CUI INC®



# SERIES: VSCP-2K0 | DESCRIPTION: AC-DC POWER SUPPLY

## FEATURES

- up to 2,000 W continuous power
- universal input (90~260 Vac / 130~370 Vdc)
- single output from 9~60 V
- programmable output voltage
- active power correction (98%)
- current sharing capable
- power good, remote sense, remote on/off control
- built-in DC fan
- over load, over voltage, over temperature, and short circuit protections
- UL and TUV safety approvals
- efficiency up to 90%



| MODEL | output voltage[1] (Vdc) | output current[2] max (A) | output power max (W) | ripple and noise[3] max (mVp-p) | efficiency typ (%) |
|---|---|---|---|---|---|
| VSCP-2K0-09 | 9 | 133 / 222 | 2,000 | 90 | 83 |
| VSCP-2K0-12 | 12 | 100 / 166 | 2,000 | 120 | 84 |
| VSCP-2K0-15 | 15 | 80 / 133 | 2,000 | 150 | 85 |
| VSCP-2K0-18 | 18 | 66 / 111.1 | 2,000 | 150 | 86 |
| VSCP-2K0-24 | 24 | 50 / 83 | 2,000 | 150 | 88 |
| VSCP-2K0-36 | 36 | 33 / 55.5 | 2,000 | 150 | 88 |
| VSCP-2K0-48 | 48 | 25 / 41 | 2,000 | 150 | 89 |
| VSCP-2K0-60 | 60 | 20 / 33 | 2,000 | 150 | 90 |

Notes:
1. output voltage is measured at output power connector
2. maximum current is measured at 100 ~ 120 V input / 200 ~ 240 V input
3. ripple and noise is measured from 10 KHz to 20 MHz at output terminals with 0.1 μF ceramic capacitor and a 22 μF electrolytic capacitor in parallel

## PART NUMBER KEY

**VSCP-2K0 - XX**

Base Number — Output Voltage

## INPUT

| parameter | conditions/description | min | typ | max | units |
|---|---|---|---|---|---|
| voltage | | 90<br>130 | | 260<br>370 | Vac<br>Vdc |
| frequency | | 47 | | 63 | Hz |
| current | at 230 Vac | | 11.5 | | A |
| inrush current | peak measured at 230 Vac, cold start | | 180 | | A |
| power factor correction | at 230 Vac, full load | | 0.98 | | |

## OUTPUT

| parameter | conditions/description | min | typ | max | units |
|---|---|---|---|---|---|
| temperature coefficient | 0 ~ 50°C | | ±0.02 | | %/°C |
| hold-up time | 230 Vac at full load | | | 12 | ms |
| adjustability | adjustable with built-in trim pot | -8 | | +3 | % |
| programming | output voltage programmable through external 1 ~ 5 V control voltage on VCI. Control voltage can also be obtained from VCO via a 470 KΩ pot. see application diagrams | 25 | | 100 | % |
| remote sense | Designated as (VS+) and (VS-). Total voltage compensation from cable losses with respect to the main output. | | | | |
| remote inhibit | Designated as (INH), requires a low signal to inhibit the output. | | | | |
| current sharing | Designated as (PAR), use in parallel for forced current sharing function. | | | | |

## PROTECTION

| parameter | conditions/description | min | typ | max | units |
|---|---|---|---|---|---|
| over voltage protection | | 110 | | 135 | % |
| over current protection[1] | current limiting 3 times with auto recovery before shutdown | | | | |

Notes: 1. Protection mode sends a pulse, waits 1.5 seconds, sends second pulse, waits 3 seconds, sends third pulse, waits 5 seconds. If overload is still present, the unit will shutdown.

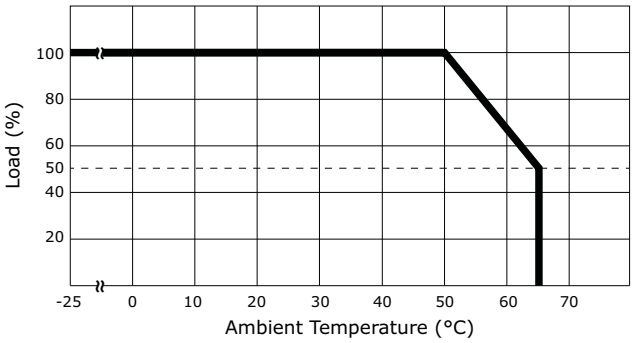
## SAFETY & COMPLIANCE

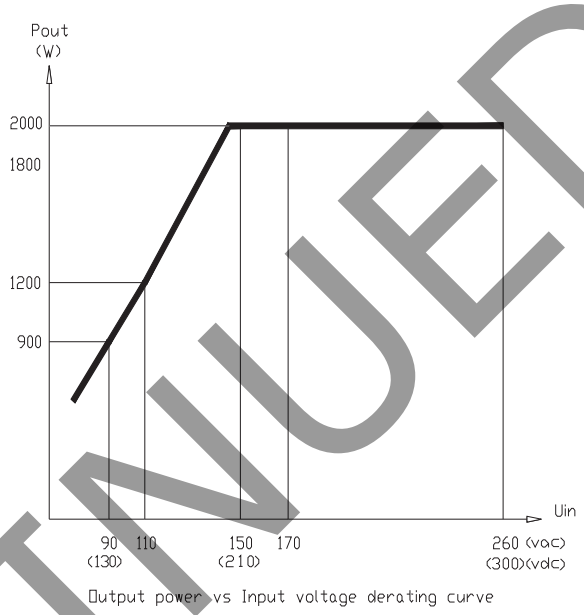
| parameter | conditions/description | min | typ | max | units |
|---|---|---|---|---|---|
| safety approvals | UL/cUL 1950, TUV EN60950 | | | | |
| EMI/EMC | EN 55022, EN 61000-4-(2,3,4,5,6,8,11), EN 61000-3-(2,3), ENV50204 | | | | |
| leakage current | at 240 Vac | | | 10.5 | mA |
| RoHS compliant | yes | | | | |

## ENVIRONMENTAL

| parameter | conditions/description | min | typ | max | units |
|---|---|---|---|---|---|
| operating temperature | | 0 | | 50 | °C |
| storage temperature | | -20 | | 85 | °C |
| operating humidity | | 20 | | 90 | % |
| storage humidity | | 10 | | 95 | % |
| vibration | for 60 minutes, each axis | 10 | | 200 | Hz |

## DERATING CURVES



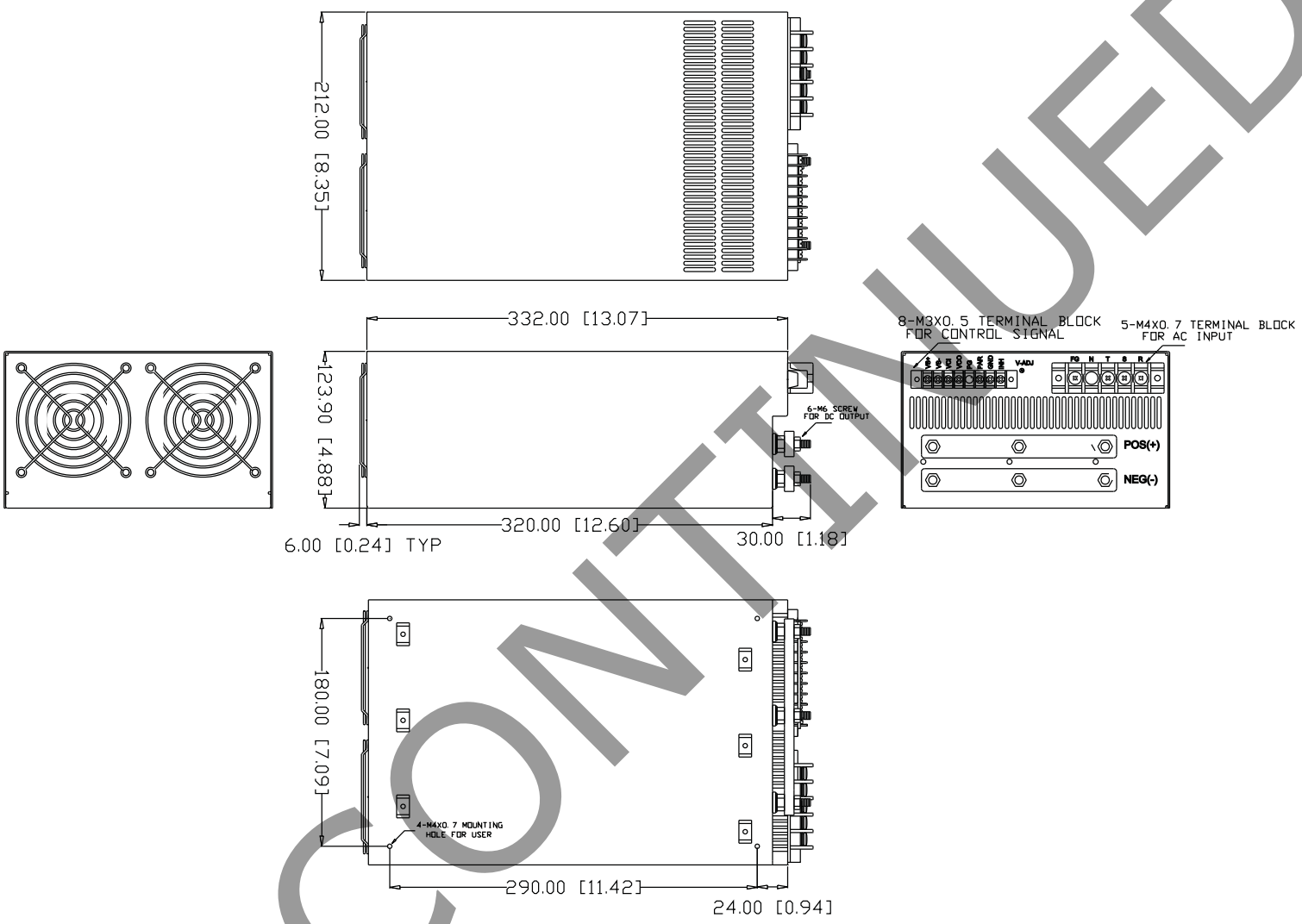

Output power vs Input voltage derating curve

## MECHANICAL

| parameter | conditions/description | min | typ | max | units |
|---|---|---|---|---|---|
| weight | | | 8.9 | | Kg |
| dimensions | 13.07 x 8.35 x 4.88 (332 x 212 x 123.9 mm) | | | | inch |

## MECHANICAL DRAWING

units: mm[inch]
tolerance: ±1.0mm unless otherwise specified




| LOGIC CONNECTOR | | |
|---|---|---|
| 1 | VS+ | output voltage remote sense+ |
| 2 | VS- | output voltage remote sense- |
| 3 | VCI | command input voltage for output programming |
| 4 | VCO | 5.1V Vdc reference for output programming |
| 5 | PG | power good signal |
| 6 | PAR | current sharing / parallel function |
| 7 | GND | return / output ground |
| 8 | INH | inhibit / remote on-off |

## WIRING CONFIGURATIONS

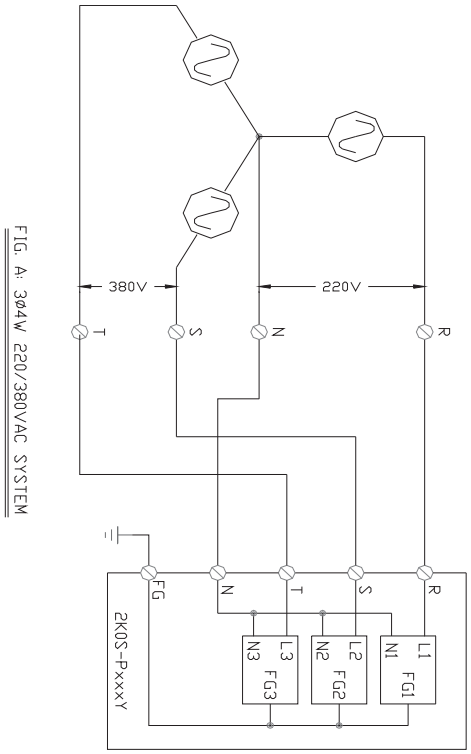



FIG. A: 3Ø4W 220/380VAC SYSTEM

Optional

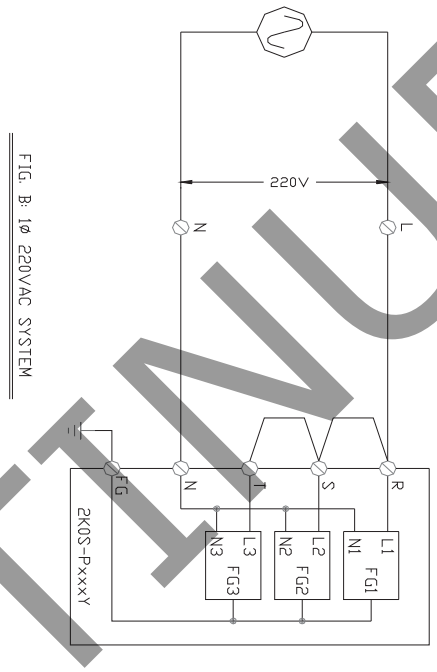



FIG. B: 1Ø 220VAC SYSTEM

Standard

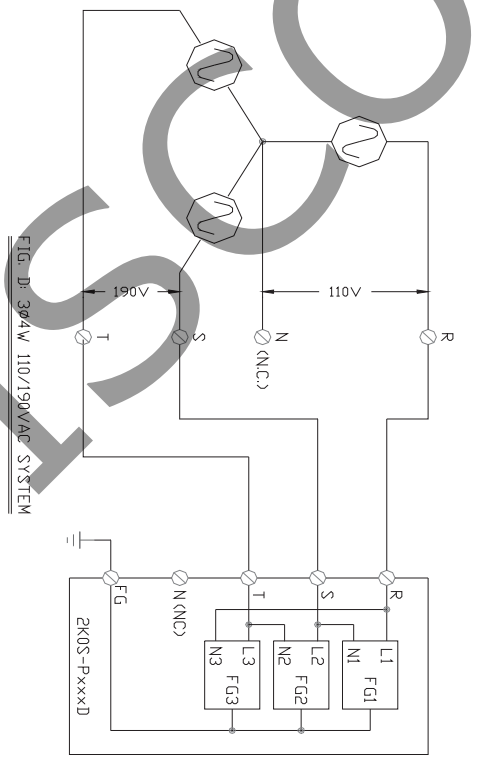



FIG. D: 3Ø4W 110/190VAC SYSTEM

Optional

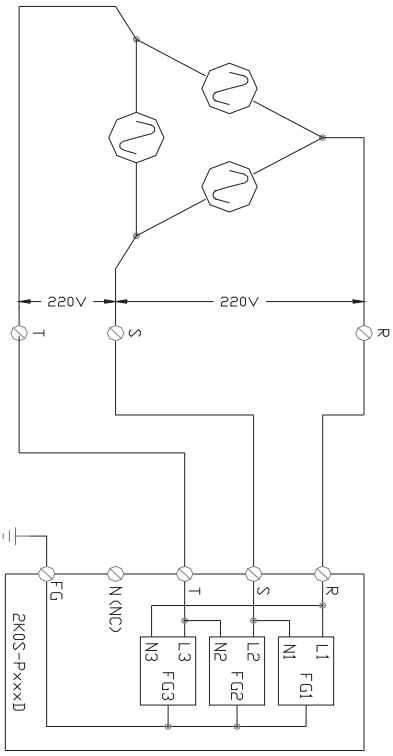
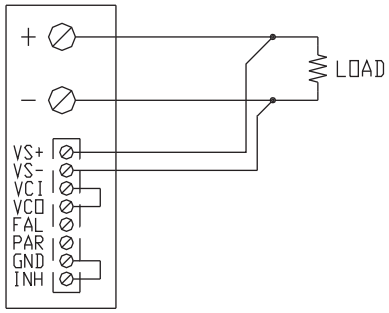


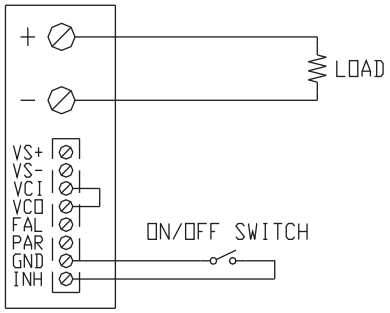

FIG. C: 3Ø 3W 220VAC SYSTEM

Optional

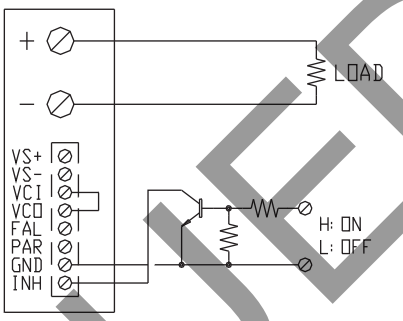
## LOGIC CONNECTIONS



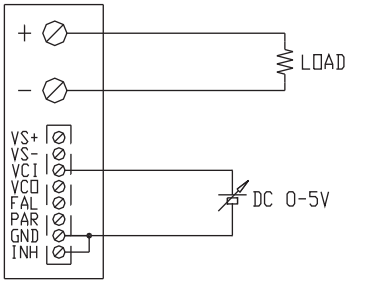

REMOTE SENSING



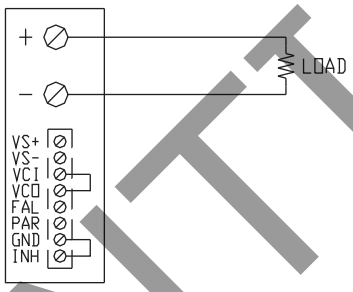

ON/OFF CONTROL BY SWITCH



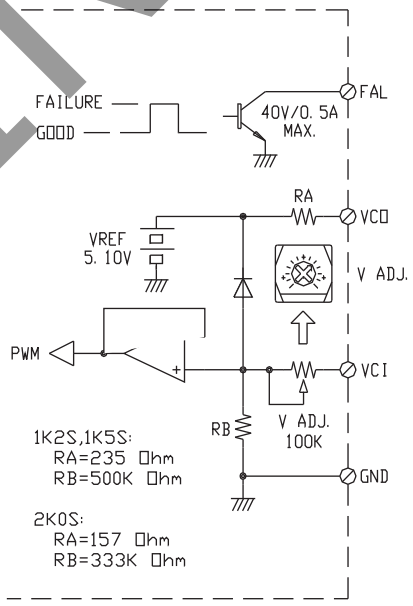

ON/OFF CONTROL BY TRANSISTOR



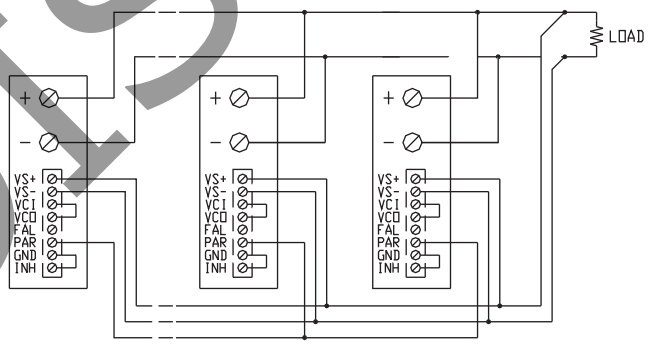

OUTPUT VOLTAGE ADJUST WITH DC 0-5V



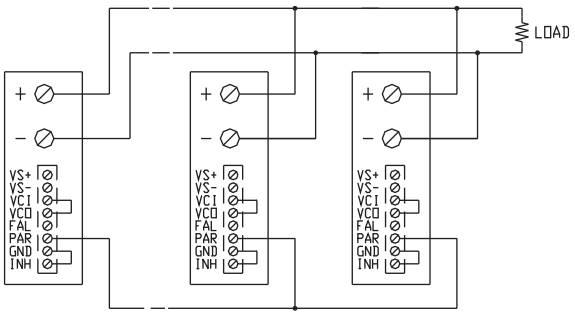

USING INTERNAL VOLTAGE CONTROL




VCI AND VCO SIGNAL




PARALLEL OPERATION WITH REMOTE SENSING




PARALLEL OPERATION WITHOUT REMOTE SENSING

## REVISION HISTORY

| rev. | description | date |
|---|---|---|
| 1.0 | initial release | 07/12/2006 |
| 1.01 | new template applied | 08/07/2008 |
| 1.02 | V-Infinity branding removed | 08/28/2012 |

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



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