   | — | ±6    | %   |
|   | For 25% to 75% load change, 0.5 A/μs: settling time              | —   | — | 500   | μs  |
| Ripple and Noise                        | Peak-Peak, 20 MHz BW, 100 mV or % of nominal                     | —   | — | 1.25  | %   |
| Overvoltage Protection                  | Tracking OVP (autorecovery, % of setpoint)                       | 103 | — | 125   | %   |
|   | Latching OVP (% of maximum voltage)                              | 107 | — | 160   | %   |
| Remote Sense                            | Maximum cable drop compensation                                  | —   | — | 0.5   | VDC |
| Rise Time                               | Monotonic  | —   | — | 5     | ms  |
| Turn-On Delay                           | From AC in   | —   | — | 1000  | ms  |
|   | From Global Enable   | —   | — | 12    | ms  |
|   | From CoolMod Enable  | —   | — | 12    | ms  |
| Hold-Up Time                            | For nominal output voltage at full load                          | 16  | — | —     | ms  |
| Overcurrent Protection                  | Straight line current limit with hiccup protection at 35% Vo nom | 105 | — | 130   | %   |
| Short Circuit Protection                | Hiccup, Autorecovery   | —   | — | —     | —   |
| Overtemperature Protection              | Autorecovery   | —   | — | —     | —   |
| Capacitive Load                         |  | —   | — | 10    | mF  |
| <b>High Voltage Modules (1 Slot)</b>    |  |     |   |       |     |
| Line Regulation                         | From minimum to maximum rated voltage                            | —   | — | ±0.5  | %   |
| Load Regulation                         | For 0 to 100% load change  | —   | — | ±1    | %   |
| Transient Response                      | For 25% to 75% load change, 0.5 A/μs: voltage deviation          | —   | — | ±3.75 | %   |
|   | For 25% to 75% load change, 0.5 A/μs: settling time              | —   | — | 500   | μs  |
| Ripple and Noise                        | Peak-Peak, 20 MHz BW, 100 mV or % of nominal                     | —   | — | 1     | %   |
| Overvoltage Protection                  | Tracking OVP (autorecovery, % of setpoint)                       | 103 | — | 125   | %   |
|   | Latching OVP (% of maximum voltage)                              | 112 | — | 122   | %   |
| Rise Time                               | Monotonic  | —   | — | 20    | ms  |
| Turn-On Delay                           | From AC in   | —   | — | 1000  | ms  |
|   | From Global Enable   | —   | — | 30    | ms  |
|   | From CoolMod Enable  | —   | — | 30    | ms  |
| Hold-Up Time                            | For nominal output voltage at full load                          | 16  | — | —     | ms  |

## ELECTRICAL SPECIFICATIONS (CONTINUED)

|                            |  |     |   |     |    |
|----------------------------|--|-----|---|-----|----|
| Overcurrent Protection     | Straight line current limit with hiccup protection at 35% Vo nom | 105 | — | 130 | %  |
| Short Circuit Protection   | Hiccup, Autorecovery   | —   | — | —   | —  |
| Overtemperature Protection | Autorecovery   | —   | — | —   | —  |
| Capacitive Load            |  | —   | — | 10  | μF |

## Auxiliary Output

| Parameter                      | Conditions/Description             | Min  | Nom | Max  | Units |
|--------------------------------|------------------------------------|------|-----|------|-------|
| Nominal Output Voltage         | Aux voltage option A               | 11.6 | 12  | 12.4 | V     |
|                                | Aux voltage option B               | 4.8  | 5   | 5.2  | V     |
| Load Regulation                |                                    | —    | —   | ±2   | %     |
| Line Regulation                | For ±10% change from nominal line  | —    | —   | ±0.5 | %     |
| Ripple and Noise               | Peak-Peak, 20 MHz BW, % of nominal | —    | —   | 4    | %     |
| Maximum Output Current         | Aux voltage option A               | —    | —   | 1.96 | A     |
|                                | Aux voltage option B               | —    | —   | 4.7  | A     |
| Maximum Output Capacitive Load |                                    | —    | —   | 1000 | μF    |
| Output Overcurrent Protection  | Hiccup                             | 105  | —   | 145  | %     |
| Short Circuit Protection       | Yes, autorecovery                  | —    | —   | —    | —     |

## Galvanic Isolation

| Parameter               | Conditions/Description   | Min  | Nom | Max | Units |
|-------------------------|--|------|-----|-----|-------|
| Input to Output         | Reinforced (2 x MOPP); contact Advanced Energy for Hi-Pot instructions | 4000 | —   | —   | VAC   |
| Input to Case           | Basic (1 x MOPP)   | 1850 | —   | —   | VAC   |
| Output to Case          | Basic (1 x MOPP)   | 1850 | —   | —   | VAC   |
| Output to Output        | Basic (1 x MOPP)   | 1850 | —   | —   | VAC   |
| Output to Output (Dual) | CmG, CmH V1-V2   | 500  | —   | —   | VDC   |

## Reliability

| Parameter            | Conditions/Description                           | Min     | Nom | Max  | Units |      |
|----------------------|--|---------|-----|------|-------|------|
| Reliability and MTBF | MTBF of > 400 kHours, Telecordia SR-332, Issue 4 | CoolMod | —   | 0.11 | —     | Fpmh |
|                      |  | CoolPac | —   | 0.19 | —     | Fpmh |
| Warranty             | 5 years  | —       | —   | —    | —     |      |

## Environmental

| Parameter             | Conditions/Description                   | Min | Nom | Max  | Units |
|-----------------------|--|-----|-----|------|-------|
| Operating Temperature | Operates below -20°C after 10 min warmup | -30 | —   | 85   | °C    |
| Storage Temperature   |  | -40 | —   | 85   | °C    |
| Derating              | See Derating Curves                      | —   | —   | —    | —     |
| Relative Humidity     | Non-condensing                           | 5   | —   | 95   | %RH   |
| Shock and Vibration   | MIL-STD-810G Method 514.6                | —   | —   | —    | —     |
| Altitude              |  | —   | —   | 5000 | m     |

**ELECTRICAL SPECIFICATIONS (CONTINUED)**

| Leakage Currents                   |                               |     |       |
|------------------------------------|-------------------------------|-----|-------|
| Parameter                          | Conditions/Description        | Nom | Units |
| <b>AC Leakage Current</b>          | <b>Input to Earth Ground</b>  | —   | —     |
| Normal Condition (High Line)       | Mains Voltage 264 VAC / 60 Hz | 248 | µA    |
| Single Fault Condition (High Line) | Mains Voltage 264 VAC / 60 Hz | 393 | µA    |
| <b>Touch Current</b>               |                               |     |       |
| Normal Condition                   | Mains Voltage 264 VAC / 60 Hz | 4.7 | µA    |
| Single Fault Condition             | Mains Voltage 264 VAC / 60 Hz | 247 | µA    |

| EMC                              |  |           |
|----------------------------------|--|-----------|
| Parameter                        | Conditions/Description                         | Units     |
| Radiated Emissions <sup>1</sup>  | EN 55011, EN 55022 and FCC, Class B            | Compliant |
| Conducted Emissions <sup>1</sup> | EN 55011, EN 55022 and FCC, Class B            | Compliant |
| Power Line Harmonics             | EN 61000-3-2, Class A                          | Compliant |
| Voltage Flicker                  | EN 61000-3-3                                   | Compliant |
| ESD                              | EN 61000-4-2, level 4, 8 kV contact, 15 kV air | A         |
| Radiated Immunity                | EN 61000-4-3, level 2, 3 V/m                   | A         |
| Electrical Fast Transient        | EN 61000-4-4, level 4, ±4 kV                   | B         |
| Surge Immunity                   | EN 61000-4-5, level 4, 2 kV DM, 4 kV CM        | B         |
| Conducted RF Immunity            | EN 61000-4-6, level 3, 10 Vemf 150 KHz-80 MHz  | A         |
| Power Frequency Magnetic Field   | EN 61000-4-8, level 4, 30 A/m                  | A         |

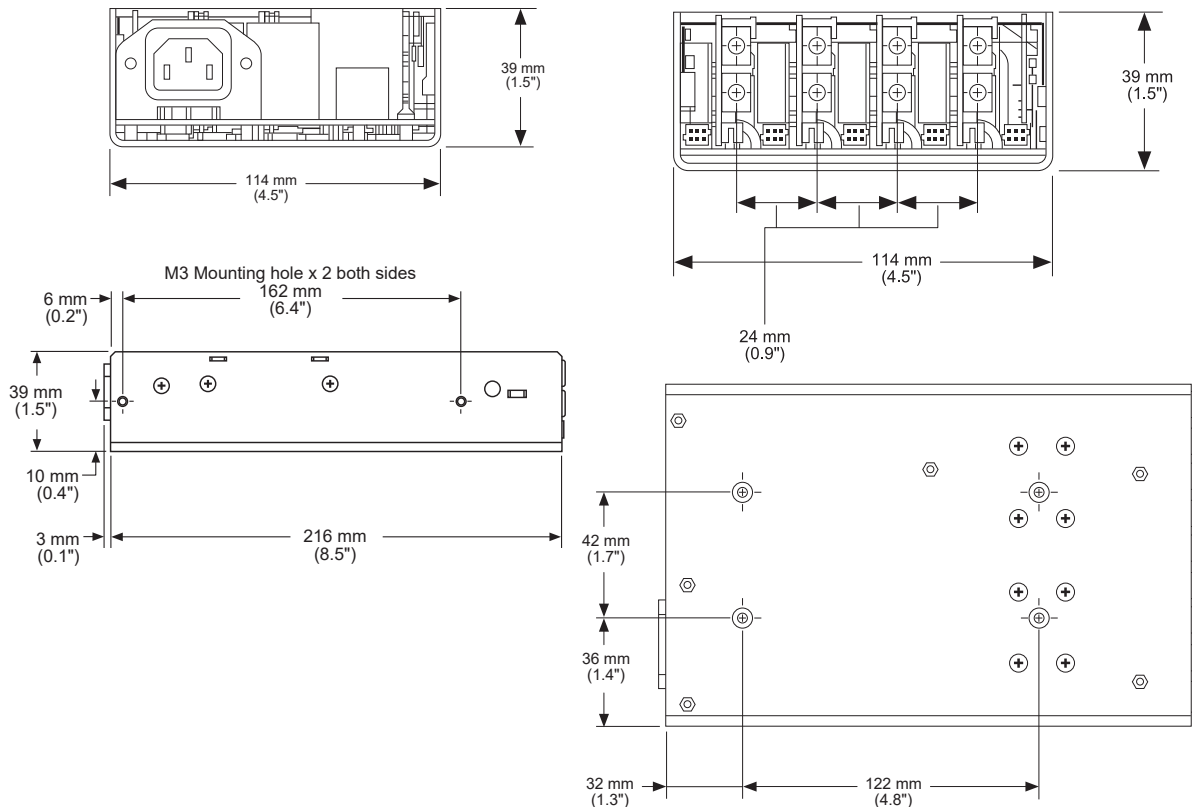
<sup>1</sup> Consult AE applications for system level compliance

| Standards and Directives <sup>1</sup> |   |
|---------------------------------------|---|
| Parameter                             | Conditions/Description  |
| Safety Agency Approvals               | EN60601-1 3rd Edition, UL60601-1, CSA601                              |
|                                       | EN60950 2nd Edition, CSA C22.2 No. 60950-1                            |
| IEC/EN 60950-1, Edition 2             | UL 60950-1/CSA 22.2 No 60950-1, Edition 2                             |
|                                       | 5000 m (16,400 ft) altitude, 100 to 240 VAC ±10%                      |
| IEC/EN 60601-1, Edition 3             | IEC 60601-1(2005), EN60601-1 (2006)                                   |
|                                       | ANSI/AAMI ES 60601-1 (2005)   |
|                                       | CAN/CSA C22.2 No. 60601-1 (2008)                                      |
|                                       | 5,000 m (16,400 ft) altitude, 100 to 240 VAC ±10%                     |
| IEC 62368 Edition 2                   | IEC 62368-1 (2014) Edition 2  |
|                                       | 5000 m (16,400 ft) altitude, 100 to 240 VAC ±10%                      |
| IEC 60601-1-2 Edition 4               | IEC 60601-1-2 (2014)  |
| Protection Class                      | Class I   |
| WEEE                                  | Waste Electrical and Electronic Equipment Directive (WEEE) 2002/96/EC |
| ROHS                                  | EU DIRECTIVE 2011/65/EC RoHS compliancy                               |
| REACH                                 | Compliant   |

## MECHANICAL SPECIFICATIONS

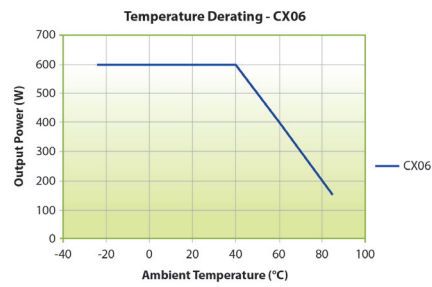
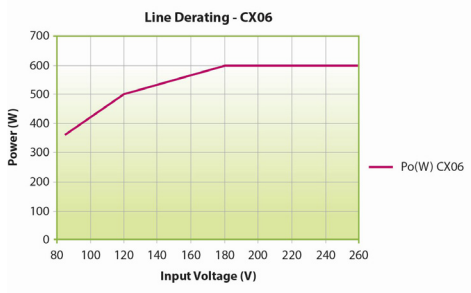
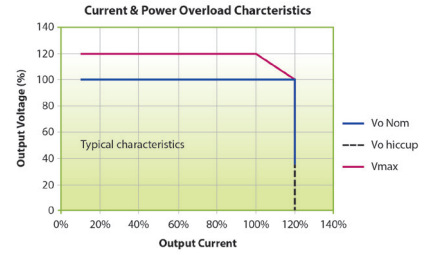
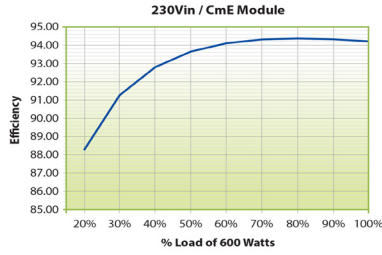
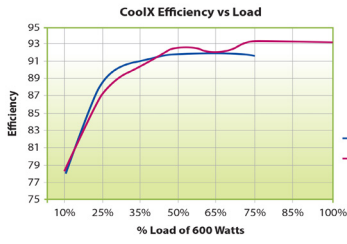
| Mechanica Data                                   |  |  |
|--|--|--|
| Parameter  | Description                            | Min  |
| Dimensions (L x W x H)                           |  | 215.9 mm x 114.3 mm x 39.1 mm (8.5 in x 4.5 in x 1 U)  |
| Weight   | Nominal Weight: CoolPac + 4 x CoolMods | 1 Kg   |
| Connectors                                       | Description                            | Mating Connectors (if applicable)  |
| AC/DC input terminal block                       | TE 2-1437667-S, DINKLE DT-35-B07W-03   | —  |
| AC/DC IEC input (Option)                         | IEC 320 Inlet                          | —  |
| Main DC output terminal block (CmA-CmF, CmM-CmQ) | M4 Screws                              | —  |
| Main DC output terminal block (CmG, CmH)         | Camden - CTB9350/4A                    | —  |
| Output Signal Connector (CmG, CmH)               | Molex 87833-0831 8-way                 | Locking Molex 51110-0860; Non Locking Molex 51110-0850; Crimp Terminal: Molex p/n 50394 or Molex 51110-0856 which includes locking tab and polarization keying |
| System Signal Connector J1005                    | Molex 87833-0831 8-way                 | Locking Molex 51110-0860; Non Locking Molex 51110-0850; Crimp Terminal: Molex p/n 50394 or Molex 51110-0856 which includes locking tab and polarization keying |
| Output Signal Connectors J1001-1004              | Molex 87833-0631 6-way                 | Locking Molex 51110-0660; Non Locking Molex 51110-0650; Crimp Terminal: Molex p/n 50394 or Molex 51110-0656 which includes locking tab and polarization keying |
| Output Sense Connectors J3                       | JST-S2BPH-K(LF)(SN)                    | JST PHR2. Crimp Terminal JST BPH-002T-P0.5S or SPH-002T-P05S   |
| Auxiliary Output Connector J1                    | Molex 1041880210 2pin                  | —  |

### Mechanical Drawings



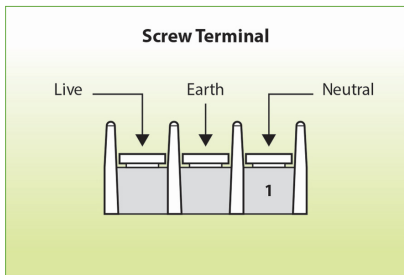
CoolX600 can be mounted on its base, vertically, or on its side. CoolX600 can also be mounted on the DIN Rail Accessory (Z744).

# INTERFACE

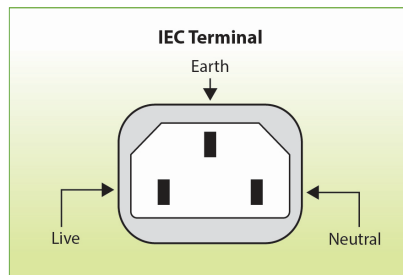


Enhanced thermal performance with system fans and base plate cooling. Contact Advanced Energy for details.

## Input Connectors

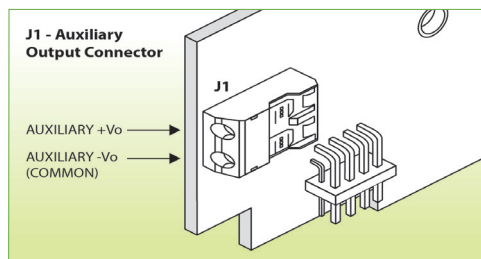
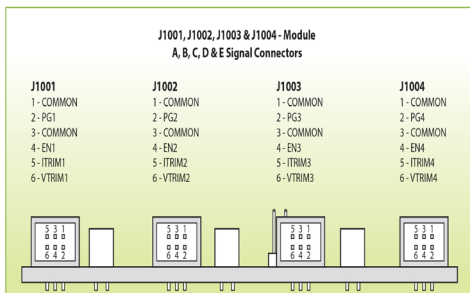
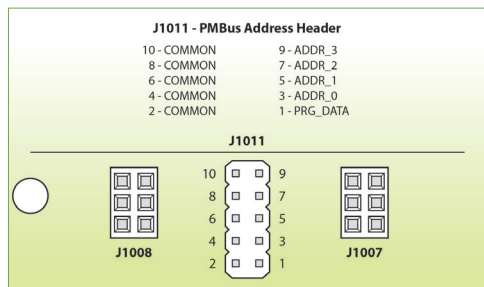
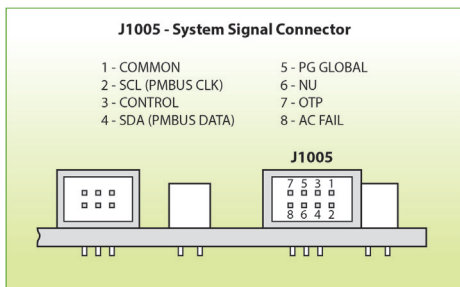


Standard (Screw Terminal)



Option 1 (IEC Terminal)

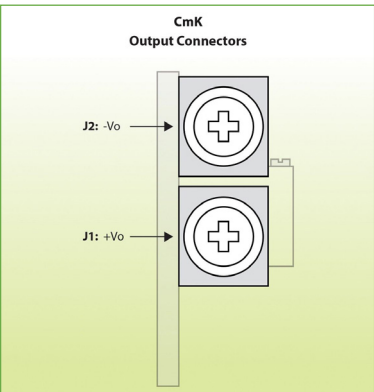
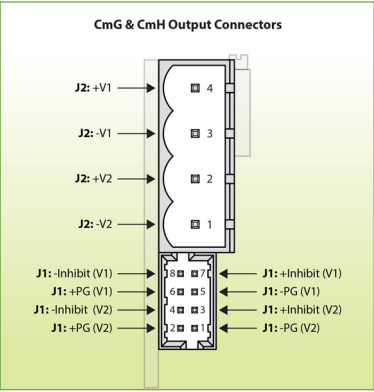
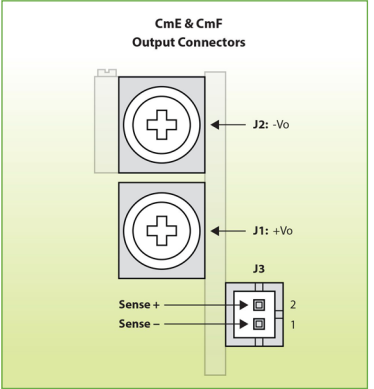
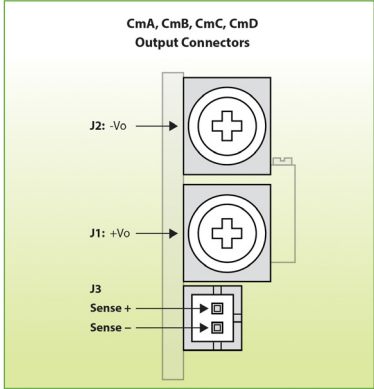
## CoolPac Connectors



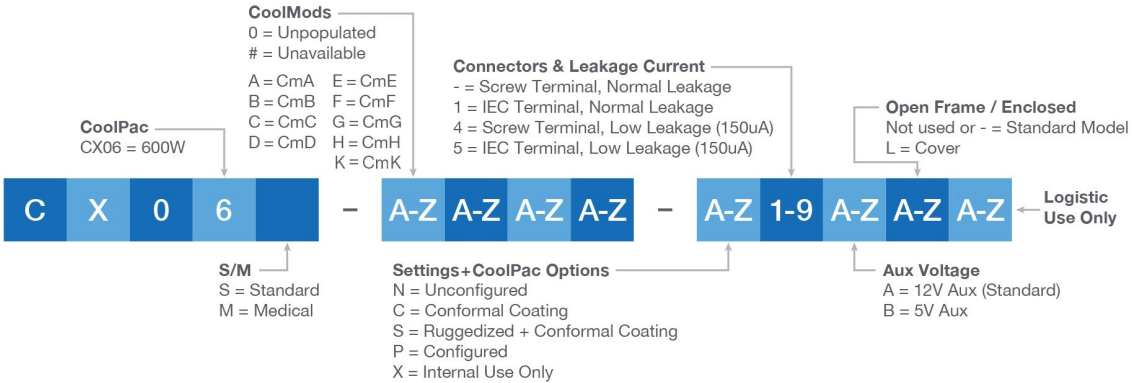


INTERFACE (CONTINUED)

CoolMod Connectors



CONFIGURATION



N = Unconfigured indicates that all voltages are set to the nominal setpoint of each module and there are no parallel/series links fitted to the power supply.

\*CmE or CmF High Power Module (3 slot module) can only occupy Slots B/C/D.