

120W, Corona-free, 20kV Isolation Voltage, Dual Output DC/DC Converter DIO 122 Series



- 20kVac isolation input/output, output/chassis
- Corona free at 12kVac
- Rugged, industrial quality
- Convection cooled - no fan
- Dual output – 60W each
- Full electronic protection

The DIO 122 series dual-output dc/dc converter was developed for very high operating isolation voltage. Typical applications are high power gate drives, medical equipment, transportation and similar areas. The unit is designed and tested for corona (partial discharge) extinction at a minimum of 12kVac and Hi-POT tested for 20kVrms isolation. The typical operating voltage potential between primary and secondary is 6.5 – 10kVac, with the same isolation provided between the two outputs. Both outputs are highly regulated and have individual current limiting and short circuit protection. Isolation design features include encapsulating the output regulators in two separate insulation chambers, and the use of transformers engineered with ABSOPULSE's field-proven proprietary technology.

SPECIFICATIONS

Input Voltage

24Vdc (22 – 29V)
48Vdc (44 – 56V)
125Vdc (110 – 140)
Consult factory for other inputs

Input Protection

Inrush current limiting
Varistor
Reverse polarity protection by crowbar diode
Internal safety fuse
Lower voltage than the specified minimum will not damage the unit

Isolation

1.5kVdc input to chassis,
20kVac input to output,
20kVac output to chassis
20kVac output 1 to output 2
Corona extinction 12kVac
minimum for the transformer

Standards

Designed to meet UL508 and related standards

EMI

EN 55022 Class A as a minimum

Switching Frequency:

100kHz \pm 5kHz
50kHz \pm 5kHz (for 24V input)

Output Voltages

Two independent outputs:
Any voltage in the range of 12V to 24V and up to 3A on each output.
Consult factory for other voltages

Redundancy diode

None
Available as option

Line/Load Regulation

\pm 1% combined from zero load to full load including output separation diode

Dynamic Response

Max 5% voltage deviation for 10% to 50% load step, with better than 1msec recovery time

Output Ripple/Noise

Better than 200mV peak to peak or 40mVrms (20MHZ BW)

Overload Protection

Rectangular current limiting with short circuit protection.
Current Limit set to: 3.5A \pm 0.4A

Output Over-voltage Protection

30V transzorb on output

Efficiency

Min 80% at full load

Operating Temperature

0°C to 50°C for full specification without derating

Temperature Drift

0.03% per °C over operating temperature range

Cooling

By convection

Environmental Protection

Basic ruggedizing and partial encapsulation in the chambers with thermally conductive silicon potting compound with UL94V-0 flammability rating.

Shock/Vibration

IEC61371 Cat 1 A&B

Humidity

5 - 95% non-condensing

MTBF

150,000 hours at 45°C per internal module
Demonstrated MTBF is significantly higher.

Indicators

Green "Output ON" LED in each chamber

Control Input

None

Alarm Output

None

Package Dimensions

Open board: 102 x 305mm (4" x 12")
Component height: 70mm (2.75")

Weight

1.1kg (2.4lb)

Connections

Input:
3-pole barrier-type terminal block with 3/8" spacing
Outputs:
2-pole barrier type terminal block inside the chamber

RoHS Compliance

Fully compliant

Warranty

Two years subject to application within good engineering practice

Please note that ABSOPULSE power supplies are designed and built to customer specifications. The specifications on this data sheet are generic and will vary depending on input/output configuration and other customer requirements. Generic specifications are subject to change

Designer and manufacturer of quality converters, inverters, UPS systems, complete rack mount systems and DC-input fluorescent lamp inverters since 1982. Custom or standard. Absopulse is a BABT-approved Facility



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