

## AC Power Supplies

### PWS310-MS C.O.T.S. Power Supply



#### Benefits

- Ultra-Quiet
- Power sensitive electronics without interference
- Rugged & Reliable
- Ensure years of safe and trouble free operation



#### Military Option

Most of the products manufactured by Analytic Systems can be adapted for military use (Commercial Off The Shelf).

We provide four different levels of ruggedization; most often, a product in military use will use the extra-wide temperature range components to allow operation to -55 degrees Celsius.

The printed circuit boards are also protected against condensation and are enhanced with vibration protection that meets or exceeds MIL-STD810F, Method 514-3 and Cat-1 Proc 1. C.O.T.S. products are designed to meet water tightness, and various levels of EMC radiated and conducted emissions MIL-STD 461E.

All C.O.T.S. products are manufactured in accordance with IPC-A-610.

#### Description

The PWS310-MS Series of COTS power supplies' provide 12, 24, 28 or 48 Volts DC at up to 300 Watts of continuous power from a 110 or 220 Volt AC source.

Analytic Systems' power supplies use Switchmode technology with powerful IGBT switching transistors for reliability and efficiency with minimum size. Circuit innovations reduce output ripple to levels previously available only from bulky and inefficient linear power supplies. Reliability features include an input fuse, thermal shutdown, current limiting and output short circuit protection with automatic recovery. An output over-voltage crowbar circuit protects any powered devices from excessive voltage in the event of a failure of the unit.

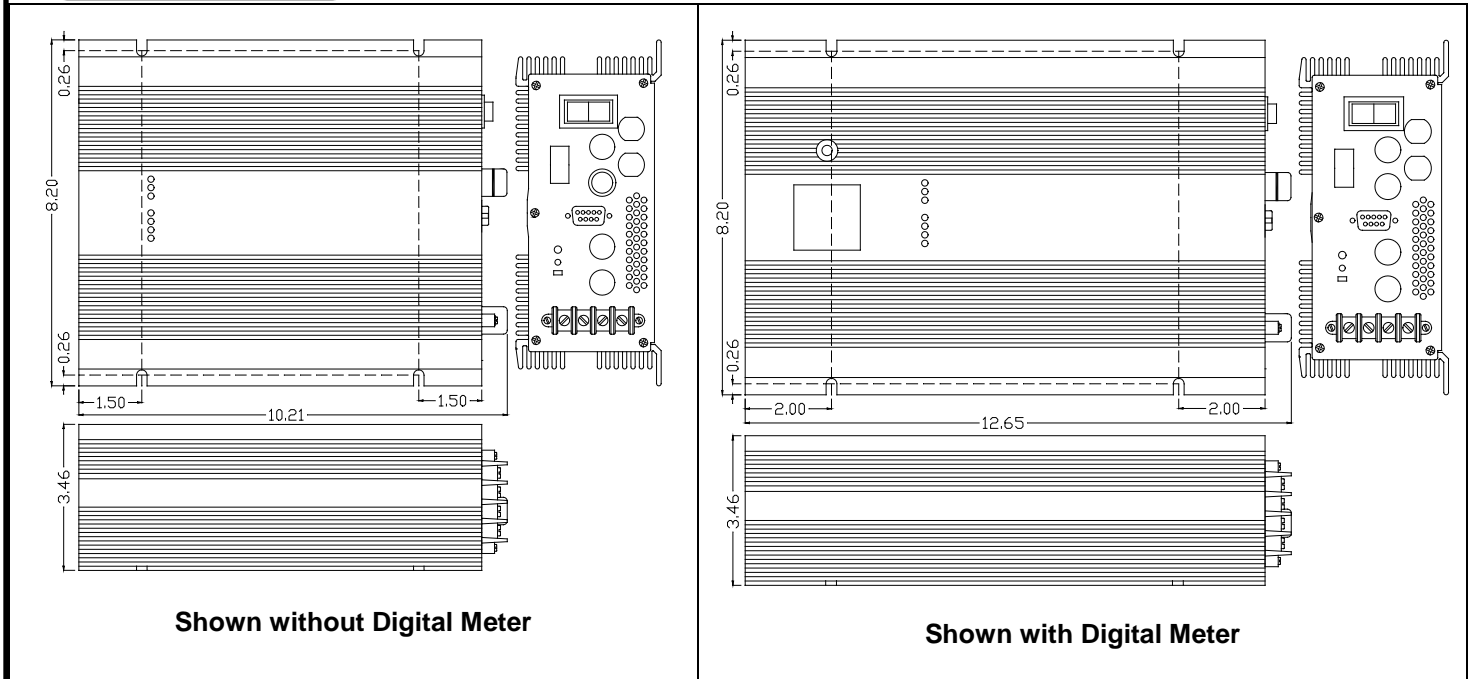
The newly updated single-board PWS310 is ultra-quiet and features the latest generation of current mode PWM control. Extra features include adjustable output voltage, audible and visual indicators for low input voltage, low output voltage, over temperature, overload and output on. Either 110 or 220 VAC input is available (field switchable). The PWS310 also features a four contact output terminal (two positive and two negative contacts) for easy connection of devices to the supply.

#### Features

- Adjustable output voltage
- Extremely rugged and well suited for harsh environments
- Ultra-quiet low EMI operation
- Audible & visual indicators for output overload, low input voltage, low output voltage & over-temperature
- Over-temperature shutdown
- Current limiting
- Short circuit protection
- Field switchable between 110VAC and 220VAC
- Output over-voltage crowbar
- Dry contact output fail relay
- Remote control option
- Digital Volt/Ammeter option
- Custom output voltages available
- 3 year parts and labour warranty
- Parallel output diodes available

# PWS310-MS Series Power Supplies

## Mechanical Diagram



Shown without Digital Meter

Shown with Digital Meter

## Specification

### Electrical (Input)

Nominal Vac (ip)	110	220
Actual (Vac)	105-125	210-250
Input Amps (max)	4.9	2.5
Input Fuse (MDA)	7A	4A
Input Frequency	45-65 Hz	
Noise on Input	< 25 mV	

### Environmental Specification

Operating Temp. Range	-40° to +55°C @ maximum output Derate Linearly 2.5% per °C from 55°C to 85°C
Humidity	0 - 95°C Relative Humidity (non-condensing) with standard conformal coating
Audible Noise	NONE Ødb @ 3 ft
Typical Service Life	> 10 yrs. (87,600 hrs)
Isolation	Input-Case & Input-Output 1500VDC Output-Case 500VDC

### Electrical (Output)

Output Nominal (op)	12	24	28	48
Output Volts (DC)	13.6	27.2 (24.0 avail)	28.0	54.4
Output Amps	20 cont. / 25 peak	10 cont. / 13 peak	10 cont. / 13 peak	5.0 cont. / 6.5 peak
Output Crowbar	16.0 ± 0.5V	32.0 ± 1.0V	32.0 ± 1.0V	64.0 ± 1.0V
Output Adjustment	± 1.0V			
Output Ripple & Noise	< 25 mV			
Transient Response	< 1V for 50% Surge			
Regulation (Line & Load)	< +/- 0.5%			
Duty Cycle	Peak 20% for 10 min max Continuous 100% for 24 hours per day			
Efficiency	> 80% @ Maximum Output			
EMC	Designed to meet MIL-STD 461E			

### Mechanical Specification

Length	9.6 in / 24.4 cm
Width	8.2 in / 20.8 cm
Height	3.5 in / 8.9 cm
Clearance	1 inch (2.5 cm) all around
Material	Marine Grade Aluminium
Finish	Black Anodize / Powder Epoxy Coat
Fastenings	All 18-8 Stainless Steel
Weight	7.5 lb / 3.4 kg
Connections	Four contact output terminals
Vibration	Designed to meet MIL-STD810F, Method 514-3 and Cat-1 Proc 1
Interconnect	IPC-A-610
Warranty	3 years

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**ANALYTIC SYSTEMS**  
INNOVATIVE POWER CONVERSION SOLUTIONS  
ISO 9001:2008 Certified Quality System