

280W, Rugged Dual-output, Industrial Quality DC/DC Converter with Wide Input Range DCW 282-F1W Series

- Rugged industrial quality
- Two regulated outputs
- Conduction/convection cooled – no fan
- Full electronic protection
- Field-proven design
- Wide input range



This rugged, industrial quality, dual-output DC/DC converter generates up to 280W continuous output power, depending on the input/output configuration. The design is based on the field-proven DCW 150 series topology, which has a track record in numerous applications. The unit has two fully independent regulated isolated outputs. All heat generating components are installed on aluminum heatsink blocks which are thermally connected to the base plate. This also provides exceptional mechanical ruggedness. Additional cooling is achieved by natural convection through the cooling slots. Conformal coating provides protection against humidity and airborne contaminants. Full electronic protection, low component count, large design headrooms, and the use of components with established reliability result in a high MTBF. The unit is manufactured at our plant under strict quality control. Customized versions are also available.

SPECIFICATIONS

Input Voltage

24Vdc (21-30V)
36Vdc (31-41V)
48Vdc (42-56V)
125Vdc (105-145V)
250Vdc (205-300V)
Wide input range models:
20 - 60Vdc or 65 - 160Vdc
Consult factory for other
input voltages and ranges

Input Protection

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

Isolation

Corresponding to input/output
voltage:
1500Vdc input to chassis
2250VDC input to output
500VDC min. output to chassis
500VDC min. between outputs

Standards

Designed to meet EN 60950-1
and related standards

EMI

EN55022 Class A with margins
conducted and radiated

Switching Frequency

47kHz \pm 2kHz

Output Voltage

V1: Any voltage 5V to 125Vdc
V2: Any voltage 5V to 125Vdc
The current on each output is
limited to 10A
Both outputs are fully regulated
The outputs are floating; either
terminal can be grounded
Returns are separated.

Redundancy diode

None
Available as option

Line/Load Regulation

\pm 1% combined from no load to full
load on both outputs

Dynamic Response

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

Output Ripple/Noise

Better than 1% of output voltage
peak to peak or 0.2% RMS of the
output voltage (20MHz BW)

Overload Protection

Individual current limiting with
short circuit protection on both
outputs (cycling)
Thermal shutdown with automatic
recovery in case of insufficient
cooling

Output Overvoltage Protection

Double regulator loop and
transzorb on both outputs

Efficiency

Typically 85% at full load depending
on input/output configuration

Operating Temperature

0°C to 50°C for full specification
Extended temperature ranges
available

Temperature Drift

0.03% per °C over operating
temperature range

Cooling

Conduction via base plate to
customer heat-sink or chassis and
natural convection

Environmental Protection

Basic ruggedizing
Heavy ruggedizing and conformal
coating is available as option

Shock/Vibration

IEC 61373 Cat 1 A&B

Humidity

5 – 95% non-condensing

MTBF

140,000 hours @45°C
Demonstrated MTBF is
significantly higher

Indicators

Green output ON LED on both
outputs, visible through cooling
slots

Control Input

None

Alarm Output

None on standard version
Available as option

Package/Dimensions (W x H x L)

F1W: 163 x 51 x 200 mm
(6.4" x 2" x 7.9") including
terminal block and flanges
Mounting holes are clear

Weight

1.4 kg (3 lbs)

Connections

12-pole barrier-type terminal
block, 3/8" spacing

RoHS

Compliant

Warranty

Two years subject to application
within good engineering practice



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