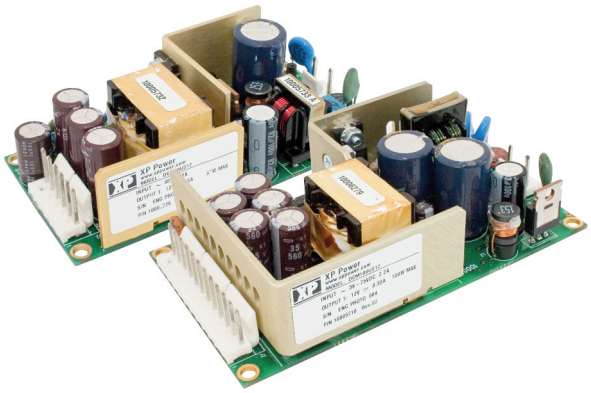
60–100 Watts
DCM Series



- Open Frame Telecom DC–DC Converter
- –48 VDC Input
- ETSI Compliant
- NEBS Compliant
- Convection–cooled
- High Power Density in 2 Small Package Sizes
- Covered Versions Available

Specification

Input

Input Voltage Range	• 48 VDC nominal (36 - 75 VDC). Can be configured as -48 VDC input [6]
Input Current	• DCM60: 1.5 A typical, 2.5 A max, DCM100: 2.2 A typical. 3.5 A max.
Input Reverse Voltage Protection	• Continuous protection with automatic recovery
Input Transient	• Compliant with ETSI EN300 132:2003
Undervoltage Lockout Protection	• 32 - 35V DC

Output

Output Voltage	• 12 V, see table
Output Voltage Trim	• ±10% via potentiometer
Minimum Load	• 5% minimum load required to meet all specification parameters
Line Regulation	• ±0.5% of nominal with input variation of 36-75V DC
Load Regulation	• ±1% of nominal with load variation 5-100%
Setpoint Accuracy	• ±1% of nominal with 48V DC input and 50% load
Turn-on Time	• 1 s typical from application of DC input
Transient Response	• <4% deviation with a 50-75-50% load change at 1 A/µs. Output returns to within 1% in less than 500 µs
Ripple & Noise	• 1% max pk-pk 20MHz bandwidth, 0.1 µF capacitor connected across measuring points [6]
Overvoltage Protection	• 115-135% of nominal, recycle input DC to reset
Overcurrent Protection	• 105-150% of max current
Short Circuit Protection	• Continuous protection, trip and restart (hiccup mode) characteristic [6]
Temperature Coefficient	• 0.02%/°C (after 20 minute warm up)

General

Efficiency	• 85% typical
Isolation Voltage	• 1500 VDC Input to Output (basic insulation), 1000 VDC Input to Ground, 500 VDC Output to Ground.
Switching Frequency	• 70 kHz typical
Power Density	• DCM60: 6.30 W/In^3 DCM100: 7.40 W/In^3
MTBF	• DCM60: 740 kHrs per MIL-HDBK-217F DCM100: 540 kHrs per MIL-HDBK-217F

Environmental

Operating Temperature	• 0 °C to +50 °C with full load, derate linearly to 50% load at 70 °C convection cooled. 0°C to 60°C with full load, derate linearly to 75% load at 70 °C with force cooling 5CFM minimum [6]
Cooling	• Convection or forced cooled [6] (see operating temperature)
Operating Humidity	• 0 to 95% RH non condensing. [1,3]
Storage Temperature	• -40 °C to +80 °C. [2,3]
Storage Humidity	• 0 to 95% RH non condensing.[2,3]
Operating Altitude	• 3000m.[3]
Shock	• ±3 shocks in each axis (total 18 shocks) 30g 11ms (half sine). [1,4]
Vibration	• 2g, 10 - 500Hz 10 sweeps. [1,5]

EMC & Safety

Emissions	• Compliant with EN61204-3 2000, EN55022 class A conducted & radiated[7], ETSI EN 300 132-2 2003, ETSI 300 386-1 1994, NEBS GR-1089-CORE issue 4
EFT/Burst	• Compliant with EN61000-4-4 level 1 Perf Criteria A, ETSI 300 386-1 1994
Surge	• EN61000-4-5 level 1 Perf Criteria A,
Conducted Immunity	• Compliant with EN61000-4-6 level 2 Perf Criteria A, ETSI 300 386-1 1994, NEBS GR-1089-Core issue 4
Narrow & Wide Band Noise	• ETSI EN 300 132-2 2003
Safety Approvals	• EN60950-1 2001 + A11 2004, UL60950-1 (2003), CSA-C22.2 No. 60950-1-03, CB Report IEC60950-1:2001, CE Marked to LVD [6]

Notes

1. Compliant with ETS 300 019-1-3 May 1992 + ammendment 1 June 1997 class 3.1.
2. Compliant with ETS 300 019-1-1 Feb 1992 class 1.1, ETS 300 019-1-2 Feb 1992 class 2.2.
3. Compliant with NEBS GR-63-Core issue 3.
4. Compliant with EN60068-2-27.
5. Compliant with EN60068-2-6.
6. For further product information, see longform datasheet.
7. For -48VDC class B operation , see longform datasheet.

Models and Ratings

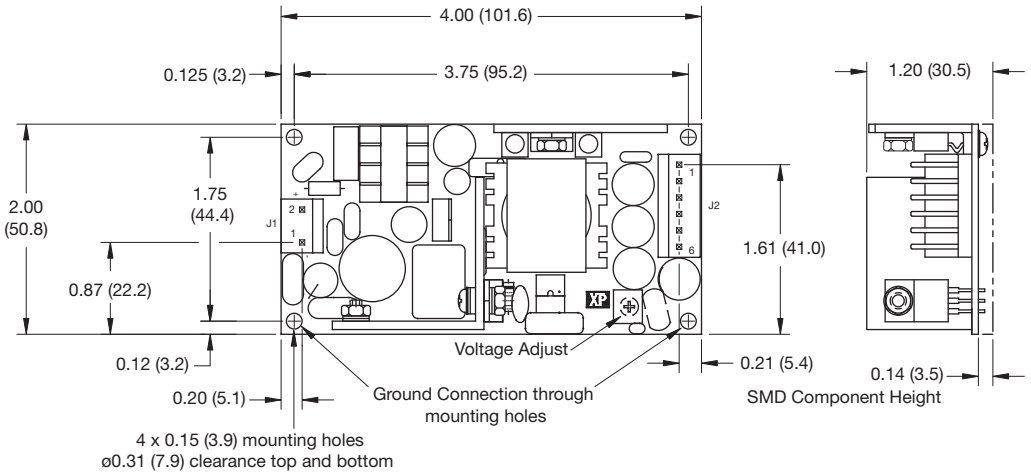
Output Voltage	Output Current			Model Number
	Min	Max - Convection-cooling	Max - 5CFM forced-cooling	
12 V	0.25 A	5.00 A	5.00 A	DCM6048S12
12 V	0.40 A	7.50 A	8.30 A	DCM10048S12

Notes

1. For a fitted cover version, add suffix “C” to model number (power derates by 20% with cover fitted)

Mechanical Details

DCM60



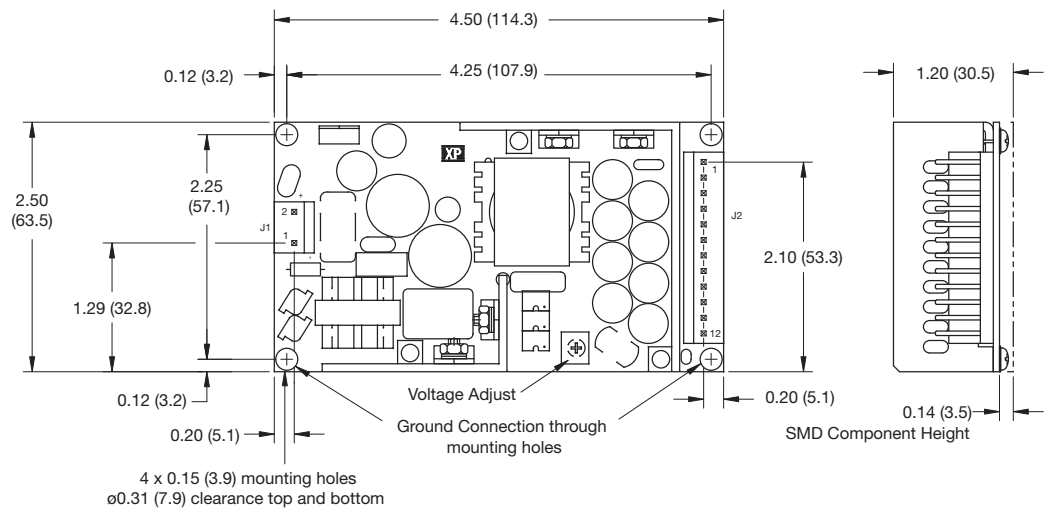
Input Connector J1	
Pin 1	-Vin
Pin 2	+Vin

J1 mates with
Molex housing 43061-0003 &
Molex series 5194 crimp terminals

Output Connector J2	
Pin	Single
1	+12V
2	+12V
3	RTN
4	RTN
5	NC
6	NC

J2 mates with
Molex housing 43061-0006 &
Molex series 5194 crimp terminals

DCM100



Input Connector J1	
Pin 1	-Vin
Pin 2	+Vin

J1 mates with
Molex housing 43061-0003 &
Molex series 5194 crimp terminals

Output Connector J2	
Pin	Single
1	+12V
2	+12V
3	+12V
4	+12V
5	RTN
6	RTN
7	RTN
8	RTN
9	NC
10	NC
11	NC
12	NC

J2 mates with
Molex housing 43061-0012 &
Molex series 5194 crimp terminals

Notes

1. All dimensions in inches (mm). Tolerance .xx = ±0.02 (0.50); .xxx = ±0.01 (0.25)
2. Cover kits available separately, order part number no. ECM40/60 COVER (4.49 x 2.52 x 1.52 (114 x 64 x 38.5)) for DCM60 or part no. ECM100 COVER (4.96 x 3.05 x 1.52 (126 x 77.5 x 38.5)) for DCM100. Output power derates by 20% with cover fitted.