

Key Features

POWER OUT: "CLEAN & SMOOTH" power; 3.3 to 48V and 30 to 150W
 POWER IN: 9-36 VDC from any noisy or EMI/RFI-affected source
 FILTERING: 660uF capacitance in/out, 35+ dB across 100Khz - 1Ghz
 SIZE/WT: (Mid) 3.3x2.8x1.8 in/0.7 lb; (High)4.5x3.5x2.2 in/1.0 lb.
 RATING: Water Intrusion - IP68 (20m for 30 min)
 MOUNTING: Built-in flange, (2) mounting holes (or custom bracket)
 INTERFACE IN: Switchcraft 2-pin male (custom connectors available)
 INTERFACE OUT: 1m cable with Switchcraft 2-pin female (custom connectors available)

SAFETY:



- Over Temperature Protection (OTP)
- Over Current Protection (OCP)
- Over Voltage Protection (OVP)

| OUTPUT - Voltage & Power Options | | | |
|----------------------------------|-----------|-----------|------------|
| Voltage | Low Power | Mid Power | High Power |
| 3.3 VDC* | 30 W | 60 W | n/a |
| 5.0 VDC | 40 W | 70 W | 140 W |
| 12 VDC* | 40 W | 75 W | 140 W |
| 15 VDC* | 40 W | 75 W | 95 W |
| 24 VDC* | 50 W | 90 W | 150 W |
| 48 VDC* | 50 W | n/a | n/a |

PRODUCT OVERVIEW

Mission Mobility's FILTERED DC-DC CONVERTERS offer 30 to 140 watts of clean, clear, stable power packaged in a small durable IP68 case.

Available in 3.3V, 5V, 12V, 15V, 24V and 48V DC output (VDC), these filtered, conditioned, regulated converters represent the highest performing, most affordable, noise and EMI/RFI blocking power solutions on the market; ideal when clean power is required for drone, vehicle, marine, portable, and other applications. The design circuitry uses the maximum available duty cycle for greatest efficiency and low power dissipation to deliver low output noise, tight line/load regulation, stable no-load operation, and fast load step response. Outputs can be trimmed +/-6% of nominal voltage.



Low & Mid Power FDD Converter with Cable

A wealth of protection features prevent damage to both the converter and outside circuits. Inputs are protected from under voltage and outputs feature short circuit protection, over current and over temperature shut down. Overloads automatically recover using the "hiccup" technique upon fault removal. Certified to standard safety and EMI/RFI approvals, all units meet RoHS-6 hazardous materials compliance.

| FILTERED DC-DC CONVERTERS - MODELS AND SPECIFICATIONS SUMMARY | | | | | | | | | | | | | | |
|--|-----------|-----------|-----------|------------------|---------------|----------|----------------|-------------------|-------------|-------------|-------------|------------|-------------------------|---------------------|
| Converter Model | Output | | | | Ripple /Noise | | Input | | Filtering | | | | Physical Dimensions | |
| | V out (V) | I out (A) | Power (W) | Efficiency (%) * | Typ. (mV) | Max (mV) | V in Range (V) | I in no load (mA) | Capacitance | | EMI / RFI | | Size L x W x H (inches) | Weight (lbs) / (kg) |
| FDD: Filtered DC-DC "-X": Voltage Out "/Y": Power Out "-5": Option - add 5V | | | | | | | | | Input (uF) | Output (uF) | Atten. (dB) | Range (Hz) | | |
| FDD-3.3/30 | 3.3 | 9.1 | 30 | 89% | 80 | 125 | 9-36 | 160 | 660 | 660 | 35+ | 100K-1G | 4.5x2.8x2.0 | 0.55 / 0.25 |
| FDD-3.3/60 | 3.3 | 18.2 | 60 | 89% | 80 | 125 | 9-36 | 300 | 660 | 660 | 35+ | 100K-1G | 4.5x2.8x2.0 | 0.65 / 0.30 |
| FDD-3.3/60 | 3.3 | 18.2 | 60 | 89% | 80 | 125 | 9-36 | 300 | 660 | 660 | 35+ | 100K-1G | 4.5x2.8x2.0 | 0.65 / 0.30 |
| FDD-5/50 | 5 | 10.0 | 50 | 91% | 100 | 150 | 9-36 | 250 | 660 | 660 | 35+ | 100K-1G | 4.5x2.8x2.0 | 0.55 / 0.25 |
| FDD-5/100 | 5 | 20.0 | 100 | 92% | 100 | 150 | 9-36 | 340 | 660 | 660 | 35+ | 100K-1G | 4.5x2.8x2.0 | 0.65 / 0.30 |
| FDD-5/100 | 5 | 20.0 | 100 | 92% | 100 | 150 | 9-36 | 340 | 660 | 660 | 35+ | 100K-1G | 4.5x2.8x2.0 | 0.65 / 0.30 |
| FDD-12/40 | 12 | 3.3 | 40 | 92% | 115 | 200 | 12 | 9-36 | 400 | 660 | 660 | 100K-1G | 3.3x2.8x1.8 | 0.7 / 0.3 |
| FDD-12/75 | 12 | 6.3 | 75 | 92% | 115 | 200 | 12 | 9-36 | 400 | 660 | 660 | 100K-1G | 3.3x2.8x1.8 | 0.7 / 0.3 |
| FDD-12/140 | 12 | 11.7 | 140 | 92% | 115 | 200 | 12 | 9-36 | 400 | 660 | 660 | 100K-1G | 4.5x3.5x2.2 | 1.0 / 0.4 |
| FDD-15/36-5 | 15 | 2.4 | 36 | 92% | 60 | 125 | 9-36 | 270 | 660 | 660 | 35+ | 100K-1G | 4.5x2.8x2.0 | 0.55 / 0.25 |
| FDD-15/72-5 | 15 | 4.8 | 72 | 92% | 60 | 125 | 9-36 | 480 | 660 | 660 | 35+ | 100K-1G | 4.5x2.8x2.0 | 0.65 / 0.30 |
| FDD-15/72-5 | 15 | 4.8 | 72 | 92% | 60 | 125 | 9-36 | 480 | 660 | 660 | 35+ | 100K-1G | 4.5x2.8x2.0 | 0.65 / 0.30 |
| FDD-24/60-5 | 24 | 2.5 | 60 | 92% | 150 | 240 | 9-36 | 80 | 660 | 660 | 35+ | 100K-1G | 4.5x2.8x2.0 | 0.55 / 0.25 |
| FDD-24/120-5 | 24 | 5.0 | 120 | 92% | 150 | 240 | 9-36 | 130 | 660 | 660 | 35+ | 100K-1G | 4.5x2.8x2.0 | 0.65 / 0.30 |
| FDD-24/120-5 | 24 | 5.0 | 120 | 92% | 150 | 240 | 9-36 | 130 | 660 | 660 | 35+ | 100K-1G | 4.5x2.8x2.0 | 0.65 / 0.30 |
| FDD-48/50-5 | 15 | 4.8 | 72 | 92% | 60 | 125 | 9-36 | 480 | 660 | 660 | 35+ | 100K-1G | 4.5x2.8x2.0 | 0.65 / 0.30 |

Note: * Efficiency measured @25° C ambient temp, 50% load and 12 volts in. Other conditions may lessen efficiency.

Filtered DC-DC Converter

The answer to
CLEAN & SMOOTH Power



| FDD CONVERTERS - FUNCTIONAL SPECIFICATIONS | | | | | | | |
|--|---------|--|-----------------------------------|--|---|--|-----------------------------|
| Specs are typical unless noted. | | FDD-3.3/30 FDD-3.3/60 | FDD-5/40 FDD-5/70 FDD-5/140 | FDD-12/40-5 FDD-12/75-5 FDD-12-140-5 | FDD-15/40-5 FDD-15/55-5 FDD-15/95-5 | FDD-24/50-5 FDD-24/90-5 FDD-24/150-5 | FDD-48/50-5 FDD-50/120-5 |
| ABSOLUTE MAXIMUM RATINGS | | | | | | | |
| Input Voltage Operating (nominal 12Vdc)** | Vdc | 9 - 36 (12-36 in ambient temp >50°C) | | | | | |
| Input Voltage Transient | Vdc | 50 Vdc maximum for 100ms | | | | | |
| Operating Ambient Temperature | °C | -30°C to 60°C | | | | | |
| Internal Over-Temperature Shutdown | °C | 105°C | | | | | |
| Storage Temperature | °C | -45°C to 125°C | | | | | |
| INPUT CHARACTERISTICS | | | | | | | |
| Input Voltage range | Vdc | 9 - 36 (12-36 in ambient temp >50°C) | | | | | |
| Input Start-up threshold | Vdc | 9.5 | 9 | | | | |
| Input UnderVoltage shutdown (<50°C/50-60°C) | Vdc | 8.5 / 9.9 | 8 / 9.9 | 8 / 9.9 | 8.2 / 9.9 | 8 / 9.9 | 8 / 9.9 |
| Input OverVoltage shutdown | Vdc | none | | | | | |
| Input Current, no load | mA | See MODELS AND SPECIFICATIONS SUMMARY Table | | | | | |
| Input Current, with output short circuit | mA | 250 | 200 | 250 | 250 | 250 | 250 |
| OUTPUT CHARACTERISTICS | | | | | | | |
| Total Output Power | Watts | 30 and 60 | 40, 70 and 140 | 40, 75 and 140 | 40,55 and 95 | 50, 90 and 150 | 50 and 120 |
| Voltage output set point | Vdc | 3.3 | 5 | 12 | 15 | 24 | 48 |
| Voltage accuracy | % Vdc | ±1% of Vnom., (50% load) | | | | | |
| Voltage pre-adjustment range | % Vdc | -6% to +6% of Vnom. | | | | | |
| Voltage Regulation; Over Line/Overload | % Vdc | +/- 0.2% (typical), +/- 0.4% (max) | | | | | |
| Efficiency | % | See MODELS AND SPECIFICATIONS SUMMARY Table | | | | | |
| Voltage Ripple/Noise (mV pk-pk @20MHz) | mV | See MODELS AND SPECIFICATIONS SUMMARY Table | | | | | |
| Start-up time; Vin-to-Vout regulated | mSec | 20 | 20 | 40 | 30 | 40 | 40 |
| Isolation safety rating | - | Basic insulation | | | | | |
| Short circuit protection method | - | Current limiting, hiccup autorestart. Remove overload for recovery. | | | | | |
| Short circuit current | Amps | 0.5 | 1 | 1.5 | 1.5 | 1 | 1 |
| Short circuit duration | mSec | Continuous, output shorted to ground. No damage. | | | | | |
| Overvoltage protection | Vdc | 4.5 | 6 | 15 | 18 | 29 | 57 |
| MECHANICAL SPECIFICATIONS | | | | | | | |
| Enclosure Dimensions (Low & Mid / High) | in(mm) | 3.3 x 2.8 x 1.8 (84 x 71 x 46) / 4.5 x 3.5 x 2.2 (114 x 89 x 56) | | | | | |
| Base footprint w/ flanges (Low & Mid / High) | in(mm) | 4.3 x 2.8 (108 x 71) / 5.5 x 3.5 (140 x 89) | | | | | |
| Mounting Holes (Low & Mid / High) | in(mm) | (2) diam 0.2 (5), center-center 3.95 (100) / (4) diam 0.22 (5.5), center-center 5.12 (132) | | | | | |
| Weight | lbs(kg) | See MODELS AND SPECIFICATIONS SUMMARY Table | | | | | |
| Interface | - | IN-IP68 Switchcraft (optional avail), OUT-IP68 Cable Gland and 1m cable | | | | | |
| SAFETY / ENVIRONMENTAL | | | | | | | |
| Electromagnetic interference (conducted) | - | Meets EN55022 and CISPR22 class B | | | | | |
| Safety | - | Meets UUCUL 60950-1, CSA-C22.2 No.60950-1, IEC/EN 60950-1 | | | | | |

Note: ** Input voltages below 12Vdc will cause converter de-rating and may result in reduced output power.



High Power FDD Converter with cable.

- IP68 and custom enclosures available.
- Specific connectors and custom shielded cables available in different lengths.
- Designed and assembled in the U.S.A.
- **Bundle to Save:** quantity discounts are available and also apply when different converter types are bundled together.



.....designing and delivering
"CLEAN & SMOOTH" power.

Mission Mobility: providing innovative power solutions.

◆ Mission Mobility ◆ 508 Central Dr., Ste. 106, Virginia Beach, VA 23454 ◆ Phone: 757-217-9290 ◆ 877-202-9924 ◆

◆ www.missionmobility.com ◆ ◆ email: info@missionmobility.com ◆