BA	ECO # 19179	07/25/00	RFC	

AT	ADD SHEET 14	1/31/97	JJR	GFS
AU	ECO # 16108	2-3-97	GFS	
AV	ECO # 16779	9-16-97	CJS	GFS
AW	ECO # 16792	10-31-97	CJS	GFS
AX	ECO # 17059	12-5-97	REW	GFS
AY	ECO # 17254	2/10/98	REW	GFS
AZ	ECO # 17264	7/09/98	REW	GFS

AK	ECO# 13530	6/29/94	JJR	GFS
AL	#14208	2/27/95	REW	GFS
AM	#14483	5/19/95	BH	GFS
AN	#14785	8/15/95	JJR	GFS
AP	#15147	1/11/96	JJR	GFS
AR	#15151	1/24/96	JJR	GFS
AS	#15399	5/10/96	JJR	GFS

AF	ECO# 11036	1/9/92	REW	WJW
AG	ECO 12432	7-28-93	GFS	WJW
AH	ECO 11360	10-15-93	RP	WJW
AJ	ECO #13337			

APPLICATION		
USED ON	NEXT ASSY.	QTY.

LTR	E.C.O. NO.	BY	APP.
Z	ECO# 10569A 4/15/91	BM	R.W.
AA	ECO# 10583 4/15/91	BM	R.W.
AB	ECO# 10583A 4/29/91	BM	WJW
AC	ADD SNUBBER & DIODE ASS'YS	BM	WJW
AD	ECO# 10643 7/8/91	BM	WJW
AE	CORR. 5KW SCHEM 8/2/91	REW	WJW

INPUT: DEPENDENT UPON MODEL
90–110Vac OR 105–125Vac OR 190–250Vac
50/60Hz.

TB2 — AC ① — AC ② — F2 — A300 LINE FILTER 20–162–001 — SCHEMATIC 01–213–000 — S1 250V, 15A — F1 — TH1 XXX — TH2 XXX — GND.

CR1 600V 30A — C1 XXX — C2 XXX

A200 INVERTER
20–335–000(1KW)
20–335–001(300–3.5)
20–335–002(600W)
20–842–000 VERSION 2
SCHEMATIC
01–000–187 (1KW)
01–000–207 (600W)
01–000–208 (300–3.5)
01–000–582 VERSION 2

DC + — COM — DC – — HF1 — HF2 — P201 P201

T1 XXX — L1 XXX — R12A XXX — C10A XXX — R12B XXX — C10B XXX — C6 XXX — R9 XXX — CR3 XXX — R3 XXX — R2 XXX — C8A XXX — C8B XXX — C8C XXX — C8D XXX — C15 TANT. XXX — C14 XXX — C13 XXX — C12 XXX — POS. — GND. — NEG.

B1 FAN 115V

E1 LINE IN — E2 LINE OUT — E3 230V COM — E3 115V COM — E4 NEU

P4 P4 P4 P4 — P10 P10 — P9 P9 P9 P9 — P2 P2 P2 — P2 P2 — P2 P2

JUMPER

J701
1 V MONITOR
2 I MONITOR
3 COMMON

TB1
1 +V
2 +V REM
3 V PROG I
4 V AMP IN
5 V PROG R
6 V PROG R COM
7 –V REM
8 –V
9 I PROG I
10 I AMP IN
11 I PROG R
12 –I
13 INV AMP IN
14 +I
15 REM V IN
16 INTERLOCK
17

NOTES:

1. ALL RESISTORS ARE IN OHMS, ALL CAPACITORS ARE IN MICROFARADS; K = 1000, AND M = 1,000,000.
2. ▭ DENOTES EQUIPMENT MARKING.
3. ⊘ DENOTES SCREWDRIVER ADJUST.
4. ⏚ DENOTES CHASSIS GROUND.
5. FOR XXX VALUES SEE B/M's.
6. 0–10V V / 0–5V, 0–10V I PROGRAMMING & MONITOR ARE OPTIONS AND MAY OR MAY NOT BE SUPPLIED – DEPENDING UPON MODEL PURCHASED.
7. R5 (CURRENT CONTROL) CAN BE 5K–10 TURN IF P/S IS DESIGNATED WITH "–10T.
8. INPUT: –1 = 105–125VAC
–2 = 190–250VAC
–6 = 90–110VAC

DIODE ASSY
(UNITS ABOVE 200V BUT BELOW 400V)
20–532–XXX
T1 XXX — C6 XXX — CR3 XXX — R9 XXX — HF1 — HF2 — OUTPUT + — L1–1

DIODE ASSY
(UNITS ABOVE 60V BUT BELOW 200V)
20–370–XXX
T1 XXX — C6 XXX — CR3 XXX — R9 XXX — HF1 — HF2 — OUTPUT + — L1–1

J7 — J6 — J1

A100 PCB ASSY.
CONTROL CIRCUIT
20–337–XXX (1KW)
20–397–XXX (600W)
20–833–XXX VERSION 2
SCHEMATIC
01–000–188 (1KW)
01–000–206 (600W)
01–000–545 VERSION 2

J5: V+ V– HI LO V+ V– HI LO P3 P3 P3 P3 P3 P3 P3 P3 P3 P3 P3 P3 P3 P3 P3 P3

A400 M1 DIGITAL METER V 66–105–001 20–351–XXX

A400 M2 DIGITAL METER A 66–105–001 20–351–XXX

R8 10K 0V ADJ. — R4 5K VOLTAGE — R5 100Ω (5K OPTIONAL) CURRENT — LED1 L101DY YEL VOLTAGE — LED2 L101DY YEL CURRENT — LED3 MV5023 RED OVER VOLTAGE — LED4 L101DG GRN POWER ON — TS1 195°F THERMOSTAT INVERTER

AUXILIARY DC POWER
P8 P8 P8
1 2 3
+12V –12V GND

FOR VOLTAGE CHANNEL PROGRAMMING: 0–5V or 0–10V

1. REMOVE JUMPER LINKS 3 to 4 & 4 to 5.
2. ADD JUMPER FROM 5 to 6. (0–10V ONLY)
3. ADD JUMPER FROM 3 TO 7.
4. APPLY SIGNAL AT TERM. 4 & 7.

FOR CURRENT CHANNEL PROGRAMMING: 0–100MV, 0–5V or 0–10V

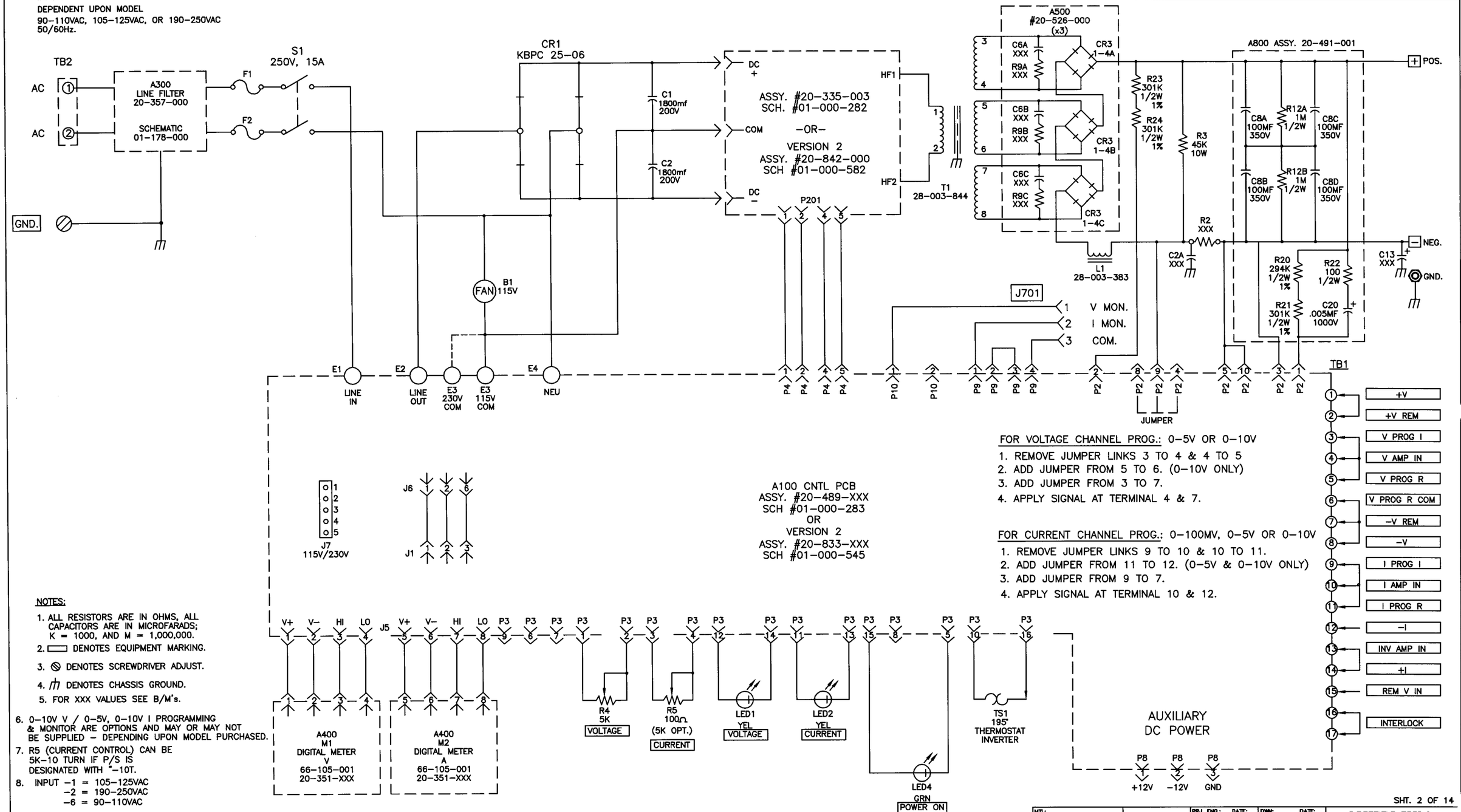
1. REMOVE JUMPER LINKS 9 to 10 & 10 to 11.
2. ADD JUMPER FROM 11 to 12. (0–5V & 0–10V ONLY)
3. ADD JUMPER FROM 9 TO 7.
4. APPLY SIGNAL AT TERM. 10 & 12.

MTL:	TOL: .X = ± .02" .XX = ± .01 .XXX = ± .005" FRAC. = ± 1/64" ANGLES = ± 1/2°	REL. TO MFG. PR.ENG: AF 9/28/95 MFG: WM 8/27/95 DOC.REL: GFS 8/21/95 ENG: S.T. 6/6/91 APP: W.W. 5/9/91	ENG. CTL. DWN: REW 4/25/89 CHK: WmH 4/19/91	LAMBDA EMI An Inmeys company
FIN:	P/L: 473			TITLE: SCHEM. MAIN EMS SWITCHER P/S 1KW & 600W
	SCALE: NONE	P1473001		DWG. NO. 01–473–001 REV. BA

1KW & 600W SHEET 1 OF 14

APPLICATION			LTR	E.C.O. NO.	BY	APP.
USED ON	NEXT ASSY.	QTY.				
				SEE PAGE ONE		

INPUT:
DEPENDENT UPON MODEL
90–110VAC, 105–125VAC, OR 190–250VAC
50/60Hz.



FOR VOLTAGE CHANNEL PROG.: 0–5V OR 0–10V

1. REMOVE JUMPER LINKS 3 TO 4 & 4 TO 5
2. ADD JUMPER FROM 5 TO 6. (0–10V ONLY)
3. ADD JUMPER FROM 3 TO 7.
4. APPLY SIGNAL AT TERMINAL 4 & 7.

FOR CURRENT CHANNEL PROG.: 0–100MV, 0–5V OR 0–10V

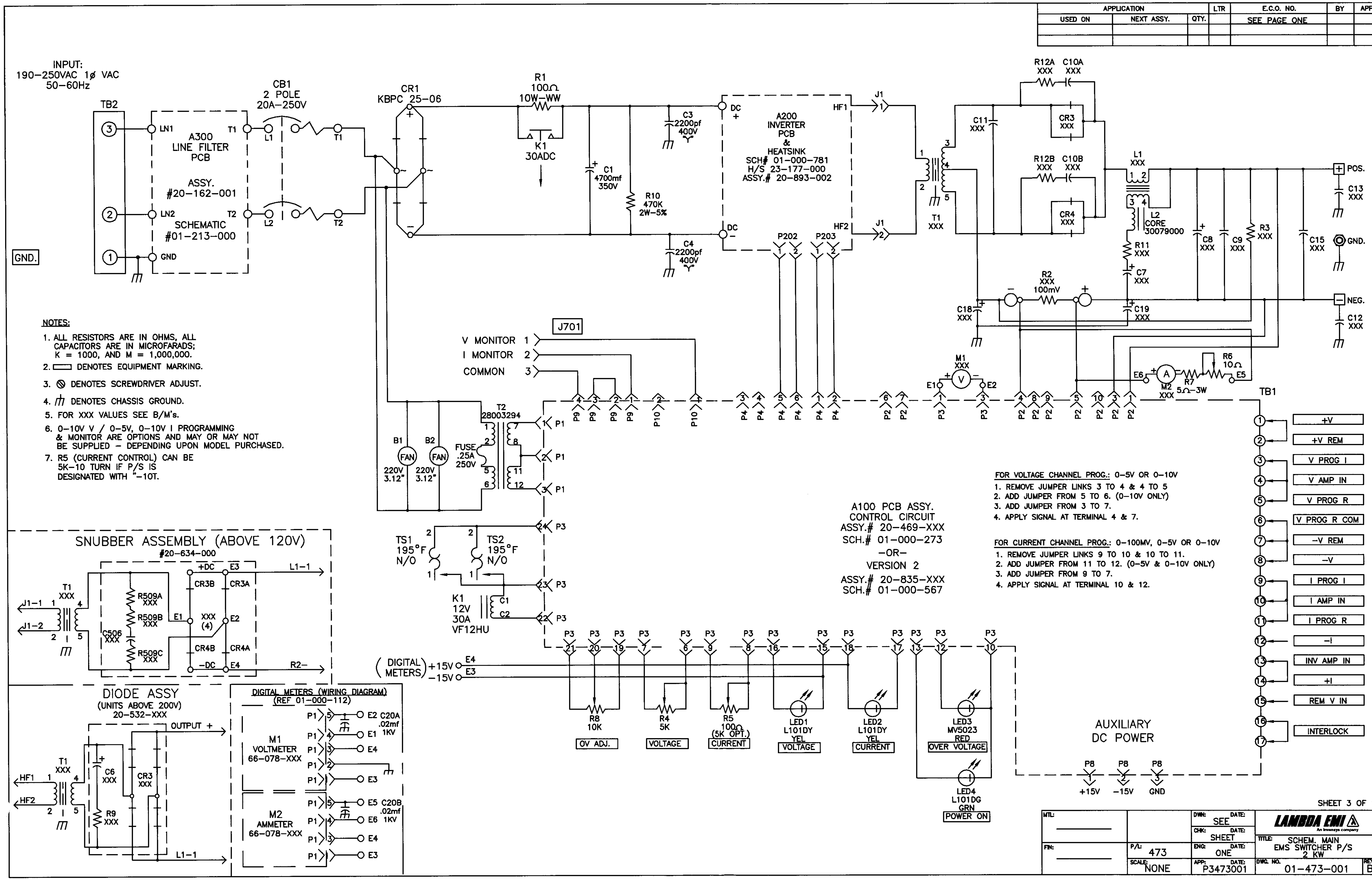
1. REMOVE JUMPER LINKS 9 TO 10 & 10 TO 11.
2. ADD JUMPER FROM 11 TO 12. (0–5V & 0–10V ONLY)
3. ADD JUMPER FROM 9 TO 7.
4. APPLY SIGNAL AT TERMINAL 10 & 12.

NOTES:

1. ALL RESISTORS ARE IN OHMS, ALL CAPACITORS ARE IN MICROFARADS; K = 1000, AND M = 1,000,000.
2. ▭ DENOTES EQUIPMENT MARKING.
3. ⊘ DENOTES SCREWDRIVER ADJUST.
4. ⏚ DENOTES CHASSIS GROUND.
5. FOR XXX VALUES SEE B/M's.
6. 0–10V V / 0–5V, 0–10V I PROGRAMMING & MONITOR ARE OPTIONS AND MAY OR MAY NOT BE SUPPLIED – DEPENDING UPON MODEL PURCHASED.
7. R5 (CURRENT CONTROL) CAN BE 5K–10 TURN IF P/S IS DESIGNATED WITH "–10T.
8. INPUT –1 = 105–125VAC
   –2 = 190–250VAC
   –6 = 90–110VAC

SHT. 2 OF 14

MTL:		PRJ. ENG.: DATE:	DWN: SEE DATE:	LAMBDA EMI An Inverspec company	
		MFG.: DATE:	CHK: PAGE DATE:	TITLE: SCHEM. MAIN EMS SWITCHER P/S 600-1/600-1.6 (STD)	
FIN:	P/L: 473	DOC. REL.: DATE:	ENG: ONE DATE:		
	SCALE: NONE	P2473001	APP: DATE:	DWG. NO. 01-473-001	REV. BA



APPLICATION
USED ON
NEXT ASSY.
QTY.
LTR
E.C.O. NO.
BY
APP.
SEE PAGE ONE
INPUT:
190–250VAC 1ø VAC
50–60Hz
TB2
GND.
A300
LINE FILTER
PCB
ASSY.
#20–162–001
SCHEMATIC
#01–213–000
LN1
LN2
GND
T1
T2
CB1
2 POLE
20A–250V
CR1
KBPC 25–06
R1
100Ω
10W–WW
K1
30ADC
C1
4700mf
350V
R10
470K
2W–5%
C3
2200pf
400V
"Y"
C4
2200pf
400V
"Y"
A200
INVERTER
PCB
&
HEATSINK
SCH# 01–000–781
H/S 23–177–000
ASSY.# 20–893–002
HF1
HF2
P202
P203
J1
T1
XXX
C11
XXX
R12A XXX
C10A XXX
CR3 XXX
R12B XXX
C10B XXX
CR4 XXX
L1 XXX
L2
CORE
30079000
R11 XXX
C7 XXX
C8 XXX
C9 XXX
R3 XXX
C15 XXX
C13 XXX
C12 XXX
POS.
GND.
NEG.
R2
XXX
100mV
C18 XXX
C19 XXX
M1 XXX
M2 XXX
R6
10Ω
R7
5Ω–3W
E1
E2
E5
E6
TB1
J701
V MONITOR 1
I MONITOR 2
COMMON 3
NOTES:
1. ALL RESISTORS ARE IN OHMS, ALL CAPACITORS ARE IN MICROFARADS; K = 1000, AND M = 1,000,000.
2. DENOTES EQUIPMENT MARKING.
3. DENOTES SCREWDRIVER ADJUST.
4. DENOTES CHASSIS GROUND.
5. FOR XXX VALUES SEE B/M's.
6. 0–10V V / 0–5V, 0–10V I PROGRAMMING & MONITOR ARE OPTIONS AND MAY OR MAY NOT BE SUPPLIED – DEPENDING UPON MODEL PURCHASED.
7. R5 (CURRENT CONTROL) CAN BE 5K–10 TURN IF P/S IS DESIGNATED WITH "–10T.
T2
28003294
B1
FAN
220V
3.12"
B2
FAN
220V
3.12"
FUSE
.25A
250V
TS1
195°F
N/O
TS2
195°F
N/O
K1
12V
30A
VF12HU
A100 PCB ASSY.
CONTROL CIRCUIT
ASSY.# 20–469–XXX
SCH.# 01–000–273
–OR–
VERSION 2
ASSY.# 20–835–XXX
SCH.# 01–000–567
FOR VOLTAGE CHANNEL PROG.: 0–5V OR 0–10V
1. REMOVE JUMPER LINKS 3 TO 4 & 4 TO 5
2. ADD JUMPER FROM 5 TO 6. (0–10V ONLY)
3. ADD JUMPER FROM 3 TO 7.
4. APPLY SIGNAL AT TERMINAL 4 & 7.
FOR CURRENT CHANNEL PROG.: 0–100MV, 0–5V OR 0–10V
1. REMOVE JUMPER LINKS 9 TO 10 & 10 TO 11.
2. ADD JUMPER FROM 11 TO 12. (0–5V & 0–10V ONLY)
3. ADD JUMPER FROM 9 TO 7.
4. APPLY SIGNAL AT TERMINAL 10 & 12.
+V
+V REM
V PROG I
V AMP IN
V PROG R
V PROG R COM
–V REM
–V
I PROG I
I AMP IN
I PROG R
–I
INV AMP IN
+I
REM V IN
INTERLOCK
SNUBBER ASSEMBLY (ABOVE 120V)
#20–634–000
R509A XXX
R509B XXX
R509C XXX
C506 XXX
CR3B
CR3A
CR4B
CR4A
XXX (4)
+DC
–DC
E3
E4
L1–1
R2–
J1–1
J1–2
DIODE ASSY
(UNITS ABOVE 200V)
20–532–XXX
OUTPUT +
HF1
HF2
C6 XXX
CR3 XXX
R9 XXX
DIGITAL METERS (WIRING DIAGRAM)
(REF 01–000–112)
M1
VOLTMETER
66–078–XXX
M2
AMMETER
66–078–XXX
C20A
.02mf
1KV
C20B
.02mf
1KV
DIGITAL METERS
+15V
–15V
R8
10K
OV ADJ.
R4
5K
VOLTAGE
R5
100Ω
(5K OPT.)
CURRENT
LED1
L101DY
YEL
VOLTAGE
LED2
L101DY
YEL
CURRENT
LED3
MV5023
RED
OVER VOLTAGE
LED4
L101DG
GRN
POWER ON
AUXILIARY
DC POWER
P8
+15V
–15V
GND
SHEET 3 OF 14
MTL:
FIN:
DWN: SEE
CHK: SHEET
ENG: ONE
APP: P3473001
P/L 473
SCALE: NONE
LAMBDA EMI
An Invensys company
TITLE: SCHEM. MAIN EMS SWITCHER P/S 2 KW
DWG. NO. 01–473–001
REV. BA

APPLICATION			LTR	E.C.O. NO.	BY	APP.
USED ON	NEXT ASSY.	QTY.	–	SEE PAGE ONE	–	

INPUT:
190–253 1ø VAC
50–60Hz

GND.

TB2

CB1
2 POLE
20A–250V

A300
LINE FILTER
PCB

ASSY.
#20–162–001

SCHEM
01–213–000

LN1 LN2 GND P301 P302 T1 T2 L1 L2

CR1
KBPC 35–08

R1
100Ω
10W–WW

K1
30ADC

R10
470K
2W–5%

C1
4700mf
350V

C3
2200pf
400V

C4
2200pf
400V

A200
INVERTER
PCB
&
HEATSINK
SCH# 01–000–781
H/S# 23–177–000
ASSY.# 20–893–002

DC + DC – HF1 HF2 J1 J1

T1
XXX

HIGH VOLTAGE
BRIDGE AND SNUBBER CURCUIT
(SEE INSERT BELOW)

+DC –DC

L1
XXX

R2
XXX
100mV

A800 PCB
(20–488–XXX)

E1 E2 E3 E4 E5 E6 E7

C8A XXX
C8B XXX
C8C XXX
C8D XXX
R11 XXX
R12 XXX
R13 XXX
R14 XXX
R15 XXX
R16 XXX
R17 XXX
C20 XXX

POS.
GND.
NEG.
C13 XXX
C12 XXX

P202 P203

J701

V MONITOR 1
I MONITOR 2
COMMON 3

M1
XXX

M2
XXX

R6
10Ω

R7
5Ω–3W

TB1

+V
+V REM
V PROG I
V AMP IN
V PROG R
V PROG R COM
–V REM
–V
I PROG I
I AMP IN
I PROG R
–I
INV AMP IN
+I
REM V IN
INTERLOCK

T2
28003860

B1 B2
FAN FAN
220V 3.12"
220V 3.12"

F1

TS2 195°F N/O
TS1 195°F N/O

K1
12V
30A
VF12HU
C1
C2

HI–VOLTAGE BRIDGE & OUTPUT CURCUIT.

400V

POSITIVE

CR6 MUR1560 (x4)
CR7 MUR1560 (x4)
C14 2000pf 500V
C15 2000pf 500V
R14 125Ω 10W
R15 125Ω 10W

TO CHOKE

600V

POSITIVE

CR5 MUR1560 (x4)
CR6 MUR1560 (x4)
CR7 MUR1560 (x4)
C13 2000pf 500V
C14 2000pf 500V
C15 2000pf 500V
R13 125Ω 10W
R14 125Ω 10W
R15 125Ω 10W

TO CHOKE

DIGITAL METERS (WIRING DIAGRAM)
(REF 01–000–112)

M1
VOLTMETER
66–078–XXX

M2
AMMETER
66–078–XXX

C20A .02mf 1KV
C20B .02mf 1KV

DIGITAL METERS +15V E4
–15V E3

R4
5K
VOLTAGE

R5
100Ω
5K OPTIONAL
CURRENT

LED1
YEL
VOLTAGE

LED2
YEL
CURRENT

LED4
GRN
POWER ON

AUXILIARY
DC POWER

P8 P8 P8
+15V –15V GND

A100 PCB ASSY.
CONTROL CIRCUIT
ASSY.#20–554–019
SCH#01–000–328
–OR–
VERSION 2
ASSY.# 20–835–XXX
SCH# 01–000–567

FOR VOLTAGE CHANNEL PROG.: 0–5V OR 0–10V
1. REMOVE JUMPER LINKS 3 TO 4 & 4 TO 5
2. ADD JUMPER FROM 5 TO 6. (0–10V ONLY)
3. ADD JUMPER FROM 3 TO 7.
4. APPLY SIGNAL AT TERMINAL 4 & 7.

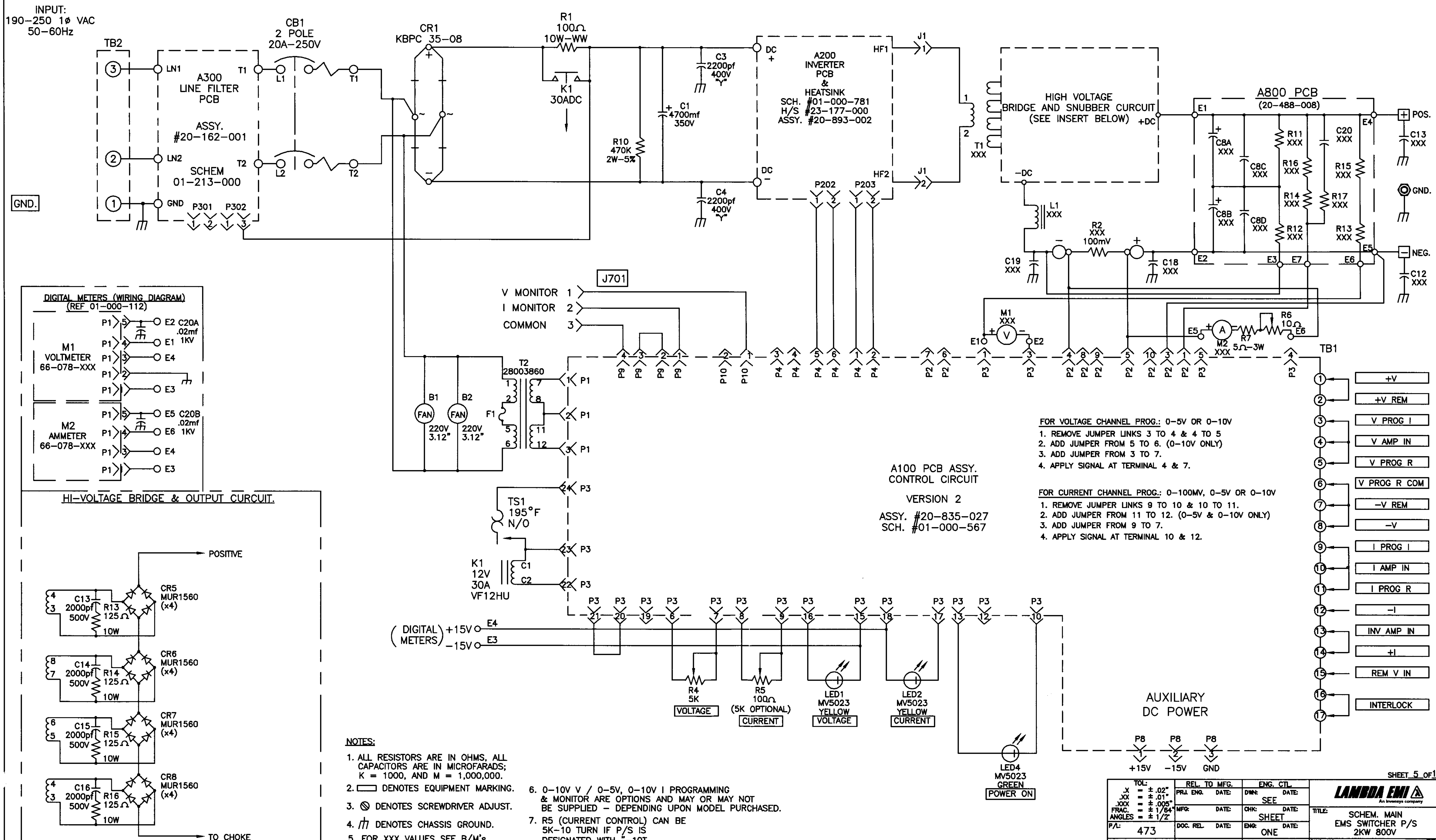
FOR CURRENT CHANNEL PROG.: 0–100MV, 0–5V OR 0–10V
1. REMOVE JUMPER LINKS 9 TO 10 & 10 TO 11.
2. ADD JUMPER FROM 11 TO 12. (0–5V & 0–10V ONLY)
3. ADD JUMPER FROM 9 TO 7.
4. APPLY SIGNAL AT TERMINAL 10 & 12.

NOTES:
1. ALL RESISTORS ARE IN OHMS, ALL CAPACITORS ARE IN MICROFARADS; K = 1000, AND M = 1,000,000.
2. ▭ DENOTES EQUIPMENT MARKING.
3. ⊘ DENOTES SCREWDRIVER ADJUST.
4. ⏚ DENOTES CHASSIS GROUND.
5. FOR XXX VALUES SEE B/M's.
6. 0–10V V / 0–5V, 0–10V I PROGRAMMING & MONITOR ARE OPTIONS AND MAY OR MAY NOT BE SUPPLIED – DEPENDING UPON MODEL PURCHASED.
7. R5 (CURRENT CONTROL) CAN BE 5K–10 TURN IF P/S IS DESIGNATED WITH "–10T.

MTL:		DWN: SEE DATE:	LAMBDA EMI An Ametek company
		CHK: PAGE DATE:	TITLE: SCHEM. MAIN EMS SWITCHER P/S 2 KW 400/600V (STD)
FIN:	P/L: 473	ENG: ONE DATE:	
	SCALE: NONE	APP: P4473001 DATE:	DWG. NO. 01–473–001 REV. BA

THIS IS A COMPUTER GENERATED DWG.
NO MANUAL REVISIONS ARE PERMITTED.

APPLICATION			LTR	E.C.O. NO.	BY	APP.
USED ON	NEXT ASSY.	QTY.		SEE SHT. ONE		



INPUT:
190–250 1ø VAC
50–60Hz
TB2
GND.
A300
LINE FILTER
PCB
ASSY.
#20-162-001
SCHEM
01-213-000
LN1
LN2
GND
T1
T2
P301
P302
CB1
2 POLE
20A–250V
CR1
KBPC 35-08
R1
100Ω
10W–WW
K1
30ADC
R10
470K
2W–5%
C1
4700mf
350V
C3
2200pf
400V
"Y"
C4
2200pf
400V
"Y"
A200
INVERTER
PCB
&
HEATSINK
SCH. #01-000-781
H/S #23-177-000
ASSY. #20-893-002
HF1
HF2
DC
P202
P203
J1
T1
XXX
HIGH VOLTAGE
BRIDGE AND SNUBBER CURCUIT
(SEE INSERT BELOW)
+DC
-DC
L1
XXX
R2
XXX
100mV
C19
XXX
C18
XXX
A800 PCB
(20-488-008)
C8A
XXX
C8B
XXX
C8C
XXX
C8D
XXX
R11
XXX
R16
XXX
R14
XXX
R12
XXX
C20
XXX
R15
XXX
R17
XXX
R13
XXX
C13
XXX
C12
XXX
POS.
GND.
NEG.
J701
V MONITOR 1
I MONITOR 2
COMMON 3
M1
XXX
M2
XXX
R6
10Ω
R7
5Ω–3W
TB1
+V
+V REM
V PROG I
V AMP IN
V PROG R
V PROG R COM
–V REM
–V
I PROG I
I AMP IN
I PROG R
–I
INV AMP IN
+I
REM V IN
INTERLOCK
T2
28003860
B1
B2
FAN
220V
3.12"
F1
TS1
195°F
N/O
K1
12V
30A
VF12HU
A100 PCB ASSY.
CONTROL CIRCUIT
VERSION 2
ASSY. #20-835-027
SCH. #01-000-567
DIGITAL METERS
+15V
–15V
R4
5K
VOLTAGE
R5
100Ω
(5K OPTIONAL)
CURRENT
LED1
MV5023
YELLOW
VOLTAGE
LED2
MV5023
YELLOW
CURRENT
LED4
MV5023
GREEN
POWER ON
AUXILIARY
DC POWER
P8
+15V
–15V
GND
DIGITAL METERS (WIRING DIAGRAM)
(REF 01-000-112)
M1
VOLTMETER
66-078-XXX
M2
AMMETER
66-078-XXX
C20A
.02mf
1KV
C20B
.02mf
1KV
HI-VOLTAGE BRIDGE & OUTPUT CURCUIT.
POSITIVE
CR5
MUR1560
(x4)
CR6
MUR1560
(x4)
CR7
MUR1560
(x4)
CR8
MUR1560
(x4)
C13
2000pf
500V
R13
125Ω
10W
C14
2000pf
500V
R14
125Ω
10W
C15
2000pf
500V
R15
125Ω
10W
C16
2000pf
500V
R16
125Ω
10W
TO CHOKE

FOR VOLTAGE CHANNEL PROG.: 0–5V OR 0–10V

1. REMOVE JUMPER LINKS 3 TO 4 & 4 TO 5
2. ADD JUMPER FROM 5 TO 6. (0–10V ONLY)
3. ADD JUMPER FROM 3 TO 7.
4. APPLY SIGNAL AT TERMINAL 4 & 7.

FOR CURRENT CHANNEL PROG.: 0–100MV, 0–5V OR 0–10V

1. REMOVE JUMPER LINKS 9 TO 10 & 10 TO 11.
2. ADD JUMPER FROM 11 TO 12. (0–5V & 0–10V ONLY)
3. ADD JUMPER FROM 9 TO 7.
4. APPLY SIGNAL AT TERMINAL 10 & 12.

NOTES:

1. ALL RESISTORS ARE IN OHMS, ALL CAPACITORS ARE IN MICROFARADS; K = 1000, AND M = 1,000,000.
2. ▭ DENOTES EQUIPMENT MARKING.
3. ⊘ DENOTES SCREWDRIVER ADJUST.
4. ⏚ DENOTES CHASSIS GROUND.
5. FOR XXX VALUES SEE B/M's.
6. 0–10V V / 0–5V, 0–10V I PROGRAMMING & MONITOR ARE OPTIONS AND MAY OR MAY NOT BE SUPPLIED – DEPENDING UPON MODEL PURCHASED.
7. R5 (CURRENT CONTROL) CAN BE 5K–10 TURN IF P/S IS DESIGNATED WITH "–10T.

SHEET 5 OF 14

TOL: .X = ±.02" .XX = ±.01" .XXX = ±.005" FRAC. = ±1/64" ANGLES = ±1/2°	REL. TO MFG. PRJ. ENG. DATE: / MFG: DATE:	ENG. CTL. DWN: SEE DATE: / CHK: SHEET DATE:	LAMBDA EMI An Invensys company
P/L: 473	DOC. REL. DATE:	ENG: ONE DATE:	TITLE: SCHEM. MAIN EMS SWITCHER P/S 2KW 800V
SCALE: NONE	DO NOT SCALE DWG.	APP: P5473001	DWG. NO. 01-473-001 REV. BA

APPLICATION			LTR	E.C.O. NO.	BY	APP.
USED ON	NEXT ASSY.	QTY.				
				SEE PAGE ONE		

INPUT:
190–250 VAC
50–60Hz

A
B
C
GND.
1Ø
3Ø

TB2

A300
LINE FILTER
PCB
ASSY.
#20–314–000
SCHEM.
#01–168–000

LN1 LN2 LN3 GND
T1 T2 T3
P301 P302

CB1
3POLE
20A–250V
L1 L2 L3

CR1 KBPC 25–06
CR2 KBPC 25–06

R1
100Ω
10W–WW

K1
30ADC

C1
4700mf
350V

R10
470K
2W–5%

C3
2200pf
400V

C4
2200pf
400V

A200
INVERTER
PCB
&
HEATSINK
SCH #01–000–781
H/S #23–177–000
ASSY. #20–893–002

DC +
DC –
HF1
HF2
J1
P202
P203

T1
XXX

R12A C10A
XXX XXX
CR3
XXX
R12B C10B
XXX XXX
CR4
XXX
C11
XXX

L1
XXX
L2
CORE
30079000

C8
XXX
C9
XXX
R3
XXX
C15
XXX
R11
XXX
C7
XXX

POS.
GND.
NEG.
C13
XXX
C12
XXX

R2
XXX
100mV
C18
XXX
C19
XXX

M1
XXX
C20
XXX
E1 E2

M2
XXX
R6
10Ω
R7
5Ω–3W
E5 E6

V MONITOR 1
I MONITOR 2
COMMON 3
J701

T2
28003294
P1

B1 B2
FAN FAN
220V
3.12"
FUSE
.25A
250V

TS1
195°F
N/O
TS2
195°F
N/O

K1
12V
30A
VF12HU
C1
C2

P3

TB1
+V
+V REM
V PROG I
V AMP IN
V PROG R
V PROG R COM
–V REM
–V
I PROG I
I AMP IN
I PROG R
–I
INV AMP IN
+I
REM V IN
INTERLOCK

A100 PCB ASSY.
CONTROL CIRCUIT
ASSY.# 20–469–XXX
SCHEM. 01–000–273
–OR–
VERSION 2
ASSY.# 20–835–XXX
SCHEM. 01–000–567

FOR VOLTAGE CHANNEL PROG.: 0–5V OR 0–10V
1. REMOVE JUMPER LINKS 3 TO 4 & 4 TO 5
2. ADD JUMPER FROM 5 TO 6. (0–10V ONLY)
3. ADD JUMPER FROM 3 TO 7.
4. APPLY SIGNAL AT TERMINAL 4 & 7.

FOR CURRENT CHANNEL PROG.: 0–100MV, 0–5V OR 0–10V
1. REMOVE JUMPER LINKS 9 TO 10 & 10 TO 11.
2. ADD JUMPER FROM 11 TO 12. (0–5V & 0–10V ONLY)
3. ADD JUMPER FROM 9 TO 7.
4. APPLY SIGNAL AT TERMINAL 10 & 12.

SNUBBER ASSEMBLY (ABOVE 120V)
#20–634–000

E1 E2 E3 E4
+DC –DC
CR3B CR3A CR4B CR4A
R509A R509B R509C
XXX
(4)
C506
XXX
L1–1
R2–
J1–1 J1–2

DIODE ASSY
(UNITS ABOVE 200V)
20–532–XXX
OUTPUT +
C6
XXX
R9
XXX
CR3
XXX
L1–1

DIGITAL METERS (WIRING DIAGRAM)
(REF 01–000–112)
M1
VOLTMETER
66–078–XXX
M2
AMMETER
66–078–XXX
C20A .02mf 1KV
C20B .02mf 1KV

(DIGITAL METERS) +15V –15V
E4 E3

R8 10K OV ADJ.
R4 5K VOLTAGE
R5 100Ω (5K OPTIONAL) CURRENT
LED1 L101DY YEL VOLTAGE
LED2 L101DY YEL CURRENT
LED3 MV5023 RED OVER VOLTAGE
LED4 L101DG GRN POWER ON

AUXILIARY
DC POWER
P8
+15V –15V GND

NOTES:
1. ALL RESISTORS ARE IN OHMS, ALL CAPACITORS ARE IN MICROFARADS; K = 1000, AND M = 1,000,000.
2. ▭ DENOTES EQUIPMENT MARKING.
3. ⊘ DENOTES SCREWDRIVER ADJUST.
4. ⏚ DENOTES CHASSIS GROUND.
5. FOR XXX VALUES SEE B/M's.
6. 0–10V V / 0–5V, 0–10V I PROGRAMMING & MONITOR ARE OPTIONS AND MAY OR MAY NOT BE SUPPLIED – DEPENDING UPON MODEL PURCHASED.
7. R5 (CURRENT CONTROL) CAN BE 5K–10 TURN IF P/S IS DESIGNATED WITH "–10T.

SHEET 6 OF 14

MTL:		DWN: SEE DATE:	LAMBDA EMI An Invensys company
		CHK: SHEET DATE:	TITLE: SCHEM. MAIN EMS SWITCHER P/S 2.5 KW
FIN:	P/L: 473	ENG: ONE DATE:	
	SCALE: NONE	APP: P6473001 DATE:	DWG. NO. 01–473–001 REV. BA

THIS IS A COMPUTER GENERATED DWG.
NO MANUAL REVISIONS ARE PERMITTED.

APPLICATION			LTR	E.C.O. NO.	BY	APP.
USED ON	NEXT ASSY.	QTY.	—	SEE PAGE ONE	—	

INPUT:
190–250 VAC
50–60Hz

A
B
C
GND.
1Ø
3Ø

TB2

A300
LINE FILTER
PCB
ASSY.
#20–314–000
SCHEM.
#01–168–000

LN1 LN2 LN3 GND
T1 T2 T3

CB1
3POLE
20A–250V
L1 L2 L3

CR1 KBPC 25–06
CR2 KBPC 25–06

R1
100Ω
10W–WW

K1
30ADC

C1
4700mf
350V

R10
470K
2W–5%

C3
2200pf
400V

C4
2200pf
400V

A200
INVERTER
PCB
&
HEATSINK
SCH #01–000–781
H/S #23–177–000
ASSY. #20–893–002

DC +
DC –
HF1
HF2
J1
P202
P203

T1
XXX

HIGH VOLTAGE
BRIDGE AND SNUBBER CURCUIT
(SEE INSERT BELOW)
+DC
–DC

L1
XXX

R2
XXX
100mV

A800 PCB
(20–488–XXX)

E1 E2 E3 E4 E5 E6 E7

C8A XXX
C8B XXX
C8C XXX
C8D XXX

R11 XXX
R12 XXX
R13 XXX
R14 XXX
R15 XXX
R16 XXX
R17 XXX

C20 XXX

POS.
GND.
NEG.
C13 XXX
C12 XXX

P301 P302

V MONITOR 1
I MONITOR 2
COMMON 3
J701

M1
XXX
E1 E2

M2
XXX
5Ω–3W
R6
10Ω
R7
E5 E6

TB1

T2
28003294

B1 B2
FAN FAN
220V 3.12"
220V 3.12"

FUSE
.25A
250V

TS1
195°F
N/O

TS2
195°F
N/O

K1
12V
30A
VF12HU
C1
C2

P1 P2 P3 P4 P8 P9 P10

(DIGITAL METERS) +15V E4
–15V E3

R4
5K
VOLTAGE

R5
100Ω
(5K OPTIONAL)
CURRENT

LED1
MV5023
YEL
VOLTAGE

LED2
MV5023
YEL
CURRENT

LED4
MV5023
GRN
POWER ON

AUXILIARY
DC POWER
P8
+15V –15V GND

TB1
1 +V
2 +V REM
3 V PROG I
4 V AMP IN
5 V PROG R
6 V PROG R COM
7 –V REM
8 –V
9 I PROG I
10 I AMP IN
11 I PROG R
12 –I
13 INV AMP IN
14 +I
15 REM V IN
16 INTERLOCK
17

FOR VOLTAGE CHANNEL PROG.: 0–5V OR 0–10V
1. REMOVE JUMPER LINKS 3 TO 4 & 4 TO 5
2. ADD JUMPER FROM 5 TO 6. (0–10V ONLY)
3. ADD JUMPER FROM 3 TO 7.
4. APPLY SIGNAL AT TERMINAL 4 & 7.

FOR CURRENT CHANNEL PROG.: 0–100MV, 0–5V OR 0–10V
1. REMOVE JUMPER LINKS 9 TO 10 & 10 TO 11.
2. ADD JUMPER FROM 11 TO 12. (0–5V & 0–10V ONLY)
3. ADD JUMPER FROM 9 TO 7.
4. APPLY SIGNAL AT TERMINAL 10 & 12.

A100 PCB ASSY.
CONTROL CIRCUIT
ASSY. #20–554–019
SCHEM. # 01–000–328
–OR–
ASSY. #20–835–XXX
SCH. #01–000–567

HI–VOLTAGE BRIDGE & OUTPUT CURCUIT.

400V

POSITIVE
CR6 MUR1560 (x4)
C14 2000pf 500V
R14 125Ω NI 10W
CR7 MUR1560 (x4)
C15 2000pf 500V
R15 125Ω NI 10W
TO CHOKE

600V

POSITIVE
CR5 MUR1560 (x4)
C13 2000pf 500V
R13 125Ω NI 10W
CR6 MUR1560 (x4)
C14 2000pf 500V
R14 125Ω NI 10W
CR7 MUR1560 (x4)
C15 2000pf 500V
R15 125Ω NI 10W
TO CHOKE

DIGITAL METERS (WIRING DIAGRAM)
(REF 01–000–112)

M1
VOLTMETER
66–078–XXX

M2
AMMETER
66–078–XXX

E2 C20A .02mf 1KV
E1
E4
E3
E5 C20B .02mf 1KV
E6
E4
E3

NOTES:
1. ALL RESISTORS ARE IN OHMS, ALL CAPACITORS ARE IN MICROFARADS; K = 1000, AND M = 1,000,000.
2. ▭ DENOTES EQUIPMENT MARKING.
3. ⊘ DENOTES SCREWDRIVER ADJUST.
4. ⏚ DENOTES CHASSIS GROUND.
5. FOR XXX VALUES SEE B/M's.
6. 0–10V V / 0–5V, 0–10V I PROGRAMMING & MONITOR ARE OPTIONS AND MAY OR MAY NOT BE SUPPLIED – DEPENDING UPON MODEL PURCHASED.
7. R5 (CURRENT CONTROL) CAN BE 5K–10 TURN IF P/S IS DESIGNATED WITH "–10T.

SHEET 7 OF 14

MTL:	TOL: .X = ± .02" .XX = ± .01" .XXX = ± .005" FRAC. = ± 1/64" ANGLES = ± 1/2°	REL. TO MFG. PRJ. ENG. DATE: MFG: DATE: DOC. REL. DATE:	ENG. CTL. DWN: SEE DATE: CHK: PAGE DATE: ENG: ONE DATE:	LAMBDA EMI An Invensys company
FIN:	P/L: 473			TITLE: SCHEM. MAIN EMS SWITCHER P/S 2.5 KW 400/600V (STD)
	SCALE: NONE	DO NOT SCALE DWG.	APP: P7473001 DATE:	DWG. NO. 01–473–001 REV. BA

LTR	E.C.O. NO.	BY	APP.
	SEE SHEET ONE.		

INPUT:
190–250 VAC
50–60Hz

A
B
C
3Ø
GND.

TB2

A300
LINE FILTER
PCB
ASSY.
420–314–001
SCHEM.
#01–168–000

LN1 LN2 LN3 GND
T1 T2 T3
P301 P302

CB1
3POLE
20A–250V
L1 L2 L3

CR1 CR2 CR3
KBPC35–08
800V–35A
FWB

R1
100Ω
10W–WW
K1
30ADC

C1
2.8K
350V

R10
470K
2W–5%

L202
28–003–965

L201
28–003–964

A200A
INVERTER
PCB
&
HEATSINK
SCH. #01–000–250
H/S #23–189–001
ASSY. #20–442–001
TOP ASSY
–OR–
VERSION 2
H/S #23–189–009
ASSY. #20–893–000

1DC +
1DC –
P203
P201
P202
1HF1
1HF2
J1

A200B
INVERTER
PCB
ASSY.#20–442–001
BOTTOM ASSY.
–OR–
VERSION 2
ASSY.#20–893–000

2DC +
2DC –
2HF1
2HF2
J2

T1A XXX
T1B XXX
C11A XXX
C11B XXX
CR4A XXX
CR4B XXX
R12A XXX C10A XXX
R12B XXX C10B XXX
R12C XXX C10C XXX
R12D XXX C10D XXX
C7 XXX
R11 XXX
L2 30079 000
L1A XXX
L1B XXX
R3A XXX 25W
R3B XXX 25W
C8A XXX
C8B XXX
C9 XXX
C15 TANT XXX
POS.
C13 XXX
NEG.
C12 XXX
R2 XXX
C18 XXX
C19 XXX
TB1

M1 XXX
M2 XXX
R6 10Ω
R7 5Ω–3W

T2
28003294

B1 FAN 220V 3.12"
B2 FAN 220V 3.12"
FUSE .25A 250V
C20 XXX

TS1 195°F N/O
TS2 195°F N/O

K1
12V
30A
VF12HU

(DIGITAL METERS)
+15V
–15V

THESE CABLES NOT
USED WITH
VERSION 2 PCB'S

A100 PCB ASSY.
CONTROL CIRCUIT
ASSY. #20–482–XXX
SCH. #01–000–275
–OR–
VERSION 2
ASSY. #20–837–XXX
SCH. #01–000–568

FOR VOLTAGE CHANNEL PROG.: 0–5V OR 0–10V
1. REMOVE JUMPER LINKS 3 TO 4 & 4 TO 5
2. ADD JUMPER FROM 5 TO 6. (0–10V ONLY)
3. ADD JUMPER FROM 3 TO 7.
4. APPLY SIGNAL AT TERMINAL 4 & 7.

FOR CURRENT CHANNEL PROG.: 0–100MV, 0–5V OR 0–10V
1. REMOVE JUMPER LINKS 9 TO 10 & 10 TO 11.
2. ADD JUMPER FROM 11 TO 12. (0–5V & 0–10V ONLY)
3. ADD JUMPER FROM 9 TO 7.
4. APPLY SIGNAL AT TERMINAL 10 & 12.

R8 10K — OV ADJ.
R4 5K — VOLTAGE
R5 100Ω (5K OPTIONAL) — CURRENT
LED1 L101DY YEL — VOLTAGE
LED2 L101DY YEL — CURRENT
LED3 MV5023 RED — OVER VOLTAGE
LED4 L101DG GRN — POWER ON

AUXILIARY
DC POWER
P8 P8 P8 P10 P9 P9 P9 P9
+15V –15V GND

J701
3 COMMON
2 I MONITOR
1 V MONITOR

+V
+V REM
V PROG I
V AMP IN
V PROG R
V PROG R COM
–V REM
–V
I PROG I
I AMP IN
I PROG R
–I
INV AMP IN
+I
REM V IN
INTERLOCK

SNUBBER ASSY 120V & ABOVE

#20–634–000
+DC
OUTPUT +
T1A XXX
T1B XXX
J1–1
J1–2
R509A XXX
R509B XXX
R509C XXX
C506 XXX
CR3B CR3A CR4B CR4A
XXX (4)
–DC
OUTPUT SECTION FOR ABOVE 100V
L1A–1
L1B–1

DIGITAL METERS (WIRING DIAGRAM)
(REF 01–000–112)

M1 VOLTMETER 66–078–XXX
M2 AMMETER 66–078–XXX

NOTES:
1. ALL RESISTORS ARE IN OHMS, ALL CAPACITORS ARE IN MICROFARADS; K = 1000, AND M = 1,000,000.
2. ▭ DENOTES EQUIPMENT MARKING.
3. ⊘ DENOTES SCREWDRIVER ADJUST.
4. ⏚ DENOTES CHASSIS GROUND.
5. FOR XXX VALUES SEE B/M's.
6. 0–10V V / 0–5V, 0–10V I PROGRAMMING & MONITOR ARE OPTIONS AND MAY OR MAY NOT BE SUPPLIED – DEPENDING UPON MODEL PURCHASED.
7. R5 (CURRENT CONTROL) CAN BE 5K–10 TURN IF P/S IS DESIGNATED WITH "–10T.

MTL:		DWN: SEE DATE:	LAMBDA EMI An Investcorp company
		CHK: SHEET DATE:	TITLE: SCHEMATIC, MAIN EMS SWITCHER P/S 5KW 220V 3Ø INPUT
FIN:	P/L: 473	ENG: ONE DATE:	
	SCALE: NONE	APP: P8473001 DATE:	DWG. NO. 01–473–001 REV. BA

APPLICATIONS			REVISIONS			
USED ON	NEXT ASSY	QTY	LTR	ECO NO	BY/DATE	APP/DATE
			A	ENGR CHG	9-25-91	WJW
			B	ECO # 13082	GFS 9-15-95	WJW
			C	REDRAWN/NO CHANGES	LPN 8-20-97	

NOTES:

1. UNLESS SPECIFIED, ALL RESISTORES ARE IN OHMS AND ARE 5 %, 1/4WATT CARBON FILM. (K=1,000)
2. ALL CAPACITORS ARE IN MICROFARADS. (M=1,000,000)

REF. CIRCUIT

VOLTAGE CHANNEL

AVERAGE CURRENT LIMIT CIRCUIT

CURRENT CHANNEL

REMOTE TURN-ON CIRCUIT

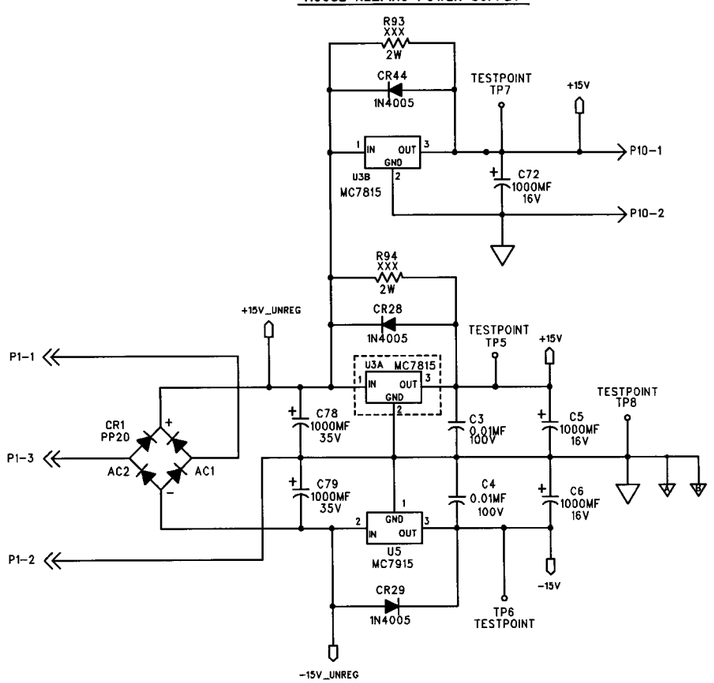
SUPERVISORY CIRCUIT

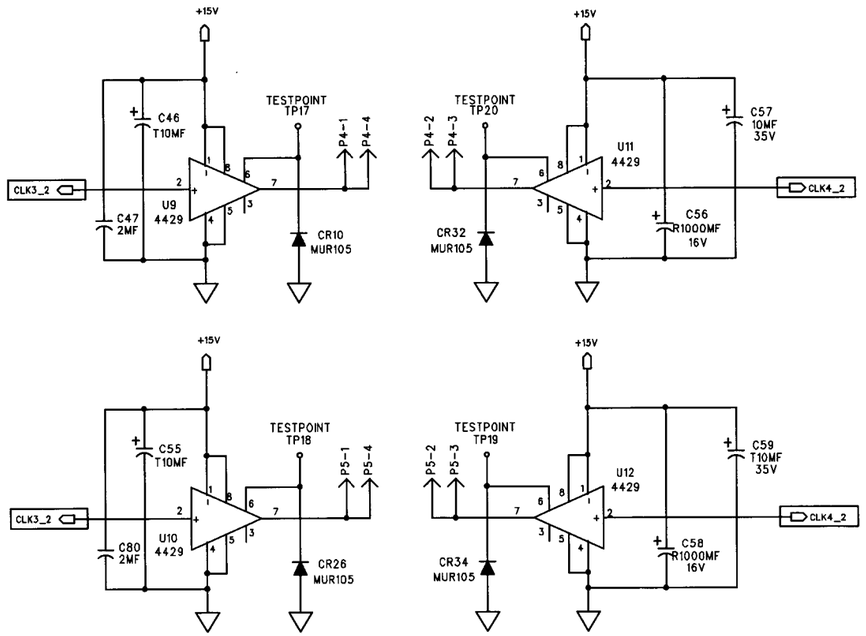
RELEASE TO MFG		ENG CONTROL		ELECTRONIC MEASUREMENTS, INC.	
PRJ.MGR:	DATE:	DWN: WM	DATE: 8-22-91	TITLE: A100 SCHEMATIC EMS 380V 5KW NEW DRIVE W/O OVP	
MFG:	DATE:	CHK: WJW	DATE: 9-9-91		
DOC.REL:	DATE:	ENG:	DATE:	PCB:	SHEET 1 OF 2
P/L:		APP:	DATE:	DRAWING NO: 01-000-386	REV. C

03-000-083

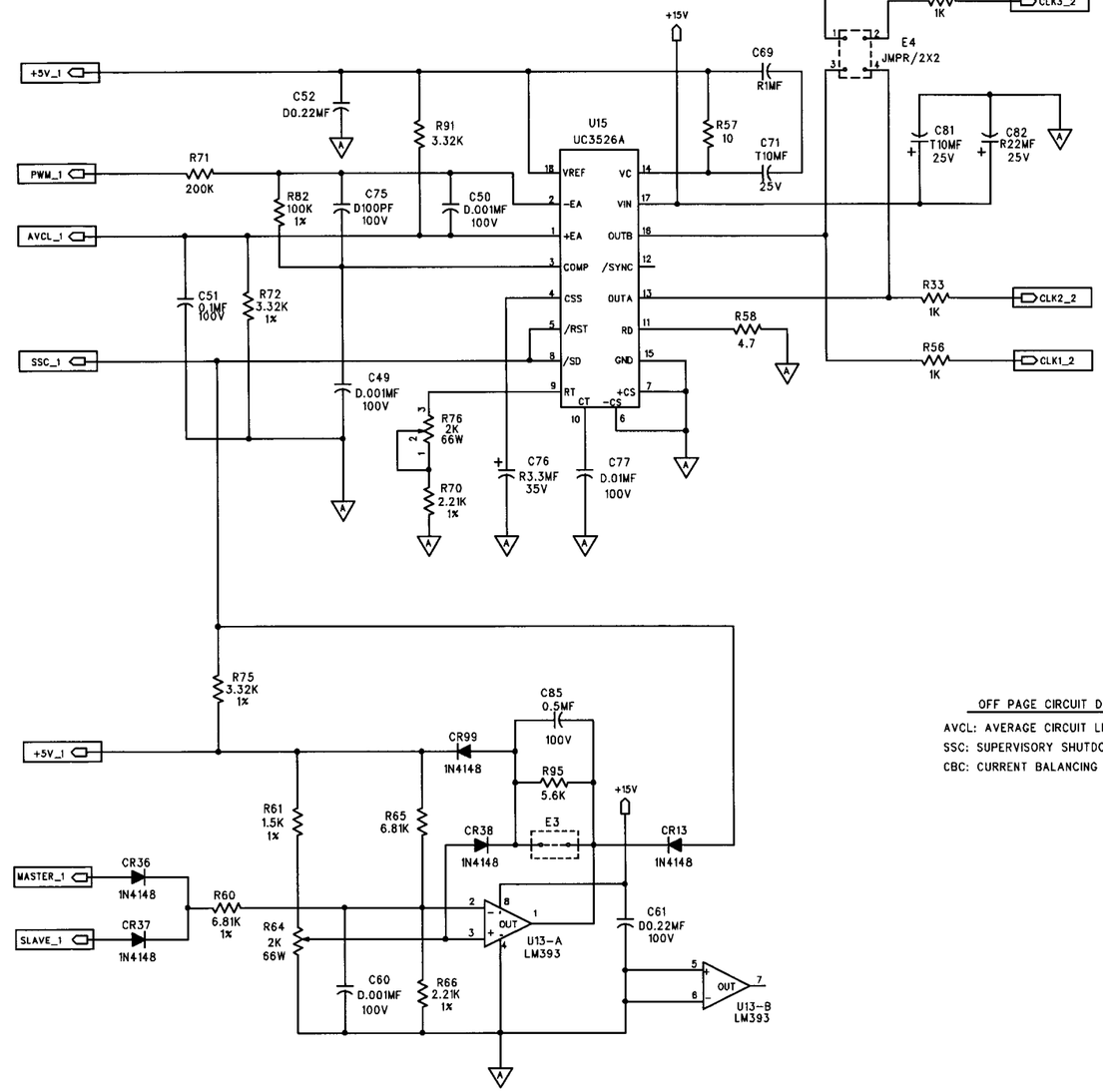
REVISIONS			
LTR	ECO NO	BY/DATE	APP/DATE
	SEE SHEET 1		

HOUSE KEEPING POWER SUPPLY





INVERTER DRIVER CIRCUIT

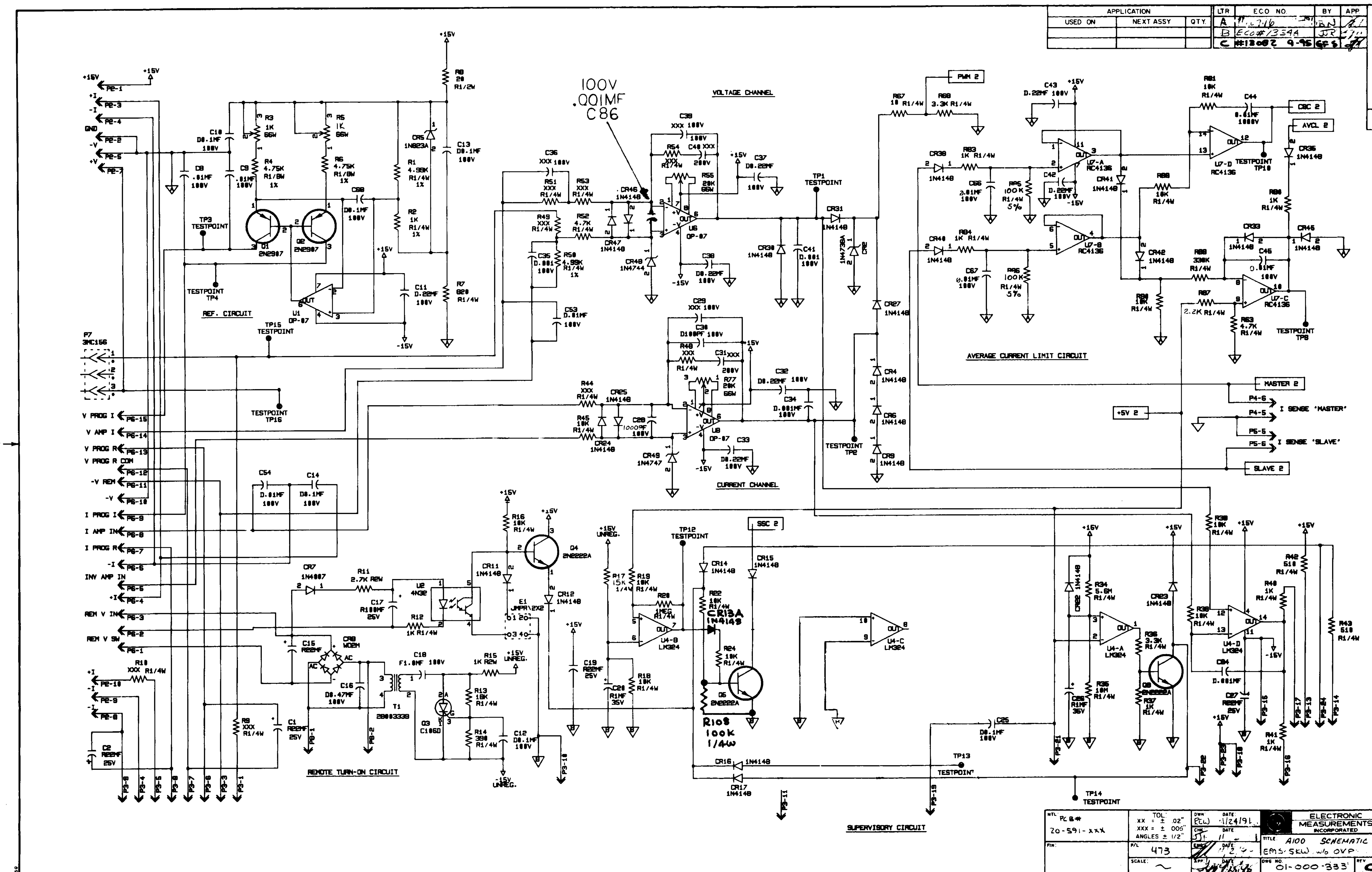


PEAK CURRENT SHUTDOWN CIRCUIT

OFF PAGE CIRCUIT DEFINITIONS

AVCL: AVERAGE CIRCUIT LIMITING CIRCUIT
SSC: SUPERVISORY SHUTDOWN CIRCUIT
CBC: CURRENT BALANCING CIRCUIT

RELEASE TO MFG		ENG CONTROL		ELECTRONIC MEASUREMENTS, INC.	
PRJ.MGR:	DATE:	DWN: WM	DATE: 8-22-91	TITLE: A100 SCHEMATIC EMS 380V 5KW NEW DRIVE W/O OVP	
MFG:	DATE:	CHK: WJW	DATE: 9-9-91		
DOC.REL:	DATE:	ENG:	DATE:	PCB:	SHEET 2 OF 2
P/L:		APP:	DATE:	DRAWING NO: 01-000-386	REV. C



APPLICATION
USED ON
NEXT ASSY
QTY.
LTR
ECO NO.
BY
APP
VOLTAGE CHANNEL
CURRENT CHANNEL
REF. CIRCUIT
AVERAGE CURRENT LIMIT CIRCUIT
REMOTE TURN-ON CIRCUIT
SUPERVISORY CIRCUIT
100V
.001MF
C86
PWM 2
CBC 2
AVCL 2
MASTER 2
SLAVE 2
SSC 2
+5V 2
I SENSE 'MASTER'
I SENSE 'SLAVE'
V PROG I
V AMP I
V PROG R
V PROG R COM
-V REM
-V
I PROG I
I AMP IN
I PROG R
-I
INV AMP IN
+I
REM V IN
REM V SW
R108
100K
1/4W
ELECTRONIC MEASUREMENTS INCORPORATED
TITLE A100 SCHEMATIC
EMS-SKW w/o OVP
DWG NO 01-000-333
REV C
P/L 473
20-591-XXX
TOL: XX = ± .02" XXX = ± .005" ANGLES ± 1/2°
DWN PCW DATE 1/24/91
SCALE ~
SHEET ___ OF ___
R S KNAPP CO

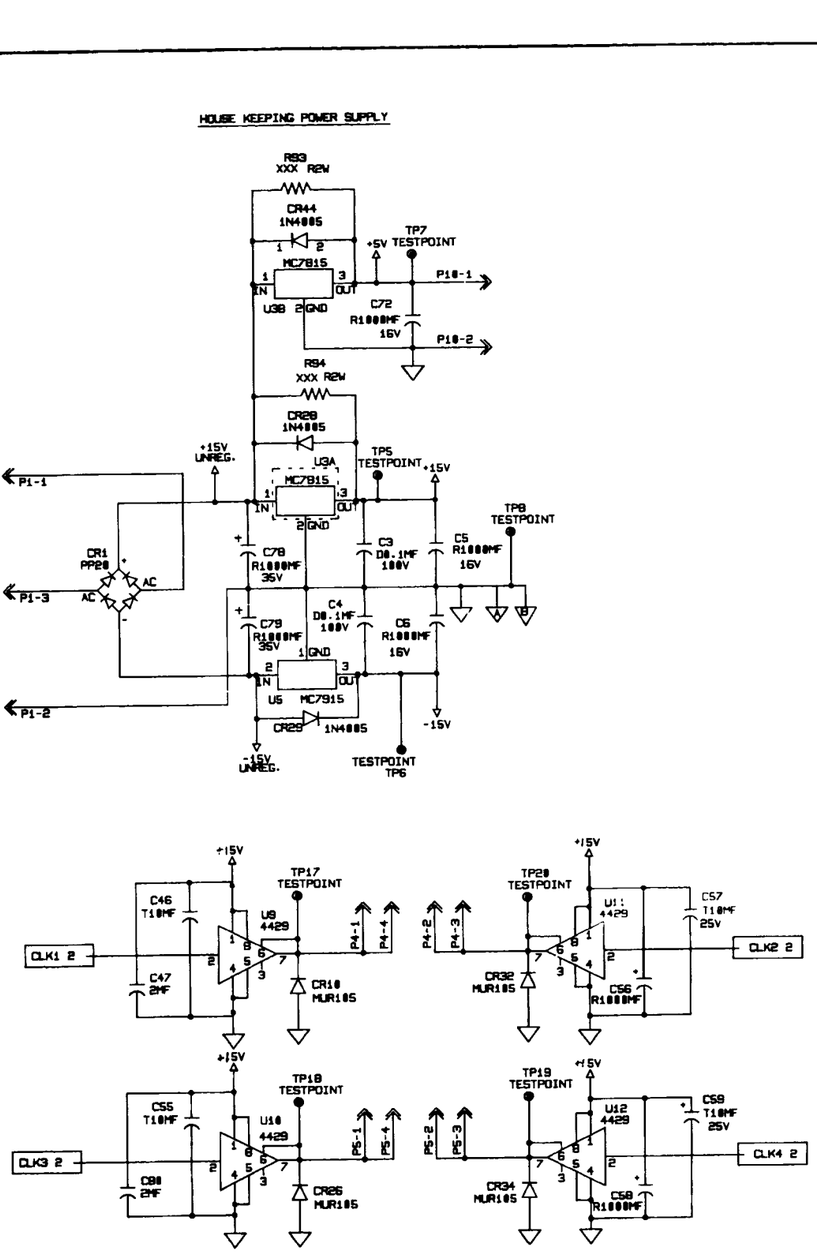
APPLICATION			LTR	E.C.O. NO.	BY	APP.
USED ON	NEXT ASSY	QTY		SEE SHEET 1		

SHEET 1

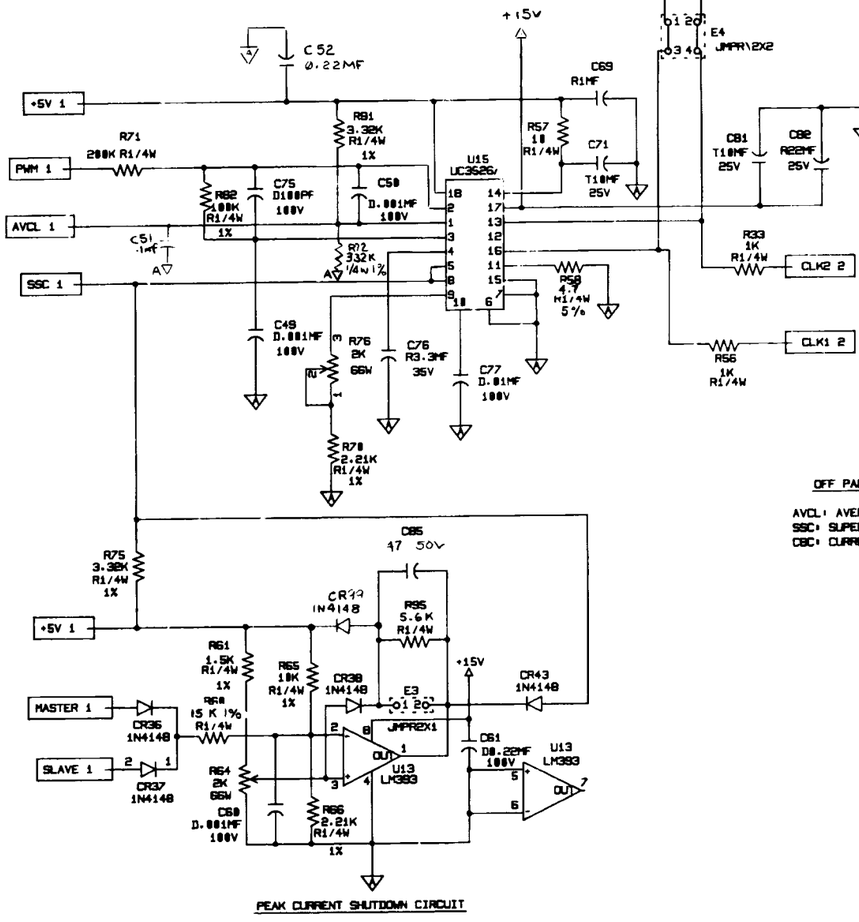
DWG NO

REV

HOUSE KEEPING POWER SUPPLY



INVERTER DRIVER CIRCUIT



PEAK CURRENT SHUTDOWN CIRCUIT

OFF PAGE CIRCUIT DEFINITIONS

AVCL: AVERAGE CURRENT LIMITING CIRCUIT
SSC: SUPERVISORY SHUTDOWN CIRCUIT
CBC: CURRENT BALANCING CIRCUIT.

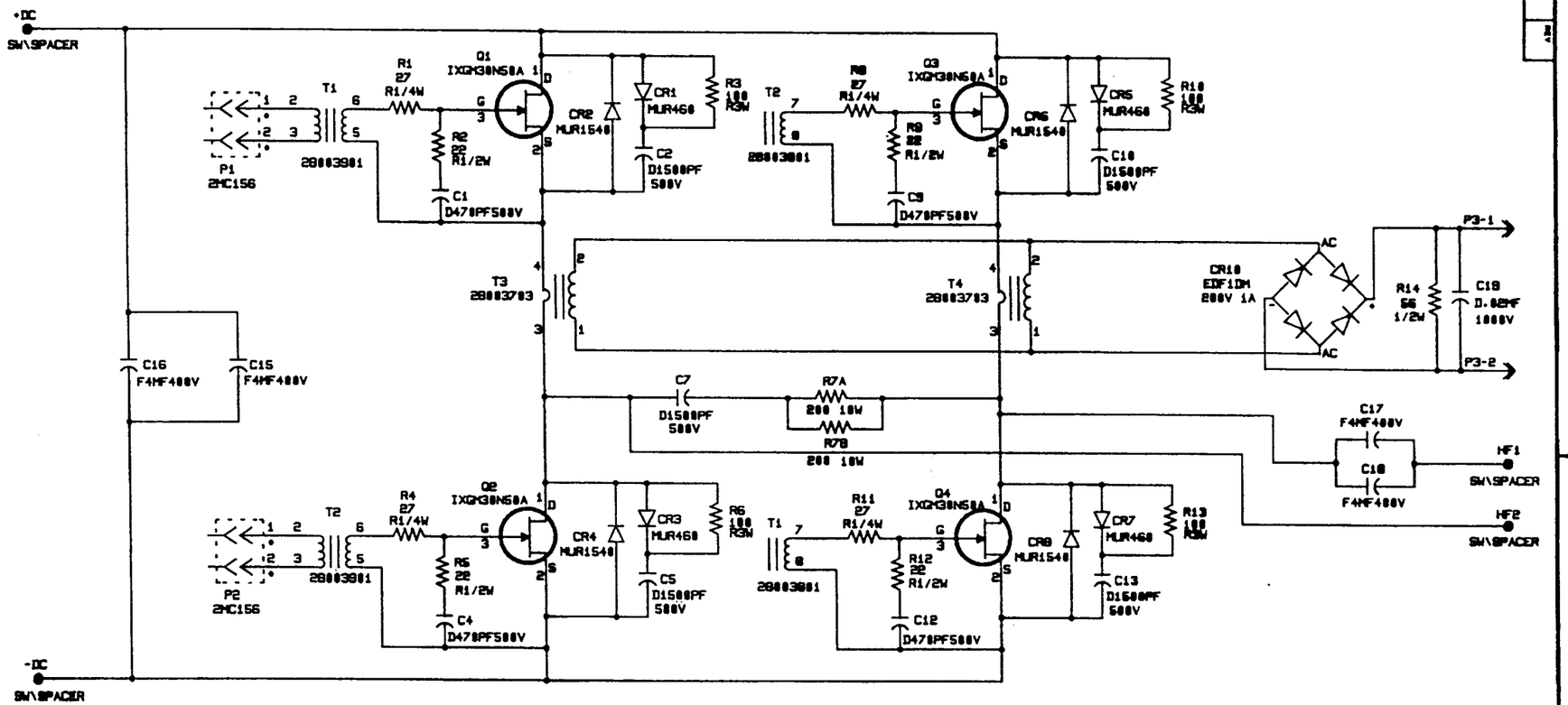
MTL	TOL xx = ± 02" xxx = ± 005" ANGLES ± 1/2"	DWN RSW DATE 1/29/91	ELECTRONIC MEASUREMENTS INCORPORATED	
FIN.	P/L 473	CHK JK DATE 1/31/91	TITLE SCHEM A100 EMS 5KW W/O OVP	
	SCALE	ENG. DATE		
		APP. DATE 2/6 1/31/91	DWG NO 01-000-333	REV C

SHEET 2 OF 2

1459
RSH&APP CO

APPLICATION				LTR	E C O NO	BY	APP.
DASH	USED ON	NEXT ASSY.	QTY.				
	EMS Sew-0777-1						

SHEET __ OF __



NOTES:

1) UNLESS SPECIFIED, ALL RESISTORS ARE IN OHMS AND ARE 5% CARBON FILM; ALL CAPACITORS ARE IN MICROFARADS. K=1,000 AND M=1,000,000.
2) REFERENCE ASSEMBLY DWG NO 28-442-001.
3) Q1 THRU Q4 MOUNT AT HEATSINK ASS'Y LEVEL.

MTL:		Dwn: BJN DATE: 6-25-90	ELECTRONIC MEASUREMENTS INCORPORATED
FIN:	P/L: 473	Chk: GFS DATE: 6:29:90	TITLE: SCHEMATIC, A200 INVERTER PCB, EMS SEW YDK/UL/CSA
	SCALE: ~	Eng: Sashu DATE: 6/27/90	DWG. NO. 01-000-308 REV
		App: DATE:	

SHEET 1 OF 1

1459
R.S. KNAPP CO

APPLICATIONS			REVISIONS			
USED ON	NEXT ASSY	QTY	LTR	ECO NO	BY/DATE	APP/DATE
			A	ECO # 10394	BN 3-21-91	WJW
			B	ECO # 10746	BN 6-28-91	WJW
			C	ENG CHANGE	RW 9-25-91	WJW
			D	ECO # 13082	GFS 9-14-95	WJW
			E	REDRAWN/NO CHANGES	LPN 8-20-97	

NOTES:

1. UNLESS SPECIFIED, ALL RESISTORES ARE IN OHMS AND ARE 5 %, 1/4 WATT CARBON FILM. (K=1,000)
2. ALL CAPACITORS ARE IN MICROFARADS. (M=1,000,000)

VOLTAGE CHANNEL

REF. CIRCUIT

AVERAGE CURRENT LIMIT CIRCUIT

CURRENT CHANNEL

REMOTE TURN-ON CIRCUIT

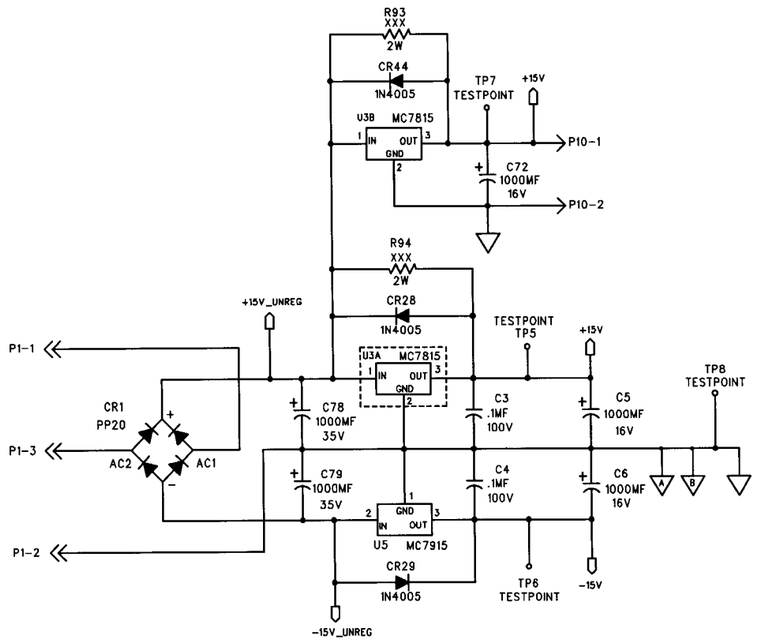
SUPERVISORY CIRCUIT

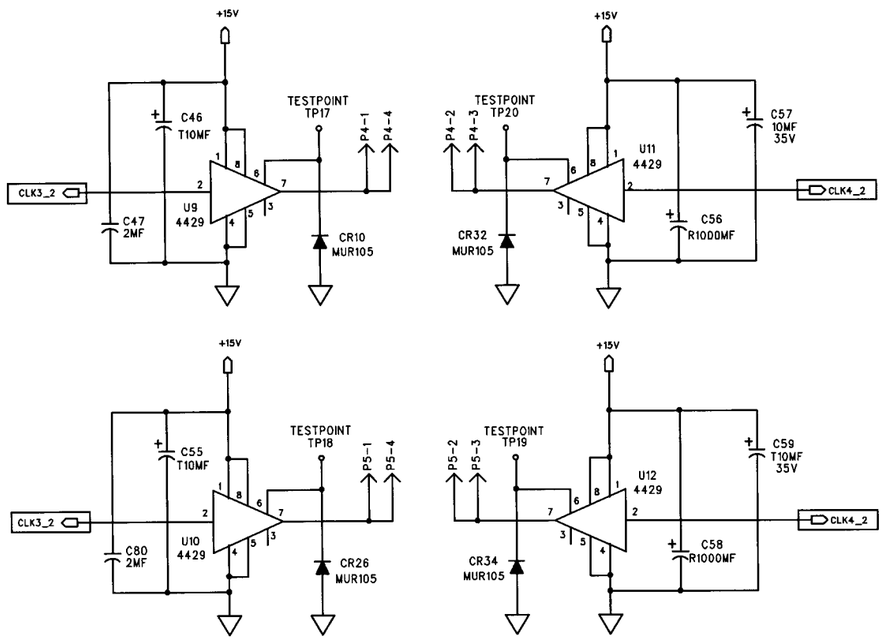
RELEASE TO MFG	ENG CONTROL	ELECTRONIC MEASUREMENTS, INC.	
PRJ.MGR: DATE:	DWN: DATE: GFS 9-14-95	TITLE:	SCHEMATIC, PCB A100 EMS 5KW 380V VDE
MFG: DATE:	CHK: DATE:		
DOC.REL: DATE:	ENG: DATE:	PCB:	SHEET 1 OF 2
P/L:	APP: DATE:	DRAWING NO: 01-000-316	REV. E

03-000-063

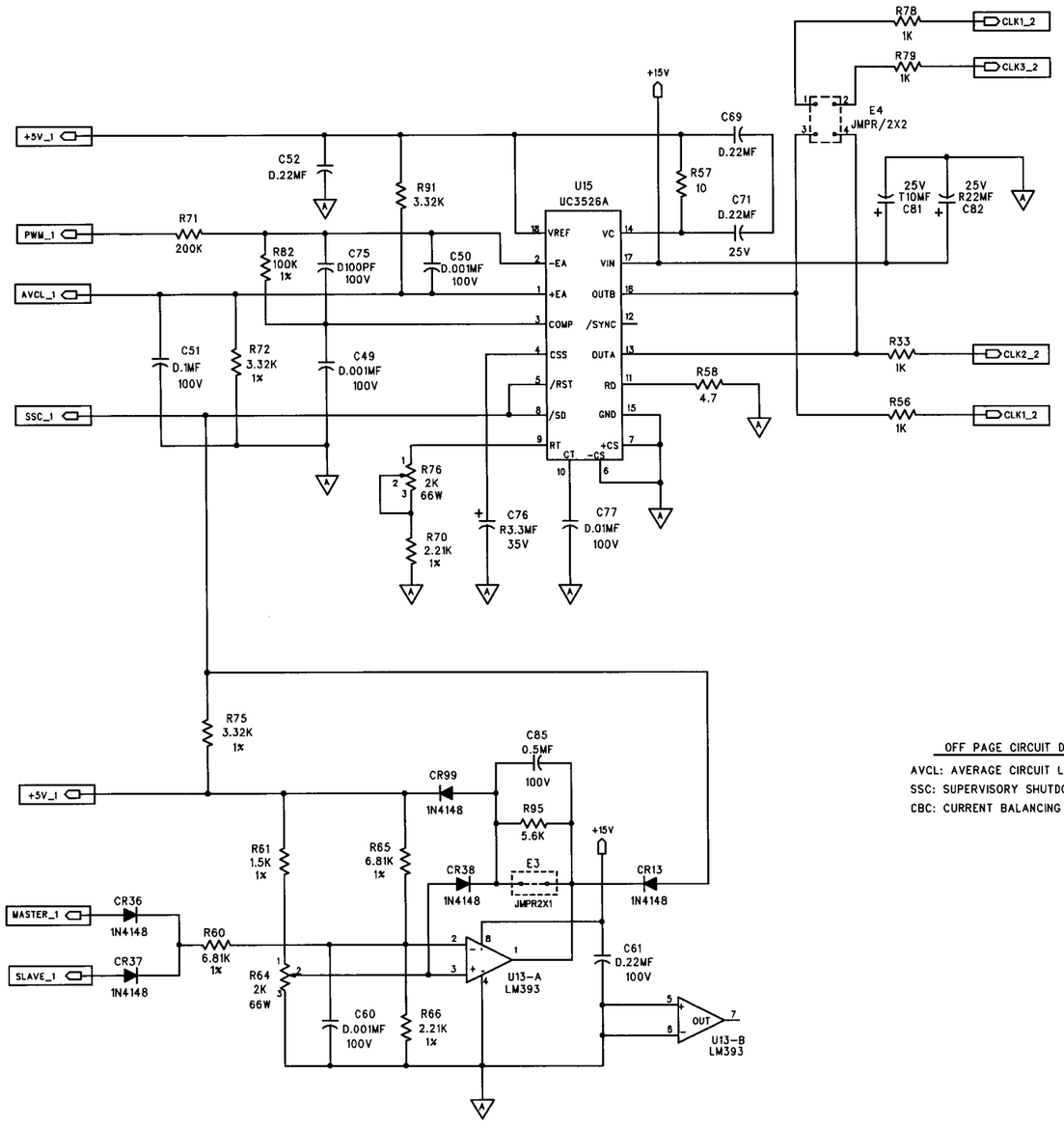
REVISIONS			
LTR	ECO NO	BY/DATE	APP/DATE
	SEE SHEET 1		

HOUSE KEEPING POWER SUPPLY





INVERTER DRIVER CIRCUIT



PEAK CURRENT SHUTDOWN CIRCUIT

OFF PAGE CIRCUIT DEFINITIONS

AVCL: AVERAGE CIRCUIT LIMITING CIRCUIT
SSC: SUPERVISORY SHUTDOWN CIRCUIT
CBC: CURRENT BALANCING CIRCUIT

RELEASE TO MFG		ENG CONTROL		ELECTRONIC MEASUREMENTS, INC.	
PRJ.MGR:	DATE:	DWN: GFS	DATE: 9-14-95	TITLE: SCHEMATIC, PCB A100 EMS 5KW 380V VDE	
MFG:	DATE:	CHK:	DATE:		
DOC.REL:	DATE:	ENG:	DATE:	PCB:	SHEET 2 OF 2
P/L:		APP:	DATE:	DRAWING NO: 01-000-316	REV. E

03-000-063

APPLICATION		
USED ON	NEXT ASSY	QTY.

LTR.	E.C.O. NO.	BY	APP.
A	REVISED DWG 123191	REW	
B	ADD MISSING COMPONENTS 4/94	REW	
C	ECO # 12372 6-15-93	GFS	
D	ECO 14406 5/19/95	WJW	GFS

SHEET ___ OF ___

NOTE: (JUMPERS E3,E4,E5)
SOLID LINE IS NORMAL OPERATION
DOTTED LINE IS NEG. VOLT. OPERATION

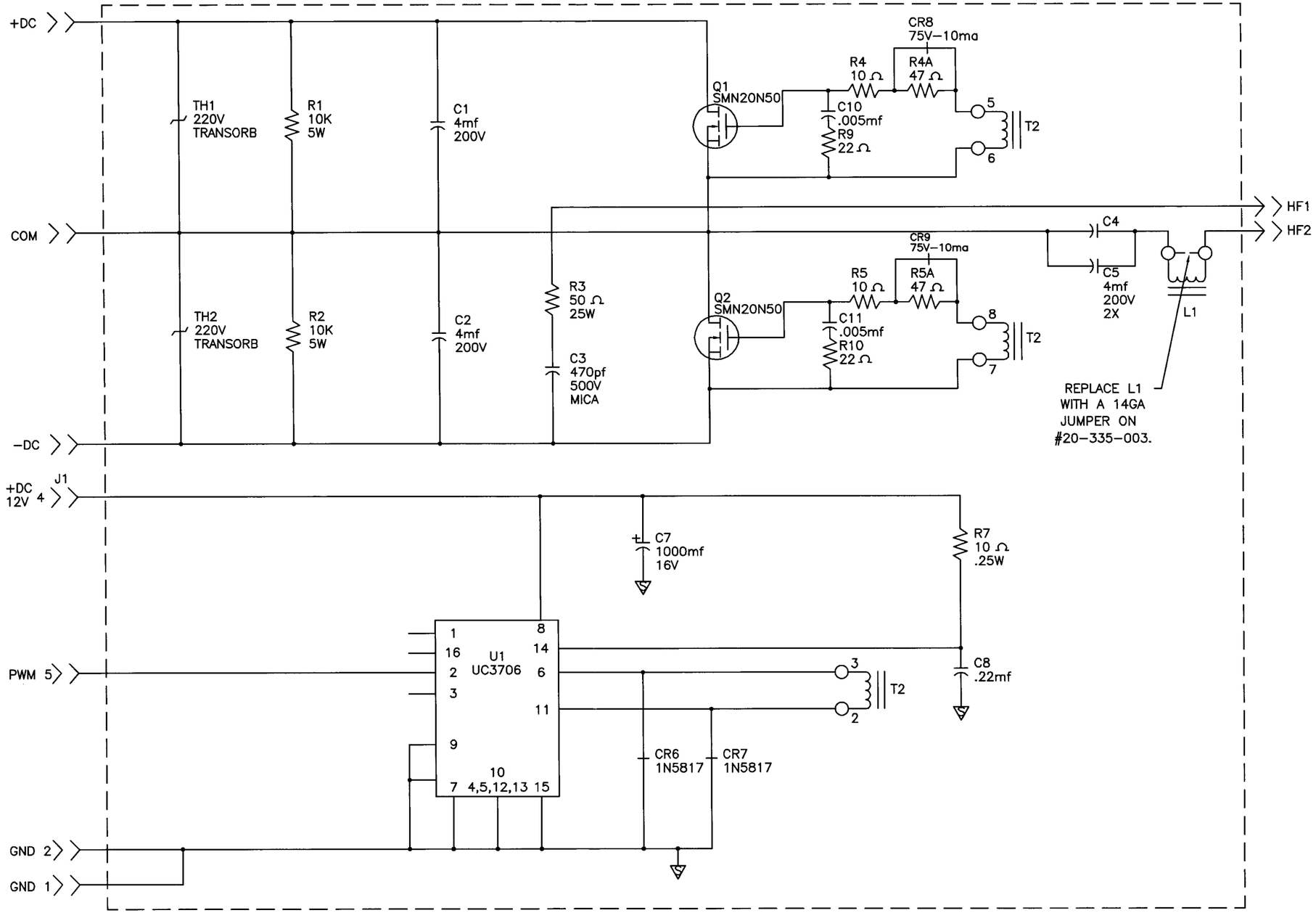
NOTE, 'C53' NOT USED ON NEGATIVE VOLTAGE P/S.

NOTES:
1) UNLESS SPECIFIED. ALL RESISTORS ARE IN OHMS AND ARE 5%. CARBON FILM: ALL CAPACITORS ARE IN MICROFARADS: K = 1.000 AND M = 1.000.000.
2) REFERENCE ASSEMBLY NO 20-554-XXX

MTL:	TOL: .XX = ± .02" .XXX = ± .005" ANGLES ± 1/2"	DWN: PHO DATE: 11/5/91	ELECTRONIC MEASUREMENTS INCORPORATED
FIN:	P/L 473	CHK: GFS DATE: 6-15-93	TITLE: SCHEMATIC A100 PCB 2.5KW EMS w/o OVP
	SCALE: ~	ENG: DATE: 1/6/91 APP: DATE: 1/15/91	DWG NO. 01-000-328 REV. D

SHEET ___ OF ___

APPLICATION			LTR	E.C.O. NO.	BY	APP.
USED ON	NEXT ASSY.	QTY.				
EMS 1KW			A	#8064 1-24-89	REW	
			B	ADD CR8-9 & R4&5A 6/90	EM	
			C	#10829 9/11/91	REW	



MTL: -----		DWN: PHO 3/13/90 DATE:	ELECTRONIC MEASUREMENTS, INC.
FIN: -----	P/L: 473	CHK: DATE: / ENG: DATE:	TITLE: A200 INVERTER EMS P/S 1KW 600-1.6
	SCALE: --	APP: DATE:	DWG. NO. 01-000-282 REV. C

APPLICATIONS		
USED ON	NEXT ASSY	QTY

REVISIONS			
LTR	ECO NO	BY/DATE	APP/DATE
A	ECO #10643	BH	WJW
B	ECO #10775	BH	WJW
C	ECO #10775A	BH	WJW
D	ECO #10835	BH	WJW
E	ECO #10892	BH	WJW
F	ECO #13082 / 14420	GFS	WJW
G	REDRAWN/NO CHANGES	LPN 8/20/97	WJW
H	ECO #16649	GFS 9-3-97	WJW
J	ECO #16779	GFS 9-18-97	

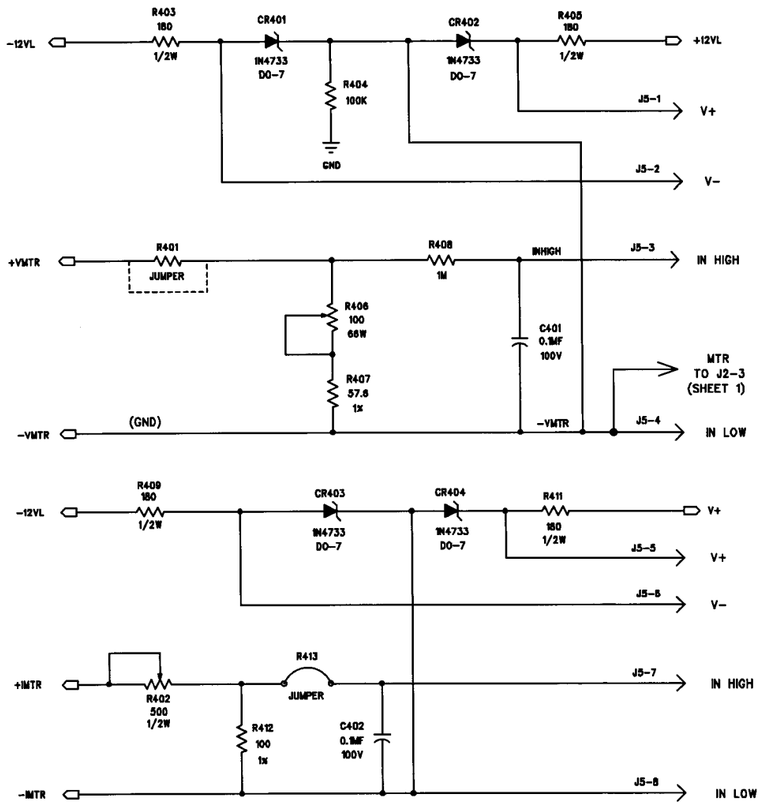
NOTES:

1. UNLESS SPECIFIED, ALL RESISTORS ARE IN OHMS AND ARE 5 % CARBON FILM, 1/4W. (K=1,000)
2. ALL CAPACITORS ARE IN MICROFARADS. (M=1,000,000)
3. REFERENCE ZERO LEVEL ASSEMBLY NO. 20-489-XXX.
4. FOR XXX VALUES SEE MAIN SCH NO. 01-473-XXX.
5. REFERENCE DESIGNATORS NOT USED: CR2, CR6, CR9, CR10, CR26, CR32, R56, U9.

RELEASE TO MFG	ENG CONTROL	E/M	ELECTRONIC MEASUREMENTS, INC.
PRJ.MGR: DATE:	DWN: GFS DATE: 3-12-87	TITLE:	SCHEMATIC A100 PCB 600V SWITCHING P/S 1KW
MFG: DATE:	CHK: JJR DATE: 5/13/94		
DOC.REL: DATE:	ENG: BH DATE: 11/20/91	PCB:	A100 PCB # 21-275-000 SHEET 1 OF 2
P/L: 473	APP: WJW DATE: 9/11/91	DRAWING NO:	01-000-283 REV. J

03-000-053

REVISIONS			
LTR	ECO NO	BY/DATE	APP/DATE
	SEE SHEET 1 FOR CHGS		

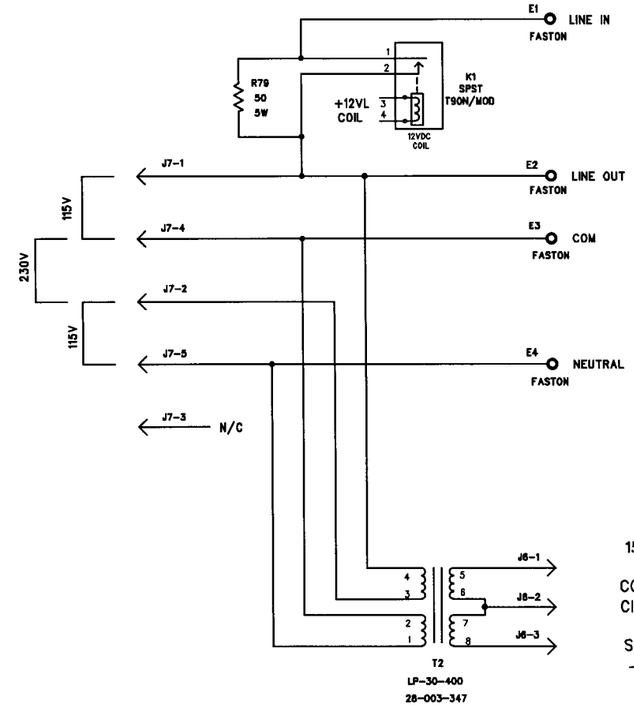


TO
DIGITAL
VOLTMETER

TO
DIGITAL
AMMETER

A400
METER CALIBRATION CIRCUIT

SOFT START CIRCUIT



115V
OR
230V
CONFIGURATION

115V
OR
230V
OUTPUT

15VAC
TO
CONTROL
CIRCUIT
A100
SECTION
– J1 –

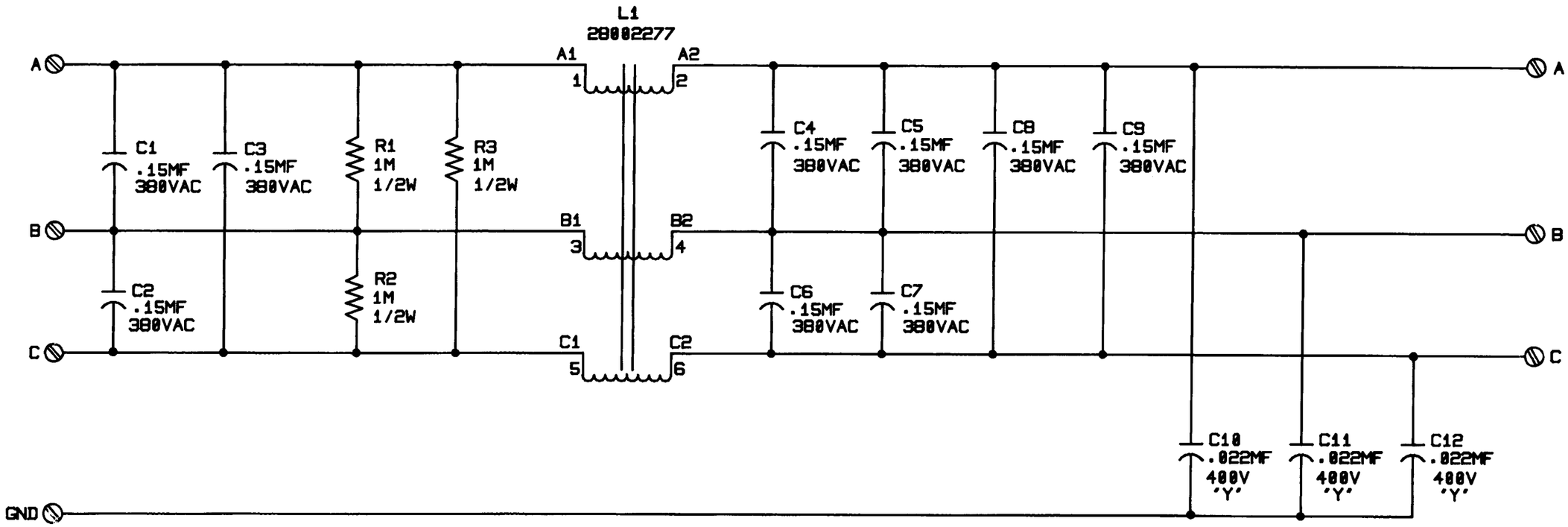
RELEASE TO MFG	ENG CONTROL	E/M	ELECTRONIC MEASUREMENTS, INC.
PR.MGR: DATE:	DWN: RSW DATE: 5-2-91	TITLE:	SCHEMATIC A100 PCB 600V SWITCHING P/S 1KW
MFG: DATE:	CHK: DATE: 5-13-94		
DOC.REL: DATE:	ENG: DATE: 11-20-91	PCB:	SHEET 2 OF 2
P/L: 473	APP: WJW DATE: 9-11-91	DRAWING NO: 01-000-283	REV. J

03-000-053

APPLICATION			LTR.	E.C.O. NO.	BY	APP.
USED ON	NEXT ASSY.	QTY.				
	20-503-000		A	ADD P/L 485	GFS 2-19-93	

DWG. NO. | REV.

Sh. 1 OF 1



ALSO GOOD FOR EMS II 5KW 380VAC

MTL:	TOL: .XX = ± .02" .XXX = ± .005" ANGLES ± 1/2"	DWN: BJN DATE: 5/30/90	ELECTRONIC MEASUREMENTS INCORPORATED
		CHK: GFS DATE: 2-19-93	
FIN:	P/L 415, 485	ENG: Seshu DATE: 6/27/90	TITLE: SCHEMATIC, A300 LINE FILTER EMS 5KW 380V
	SCALE:	APP: DATE:	DWG NO. 01-000-302 REV. A

SHEET 1 OF 1

BRUNING 46660

LTR	E.C.O. NO.
D	ADD C51,872 10/30/90
E	ECO. 10359 3/3/91 BD
F	#10746 6/24/91 BM
G	#10754 8-1-91 BM

ADD'T REVS SHT. 2

VOLTAGE CHANNEL

CURRENT CHANNEL

REF. CIRCUIT

AVERAGE CURRENT LIMIT CIRCUIT

REMOTE TURN-ON CIRCUIT

SUPERVISORY CIRCUIT

C103A XXX

R100A XXX

R85 & R86 NORMALLY ARE 100K Ω 5%. .
ON 6KW SUPPLYS R85 & R86 ARE 4.7K Ω 5%.

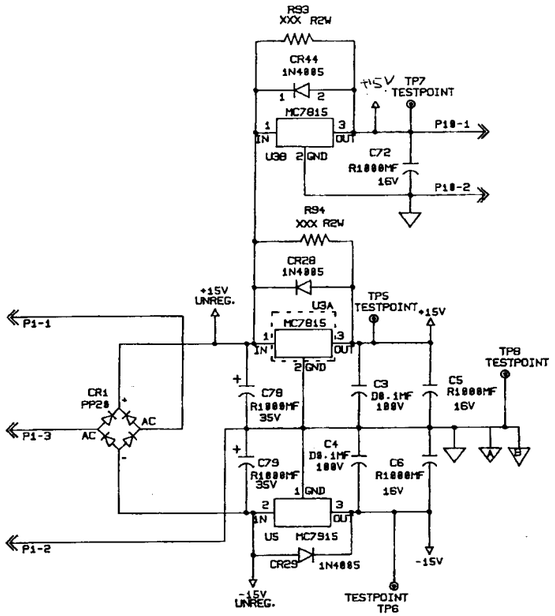
DWD: PHO
GFS 9-14-95

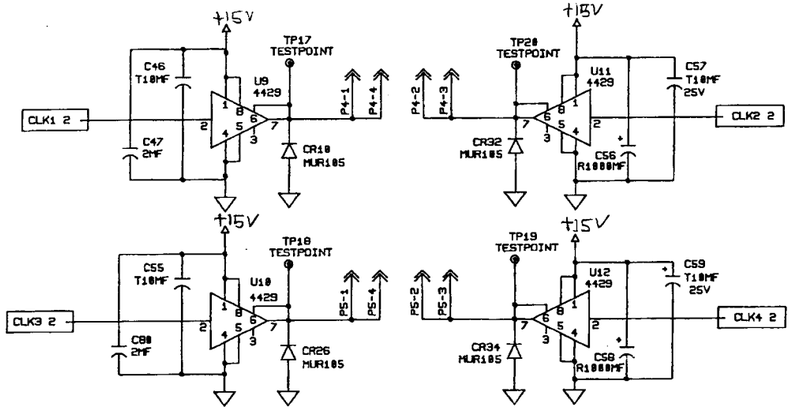
A100 SCH, EMS 5KW 250V
NEW DRIVE

01-000-275 REV. L
SHT 1 OF 2

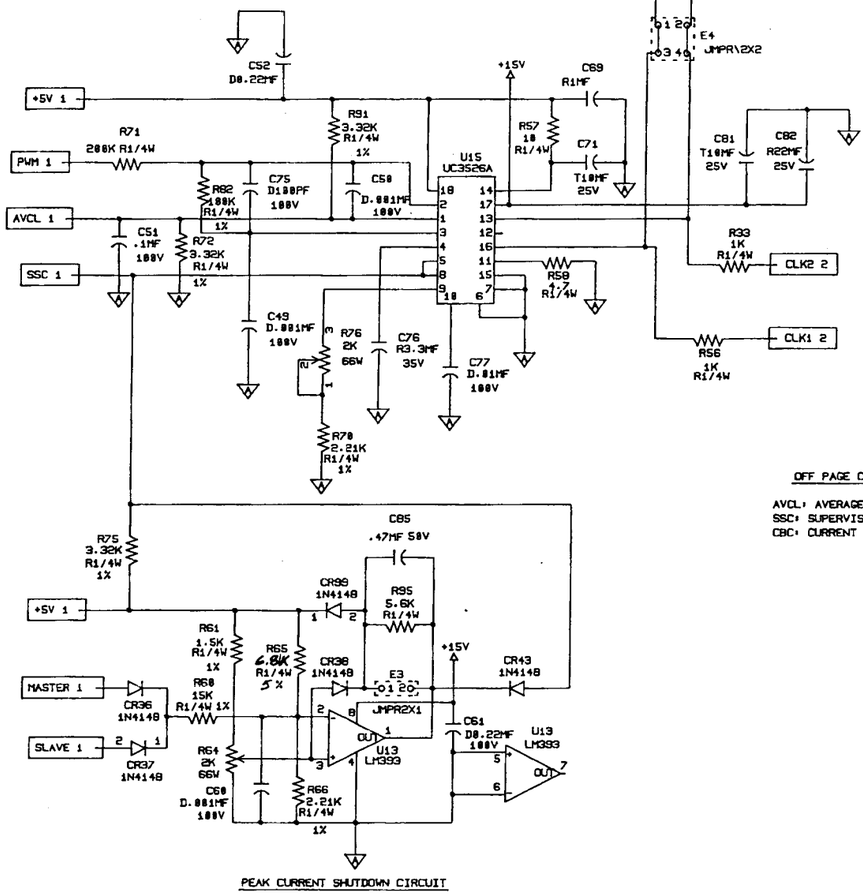
REV H. ENG CHG. 9/25/91 REW
REV J ECO 13402 DRWN 4/20/94
REV. K ECO 14470 JJR 5-25-95
REV. L ECO# 14874 GFS 9-14-95

HOUSE KEEPING POWER SUPPLY





INVERTER DRIVER CIRCUIT



PEAK CURRENT SHUTDOWN CIRCUIT

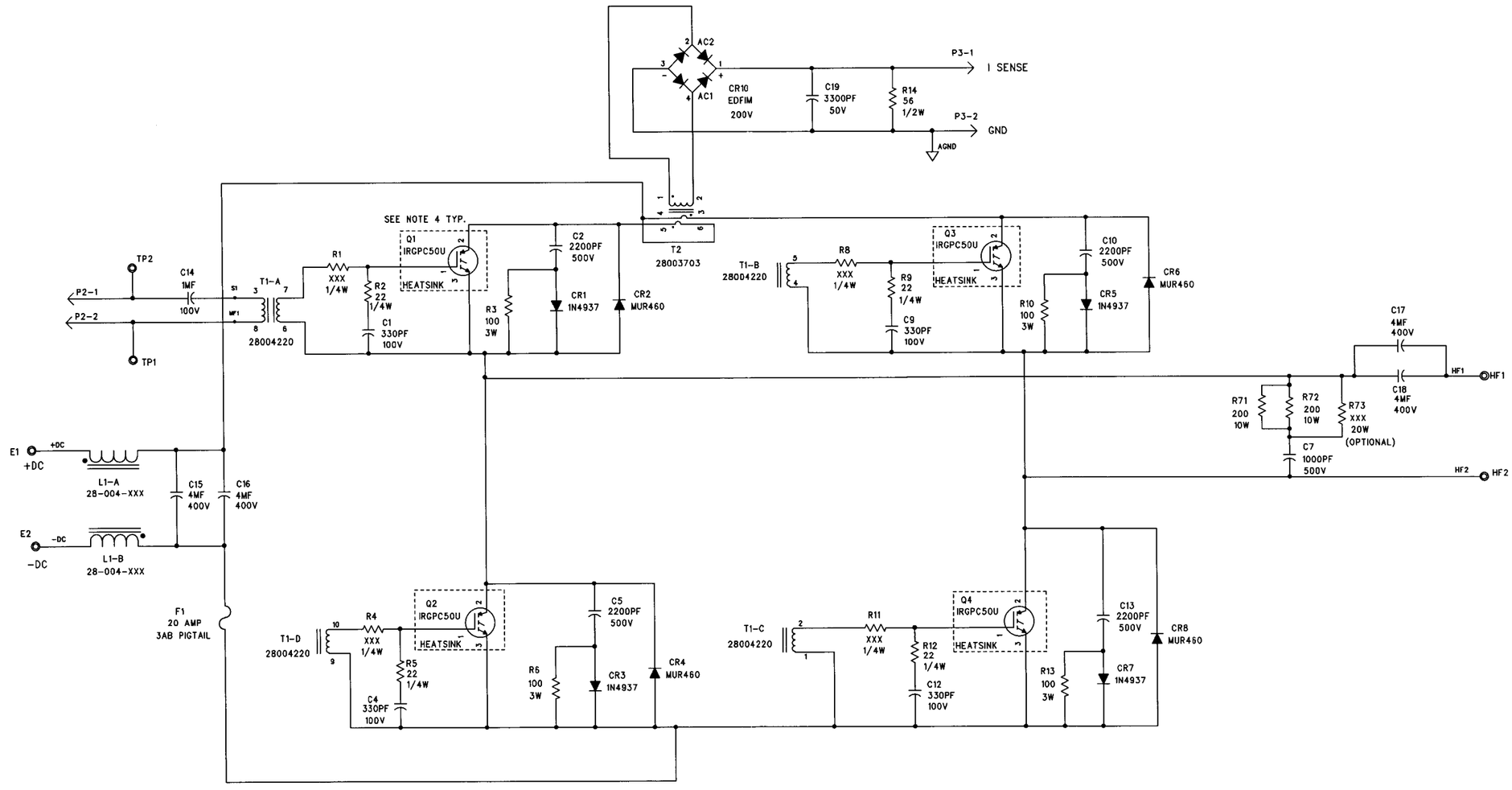
OFF PAGE CIRCUIT DEFINITIONS

AVCL: AVERAGE CURRENT LIMITING CIRCUIT
SSC: SUPERVISORY SHUTDOWN CIRCUIT
CBC: CURRENT BALANCING CIRCUIT

A100 SCHEMATIC
EMS 5KW 250V
NEW DRIVE

01-000-275 REV. L
SHT 2 OF 2

APPLICATIONS			REVISIONS			
USED ON	NEXT ASSY	QTY	LTR	ECO NO	BY/DATE	APP/DATE
EMS 2KW/2.5KW/5KW	20-442-XXX	1	A	ECO # 10539	BM 3/25/91	GFS
EMSII 2KW/2.5KW/5KW	20-442-XXX	1	B	ECO # 14679	CJS 4/8/97	GFS
			C	ECO # 17885	RFL 09/08/98	



20-893-002	47-1/4W-5%	23-189-XXX
20-893-001	47-1/4W-5%	23-177-XXX
20-442-101	47-1/4W-5%	23-189-008
20-442-006	56-1/4W-5%	23-177-005
20-446-003	82-1/4W-5%	23-189-XXX
20-442-000	27-1/4W-5%	23-177-XXX
PCB ASS'Y	R1-R4-R8-R11	H/S ASS'Y
VARIATION CHART		

03-000-053

NOTES:

1. UNLESS SPECIFIED ALL RESISTORS ARE IN OHMS AND ARE 5% CARBON FILM ALL CAPACITORS ARE IN MICROFARADS. K= 1.000 AND M= 1.000.000.
2. FOR XXX VALUES SEE CHART BELOW.
3. REFERENCE ASSEMBLY DWG. NO. 20-893-XXX.
4. Q1 THRU Q4 ARE MOUNTED ON HEAT SINK.

S P

TOL: .X = +.02 .XX = +.01 .XXX = +.005 FRAC = +1/64 ANGLES = +1/2	RELEASE TO MFG	ENG CONTROL	ELECTRONIC MEASUREMENTS, INC.
	PRJ.MGR: DATE: SS 7-21-95	DWN: DATE: GFS 1-11-90	TITLE: A200 PCB SCHEMATIC INVERTER EMS 2KW/2.5KW/5KW NEW STD
	MFG: DATE: PJS 7-21-95	CHK: DATE: REW 2-22-93	
P/L: 473/485	DOC.REL: DATE: WJW 7-21-95	ENG: DATE: SS 2-27-93	PCB: 21-496-000 20-442-XXX 20-893-XXX / SHEET 1 OF 1
SCALE: NONE		APP: DATE: WJW 2-22-90	DRAWING NO: 01-000-250 / REV. C

APPLICATIONS			REVISIONS			
USED ON	NEXT ASSY	QTY	LTR	DESCRIPTION	BY/DATE	APP/DATE
			M	ECO #16385 (REDRAWN INTO PADS)	LPN 5/30/97	WW

INVERTER

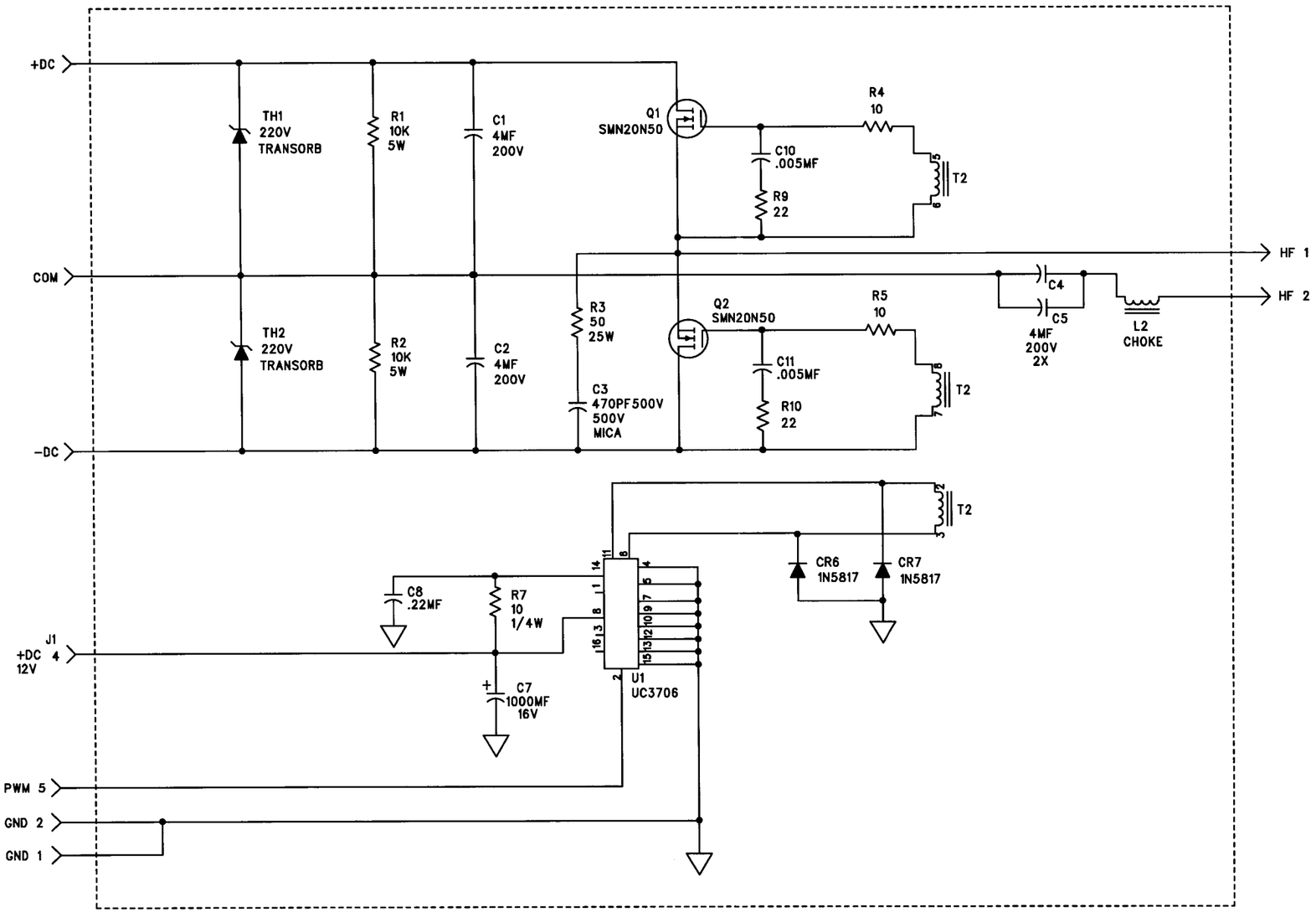
OUTPUT DRIVERS

NOTES:
1. UNLESS SPECIFIED, ALL RESISTORS ARE IN OHMS AND ARE 5%. ALL CAPACITORS ARE IN MICROFARADS. (M=1,000,000)
2. REFERENCE ASSY NO. 20-469-000.
3. FOR XXX VALUES SEE B/M'S.
4. (*) R149 AND C149 ADDED ON 300-6 AND 300.8 UNITS ONLY.

RELEASE TO MFG	ENG CONTROL	E/M	ELECTRONIC MEASUREMENTS, INC.
PR.MGR: DATE:	DWN: GFS DATE: 1-23-94	TITLE:	A100 PCB SCHEMATIC EMS 2.5KW W/NEW DRIVE
MFG: DATE:	CHK: SESHU DATE: 5-13-89		
DOC.REL: DATE:	ENG: SESHU DATE: 5-17-89	PCB:	SHEET 1 OF 1
P/L: 473	APP: WJW DATE: 5-17-89	DRAWING NO: 01-000-273	REV. M

03-000-053

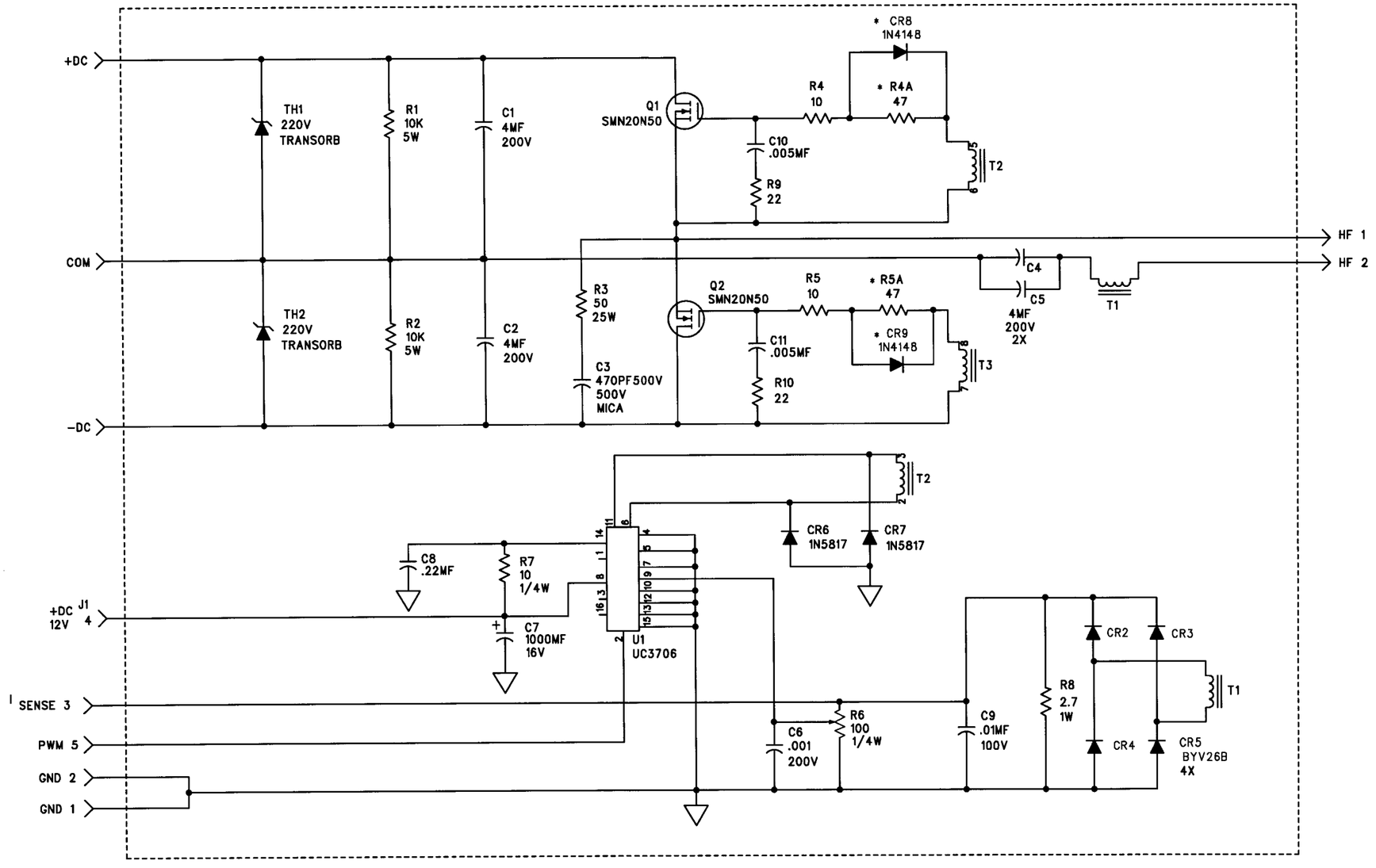
APPLICATIONS			REVISIONS			
USED ON	NEXT ASSY	QTY	LTR	ECO NO	BY/DATE	APP/DATE
			A	REDRAWN	CJS 7/1/97	



TOL: .X = ±.02 .XX = ± .01 .XXX = ± .005 FRAC = ± 1/64 ANGLES = ± 1/2	RELEASE TO MFG	ENG CONTROL	ELECTRONIC MEASUREMENTS, INC.	
	PRJ.MGR: DATE:	DWN: REW 1/17/89 DATE:	TITLE: A200 INVERTER P/S 600W	
	MFG: DATE:	CHK: JJR 5/13/94 DATE:		
P/L: 473	DOC.REL: DATE:	ENG: JR 1/25/89 DATE:	PCB: 21-	SHEET OF
SCALE: NONE		APP: WJW 1/25/89 DATE:	DRAWING NO: 01-000-207	REV. A

03-000-052

APPLICATIONS			REVISIONS			
USED ON	NEXT ASSY	QTY	LTR	ECO NO	BY/DATE	APP/DATE
			A	REDRAWN	CJS 7/1/97	



NOTES:

UNLESS OTHERWISE SPECIFIED ALL RESISTORS ARE IN OHMS, ALL CAPACITORS ARE IN MICROFARADS.

TOL: .X = ±.02, .XX = ± .01, .XXX = ± .005, FRAC = ± 1/64, ANGLES = ± 1/2	RELEASE TO MFG	ENG CONTROL	ELECTRONIC MEASUREMENTS, INC.
	PRJ.MGR: DATE:	DWN: REW 1/20/89 DATE:	TITLE: A200 INVERTER EMS 300-3.5 1KW P/S
	MFG: DATE:	CHK: JJR 5/13/94 DATE:	
P/L: 473	DOC.REL: DATE:	ENG: JR 1/25/89 DATE:	PCB: 21- SHEET OF
SCALE: NONE		APP: WJW 1/25/89 DATE:	DRAWING NO: 01-000-208 REV. A

03-000-052

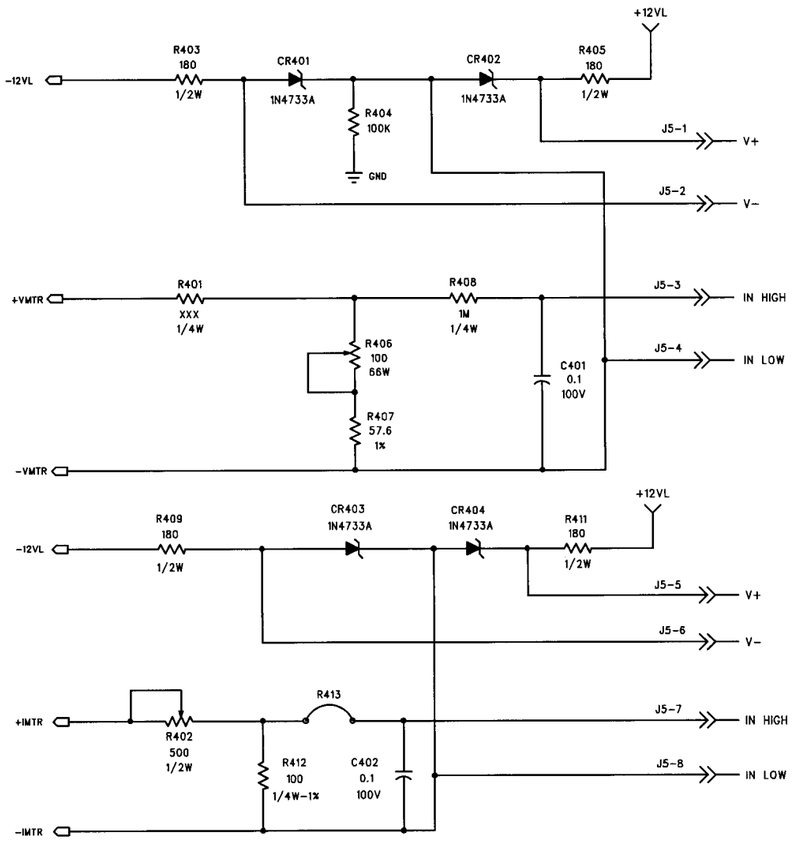
NOTES:
1. UNLESS SPECIFIED, ALL RESISTORS ARE IN OHMS AND ARE 5 % CARBON FILM. (K=1,000)
2. ALL CAPACITORS ARE IN MICROFARADS. (M=1,000,000)
3. REFERENCE ZERO LEVEL ASSEMBLY NO. 20-337-000.
4. FOR XXX VALUES SEE MAIN SCH NO. 01-473-001, SHT 4 OF 4.
5. REFERENCE DESIGNATORS NOT USED: CR2, CR6, CR9, CR10, CR26, CR32, R56, U9.
6. (+) INSTALLR49C IN SERIES WITH R49 ON ALL 150-7 STANDARD AND SPECIAL UNITS.
7. (**) INSTALL RC FILTER, R49A AND C49A, ACROSS R49 AND R49C ON ALL 150-7 STANDARD UNITS ONLY.

APPLICATIONS			REVISIONS			
USED ON	NEXT ASSY	QTY	LTR	ECO NO	BY/DATE	APP/DATE
			C	ECO #3237	REW	WJW
			D	ECO #10658	BM	WJW
			E	ECO #10892	BM	WJW
			F	ECO #14604	GFS 6/95	WJW
			G	REDRAWN/NO CHANGES	LPN 8/20/97	WJW
			H	ECO #16649	GFS 9-3-97	WJW
			J	ECO #16779	GFS 9-18-97	

RELEASE TO MFG	ENG CONTROL	E/M	ELECTRONIC MEASUREMENTS, INC.
PRJ.MGR: DATE:	DWN: REW DATE: 5-2-89	TITLE:	A100 PCB SCHEMATIC EMS 600W SWITCHING P/S
MFG: DATE:	CHK: SESHU DATE: 5-13-89		
DOC.REL: DATE:	ENG: SESHU DATE: 5-17-89	PCB:	SHEET 1 OF 2
P/L: 473	APP: WJW DATE: 5-17-89	DRAWING NO:	01-000-206 REV. J

03-000-053

REVISIONS			
LTR	ECO NO	BY/DATE	APP/DATE
	SEE SHEET 1		



TO DIGITAL VOLTMETER

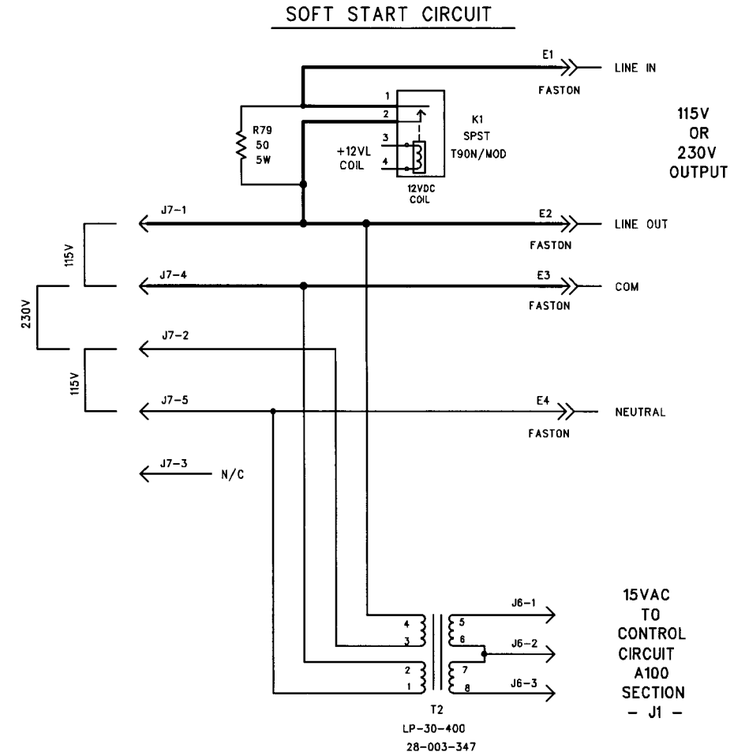
TO DIGITAL AMMETER

A400

METER CALIBRATION CIRCUIT

115V OR 230V CONFIGURATION

SOFT START CIRCUIT



NOTES:

1. UNLESS SPECIFIED ALL RESISTORS ARE IN OHMS AND ARE 5% CARBON FILM
2. ALL CAPACITORS ARE IN MICROFARADS, K=1,000 AND M=1,000,000.
3. REFERENCE ZERO LEVEL ASSEMBLY NO. 20-337-000.
4. FOR XXX VALUES SEE MAIN SCH NO. 01-473-001 SHEET 4 OF 4.

RELEASE TO MFG	ENG CONTROL	E/M	ELECTRONIC MEASUREMENTS, INC.
PR.MGR: DATE:	DWN: REW DATE: 5-2-89	TITLE:	A100 PCB SCHEM 600KW SWITCHING P/S
MFG: DATE:	CHK: SESHU DATE: 5-13-89		
DOC.REL: DATE:	ENG: SESHU DATE: 5-17-89	PCB:	SHEET 2 OF 2
P/L: 473	APP: WJW DATE: 5-17-89	DRAWING NO: 01-000-206	REV. J

03-000-053

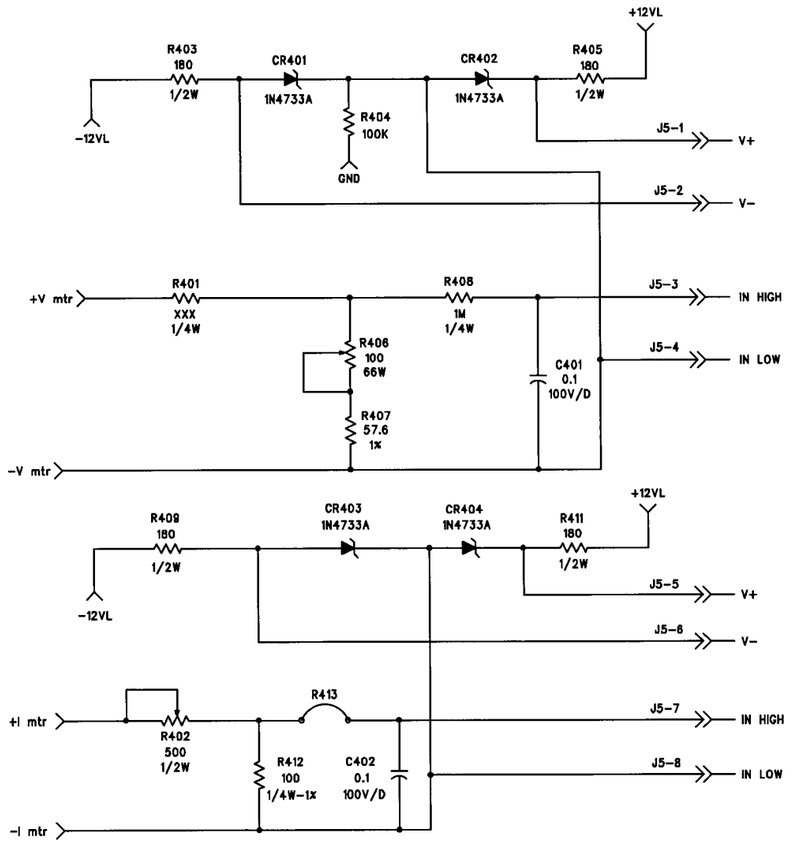
APPLICATIONS			REVISIONS			
USED ON	NEXT ASSY	QTY	LTR	ECO NO	BY/DATE	APP/DATE
			C	ECO #3237	REW	WJW
			D	ECO #10858	BM	WJW
			E	ECO #10892	BM	WJW
			F	ECO #13082 / 14316	GFS	WJW
			G	REDRAWN/NO CHANGES	LPN 8/20/97	WJW
			H	ECO #16649	GFS 9-3-97	WJW
			J	ECO # 16779	GFS 9-18-97	WJW
			K	ECO # 19718	RFC 2-09-01	

NOTES:
1. UNLESS SPECIFIED, ALL RESISTORS ARE IN OHMS AND ARE 5 % CARBON FILM. (K=1,000)
2. ALL CAPACITORS ARE IN MICROFARADS. (M=1,000,000)
3. REFERENCE ZERO LEVEL ASSEMBLY NO. 20-337-000.
4. FOR XXX VALUES SEE MAIN SCH NO. 01-473-001, SHT 4 OF 4.
5. REFERENCE DESIGNATORS NOT USED: CR2, CR6, CR9, CR10, CR26, CR32, R56, U9.
6. (•) INSTALLR49C IN SERIES WITH R49 ON ALL 150-7 STANDARD AND SPECIAL UNITS.
7. (••) INSTALL RC FILTER, R49A AND C49A, ACROSS R49 AND R49C ON ALL 150-7 STANDARD UNITS ONLY.

RELEASE TO MFG		ENG CONTROL		E/M	ELECTRONIC MEASUREMENTS, INC.
PRJ.MGR: JR	DATE: 11-14-97	DWN: REW	DATE: 5-2-89	TITLE:	A100 PCB SCHEMATIC EMS 1KW SWITCHING P/S
MFG: WM	DATE: 11-14-97	CHK: SESHU	DATE: 5-13-89		
DOC.REL: WJW	DATE: 11-14-97	ENG: SESHU	DATE: 5-17-89	PCB: A100 PCB # 21-275-000	SHEET 1 OF 2
P/L: 473		APP: WJW	DATE: 5-17-89	DRAWING NO: 01-000-188	REV. K

03-000-083

REVISIONS			
LTR	ECO NO	BY/DATE	APP/DATE
	SEE SHEET 1		



TO DIGITAL VOLTMETER

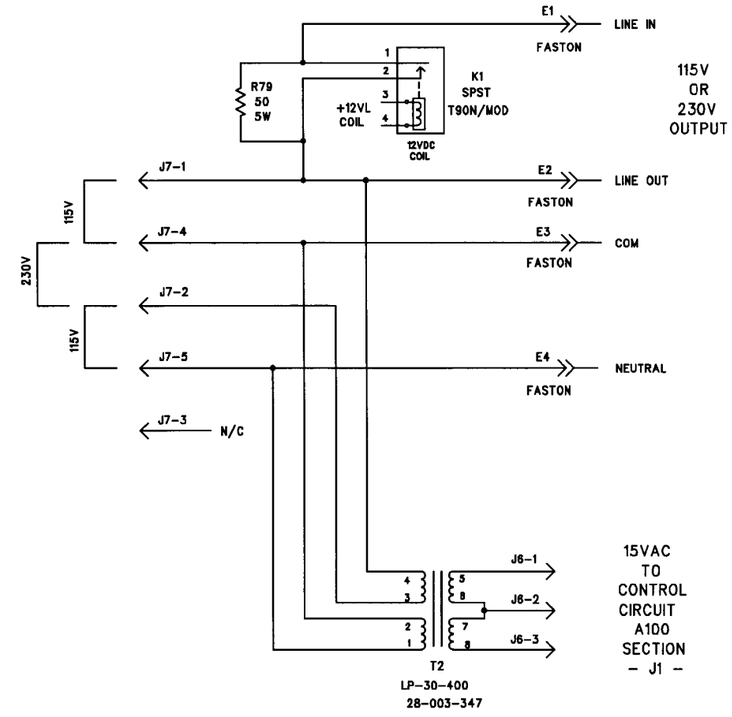
TO DIGITAL AMMETER

A400

METER CALIBRATION CIRCUIT

115V OR 230V CONFIGURATION

SOFT START CIRCUIT



NOTES:

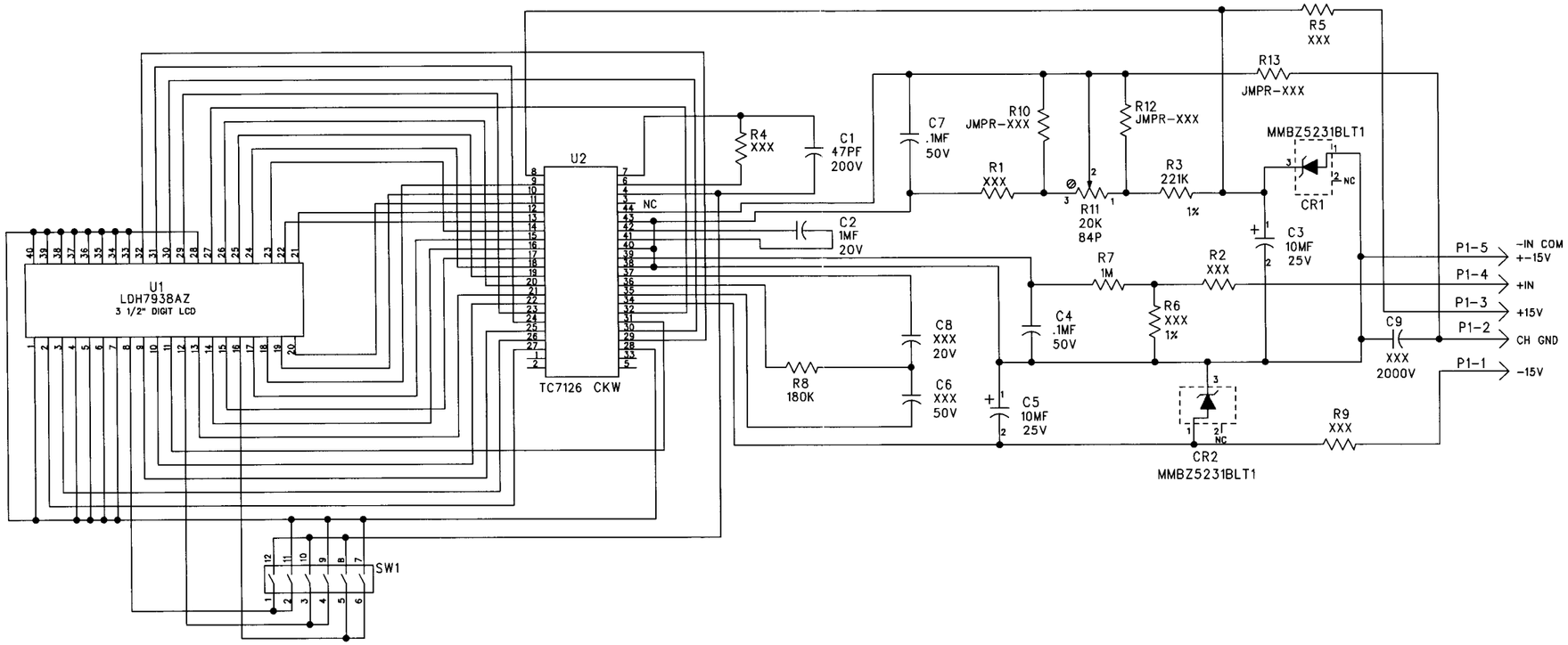
1. UNLESS SPECIFIED ALL RESISTORS ARE IN OHMS AND ARE 5% CARBON FILM
2. ALL CAPACITORS ARE IN MICROFARADS, K=1,000 AND M=1,000,000.
3. REFERENCE ZERO LEVEL ASSEMBLY NO. 20-337-000.
4. FOR XXX VALUES SEE MAIN SCH NO. 01-473-001 SHEET 4 OF 4.

RELEASE TO MFG		ENG CONTROL		E/M	ELECTRONIC MEASUREMENTS, INC.	
PRJ.MGR:	DATE:	DWN: REW	DATE: 5-2-89	TITLE:	A100 PCB SCHEMATIC EMS 1KW SWITCHING P/S	
MFG:	DATE:	CHK: SESHU	DATE: 5-13-89			
DOC.REL:	DATE:	ENG: SESHU	DATE: 5-17-89	PCB:	A100 PCB # 21-275-000	SHEET 2 OF 2
P/L: 473		APP: WJW	DATE: 5-17-89	DRAWING NO:	01-000-188	REV. K

03-000-003

THIS IS A COMPUTER GENERATED DWG.
NO MANUAL CHANGES ARE PERMITTED.

REVISIONS			
LTR	ECO NO	BY/DATE	APP/DATE
H	REDRAWN	BJN 2-6-90	WJW
J	ECO #10211	EM 7-17-90	WJW
K	REDRAWN PER ECO 13280	BJN 2-25-94	WJW
L	ECO #14492	GFS 5-3-95	WJW
M	ECO # 18637 SMT DESIGN	DR 4-25-99	GFS
N	ECO #19169	GFS 4-19-00	WJW
P	ECO #20334	RFC 07/18/02	



DECIMAL SWITCH SW1

0-1.999	S1	S4	S6	ON
2-19.99	S2	S3	S6	ON
20-199.9	S2	S4	S5	ON
200-1999	S2	S4	S6	ON

NOTES:

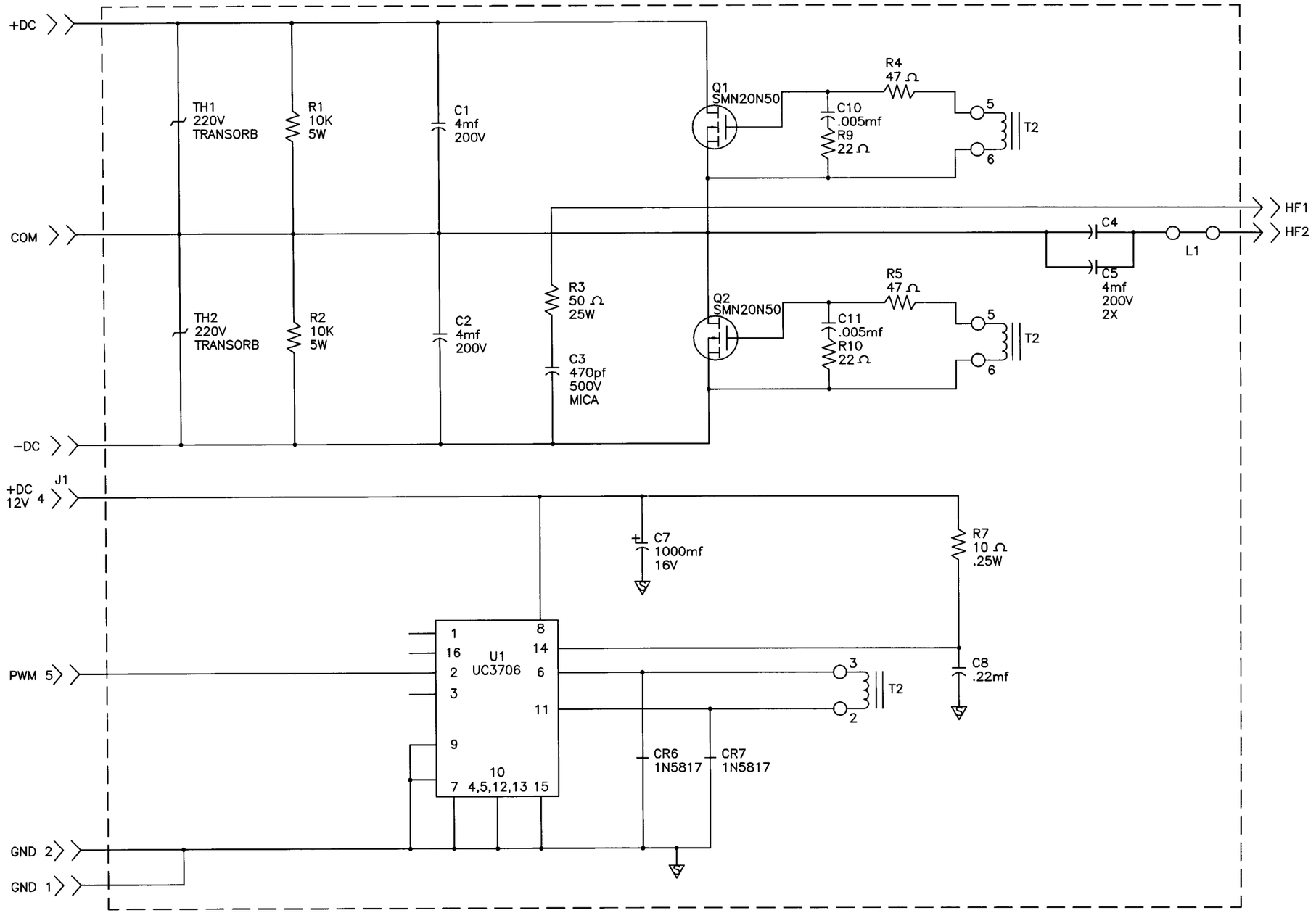
1. UNLESS SPECIFIED, ALL RESISTORS ARE IN OHMS, ALL CAPACITORS ARE IN MICROFARADS. K = 1,000 AND M = 1,000,000.
2. REF. ASSEMBLY 20-160-XXX.
3. SEE B/M FOR RESISTOR TYPE AND WATTAGE.
4. SEE B/M FOR CAPICATOR TYPE.

PADS POWER LOGIC DRAWING.
THIS IS A STANDARD FORMAT.
NOT ALL BOXES APPLY TO EVERY DRAWING AND MAY NOT BE FILLED IN.

P
S

TOL: .X = ±.02, .XX = ± .01, .XXX = ± .005, FRAC = ± 1/64, ANGLES = ± 1/2	RELEASE TO MFG	ENG CONTROL	LAMBDA EMI
	PRJ.MGR: JR DATE: 3-3-95	DWN: BJN DATE: 2-25-94	TITLE: A100 PCB SCHEMATIC DIGITAL METER PCB - ALL P/S
	MFG: PJS DATE: 3-10-95	CHK: GFS DATE: 3-3-95	
P/L: ALL	DOC.REL: GFS DATE: 3-3-95	ENG: JR DATE: 3-3-95	PCB: A100 PCB # 21-125-000 SHEET 1 OF 1
SCALE: ———		APP: GFS DATE: 3-3-95	DRAWING NO: 01-000-112 REV. P

APPLICATION			LTR	E.C.O. NO.	BY	APP.
USED ON	NEXT ASSY.	QTY.	D	REDRWN. 5/16/89	REW	
EMS 1KW			E	ECO#8425 2/12/90	EM	
			F	ECO#13338 4/28/94	JJR	



MTL: -----		DWN: REW 5/16/89 DATE:	ELECTRONIC MEASUREMENTS, INC.
		CHK: GFS 8/29/94 DATE:	TITLE: A200 INVERTER EMS P/S 1KW
FIN: -----	P/L: 473	ENG: SESH 2/13/90 DATE:	
	SCALE: --	APP: WJW 2/13/90 DATE:	DWG. NO. 01-000-187 REV. F

APPLICATION			LTR	E.C.O. NO.	BY	APP.
USED ON	NEXT ASSY.	QTY.	1	INITIAL RELEASE 03/16/94	REW	JR
1KW–200A STD.	FINAL		A	REL TO PROD. 6–13–94	GFS	
			B	ECO #16779 9/16/97	CJS	JR
			C	ECO #18794 10–12–98	GFS	

INPUT:
195–253 VAC
50/60Hz.

TB2
AC ①
AC ②
GND

A300
LINE FILTER
20–357–000

SCHEMATIC
01–178–000

F1
20A
250V

F2
20A
250V

S1
250V
15A
ON
OFF

TH1
250V

TH2
250V

CR1
KBPC 25–06

C1
XXX

C2
XXX

A200 INVERTER PCB
ASSY # 20–335–000
SCHEM # 01–000–187
OR
ASSY # 20–842–000
SCHEM # 01–000–582

DC +
COM
DC –
HF1
HF2

T1
XXX

L1
XXX

R12A XXX
C10A XXX
R12B XXX
C10B XXX
TH4 150V
TH5 150V
CR3 XXX
R3 XXX
R2 XXX
C8A XXX
C8B XXX
C8C XXX
OMIT ON 600W
TH7 18V
C14 .02mf 1KV
C15 TANT. XXX SEE CHART
C13 XXX
C12 XXX
POS
NEG
GND.

P201 1 2 4 5

E1 LINE IN
E2 LINE OUT
E3 230V COM
E3 115V COM
E4 NEU

P4 1 2 4 5

P2 8 9 4 5 10 3 1

JUMPER

+V
+V REM
V PROG I
V AMP IN
V PROG R
V PROG R COM
–V REM
–V
I PROG I
I AMP IN
I PROG R
–I
INV AMP IN
+I
REM V IN
INTERLOCK

J1 P1

P501 1 2 3 4 5 6

A500 PCB
24VDC FAN PWR
SCHEMATIC # 01–000–549
ASSEMBLY # 20–831–000

+24VDC P502 1
COMMON P502 2
FAN
B1
24VDC

J7
230V

J6 1 2 3
J1 1 2 3

A100 PCB ASSY.
CONTROL CIRCUIT
ASSY # 20–828–2XX
SCHEM # 01–000–570

J5 V+ 1 V– 2 HI 3 LO 4 V+ 5 V– 6 HI 7 LO 8

P3 9 8 7 1 2 3 4 12 14 11 13 15 8 5 10 16

A400A
M1
DIGITAL METER
V
66–105–001
20–351–XXX

A400B
M2
DIGITAL METER
A
66–105–001
20–351–XXX

R8 XXX OV ADJ.
R4 XXX VOLTAGE
R5 XXX CURRENT
LED1 YELLOW VOLTAGE
LED2 YELLOW CURRENT
LED3 RED OVP
LED4 GRN POWER ON
TS1 195°F

NOTES:

1. ALL RESISTORS ARE IN OHMS, ALL CAPACITORS ARE IN MICROFARADS; K = 1000, AND M = 1,000,000.
2. ▭ DENOTES EQUIPMENT MARKING.
3. ⊘ DENOTES SCREWDRIVER ADJUST.
4. ⏚ DENOTES CHASSIS GROUND.
5. FOR XXX VALUES SEE B/M's.

MTL:	TOL: .X = ± .02" .XX = ± .01 .XXX = ± .005" FRAC. = ± 1/64" ANGLES = ± 1/2°	REL. TO MFG. PR.ENG: AF 7–18–95 MFG: PS 7–18–95	ENG. CTL. DWN: REW 3/16/94 CHK: GFS 3–18–94	LAMBDA EMI An Invensys company
FIN:	P/L: 473	DOC.REL: GFS 7–18–95 ENG: JR 3–18–94		TITLE: MAIN SCHEMATIC EMS 1KW 5–200 (STD.)
	SCALE: NONE		APP: WJW 3–18–94	DWG. NO. 01–473–162 REV. C

LTR	E.C.O. NO.	BY	APP.
	SEE SHEET ONE		

NOTES:

1. ALL RESISTORS ARE IN OHMS, ALL CAPACITORS ARE IN MICROFARADS; K = 1000, AND M = 1,000,000.
2. ▭ DENOTES EQUIPMENT MARKING.
3. ⊘ DENOTES SCREWDRIVER ADJUST.
4. ⏚ DENOTES CHASSIS GROUND.
5. FOR XXX VALUES SEE B/M's.
6. 0–10V V / 0–5V, 0–10V I PROGRAMMING & MONITOR ARE OPTIONS AND MAY OR MAY NOT BE SUPPLIED – DEPENDING UPON MODEL PURCHASED.
7. RS (CURRENT CONTROL) CAN BE 5K–10 TURN IF P/S IS DESIGNATED WITH "–10T.

FOR VOLTAGE CHANNEL PROG.: 0–5V OR 0–10V

1. REMOVE JUMPER LINKS 3 TO 4 & 4 TO 5
2. ADD JUMPER FROM 5 TO 6. (0–10V ONLY)
3. ADD JUMPER FROM 3 TO 7.
4. APPLY SIGNAL AT TERMINAL 4 & 7.

FOR CURRENT CHANNEL PROG.: 0–100MV, 0–5V OR 0–10V

1. REMOVE JUMPER LINKS 9 TO 10 & 10 TO 11.
2. ADD JUMPER FROM 11 TO 12. (0–5V & 0–10V ONLY)
3. ADD JUMPER FROM 9 TO 7.
4. APPLY SIGNAL AT TERMINAL 10 & 12.

SHT 13 OF 14

MTL:
FIN:
P/L: 473
SCALE: NONE
DWN: SEE DATE:
CHK: SHEET DATE:
ENG: ONE DATE:
APP: X3473001 DATE:
LAMBDA EMI
An Invensys company
TITLE: SCHEMATIC, MAIN EMS SWITCHER P/S 5KW 415V VER.2
DWG. NO. 01–473–001
REV. BA

INPUT: 396–484VAC 50–60Hz

A
B
C
3Ø
GND.
NEU.

TB2

CB1 3POLE 20A VDE

L1 T1 TH1 575V TH3 575V
L2 T2 TH2 575V
L3 T3
GND

A300 LINE FILTER PCB ASSY. #20–503–003

LN1 LN2 LN3 T1 T2 T3

SCHEM. #01–000–302

CR1

VUO–50–12N03 1200V–50A FWB

R1 1K–5W–WW ((x2 in PAR.)

K1 30ADC

L202

C1 2.8K 350V

R10A & B 20K 5W–5% (IN PAR.)

L201

C2 2.8K 350V

R10C & D 20K 5W–5% (IN PAR.)

R13 1K 10W–WW

F1 1A–250V

R16 XXX

B1 FAN 220V 3.12"
B2 FAN 220V 3.12"

T2 28003860

C20 .1mf 1KV

TS1 195°F N/O
TS2 195°F N/O

K1 12V 30A VF12HU

(DIGITAL METERS) +15V E4
–15V E3

A200A INVERTER PCB & HEATSINK 01–000–308 23–189–001 20–442–001 TOP ASSY

A200B INVERTER PCB 20–442–001 BOTTOM ASSY.

1DC +
1DC –
2DC +
2DC –

1HF1 1HF2 2HF1 2HF2

J1 J2

P201 P202 P203

P1 P2 P3 P4 P5

SNUBBER ASSY (R12A–D & C10A–D) ARE USED ON EMS MODELS BETWEEN 20V AND 100V.(SEE TABUL. FOR VALUES.)

R12A C10A
CR2A XXX
CR3A XXX
R12B C10B
R12C C10C
CR2B XXX
R12D C10D
CR3B XXX

T1A XXX
T1B XXX

C6A XXX
C11A XXX
R9A XXX
C6B XXX
C11B XXX
R9B XXX

C7 XXX
R11 XXX
L2 30079 000
L1A XXX
L1B XXX

R3A XXX 25W
R3B XXX 25W

C8A XXX
C8B XXX
C9 XXX

POS.
C13 .02mf 1KV
C15 TANT XXX SEE CHART
NEG.
C12 .02mf 1KV

R2 XXX – 100mV +

C18 XXX
C19 XXX

M1 XXX V
M2 XXX A
R6 10Ω
R7 5Ω–3W
E1 E2 E5 E6

TB1

P7–3	+V
P7–1	+V REM
P6–15	V PROG I
P6–14	V AMP IN
P6–13	V PROG R
P6–12	V PROG R COM
P6–11	–V REM
P6–10	–V
P6–9	I PROG I
P6–8	I AMP IN
P6–7	I PROG R
P6–6	–I
P6–5	INV AMP IN
P6–4	+I
P6–3	REM V IN
P6–2	INTERLOCK
P6–1	

R8 10K 1 TURN — 0V ADJ.
R4 5K 10 TURN — VOLTAGE
R5 100Ω 1 TURN — CURRENT
LED1 MV5023 YEL — VOLTAGE
LED2 MV5023 YEL — CURRENT
LED3 MV5023 RED — OVER VOLTAGE
LED4 MV5023 GRN — POWER ON

NOTES:

1. ALL RESISTORS ARE IN OHMS, ALL CAPACITORS ARE IN MICROFARADS; K = 1000, AND M = 1,000,000.
2. ▭ DENOTES EQUIPMENT MARKING.
3. ⊘ DENOTES SCREWDRIVER ADJUST.
4. ⏚ DENOTES CHASSIS GROUND.
5. FOR XXX VALUES SEE B/M's.

A100 PCB ASSY. CONTROL CIRCUIT 20–481–XXX SCHEMATIC 01–000–316

OUTPUT RECTIFIER ASSY. 120V to 299V

SNUBBER ASSY. #20344001

J1 J2
T1A XXX T1B XXX
R509A 100 3W
R509B 100 3W
R509C 100 3W
C506 .001 500V
CR3B CR3A CR4B CR4A
500V 30A (4)
+DC TO OUTPUT +
–DC TO L1A–1 TO L1B–1

APPLICATION			LTR	E.C.O. NO.	BY	APP.
USED ON	NEXT ASSY.	QTY.		SEE SHEET ONE		

SHEET 14 OF 14

MTL:	TOL: .X = ± .02" .XX = ± .01 .XXX = ± .005" FRAC. = ± 1/64" ANGLES = ± 1/2°	REL. TO MFG. PR.ENG: DATE: MFG: DATE: DOC.REL: DATE:	ENG. CTL. DWN: SEE DATE: CHK: SHEET DATE: ENG: ONE DATE: APP: X4473001 DATE:	LAMBDA EMI An Ametek company
FIN:	P/L: 473 SCALE: NONE			TITLE: MAIN SCHEMATIC EMS 5KW P/S 440–480VAC
				DWG. NO. 01–473–001 REV. BA

THIS IS A COMPUTER GENERATED DWG.
NO MANUAL REVISIONS ARE PERMITTED.

APPLICATION		LTR	E.C.O. NO.	BY	APP.
USED ON	NEXT ASSY.	QTY.			
			SEE PAGE ONE		

342–418VAC
50–60Hz
3ø
A
B
C
GND.
NEU.

TB2
CB1
3POLE
20A VDE
L1
L2
L3
GND
T1
T2
T3
TH1 420V
TH2 420V
TH3 420V
LN1
LN2
LN3
A300
LINE FILTER
PCB
ASSY.
#20–503–000
SCHEM.
#01–000–302
RSTL
OPTION
TO
A500
PCB
RSTL
P505
R20
7.5K
25W
R21
2.5K
25W
F1
1A–250V
R13
1K
10W–WW
CR1
R1
1K–5W–WW
((x2 in PAR.)
K1
30ADC
VU0–50–12N05
1200V–50A
FWB
C1
2.8K
350V
C2
2.8K
350V
R10A & B
20K
5W–5%
(IN PAR.)
R10C
R10D
20K
5W–5%
(IN PAR.)
L202
L201
A200A
INVERTER
PCB
&
HEATSINK
SCH #01–000–250
H/S #23–189–XXX
ASSY. #20–893–XXX
TOP ASSY
P203
P201
P202
A200B
INVERTER
PCB
ASSY. #20–893–XXX
SCH # 01–000–250
SCH # 01–000–250
BOTTOM ASSY.
1DC
2DC
1HF2
2HF1
2HF2
J1
J2
T1A & B
28–XXX–XXX
HIGH VOLTAGE
BRIDGE AND
SNUBBER CIRCUIT
A500 PCB
SCHEM #
01–000–702
ASS'Y #
20–894–XXX
L1A
XXX
L1B
XXX
A800 PCB
(20–488–XXX)
C8A XXX
C8B XXX
C8C XXX
C8D XXX
R11 XXX
R12 XXX
R13 XXX
R14 XXX
R15 XXX
R16 XXX
R17 XXX
C20 XXX
C10 47mf 1KV
C13 .1mf 1KV
C12 .1mf 1KV
POS.
GND.
NEG.
R2 XXX – 100mv +
C19 XXX XXX
C18 XXX XXX
M1 XXX
M2 XXX
R6 10Ω
R7 5Ω–3W
TO R2(+) SENSE
TO R2 (–) SENSE
E1 E2 E3 E4 E5 E6 E7
B1 B2
FAN 220V 3.12"
FAN 220V 3.12"
T2
28003860
C20 .1mf 1KV
TS2 195°F N/O
TS1 195°F N/O
K1
12V
30A
VF12HU
(DIGITAL METERS)
+15V
–15V
P1 P2 P3 P4 P5 P6 P7 P8 P9 P10
TB1
+V
+V REM
V PROG I
V AMP IN
V PROG R
V PROG R COM
–V REM
–V
I PROG I
I AMP IN
I PROG R
–I
INV AMP IN
+I
REM V IN
INTERLOCK
J701
3 COMMON
2 I MONITOR
1 V MONITOR
AUXILIARY
DC POWER
+15V –15V GND
R4 5K VOLTAGE
R5 100Ω (5K OPTIONAL) CURRENT
LED1 VOLTAGE
LED2 CURRENT
LED4 POWER ON

A100 PCB ASSY.
CONTROL CIRCUIT
ASSY. 20–837–XXX
SCH. 01–000–568

FOR VOLTAGE CHANNEL PROG.: 0–5V OR 0–10V
1. REMOVE JUMPER LINKS 3 TO 4 & 4 TO 5
2. ADD JUMPER FROM 5 TO 6. (0–10V ONLY)
3. ADD JUMPER FROM 3 TO 7.
4. APPLY SIGNAL AT TERMINAL 4 & 7.

FOR CURRENT CHANNEL PROG.: 0–100MV, 0–5V OR 0–10V
1. REMOVE JUMPER LINKS 9 TO 10 & 10 TO 11.
2. ADD JUMPER FROM 11 TO 12. (0–5V & 0–10V ONLY)
3. ADD JUMPER FROM 9 TO 7.
4. APPLY SIGNAL AT TERMINAL 10 & 12.

DIGITAL METERS (WIRING DIAGRAM)
(REF 01–000–112)
M1
M2
P1 5 E2
P1 2
P1 4 E1
P1 3 E3
P1 1 E4
P1 5 E6
P1 4 E5
P1 3 E3
P1 1 E4

NOTES:
1. ALL RESISTORS ARE IN OHMS, ALL CAPACITORS ARE IN MICROFARADS; K = 1000, AND M = 1,000,000.
2. ▭ DENOTES EQUIPMENT MARKING.
3. ⊘ DENOTES SCREWDRIVER ADJUST.
4. ⏚ DENOTES CHASSIS GROUND.
5. FOR XXX VALUES SEE B/M's.
6. 0–10V V / 0–5V, 0–10V I PROGRAMMING & MONITOR ARE OPTIONS AND MAY OR MAY NOT BE SUPPLIED – DEPENDING UPON MODEL PURCHASED.
7. R5 (CURRENT CONTROL) CAN BE 5K–10 TURN IF P/S IS DESIGNATED WITH "–10T.

TOL:	REL. TO MFG.	ENG. CTL.	LAMBDA EMI An Investcorp company
.X = ± .02" .XX = ± .01" .XXX = ± .005" FRAC. = ± 1/64" ANGLES = ± 1/2°	PRJ. ENG. DATE: MFG: DATE: DOC. REL. DATE: DO NOT SCALE DWG.	DWN: DATE: SEE CHK: DATE: PAGE ENG: DATE: ONE APP: DATE: X1473001	TITLE: SCHEMATIC, MAIN EMS SWITCHER P/S 5KW HV 600–8–8 (STD)
P/L: 473			DWG. NO. 01–473–001 REV. BA
SCALE: NONE			

SHEET 11 OF 14

THIS IS A COMPUTER GENERATED DWG.
NO MANUAL REVISIONS ARE PERMITTED.

LTR	E.C.O. NO.	BY	APP.
	SEE SHEET ONE.		

INPUT:
190–250 VAC
50–60Hz

A
B
C
3Ø
GND.

TB2

CB1
3POLE
20A–250V

A300
LINE FILTER
PCB
ASSY.
420–314–001
SCHEM.
#01–168–000

LN1 LN2 LN3 GND
T1 T2 T3
L1 L2 L3
P301 P302

CR1 CR2 CR3
KBPC35–08
800V–35A
FWB

R1
100Ω
10W–WW

K1
30ADC

C1
2.8K
350V

R10
470K
2W–5%

L202
28–003–965

L201
28–003–964

A200A
INVERTER
PCB
&
HEATSINK
SCH. #01–000–250
H/S #23–189–001
ASSY. #20–442–001
TOP ASSY
–OR–
VERSION 2
H/S #23–189–009
ASSY. #20–893–000

1DC +
1DC –
P203
P201
P202
1HF1
1HF2
J1

A200B
INVERTER
PCB
ASSY. #20–442–001
BOTTOM ASSY.
–OR–
VERSION 2
ASSY. #20–893–000

2DC +
2DC –
2HF1
2HF2
J2

T1A XXX
T1B XXX
C11A XXX
C11B XXX
CR4A XXX
CR4B XXX
R12A XXX
R12B XXX
R12C XXX
R12D XXX
C10A XXX
C10B XXX
C10C XXX
C10D XXX
C7 XXX
R11 XXX
L2 30079 000
L1A XXX
L1B XXX
R3A XXX 25W
R3B XXX 25W
R2 XXX
CBA XXX
C8B XXX
C9 XXX
C15 TANT XXX
C13 XXX
C12 XXX
C18 XXX
C19 XXX
POS.
NEG.

M1 XXX
M2 XXX
R6 10Ω
R7 5Ω–3W
E1 E2 E3 E4 E5 E6

T2
28003294
B1 B2
FAN 220V 3.12"
FUSE .25A 250V
C20 .1mf 1KV

TS1 195°F N/O
TS2 195°F N/O

K1
12V
30A
VF12HU

DIGITAL METERS
+15V
–15V

THESE 2 CABLES
NOT USED WITH
VERSION 2 PCB'S

A100 PCB ASSY.
CONTROL CIRCUIT
ASSY. #20–482–6XX
SCH. #01–000–571
–OR–
VERSION 2
ASSY. #20–837–XXX
SCH. #01–000–568

FOR VOLTAGE CHANNEL PROG.: 0–5V OR 0–10V
1. REMOVE JUMPER LINKS 3 TO 4 & 4 TO 5
2. ADD JUMPER FROM 5 TO 6. (0–10V ONLY)
3. ADD JUMPER FROM 3 TO 7.
4. APPLY SIGNAL AT TERMINAL 4 & 7.

FOR CURRENT CHANNEL PROG.: 0–100MV, 0–5V OR 0–10V
1. REMOVE JUMPER LINKS 9 TO 10 & 10 TO 11.
2. ADD JUMPER FROM 11 TO 12. (0–5V & 0–10V ONLY)
3. ADD JUMPER FROM 9 TO 7.
4. APPLY SIGNAL AT TERMINAL 10 & 12.

TB1
+V
+V REM
V PROG I
V AMP IN
V PROG R
V PROG R COM
–V REM
–V
I PROG I
I AMP IN
I PROG R
–I
INV AMP IN
+I
REM V IN
INTERLOCK
J701
3 COMMON
2 I MONITOR
1 V MONITOR

R8 10K — OV ADJ.
R4 5K — VOLTAGE
R5 100Ω — (5K OPTIONAL) CURRENT
LED1 L101DY YEL — VOLTAGE
LED2 L101DY YEL — CURRENT
LED3 MV5023 RED — OVER VOLTAGE
LED4 L101DG GRN — POWER ON

AUXILIARY
DC POWER
P8 +15V
P8 –15V
P8 GND
P10
P9 P9 P9 P9

DIGITAL METERS (WIRING DIAGRAM)
(REF 01–000–112)
M1
VOLTMETER
66–078–XXX
M2
AMMETER
66–078–XXX

SNUBBER ASSY 120V & ABOVE
#20–634–000
T1A XXX
T1B XXX
R509A XXX
R509B XXX
R509C XXX
C506 XXX
CR3A CR3B CR4A CR4B
XXX (4)
+DC OUTPUT +
–DC
OUTPUT SECTION FOR ABOVE 100V
L1A–1
L1B–1

NOTES:
1. ALL RESISTORS ARE IN OHMS, ALL CAPACITORS ARE IN MICROFARADS; K = 1000, AND M = 1,000,000.
2. ▭ DENOTES EQUIPMENT MARKING.
3. ⊘ DENOTES SCREWDRIVER ADJUST.
4. ⏚ DENOTES CHASSIS GROUND.
5. FOR XXX VALUES SEE B/M's.
6. 0–10V V / 0–5V, 0–10V I PROGRAMMING & MONITOR ARE OPTIONS AND MAY OR MAY NOT BE SUPPLIED – DEPENDING UPON MODEL PURCHASED.
7. R5 (CURRENT CONTROL) CAN BE 5K–10 TURN IF P/S IS DESIGNATED WITH "–10T.

MTL:	TOL: .X = ± .02" .XX = ± .01" .XXX = ± .005" FRAC. = ± 1/64" ANGLES = ± 1/2°	REL. TO MFG. PRJ. ENG. DATE:	ENG. CTL. DWN: SEE DATE:
FIN:	P/L: 473	MFG: DATE:	CHK: PAGE DATE:
	SCALE: NONE	DOC. REL. DATE: DO NOT SCALE DWG.	ENG: ONE DATE:
			APP: X2473001 DATE:

LAMBDA EMI
An Ametek company

TITLE: SCHEMATIC, MAIN
EMS SWITCHER P/S
6KW 220V 3Ø INPUT

DWG. NO. 01–473–001 REV. BA

THIS IS A COMPUTER GENERATED DWG.
NO MANUAL REVISIONS ARE PERMITTED.

APPLICATION		LTR	E.C.O. NO.	BY	APP.
USED ON	NEXT ASSY.	QTY.			
			A	INIT. REL 10-25-00	REW	

INPUT:
190–253 VAC
50–60Hz
or 180–220 VAC
DEPENDING ON MODEL

A
B
C
3Ø
GND.

TB2

CB1
3POLE
20A–250V

A300
LINE FILTER
PCB
ASSY.
420–314–001
SCHEM.
#01–168–000

LN1 LN2 LN3 GND
T1 T2 T3
L1 L2 L3
P301 P302

CR1 CR2 CR3
KBPC35–08
800V–35A
FWB

R1
400Ω
10W–WW
K1
30ADC

C1
2.8K
350V

R10
470K
2W–5%

L202
28–003–965

L201
28–003–964

A200A
INVERTER
PCB
&
HEATSINK
SCH #01–000–250
H/S #23–189–XXX
ASSY. #20–893–XXX
TOP ASSY

P203 P201 P202
1DC +
1DC –

A200B
INVERTER
PCB
ASSY. #20–893–XXX
SCH # 01–000–250
SCH # 01–000–250
BOTTOM ASSY.

2DC +
2DC –

J1 1HF2
J2 2HF1
J1 2HF2

T1A & B
28–XXX–XXX

DIODE H/S
ASSY.
#23–200–XXX

HIGH VOLTAGE
BRIDGE AND
SNUBBER CIRCUIT
A500 PCB
SCHEM #
01–000–702
ASS'Y #
20–894–XXX

L1A XXX
L1B XXX

A800 PCB
(20–488–XXX)

E1 E2 E3 E4 E5 E6 E7

C8A XXX
C8B XXX
C8C XXX
C8D XXX
C20 .02mf 1000V
C10 XXX
C13 XXX
C12 XXX
C18 XXX
C19 XXX

R11 XXX
R12 XXX
R13 XXX
R14 XXX
R15 XXX
R16 XXX
R17 XXX
R2 XXX

POS.
GND.
NEG.

M1 XXX
M2 XXX
R6 10Ω
R7 5Ω–3W
TO R2(+) SENSE
TO R2 (–) SENSE

T2
28003860
B1 FAN 220V 3.12"
B2 FAN 220V 3.12"

C20 XXX 1KV

TS2 195°F N/O
TS1 195°F N/O

K1
12V
30A
VF12HU

(DIGITAL METERS)
+15V E4
–15V E3

R4 5K VOLTAGE
R5 100Ω (5K OPTIONAL) CURRENT
LED1 VOLTAGE
LED2 CURRENT
LED4 POWER ON

AUXILIARY
DC POWER
P8 1 +15V
P8 2 –15V
P8 3 GND

TB1

P7 3	+V
P7 1	+V REM
P6 15	V PROG I
P6 14	V AMP IN
P6 13	V PROG R
P6 12	V PROG R COM
P6 11	–V REM
P6 10	–V
P6 9	I PROG I
P6 8	I AMP IN
P6 7	I PROG R
P6 6	–I
P6 5	INV AMP IN
P6 4	+I
P6 3	REM V IN
P6 2	INTERLOCK
P6 1	

J701
3 COMMON
2 I MONITOR
1 V MONITOR

A100 PCB ASSY.
CONTROL CIRCUIT
ASSY. #20–837–XXX
SCH. #01–000–568

FOR VOLTAGE CHANNEL PROG.: 0–5V OR 0–10V
1. REMOVE JUMPER LINKS 3 TO 4 & 4 TO 5
2. ADD JUMPER FROM 5 TO 6. (0–10V ONLY)
3. ADD JUMPER FROM 3 TO 7.
4. APPLY SIGNAL AT TERMINAL 4 & 7.

FOR CURRENT CHANNEL PROG.: 0–100MV, 0–5V OR 0–10V
1. REMOVE JUMPER LINKS 9 TO 10 & 10 TO 11.
2. ADD JUMPER FROM 11 TO 12. (0–5V & 0–10V ONLY)
3. ADD JUMPER FROM 9 TO 7.
4. APPLY SIGNAL AT TERMINAL 10 & 12.

DIGITAL METERS (WIRING DIAGRAM)
(REF #01–000–112)

M1: P1 5 E2; P1 2; P1 4 E1; P1 3 E3; P1 E4
M2: P1 5 E6; P1 4 E5; P1 3 E3; P1 E4

NOTES:
1. ALL RESISTORS ARE IN OHMS, ALL CAPACITORS ARE IN MICROFARADS; K = 1000, AND M = 1,000,000.
2. ▭ DENOTES EQUIPMENT MARKING.
3. ⊘ DENOTES SCREWDRIVER ADJUST.
4. ⏚ DENOTES CHASSIS GROUND.
5. FOR XXX VALUES SEE B/M's.
6. 0–10V V / 0–5V, 0–10V I PROGRAMMING & MONITOR ARE OPTIONS AND MAY OR MAY NOT BE SUPPLIED – DEPENDING UPON MODEL PURCHASED.
7. R5 (CURRENT CONTROL) CAN BE 5K–10 TURN IF P/S IS DESIGNATED WITH "–10T.

MTL:	TOL: .X = ± .02" .XX = ± .01" .XXX = ± .005" FRAC. = ± 1/64" ANGLES = ± 1/2°	REL. TO MFG. PRJ. ENG. DATE:	ENG. CTL. DWN: SEE DATE:	SHEET 9 OF 14
FIN:	P/L: 473	MFG: DATE:	CHK: PAGE DATE:	LAMBDA EMI An Ametek company
	SCALE: NONE	DOC. REL. DATE:	ENG: ONE DATE:	TITLE: SCHEMATIC, MAIN EMS SWITCHER P/S EMS 5KW HV (300–450V)
	DO NOT SCALE DWG.		APP: DATE:	DWG. NO. 01–473–001 REV. BA

THIS IS A COMPUTER GENERATED DWG.
NO MANUAL REVISIONS ARE PERMITTED.

LTR	E.C.O. NO.	BY	APP.
	SEE SHEET ONE		

INPUT:
342–418VAC
50–60Hz

A
B
3Ø
C
GND.
NEU.

CB1
3POLE
20A VDE

TB2

L1 L2 L3 GND

T1 T2 T3

TH1 420V
TH2 420V
TH3 420V

LN1 LN2 LN3

A300
LINE FILTER
PCB
ASSY.
#20–503–000

SCHEM.
#01–000–302

RSTL OPTION
TO A500 PCB RSTL
P505
R20 7.5K 25W
R21 2.5K 25W

CR1
VUO–50–12N03
1200V–50A
FWB

R1
1K–5W–WW
((x2 in PAR.)
K1
30ADC

C1 2.8K 350V
C2 2.8K 350V

R10A & B 20K 5W–5% (IN PAR.)
R10C & D 20K 5W–5% (IN PAR.)

L202
L201

R13
1K
10W–WW

F1
1A–250V

B1 B2
FAN 220V 3.12"
FAN 220V 3.12"

T2
28003860

C20
.1mf
1KV

TS1 195°F N/O
TS2 195°F N/O

K1
12V
30A
VF12HU

(DIGITAL METERS)
+15V E4
–15V E3

1DC + P203
P201
P202
1DC –
2DC + P202
2DC –

A200A
INVERTER
PCB
&
HEATSINK
SCH #01–000–250
H/S #23–189–001
ASSY. #20–442–001
TOP ASSY
–OR–
VERSION 2
H/S #23–189–009
ASSY. #20–893–000

A200B
INVERTER
PCB
ASSY. #20–442–001
BOTTOM ASSY.
–OR–
VERSION 2
ASSY. #20–893–000

1HF1 J1
1HF2 J1
2HF1 J2
2HF2 J1

SNUBBER ASSY (R12A–D & C10A–D) ARE USED ON EMS MODELS BETWEEN 20V AND 100V.(SEE TABUL. FOR VALUES.)

R12A C10A
R12B C10B
R12C C10C
R12D C10D

T1A XXX
T1B XXX

C6A XXX
C6B XXX
C11A XXX
C11B XXX
R9A XXX
R9B XXX
CR2A XXX
CR3A XXX
CR2B XXX
CR3B XXX

C7 XXX
R11 XXX
L2 30079 000
L1A XXX
L1B XXX
R3A XXX 25W
R3B XXX 25W
C8A XXX
C8B XXX
C9 XXX
C13 XXX
C15 TANT XXX
C12 XXX
R2 XXX
C18 XXX
C19 XXX

POS.
NEG.

M1 XXX
M2 XXX
R6 10Ω
R7 5Ω–3W

E1 E2 E6 E5

THESE 2 CABLES NOT USED WITH VERSION 2 PCB'S

A100 PCB ASSY.
CONTROL CIRCUIT
ASSY. #20–481–XXX
SCH. #01–000–316
–OR–
VERSION 2
ASSY. #20–837–XXX
SCH. #01–000–568

FOR VOLTAGE CHANNEL PROG.: 0–5V OR 0–10V
1. REMOVE JUMPER LINKS 3 TO 4 & 4 TO 5
2. ADD JUMPER FROM 5 TO 6. (0–10V ONLY)
3. ADD JUMPER FROM 3 TO 7.
4. APPLY SIGNAL AT TERMINAL 4 & 7.

FOR CURRENT CHANNEL PROG.: 0–100MV, 0–5V OR 0–10V
1. REMOVE JUMPER LINKS 9 TO 10 & 10 TO 11.
2. ADD JUMPER FROM 11 TO 12. (0–5V & 0–10V ONLY)
3. ADD JUMPER FROM 9 TO 7.
4. APPLY SIGNAL AT TERMINAL 10 & 12.

TB1

P7-3	+V
P7-1	+V REM
P6-15	V PROG I
P6-14	V AMP IN
P6-13	V PROG R
P6-12	V PROG R COM
P6-11	–V REM
P6-10	–V
P6-9	I PROG I
P6-8	I AMP IN
P6-7	I PROG R
P6-6	–I
P6-5	INV AMP IN
P6-4	+I
P6-3	REM V IN
P6-2	INTERLOCK
P6-1	COMMON
	I MONITOR
	V MONITOR

R8 10K OV ADJ.
R4 5K VOLTAGE
R5 100Ω (5K OPTIONAL) CURRENT
LED1 MV5023 YEL VOLTAGE
LED2 MV5023 YEL CURRENT
LED3 MV5023 RED OVER VOLTAGE
LED4 MV5023 GRN POWER ON

AUXILIARY DC POWER
J701
P8 P8 P8 P10 P9 P9 P9 P9
+15V –15V GND

NOTES:

1. ALL RESISTORS ARE IN OHMS, ALL CAPACITORS ARE IN MICROFARADS; K = 1000, AND M = 1,000,000.
2. ▭ DENOTES EQUIPMENT MARKING.
3. ⊘ DENOTES SCREWDRIVER ADJUST.
4. ⏚ DENOTES CHASSIS GROUND.
5. FOR XXX VALUES SEE B/M's.
6. 0–10V V / 0–5V, 0–10V I PROGRAMMING & MONITOR ARE OPTIONS AND MAY OR MAY NOT BE SUPPLIED – DEPENDING UPON MODEL PURCHASED.
7. R5 (CURRENT CONTROL) CAN BE 5K–10 TURN IF P/S IS DESIGNATED WITH "–10T.

OUTPUT RECTIFIER ASSY. 120V & UP

SNUBBER ASSY. #20344001
J1 J2 T1A XXX T1B XXX
R509A 100 3W
R509B 100 3W
R509C 100 3W
C506 .001 500V
CR3B CR3A CR4B CR4A
500V 30A (4)
+DC –DC
TO OUTPUT +
TO L1A–1
TO L1B–1

DIGITAL METERS (WIRING DIAGRAM)
(REF 01–000–112)

M1 VOLTMETER 66–078–XXX
M2 AMMETER 66–078–XXX

SHEET 10 OF 14

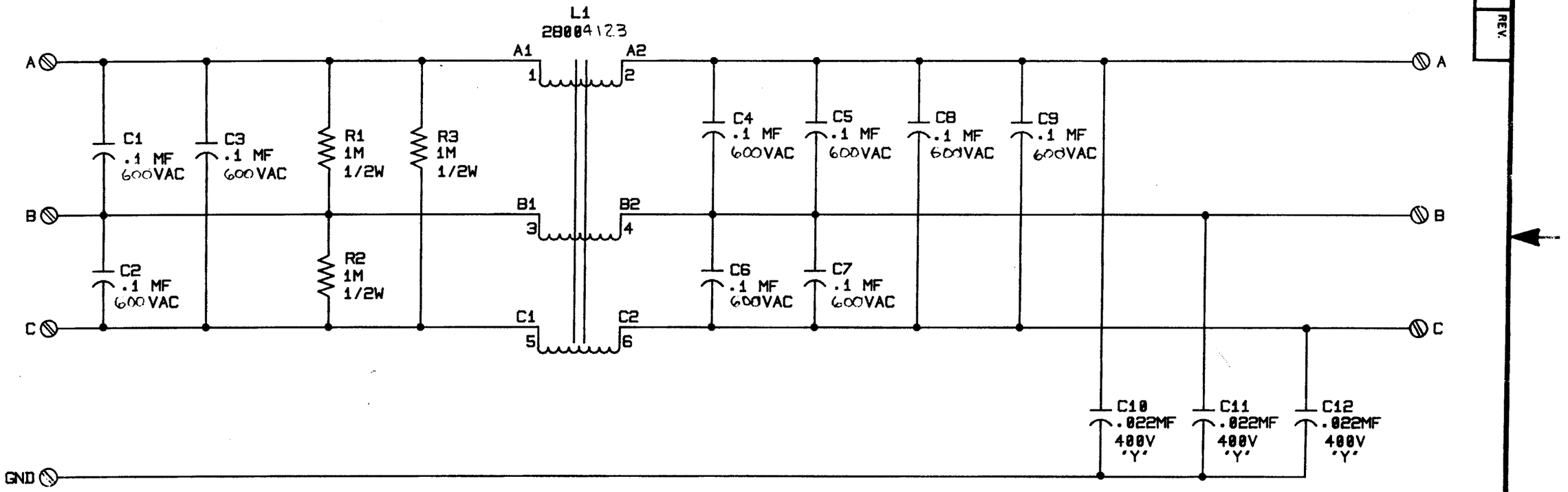
MTL:	TOL: .X = ± .02" .XX = ± .01" .XXX = ± .005" FRAC. = ± 1/64" ANGLES = ± 1/2°	REL. TO MFG. PRJ. ENG. DATE: MFG: DATE: DOC. REL. DATE:	ENG. CTL. DWN: SEE DATE: CHK: SHEET DATE: ENG: ONE DATE:	LAMBDA EMI An Invensys company	
FIN:	P/L: 473			TITLE: SCHEMATIC, MAIN EMS SWITCHER P/S 5KW 380V VER.2	
	SCALE: NONE	DO NOT SCALE DWG.	APP: PX473001 DATE:	DWG. NO. 01–473–001	REV. BA

APPLICATION			LTR.	E.C.O. NO.	BY	APP.
USED ON	NEXT ASSY.	QTY.				
	20-503-003					

DWG. NO.

REV.

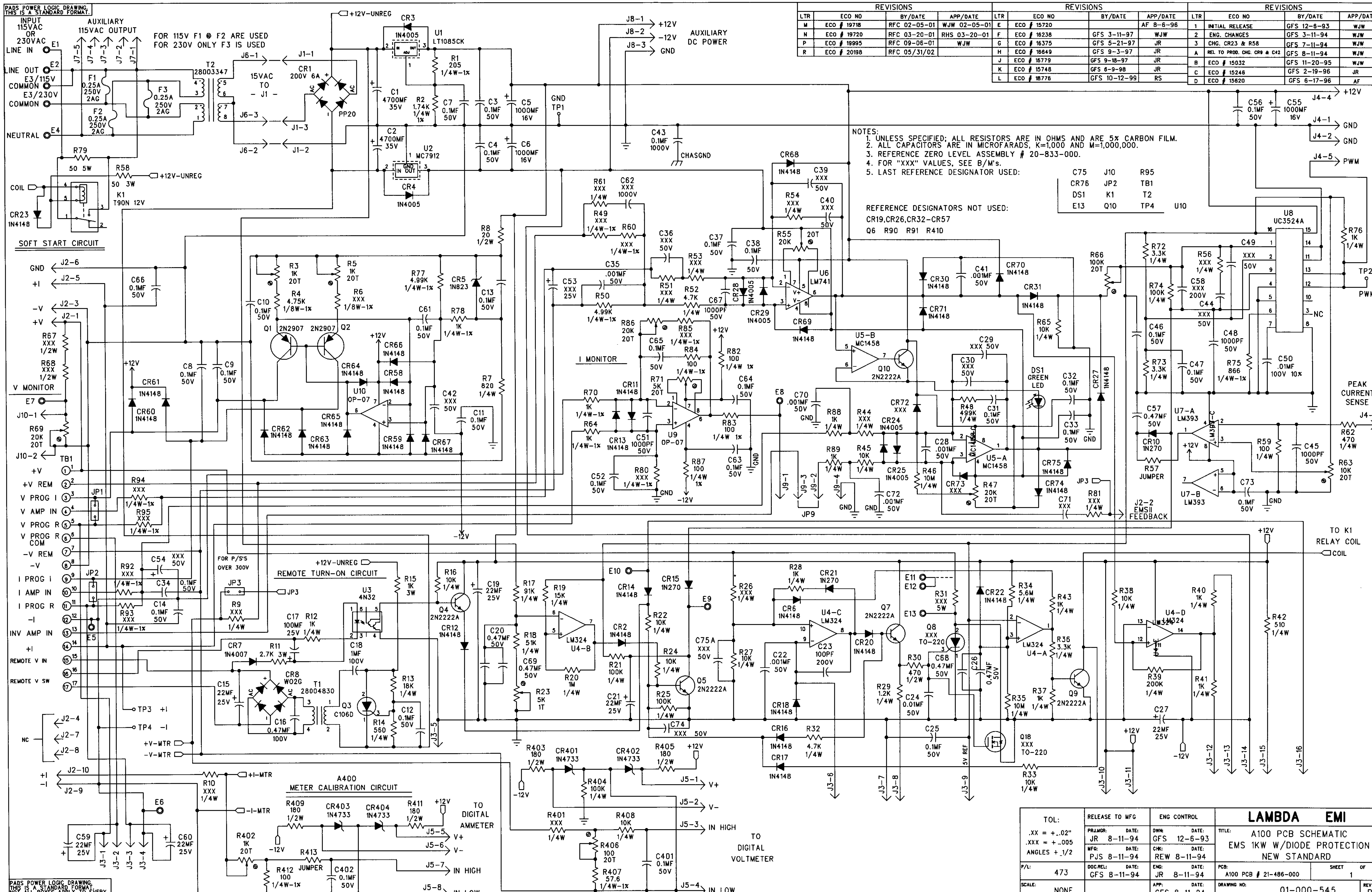
SHEET ___ OF ___.



MTL:	TOL: .XX = ± .02" .XXX = ± .005" ANGLES ± 1/2"	DWN: RDW DATE: 9/14/92	E/M	ELECTRONIC MEASUREMENTS INCORPORATED
		CHK: / DATE:		
FIN:	P/L 473	ENG: DATE:	TITLE: SCHEMATIC, A300 LINE FILTER EMS 5KW415V	
	SCALE:	APP: DATE:	DWG NO. 01-000-412	REV.

SHEET 1 OF 1.

BRUNING 46



PADS POWER LOGIC DRAWING.
THIS IS A STANDARD FORMAT.

LTR	ECO NO	BY/DATE	APP/DATE
M	ECO # 19718	RFC 02-05-01	WJW 02-05-01
N	ECO # 19720	RFC 03-20-01	RHS 03-20-01
P	ECO # 19995	RFC 09-06-01	WJW
R	ECO # 20198	RFC 05/31/02	

LTR	ECO NO	BY/DATE	APP/DATE
E	ECO # 15720		AF 8-6-96
F	ECO # 16238	GFS 3-11-97	WJW
G	ECO # 16375	GFS 5-21-97	JR
H	ECO # 16649	GFS 9-3-97	JR
J	ECO # 16779	GFS 9-18-97	JR
K	ECO # 15748	GFS 6-9-98	JR
L	ECO # 18776	GFS 10-12-99	RS

LTR	ECO NO	BY/DATE	APP/DATE
1	INITIAL RELEASE	GFS 12-6-93	WJW
2	ENG. CHANGES	GFS 3-11-94	WJW
3	CHG. CR23 & R58	GFS 7-11-94	WJW
A	REL TO PROD. CHG. CR9 & C42	GFS 8-11-94	WJW
B	ECO # 15032	GFS 11-20-95	WJW
C	ECO # 15246	GFS 2-19-96	JR
D	ECO # 15620	GFS 6-17-96	AF

NOTES:
1. UNLESS SPECIFIED; ALL RESISTORS ARE IN OHMS AND ARE 5% CARBON FILM.
2. ALL CAPACITORS ARE IN MICROFARADS, K=1,000 AND M=1,000,000.
3. REFERENCE ZERO LEVEL ASSEMBLY # 20-833-000.
4. FOR "XXX" VALUES, SEE B/M's.
5. LAST REFERENCE DESIGNATOR USED:

C75	J10	R95	
CR76	JP2	TB1	
DS1	K1	T2	
E13	Q10	TP4	U10

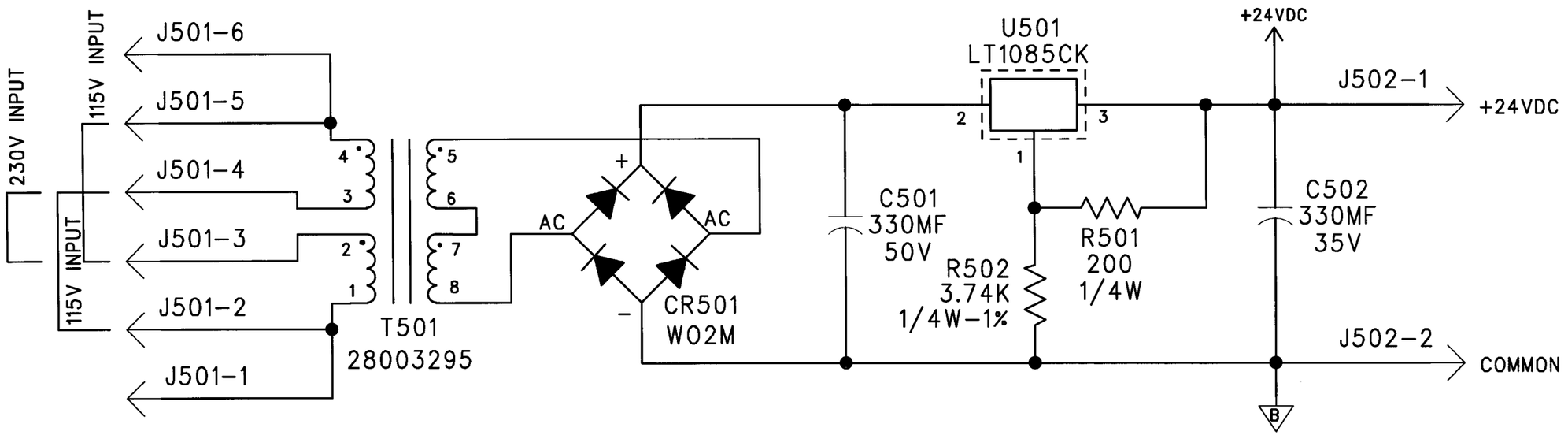
REFERENCE DESIGNATORS NOT USED:
CR19,CR26,CR32-CR57
Q6 R90 R91 R410

FOR 115V F1 & F2 ARE USED
FOR 230V ONLY F3 IS USED

TOL:	RELEASE TO MFG	ENG CONTROL	LAMBDA EMI	
.XX = +_.02" .XXX = +_.005 ANGLES +_1/2	PRJ.MGR: JR DATE: 8-11-94	DWN: GFS DATE: 12-6-93	TITLE: A100 PCB SCHEMATIC EMS 1KW W/DIODE PROTECTION NEW STANDARD	
	MFG: PJS DATE: 8-11-94	CHK: REW DATE: 8-11-94		
P/L: 473	DOC.REL: GFS DATE: 8-11-94	ENG: JR DATE: 8-11-94	PCB: A100 PCB # 21-486-000	SHEET 1 OF 1
SCALE: NONE		APP: GFS DATE: 8-11-94	DRAWING NO: 01-000-545	REV. R

PADS POWER LOGIC DRAWING.
THIS IS A STANDARD FORMAT.
NOT ALL BOXES APPLY TO EVERY
DRAWING AND MAY NOT BE FILL IN.

APPLICATIONS			REVISIONS			
USED ON	NEXT ASSY	QTY	LTR	ECO NO	BY/DATE	APP/DATE
			1	INITIAL RELEASE	GFS 12-15-93	WJW 12-20-93
			A	RELEASE TO PROD. CHG. R502	GFS 11-29-94	



NOTES:

1. UNLESS SPECIFIED, ALL RESISTORS ARE IN OHMS, ALL CAPACITORS ARE IN MICROFARADS. K = 1,000 AND M = 1,000,000.
2. REF. ASSEMBLY 20-831-000.

TOL: .X = ±.02 .XX = ± .01 .XXX = ± .005 FRAC = ± 1/64 ANGLES = ± 1/2	RELEASE TO MFG	ENG CONTROL	ELECTRONIC MEASUREMENTS, INC.
	PRJ.MGR: DATE:	DWN: DATE: GFS 12-15-93	TITLE: A500 PCB SCHEMATIC 24VDC FAN PWR EMS 5-200-0980F
	MFG: DATE:	CHK: DATE: BM 12-16-93	
P/L: 473	DOC.REL: DATE:	ENG: DATE: JR 12-15-93	PCB: 21-489-000 SHEET 1 OF 1
SCALE: NONE		APP: DATE: WJW 12-20-93	DRAWING NO: 01-000-549 REV. A

03-000-053

THIS IS A COMPUTER GENERATED DWG.
NO MANUAL CHANGES ARE PERMITTED.

REVISIONS				REVISIONS			
LTR	ECO NO	BY/DATE	APP/DATE	LTR	ECO NO	BY/DATE	APP/DATE
D	ECO # 15870	GFS 9-27-96	JR	H	ECO 17887	CJS 9-25-98	GFS
E	ECO # 16193	GFS 3-11-97		J	ECO 20087	KHL 10-29-01	
F	ECO # 16385	GFS 7-24-97		A	ECO#13992/REL TO PROD	GFS 10-21-94	JR
G	ECO # 16445	LPN 8-8-97	GFS	B	ECO # 14381	GFS 3-13-95	JR
				C	ECO # 15449	GFS 5-1-96	WJW

AUXILIARY DC POWER

INVERTER

OUTPUT DRIVERS

28VAC FROM T2 XFMR

I MONITOR

V MONITOR

REMOTE TURN-ON CIRCUIT

NOTES:
1) UNLESS SPECIFIED, ALL RESISTORS ARE IN OHMS AND ARE 1/4 WATT, 5% CARBON FILM.
2. ALL CAPACITORS ARE IN MICROFARADS, K=1,000 AND M=1,000,000.
3. REFERENCE ZERO LEVEL ASSEMBLY # 20-835-000.
4. FOR "XXX" VALUES SEE B/M'S.
5. LAST REFERENCE DESIGNATOR USED:

C79	J10	TB1
CR52	JP4	T1
DS1	Q10	TP4
E13	R106	U12

REFERENCE DESIGNATORS NOT USED:
E1 E2 E3 E4 E5 E6 Q6 J5 J6 J7

PADS DRAWING.
THIS IS A STANDARD FORMAT.
NOT ALL BOXES APPLY TO EVERY DRAWING AND MAY NOT BE FILLED IN.

TOL: .X = ± .02" .XX = ± .01" .XXX = ± .005" FRAC. = ± 1/64" ANGLES = ± 1/2DEG	RELEASE TO MFG	ENG CONTROL	LAMBDA EMI
	PRJ.MGR: DATE: JR 10-18-94	DWN: DATE: GFS 3-7-94	TITLE: A100 PCB SCHEMATIC EMS 2KW W/DIODE PROTECTION NEW STANDARD
	MFG: DATE: PJS 10-18-94	CHK: DATE: REW 10-17-94	
P/L: 473	DOC.REL: DATE: GFS 10-18-94	ENG: DATE: JR 10-18-94	PCB: 21-490-000 SHEET 1 OF 1
SCALE: NONE		APP: DATE: GFS 10-18-94	DRAWING NO: 01-000-567 REV. J

APPLICATIONS			REVISIONS			
USED ON	NEXT ASSY	QTY	LTR	ECO NO	BY/DATE	APP/DATE
			C	ECO # 17887	CJS 9-24-98	GFS
			D	ECO # 18692	GFS 8-19-99	
			A	RELEASE TO PROD.	GFS 7-30-96	WJW
			B	ECO # 16103	GFS 1-15-97	JR

REMOTE TURN-ON CIRCUIT

NOTES:
1) UNLESS SPECIFIED, ALL RESISTORS ARE IN OHMS AND ARE 5% CARBON FILM.
2. ALL CAPACITORS ARE IN MICROFARADS, K=1,000 AND M=1,000,000.
3. REFERENCE ZERO LEVEL ASSEMBLY # 20-837-000.
4. FOR "XXX" VALUES, SEE B/M's.
5. LAST REFERENCE DESIGNATOR USED:

C89	JP2	TP20
CR61	Q9	U15
E13	R106	
J10		

REFERENCE DESIGNATORS NOT USED:
E1 E2 E3 E4 E5 E6 Q6

TOL: .X = ±.02, .XX = ±.01, .XXX = ±.005, FRAC = ± 1/64, ANGLES = ± 1/2	RELEASE TO MFG	ENG CONTROL	LAMBDA EMI
	PRJ.MGR: AF 7-31-96	DWN: GFS 12-12-95	TITLE: A100 PCB SCHEMATIC EMS 5KW W/DIODE PROTECTION NEW STANDARD
	MFG: PJS 7-31-96	CHK: JR 1-29-96	
P/L: 473	DOC.REL: WJW 7-31-96	ENG: AF 1-29-96	PCB: A100 PCB # 21-491-000 SHEET 1 OF 1
SCALE: NONE		APP: JR 1-29-96	DRAWING NO: 01-000-568 REV. D

03-000-053

REVISIONS			
LTR	ECO NO	BY/DATE	APP/DATE
F	ECO # 19718	RFC 02-05-01	

REVISIONS			
LTR	ECO NO	BY/DATE	APP/DATE
1	INITIAL RELEASE	GFS 3-17-94	JR 3-18-94
A	REL TO PROD.	GFS 6-13-94	JR 6-13-94
B	ECO # 13719	GFS 8-2-94	JR 8-2-94
C	ECO # 15246	GFS 2-19-96	JR
D	ECO # 16649	GFS 9-3-97	JR
E	ECO # 16779	GFS 9-18-97	WJW

NOTES:
1. UNLESS SPECIFIED; ALL RESISTORS ARE IN OHMS AND ARE 5% CARBON FILM.
2. ALL CAPACITORS ARE IN MICROFARADS, K=1,000 AND M=1,000,000.
3. REFERENCE ZERO LEVEL ASSEMBLY # 20-828-200.
4. FOR "XXX" VALUES, SEE B/M's.
5. LAST REFERENCE DESIGNATOR USED:

C73	J10	R95	
CR76	JP2	TB1	
DS1	K1	T2	
E13	Q10	TP4	U10

REFERENCE DESIGNATORS NOT USED:
CR19,CR26,CR32-CR57
Q6 R9D R91 R410

TOL: .XX = +_.02" .XXX = +_.005 ANGLES +_1/2	RELEASE TO MFG	ENG CONTROL	ELECTRONIC MEASUREMENTS, INC.
	PRJ/MGR: DATE: JR 6-13-94	DSN: DATE: GFS 3-17-94	TITLE: A100 PCB SCHEMATIC EMS 1KW W/DIODE PROTECTION EMS 5-200-2 230V
P/L: 473	MFG: DATE: PJS 6-14-94	CHK: DATE: REW 3-18-94	PCB: 21-486-000 SHEET OF 1 1
SCALE: NONE	DOC.REL: DATE: GFS 6-13-94	ENG: DATE: JR 3-18-94	DRAWING NO: 01-000-570 REV. F
		APP: DATE: WJW 3-18-94	

03-000-053

APPLICATIONS			REVISIONS			
USED ON	NEXT ASSY	QTY	LTR	ECO NO	BY/DATE	APP/DATE
			A	ECO # 13337	BM 8-8-94	GFS
			B	REDRAWN/NO CHANGES	LPN 3-5-97	

NOTES:

1. UNLESS SPECIFIED, ALL RESISTORES ARE IN OHMS AND ARE 5 %, 1/4WATT CARBON FILM. (K=1,000)
2. ALL CAPACITORS ARE IN MICROFARADS. (M=1,000,000)

VOLTAGE CHANNEL

REF. CIRCUIT

AVERAGE CURRENT LIMIT CIRCUIT

CURRENT CHANNEL

REMOTE TURN-ON CIRCUIT

SUPERVISORY CIRCUIT

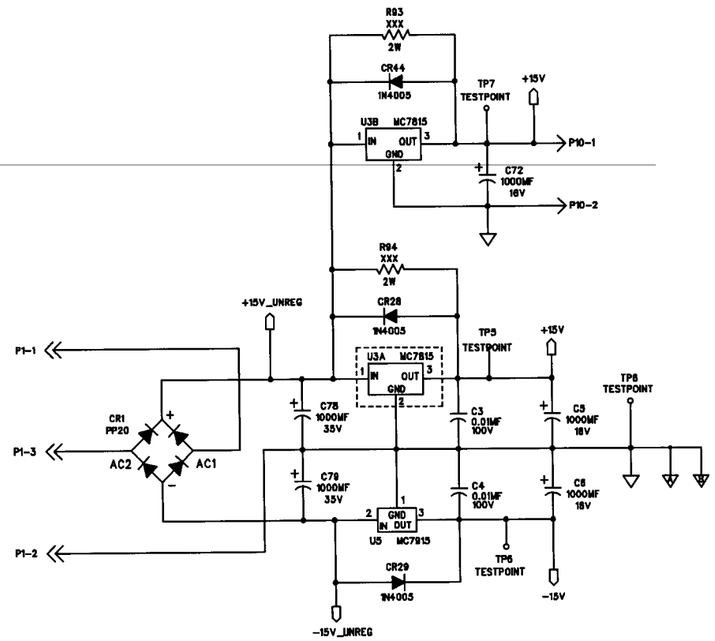
SPARES

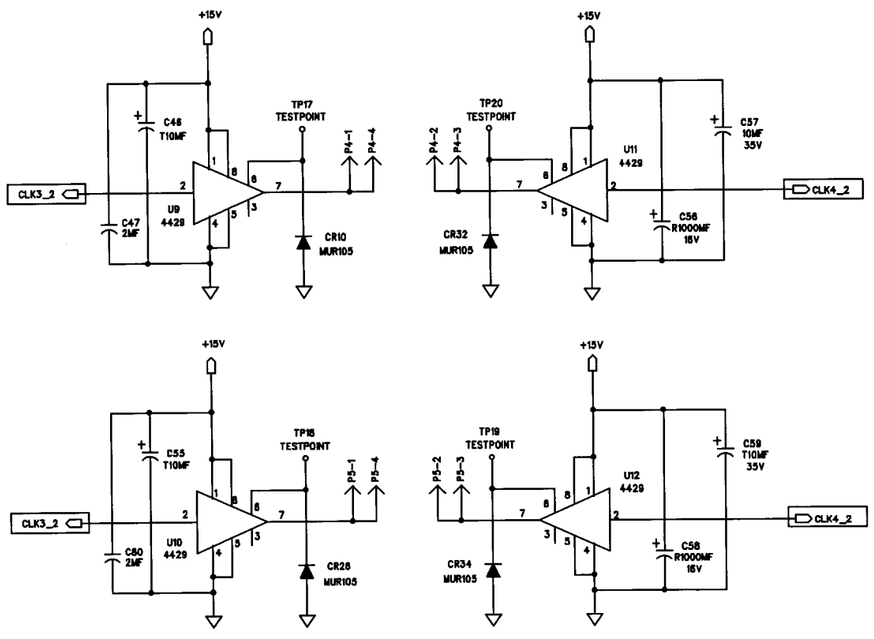
RELEASE TO MFG	ENG CONTROL	ELECTRONIC MEASUREMENTS, INC.
PRJ.MGR: DATE:	DWN: McBRIDE DATE: 8-8-94	TITLE: A100 SCHEMATIC EMS 5KW
MFG: DATE:	CHK: DNH DATE: 8-9-94	
DOC.REL: GFS DATE: 8-10-94	ENG: DATE:	PCB: SHEET 1 OF 2
P/L: 473	APP: GFS DATE: 8-10-94	DRAWING NO: 01-000-571 REV. B

03-000-083

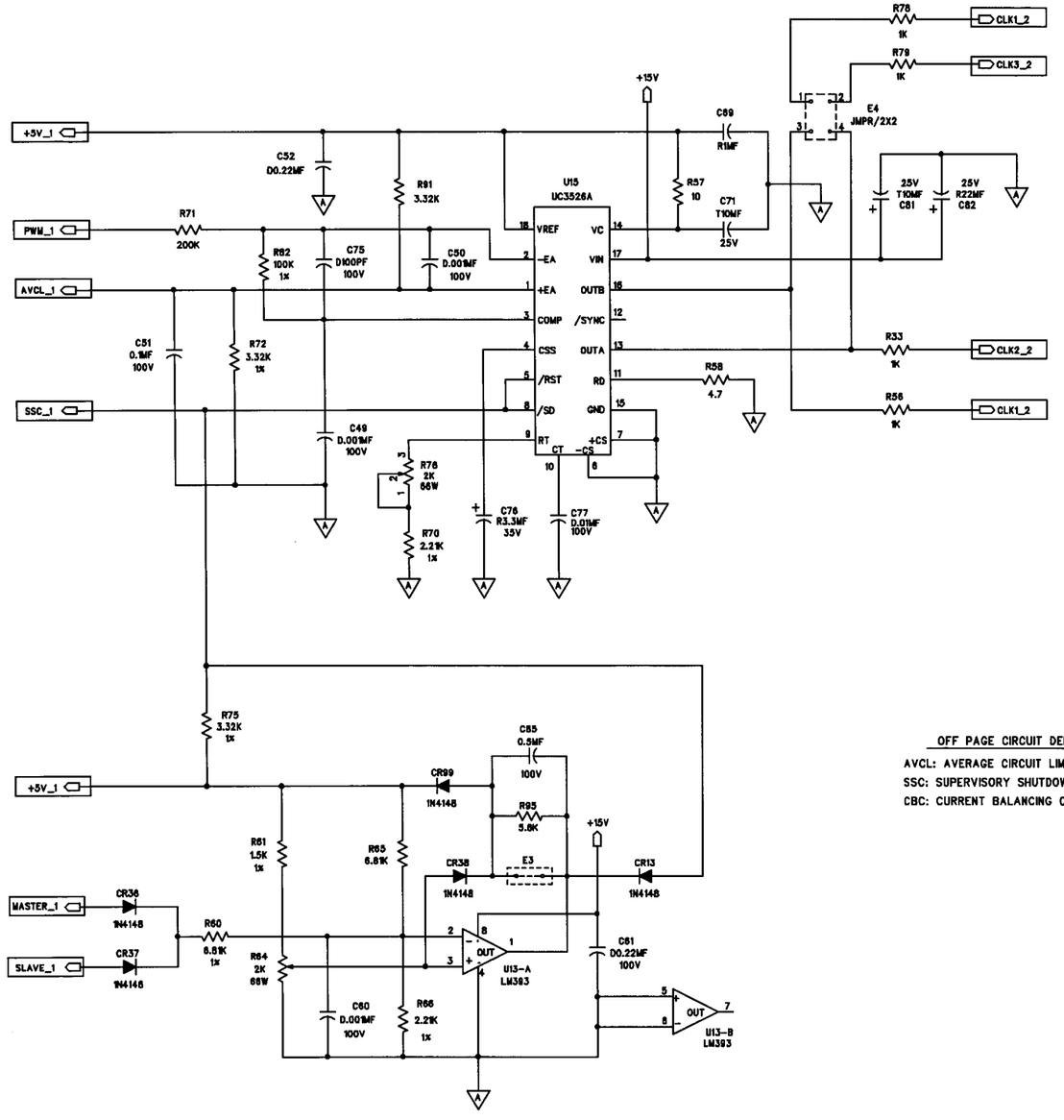
REVISIONS			
LTR	ECO NO	BY/DATE	APP/DATE
	SEE SHT 1 FOR CHGS		

HOUSE KEEPING POWER SUPPLY





INVERTER DRIVER CIRCUIT



PEAK CURRENT SHUTDOWN CIRCUIT

OFF PAGE CIRCUIT DEFINITIONS

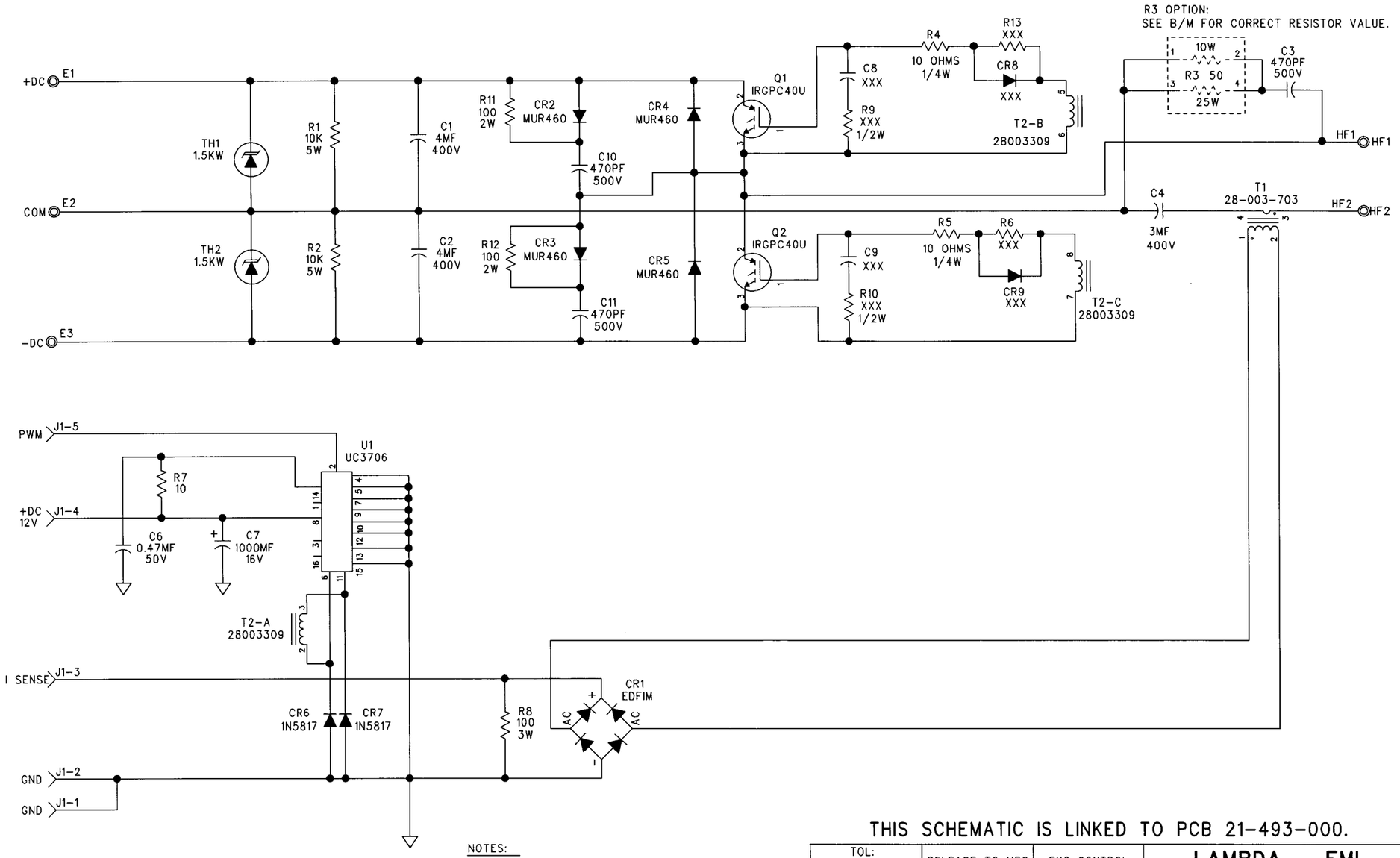
AVCL: AVERAGE CIRCUIT LIMITING CIRCUIT
SSC: SUPERVISORY SHUTDOWN CIRCUIT
CBC: CURRENT BALANCING CIRCUIT

RELEASE TO MFG	ENG CONTROL	ELECTRONIC MEASUREMENTS, INC.	
PRJ.MGR: DATE:	DWN: DATE:	TITLE: A100 SCHEMATIC EMS 5KW	
MFG: DATE:	CHK: DATE:		
DOC.REL: DATE:	ENG: DATE:	PCB:	SHEET 2 OF 2
P/L:	APP: DATE:	DRAWING NO: 01-000-571	REV. B

03-000-0p3

THIS IS A COMPUTER GENERATED DWG.
NO MANUAL REVISIONS ARE PERMITTED.

REVISIONS			
LTR	ECO NO	BY/DATE	APP/DATE
1	INITIAL RELEASE	BM 5/18/94	GFS 6-1-94
A	RELEASE TO PROD.	GFS 11-14-94	WJW
B	ECO # 17945	RFL 10-30-98	WJW
C	ECO # 20198	RFC 05/31/02	



NOTES:

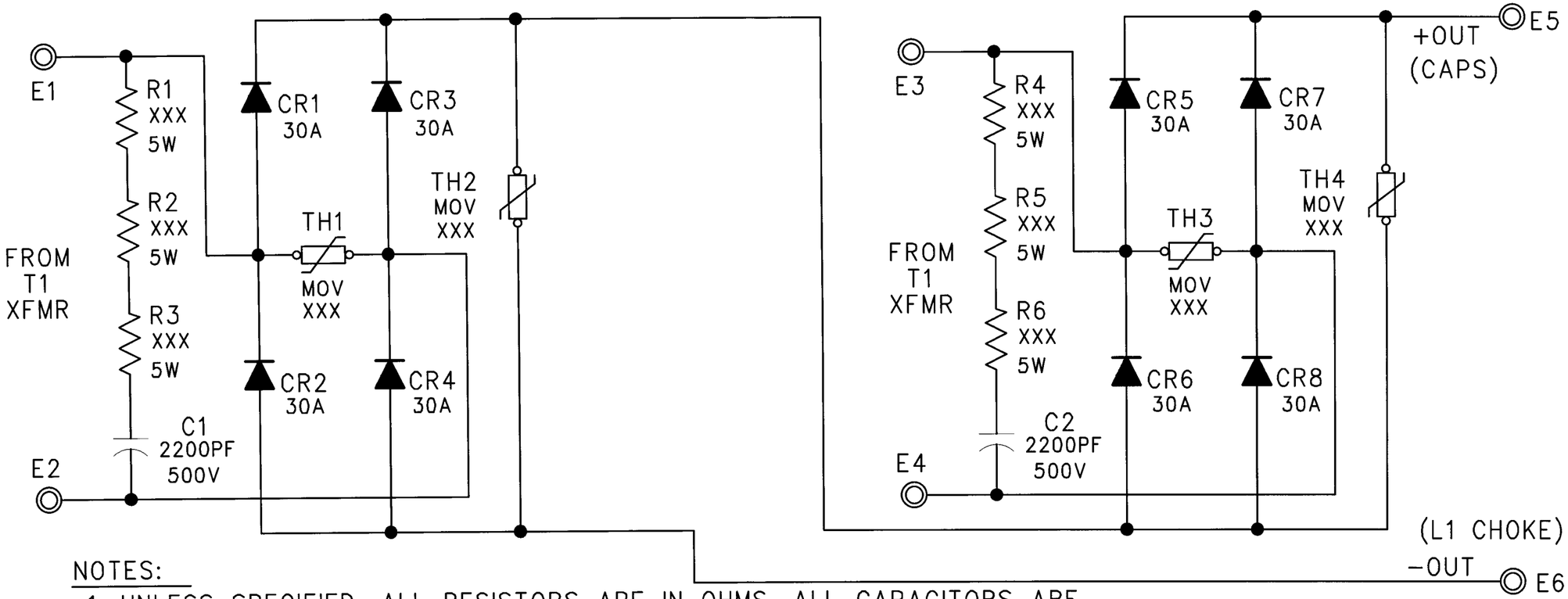
1. UNLESS SPECIFIED, ALL RESISTORS ARE IN OHMS, ALL CAPACITORS ARE IN MICROFARADS. K = 1,000 AND M = 1,000,000.
2. REF. ASSEMBLY: 20-842-000 & 20-842-400.

THIS SCHEMATIC IS LINKED TO PCB 21-493-000.

PADS POWER LOGIC DRAWING.
THIS IS A STANDARD FORMAT.
NOT ALL BOXES APPLY TO EVERY
DRAWING AND MAY NOT BE FILLED IN.

TOL: .X = ±.02, .XX = ± .01, .XXX = ± .005, FRAC = ± 1/64, ANGLES = ± 1/2	RELEASE TO MFG	ENG CONTROL	LAMBDA EMI
	PRJ.ENG: DATE: RJ 9-18-97	DWN: DATE: BM 5/18/94	TITLE: A200 PCB SCHEMATIC INVERTER EMS 1KW NEW STANDARD
	MFG: DATE: PJS 8-20-97	CHK: DATE: GFS 6-1-94	
P/L: 473	DOC.REL: DATE: WJW 8/20/97	ENG: DATE: SS 5-27-95	PCB: A200 PCB # 21-493-000 — SHEET 1 OF 1
SCALE: NONE		APP: DATE: GFS 6-1-94	DRAWING NO: 01-000-582 — REV. C

APPLICATIONS			REVISIONS			
USED ON	NEXT ASSY	QTY	LTR	ECO NO	BY/DATE	APP/DATE
			1	INITIAL RELEASE	GFS 3-13-96	WJW 3-22-96
			A	RELEASE TO PROD.	GFS 2-13-97	



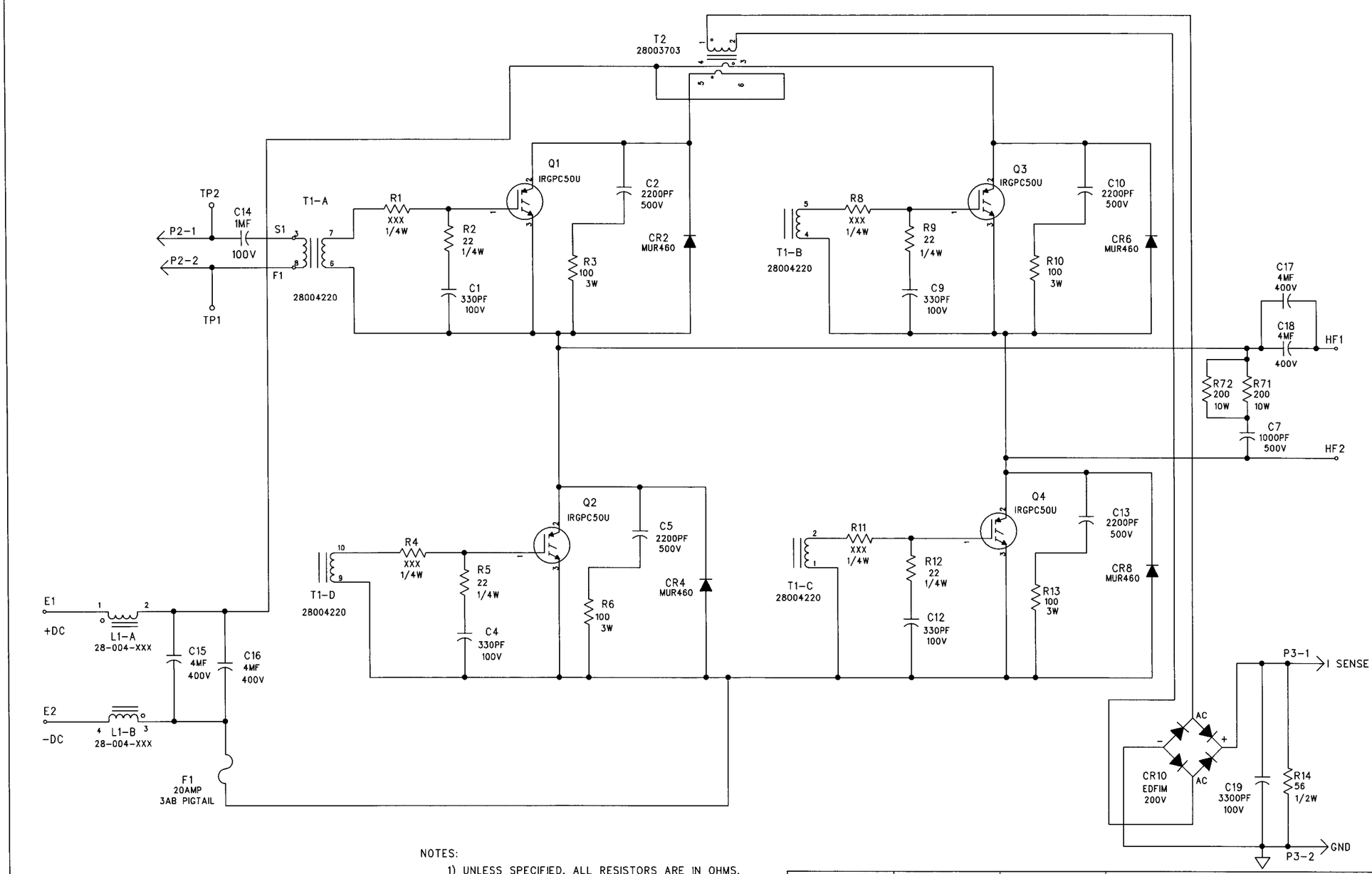
NOTES:

1. UNLESS SPECIFIED, ALL RESISTORS ARE IN OHMS, ALL CAPACITORS ARE IN MICROFARADS. K = 1,000 AND M = 1,000,000.

TOL: .X = ±.02 .XX = ± .01 .XXX = ± .005 FRAC = ± 1/64 ANGLES = ± 1/2	RELEASE TO MFG	ENG CONTROL	ELECTRONIC MEASUREMENTS, INC.	
	PRJ.MGR: DATE:	DWN: GFS DATE: 3-13-96	TITLE: A500 PCB SCHEMATIC DIODE SNUBBER 600V EMS 1KW & 5KW NEW	
	MFG: DATE:	CHK: WJW DATE: 3-22-96		
S P/L: 473	DOC.REL: DATE:	ENG: AF DATE: 3-22-96	PCB: A500 PCB # 21-709-000 PCB ASS'y # 20-894-XXX	SHEET 1 OF 1
P SCALE: NONE		APP: WJW DATE: 3-22-96	DRAWING NO: 01-000-702	REV. A

03-000-053

APPLICATIONS			REVISIONS			
USED ON	NEXT ASSY	QTY	LTR	ECO NO	BY/DATE	APP/DATE
EMSII 5KW	20-893-002	1	1	INITIAL RELEASE	GFS 5-12-97	JR
			A	RELEASE TO PROD.	GFS 7-19-97	JR
			B	ECO # 17885	RFL 9-16-98	



NOTES:

1) UNLESS SPECIFIED, ALL RESISTORS ARE IN OHMS, AND ARE 5% CARBON FILM; ALL CAPACITORS ARE IN MICROFARADS : K = 1,000 ANS M = 1,000,000.
2) FOR XXX VALUES SEE CHART BELOW.
3) REFERENCE ASSEMBLY No 20-893-XXX

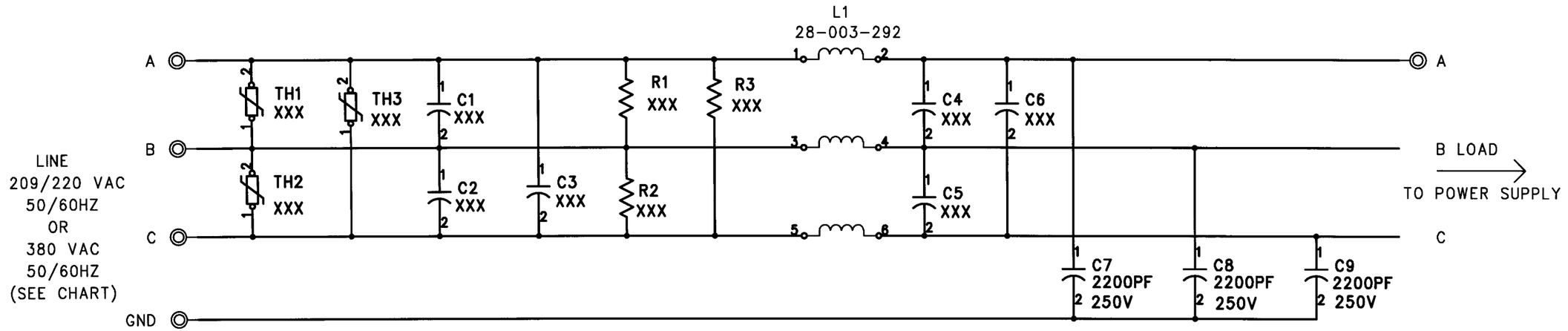
20-893-002	47-1/4W-5%	23-189-011
PCB ASS'Y	R1-R4-R8-R11	H/S ASS'Y
VARIATION CHART		

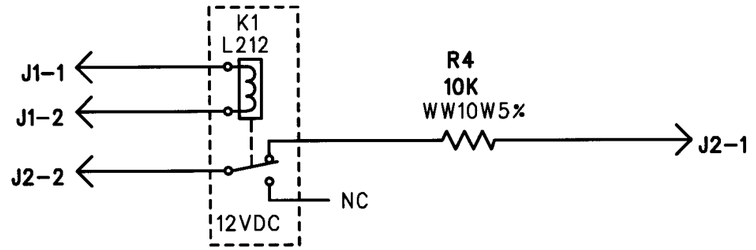
03-000-052

P S

TOL: .X = ±.02, .XX = ± .01, .XXX = ± .005, FRAC = ± 1/64, ANGLES = ± 1/2	RELEASE TO MFG	ENG CONTROL	ELECTRONIC MEASUREMENTS, INC.
	PRJ.MGR: JR DATE: 8-17-98	DWN: GFS DATE: 5-12-97	TITLE: A200 PCB SCHEMATIC INVERTER EMS 5KW -1267A
	MFG: WM DATE: 8-17-98	CHK: REW DATE: 5-12-97	
P/L: 473/485	DOC.REL: WJW DATE: 8-17-98	ENG: JR DATE: 5-12-97	PCB: 21-496-000 20-893-002 SHEET 1 OF 1
SCALE: NONE		APP: GFS DATE: 5-12-97	DRAWING NO: 01-000-781 REV. B

APPLICATIONS			REVISIONS			
USED ON	NEXT ASSY	QTY	LTR	ECO NO	BY/DATE	APP/DATE
EMS 2.5KW	20-314-000		A	ADD FOR 250V	REW	WJW
EMS 5KW	20-314-001		B	ECO #16415 12/17/90	EAIREW	WJW
			C	ADD NOTES	GFS	WJW
			D	REDRAWN	CJS 3/31/97	





VARIATION CHART		
SYMBOL	VALUE	APPLICATION
C4,C5,C6	0.47mf-250VAC	EMS 2.5KW 20-314-000
C4,C5,C6	1.0mf-250VAC	EMS 5KW 20-314-001
C1,C2,C3	.47mf-250VAC	EMS 2.5KW 20-314-000 EMS 5KW 20-314-001
TH1,TH3	275V-2500A	EMS 2.5KW 20-314-000 EMS 5KW 20-314-001
TH1,TH3	275V-2500A	EMS 5KW 350V 20-314-001

TOL: .X = ±.02 .XX = ± .01 .XXX = ± .005 FRAC = ± 1/64 ANGLES = ± 1/2	RELEASE TO MFG	ENG CONTROL	ELECTRONIC MEASUREMENTS, INC.
	PRJ.MGR: DATE:	DWN: DATE: I.C 9/23/86	TITLE: SCHEMATIC EMS 30 A300 PCB ASSY SWITCHER LINE SWITCHER
	MFG: DATE:	CHK: DATE: GFC 8/24/97	
P/L: 473/485	DOC.REL: DATE:	ENG: DATE: I.C 9/23/86	PCB: 21- SHEET 1 OF 1
SCALE: NONE		APP: DATE: WJW 9/23/86	DRAWING NO: 01-168-000 REV. D

03-000-051

APPLICATION			LTR.	E.C.O. NO.	BY	APP.
USED ON	NEXT ASSY.	QTY.	A	CHG PER ENG 5/15/87	S.T	R.K.B
EMS 1KW	20-357-000	~				

DWG. NO. 01-178-000 REV.

SHEET ___ OF ___.

REF. ASSY DWG 20-357-000

MTL:	TOL: .XX = ± .02" .XXX = ± .005" ANGLES ± 1/2"	DWN: J.V.D. DATE: 7-23-87	ELECTRONIC MEASUREMENTS INCORPORATED
		CHK: GFS DATE: 8-Dec-94	TITLE: SCHEMATIC DIAGRAM FOR A300 LINE FILTER EMS 1KW
FIN:	P/L 473	ENG: DATE:	
	SCALE: NONE	APP: DATE:	DWG NO. 01-178-000 REV. A

SHEET 1 OF 1.

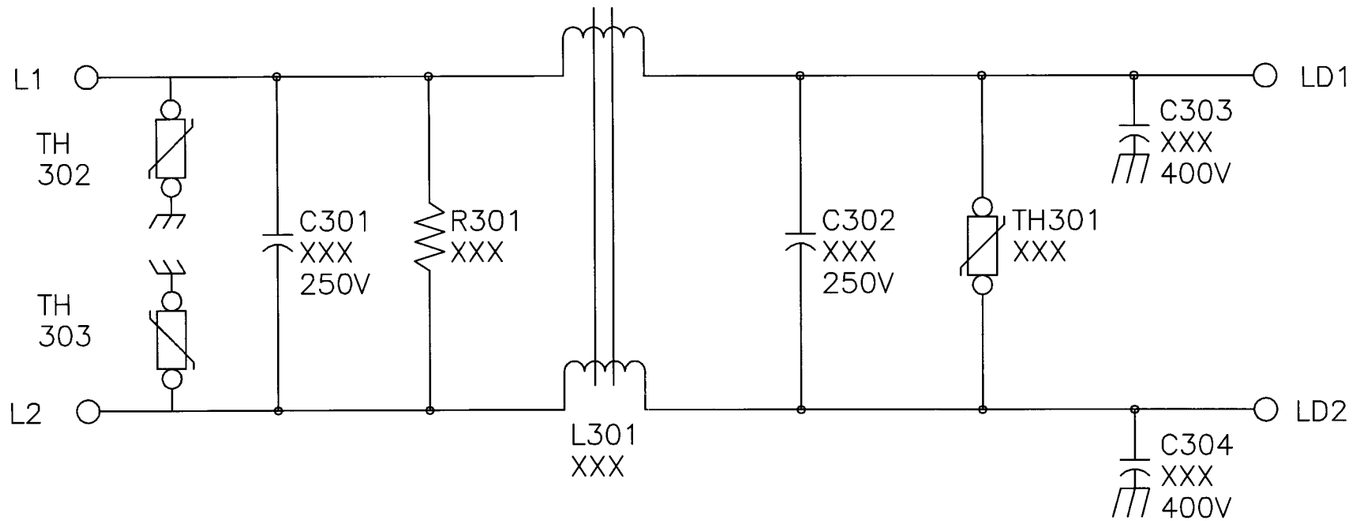
BRUNING 46

THIS IS A COMPUTER GENERATED DWG.
NO MANUAL REVISIONS ARE PERMITTED.

APPLICATION			LTR	E.C.O. NO.	BY	APP.
USED ON	NEXT ASSY.	QTY.				
			A	ADD CHART 6/24/91	BM	
			B	ECO#15143 1/19/96	JJR	GFS
			C	ECO#15570 6/11/96	JJR	

NOTES:

1. ALL RESISTORS ARE IN OHMS, ALL CAPACITORS ARE IN MICROFARADS; K = 1000, AND M = 1,000,000.
2. ▭ DENOTES EQUIPMENT MARKING.
3. ⊘ DENOTES SCREWDRIVER ADJUST.
4. ⏚ DENOTES CHASSIS GROUND.
5. FOR XXX VALUES SEE B/M's.



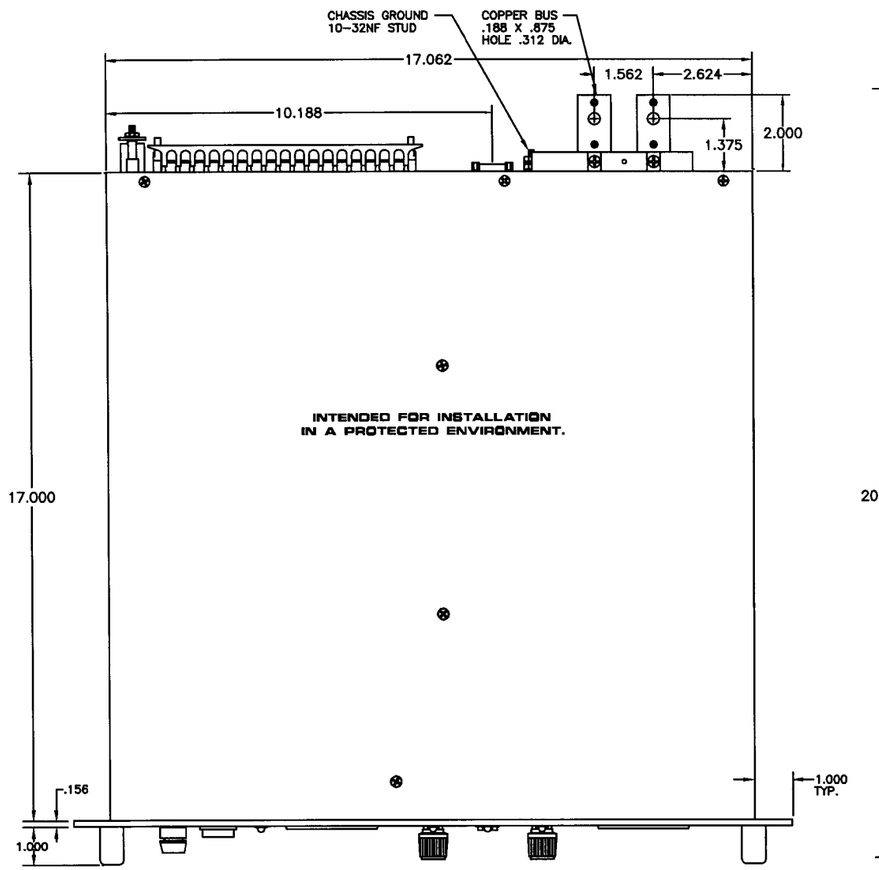
ASSY.#	L301	TH1	TH2 TH3
20162001	28002326	V250LA40B	OMIT
20162002	28002327	V250LA40B	OMIT
20162003	28002328	V130LA20B	OMIT
20162004	28003060	V130LA20B	OMIT
20162005	28003060	V250LA40B	OMIT
20162006	28003060	V250LA40B	OMIT
20162007	28004239	V130LA20B	OMIT
20162008	28002328	V275LA40B	OMIT
20162009	28003060	V250LA40B	V150LA20B

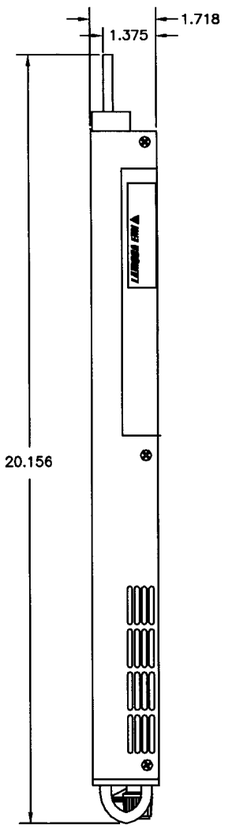
SHEET___OF___

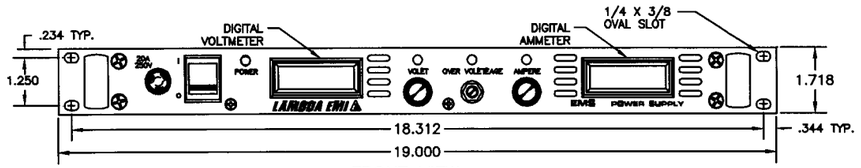
MTL: ~	TOL: .X = ± .02" .XX = ± .01" .XXX = ± .005" FRAC. = ± 1/64" ANGLES = ± 1/2°	REL. TO MFG. PRJ. ENG. DATE: SESHU 6/24/91	ENG. CTL. DWN: DATE: BM 3/18/91	ELECTRONIC MEASUREMENTS, INC.
		MFG: DATE: PJS 6/24/91	CHK: DATE: JJR 5/13/94	TITLE: SCHEMATIC A300 LINE FILTER TCR/EMS 600W/1KW/2KW
FIN: ~	P/L: 470/473	DOC. REL. DATE: WJW 3/18/91	ENG: DATE: SESHU 6/24/91	
	SCALE: ~	DO NOT SCALE DWG.	APP: DATE: WJW 3/18/91	DWG. NO. 01-213-000 REV. C

THIS IS A COMPUTER GENERATED DWG.
NO MANUAL REVISIONS ARE PERMITTED.

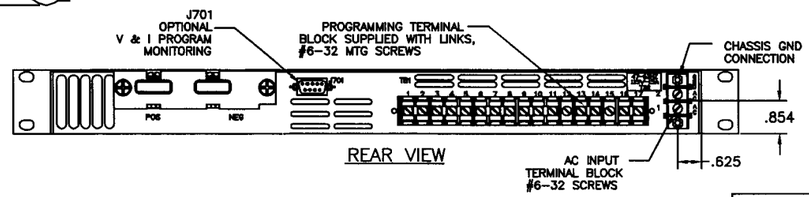
APPLICATION			LTR	E.C.O. NO.	BY	APP.
USED ON	NEXT ASSY.	QTY.	A	RELEASE TO PRODUCTION	REW 2/12/90	WJW
			B	ECO#16952	REW 11-13-97	GFS
			C	ECO#18914 12-21-99	REW	RFC
			D	ECO#19120 05-24-00	RFC	







FRONT VIEW



REAR VIEW

STANDARD FEATURES:
1. ON OFF SWITCH.
2. DIGITAL VOLTMETER AND AMMETER.
3. VOLTAGE AND CURRENT ADJUST.
4. VOLTAGE AND CURRENT MODE LAMP INDICATORS.
5. INTERNAL LINE FILTER.
6. PWM CONTROL.
7. REMOTE TURN ON AC, DC, OR DRY SWITCH.
8. OVERVOLTAGE PROTECTION WITH FRONT PANEL ADJUST.
9. RACK MOUNTABLE.
10. POWER ON INDICATOR.

OPTIONAL FEATURES:
1. LOCKBUSHING IN PLACE OF KNOBS.
2. 10 TURN CURRENT ADJUST.
3. CHOICE OF PANEL COLOR.
4. TEST POINTS.
5. RSTL PROGRAMMER (IEEE 488 RS232)

PROGRAMMING CHART	
TB1	FUNCTION
1	+ VOLTAGE
2	+ VOLTAGE SENSE REMOTE
3	V PROGRAMMING I
4	V AMP IN
5	V PROGRAMMNG R
6	V PROGRAMMING R COM
7	– VOLTAGE SENSE REMOTE
8	– VOLTAGE
9	I PROGRAMMING I
10	I AMP IN
11	I PROGRAMMING R
12	– SHUNT
13	INVERTER AMP IN
14	+ SHUNT
15	6–32VDC OR 12–24VAC INPUT
16	AC–DC OR SWITCH BTWN 15–16
17	SWITCH OR LINK 16 TO 17

REMOTE VOLTAGE TURN–ON (REMOTE V IN)

REMOTE DRY CONTACT TURN ON (REMOTE SW)

FACTORY WIRED FOR LOCAL TURN ON.

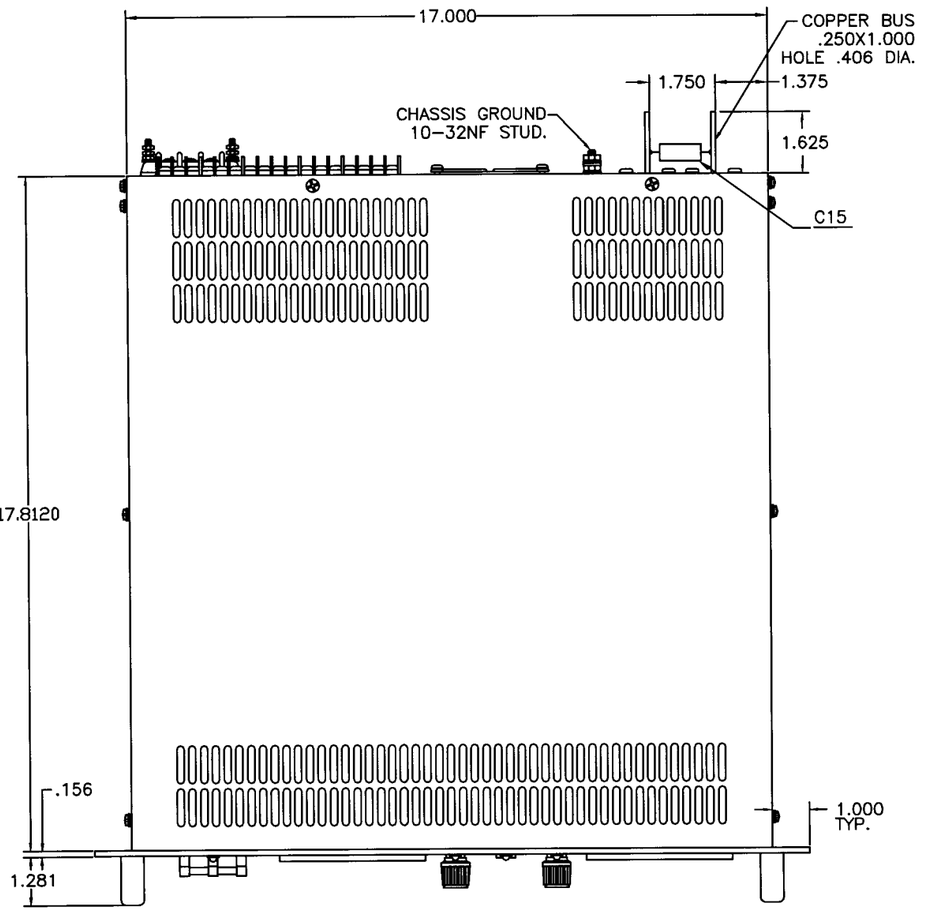
AC INPUT CHART	
TB2	1 Ø
1	AC LINE
2	AC LINE
MTG	GND

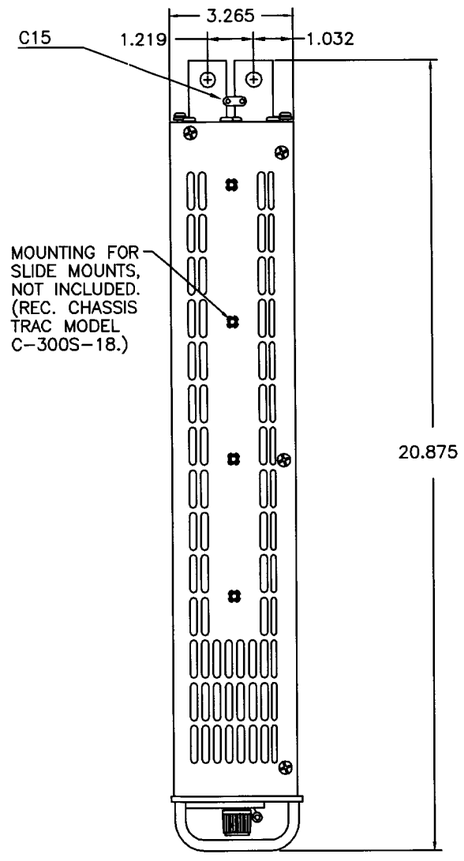
0–5V/0–10V MONITOR	
J701	FUNCTION
1	V MONITOR
2	I MONITOR
3	COMMON

MTL: ~	TOL: .X = ± .02" .XX = ± .01" .XXX = ± .005" FRAC. = ± 1/64" ANGLES = ± 1/2°	REL. TO MFG. ENG: SESHU 2/14/90	ENG. CTL. DWN: REW 2/12/90	LAMBDA EMI An Invensys company	SHEET__OF__
FIN: ~	P/L: 485	MFG: PJS 2/14/90	CHK: GFS 2/14/90	TITLE: DIMENSIONAL OUTLINE EMS 600W/1KW	
DO NOT SCALE DWG.	SCALE: NONE	DOC. REL: WJW 3/14/90	ENG: SESHU 2/14/90		
		DO NOT SCALE DWG.	APP: WJW 3/14/90	DWG. NO. 02-473-002	REV. D

THIS IS A COMPUTER GENERATED DWG.
NO MANUAL REVISIONS ARE PERMITTED.

APPLICATION			LTR	E.C.O. NO.	BY	APP.
USED ON	NEXT ASSY.	QTY.				
			A	INIT. REL. 8/23/94	REW	GFS
			B	ECO#16952 11-13-97	REW	GFS
			C	ECO#18914 12/22/99	REW	RFC
			D	ECO#19120 05-24-00	RFC	GFS
			E	ECO#19682 12/5/00	LWR	





STANDARD FEATURES:
1. U/L RECOGNIZED INPUT CIRCUIT BREAKER.
2. ANALOG VOLTMETER AND AMMETER.
3. VOLTAGE AND CURRENT ADJUST.
4. VOLTAGE AND CURRENT MODE LAMP INDICATORS.
5. INTERNAL LINE FILTER.
6. PWM CONTROL.
7. REMOTE TURN ON AC,DC, OR DRY SWITCH.
8. OVERVOLTAGE PROTECTION WITH FRONT PANEL ADJUST.
9. UNIVERSAL RACK MTG. BOTH EAI & WESTERN ELECTRIC.
10. POWER ON INDICATOR.

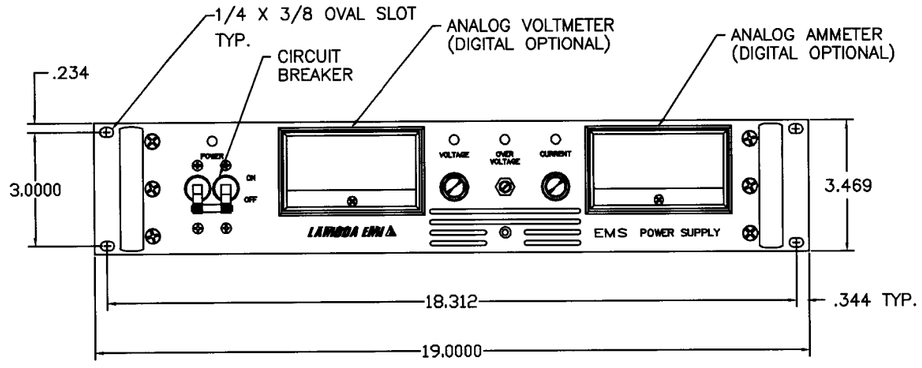
OPTIONAL FEATURES:
1. DIGITAL METERS.
2. LOCKBUSHING IN PLACE OF KNOB.
3. 10 TURN CURRENT ADJUST.
4. CHOICE OF PANEL COLOR.

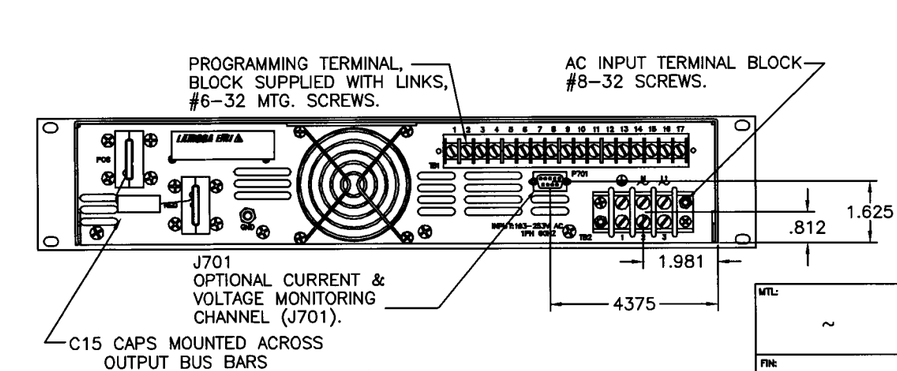
PROGRAMMING CHART	
TB1	FUNCTION
1	+ VOLTAGE
2	+ VOLTAGE SENSE REMOTE
3	V PROGRAMMING I
4	V AMP IN
5	V PROGRAMMING R
6	V PROGRAMMING R COM
7	- VOLTAGE SENSE REMOTE
8	- VOLTAGE
9	I PROGRAMMING I
10	I AMP IN
11	I PROGRAMMING R
12	-SHUNT
13	INVERTER AMP IN
14	+ SHUNT
15	6-32VDC OR 12-24VAC INPUT
16	AC-DC OR SWITCH BTWN 15-16 — LINK SUPPLIED BY FACTORY.
17	SWITCH OR LINK 16 TO 17 — REMOVE FOR REMOTE INTERLOCK.

FACTORY WIRED FOR LOCAL TURN ON.

AC INPUT CHART	
TB2	1Ø
1	GND
2	NEUTRAL
3	AC LINE

0-5V/0-10V MONITOR	
J701	FUNCTION
1	V MONITOR
2	I MONITOR
3	COMMON





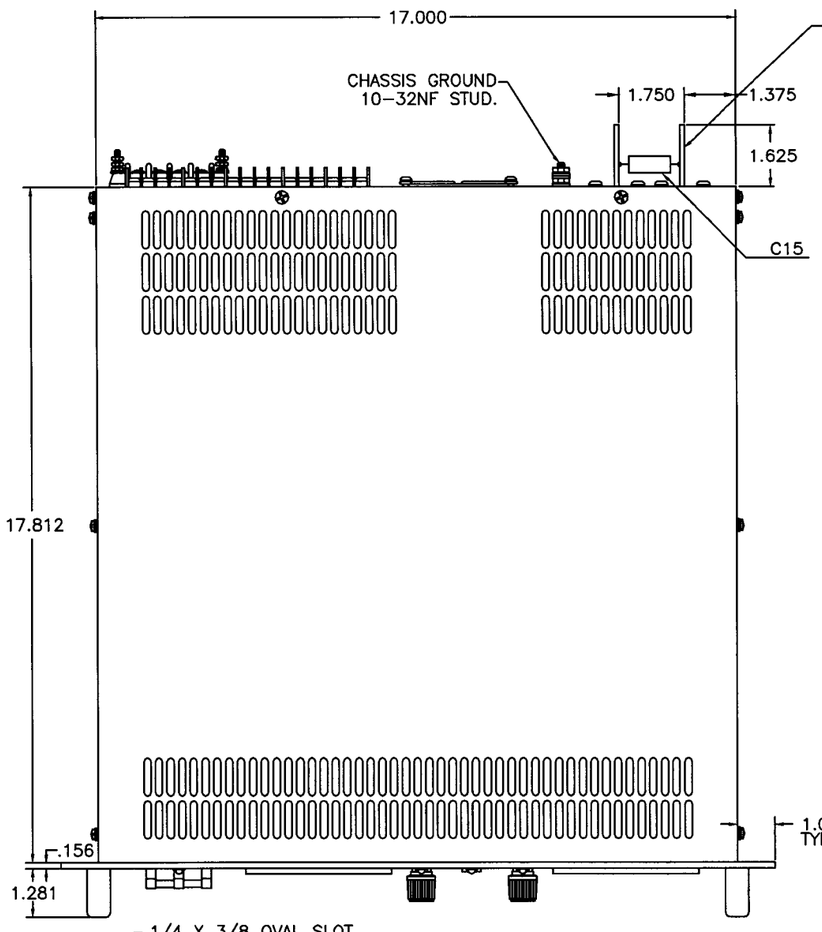
0-5V/0-10V MONITOR	
J701	FUNCTION
1	V MONITOR
2	I MONITOR
3	COMMON

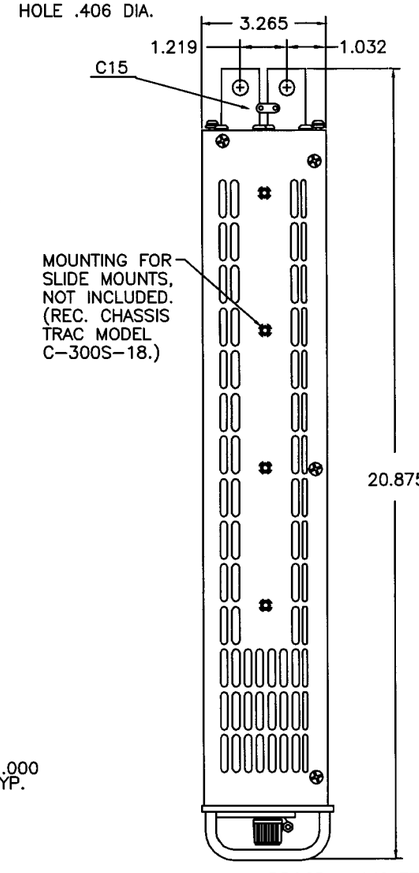
MTL: ~	TOL: X = ± .02" .XX = ± .01" .XXX = ± .005" FRAC. = ± 1/64" ANGLES = ± 1/2°	REL. TO MFG. ENG: SESH 12/14/90 MFG: PJS 5/14/94 DOC. REL. GFS 5/14/94	ENG. CTL. DWN: REW 2/12/90 CHK: JJR 5/13/94 ENG: SESH 12/14/90 APP: GFS 5/13/94	LAMBDA EMI TITLE: DIM. OUTLINE EMS 2KW P/S
FIN: ~ DO NOT SCALE DWG.	P/L: 473 SCALE: ~	DO NOT SCALE DWG.		DWG. NO. 02-473-003 REV. E

SHEET

THIS IS A COMPUTER GENERATED DWG.
NO MANUAL REVISIONS ARE PERMITTED.

APPLICATION			LTR	E.C.O. NO.	BY	APP.
USED ON	NEXT ASSY.	QTY.				
			A	INIT. REL. 2/12/90	REW	GFS
			B	ECO#16952 11-13-97	REW	GFS
			C	ECO#18914 12/22/99	REW	RFC
			D	ECO#19120 05-24-00	RFC	GFS
			E	ECO#19682 12/5/00	LWR	





STANDARD FEATURES:
1. U/L RECOGNIZED INPUT CIRCUIT BREAKER.
2. ANALOG VOLTMETER AND AMMETER.
3. VOLTAGE AND CURRENT ADJUST.
4. VOLTAGE AND CURRENT MODE LAMP INDICATORS.
5. INTERNAL LINE FILTER.
6. PWM CONTROL.
7. REMOTE TURN ON AC,DC, OR DRY SWITCH.
8. OVERVOLTAGE PROTECTION WITH FRONT PANEL ADJUST.
9. UNIVERSAL RACK MTG. BOTH EAI & WESTERN ELECTRIC.
10. POWER ON INDICATOR.

OPTIONAL FEATURES:
1. DIGITAL METERS.
2. LOCKBUSHING IN PLACE OF KNOB.
3. 10 TURN CURRENT ADJUST.
4. CHOICE OF PANEL COLOR.

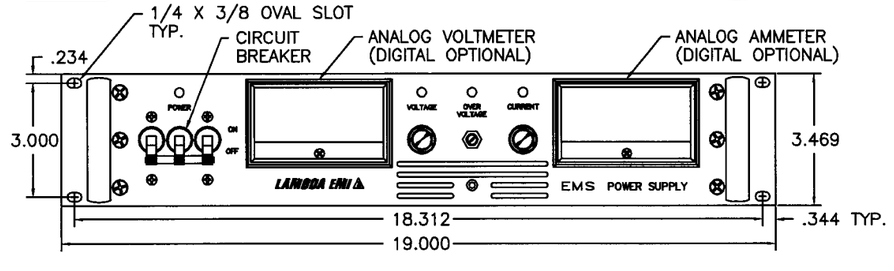
PROGRAMMING CHART	
TB1	FUNCTION
1	+ VOLTAGE
2	+ VOLTAGE SENSE REMOTE
3	V PROGRAMMING I
4	V AMP IN
5	V PROGRAMMING R
6	V PROGRAMMING R COM
7	- VOLTAGE SENSE REMOTE
8	- VOLTAGE
9	I PROGRAMMING I
10	I AMP IN
11	I PROGRAMMING R
12	-SHUNT
13	INVERTER AMP IN
14	+ SHUNT
15	6-32VDC OR 12-24VAC INPUT
16	AC-DC OR SWITCH BTWN 15-16
17	SWITCH OR LINK 16 TO 17

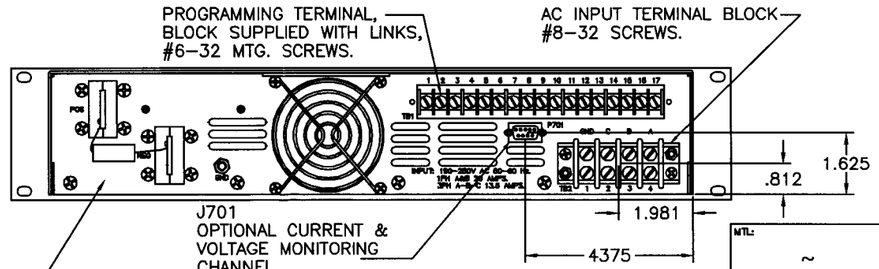
LINK SUPPLIED BY FACTORY. REMOVE FOR REMOTE INTERLOCK.

FACTORY WIRED FOR LOCAL TURN ON.

AC INPUT CHART		
TB2	3Ø	1Ø
1	GND	GND
2	PHASE C INPUT	DO NOT USE
3	PHASE B INPUT	NEUTRAL
4	PHASE A INPUT	AC HI LINE

0-5V/0-10V MONITOR	
J701	FUNCTION
1	V MONITOR
2	I MONITOR
3	COMMON



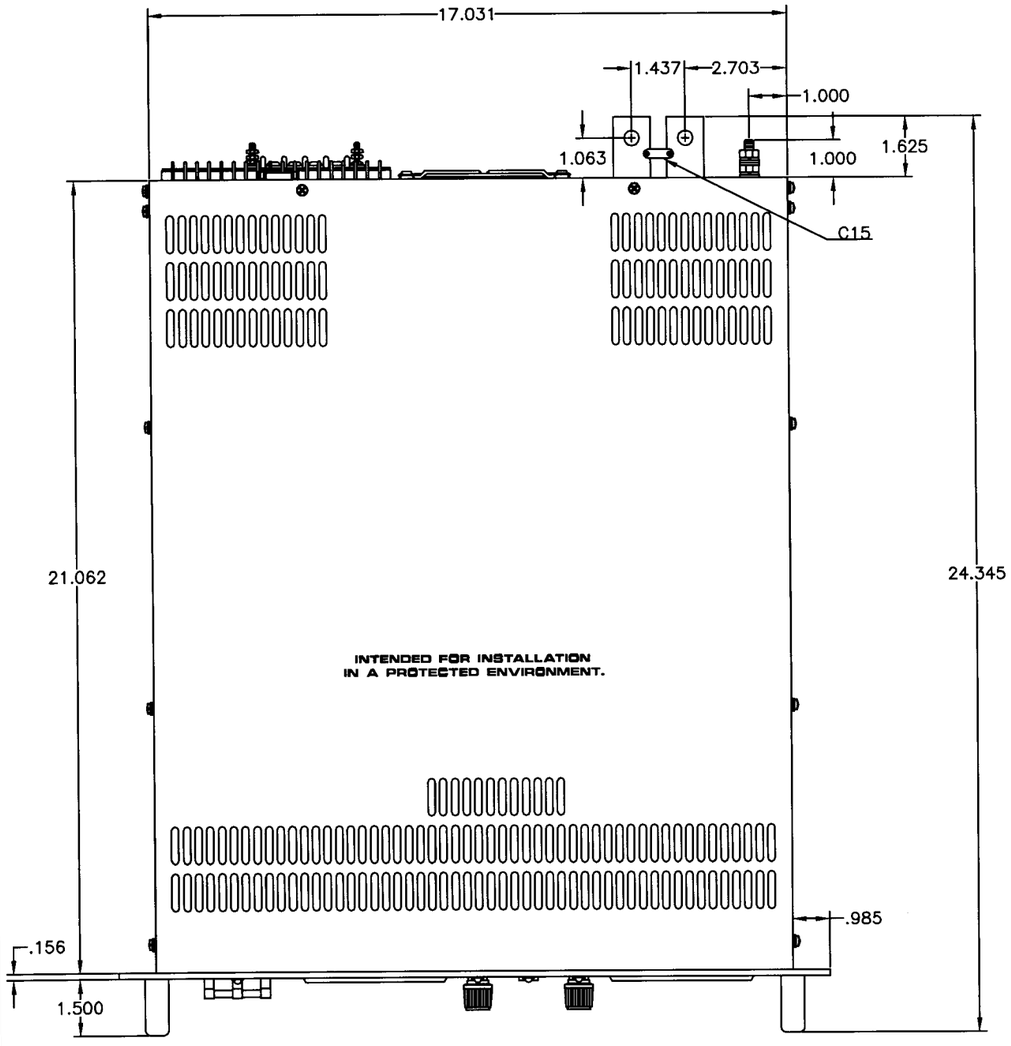


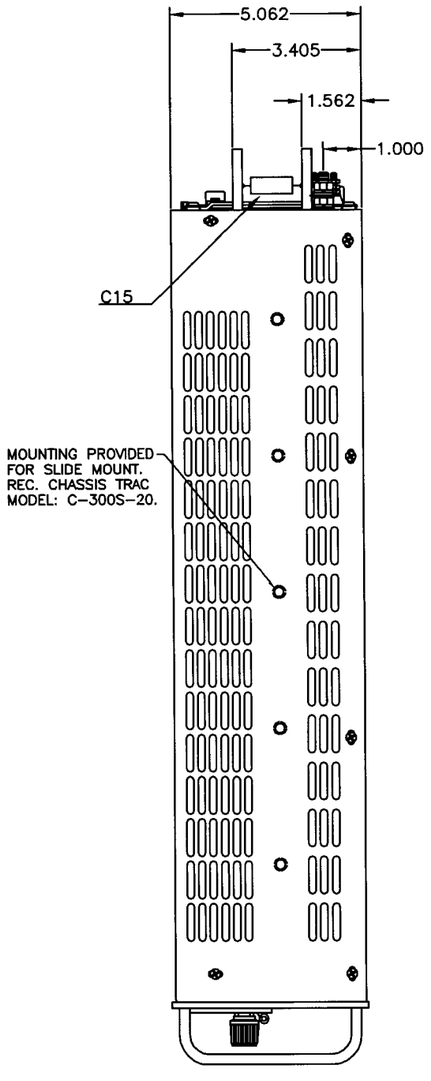
MTL: ~	TOL: .X = ± .02" .XX = ± .01" .XXX = ± .005" FRAC: = ± 1/64" ANGLES = ± 1/2°	REL. TO MFG. ENG: SESH 12/14/90 MFG: PJS 5/13/94 DOC. REL: GFS 5/13/94	ENG. CTL. DWN: REW 2/12/90 CHK: JJR 5/13/94 ENG: SESH 12/14/90 APP: GFS 5/13/94	LAMBDA EMI An Inventronics company
FIN: ~ DO NOT SCALE DWG.	P/L: 473 SCALE: ~ DO NOT SCALE DWG.			TITLE: DIM. OUTLINE EMS 2.5KW P/S
				DWG. NO. 02-473-004 REV. E

SHEET__OF__

THIS IS A COMPUTER GENERATED DWG.
NO MANUAL REVISIONS ARE PERMITTED.

APPLICATION			LTR	E.C.O. NO.	BY	APP.
USED ON	NEXT ASSY.	QTY.				
			A	INIT. REL. 2/13/90	REW	GFS
			B	ECO#16952 11-13-97	REW	GFS
			C	ECO#18914 12-22-99	REW	RFC
			D	ECO#19120 05-24-00	RFC	GFS
			E	ECO#19682 12/5/00	LWR	





STANDARD FEATURES:
1. U/L RECOGNIZED INPUT CIRCUIT BREAKER.
2. ANALOG VOLTMETER AND AMMETER.
3. VOLTAGE AND CURRENT ADJUST.
4. VOLTAGE AND CURRENT MODE LAMP INDICATORS.
5. INTERNAL LINE FILTER.
6. PWM CONTROL.
7. REMOTE TURN ON AC,DC, OR DRY SWITCH.
8. OVERVOLTAGE PROTECTION WITH FRONT PANEL ADJUST.
9. UNIVERSAL RACK MTG. BOTH EAI & WESTERN ELECTRIC.
10. POWER ON INDICATOR.

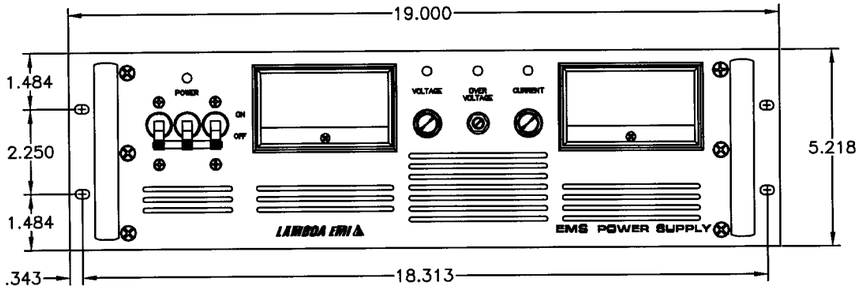
OPTIONAL FEATURES:
1. DIGITAL METERS.
2. LOCKBUSHING IN PLACE OF KNOB.
3. 10 TURN CURRENT ADJUST.
4. CHOICE OF PANEL COLOR.

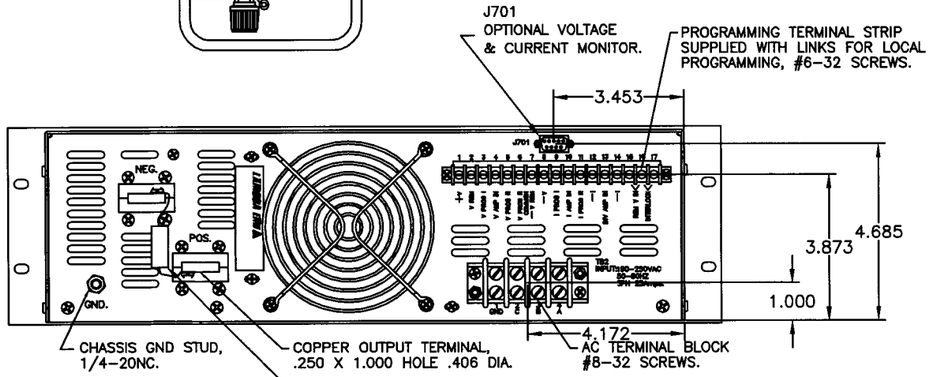
PROGRAMMING CHART	
TB1	FUNCTION
1	+ VOLTAGE
2	+ VOLTAGE SENSE REMOTE
3	V PROGRAMMING I
4	V AMP IN
5	V PROGRAMMING R
6	V PROGRAMMING R COM
7	– VOLTAGE SENSE REMOTE
8	– VOLTAGE
9	I PROGRAMMING I
10	I AMP IN
11	I PROGRAMMING R
12	–SHUNT
13	INVERTER AMP IN
14	+ SHUNT
15	6–32VDC OR 12–24VAC INPUT
16	AC–DC OR SWITCH BTWN 15–16
17	SWITCH OR LINK 16 TO 17

LINK SUPPLIED BY FACTORY.
REMOVE FOR REMOTE INTERLOCK.
FACTORY WIRED FOR LOCAL TURN ON.

AC INPUT CHART	
TB2	3Ø
1	GND
2	PHASE C INPUT
3	PHASE B INPUT
4	PHASE A INPUT

0–5V/0–10V MONITOR	
J701	FUNCTION
1	V MONITOR
2	I MONITOR
3	COMMON





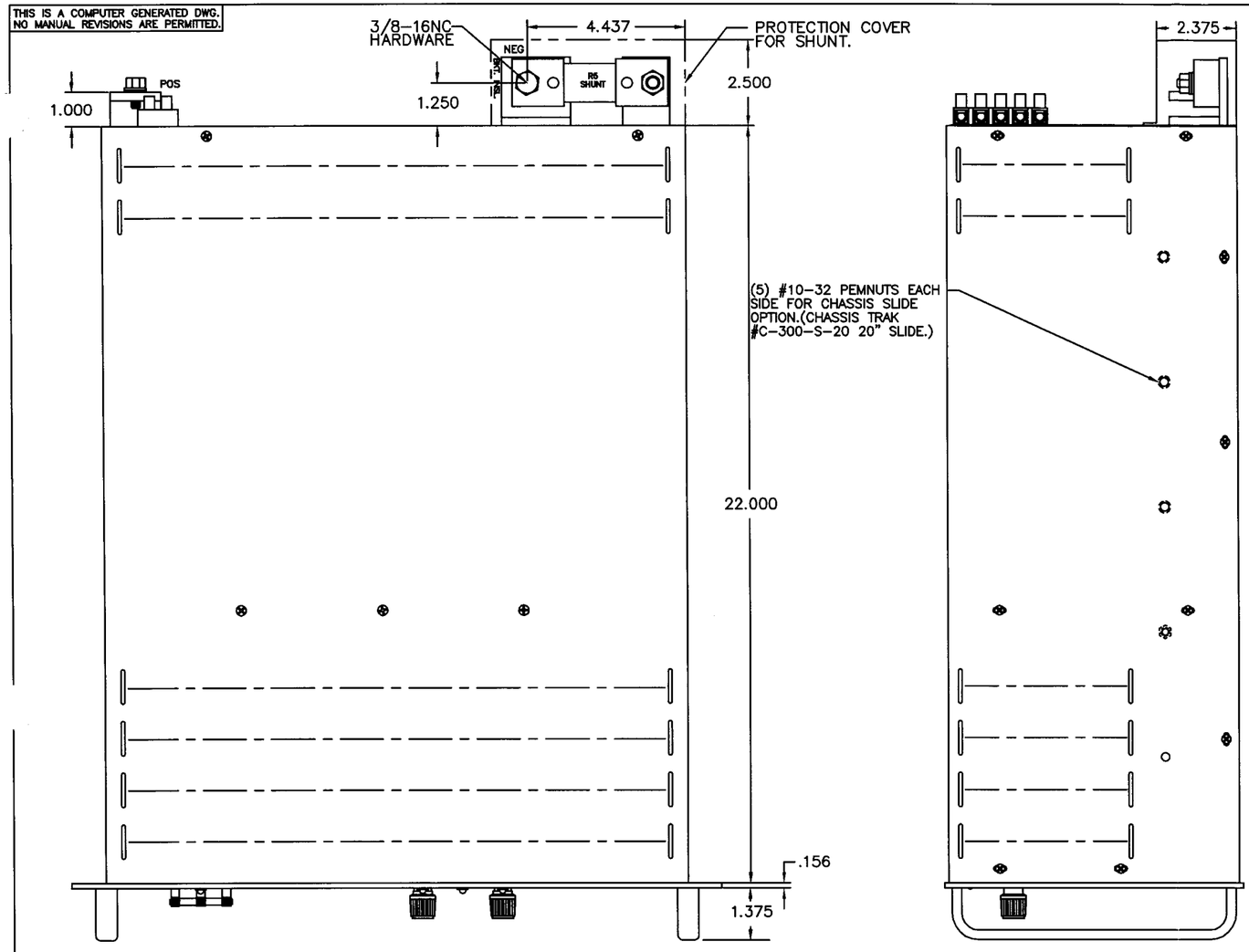
C15 CAPS MOUNTED ACROSS
OUTPUT BUS BARS
(ON UNITS WITH 7.5V THRU 48V OUTPUT)

MTL: ~	TOL: .X ± .02" .XX ± .01" .XXX ± .005" FRAC. ± 1/64" ANGLES ± 1/2"	REL. TO MFG. ENG: SESH 2/14/90 MFG: PJS 5/13/94 DOC. REL: GFS 5/13/94	ENG. CTL. DWN: REW 2/12/90 CHK: JJR 5/13/94 ENG: SESH 2/14/90	LAMBDA EMI
FIN: ~	P/L: 473			TITLE: DIM. OUTLINE EMS 5KW-2 (220VAC)
DO NOT SCALE DWG.	SCALE: ~	DO NOT SCALE DWG.	APP: GFS 5/13/94	DWG. NO. 02-473-005 REV. E

SHEET__OF__

THIS IS A COMPUTER GENERATED DWG.
NO MANUAL REVISIONS ARE PERMITTED.

APPLICATION			LTR	E.C.O. NO.	BY	APP.
USED ON	NEXT ASSY.	QTY.	A	INIT. REL 6/27/90	REW	REW
			B	ENG'R CHG 8/6/91	REW	GFS
			C	ECO#16952 11/13/97	REW	GFS



STANDARD FEATURES:
1. U/L RECOGNIZED INPUT CIRCUIT BREAKER.
2. ANALOG VOLTMETER AND AMMETER.
3. VOLTAGE AND CURRENT ADJUST.
4. VOLTAGE AND CURRENT MODE LAMP INDICATORS.
5. INTERNAL LINE FILTER.
6. PWM CONTROL.
7. REMOTE TURN ON AC,DC, OR DRY SWITCH.
8. OVERVOLTAGE PROTECTION WITH FRONT PANEL ADJUST.
9. UNIVERSAL RACK MTG. BOTH EAI & WESTERN ELECTRIC.
10. PHASE READY INDICATOR.
11. P/S WEIGHT = 105 LBS.

OPTIONAL FEATURES:
1. DIGITAL METERS.
2. LOCKBUSHING IN PLACE OF KNOB.
3. 10 TURN CURRENT ADJUST.
4. CHOICE OF PANEL COLOR.
5. INTERNAL IEEE PROGRAMMING.

J1 PROGRAMMING CHART	
J1	FUNCTION
1	+ VOLTAGE
2	+ VOLTAGE SENSE REMOTE
3	V PROGRAMMING I
4	V AMP IN
5	V PROGRAMMING R
6	V PROGRAMMING R COM
7	− VOLTAGE SENSE REMOTE
8	− VOLTAGE
9	I PROGRAMMING I
10	I AMP IN
11	I PROGRAMMING R
12	−SHUNT
13	INVERTER AMP IN
25	+ SHUNT
14	6−32VDC OR 12−24VAC INPUT
15	AC−DC OR SWITCH BTWN 15−16
16	SWITCH OR LINK 16 TO 17

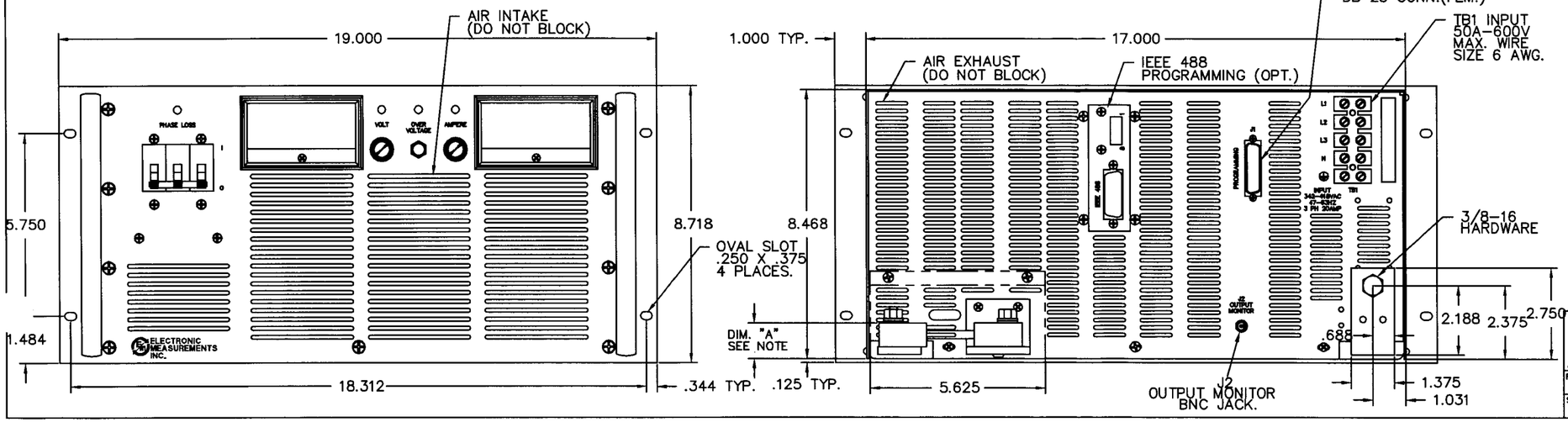
JUMPER SUPPLIED BY FACTORY
REMOVE FOR REMOTE INTERLOCK.

FACTORY WIRED MATING CONNECTOR FOR LOCAL OPERATION PROVIDED.

AC INPUT CHART	
TB1	3Ø
1	L1 INPUT
2	L2 INPUT
3	L3 INPUT
4	N NEUTRAL
5	GROUND

(USED ON 380VAC INPUT ONLY.)

OUTPUT	10A−200A	250A−UP
DIM. "A"	.938	1.188

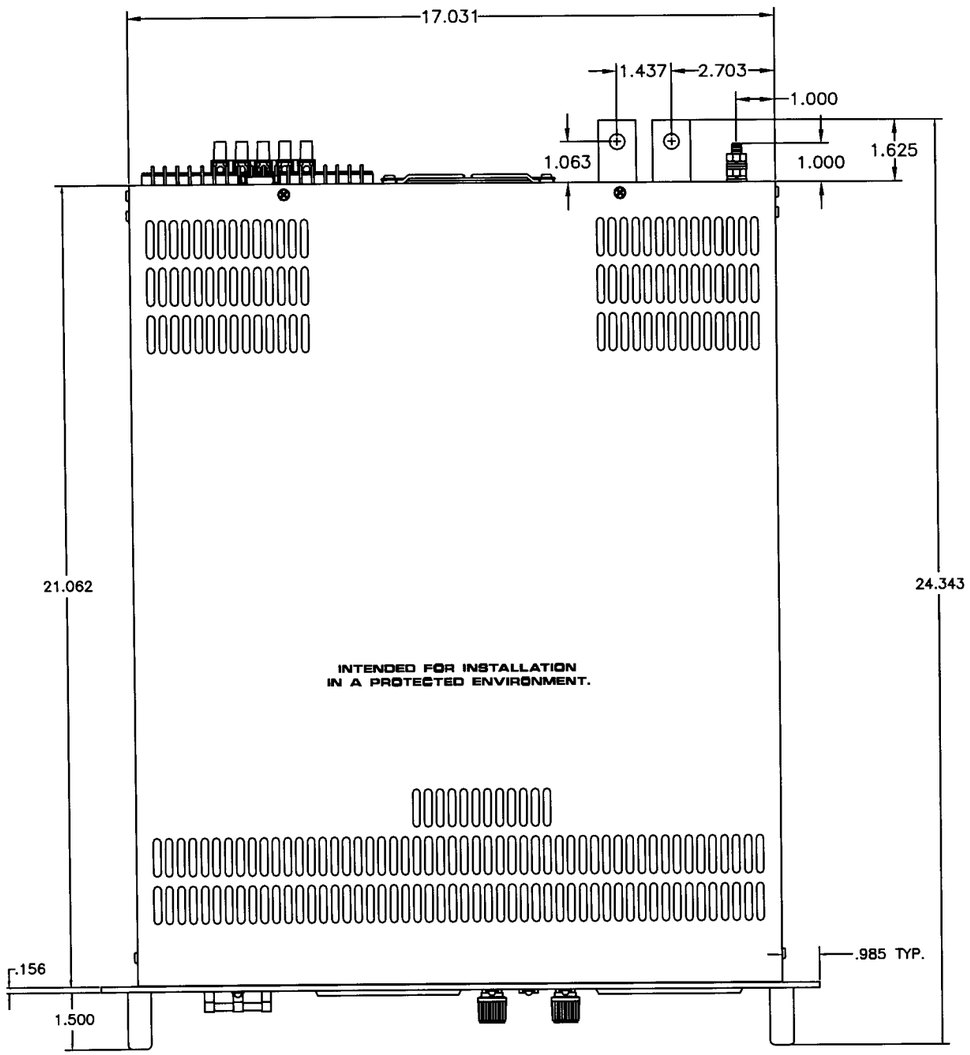


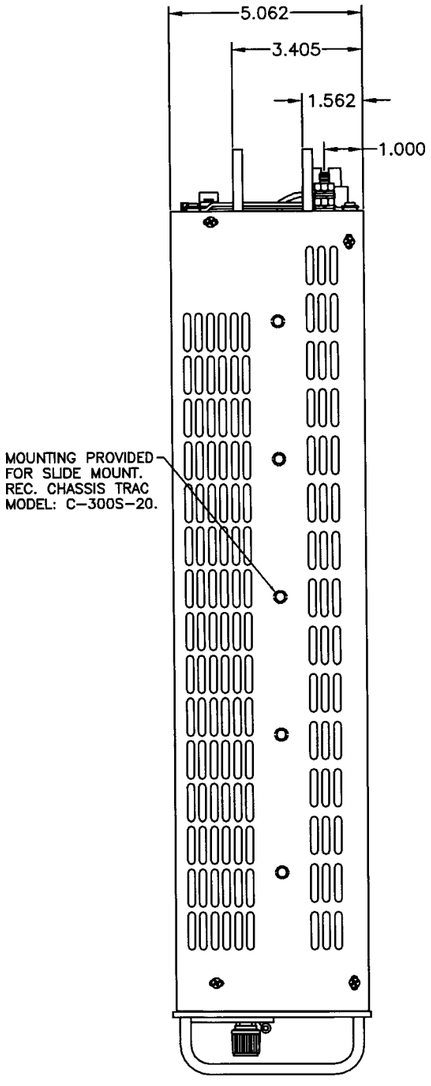
TOL:	REL. TO MFG.	ENG. CTL.	ELECTRONIC MEASUREMENTS, INC.
.X = ± .02"	ENG: JR DATE: 8/6/91	DWN: REW DATE: 6/27/90	
.XX = ± .01"	MFG: PJS DATE: 8/6/91	CHK: GFS DATE: 8/6/91	TITLE: DIM. OUTLINE EMS 10KW P/S
.XXX = ± .005"	DOC. REL: WJW DATE: 8/6/91	ENG: JR DATE: 8/6/91	
FRAC. = ± 1/64"			
ANGLES = ± 1/2°			
P/L: 473			
SCALE: NONE	DO NOT SCALE DWG.	APP: WJW DATE: 8/6/91	DWG. NO. 02-473-006 REV. C

SHEET__OF__

THIS IS A COMPUTER GENERATED DWG.
NO MANUAL REVISIONS ARE PERMITTED.

APPLICATION			LTR	E.C.O. NO.	BY	APP.
USED ON	NEXT ASSY.	QTY.				
			A	INIT.REL 2/12/90	REW	GFS
			B	ECO#16952 11/13/97	REW	GFS
			C	ECO#18914 12/22/99	REW	RFC
			D	ECO#19120 05/24/00	RFC	





STANDARD FEATURES:
1. U/L RECOGNIZED INPUT CIRCUIT BREAKER.
2. ANALOG VOLTMETER AND AMMETER.
3. VOLTAGE AND CURRENT ADJUST.
4. VOLTAGE AND CURRENT MODE LAMP INDICATORS.
5. INTERNAL LINE FILTER.
6. PWM CONTROL.
7. REMOTE TURN ON AC,DC, OR DRY SWITCH.
8. OVERVOLTAGE PROTECTION.
9. UNIVERSAL RACK MTG. BOTH EAI & WESTERN ELECTRIC.
10. POWER ON INDICATOR.

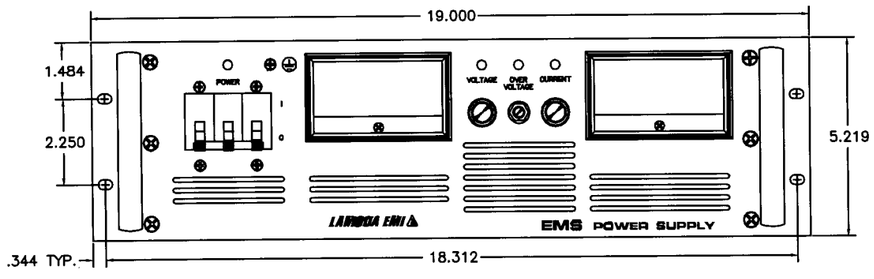
OPTIONAL FEATURES:
1. DIGITAL METERS.
2. LOCKBUSHING IN PLACE OF KNOB.
3. 10 TURN CURRENT ADJUST.
4. CHOICE OF PANEL COLOR.

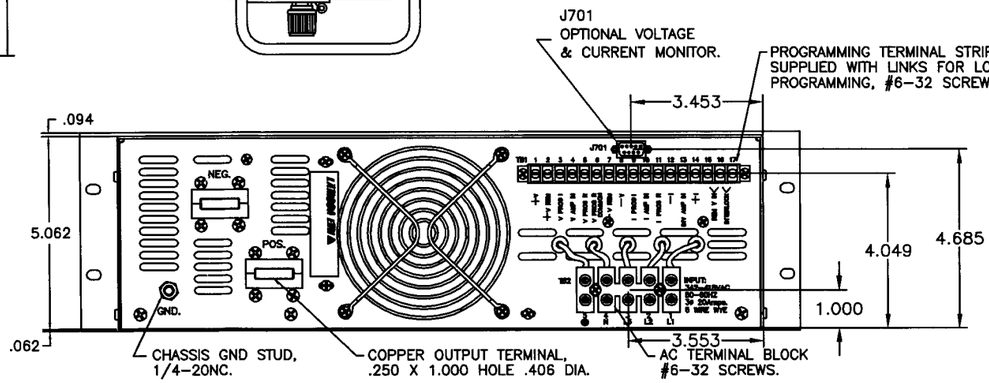
PROGRAMMING CHART	
TB1	FUNCTION
1	+ VOLTAGE
2	+ VOLTAGE SENSE REMOTE
3	V PROGRAMMING I
4	V AMP IN
5	V PROGRAMMING R
6	V PROGRAMMING R COM
7	– VOLTAGE SENSE REMOTE
8	– VOLTAGE
9	I PROGRAMMING I
10	I AMP IN
11	I PROGRAMMING R
12	–SHUNT
13	INVERTER AMP IN
14	+ SHUNT
15	6–32VDC OR 12–24VAC INPUT
16	AC–DC OR SWITCH BTWN 15–16
17	SWITCH OR LINK 16 TO 17

LINK SUPPLIED BY FACTORY.
REMOVE FOR REMOTE INTERLOCK.
FACTORY WIRED FOR LOCAL TURN ON.

AC INPUT CHART	
TB2	3Ø
1	PHASE A INPUT
2	PHASE B INPUT
3	PHASE C INPUT
4	NEUTRAL
5	GROUND

0–5V/0–10V MONITOR	
J701	FUNCTION
1	V MONITOR
2	I MONITOR
3	COMMON





MTL: ~	TOL: .X = ± .02" .XX = ± .01" .XXX = ± .005" FRAC. = ± 1/64" ANGLES = ± 1/2"	REL. TO MFG. ENG: SESH 12/12/90 MFG: PJS 5/13/94	ENG. CTL. DWN: REW 2/12/90 CHK: JJR 5/13/94	LAMBDA EMI
FIN: ~ DO NOT SCALE DWG.	P/L: 473 SCALE: ~	DOC. REL. GFS 5/13/94 DO NOT SCALE DWG.	ENG: SESH 12/12/90 APP: GFS 5/13/94	TITLE: DIM. OUTLINE EMS 5KW–8 PMS
				DWG. NO. 02–473–008 REV. D

SHEET