

CSU Series 1800W - 2400W 12V Distributed Power System

Preliminary Data Sheet

Front-end Bulk Power

Total Output Power: 1800W,
2000W, 2400 W

Input Voltage: 90 to 127, 180-264
Vac, 240Vdc

SPECIAL FEATURES

- Ultra-high density
- 1U power supply
- Active power factor correction
- EN61000-3-2 Harmonic compliance
- Inrush current control
- 80PLUS® Platinum efficiency
- N+N, N+1 redundant
- Hot-pluggable
- Active current sharing
- PMBus® compliant
- Closed loop throttle
- Cold redundancy
- Two-year warranty

COMPLIANCE

- Conducted/Radiated EMI Class A Limits
- RoHS
- IEC 60950/62368

SAFETY

- UL/cUL
- CB Test Certificate
- CE Mark
- KC
- EAC
- BIS
- CQC
- BSMI



Electrical Specifications

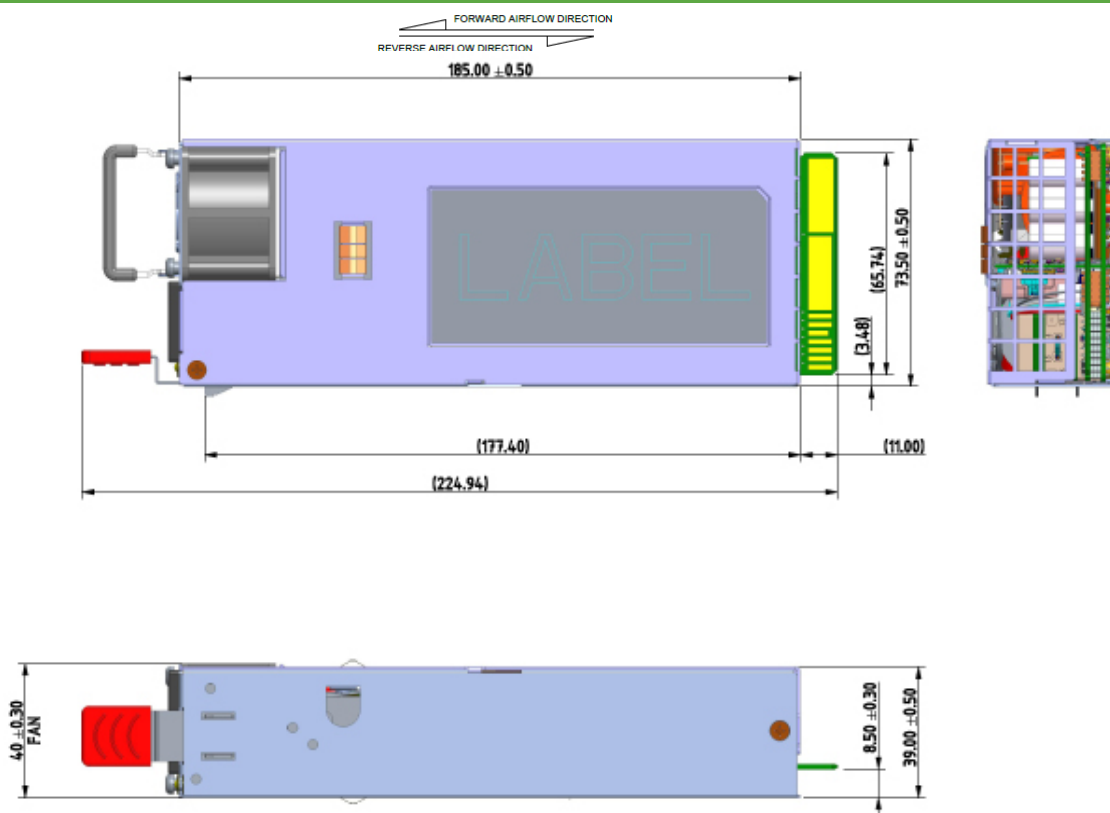
| Input | | | | | | | |
|-------------------------------|-----------|---|-----------|--------------------|-------------------|------|-------|
| Input Range and Output Power | | | CSU1800AP | CSU2000AP | CSU2400AP | | |
| | | 90-127 Vac | 1000W | 1400W ¹ | N/A | | |
| | | 180-264 Vac | 1800W | 2000W ² | 2400W | | |
| Frequency | | 47 Hz to 63 Hz | | | | | |
| Efficiency | | 94.0% peak, platinum efficiency rating | | | | | |
| Max input current | | 100/200Vac | 11.3A/10A | C14 14.4A/10A | 13.8A | | |
| Inrush current | | 35 Apk, cold start | | | | | |
| Conducted EMI | | Class A | | | | | |
| Radiated EMI | | Class A | | | | | |
| Power factor | | >0.9 beginning at 10% load | | | | | |
| Hold-up time | | 11 ms at full load | | | | | |
| Leakage current | | <0.585 mA | | | | | |
| Output | | | | | | | |
| | | Main DC Output | | | Standby DC Output | | |
| | | MIN | NOM | MAX | MIN | NOM | MAX |
| Nominal setting | | -0.20% | 12.2V | 0.20% | -3.5% | 12.0 | +3.5% |
| Total output regulation range | | -5% | | +5% | -5% | | +5% |
| Dynamic load regulation range | | -5% | | +5% | -5% | | +5% |
| Output ripple | | | | 1% | | | 1% |
| Output current | CSU1800AP | 1.0 A ³ | | 147.5 | 0.1 A | | 3.5 A |
| | CSU2000AP | | | 163.9 | | | |
| | CSU2400AP | | | 196.7 | | | |
| Current sharing | | Within ±6% of full load rating, starting at 25% of PSU rated load | | | N/A | | |
| Capacitive loading | | 2,000 | | 50,000 | 10 | | 3,100 |
| Output rise time | | 10 ms | | 70 ms | 10 ms | | 70 ms |

¹ Output power limited at 1400W at 120Vac; linearly derated to 1250W at 100Vac.

² CSU2000AP-3-200/201 only. CSU2000AP-3-100/101 output power rating limited by 10A input current.

³ Minimum current for transient load response testing only. Unit is designed to operate and be within output regulation range at zero load.

Mechanical Outline CSU1800AP-3-100/101 and CSU2000AP-3-100/-101

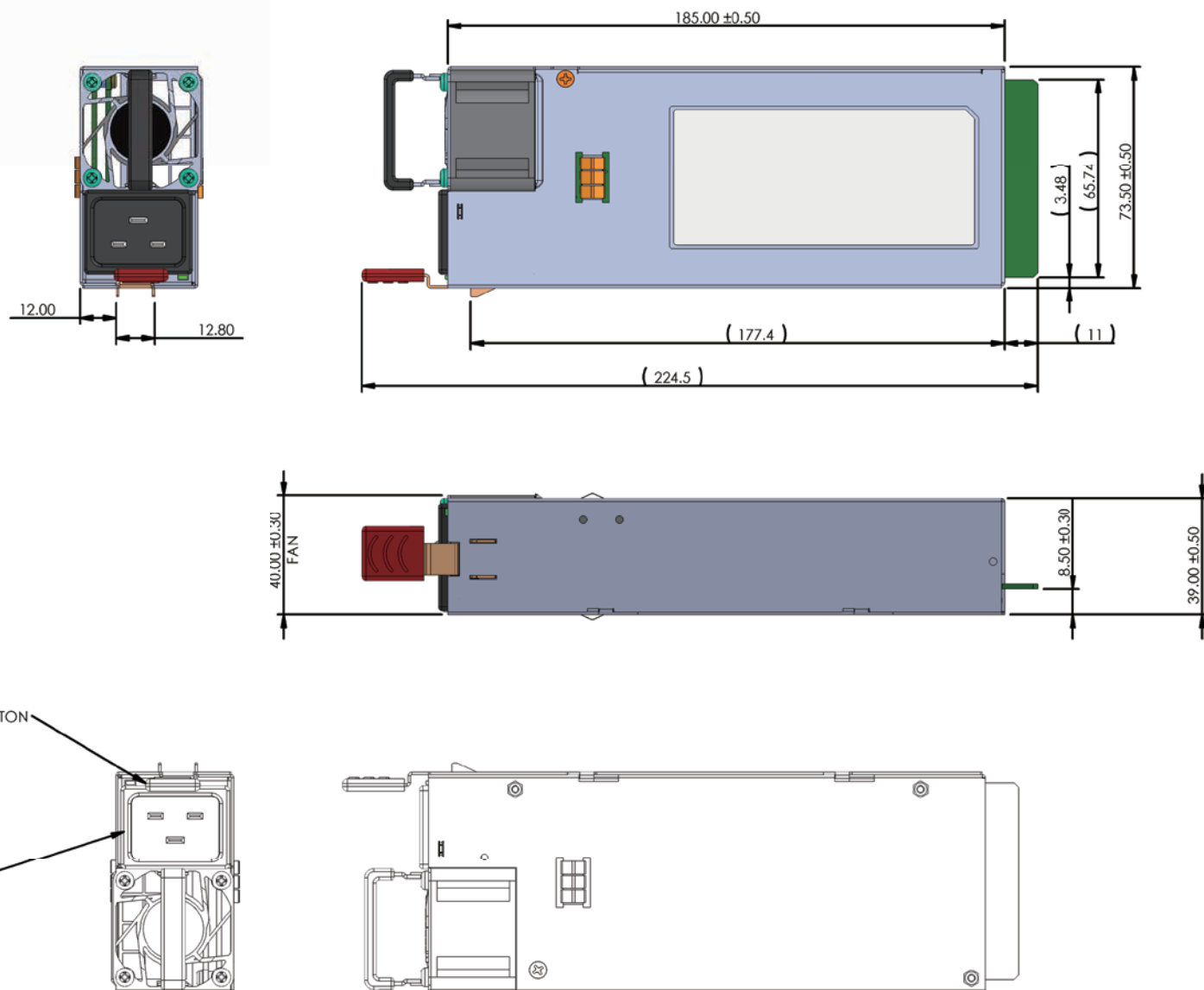


Environmental Specifications

| | | |
|--|-----------------|--|
| Operating temperature | Forward Airflow | CSU1800AP-3-100/CSU2000AP-3-100/CSU2000AP-3-200: -5 to 55°C full rated power Allowable up to TBD °C for short term operation |
| | | CSU2400AP-3-100: -5 to 50°C full rated power, allowable up to 55°C at derated power Allowable up to TBD °C for short term operation |
| | Reverse Airflow | Continuous maximum 40°C, allowable up to 50°C for short term duration |
| | | TBD |
| Operating altitude | | Up to 10,000 feet ¹ |
| Operating relative humidity | | +5% to 95%, non-condensing |
| Non-operating temperature | | -40 to +70 °C |
| Shipping and storage relative humidity | | +5% to 95%, non-condensing |
| Non-operating altitude | | Up to 50,000 feet |
| Vibration and shock | | Standard operating/non-operating random shock and vibration |
| RoHS compliance | | Yes |
| MTBF | | 500 k hours at 50 °C, 85% load, nominal input |
| Operating life | | Minimum of 5 years at 50°C, 85% load, nominal input |

¹ Safety creepage/clearance rated for 5,000m altitude for CQC

Mechanical Outline CSU2000AP-3-200/201 and CSU2400AP-3-100/101



| Model Number | Description | Outputs | | Airflow Direction |
|-----------------|--|--------------|------------|-------------------|
| CSU1800AP-3-100 | 1U x 73.5 x 185mm 1800W, Platinum efficiency, red, C14 | 12.2V/147.5A | 12.0V/3.5A | Forward |
| CSU2000AP-3-100 | 1U x 73.5 x 185mm 2000W, Platinum efficiency, red, C14 | 12.2V/163.9A | 12.0V/3.5A | Forward |
| CSU2000AP-3-200 | 1U x 73.5 x 185mm 2000W, Platinum efficiency, red, C20 | 12.2V/163.9A | 12.0V/3.5A | Forward |
| CSU2400AP-3-100 | 1U x 73.5 x 185mm 2400W, Platinum efficiency, red, C20 | 12.2V/196.7A | 12.0V/3.5A | Forward |

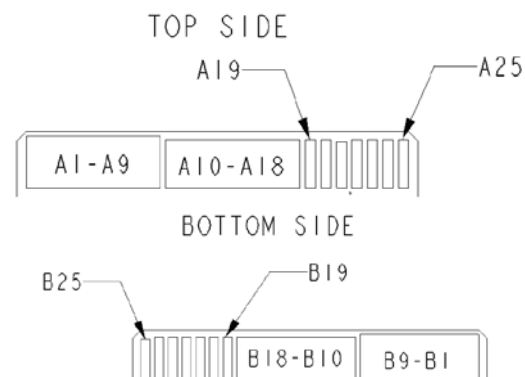
Connector Definition

| | |
|--|--|
| Output connector part number | Card-edge |
| Recommended mating connector part number | FCI Amphenol 10035388* |
| | FCI Amphenol GPCEFX361411HHR (CSU1800AP-3-xxx and CSU2000AP-3-xxx) |
| | FCI Amphenol 10147875-001LF (CSU2400AP-3-xxx) |

* Use with caution to maintain connector temperature rise and connector temperature

Output Connector Pin Configuration

| | | | |
|--------|-------------------|---------|--|
| A1-A9 | POWER GND | B1-B9 | POWER GND |
| A10-18 | +12V | B10-B18 | +12V |
| A19 | SDA | B19 | A0 (addressing) |
| A20 | SCL | B20 | A1 (addressing) |
| A21 | PSON# | B21 | 12VSB |
| A22 | SMBAlert# | B22 | CR_BUS |
| A23 | RETURN_SENSE | B23 | ISHARE |
| A24 | +12V_REMOTE_SENSE | B24 | GND (used by system for presence detect) |
| A25 | PWOK | B25 | RESERVED |



Addressing

| PMBUS | | | | IPMI FRU | | | |
|-------|----|--------------|---------------|----------|----|--------------|---------------|
| A1 | A0 | Read Address | Write Address | A1 | A0 | Read Address | Write Address |
| 0 | 0 | B0h | B1h | 0 | 0 | A0h | A1h |
| 0 | 1 | B2h | B3h | 0 | 1 | A2h | A3h |
| 1 | 0 | B4h | B5h | 1 | 0 | A4h | A5h |
| 1 | 1 | B6h | B7h | 1 | 1 | A6h | A7h |

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WORLDWIDE OFFICES

Americas

2900 S.Diablo Way
Tempe, AZ 85282
USA
+1 888 412 7832

Europe (UK)

Waterfront Business Park
Merry Hill, Dudley
West Midlands, DY5 1LX
United Kingdom
+44 (0) 1384 842 211

Asia (HK)

14/F, Lu Plaza
2 Wing Yip Street
Kwun Tong, Kowloon
Hong Kong
+852 2176 3333

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