



FEATURES

- COTS Configurable Standard Product in 3U Eurocard**
- 1 to 4 User Specified Outputs**
- Up to 250 Watts Output Power continuous**
- Rugged Design (MIL-STD-810D)**
- Integral EMI Filter (MIL-STD-461C when supplemented with defined components)**
- Non - ITAR**

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 power of 250 watts.

The input is designed with filtering to reduce EMI and to suppress input transients; capable of surviving Def Stan 61-5 part 5 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 in table 1. Outputs are non isolated.

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

Table 1: Typical 3V Combinations

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

GENERAL SPECIFICATION

Input Characteristics - @ 25°C

Input Voltage	28 V Nominal (I.A.W. Def Stan 61-5 Part 6 issues 5 and 6, or Mil Std 1275D) 18V to 40V continuous
EMC	MIL-STD-461E/F CE102, CS101, CS114, CS115, CS116 (when fitted with external bulkhead filter)
Supply Variations	I.A.W. Def Stan 61-5 Part 6 issues 5 and 6, or Mil Std 1275D
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 power)
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)
Load Transient	<5% 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 to input DC return. (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 industrial version (Ambient)	-55		+90	°C
Thermal Resistance Case - Sink		0.02		°C/W

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Mechanical Outline

AWAITING DRAWING – 3U VPX with 1inch pitch. 160mm x 100mm x 24.6mm

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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 fold-back circuit operates. The overload is continually monitored and the outputs will recover automatically when the fault disappears.

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 input supply 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.

All technical information in this brochure has been carefully checked and is believed to be accurate, but no responsibility is assumed for errors or omissions. XCEL reserves the right to make changes without notice in products specification.

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