



## Power Systems Group

# PS431x-1

## 0-5 VDC Converter, Lightweight Light Dimmers



*These 28 VDC converters are part of a family of light dimmers for cockpit lighting.*

Designed to meet extremely demanding aircraft environmental conditions, this family of light dimmers provides variable, low-voltage power for cockpit instrumentation lighting. Lighting power is regulated and filtered for compatibility with sensitive instruments and wiring.

These Power Systems Group units incorporate the latest advances in solid-state power conversion to provide a low-cost, lightweight solution to lighting needs. Our family of dimmers is extremely flexible, as demonstrated by our list of available units. Additional models can be easily designed to meet the exact requirements of any aircraft system, for minimal engineering costs.

The PS431 family includes all required protection and filtering to comply with MIL-STD-704 power at the input and output of the unit. EMI filtering is an integral part of the design.

Output voltage is adjusted by means of either a variable control voltage or a potentiometer, depending on the model. Output voltage ranges vary from 5 to 28 volts. All units are designed to operate from a MIL-STD-704, 28 volt bus.

The PS431x-1 units may be operated in parallel for larger lighting load requirements.

### Standard Features:

- 28 Volt input (MIL-STD-704)
- Various output voltage ranges
- Overvoltage protection on output
- Reverse input voltage protection
- Qualified for operation from -55°C to 71°C temp range
- No maintenance required
- Units can be operated in parallel for greater load capacity

### Applications:

- Fixed & rotary wing aircraft
- Instrumentation lighting
- Cockpit lighting
- Cargo bay lighting

# Basic Specifications

## Electrical Characteristics:

Input ..... 28 VDC nominal, 18 to 32 VDC continuous operating range. Unit will operate through a transient of up to 40 V

Input Current ..... 2.5 A max. for 28 V input, 10 A load and 5 V output

Input Line Protection ..... Use 4 A fuse or circuit breaker for 10 A loads. Use 3 A fuse/breaker for 7.5 A loads. Use 2 A fuse/breaker for 5 A or lower load.

Internal Protection ..... Input voltage transient protection per MIL-STD-704A Input reverse polarity protection, output overload protection and output overvoltage protection (output will not exceed 6 VDC regardless of remote control setting) If the remote pot line is open, the output shuts off and the unit draws less than 0.030 A.

Output ..... 0 to 5.2 VDC, variable

Output Current ..... 8.2 A to 10 A max. (see table). Short Circuit current is limited by internal circuitry to 10 amps for 8.2 amps models and 12 amps from 10 amp models.

Efficiency ..... 75% min. at 28 VDC input, full load, 5 V output

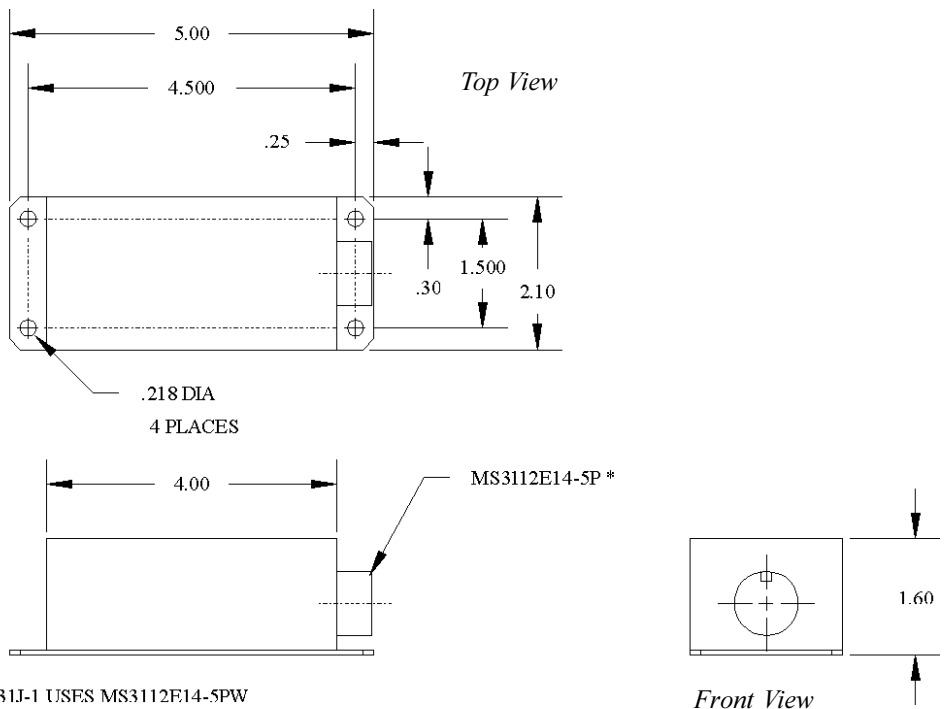
Remote Control ..... Voltage or resistance programmable (see table)

Weight ..... 0.7 lbs. max.

Specifications subject to change without notice.

Model No.	Output	Remote Control	Connector Pin Assignments
PS431A-1	0-5.3 Volts 10 Amps max	5k Pot *	A - +28 VDC input B - Ground C - 0-5 Volt output D - Control pot E - Not used
PS431B-1	0-5.3 Volts 8.2 Amps max (10 Amps max short circuit)	5k Pot * 0-28VDC	A - +28 VDC input B - Ground C - 0-5 Volt output D - Control pot E - 28 Volt control
PS431C-1	0-5.3 Volts 10 Amps max	0-28VDC	A - +28 VDC input B - Ground C - 0-5 Volt output D - Not used E - 28 Volt control
PS431D-1	0-5.3 Volts 10 Amps max	5k Pot * 0-28VDC	A - +28 VDC input B - Ground C - 0-5 Volt output D - Control pot E - 28 Volt control
PS431E-1	0-5.3 Volts 10 Amps max	0-28VDC	A - +28 VDC input B - Ground C - 0-5 Volt output D - 28 Volt control E - Not used
PS431F-1	0-5.3 Volts 8.2 Amps max (10 Amps max short circuit)	5k Pot *	A - +28 VDC input B - Ground C - 0-5 Volt output D - Control pot E - Not used
PS431G-1	0-5.3 Volts for 5k pot 0-4.1 volts for 28V control 10 Amps max	5k Pot * 0-28VDC	A - +28 VDC input B - Ground C - 0-5 Volt output D - Control pot E - 28 Volt control
PS431H-1	0-6.3 Volts 8.0 Amps max	0-6.3VDC	A - +28 VDC input B - Ground C - 0-6.3 Volt output D - Not used E - 6.3 Volt control
PS431J-1	0-28VDC 1.4 Amps max	5k Pot *	A - +28 VDC input B - Ground C - 0-28 Volt output D - Control pot E - Not used

### Model Diagram



\* PS431J-1 USES MS3112E14-5PW



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\* For multiple units, R=5000 ohms/N (units)