

3V Series

DC/DC Converter

Partners in Power



**Powerful,
robust, and
working in any
environment -
however
extreme.**

Features

- COTS Configurable Standard Product in a 1 inch 3U outline
- 1 to 4 User Specified Outputs
- Up to 250 Watts Output Power continuous
- Rugged Design suitable for a vehicular or airborne environment
- Integral EMI Filter
- ITAR Free



www.xcelpower.com

Features

The **NEW 3V Series** was developed to provide a range of power supplies for severe environmental applications with user specifiable outputs.

3V Series power supplies are configurable “standard” products, providing up to 4 outputs isolated from the supply (500VDC and 10Mohm), to a maximum power of 250 watts.

The input is designed with filtering to reduce EMI and to suppress or survive input transients; capable of surviving ISO 7637-2, Def Stan 61-5 part 6 issues 5 and 6, and Mil Std 1275D.

Outputs 1 and 2 can be configured to customer requirements in the range of 3 to 8 volts DC, and can be specified to a maximum of 100 watts or 20 amps per output, whichever is the lesser. Outputs 3 and 4 can be configured to customer requirements in the range of 8 to 30 volts DC, and can be specified to a maximum of 84 watts or 10 amps per output, whichever is the lesser – typical combinations are shown below. Outputs are non isolated.

The design of the enclosure is optimized for thermal conduction and allows for easy mounting, via “wedgelock” fittings. The 3V Series power supplies can also be packaged in a machined aluminium box with a chromate coating for cold wall applications.



Application notes

Protection: Output protection is provided by a current limit which is set at 130% of the maximum power rating. During an overload condition a hiccup circuit operates. The overload is continually monitored and the outputs will recover automatically when the fault is removed.

EMI/Transients: Provision of an additional external filter at the equipment bulkhead is advised to achieve equipment emissions and susceptibility requirements.

Inhibit/Enable: The module is enabled by connecting the enable line to enable return. The open circuit voltage of the enable is less than 20V and in the enable condition the current is less than 10 mA.

Screening: All units undergo electrical and temperature cycling tests. A certificate of conformance is supplied with all units.

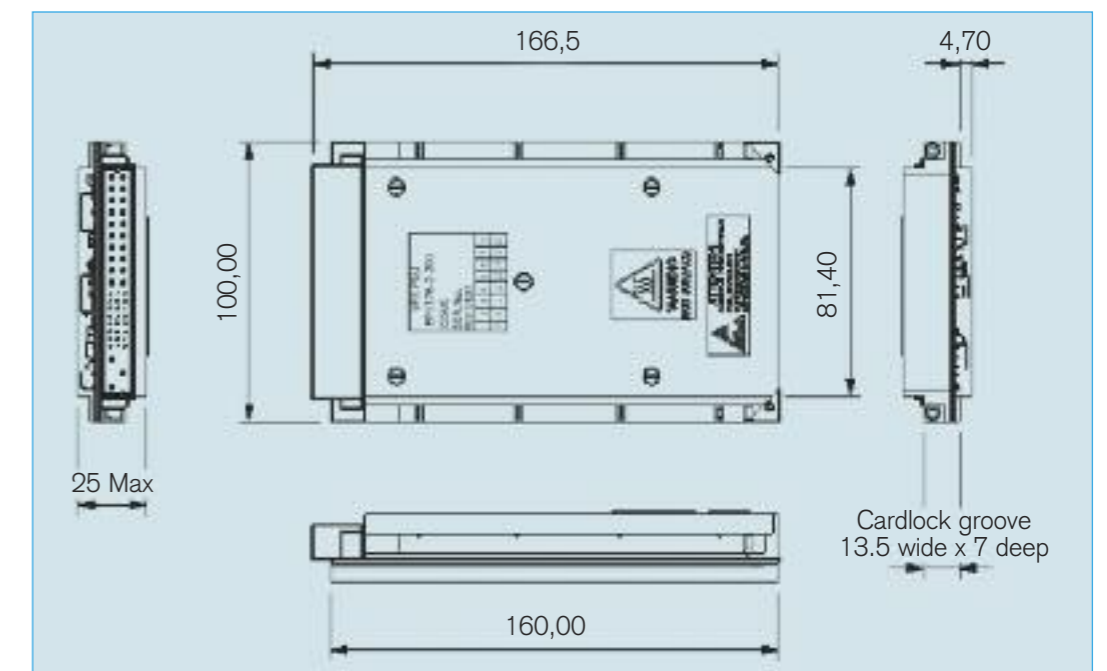
In addition to offering variants (electrical and mechanical) of the 3V series, XCEL Power Systems have other standard and custom power supplies used in both military and industrial applications.

Please consult the Sales Office on: 01233 623404 for further information.



Typical 3V Series Combinations

Input	Output			
28V Nominal	1	2	3	4
	3V3@20A	5V@20A	12V@6A	-12V@1A
	3V3@20A	3V3@20A	15V@5A	-15V@2A
	5V@20A	5.0V@20A	12V@2A	-12V@2A
	3V3@10A	5V@20A	12V@7A	-12V@3A
	3V3@10A	5V@20A	28V@3A	-12V@3A



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General specification

Input characteristics - @ 25° C				
Input Voltage	28 V Nominal 22V to 40V continuous 18V at a maximum of 200W			
EMC	Def Stan 59-411 Input Conducted emissions to Land Class D. MIL-STD-461E/F CE102, CS101, CS114, CS115, CS116 (when fitted with external bulkhead filter).			
Supply Variations	I.A.W. ISO 7637-2, Def Stan 61-5 Part 6 issues 5 and 6, or Mil Std 1275D (Battery and generator conditions only)			
Efficiency	Dependant on selected outputs (>75% at full load with outputs of 3.3V and above).			
Output characteristics				
No. of Outputs	1 to 4 (outputs 1 and 2 may be paralleled for increased current)			
Output Voltage	3 to 30Vdc (set at manufacture)			
Minimum Current	0 amps			
Maximum Current	Outputs 1 and 2, 20 Amps/output. Outputs 3 and 4, 10 Amps/output			
Load Regulation (5-100%)	±3% or ±200mV (whichever is greater)			
Line Regulation	±1%			
Noise & Ripple	<100mV (150Hz to 20 MHz at 5 to 100% of load)			
Load Transient	<5% output deviation for a 25% load change			
Overcurrent Protection	On all outputs - typically 130% overload			
Overvoltage Protection	On all outputs – typically 125% of nominal voltage			
Inhibit/Enable - Function	Requires open collector. (Maximum open circuit voltage 20V)			
Isolation characteristics				
	Min	Typ	Max	Units
Isolation (input to output)	500			Vdc
Isolation (output to case)	50			Vdc
Isolation (input to case)	500			Vdc
Insulation Resistance	10			MOhm
Environmental characteristics				
	Min	Typ	Max	Units
Operating Temperature (Case)	-40		+85	°C
Storage Temperature (Ambient)	-55		+90	°C
Thermal Resistance Case - Sink		0.56		°C/W

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A subsidiary of EMRISE Electronics

Design, Manufacture & Test for Extreme Environments

AC-DC / DC-DC Power Conversion, custom or semi-custom solutions

ISO 9001

ISO 14001

ISO 9100

