

TRAILER LIGHTING REDUCERS

24V-12V multi-circuit trailer lighting reducers.

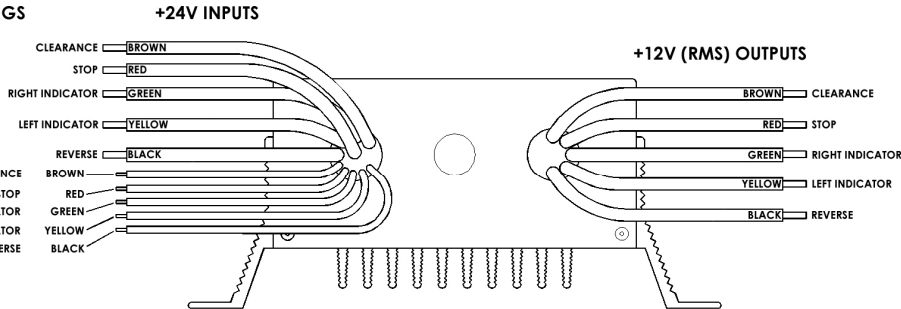
FUNCTION

The Redarc range of multi-circuit voltage reducers (or converters), operate from nominal 24V DC electrical systems and provide four or five **12V RMS** output circuits. The reducers are intended for multiple-trailer applications with a large number of operating lamps. They are small, light, 95% efficient, well-protected against short-circuits, and generate no radio frequency interference. They are particularly suitable for situations in which radio noise must be absolutely minimal to avoid interference with sensitive CB and HF receivers.

RECOMMENDED FUSE RATINGS

VRAA	VRA	VRB	VRC
100A	80A	50A	25A
80A	50A	40A	25A
50A	40A	20A	20A
50A	40A	20A	20A
N/A	40A	20A	20A

CONTROL INPUTS
I < 0.1A



APPLICATION

The reducers have four or five separate circuits, each of which is provided with its own 24V control wire. These control wires are connected to the appropriate points in the cab electrical system (clearance light switch, left and right indicator outputs, brake light switch and reverse light switch where applicable). The trigger wires draw less than 200 milliamps each.

24V DC power is supplied to each circuit via separate wires, which should be connected to the battery positive terminal via individual fuses or circuit breakers of suitable rating (as shown in the diagram above).

The reducers are suitable for high start-up current lamp loads because of their high peak current capability.

PROTECTION

The internal electrical components are protected against the large transient voltages often present on the 24V supply in mobile electrical systems. A fast-acting sensor monitors output current to limit it if individual circuits in the reducers are overloaded, or in the event of output short-circuits.

NOTES

Any form of pressure washing must be avoided at all times. If cleaning is desired, use a clean damp cloth and wipe the surface. The unit is potted with a water protecting compound, however we would recommend the unit be mounted in a protected location.

Jump starting with a high voltage auxiliary battery or using an external battery charger with the battery leads connected should be avoided to ensure long-term reliability of the converter and other electronic equipment used in the vehicle. The reducers draw no current when they are not actually supplying power to a 12V load, so the 24V power input leads (battery feeds) may be connected directly to the battery positive terminal via the in-line fuses. This feature saves the parts and labour costs involved with fitting extra relays, operated by the main electrical switch, to supply 24V power.

The reducers are suitable only for lamp loads, and not for 12V radios, cassette players, mobile phones, electric brakes, DC motors, inverters or refrigerators. The output voltage is alternating, not DC, and is preset during manufacture. Normal DC averaging meters will give inaccurate readings (~6.5V), and a true RMS-reading voltmeter is required for correct measurement of output voltage.

The reducer should be mounted in a cool, protected location. The conversion efficiency is approximately 95% at full load, which results in very low heat generation. The reducers may be mounted in a confined space, but a steady air flow parallel to the plane of the fins is strongly recommended, to prevent overheating. Truck chassis rail mounting is quite acceptable for instance.

A short-circuit to earth in any of the 12V outputs will not damage the converter, but "partial short-circuits" just below the circuit rating will lower the output voltage as the output current is automatically limited.

LED Lamps: The reducers incorporate small load resistors to allow most LED lamp assemblies to operate correctly. To use this feature, the heat sink must be earthed.

SPECIFICATIONS

MODEL	VRAA	VRA(REV)	VRB(REV)	VRC
Number of Circuits	4	4 or (5)	4 or (5)	5
Input Voltage range	20V-33VDC	20V-33VDC	20V-33VDC	20V-33VDC
MAX LOAD CURRENT:				
Clearance Lamps	90A	60A	40A	23A
Brake Lamps	60A	40A	30A	23A
Right Indicator	40A	30A	15A	16A
Left Indicator	40A	30A	15A	16A
Reverse (REV option)	N/A	30A	15A	16A
Conversion Efficiency	95% at Full Load	95% at Full Load	95% at Full Load	95% at Full Load
Ambient Temp. Range	-10°C to +50°C	-10°C to +50°C	-10°C to +50°C	-10°C to +50°C
Current Limiting	Automatic	Automatic	Automatic	Automatic
Moisture & Dust Protection	Fully-potted	Fully-potted	Fully-potted	Fully-potted
Dimensions	140x60x300mm	140x60x300mm	140x60x300mm	140x60x300mm
Weight	1.5kg	1.5kg	1.5kg	1.5kg
Warranty	2 years	2 years	2 years	2 years

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Specifications are subject to change without notification.