


SERIES: VF-S250-XXA | **DESCRIPTION:** AC-DC POWER SUPPLY

FEATURES

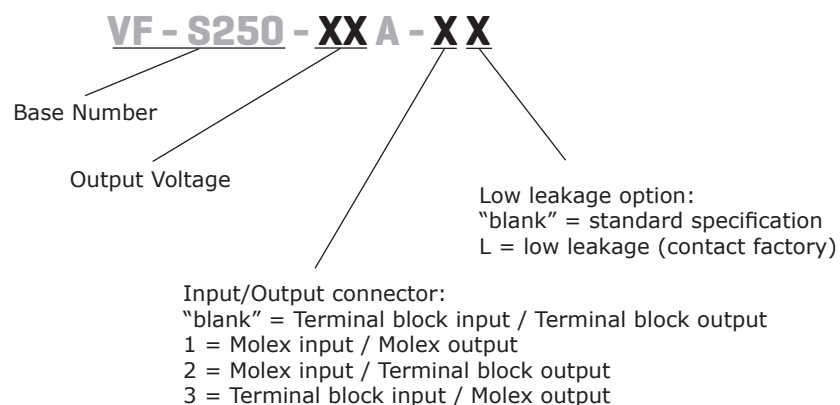
- up to 250 W continuous power
- 600 W peak power within 500 μ s duty duration
- passive power factor correction
- power good signal
- remote on/off control
- 3000 Vac isolation voltage
- over load, over voltage, over temperature, and short circuit protections
- UL, cUL, and TUV 62368-1 safety approvals
- efficiency up to 85%



| MODEL | output voltage | output current | output power ¹ | ripple and noise ^{2,3} | efficiency |
|-------------|----------------|----------------|---------------------------|---------------------------------|------------|
| | (Vdc) | max (A) | max (W) | max (mVp-p) | typ (%) |
| VF-S250-05A | 5 | 40 | 200 | 50 | 75% |
| VF-S250-09A | 9 | 25 | 225 | 90 | 83% |
| VF-S250-12A | 12 | 20.83 | 250 | 120 | 80% |
| VF-S250-15A | 15 | 16.67 | 250 | 150 | 83% |
| VF-S250-18A | 18 | 13.89 | 250 | 180 | 83% |
| VF-S250-24A | 24 | 10.42 | 250 | 240 | 83% |
| VF-S250-28A | 28 | 8.93 | 250 | 280 | 83% |
| VF-S250-36A | 36 | 6.93 | 250 | 360 | 83% |
| VF-S250-48A | 48 | 5.21 | 250 | 480 | 83% |
| VF-S250-54A | 54 | 4.63 | 250 | 540 | 83% |

Notes:

1. Maximum power must not exceed 135 W with convection cooling or 250 W with 16 CFM forced air. The 5 and 9 Vdc models have a maximum of 100 W and 121.5 W respectively for convection cooling.
2. 1% minimum load is required to maintain the ripple and regulation.
3. Ripple and noise is measured from 10 KHz to 20 MHz at output terminals with a 0.1 μ F ceramic capacitor and a 22 μ F electrolytic capacitor in parallel.

PART NUMBER KEY


INPUT

| parameter | conditions/description | min | typ | max | units |
|----------------|---|-----|-----|-----|-------|
| voltage | auto selectable | 90 | | 132 | Vac |
| | | 180 | | 264 | Vac |
| frequency | | 47 | | 63 | Hz |
| current | at 110~120 Vac, cold start | | | 6 | A |
| | at 200~240 Vac, cold start | | | 3 | A |
| inrush current | at 115 Vac, cold start | | | 35 | A |
| | at 230 Vac, cold start | | | 70 | A |
| power factor | compliant to EN 61000-3-2 class A | | | | |
| remote on/off | designated as RMSW on the CN1, requires a low signal to inhibit output, hiccup mode | | | | |

OUTPUT

| parameter | conditions/description | min | typ | max | units |
|---------------------|---|-----|-----|-----|-------|
| regulation | | | ±1 | | % |
| transient response | output voltage returns to within 1% in less than 2.5 ms for a 50% load change peak transient does not exceed 5%. | | | | |
| start-up time | at 230 Vac | | | 1 | s |
| hold-up time | at 80% of rated maximim load | 20 | | | ms |
| adjustability | | | ±5 | | % |
| switching frequency | fixed | | 25 | | kHz |
| power good | designated as PG on the CN1, signal goes high 100~500 ms after the output reaches regulation, signal goes low at least 1 ms before loss of regulation (open collector). | | | | |
| fan drive | 12 Vdc / 300 mA for external fan | | | | |

PROTECTIONS

| parameter | conditions/description | min | typ | max | units |
|-----------------------------|---|-----|-----|-----|-------|
| over voltage protection | AC input needs to be reset to restart the power supply | | | 130 | % |
| over current protection | automatically recovers | 110 | | 140 | % |
| short circuit protection | short circuit can be continuous, recovers automatically | | | | |
| over temperature protection | auto recovery | | 110 | | °C |

SAFETY & COMPLIANCE

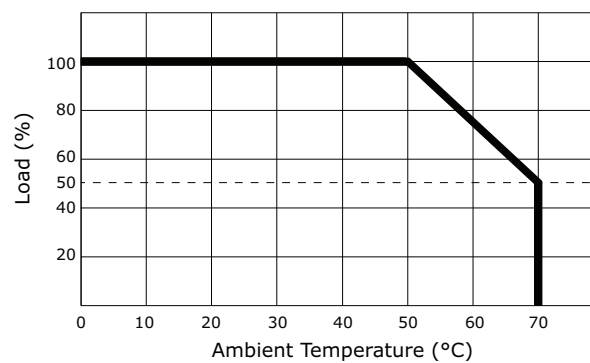
| parameter | conditions/description | min | typ | max | units |
|-------------------|--|---------|-----|-----|-------|
| isolation voltage | for 3 seconds at 10 mA max | | | | |
| | primary to secondary: | 3,000 | | | Vac |
| | primary to transformer core: | 1,500 | | | Vac |
| | primary to earth chassis: | 1,500 | | | Vac |
| safety approvals | IEC/EN/UL 62368-1 | | | | |
| EMI/EMC | EN 55032 Class B conducted / radiated, EN 61000-3-2, EN 61000-3-3, EN 55024 (IEC 61000-4-2, IEC 61000-4-3, IEC 61000-4-4, IEC 61000-4-5, IEC 61000-4-6, IEC 61000-4-8, IEC 61000-4-11) | | | | |
| leakage current | standard model at 264 Vac | | | 1 | mA |
| | low-leakage model at 240 Vac | | | 500 | µA |
| | low-leakage model at 120 Vac | | | 300 | µA |
| RoHS | yes | | | | |
| MTBF | according to MIL-HDBK-217 at 30°C | 100,000 | | | hrs |

ENVIRONMENTAL

| parameter | conditions/description | min | typ | max | units |
|-----------------------|---|-----|-----|-----|-------|
| operating temperature | | 0 | | 70 | °C |
| storage temperature | | -20 | | 85 | °C |
| operating humidity | non-condensing | 5 | | 90 | % |
| storage humidity | non-condensing | 5 | | 95 | % |
| vibration | acceleration ± 7.35 M/(SxS), on X, Y and Z Axis | 5 | | 50 | Hz |

DERATING CURVE

output power vs. ambient temperature



MECHANICAL

| parameter | conditions/description | min | typ | max | units |
|------------|---|-----|-----|-----|-------|
| dimensions | 127.00 x 81.28 x 38.10 (5 x 3.2 x 1.5 inch) | | | | mm |
| weight | | | 400 | | g |

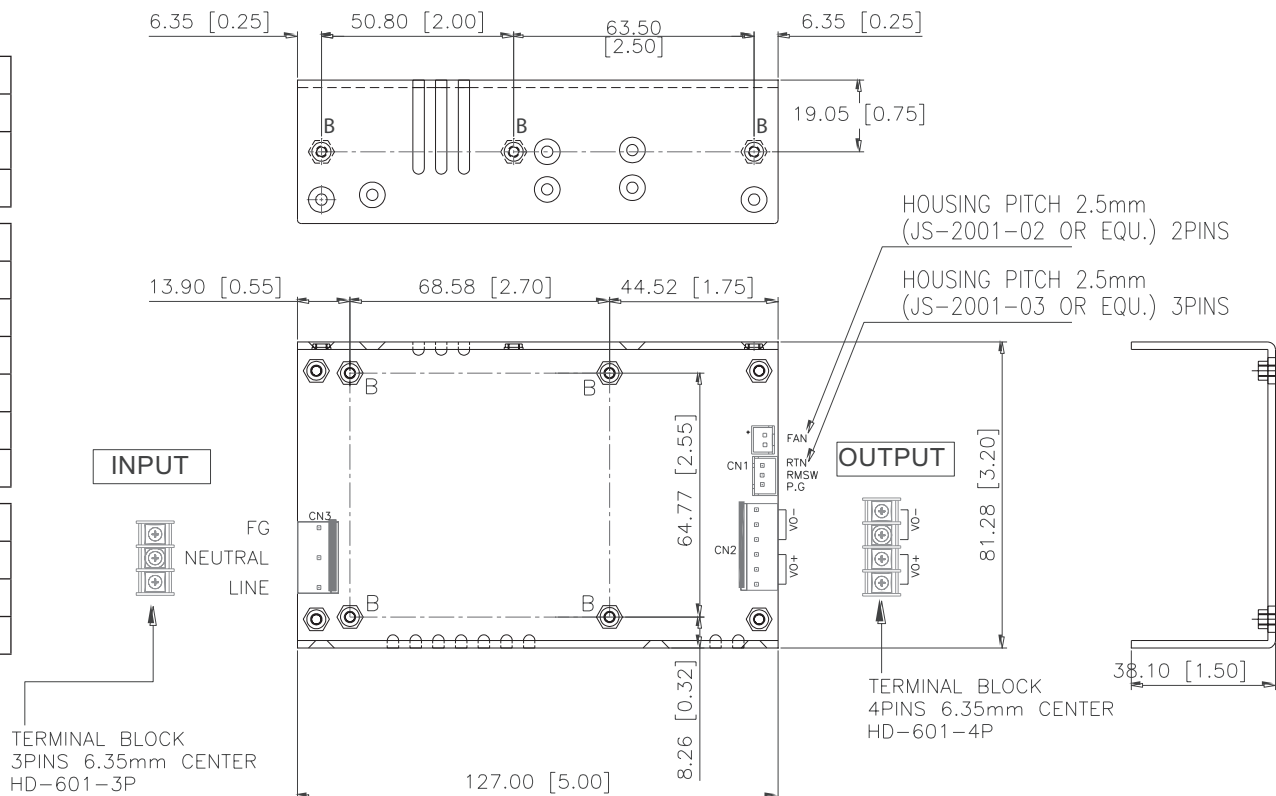
MECHANICAL DRAWING

units: mm

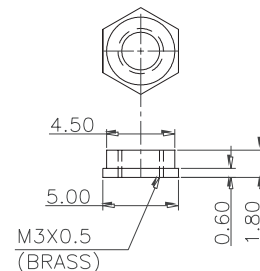
| CN1 | |
|-----|------------|
| 1 | ground |
| 2 | ac neutral |
| 3 | ac line |

| CN2 | |
|-----|-----|
| 1 | Vo+ |
| 2 | Vo+ |
| 3 | Vo+ |
| 4 | Vo- |
| 5 | Vo- |
| 6 | Vo- |

| CN3 | |
|-----|---------------|
| 1 | Power Good |
| 2 | remote switch |
| 3 | RTN |



B: MOUNTING HOLE 7 PLACES
 SACLE4:1
 MAXIMUM PENETRATION LENGTH=2.1MM



- Notes:
1. CN1 mates with molex part no. 09-93-0500 and molex 2478, 2578, 8818 crimp pins.
 2. CN2 mates with molex part no. 09-93-0600 and molex 2478, 2578, 8818 crimp pins.
 3. CN3 mates with JST part no. XHP-3 or equivalent (Chyao Shiunn JS-2001-03) and JST SXH-002T-P0.6 mating pins
 4. Fan drive connector mates with JST part no. XHP-2 or equivalent.
 5. Mounting hole maximum M3 screw penetration depth is 2.1 mm.

REVISION HISTORY

| rev. | description | date |
|------|--|------------|
| 1.0 | initial release | 05/05/2009 |
| 1.01 | new template applied | 12/16/2011 |
| 1.02 | V-Infinity branding removed | 08/28/2012 |
| 1.03 | updated Molex mating connector part numbers | 07/11/2013 |
| 1.04 | updated spec | 08/13/2013 |
| 1.05 | updated to be certified to 62368-1 safety standard | 07/02/2019 |

The revision history provided is for informational purposes only and is believed to be accurate.



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