



3 kW, N+1 REDUNDANT,  
RACK-MOUNTABLE,  
POWER-FACTOR CORRECTED,  
AC-DC RECTIFIER SYSTEM

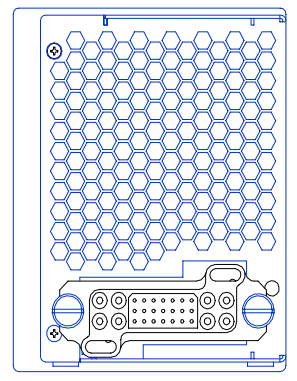
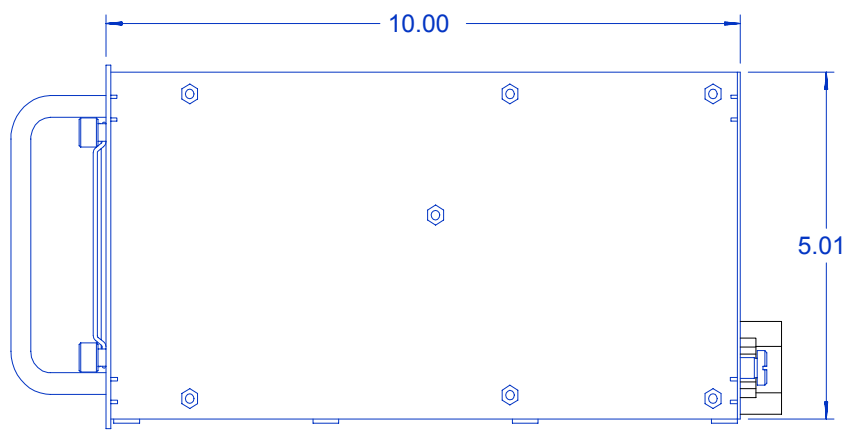
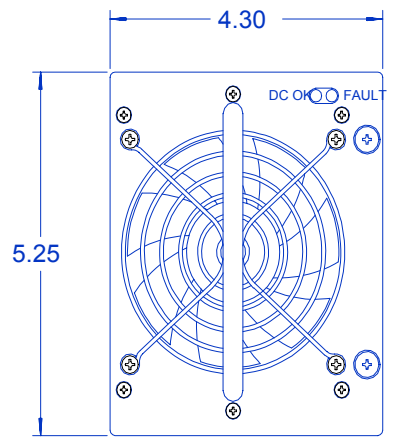
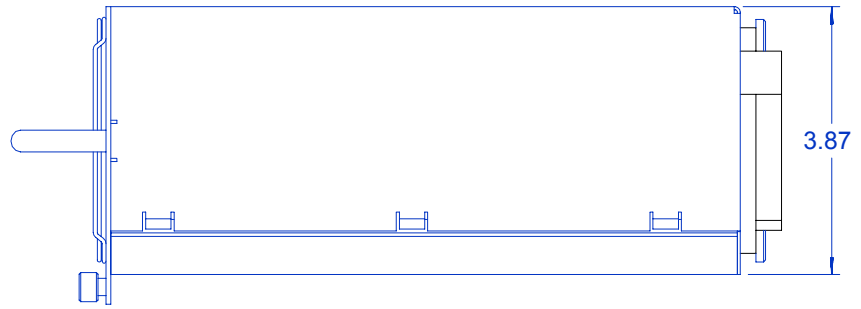


**PS2266 POWER SUPPLY FEATURES**

<b>INPUT POWER:</b>	90 - 264 Vac, 47 - 63 Hz, Single Phase, 13.8A Max service (with Active Power Factor Correction)
<b>INRUSH CURRENT:</b>	Limited by Active Inrush Current Protection to less than <40A peak @ 115Vac, <80A peak @ 230Vac
<b>INPUT/ OUTPUT CONNECTOR:</b>	Floating ELCON Lower Drawer
<b>OUTPUT POWER:</b>	1 kW Max (53 Vdc @ 19 A) with current sharing
<b>NOMINAL SIZE:</b>	10.00”L x 5.01”H x 3.87”W
<b>WEIGHT:</b>	7.4 Lb
<b>OPERATING AMBIENT:</b>	0-50 degrees Celsius
<b>COOLING:</b>	68 CFM, 92 mm internal fan, front to back air flow
<b>SIGNALS:</b>	DC OK and Fault output signals and front panel LEDs, Power Supply Present output signal
<b>CONSTRUCTION:</b>	Fully enclosed steel chassis
<b>CONTROLS:</b>	Remote ON/ OFF output signal
<b>PROTECTIONS:</b>	Input undervoltage protection; Self-restarting type overvoltage protection on high voltage dc bus; Primary power limiting; Primary and secondary overtemperature protection, resetting with hysteresis; Output overvoltage lockout; Output current limiting/ regulation with delayed undervoltage lockout (restartable with ON/ OFF DC switch)
<b>POWER CIRCUITS:</b>	70 kHz power factor correcting boost rectifier; Two interleaved 108 kHz, current-mode controlled, isolating forward down converters. 200 kHz Flyback converter for primary bias, secondary bias, and fan

# POWER SUPPLY MECHANICAL OUTLINE

AIR FLOW  
→

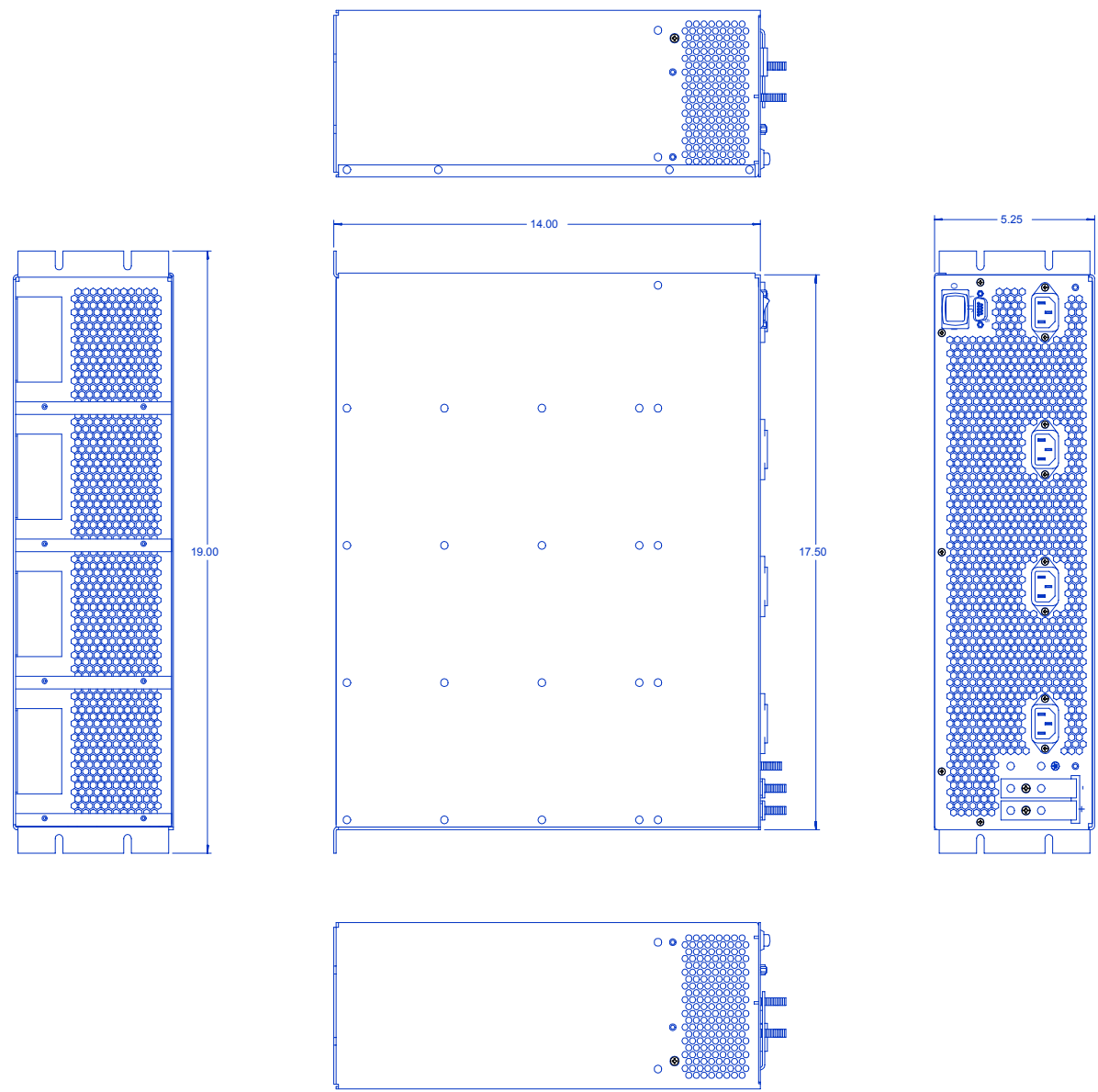




**PS2266 BAY FEATURES**

<b>INSTALLED POWER:</b>	3 kW of redundant power (4 kW non-redundant)
<b>INPUT CONNECTOR:</b>	Four male 15 A IEC 320 AC inlets with line filter
<b>OUTPUT CONNECTOR:</b>	Custom designed for ILSCO E70/H70 copper lugs or compatible: Two copper bus bars with 2 x 1/4-20 bolts 1" apart for -54 V and RTN; 2 x 1/4-20 bolts 1" apart bolted into chassis for chassis connection.
<b>LOGIC CONNECTOR:</b>	9-Pin D-Sub female connector System GND, DC OK, and PS present signals ORed from all four module locations AC System signal permanently tied to System GND
<b>NOMINAL SIZE:</b>	14" L x 5.25" H x 19" W
<b>CONSTRUCTION:</b>	Steel chassis
<b>WEIGHT:</b>	20.2 Lb
<b>CONTROLS:</b>	Output voltage ON/ OFF Logic Level switch (which also functions as reset switch for delayed undervoltage lockout)

# BAY (B2266) MECHANICAL OUTLINE



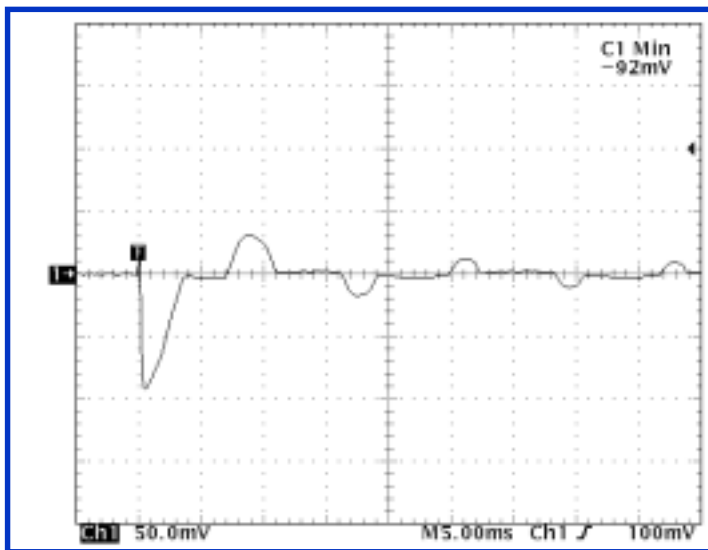
## PS ELCON CONNECTOR PIN ASSIGNMENT

Description	PIN
Line Ground	1
Line	2
Neutral	4
+54V	26
54V RTN	28
DC OK	23
PS Present	20
Remote ON/ OFF	17
System GND	14
OVP Test	11

## BAY CONNECTORS

-54V Bus Bar	
RTN Bus Bar	
Chassis GND	
4 x 15 A 320 IEC INLET	
<b>DSUB</b>	<b>PIN</b>
System GND	1
AC Unit	7
PS Present	3
DC OK	5

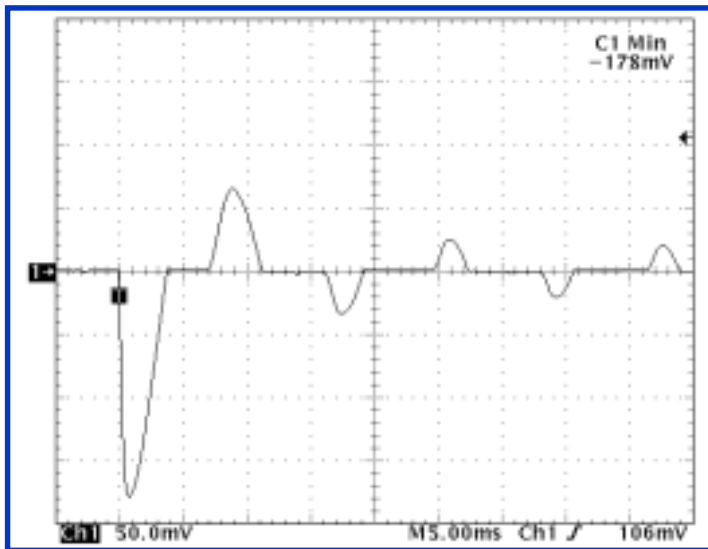
**CONDITIONS:** Line Voltage: As indicated  
Load: 1 kW resistive load (53 V @ 19 A)



INRUSH @ 115 Vac

20A/div

Measured I peak= 36.8 A  
Spec: 40 A pk max

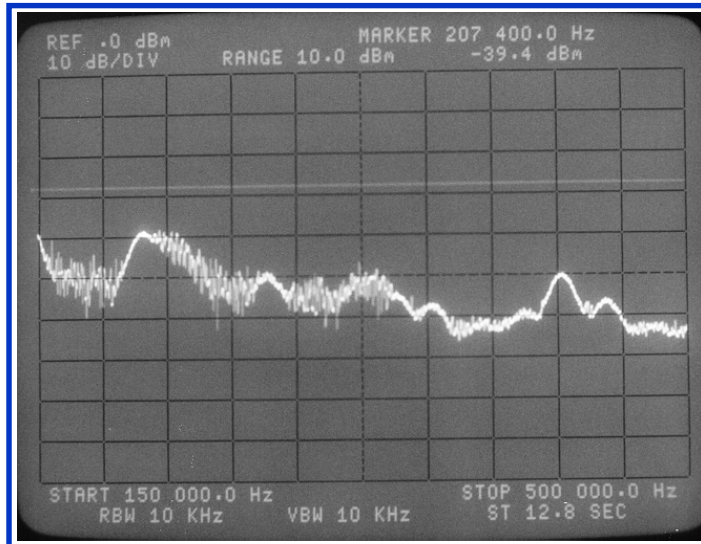


INRUSH @ 230Vac

20A/div

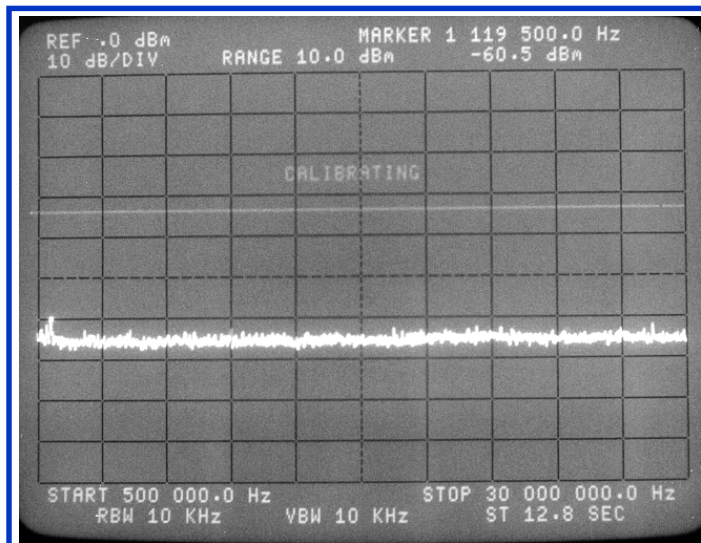
Measured I peak= 71.2 A  
Spec: 80 A pk

**CONDITIONS:** Input Voltage: 234 Vac, 50 Hz  
Load: 1 kW resistive load (53 V @ 19 A); Unit inside Bay



150 kHz - 500 kHz sweep  
10 kHz BW, peak detection

CISPR A Spec: -28 dBm Qp (max)  
Meas. margin: 11.4 dBm @ 207 kHz

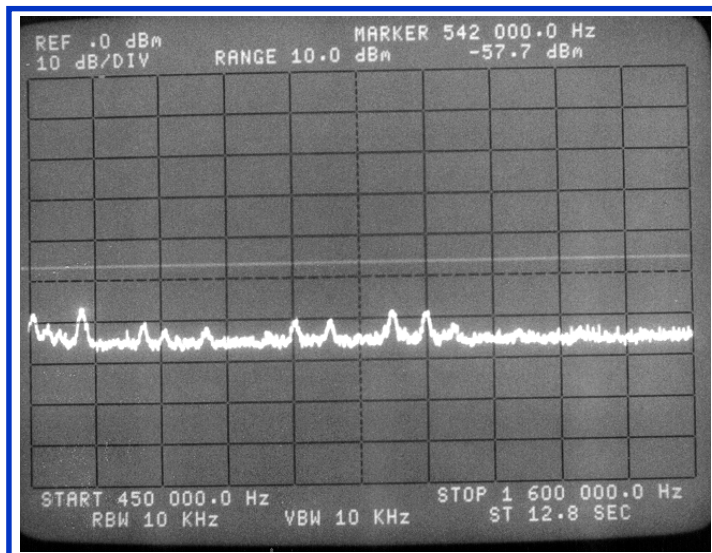


500 kHz - 30 MHz sweep  
10 kHz BW, peak detection

CISPR A Spec: -34dBm Qp (max)  
Meas. margin: 26 dBm @ 1.1 MHz

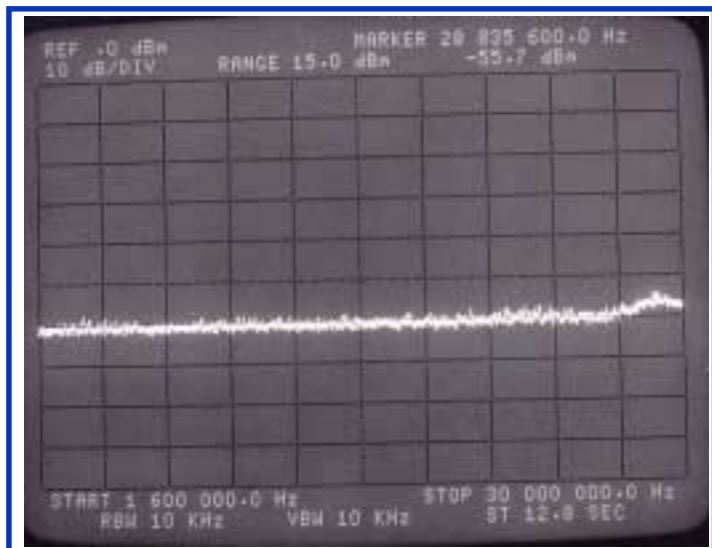


**CONDITIONS:** Input Voltage: 115 Vac, 60 Hz  
Load: 1 kW resistive load (53 V @ 19 A ); Unit inside Bay



450 kHz - 1.6 MHz sweep  
10 kHz BW, peak detection

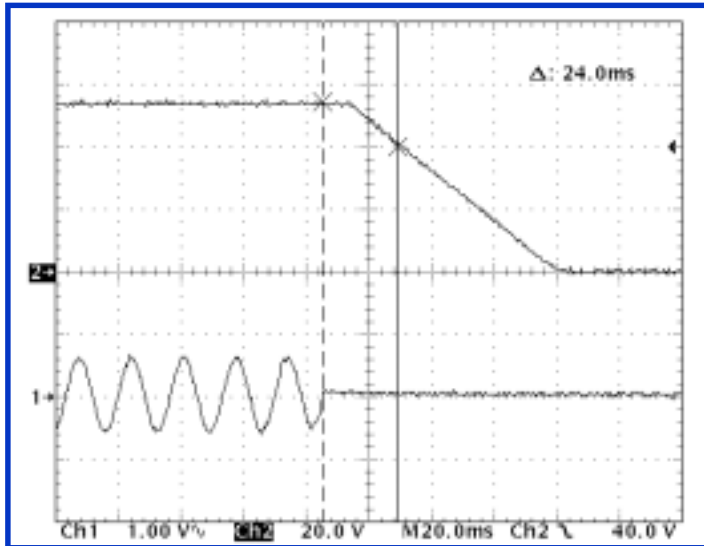
FCC A Spec: -47dBm Qp (max)  
Meas. margin: 10.7 dBm @ 542 kHz



1.6 MHz - 30 MHz sweep  
10 kHz BW, peak detection

FCC A Spec: -37dBm Qp (max)  
Meas. margin: 18.7 dBm @ 29 MHz

**CONDITIONS:** Line Voltage: 90 Vac @ 60 Hz  
Load: 1 kW electronic load (53 V @ 19 A); nonredundant operation

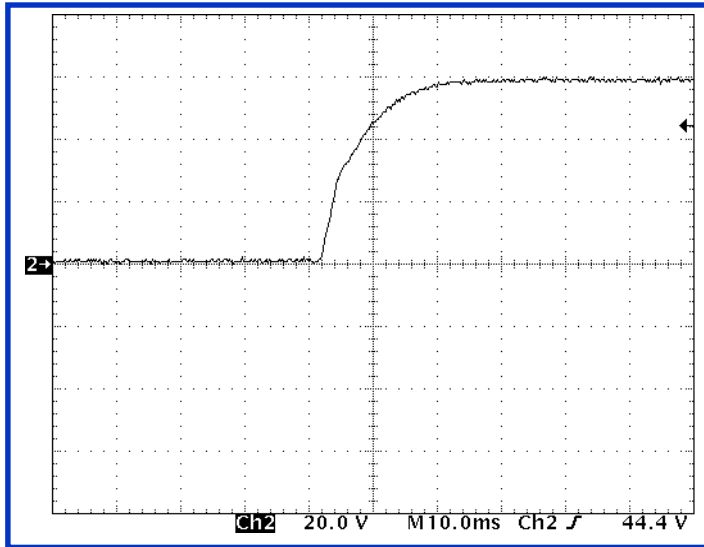


Ch 1: AC Line monitor (200 V/ div)

Ch 2: +54V output (20 V/div)

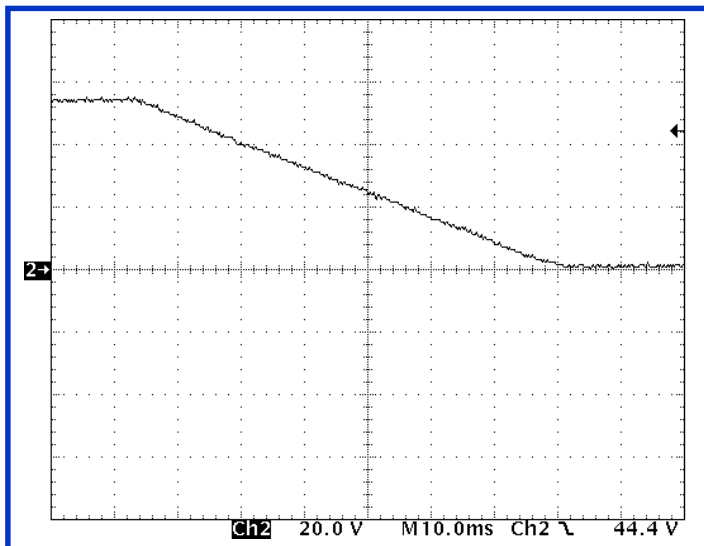
Measured Hold up time: 24.0 ms  
(from nominal voltage down to 40 Vdc)

Spec: 20 ms

**TYPICAL PERFORMANCE: OUTPUT VOLTAGE RISE/FALL****VOLTAGE RISE**

**CONDITIONS:** Input Voltage: 264 V @ 60 Hz  
Load: No load

Ch 1: 54 V Output  
Voltage overshoot: None

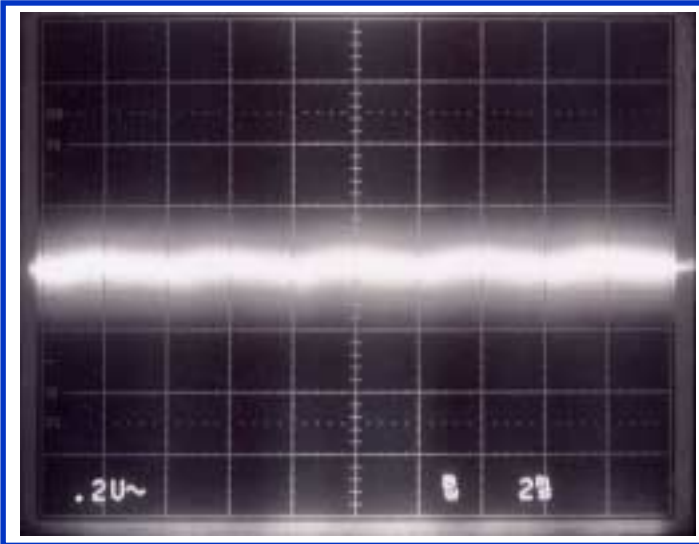
**VOLTAGE FALL**

**CONDITIONS:** Input Voltage: 90 V @ 60 Hz  
Load: 1 kW (53 V @ 19 A)  
Electronic load

Ch 1: 54 V Output  
Voltage undershoot: None

**TYPICAL PERFORMANCE: DIFFERENTIAL MODE OUTPUT RIPPLE & NOISE**

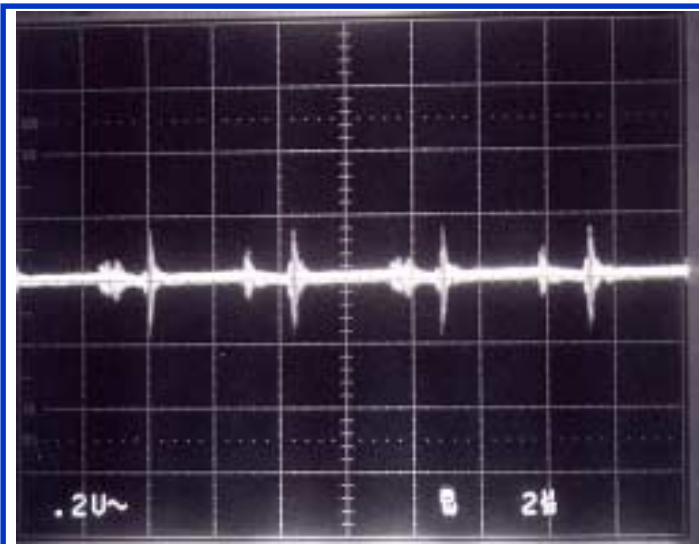
**CONDITIONS:** Input Voltage: 230 Vac, 60Hz  
Load: 1 kW electronic load (53 V @ 19 A)



**OUTPUT RIPPLE**

200 mV/ div, 2ms/ div  
20 MHz B.W.

Meas: 100 mV p-p  
Spec: 600 mV p-p

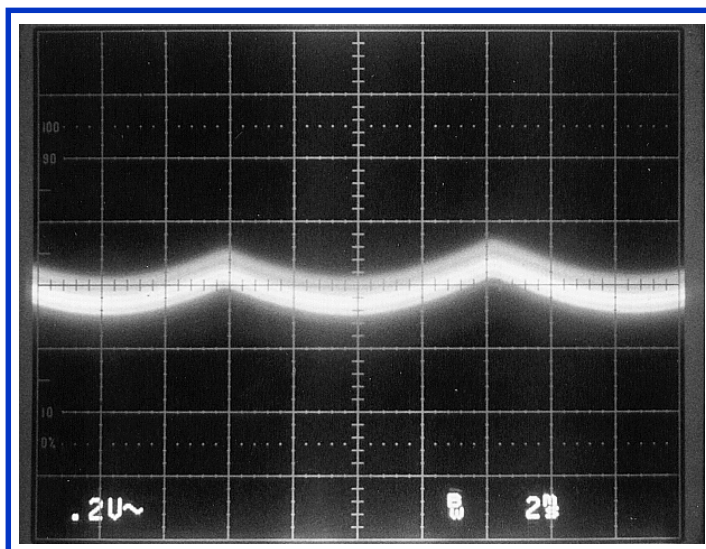


**OUTPUT NOISE**

200 mV/ div, 2 μs/ div  
20MHz B.W.

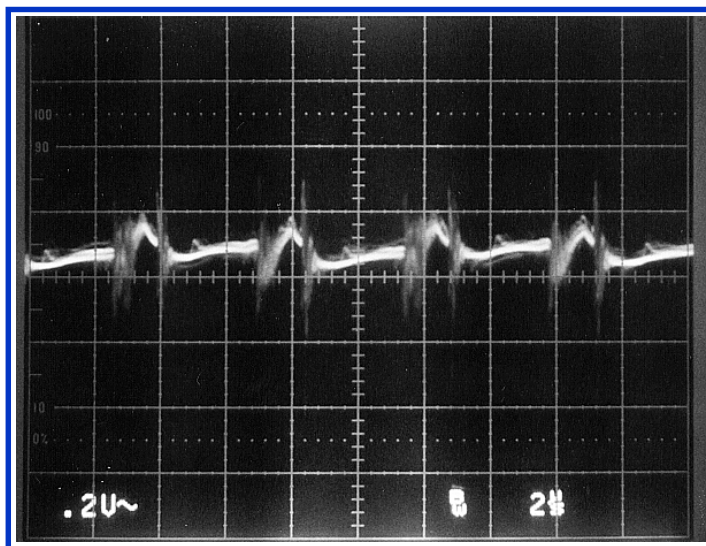
Meas: 340 mV p-p  
Spec: 600 mV p-p

**CONDITIONS:** Input Voltage: 230 Vac, 60Hz  
Load: 1 kW electronic load (53 V @ 19 A)

**COMMON MODE RIPPLE**

200 mV/div, 2 ms/ div  
20 MHz B.W.

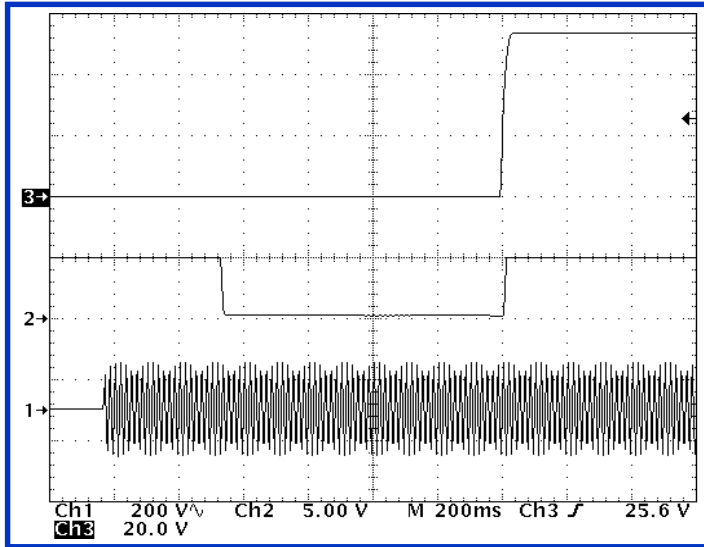
Meas: 100 mV p-p  
Spec: 600 mV p-p

**COMMON MODE NOISE**

200 mV/div, 2 μs/ div  
20 MHz B.W.

Meas: 440 mV p-p  
Spec: 600 mV p-p

**CONDITIONS:** Line Voltage: 120 Vac @ 60 Hz  
Load: 1 kW resistive load (53 V @ 19 A)  
Stand alone unit (Not in Bay); External pull up for DC OK signal

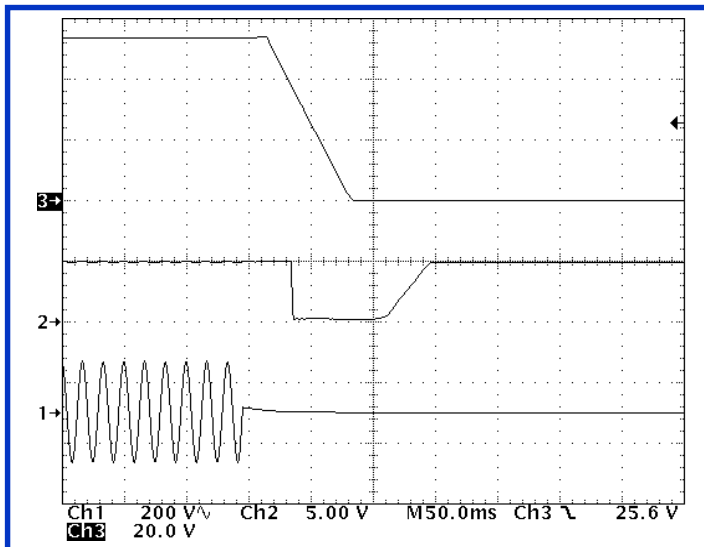


**TURN-ON**

CH 3: 53 V Output

CH 2: DC OK

CH 1: AC Input



**TURN-OFF**

CH 3: 53 V Output

CH 2: DC OK

CH 1: AC Input



TYPICAL PERFORMANCE: OVERVOLTAGE/UNDERVOLTAGE PROTECTION

**CONDITIONS:**

Line Voltage: 120 Vac @ 60 Hz

**UNDERVOLTAGE PROTECTION**

OUTPUT	UNDERVOLTAGE LIMIT POINT	UNDERVOLTAGE LIMIT SPEC	TYPE
+54V	*23.9	none	Latching (with 3 s delay)

\*Measured at output connector

Load: N/A

**OVERVOLTAGE PROTECTION**

OUTPUT	OVER VOLTAGE LIMIT POINT	OVER VOLTAGE LIMIT SPEC	TYPE
+54V	**62.2	< 72 V	Latching

\*\*Measured at no load at output connector



## TYPICAL PERFORMANCE: POWER FACTOR AND EFFICIENCY

**CONDITIONS:** Line Voltage: Per table @ 60 Hz  
Load: 1 kW resistive load (53 V @ 19 A)

Voltage measured at Elcon connector.

INPUT VOLTAGE (Vac)	*INPUT CURRENT (A)	INPUT POWER (W)	POWER FACTOR	EFFICIENCY %
90	13.769	1,236.2	0.997	81.8
115	10.536	1,210.7	0.997	83.5
132	9.115	1,200.5	0.997	84.1
180	6.602	1,180.2	0.992	85.5
230	5.167	1,171.7	0.981	86.1
264	4.515	1,168.2	0.980	86.3

\*Spec: < 13.8 A @ 103 Vac





## 20. TYPICAL PERFORMANCE SUMMARY

<b>Inrush Current @ 230 Vac</b>	71.2 Apk
<b>Line Current Harmonics</b>	Complies with EN61000, Paragraph 3.2
<b>Line Conducted EMI</b>	Complies with CISPR A and FCC A
<b>Hold-Up Time</b>	24 ms
<b>Line Regulation</b>	0 %
<b>Load Regulation</b>	8.4 %
<b>Differential Mode Noise</b>	340 mVp-p
<b>Common Mode Noise</b>	440 mVp-p
<b>OVP</b>	62.2 V
<b>UVP</b>	23.9 V
<b>Gain Margin</b>	15 dB
<b>Phase Margin</b>	86.1 Deg
<b>Power Factor @ Efficiency @ 115 Vac, 1 kW</b>	.997 Power Factor; 83.5 % Efficiency