

**SERIES:** VUF-D400-D | **DESCRIPTION:** AC-DC POWER SUPPLY

**FEATURES**

- safety approvals: UL 60950-1, CSA C22.2 No. 60950-1-03
- dual output
- current monitoring and remote voltage adjustments (margin)
- compact 1U size and high power density: 5.56 W/inch<sup>3</sup>
- power factor corrected to EN 61000-3-2 Class D
- short circuit, overload, over voltage and over temperature protections
- optional IEC320 AC inlet or terminal block
- current sharing



| MODEL          | output<br>voltage <sup>1,2,3</sup><br>(Vdc) | output<br>current max. |                  | ripple<br>and noise <sup>4,5</sup><br>max<br>(% Vp-p) | efficiency<br><br>typ<br>(%) |
|----------------|---------------------------------------------|------------------------|------------------|-------------------------------------------------------|------------------------------|
|                |                                             | convection<br>(A)      | 22.95 CFM<br>(A) |                                                       |                              |
| VUF-D400-D312  | 3.3                                         | 30                     | 40               | ±1                                                    | 75                           |
|                | 12                                          | 16.7                   | 25               |                                                       |                              |
| VUF-D400-D324  | 3.3                                         | 30                     | 40               | ±1                                                    | 75                           |
|                | 24                                          | 8.34                   | 12.5             |                                                       |                              |
| VUF-D400-D512  | 5                                           | 30                     | 40               | ±1                                                    | 75                           |
|                | 12                                          | 16.7                   | 25               |                                                       |                              |
| VUF-D400-D524* | 5                                           | 30                     | 40               | ±1                                                    | 75                           |
|                | 24                                          | 8.34                   | 12.5             |                                                       |                              |
| VUF-D400-D1242 | 12                                          | 16.7                   | 25               | ±1                                                    | 75                           |
|                | 24                                          | 8.33                   | 12.5             |                                                       |                              |

Notes:

1. output is fully isolated
2. output voltage is measured at output power connector
3. provides peak power of 700 W within 500  $\mu$ s for all models
4. 1% minimum load is required to maintain the ripple and regulation
5. Ripple & noise are measured at 20 MHz BW with 0.1  $\mu$ F ceramic cap and a 22  $\mu$ F electrolytic capacitors on the output
6. \* Discontinued model.

**PART NUMBER KEY**


## INPUT

| parameter               | conditions/description                                                                                             | min | typ | max  | units |
|-------------------------|--------------------------------------------------------------------------------------------------------------------|-----|-----|------|-------|
| voltage                 |                                                                                                                    | 90  |     | 264  | Vac   |
| frequency               |                                                                                                                    | 47  |     | 63   | Hz    |
| current                 | at 90 Vac, full load                                                                                               |     |     | 6.35 | A     |
| inrush current          | at 230 Vac, full load, cold start                                                                                  |     |     | 35   | A     |
| input fuse              | Built-in ac fuse. A blown fuse usually indicates permanent damage to the power supply serviceable by factory only. |     |     |      |       |
| power factor correction | meets EN 61000-3-2 Class D                                                                                         |     |     |      |       |

## OUTPUT

| parameter           | conditions/description                                                                                                                              | min | typ | max | units |
|---------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------|-----|-----|-----|-------|
| total regulation    |                                                                                                                                                     |     | ±5  |     | %     |
| transient response  | output voltage returns to within 1% in less than 2.5 ms, 50% load change, peak transient does not exceed 5%.                                        |     |     |     |       |
| overshoot           | turn-on and turn-off overshoot shall not exceed 5% over nominal voltage.                                                                            |     |     |     |       |
| turn-on delay       | at 230 Vac                                                                                                                                          |     |     | 1   | s     |
| hold-up time        | at 80% load                                                                                                                                         | 20  |     |     | ms    |
| adjustment range    | output user adjustable                                                                                                                              |     | ±5  |     | %     |
| remote sense        | Designated as RS+ and RS- on CN3. Total voltage compensation for cable losses with respect to the main output.                                      |     |     |     |       |
| remote on/off       | Defined RSW on CN3, requiring a low signal to inhibit output.                                                                                       |     |     |     |       |
| LED display (LED 1) | Green - the power supply is operating normally.<br>Orange - when any protection occurs or RSW is low.                                               |     |     |     |       |
| power good          | Designated as PG on CN3. This signal goes high 100~500 ms after the output reaches regulation. It goes low at least 1 ms before loss of regulation. |     |     |     |       |

## PROTECTIONS

| parameter                      | conditions/description                                                                                                                    | min | typ | max | units |
|--------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------|-----|-----|-----|-------|
| input under voltage protection | Power supply shuts down when ac input is under 80 ±5 Vac. When ac line reappears over 86 ±5 Vac, the power supply restarts automatically. |     |     |     |       |
| over voltage protection        | shutdown and latches, ac input reset required to restart                                                                                  |     |     | 130 | %     |
| over current protection        | auto recovery                                                                                                                             | 110 |     | 140 | %Io   |
| short circuit protection       | auto recovery upon removal of short                                                                                                       |     |     |     |       |
| over temperature protection    | shutdown                                                                                                                                  | 85  |     |     | °C    |

## SAFETY & COMPLIANCE

| parameter         | conditions/description                                                                                                                                 | min     | typ | max | units |
|-------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------|---------|-----|-----|-------|
| isolation voltage | primary to secondary at 2 mA for 3 seconds                                                                                                             | 4,000   |     |     | Vac   |
|                   | primary to transformer core at 2 mA for 3 seconds                                                                                                      | 1,500   |     |     | Vac   |
|                   | primary to earth ground at 2 mA for 3 seconds                                                                                                          | 1,500   |     |     | Vac   |
| safety approvals  | UL 60950-1, CSA C22.2 No. 60950-1-03, TUV EN 60950-1, CE Mark (LVD)<br>EN 61204-3/61000-3-(2,3) & IEC 61000-4 Series Regulations, CB                   |         |     |     |       |
| EMI/EMC           | FCC Part 15, CISPR22 Class B, conducted                                                                                                                |         |     |     |       |
| leakage current   |                                                                                                                                                        |         |     | 1.5 | mA    |
| grounding test    | allowable resistance measured when 40 A current is applied<br>from the ground pin of the three prong plug to the farthest<br>earthed connection point. |         |     | 0.1 | Ω     |
| RoHS compliant    | yes                                                                                                                                                    |         |     |     |       |
| MTBF              | according to MIL-HBK-217F at 30°C                                                                                                                      | 100,000 |     |     | hours |

## ENVIRONMENTAL

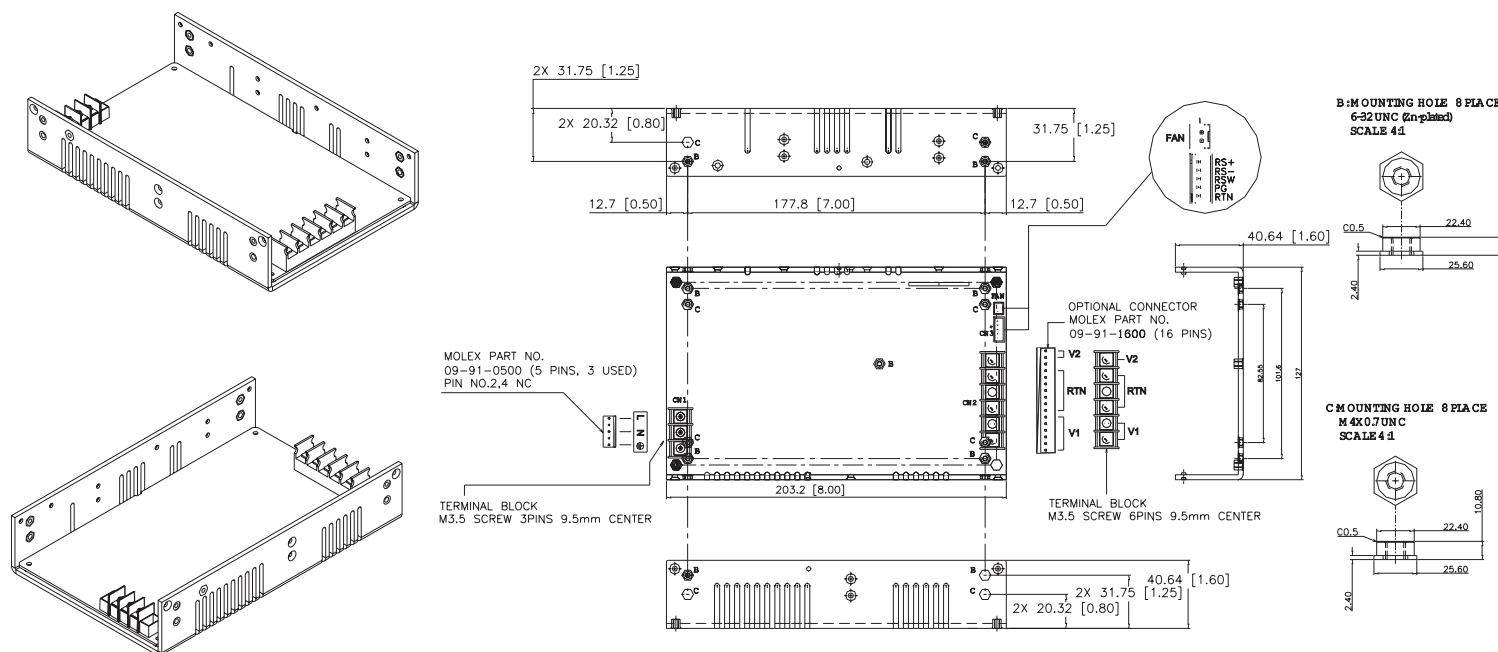
| parameter             | conditions/description                 | min | typ | max | units |
|-----------------------|----------------------------------------|-----|-----|-----|-------|
| operating temperature | derating linearly at 2.5% from 50~70°C | 0   |     | 50  | °C    |
| storage temperature   |                                        | -20 |     | 85  | °C    |
| operating humidity    | non-condensing                         | 5   |     | 90  | %RH   |
| storage humidity      | non-condensing                         | 5   |     | 95  | %RH   |

## MECHANICAL

| parameter       | conditions/description               | min | typ | max | units |
|-----------------|--------------------------------------|-----|-----|-----|-------|
| dimensions      | 8 x 5 x 1.6 (203.2 x 127 x 40.64 mm) |     |     |     | inch  |
| weight          |                                      |     |     | 1.0 | kg    |
| Mounting screws | 6-32, 1/4" or shorter                |     |     |     |       |

## MECHANICAL DRAWING

units: inches (mm)

tolerance: inches: x.xx =  $\pm 0.02$ mm: x.xx =  $\pm 0.5$ 

| INPUT CONNECTOR (CN1)                                     |                                                    |
|-----------------------------------------------------------|----------------------------------------------------|
| Howder HD-121-3P (option 1)                               | MoLEX 26-48-1071 or similar. (option 2)            |
| Suggested mating connector<br>MoLEX 19198-0016 or similar | Suggested mating plug<br>MoLEX Part No. 09-91-0700 |

| OUTPUT CONNECTOR (CN2)                                    |          |                                                |          |
|-----------------------------------------------------------|----------|------------------------------------------------|----------|
| Howder HD-121-6P (option 1)                               |          | MoLEX 26-48-1161 or similar. (option 2)        |          |
| Suggested mating connector<br>MoLEX 19198-0045 or similar |          | Suggested mating connector<br>MoLEX 09-91-1600 |          |
| PIN                                                       | FUNCTION | PIN                                            | FUNCTION |
| 1~2                                                       | +Vo      | 1~6                                            | +Vo      |
| 3~5                                                       | RTN      | 7~13                                           | RTN      |
| 6                                                         | -Vo      | 14~16                                          | -Vo      |

| LOGIC CONNECTOR (CN3)                                                           |                        | FAN                                                                              |
|---------------------------------------------------------------------------------|------------------------|----------------------------------------------------------------------------------|
| JS B5B-XH-A                                                                     |                        | JS B2B-XH-A                                                                      |
| Suggested mating connector<br>JST XHP-5 or equivalent<br>Contact: SXH-002T-P0.6 |                        | Suggested mating connector<br>JST XHP-2 or equivalent,<br>Contact: SXH-001T-P0.6 |
| PIN                                                                             | FUNCTION               |                                                                                  |
| 1                                                                               | RTN - return           |                                                                                  |
| 2                                                                               | PG - power good signal |                                                                                  |
| 3                                                                               | RSW - remote on/off    |                                                                                  |
| 4                                                                               | RS- - remote sense (-) |                                                                                  |
| 5                                                                               | RS+ - remote sense (+) |                                                                                  |

## REVISION HISTORY

| rev. | description                                       | date       |
|------|---------------------------------------------------|------------|
| 1.0  | initial release                                   | 07/11/2006 |
| 1.02 | new template applied, V-Infinity branding removed | 08/28/2012 |
| 1.03 | company logo updated                              | 10/02/2020 |
| 1.04 | discontinued model VUF-D400-D524                  | 06/02/2022 |

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



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CUI offers a two (2) year limited warranty. Complete warranty information is listed on our website.

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