250W, Rugged Dual-output, Industrial Quality DC/DC Converter with 300Vdc Input
DCH 282-F1W Series

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

This rugged, industrial quality, dual-output DC/DC converter generates up to 250W 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 exclusive use of components with established reliability contribute to a high MTBF. The unit is manufactured at our plant under strict quality control. Customized versions are also available.

SPECIFICATIONS

Input Voltage
200 – 370Vdc
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 ±2kHz

Output Voltage
V1: Any voltage 5V to 125Vdc
V2: Any voltage 5V to 150Vdc
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 isolated.

Redundancy diode
None
Available as option

Line/Load Regulation
±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 mode)

Output Overvoltage Protection
Double regulator loop and transzorbs 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

TB Pin-out

OUTPUT									INPUT		
V1			V2								
−	+	NOT USED	−	+	NOT USED	NOT USED	NOT USED	NOT USED	GND ⏚	+	−
1	2	3	4	5	6	7	8	9	10	11	12

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