

FEATURES

- 28mm Height Ultra Low-Profile Design
- Meet IEC/EN/ANSI/AAMI ES60601-1 (Edition 3.1)
- Max. 600W Output under Forced Fan Flow
- Max. 350W Output under Air Convection
- 80 ~ 264 Vac Input Range
- 1.09”(H) * 4”(W) * 8.58”(L) inches footprints
- Efficiency 95% (typ.) at 230Vac input
- Remote sense; Power Good; Built-in VR
- Output Voltage: 12/ 18/ 24/ 36/ 48Vdc
- LED indicator for power on
- 12Vdc fan supply
- No Load Power Consumption: < 0.3W
- Max Power Density: 16 Watt/cu-in

APPLICATIONS

- AIO
- Printers
- POS Systems
- Charging Systems
- Embedded IPC Systems
- Visual Computing Systems
- Patient care & hospital grade system
- Human–Machine Interaction (HMI) Systems

MODEL :

| Model | Voltage Output | Output Current Max. (A) | | Ripple & Noise | Line Reg. | Load Reg. | Voltage ADJ. Range | Fan Output |
|---------------|----------------|-------------------------|--------|----------------|-----------|-----------|--------------------|------------|
| | | 21CFM | no fan | | | | | |
| ENG-600-12-01 | 12 V | 45 | 29.17 | 1% | ±0.5% | ±1% | ±5% | Vout |
| ENG-600-18-01 | 18 V | 30 | 19.45 | 1% | ±0.5% | ±1% | ±5% | 12Vdc/0.5A |
| ENG-600-24-01 | 24 V | 25 | 14.58 | 1% | ±0.5% | ±1% | ±5% | 12Vdc/0.5A |
| ENG-600-36-01 | 36 V | 16.67 | 9.72 | 1% | ±0.6% | ±1% | ±5% | 12Vdc/0.5A |
| ENG-600-48-01 | 48 V | 12.5 | 7.29 | 1% | ±0.5% | ±1% | ±5% | 12Vdc/0.5A |

INPUT

| Parameter | conditions/description | min | typ | max | units |
|---------------------------|---------------------------------------|------|-----|-----|-------|
| Voltage | | 80 | | 264 | Vac |
| Frequency | | 47 | | 63 | Hz |
| Current | at 115 Vac, full load | | 6.5 | | A |
| | at 230 Vac, full load | | 3.3 | | A |
| Inrush current | at 230 Vac, cold start | | | 70 | A |
| Leakage current | at 115 Vac | | | 0.2 | mA |
| | at 230 Vac | | | 0.4 | mA |
| Touch current | | | | 0.1 | mA |
| Power factor | at full load | 0.95 | | | |
| No load power consumption | | | | 0.5 | W |
| Input fuse | 6.3A/250 V time delay fuse (included) | | | | |

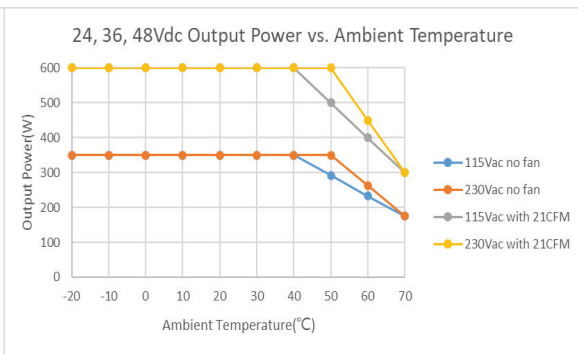
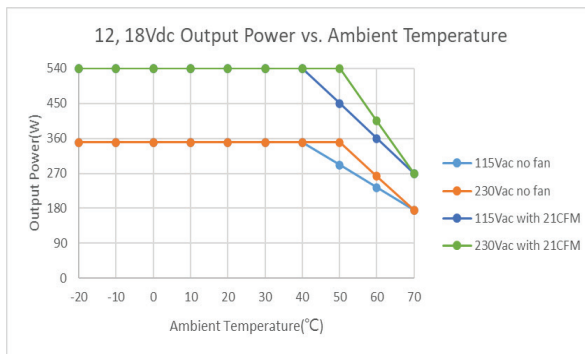
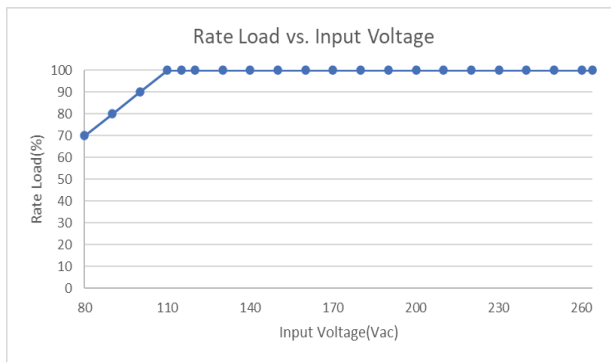
| OUTPUT | | | | | |
|-----------------------------|---|-----|-----------|-----|-------|
| Parameter | conditions/description | min | typ | max | units |
| Line regulation $\pm 0.5\%$ | | | ± 0.5 | | % |
| Load regulation | from 100% to 10% load | | ± 1 | | % |
| Hold-up time | at 115/230 Vac, full load | | 8.3 | | ms |
| Adjustability | built in trim pot | | ± 5 | | % |
| Switching frequency | | 50 | | 300 | kHz |
| Transient response | 25% step load change, at 0.1 A/ μ S slew rate, 50% duty cycle, 50/60 Hz, max excursion 4%, recovery time 5 ms | | | | |
| Fan output | 12 Vdc / 500 mA | | | | |

| PROTECTIONS | | | | | |
|-----------------------------|------------------------|-----|-----|-----|-------|
| Parameter | conditions/description | min | typ | max | units |
| Over voltage protection | hiccup, auto recovery | 110 | | 140 | % |
| Over current protection | hiccup, auto recovery | 110 | | | % |
| Short circuit protection | hiccup, auto recovery | | | | |
| Over temperature protection | Latch | | | | |

| SAFETY & COMPLIANCE | | | | | |
|------------------------------------|---|-----|-------------|-----|-------|
| Parameter | conditions/description | min | typ | max | units |
| Isolation voltage | input to output (2 x MOPP) | | 4,200 | | Vac |
| | input to ground (1 x MOPP) | | 1,500 | | Vac |
| | output to ground | | 1,500 | | Vac |
| Safety approvals | IEC60601-1, TUV EN60601-1, UL ANSI / AAMI ES60601-1 (3.1 version), EAC TP TC 020. CAN/CSA-C22.2 No. 60601-1:14 - Edition 3 approved; Design refer to EN60335-1 (By request) | | | | |
| Safety class | Class I | | | | |
| Conducted emissions | EN 55011 Class A | | | | |
| Radiated emissions | EN 55011 Class A (to be controlled in end system with external core (King core K5B RC 25 x 12 x 15-M in input cable (5 turns)) | | | | |
| Input current harmonics | EN 61000-3-2, Class D | | | | |
| Voltage fluctuation and flicker | EN 61000-3-3, pass | | | | |
| ESD immunity | EN 61000-4-2, level 4, criterion A | | | | |
| Radiated field immunity | EN 61000-4-3, level 4, criterion A | | | | |
| Electrical fast transient Immunity | EN 61000-4-4, level 4, criterion A | | | | |
| Surge immunity | EN 61000-4-5, level 4, criterion A | | | | |
| Conducted immunity | EN 61000-4-6, level 4, criterion A | | | | |
| Magnetic field immunity | EN 61000-4-8, level 4, criterion A | | | | |
| Voltage dips, interruptions | EN 61000-4-11, criterion A & B | | | | |
| MTBF | as per Telcordia-SR332-issue | | 3 3,370,000 | | hours |
| RoHS | 2011/65/EU | | | | |

| ENVIRONMENTAL | | | | | | |
|-----------------------|------------------------|-----|--------|-----|-------|--|
| Parameter | conditions/description | min | typ | max | units | |
| Operating temperature | see derating curves | -20 | | 70 | °C | |
| Storage temperature | | -40 | | 85 | °C | |
| Operating humidity | non-condensing | 20 | | 90 | % | |
| Storage humidity | non-condensing | 20 | | 90 | % | |
| Operating altitude | | | 16,000 | | ft | |

DERATING CURVES

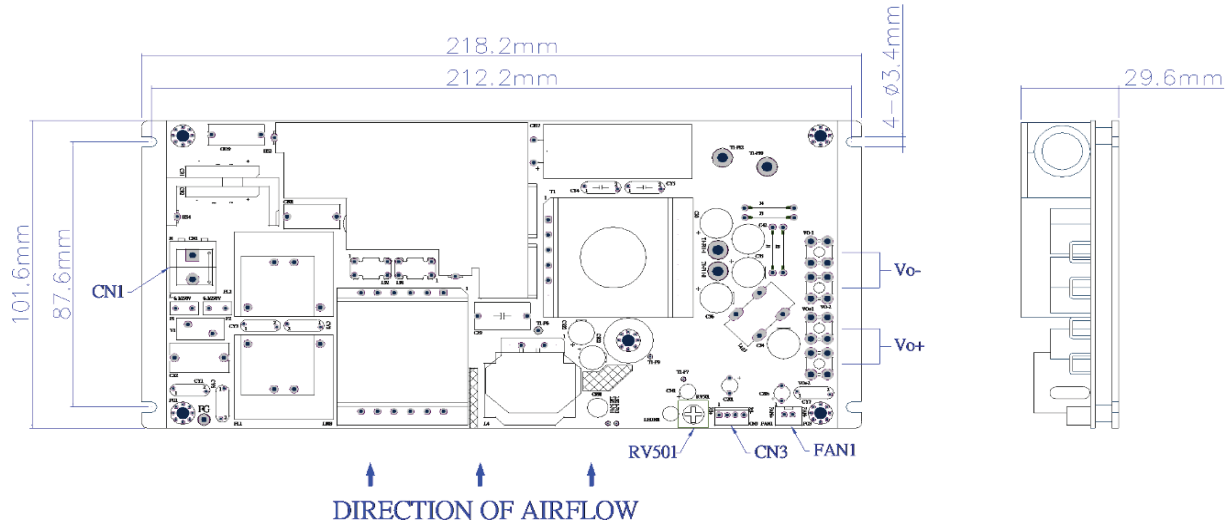


| MECHANICAL | | | | | | |
|--------------------------|--|-----|---------|-----|-------|--|
| Parameter | conditions/description | min | typ | max | units | |
| Dimensions | 8.58 x 4.00 x 1.09 (203.20 x 101.60 x 27.68 mm) | | | | inch | |
| Weight | | | 750 ±10 | | g | |
| Cooling | external fan or conduction plate | | | | | |
| CN1 Input connector | Mates with JST housing VHR-3M; pins SVH-41T-P1.1 or equivalent | | | | | |
| VO+ VO- Output connector | Accepts 1501 KSS Ring Terminal R2-3S for max 14 AWG wire up to 27 A. Use multiple terminals for higher currents. | | | | | |
| FAN1 Fan connector | Mates with JST housing XHP-2; pins SXH-001T-P0.6 or equivalent | | | | | |

MECHANICAL DRAWING

Units: inch [mm]

Tolerance: ±0.04 [±1.0]



| CN1 | |
|-----|----------|
| PIN | Function |
| 1 | N |
| 2 | NC |
| 3 | L |

| CN3 | |
|-----|----------|
| PIN | Function |
| 1 | RS+ |
| 2 | RS- |
| 3 | PG |
| 4 | GND |

| FANI | |
|------|----------|
| PIN | Function |
| 1 | +FAN |
| 2 | -FAN |

REVISION HISTORY

| Rev. | Description | Date |
|------|-----------------|------------|
| 1.0 | Initial release | 09/22/2020 |