

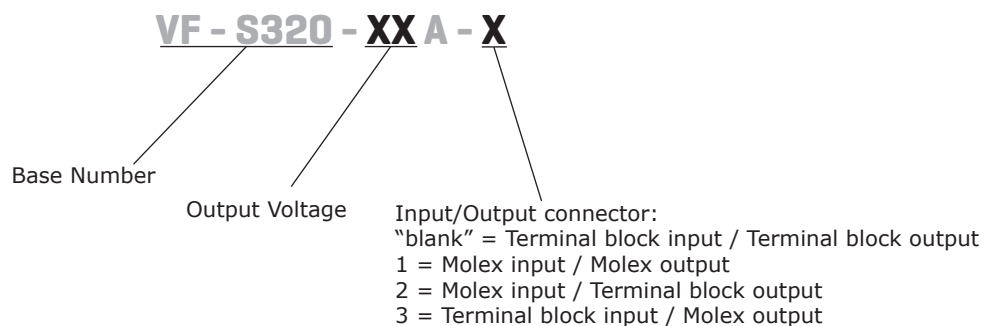
SERIES: VF-S320-XXA | **DESCRIPTION:** AC-DC POWER SUPPLY**FEATURES**

- up to 320 W continuous power w/ 22 CFM forced air
- 700 W peak power within 500 μ s duty duration
- passive power factor correction
- power good signal
- 3,000 Vac isolation voltage
- over load, over voltage, over temperature, and short circuit protections
- UL/EN/IEC 62368 certified
- efficiency up to 83%



| MODEL | output voltage | output current | | output power ¹ | | ripple and noise ^{3,4} | efficiency |
|--------------|----------------|----------------|---------------------------------|---------------------------|---------------------------------|---------------------------------|------------|
| | (Vdc) | max (A) | max w/ airflow ² (A) | max (W) | max w/ airflow ² (W) | max (mVp-p) | typ (%) |
| VF-S320-05A* | 5 | 27.28 | 45 | 136 | 225 | 50 | 75% |
| VF-S320-09A* | 9 | 16.37 | 29.1 | 147 | 262 | 90 | 83% |
| VF-S320-12A | 12 | 15 | 26.67 | 180 | 320 | 120 | 80% |
| VF-S320-15A | 15 | 12 | 21.33 | 180 | 320 | 150 | 83% |
| VF-S320-18A | 18 | 10 | 17.78 | 180 | 320 | 180 | 83% |
| VF-S320-24A | 24 | 7.5 | 13.33 | 180 | 320 | 240 | 83% |
| VF-S320-28A | 28 | 6.43 | 11.43 | 180 | 320 | 280 | 83% |
| VF-S320-36A | 36 | 5 | 8.89 | 180 | 320 | 360 | 83% |
| VF-S320-48A | 48 | 3.75 | 6.67 | 180 | 320 | 480 | 83% |
| VF-S320-54A | 54 | 3.33 | 5.93 | 180 | 320 | 540 | 83% |

- Notes:
1. Maximum power must not exceed 180 W with convection cooling or 320 W for forced air.
 2. With external 22 CFM fan.
 3. 1% minimum load is required to maintain the ripple and regulation.
 4. 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.
 5. * Discontinued model.

PART NUMBER KEY

INPUT

| parameter | conditions/description | min | typ | max | units |
|----------------|--|--------|-----|----------|--------|
| voltage | 90-132/180-264 auto selectable | 90/180 | | 132/264 | Vac |
| frequency | | 47 | | 63 | Hz |
| current | at 100~120 Vac, cold start at 200~240 Vac, cold start | | | 6 3 | A A |
| inrush current | at 115 Vac, cold start at 230 Vac, cold start | | | 35 70 | A A |
| power factor | Compliant to EN 61000-3-2 class A | | | | |

OUTPUT

| parameter | conditions/description | min | typ | max | units |
|-------------------------|---|-----|------|-----|-------|
| line regulation | low line to high line | | ±1 | | % |
| load regulation | all other outputs | | ±1 | | % |
| temperature coefficient | | | 0.25 | | mV/°C |
| 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 120 Vac | | | 1 | s |
| rise time | | 0.2 | | 20 | ms |
| hold-up time | At 120 Vac and 80% of rated maximum load | 20 | | | ms |
| adjustability | | | ±5 | | % |
| power good | Designated as PG on the CN3. This signal goes TTL high 100-500 ms after the output reaches regulation. It goes low at least 1 mS before loss of regulation. | | | | |
| fan drive | 12 Vdc / 400 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 upon removal of short | | | | |
| over temperature protection | auto recovery | | | 85 | °C |

SAFETY & COMPLIANCE

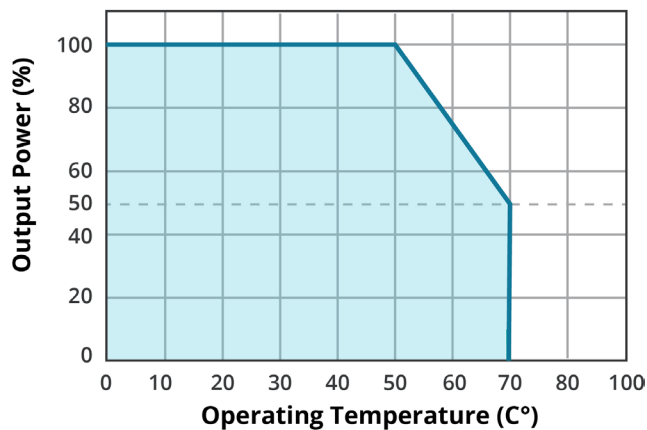
| parameter | conditions/description | min | typ | max | units |
|-------------------|--|-------------------------|-----|------------|-------------------|
| isolation voltage | applied for 3 seconds at 10 mA max. primary to secondary primary to transformer core primary to earth chassis | 3,000 1,500 1,500 | | | Vac Vac Vac |
| safety approvals | certified to 62368: IEC, EN, UL | | | | |
| EMI/EMC | pass FCC Part 15, CISPR 22 class B, conducted | | | | |
| leakage current | at 240 Vac at 120 Vac | | | 500 300 | µA µA |
| RoHS compliant | yes | | | | |
| MTBF | according to MIL-HDBK-217 at 30 °C | 100,000 | | | hrs |

ENVIRONMENTAL

| parameter | conditions/description | min | typ | max | units |
|-----------------------|---|-----|-----|-----|-------|
| operating temperature | see derating curve | 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 CURVES

TEMPERATURE DERATING CURVE

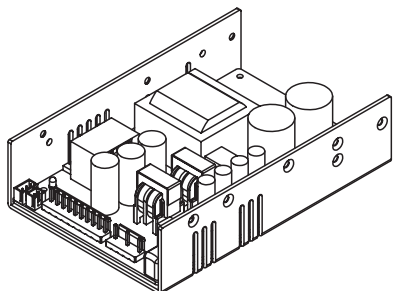


MECHANICAL

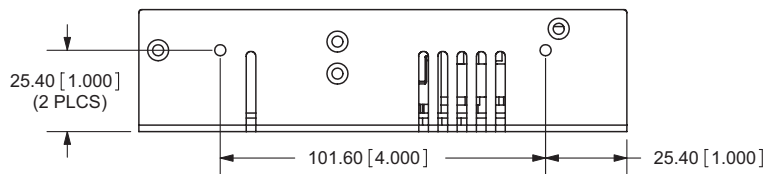
| parameter | conditions/description | min | typ | max | units |
|------------|--|-----|-----|-----|-------|
| dimensions | 152.40 x 101.60 x 38.10 [6 x 4 x 1.5 inch] | | | | mm |
| weight | | | | 600 | g |

MECHANICAL DRAWING

units: mm[inches]
 tolerance: ±0.3 mm
 unless otherwise specified



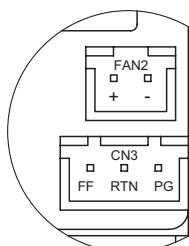
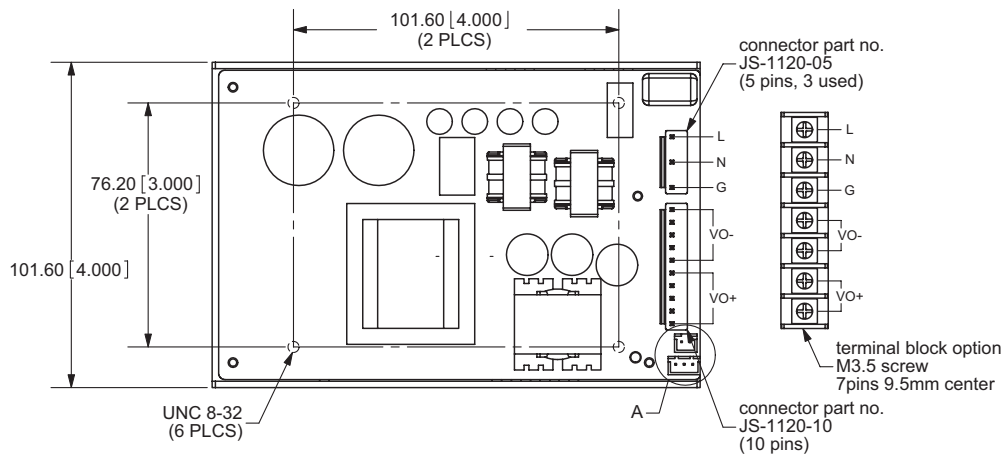
SCALE: 1:3



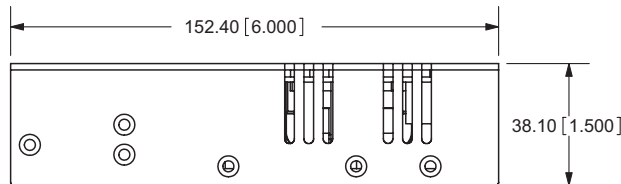
| CN1 | |
|-----|------------|
| 1 | ground |
| 2 | ac neutral |
| 3 | ac line |

| CN2 | |
|-----|-----|
| 1 | Vo+ |
| 2 | Vo+ |
| 3 | Vo+ |
| 4 | Vo+ |
| 5 | Vo+ |
| 6 | Vo- |
| 7 | Vo- |
| 8 | Vo- |
| 9 | Vo- |
| 10 | Vo- |

| CN3 | |
|-----|------------|
| 1 | power good |
| 2 | RTN |
| 3 | fan fail |



DETAIL A
 SCALE 2 : 1



- Notes:
1. CN1 mates with JST VH series 5-pin connector.
 2. CN2 mates with VH series 10-pin connector.
 3. CN3 mates with JST 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 max depth 4.00mm

REVISION HISTORY

| rev. | description | date |
|------|--|------------|
| 1.0 | initial release | 05/5/2009 |
| 1.01 | new template applied | 12/17/2011 |
| 1.02 | V-Infinity branding removed | 08/28/2012 |
| 1.03 | removed on/off information, removed low leakage option, updated spec | 04/23/2013 |
| 1.04 | company logo updated | 12/22/2020 |
| 1.05 | safeties updated | 02/10/2021 |
| 1.06 | derating curve updated | 04/22/2021 |
| 1.07 | discontinued models VF-S320-05A & VF-S320-09A | 06/02/2022 |

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



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