FILTERED DC-DC CONVERTER

THE ANSWER TO "CLEAN & SMOOTH" POWER

Key Features

POWER OUT: "CLEAN & SMOOTH" power: 3.3V-48V and 30W-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: (Low/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: (Std) Switchcraft 2-pin male (custom connector/cable avail)
INTERFACE OUT: (Std) Switchcraft 2-pin female (custom connector/cable avail)
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 30-150 watts of clean, clear, stable power packaged in a small durable IP68 case. These filtered, conditioned, regulated converters represent the highest performing, most affordable, noise and EMI/RFI blocking power solutions on the market. 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.

Available in 3.3V, 5V, 12V, 15V, 24V and 48V DC output (VDC). Ideal when clean power is required for drone, vehicle, marine, portable, and other applications.

Low & Mid Power FDD Converter with 1 m output cable

FILTERED DC-DC CONVERTERS - MODELS AND SPECIFICATIONS SUMMARY														
Converter Model	Output						Input		Filtering				Physical Dimensions	
FDD: Filtered DC-DC "-X": Voltage Out "/X": Power Out ** Option - add 5V	V out (V)	I out (A)	Power (W)	Efficiency (%) *	Ripple /Noise		V in Range (V)	I in no load (mA)	Capacitance		EMI / RFI		Size L x W x H (inches)	Weight (lbs) / (kg)
					Typ. (mV)	Max (mV)			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	3.3x2.8x1.8	0.7 / 0.3
FDD-3.3/60**	3.3	18.2	60	89%	80	125	9-36	300	660	660	35+	100K-1G	3.3x2.8x1.8	0.7 / 0.3
FDD-5/40	5	10.0	50	91%	100	150	9-36	250	660	660	35+	100K-1G	3.3x2.8x1.8	0.7 / 0.3
FDD-5/70	5	20.0	100	92%	100	150	9-36	340	660	660	35+	100K-1G	3.3x2.8x1.8	0.7 / 0.3
FDD-5/100	5	20.0	100	92%	100	150	9-36	340	660	660	35+	100K-1G	4.5x3.5x2.2	1.0 / 0.4
FDD-12/40**	12	3.3	40	92%	115	200	12	9-36	660	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	660	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	660	660	660	100K-1G	4.5x3.5x2.2	1.0 / 0.4
FDD-15/40**	15	2.4	36	92%	60	125	9-36	270	660	660	35+	100K-1G	3.3x2.8x1.8	0.7 / 0.3
FDD-15/75**	15	4.8	72	92%	60	125	9-36	480	660	660	35+	100K-1G	3.3x2.8x1.8	0.7 / 0.3
FDD-15/95**	15	4.8	72	92%	60	125	9-36	480	660	660	35+	100K-1G	4.5x3.5x2.2	1.0 / 0.4
FDD-24/50**	24	2.5	60	92%	150	240	9-36	80	660	660	35+	100K-1G	3.3x2.8x1.8	0.7 / 0.3
FDD-24/90**	24	5.0	120	92%	150	240	9-36	130	660	660	35+	100K-1G	3.3x2.8x1.8	0.7 / 0.3
FDD-24/150**	24	5.0	120	92%	150	240	9-36	130	660	660	35+	100K-1G	4.5x3.5x2.2	1.0 / 0.4
FDD-48/50**	15	4.8	72	92%	60	125	9-36	480	660	660	35+	100K-1G	3.3x2.8x1.8	0.7 / 0.3

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

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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.

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. Compliant to safety and EMI/RFI standards, plus all units meet RoHS-6 hazardous materials compliance.

High Power FDD Converter with output 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.

♦ 508 Central Dr., Ste. 106, Virginia Beach, VA 23454 ♦877-202-9924♦www.missionmobility.com ♦info@missionmobility.com ♦