NWL, Inc.
www.nwl.com
(609) 298-7300
nwlinfo@nwl.com

PowerPlus™ Technical Specifications

PowerPlus is a series resonant switch mode power supply specifically designed for use with electrostatic precipitators. Utilizing this system has proven to improve the collection efficiency of new and existing precipitators. It has a heavy-duty industrial grade design, suitable for use in power plants and all other industrial operating environments.

ELECTRICAL SPECIFICATIONS								PHYSICAL SPECIFICATIONS					
kW	kVA	Input Voltage 3ø, 50/60 Hz, ±10%	Output Current mADC	Output Voltage kVDC	Rated Input Current Amps	Circuit Breaker Rating Amps	Losses kW	Weight lbs (kg)	Width inch (mm)	Depth inch (mm)	Height inch (mm)	Max Floor Load lbs (kg)	Dielectric Volume gals (liters)
4.2	4.8	400-480	60 50	70 83	7	15	0.31	1000 (454)	28.46 (723)	50.72 (1288)	70 (1778)	200 (98)	41 (154)
8.5	9.7	400-480	120 100	70 83	14	20	0.62						
17	19.4	400-480	245 205	70 83	28	40	1.23	1050 (477)	45.93 (1167)	46.86 (1190)	57.84 (1469)	200 (98)	41 (154)
21	24.2	400-480	300 255	70 83	35	50	1.75						
28	31.7	400	400 335	70 83	46	70	1.9	1000 (454)	42.47 (1079)	46.90 (1191)	50.78 (1290)	215 (106)	29 (110)
28	32.2	480	400 335	70 83	39	60	2.0						
35	39.1	480	500 420	70 83	48	70	2.1						
45	50.9	400	645 540	70 83	73.5	100	3.1	1100 (499)	46.67 (1185)	46.90 (1191)	57.77 (1493)	305 (149)	29 (110)
56	63.4	400	800 675	70 83	92	150	3.9						
56	63.4	480	800 675	70 83	76	100	3.6						
70	78.3	480	1000 840	70 83	94	150	4.4						
84	94.1	400	1200 1010 840		136	200	4.9						
96	107.5	400	1370 1155 960	70 83	155	250	5.6	2200 (1044)	64.75 (1645)	47.50 (1204)	81.75 (2080)	295 (144)	100 (379)
105	118	480	1500 1265 1050	**100**	142	200	5.5	**2650 (1202)**	**42 (1066)**	**92 (2338)**	**89 (2260)**	**138 (55)**	**112 (424)**
120	134	480	1700 1445 1200		161	250	6.3						
128	143	400	1830 1550 1280	70 83 100	207	300	7.4	4500 (2042)	47.14 (1197)	92.03 (2338)	87.26 (2267)	280 (112)	155 (587)
160	178	400	2285 1930 1600	70 83 100	257	400	9.3						
160	178	480	2285 1930 1600	70 83 100	214	300	8.4						
200	223	480	2860 2410 2000	70 83 100	268	400	10.5						

PowerPlus™ General Specifications — All Models

INTERNATIONAL CERTIFICATIONS	
Power Supply Standards	UL 1012, CSA 107.1 (128,160 & 200 kW certifications pending)
Optional CE Certification Includes	EMC Directive (2004/108/CE), Machinery Directive (2006/42/EC), EN 61000-6-4, EN 55011, EN 61000-6-2, EN 60204-1, EN ISO 12100-1, IEC 61000-4-2, IEC 61000-4-3, IEC 61000-4-4, IEC 61000-4-5, IEC 61000-4-6 , IEC 60204-1 (128,160 & 200 kW certifications pending)
Enclosure Environmental Rating	IP56, NEMA4 (128,160 & 200 kW certifications pending)

OTHER ELECTRICAL SPECIFICATIONS	
Circuit Breaker IAC Rating @ 480VAC (UL & IEC rated)	25K
Power Factor	0.94
% Ripple – KVp-p	3-5
Resonant Frequency – KHz	50
Arc Shutdown Time – µsec	30

OPERATING CONDITIONS	
Minimum Ambient Temperature	-20 °C
Maximum Avg. Ambient Temperature (24 hr)	40 °C
Maximum Ambient Temperature	50 °C (for up to 4 hours)
Maximum Oil Temperature Rise	40 °C
Maximum Tank Surface Temperature	75 °C
Maximum Relative Humidity	100%
Maximum Permissible Altitude	1000 m (3300 ft)

EXTERIOR SPECIFICATIONS	
Nameplate Material	Aluminum 0.32" (8 mm) thick, satin finish
Paint (primer)	High solid alkyd primer, VOC compliant, gray, 1-1.5 mils (25-40µm)
Paint (top coat)	High build acrylic enamel, semi-gloss, 1-1.5 mils (25-40µ)
Paint (color)	ASA 61 gray (RAL 7042)

CONNECTIONS	
Oil Level Switch Ratings	20VA contacts
Minimum Ground Wire size	#2 AWG Cu. per NEC, section 250 (35 mm² Cu.)
Input Connection	Stabs for 5/16" – 3/8" ring lugs (8-10 mm), ½" ring lugs for 120 kW/100 kV units
Output Termination	½" NPT Female on HV bushing
External Safety Ground Termination	⅜-16 UNCF, (9.5 mm)
Internal Neutral Ground Termination	⅜16 x 1" stud, (10 mm)
Low Voltage feed thru	¼20 UNCF epoxy feed thru, (7 mm)

OTHER	
Windings Conductor Material	Copper wire
Insulation Class	A
Dielectric type	Cross Grade 206 Mineral Oil (or equivalent) or Dow Corning 561 Silicone Fluid