

300 Watt, 5 Volt, Medical Safety Certified
Single Output Power Supply with PFC

UNIT CODE	DESCRIPTION
MED-PS 300-5V	300 Watt, 5 Volt, Single Output Medical Power Supply with Active PFC Function

SPECIFICATIONS		
AC Input	Output	Approvals
Universal AC input 85 ~ 264V	+5VDC @ 0 ~ 60A	     

Features at a Glance:

Medical safety certified, MOOP level
 Built-in active PFC function, PF>0.95
 Withstands 300VAC surge for 5 seconds
 Low leakage current <300µA/264VAC
 No load power consumption < 0.5W
 Standby 5V @ 0.3A
 1U low profile case: 41mm
 Protection: Short circuit; Overload;
 Over voltage; Over temperature
 Built-in: Constant current limiting circuit;
 Remote ON-OFF control; DC OK signal;
 Cooling fan with ON-OFF control
 Working temperature range -40°C ~ +70°C
 Certificates: UL / CUL / CB / CE
 Safety standards: ANSI/AAMI ES60601-1,
 IEC60601-1 approved
 EMC standards: Class B level
 (see following pages for complete EMC details)
 MTBF: 176K hrs min. *MIL-HDBK-217F (25°C)*
 Case: 980A
 Weight: 1.69 lbs (0.77 Kgs)
 Dimensions: 7.83 x 4.13x 1.61 inches (LxWxH)
 199 x 105 x 41mm (LxWxH)
 5 year warranty



The MED-PS 300 series are medium power, highly reliable power supplies designed to meet the rigorous demands of the medical device and equipment markets. These are 300 Watt, compact, efficient, AC/DC enclosed medical type power supplies that comply with international medical safety regulations (MOOP level).

Standard functions include built-in remote ON/OFF control, protections for short circuit, overload (constant current mode), over voltage, and over temperature. Additionally, with low leakage current ($\leq 300\mu\text{A}$), extremely low no-load power consumption (<0.6W), 1U low profile (41mm). This series meet the high quality requirements for medical applications and are an excellent choice for non-patient contact instruments and equipment. Global certificates of compliance meeting UL/ CUL/ CB/ CE medical safety requirements ensure users' safety. EMI, Class B Level, compliant.

Suitable applications include medical and diagnostic equipment requiring low leakage current such as lab and analysis equipment, monitoring equipment, MRI & X-ray machines, CT Scanners, chemical or biological detection equipment, as well as any system requiring low leakage current and/or low, no-load, power consumption.

Pricing: 1 ~ 9 \$ 229.00
 10+ 206.50
 25+ 184.50

[Release & Application Notes](#)

POLLOCK INDUSTRIES, INC. 81 Butternut Road, White River, VT 05001
 toll-free 1-866-665-5434 (603) 888-2467 power@electracool.com



■ Features :

- Universal AC input / Full range
- Built-in active PFC function, PF>0.95
- High efficiency up to 89%
- Withstand 300VAC surge input for 5 seconds
- Protections: Short circuit / Overload / Over voltage / Over temperature
- Built-in constant current limiting circuit
- 1U low profile 41mm
- Medical safety approved (MOOP level)
- Built-in cooling fan ON-OFF control
- Built-in DC OK signal
- Built-in remote ON-OFF control
- Standby 5V@0.3A
- Built-in remote sense function
- No load power consumption<0.5W (Note.6)
- 5 years warranty



SPECIFICATION

MODEL	MSP-300-3.3	MSP-300-5	MSP-300-7.5	MSP-300-12	MSP-300-15	MSP-300-24	MSP-300-36	MSP-300-48	
OUTPUT	DC VOLTAGE	3.3V	5V	7.5V	12V	15V	24V	36V	48V
	RATED CURRENT	60A	60A	40A	27A	22A	14A	9A	7A
	CURRENT RANGE	0 ~ 60A	0 ~ 60A	0 ~ 40A	0 ~ 27A	0 ~ 22A	0 ~ 14A	0 ~ 9A	0 ~ 7A
	RATED POWER	198W	300W	300W	324W	330W	336W	324W	336W
	RIPPLE & NOISE (max.) Note.2	80mVp-p	90mVp-p	100mVp-p	120mVp-p	150mVp-p	150mVp-p	250mVp-p	250mVp-p
	VOLTAGE ADJ. RANGE	2.8 ~ 3.8V	4.3 ~ 5.8V	6.8 ~ 9V	10.2 ~ 13.8V	13.5 ~ 18V	21.6 ~ 28.8V	28.8 ~ 39.6V	40.8 ~ 55.2V
	VOLTAGE TOLERANCE Note.3	± 2.5%	± 2.0%	± 2.0%	± 1.0%	± 1.0%	± 1.0%	± 1.0%	± 1.0%
	LINE REGULATION	± 0.5%	± 0.5%	± 0.5%	± 0.3%	± 0.3%	± 0.2%	± 0.2%	± 0.2%
	LOAD REGULATION	± 1.0%	± 1.0%	± 1.0%	± 0.5%	± 0.5%	± 0.5%	± 0.5%	± 0.5%
	SETUP, RISE TIME	1000ms, 50ms/230VAC 2500ms, 50ms/115VAC at full load							
HOLD UP TIME (Typ.)	16ms/230VAC 16ms/115VAC at full load								
INPUT	VOLTAGE RANGE Note.5	85 ~ 264VAC 120 ~ 370VDC							
	FREQUENCY RANGE	47 ~ 63Hz							
	POWER FACTOR (Typ.)	PF>0.95/230VAC PF>0.99/115VAC at full load							
	EFFICIENCY (Typ.)	80%	82%	86%	88%	88%	87%	88%	89%
	AC CURRENT (Typ.)	4.5A/115VAC 2.25A/230VAC							
	INRUSH CURRENT (Typ.)	35A/115VAC 70A/230VAC							
LEAKAGE CURRENT	Earth leakage current < 450µA/264VAC , Touch leakage current < 100µA/264VAC								
PROTECTION	OVERLOAD	105 ~ 135% rated output power Protection type : Constant current limiting, recovers automatically after fault condition is removed							
	OVER VOLTAGE	3.96 ~ 4.62V	6 ~ 7V	9.4 ~ 10.9V	14.4 ~ 16.8V	18.8 ~ 21.8V	30 ~ 34.8V	41.4 ~ 48.6V	57.6 ~ 67.2V
	OVER TEMPERATURE	Shut down o/p voltage, recovers automatically after temperature goes down							
FUNCTION	5V STANDBY	5VSB : 5V@0.3A ; tolerance ±5%, ripple : 50mVp-p(max.)							
	DC OK SIGNAL	PSU turns on : 3.3 ~ 5.6V ; PSU turns off : 0 ~ 1V							
	REMOTE CONTROL	RC+ / RC-: 4 ~ 10V or open = power on ; 0 ~ 0.8V or short = power off							
	FAN CONTROL (Typ.)	Load 35 ± 15% or RTH2 ≥ 50°C Fan on							
ENVIRONMENT	WORKING TEMP.	-40 ~ +70°C (Refer to "Derating Curve")							
	WORKING HUMIDITY	20 ~ 90% RH non-condensing							
	STORAGE TEMP., HUMIDITY	-40 ~ +85°C , 10 ~ 95% RH							
	TEMP. COEFFICIENT	± 0.03%/°C (0 ~ 50°C)							
	VIBRATION	10 ~ 500Hz, 5G 10min./1cycle, 60min. each along X, Y, Z axes							
SAFETY & EMC (Note 4)	SAFETY STANDARDS	ANSI/AAMI ES60601-1, IEC60601-1 approved							
	ISOLATION LEVEL	Primary-Secondary: 2×MOOP, Primary-Earth: 1×MOOP							
	WITHSTAND VOLTAGE	I/P-O/P:4KVAC I/P-FG:2KVAC O/P-FG:0.5KVAC							
	ISOLATION RESISTANCE	I/P-O/P, I/P-FG, O/P-FG:100M Ohms / 500VDC / 25°C / 70% RH							
	EMC EMISSION	Compliance to EN55011 (CISPR11) Class B, EN61000-3-2,-3							
	EMC IMMUNITY	Compliance to EN61000-4-2,3,4,5,6,8,11, EN60601-1-2							
OTHERS	MTBF	176Khrs min. MIL-HDBK-217F (25°C)							
	DIMENSION	199*105*41mm (L*W*H)							
	PACKING	0.95Kg;15pcs/15.3Kg/0.69CUFT							
NOTE	<p>1. All parameters NOT specially mentioned are measured at 230VAC input, rated load and 25°C of ambient temperature.</p> <p>2. Ripple & noise are measured at 20MHz of bandwidth by using a 12" twisted pair-wire terminated with a 0.1µf & 47µf parallel capacitor.</p> <p>3. Tolerance : includes set up tolerance, line regulation and load regulation.</p> <p>4. The power supply is considered a component which will be installed into a final equipment. The final equipment must be re-confirmed that it still meets EMC directives. For guidance on how to perform these EMC tests, please refer to EMI testing of component power supplies. (as available on http://www.meanwell.com)</p> <p>5. Derating may be needed under low input voltages. Please check the derating curve for more details.</p> <p>6. No load power consumption<0.5W when RC- & RC+ (CN100 pin4,6) 0 ~ 8V or short.</p>								

Mechanical Specification

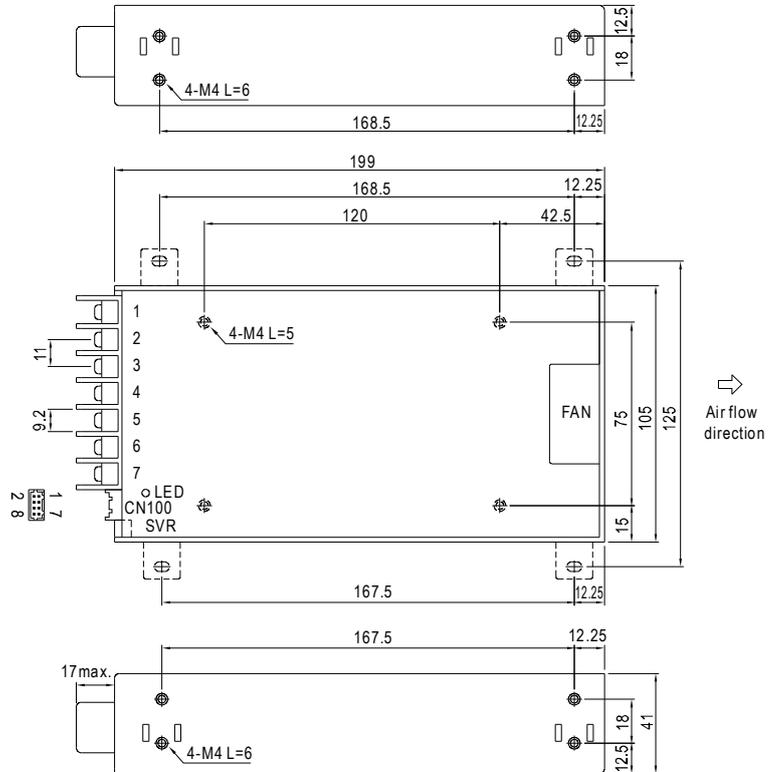
Case No.980A Unit:mm

Terminal Pin No. Assignment

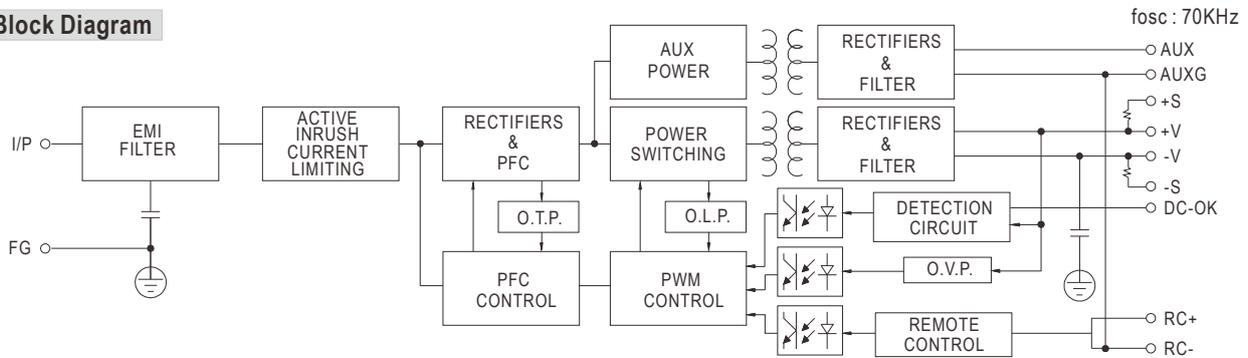
Pin No.	Assignment	Pin No.	Assignment
1	AC/L	4,5	DC OUTPUT -V
2	AC/N	6,7	DC OUTPUT +V
3	FG		

Connector Pin No. Assignment (CN100):
HRS DF11-8DP-2DS or equivalent

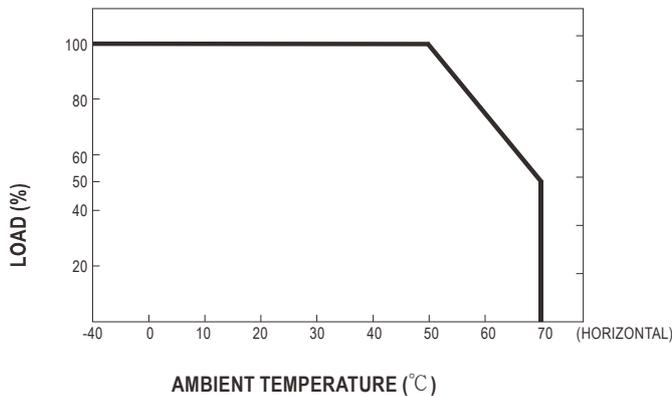
Pin No.	Assignment	Mating Housing	Terminal
1	AUX	HRS DF11-8DS or equivalent	HRS DF11-8**SC or equivalent
2	AUXG		
3	DC-OK		
4	RC-		
5	GND		
6	RC+		
7	+S		
8	-S		



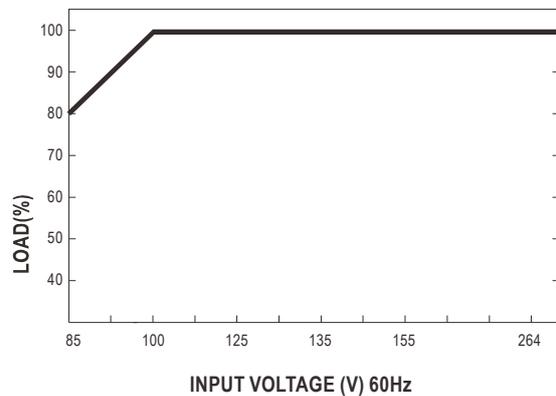
Block Diagram



Derating Curve



Output Derating VS Input Voltage



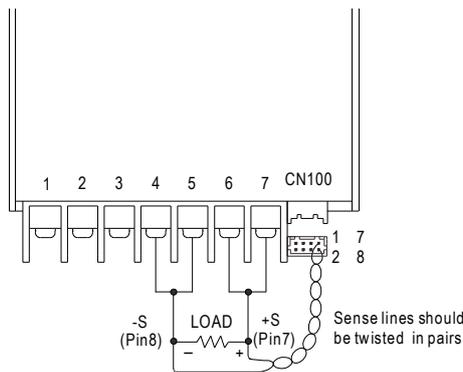
■ **Function Description of CN100**

Pin No.	Function	Description
1	AUX	Auxiliary voltage output, 4.75~5.25V, reference to pin 2(AUXG). The maximum load current is 0.3A. This output has the built-in oring diodes and is not controlled by the "remote ON/OFF control".
2	AUXG	Auxiliary voltage output ground. The signal return is isolated from the output terminals (+V & -V).
3	DC-OK	DC-OK signal is a TTL level signal, referenced to pin5(DC-OK GND). High when PSU turns on.
4	RC-	Remote control ground.
5	GND	This pin connects to the negative terminal(-V). Return for DC-OK signal output.
6	RC+	Turns the output on and off by electrical or dry contact between pin 4 (RC-), Short: Power OFF, Open: Power ON.
7	+S	Positive sensing. The +S signal should be connected to the positive terminal of the load. The +S and -S leads should be twisted in pair to minimize noise pick-up effect. The maximum line drop compensation is 0.5V.
8	-S	Negative sensing. The -S signal should be connected to the negative terminal of the load. The -S and +S leads should be twisted in pair to minimize noise pick-up effect. The maximum line drop compensation is 0.5V.

■ **Function Manual**

1.Remote Sense

The remote sensing compensates voltage drop on the load wiring up to 0.5V.



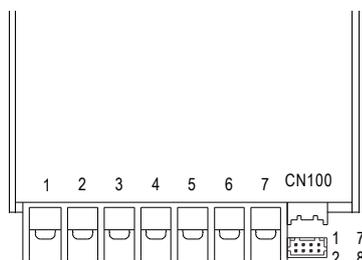
CN100					
1	AUX	DC-OK	GND	+S	7
2	AUXG	RC-	RC+	-S	8

Fig 1.1

2.DC-OK Signal

DC-OK signal is a TTL level signal. High when PSU turns on.

Between DC-OK(pin6) and GND(pin4)	Output Status
3.3 ~ 5.6V	ON
0 ~ 1V	OFF



CN100					
1	AUX	DC-OK	GND	+S	7
2	AUXG	RC-	RC+	-S	8

Fig 2.1

POLLOCK INDUSTRIES, INC. 81 Butternut Road, White River, VT 05001
toll-free 1-866-665-5434 (603) 888-2467 power@electracool.com

Copyright © 2014-2015 Pollock Industries, Inc.
All trademarks and service marks are the properties of their respective owners

3.Remote Control

The PSU can be turned ON/OFF by using the "Remote ON/OFF" function

Between RC+(pin3) and RC-(pin5)	Output Status
SW ON (Short)	OFF
SW OFF (Open)	ON

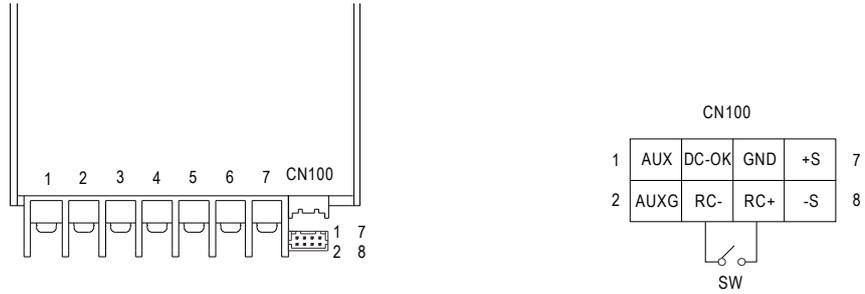


Fig 3.1

POLLOCK INDUSTRIES, INC. 81 Butternut Road, White River, VT 05001
toll-free 1-866-665-5434 (603) 888-2467 power@electracool.com

Copyright © 2014-2015 Pollock Industries, Inc.
All trademarks and service marks are the properties of their respective owners