

SERIES: VDRS-20 | DESCRIPTION: AC-DC DIN RAIL
FEATURES

- up to 24 W continuous power
- DIN Rail power supplies
- universal input (88-264 Vac / 124-370 Vdc)
- single output from 12 to 24 V
- over voltage, over load, over temperature, and short circuit protections
- UL1310, UL 508, and TUV safety approvals
- long life electrolytic capacitors
- efficiency up to 86%



| MODEL | output voltage (Vdc) | output current max (A) | output power max (W) | ripple and noise¹ max (mVp-p) | efficiency (%) |
|--------------|--------------------------------|----------------------------------|--------------------------------|--|--------------------------|
| VDRS-20-12 | 12 | 1.7 | 20.4 | 100 | 83 |
| VDRS-20-15 | 15 | 1.4 | 21 | 100 | 85 |
| VDRS-20-24 | 24 | 1 | 24 | 120 | 86 |

Note:

1. at full load, 230 Vac input, measured at 20MHz bandwidth with a 47 μ F and 0.1 μ F parallel cap on the output

PART NUMBER KEY
VDRS - 20 - XX

Base Number

Output Voltage

INPUT

| parameter | conditions/description | min | typ | max | units |
|----------------|------------------------|-----|-----|------|-------|
| voltage | | 88 | | 264 | Vac |
| | | 124 | | 370 | Vdc |
| frequency | | 47 | | 63 | Hz |
| current | 115 Vac | | | 0.45 | A |
| | 230 Vac | | | 0.32 | A |
| inrush current | 115 Vac | | | 20 | A |
| | 230 Vac | | | 40 | A |

OUTPUT

| parameter | conditions/description | min | typ | max | units |
|-------------------------|-----------------------------------|-----|-------|-----|-------|
| line regulation | | | | ±1 | % |
| load regulation | | | | ±1 | % |
| temperature coefficient | (0 ~ 50°C) | | ±0.03 | | %/°C |
| hold-up time | at 115 Vac, cold start | 16 | | | ms |
| | at 230 Vac, cold start | 32 | | | ms |
| adjustability | adjustable with built-in trim pot | | | ±10 | % |

PROTECTIONS

| parameter | conditions/description | min | typ | max | units |
|--------------------------|--|-----|-----|-----|-------|
| over voltage protection | latch-off mode | 115 | | 150 | % |
| over load protection | constant current limiting, automatically recovers after fault condition is removed | 102 | | | % |
| short circuit protection | output shut down and auto restart | | | | |

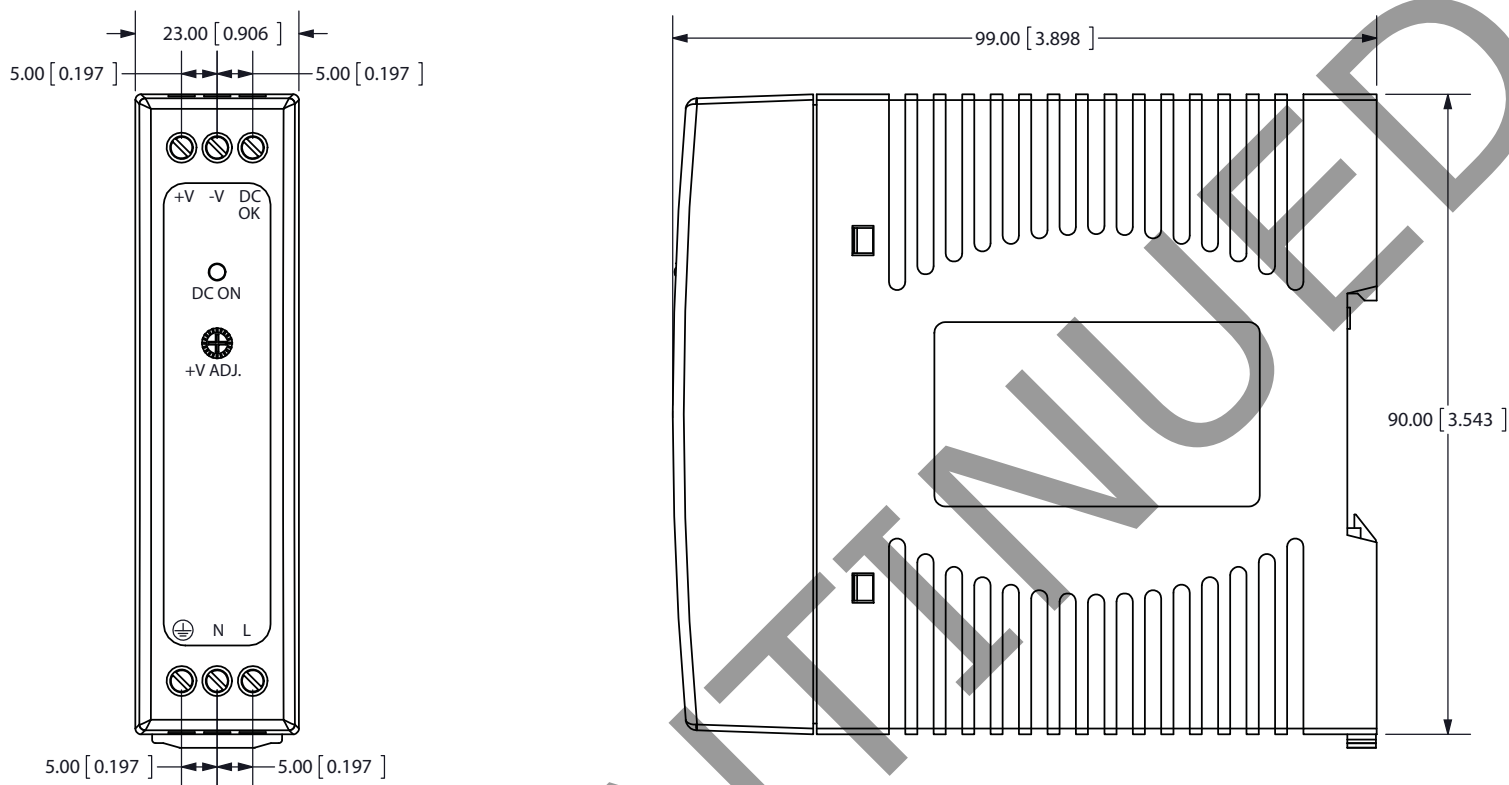
SAFETY & COMPLIANCE

| parameter | conditions/description | min | typ | max | units |
|----------------------|--|---------|-----|-------|-------|
| isolation voltage | input to output for 1 minute | | | 3,000 | Vac |
| | input to case for 1 minute | | | 1,500 | Vac |
| isolation resistance | input to output, input to case, output to case, 500 Vdc | 100 | | | MΩ |
| safety approvals | UL 508, TUV EN60950-1, UL1310 NEC class 2 compliant | | | | |
| EMI/EMC | EN55022 : 2006(Class B), EN61204-3: 2000, EN61000-6-3: 2007, EN61000-3-2,3 :2006, EN55024, EN61204-3: 2000, EN61000-6-1: 2007 (EN61000-4-2,3,4,5,6,8,11) | | | | |
| leakage current | | | | 1 | mA |
| RoHS compliant | yes | | | | |
| MTBF | | 120,400 | | | hours |

ENVIRONMENTAL

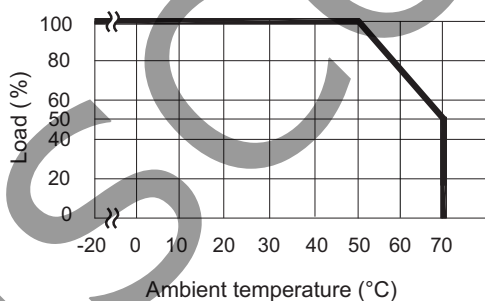
| parameter | conditions/description | min | typ | max | units |
|-----------------------|---|-----|-----|-----|-------|
| operating temperature | | -20 | | 70 | °C |
| storage temperature | | -40 | | 85 | °C |
| operating humidity | non-condensing | 20 | | 90 | % |
| storage humidity | | 10 | | 95 | % |
| vibration | (10 ~ 500 Hz, 1 hour per axis, 3 hours total) | | 5 | | Grms |

MECHANICAL DRAWING

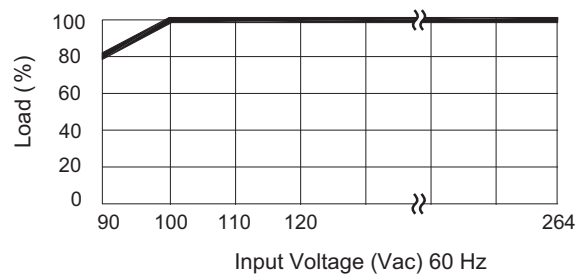


DERATING CURVE

Output power vs. Ambient temperature

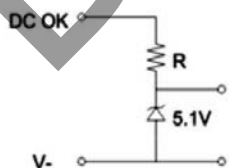


Output power vs. Input Voltage



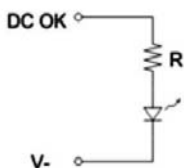
ACTIVE DC SIGNAL

(a) 5V signal



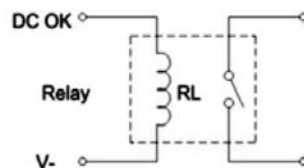
| Model | R |
|-------|----------------------------|
| 12 V | $\geq 1.5 \text{ K}\Omega$ |
| 15 V | $\geq 2.0 \text{ K}\Omega$ |
| 24 V | $\geq 3.9 \text{ K}\Omega$ |

(b) LED



| Model | R |
|-------|----------------------------|
| 12 V | $\geq 2.4 \text{ K}\Omega$ |
| 15 V | $\geq 3.0 \text{ K}\Omega$ |
| 24 V | $\geq 4.7 \text{ K}\Omega$ |

(c) Relay



| Model | R |
|-------|----------------------------|
| 12 V | $\geq 0.7 \text{ K}\Omega$ |
| 15 V | $\geq 0.7 \text{ K}\Omega$ |
| 24 V | $\geq 1.2 \text{ K}\Omega$ |

REVISION HISTORY

| rev. | description | date |
|------|-----------------------------|------------|
| 1.0 | initial release | 06/03/2010 |
| 1.01 | new template applied | 08/18/2011 |
| 1.02 | V-Infinity branding removed | 08/23/2012 |

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



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