

**Technical Publication**  
**SC-1006R0**

# **Schematics**

**HF Series Generators**  
**Battery Generators**

## REVISION HISTORY

REVISION	DATE	REASON FOR CHANGE
<i>Refer to each schematic</i>		

This Document is the english original version, edited and supplied by the manufacturer.

The Revision state of this Document is indicated in the code number shown at the bottom of this page.

## ADVISORY SYMBOLS

The following advisory symbols will be used throughout this manual. Their application and meaning are described below.



***DANGERS ADVISE OF CONDITIONS OR SITUATIONS THAT IF NOT HEADED OR AVOIDED WILL CAUSE SERIOUS PERSONAL INJURY OR DEATH.***



**ADVISE OF CONDITIONS OR SITUATIONS THAT IF NOT HEADED OR AVOIDED COULD CAUSE SERIOUS PERSONAL INJURY, OR CATASTROPHIC DAMAGE OF EQUIPMENT OR DATA.**



***Advise of conditions or situations that if not heeded or avoided could cause personal injury or damage to equipment or data.***

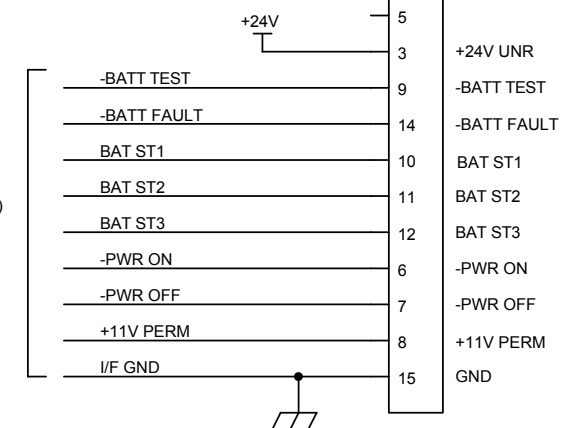
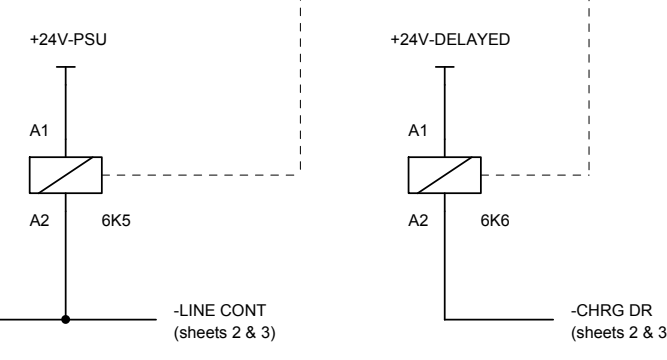
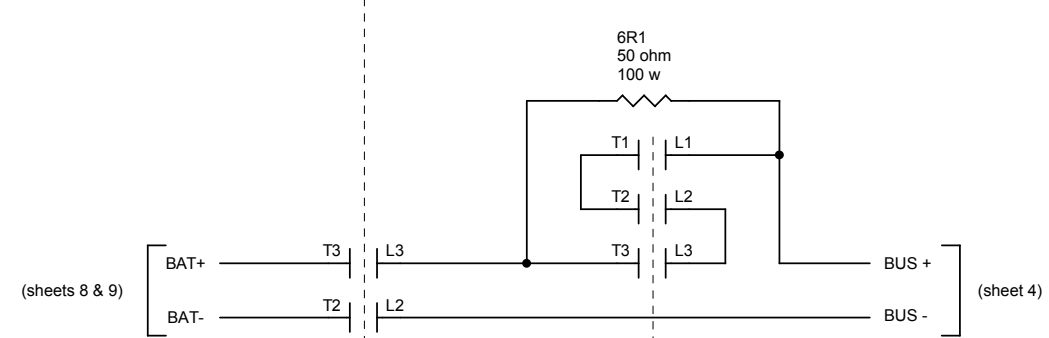
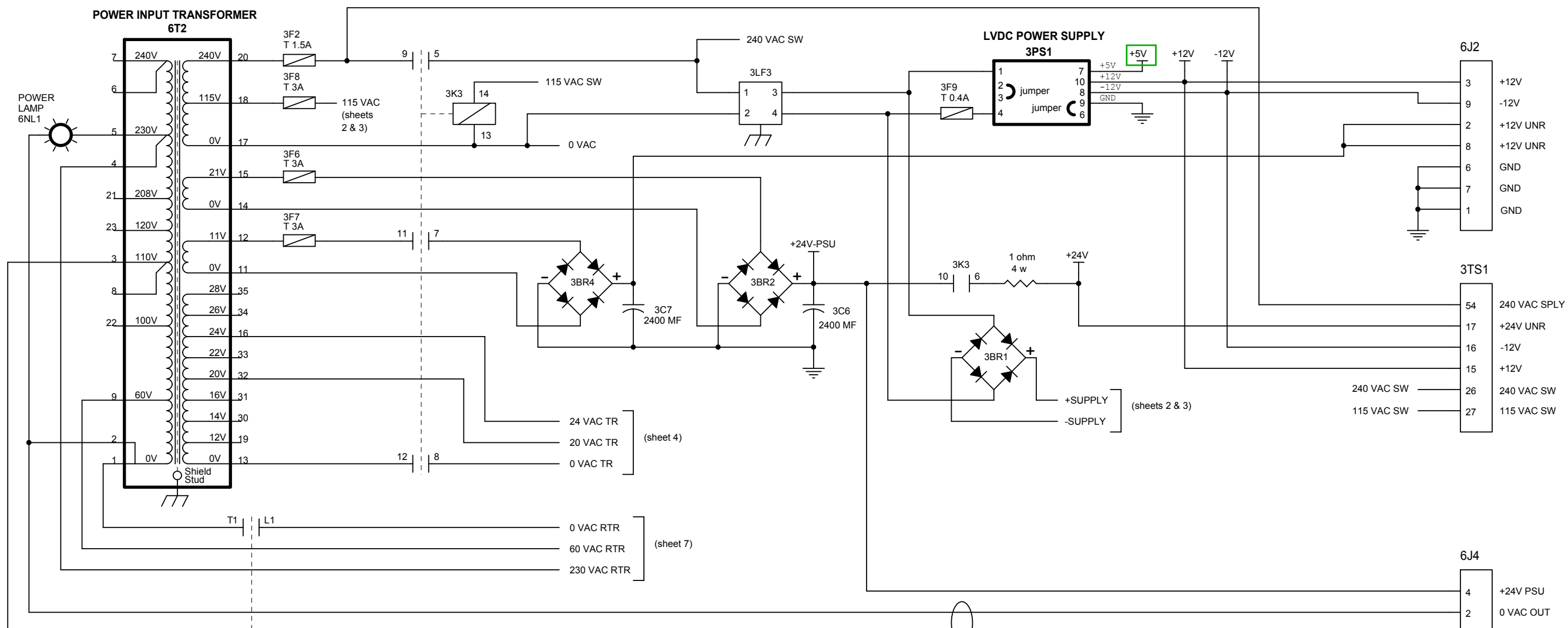
Note 

***Alert readers to pertinent facts and conditions. Notes represent information that is important to know but which do not necessarily relate to possible injury or damage to equipment.***

**TABLE OF CONTENTS**

SCH. No.	SCHEMATIC	REMARKS
54302012	ESM Compact Generator w/ Stand-Alone	<i>Generator with Stand-Alone Option</i>
A3096-02	LF-RAC PCB	<i>Only used with Low Speed Generator</i>
A3000-xx	HT Controller PCB	<i>See Board code in Generator</i>
A3004-xx	Filament Control PCB	<i>See Board code in Generator</i>
A3009-xx	Interface Control PCB	<i>See Board code in Generator</i>
A3063-06	IPM Driver PCB	
A3212-01	Charge / Discharge Monitor PCB	
A3024-xx	ATP Console CPU PCB	
<b>ESM (ENERGY STORAGE MODULE) WITH STAND-ALONE OPTION</b>		
A3285-02	Battery Charger PCB	
A3138-01	Isolated Stand-Alone Control PCB	
A3264-01	Energy Guard	
A3139-01	Line Monitor PCB	
<b>CONTROL CONSOLE</b>		
A3553-02	Serial Console Control PCB	
A-3585-21	RAD Multiuse H2 Console Control	

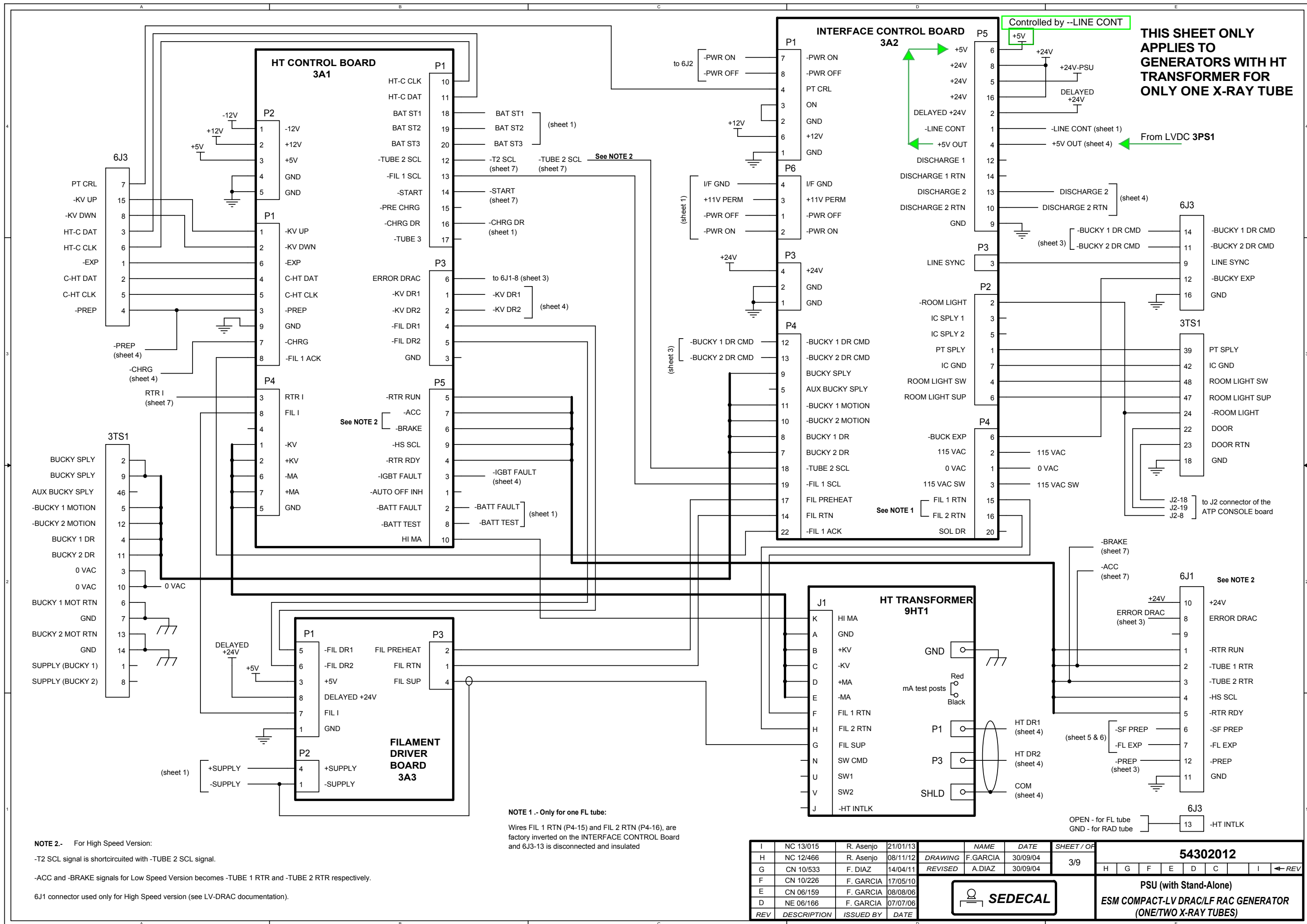




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H	NC 12/466	R. Asenjo	08/11/12	DRAWING	F.GARCIA	30/09/04												
G	CN 10/533	F. DIAZ	14/04/11	REVISED	A.DIAZ	30/09/04												
F	CN 10/226	F. GARCIA	17/05/10								H	G	F	E	D	C	I	←REV
E	CN 06/159	F. GARCIA	08/08/06								PSU (with Stand-Alone)							
D	NE 06/166	F. GARCIA	07/07/06								ESM COMPACT-LV DRAC/LF RAC GENERATOR (ONE/TWO X-RAY TUBES)							







**THIS SHEET ONLY APPLIES TO GENERATORS WITH HT TRANSFORMER FOR ONLY ONE X-RAY TUBE**

**NOTE 2.-** For High Speed Version:  
 -T2 SCL signal is shortcircuited with -TUBE 2 SCL signal.  
 -ACC and -BRAKE signals for Low Speed Version becomes -TUBE 1 RTR and -TUBE 2 RTR respectively.  
 6J1 connector used only for High Speed version (see LV-DRAC documentation).

**NOTE 1 - Only for one FL tube:**  
 Wires FIL 1 RTN (P4-15) and FIL 2 RTN (P4-16), are factory inverted on the INTERFACE CONTROL Board and 6J3-13 is disconnected and insulated

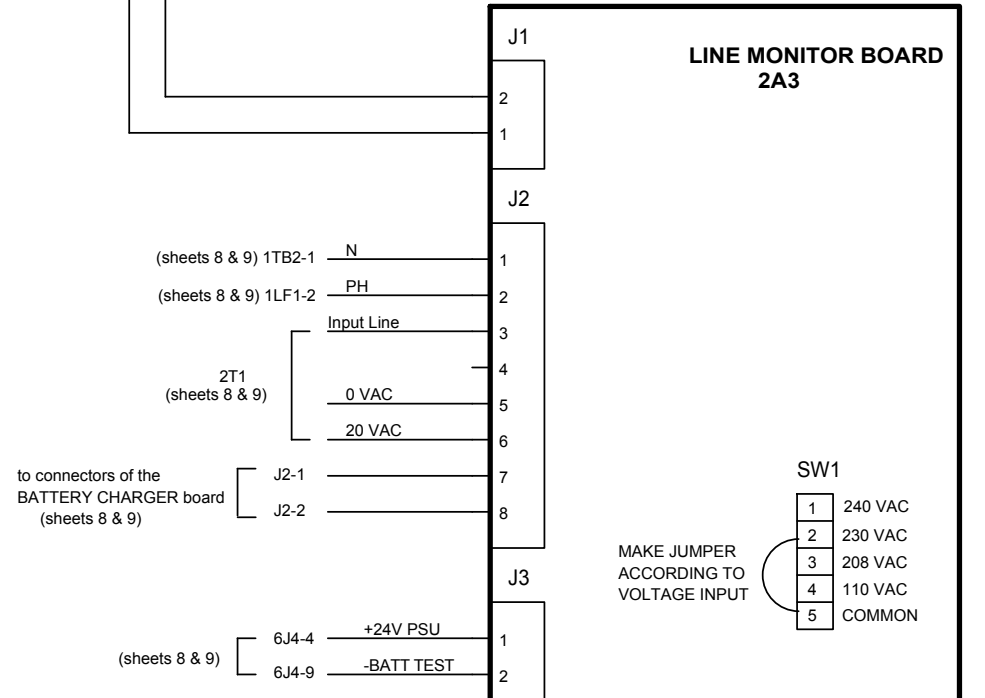
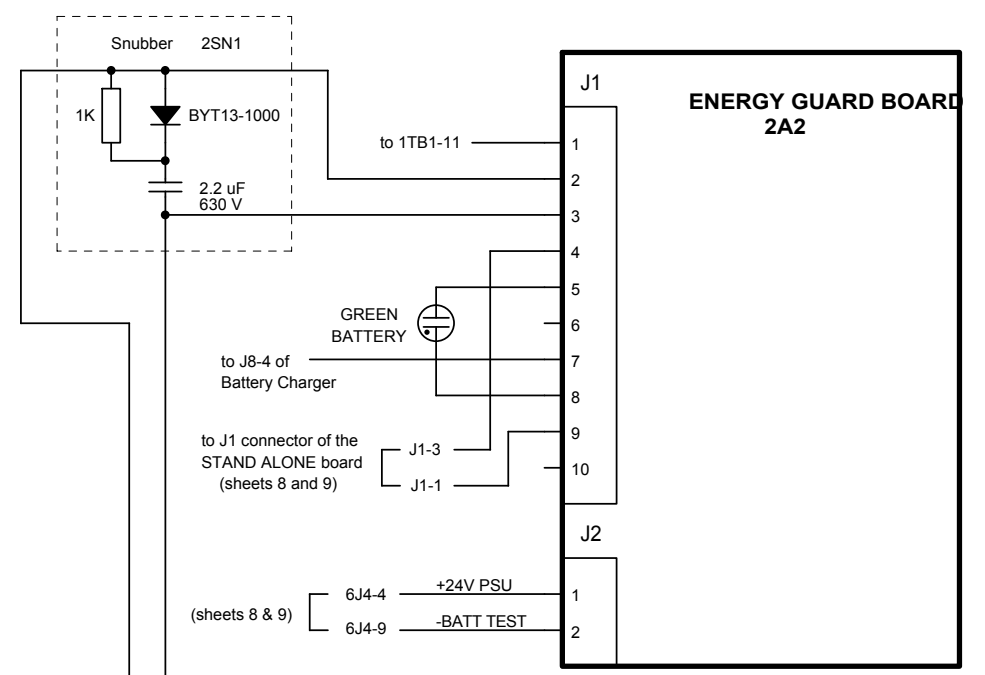
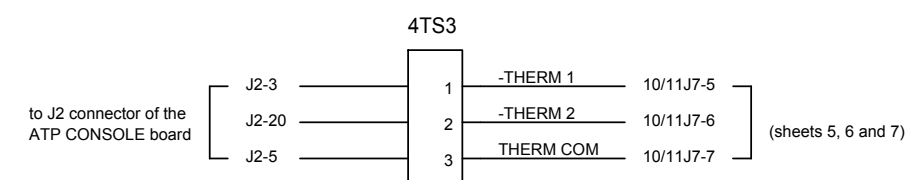
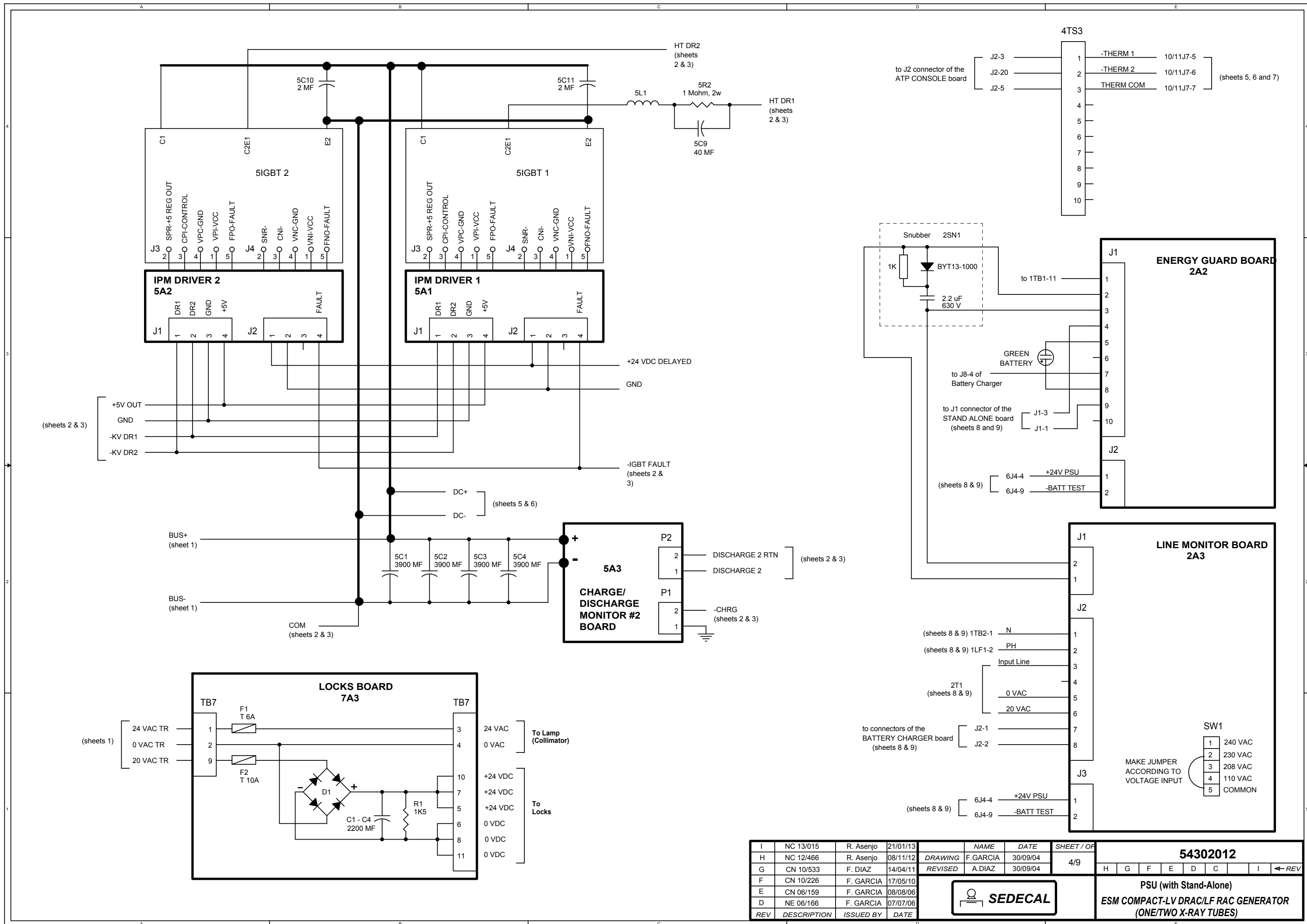
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G	CN 10/533	F. DIAZ	14/04/11	REVISED	A.DIAZ	30/09/04
F	CN 10/226	F. GARCIA	17/05/10			
E	CN 06/159	F. GARCIA	08/08/06			
D	NE 06/166	F. GARCIA	07/07/06			

<b>SEDECAL</b>						
<b>PSU (with Stand-Alone)</b>						
<b>ESM COMPACT-LV DRAC/LF RAC GENERATOR (ONE/TWO X-RAY TUBES)</b>						

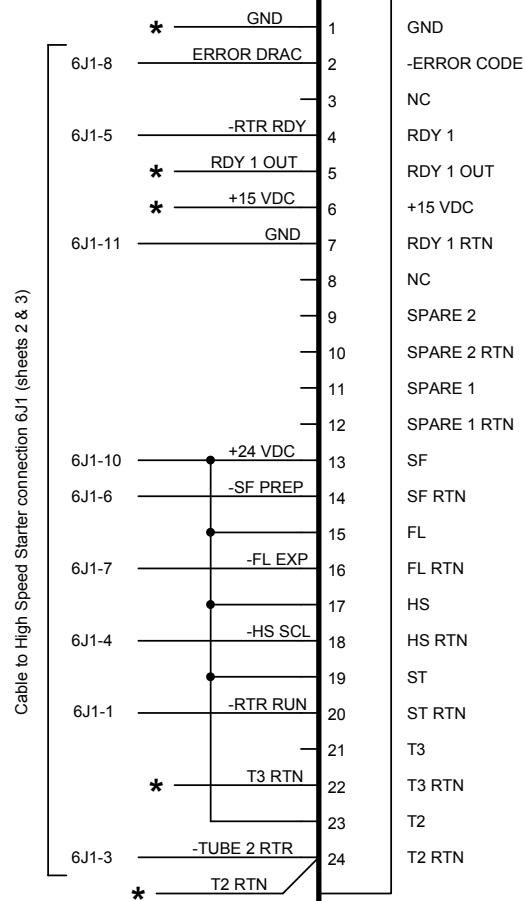
**54302012**

H G F E D C I ←REV



REV	DESCRIPTION	ISSUED BY	DATE	NAME	DATE	SHEET / OF	54302012							
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H	NC 12/466	R. Asenjo	08/11/12	DRAWING	F.GARCIA	30/09/04	4/9							
G	CN 10/533	F. DIAZ	14/04/11	REVISED	A.DIAZ	30/09/04								
F	CN 10/226	F. GARCIA	17/05/10											
E	CN 06/159	F. GARCIA	08/08/06											
D	NE 06/166	F. GARCIA	07/07/06											
							<b>SEDECAL</b>			<b>PSU (with Stand-Alone)</b> <b>ESM COMPACT-LV DRAC/LF RAC GENERATOR</b> <b>(ONE/TWO X-RAY TUBES)</b>				

Note:  
See DELAYED SWITCH-OFF  
board on sheet 5 for the  
connections (\*) added to J4



Cable to High Speed Starter connection 6J1 (sheets 2 & 3)

**CONTROL DRAC  
PCB (A3243-03)**

**11A1**

See Note

J4

- +5 VDC
- +5 VDC
- +5 VDC
- +5 VDC
- GND
- GND
- GND
- GND
- +15 VDC
- +15 VDC
- +15 VDC
- +15 VDC
- 15 VDC
- 15 VDC
- V UNR
- V UNR
- PRECH IF
- PRECH IF
- +5 VDC
- +5 VDC
- T3 IF
- T3 IF
- T2 IF
- T2 IF
- T1 IF
- T1 IF
- T3
- T3 RTN
- T2
- T2 RTN

J3

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14
- 15
- 16
- 17
- 18
- 19
- 20
- 21
- 22
- 23
- 24
- 25
- 26

Ferrite Core

Ribbon Cable

Ferrite Core

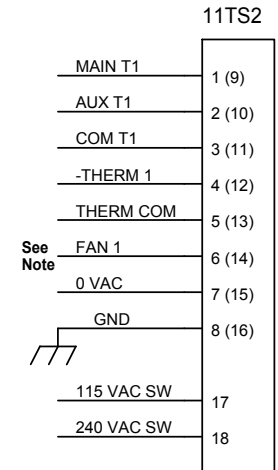
J1

**INTERFASE DRAC-HF  
PCB (A3240-05)**

**11A2**

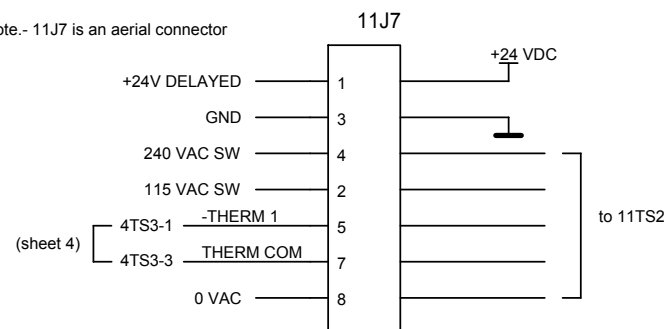
- 1 +5 VDC
- 2 +5 VDC
- 3 +5 VDC
- 4 +5 VDC
- 5 GND
- 6 GND
- 7 GND
- 8 GND
- 9 +15 VDC
- 10 +15 VDC
- 11 +15 VDC
- 12 +15 VDC
- 13 -15 VDC
- 14 -15 VDC
- 15 V UNR
- 16 V UNR
- 17 PRECH IF
- 18 PRECH IF
- 19 +5 VDC
- 20 +5 VDC
- 21 T3 IF
- 22 T3 IF
- 23 T2 IF
- 24 T2 IF
- 25 T1 IF
- 26 T1 IF

Connections ( ) for  
only one FL tube



Note:  
Connect FAN to 11TS2-17  
or 11TS2-18 as required.

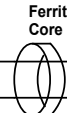
Note.- 11J7 is an aerial connector



- AUX
- COM
- SHL
- PRIN
- V-
- V+

J2

- 1
- 2



- J1
- J5
- J4
- J3

Ferrite Core

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 10
- 12
- 11K2
- 11K3
- R2
- R1
- R3
- R4
- F1
- VR1
- T

Ferrite Core

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 10
- 12
- 11K2
- 11K3
- R2
- R1
- R3
- R4
- F1
- VR1
- T

Ferrite Core

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 10
- 12
- 11K2
- 11K3
- R2
- R1
- R3
- R4
- F1
- VR1
- T

Ferrite Core

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 10
- 12
- 11K2
- 11K3
- R2
- R1
- R3
- R4
- F1
- VR1
- T

Ferrite Core

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 10
- 12
- 11K2
- 11K3
- R2
- R1
- R3
- R4
- F1
- VR1
- T

Ferrite Core

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 10
- 12
- 11K2
- 11K3
- R2
- R1
- R3
- R4
- F1
- VR1
- T

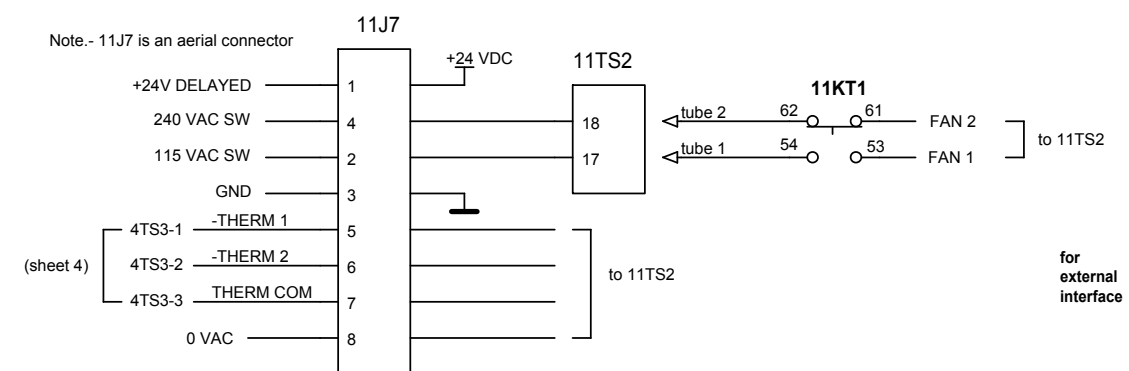
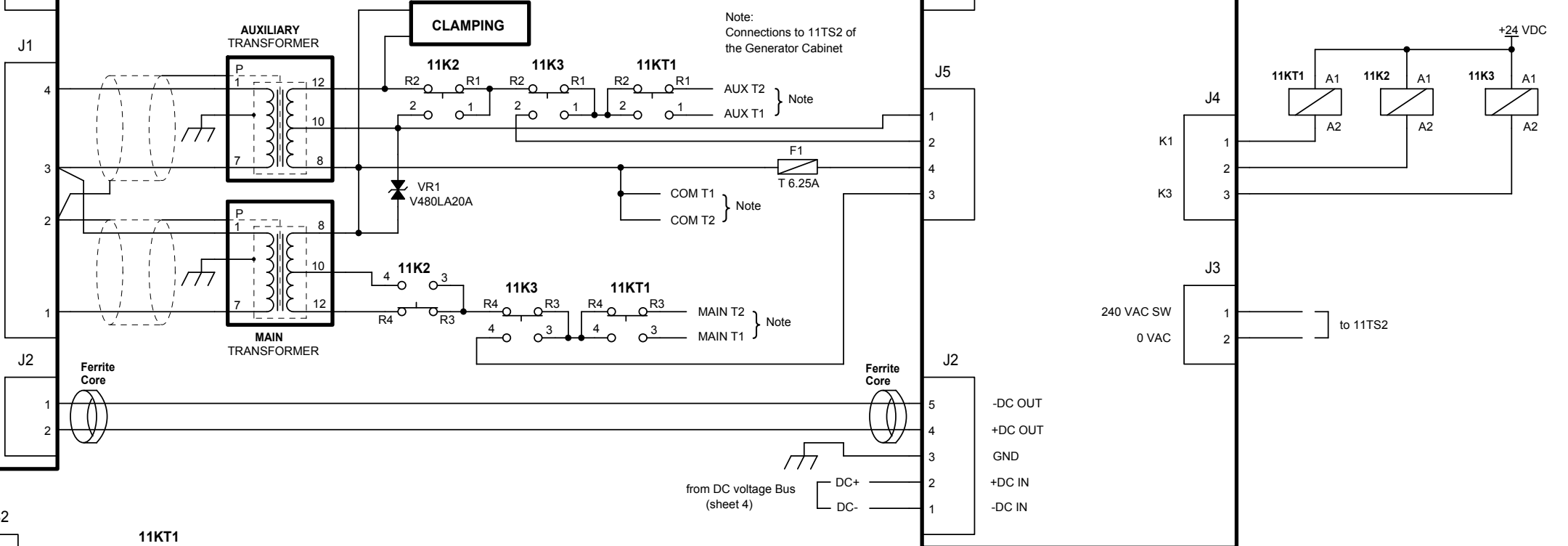
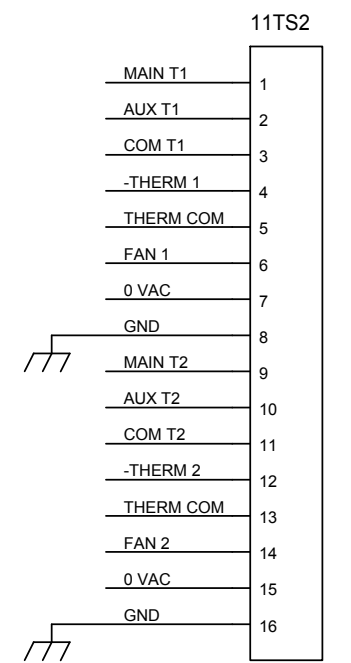
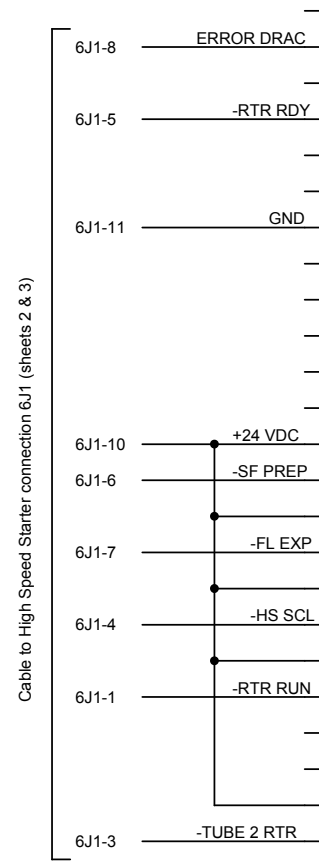
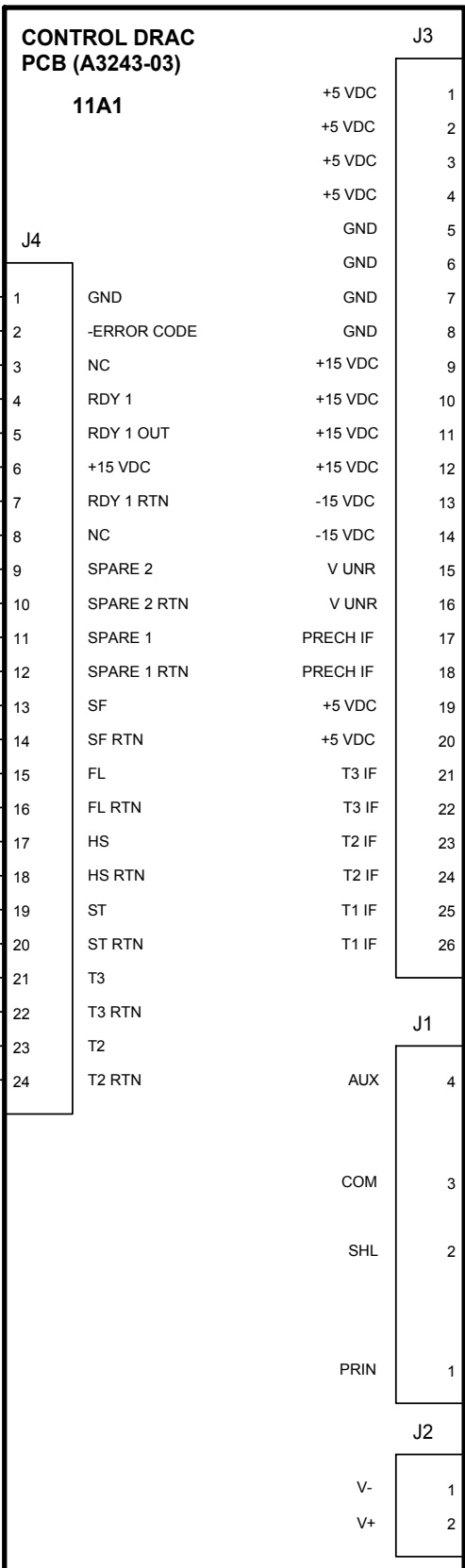
Ferrite Core

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 10
- 12
- 11K2
- 11K3
- R2
- R1
- R3
- R4
- F1
- VR1
- T

Ferrite Core

**THIS SHEET ONLY APPLIES TO HIGH SPEED STARTER FOR ONLY ONE X-RAY TUBE (OPTIONAL)**

REV	DESCRIPTION	ISSUED BY	DATE	NAME	DATE	SHEET / OF	54302012				
I	NC 13/015	R. Asenjo	21/01/13				54302012				
H	NC 12/466	R. Asenjo	08/11/12	DRAWING	F.GARCIA	30/09/04	54302012				
G	CN 10/533	F. DIAZ	14/04/11	REVISED	A.DIAZ	30/09/04	54302012				
F	CN 10/226	F. GARCIA	17/05/10				54302012				
E	CN 06/159	F. GARCIA	08/08/06				54302012				
D	NE 06/166	F. GARCIA	07/07/06				54302012				
							PSU (with Stand-Alone) ESM COMPACT-LV DRAC/LF RAC GENERATOR (ONE/TWO X-RAY TUBES)				



**THIS SHEET ONLY APPLIES TO HIGH SPEED STARTER FOR ONLY TWO X-RAY TUBES (STANDARD)**

REV	DESCRIPTION	ISSUED BY	DATE	NAME	DATE	SHEET / OF	54302012					
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H	NC 12/466	R. Asenjo	08/11/12	DRAWING	F.GARCIA	30/09/04	6/9					
G	CN 10/533	F. DIAZ	14/04/11	REVISED	A.DIAZ	30/09/04	H G F E D C I ←REV					
F	CN 10/226	F. GARCIA	17/05/10				PSU (with Stand-Alone)					
E	CN 06/159	F. GARCIA	08/08/06				ESM COMPACT-LV DRAC/LF RAC GENERATOR (ONE/TWO X-RAY TUBES)					
D	NE 06/166	F. GARCIA	07/07/06				SEDECAL					

**THIS SHEET ONLY APPLIES TO LOW SPEED STARTER**

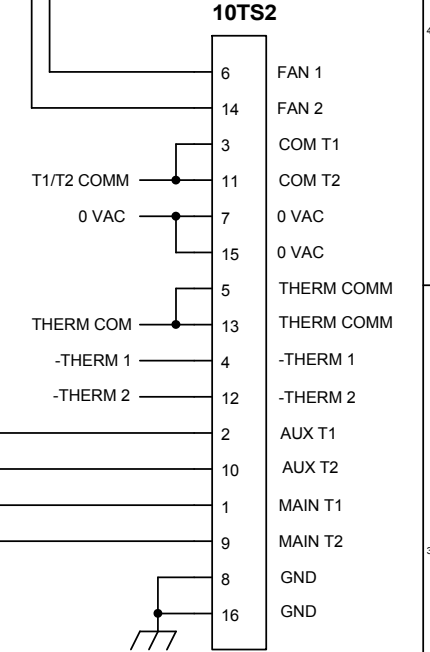
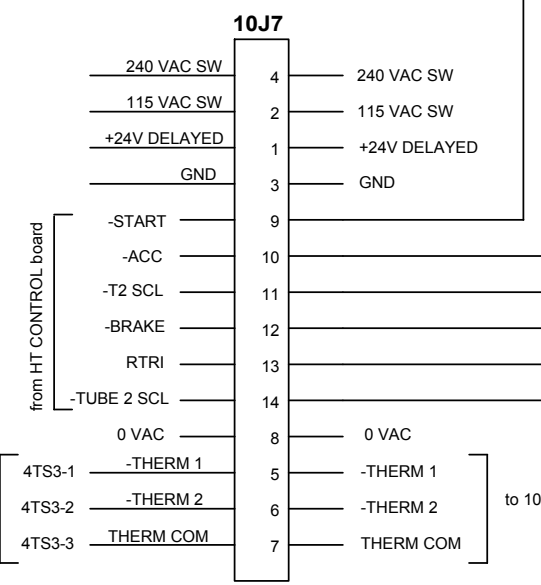
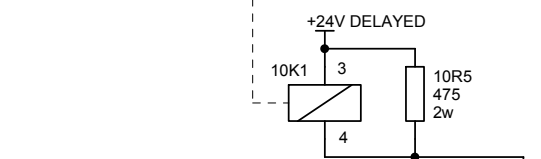
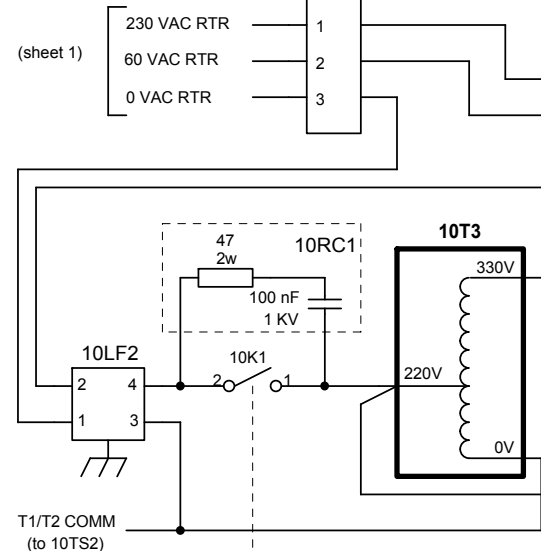
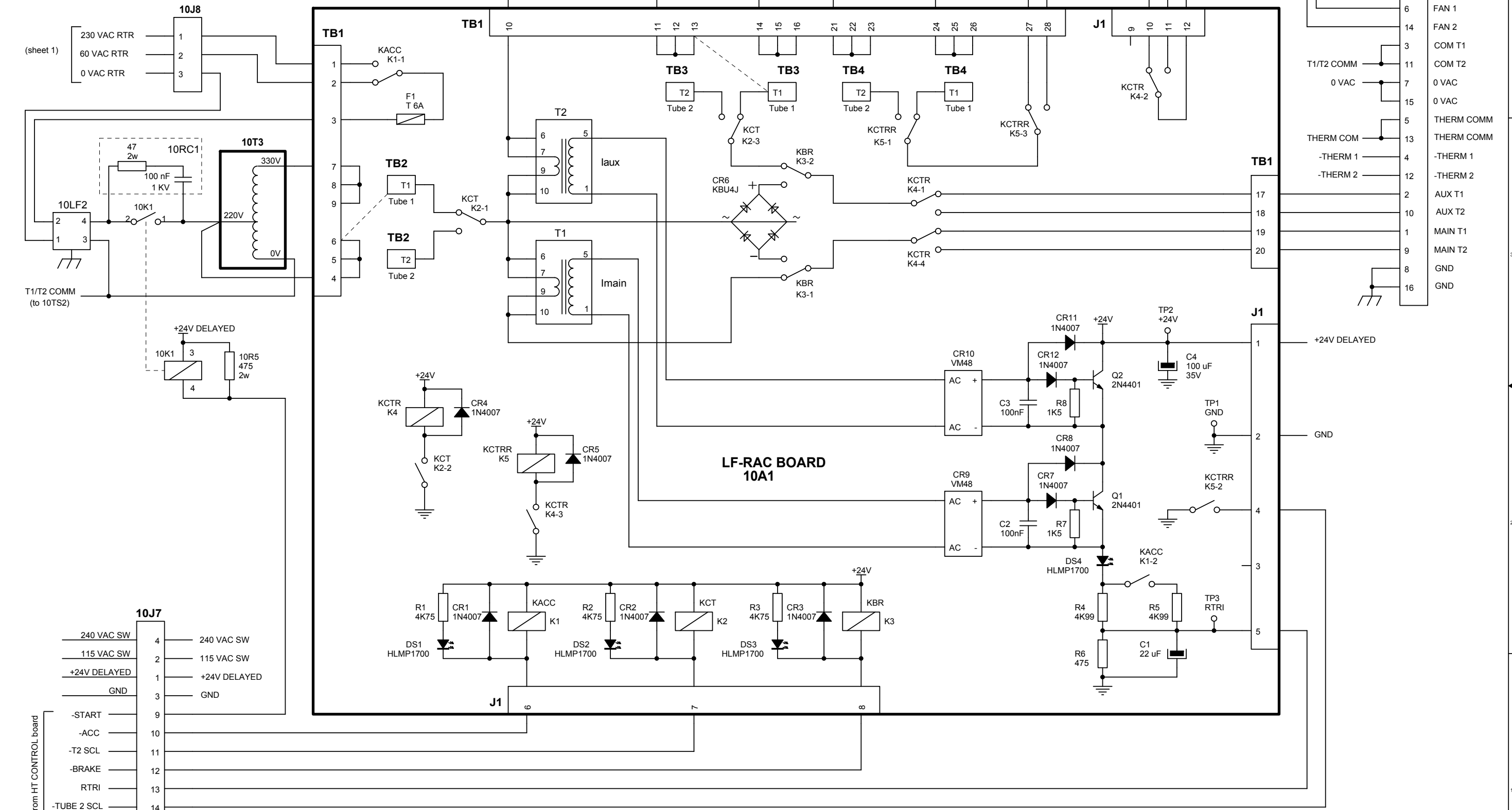
NOTE.- 10T3, 10C5-1, and 10R4-1 for 330 VAC Stator

Note.- Capacitor 10C5 could be 40 uF depending on tube used

Note.- 10J7 and 10J8 are aerial connectors

for external interface

NOTE.- Use Tube 2 connections for FL tube



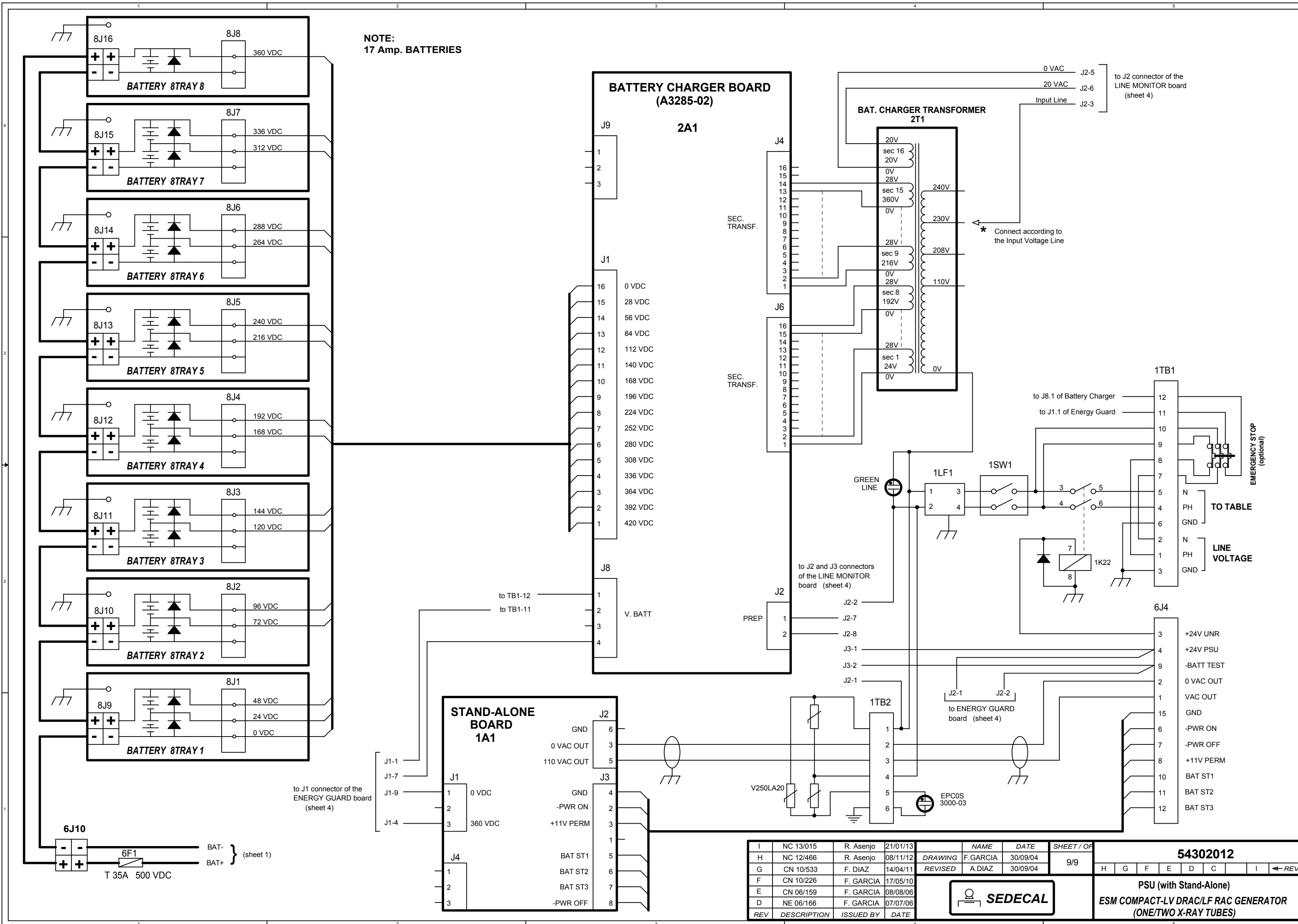
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H	NC 12/466	R. Asenjo	08/11/12	DRAWING	F.GARCIA	30/09/04	7/9				
G	CN 10/533	F. DIAZ	14/04/11	REVISED	A.DIAZ	30/09/04					
F	CN 10/226	F. GARCIA	17/05/10								
E	CN 06/159	F. GARCIA	08/08/06								
D	NE 06/166	F. GARCIA	07/07/06								



PSU (with Stand-Alone)  
ESM COMPACT-LV DRAC/LF RAC GENERATOR  
(ONE/TWO X-RAY TUBES)



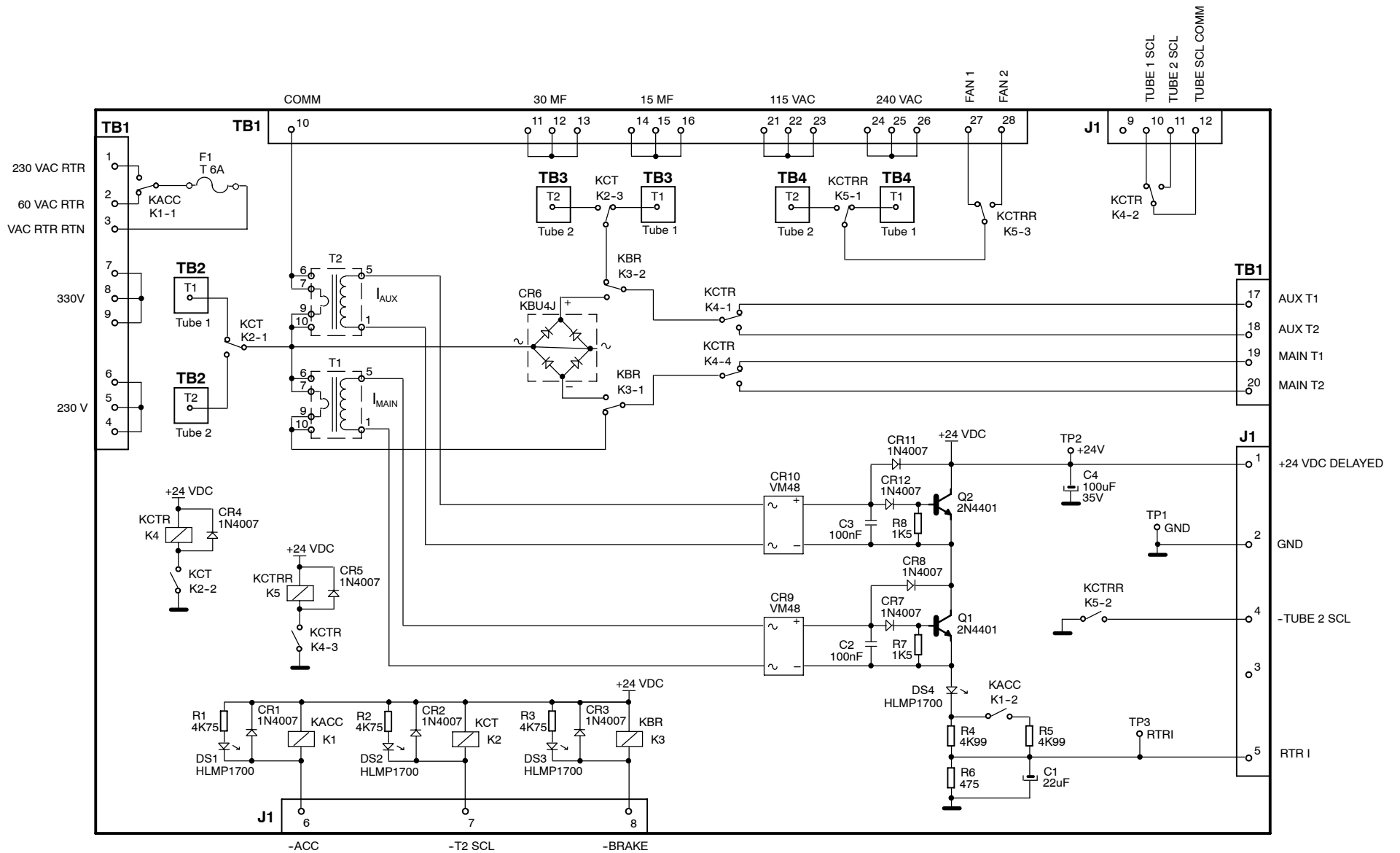
**NOTE:  
17 Amp. BATTERIES**



REV	DESCRIPTION	ISSUED BY	DATE	NAME	DATE	SHEET / OF	54302012							
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G	CN 10/533	F. DIAZ	14/04/11	REVISED	A.DIAZ	30/09/04								
F	CN 10/226	F. GARCIA	17/05/10											
E	CN 06/159	F. GARCIA	08/08/06											
D	NE 06/166	F. GARCIA	07/07/06											




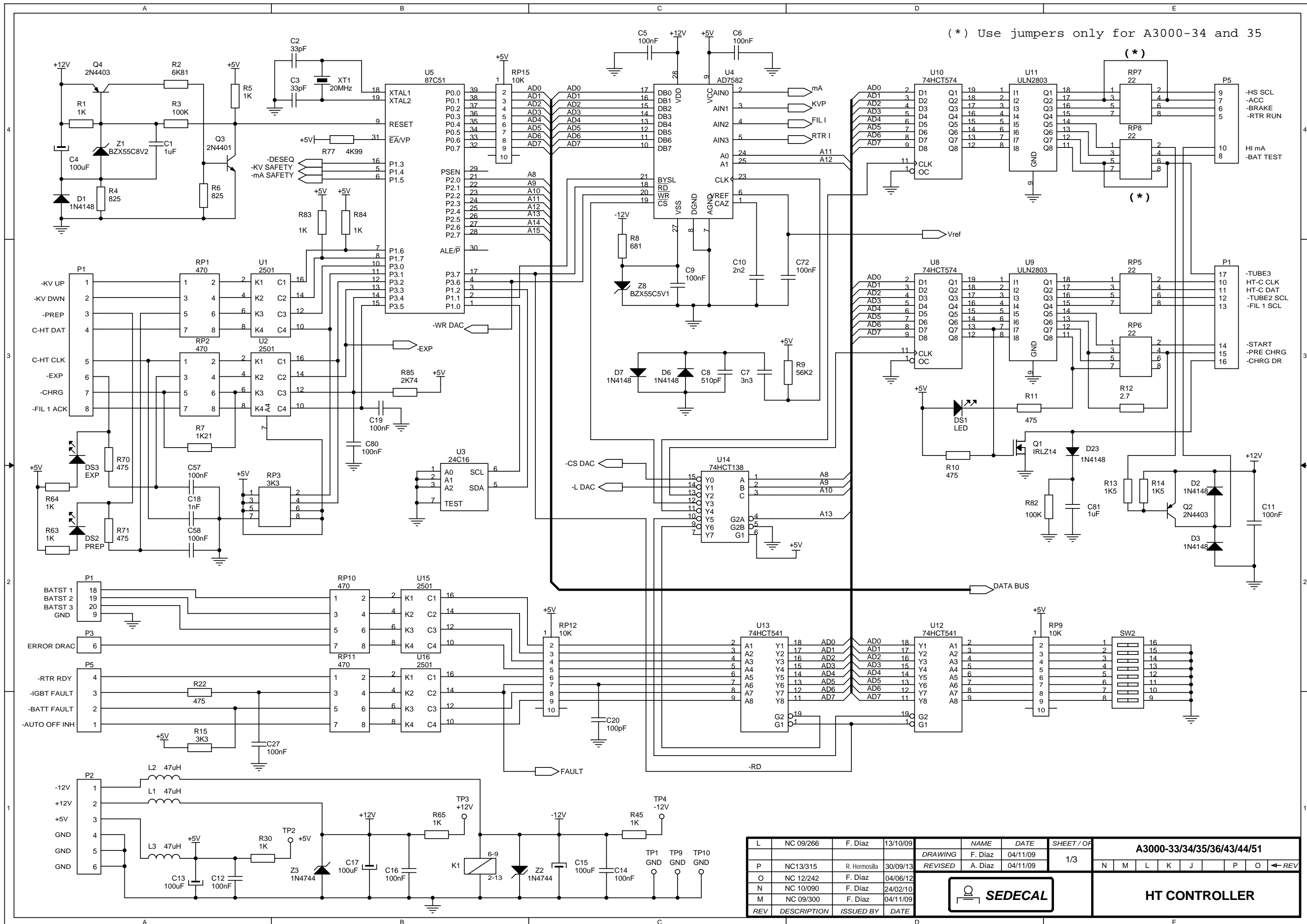
**PSU (with Stand-Alone)  
ESM COMPACT-LV DRAC/LF RAC GENERATOR  
(ONE/TWO X-RAY TUBES)**



**Note:**  
 The LF-RAC shown in the Generator schematic (543020XX) is a basic documentation, only for interconnection purposes.  
 Follow this schematic for detailed component information of the LF-RAC board.

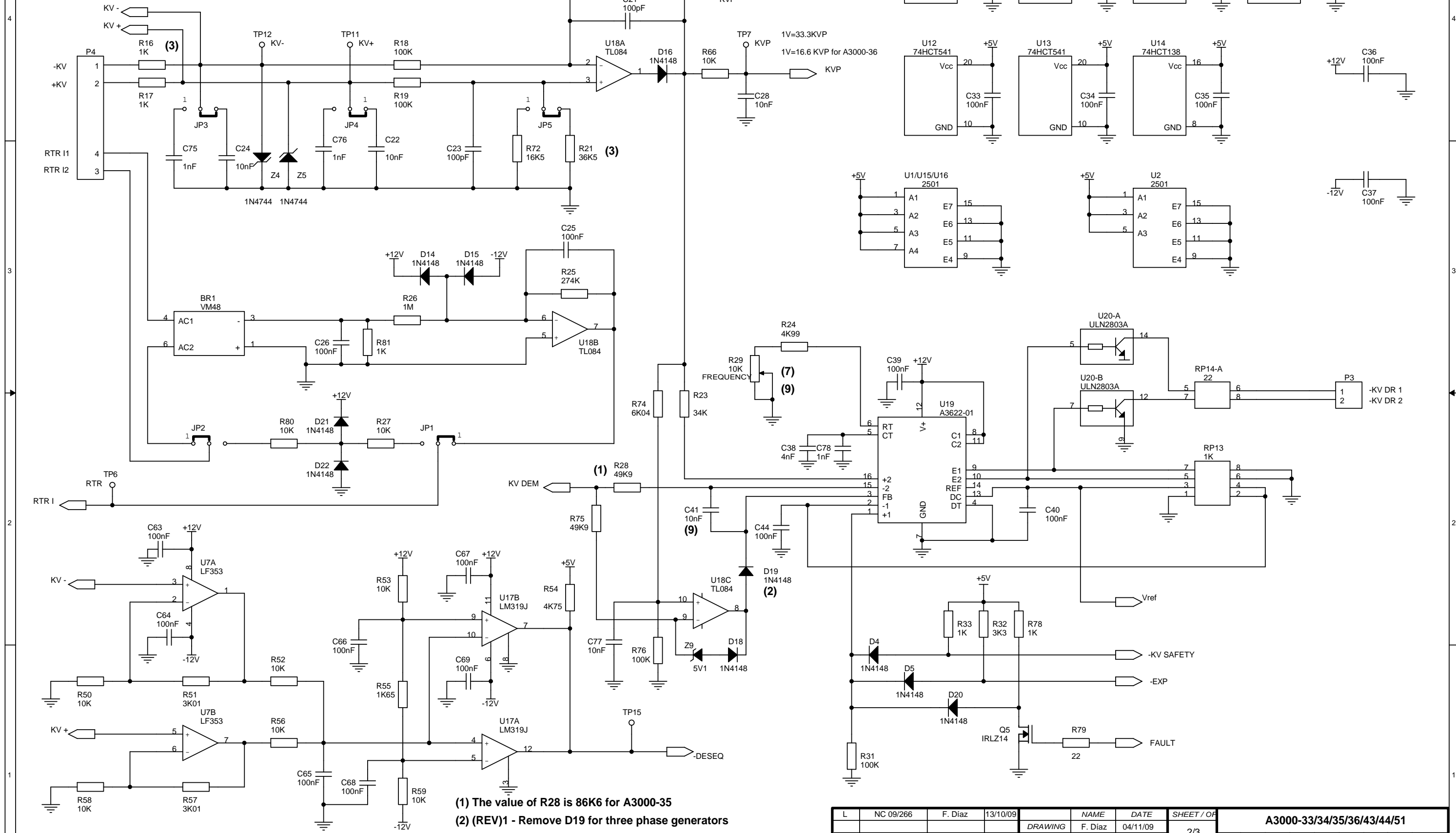
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				NAME	DATE	SHEET / OF	DWG:	A3096-02					
				DRAWING	F. GARCIA	21/09/97	1 / 1					B	REV
				REVISED	A. DIAZ	21/09/97							
B	CN 03/004	F. Garcia	13/01/03					<b>LF - RAC Board</b> ( Line Frequency Rotatory Anode Controller )					
REV	DESCRIPTION	ISSUED BY	DATE										



L	NC 09/266	F. Diaz	13/10/09	NAME	DATE	SHEET / OF	A3000-33/34/35/36/43/44/51								
P	NC13/315	R. Herosilla	30/09/13	DRAWING	F. Diaz	04/11/09	1/3	N	M	L	K	J	P	O	← REV
O	NC 12/242	F. Diaz	04/06/12	REVISED	A. Diaz	04/11/09									
N	NC 10/090	F. Diaz	24/02/10												
M	NC 09/300	F. Diaz	04/11/09												
REV	DESCRIPTION	ISSUED BY	DATE				HT CONTROLLER								

HV TANK	JP3	JP4	JP5	JP6
COMPACT	2	1	2	2
VERTICAL	1	2	1	1



- (1) The value of R28 is 86K6 for A3000-35
- (2) (REV)1 - Remove D19 for three phase generators
- (3) R16, R17 = 4K02, and R20, R21 = 69K8 for A3000-36
- (7) Adjust R29 to have a period of 48 us at U19-5 for A3000-43
- (9) C41 = 100nF. Adjust R29 to have a period of 48 us at U19-5 for A3000-51

L	NC 09/266	F. Diaz	13/10/09	NAME	DATE	SHEET / OF	A3000-33/34/35/36/43/44/51				
P	NC13/315	R. Hermosilla	30/09/13	DRAWING	F. Diaz	04/11/09	2/3		← REV		
O	NC 12/242	F. Diaz	04/06/12	REVISED	A. Diaz	04/11/09					
N	NC 10/090	F. Diaz	24/02/10								
M	NC 09/300	F. Diaz	04/11/09								
REV	DESCRIPTION	ISSUED BY	DATE					HT CONTROLLER			

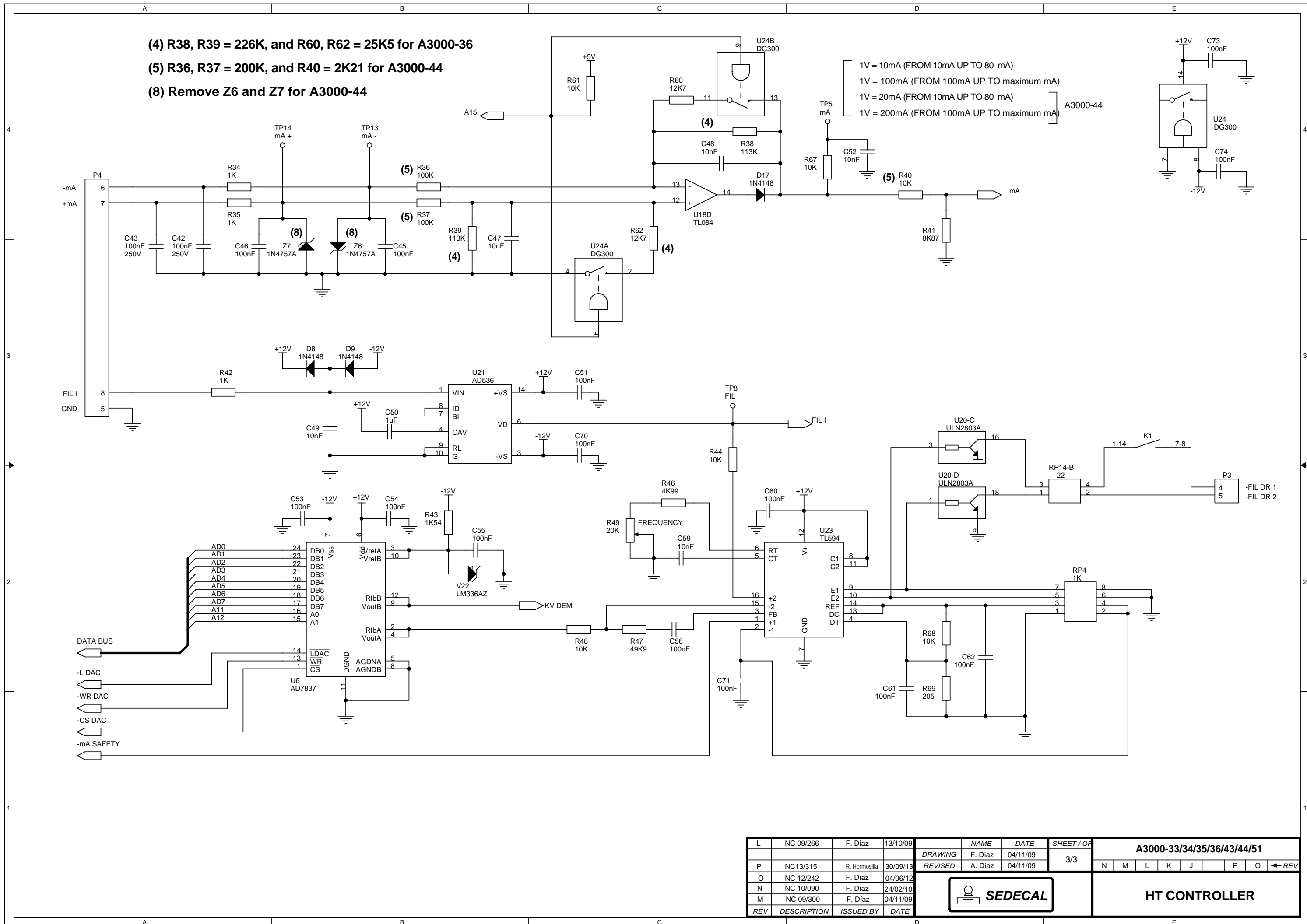
(4) R38, R39 = 226K, and R60, R62 = 25K5 for A3000-36

(5) R36, R37 = 200K, and R40 = 2K21 for A3000-44

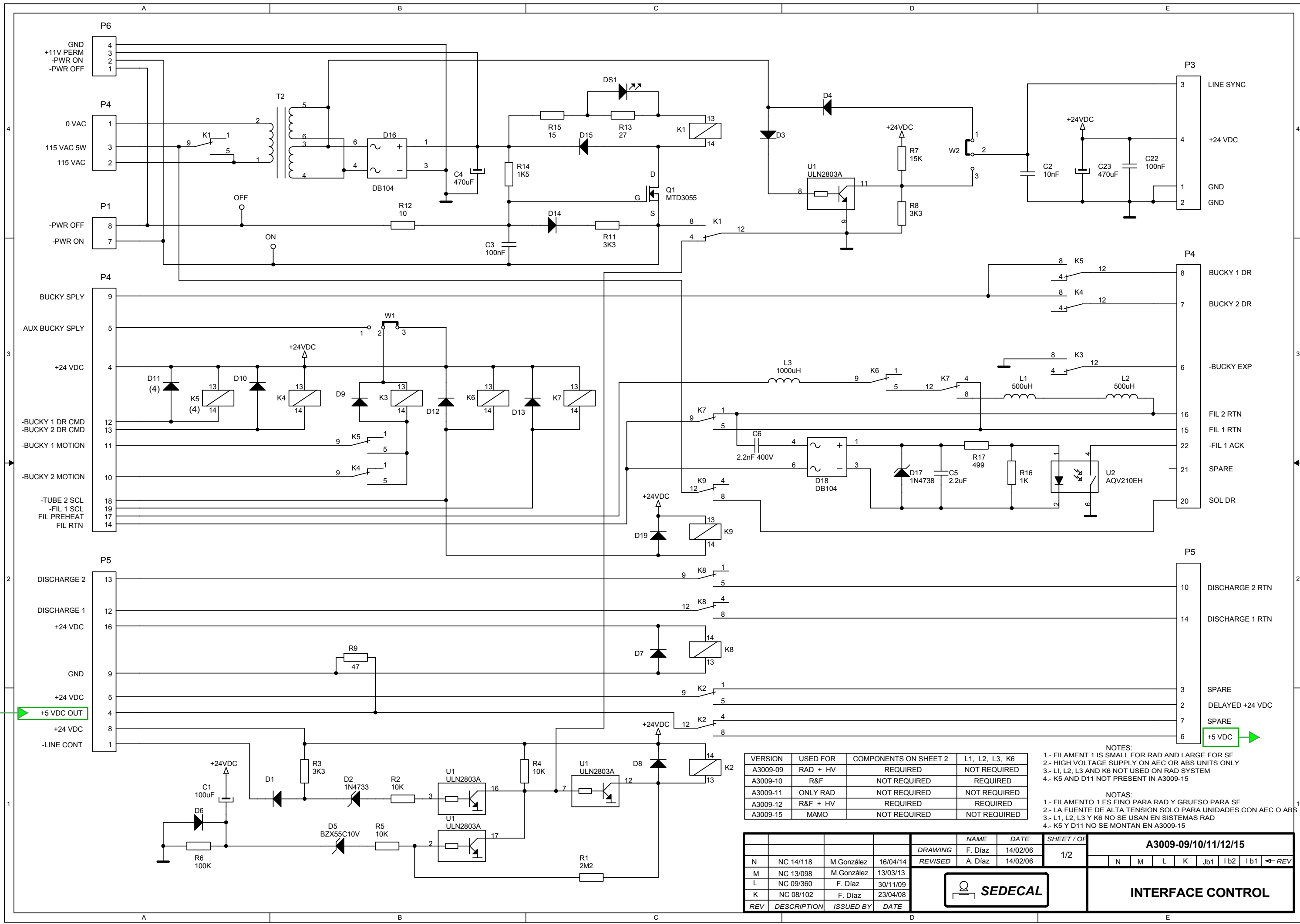
(8) Remove Z6 and Z7 for A3000-44

1V = 10mA (FROM 10mA UP TO 80 mA)  
 1V = 100mA (FROM 100mA UP TO maximum mA)  
 1V = 20mA (FROM 10mA UP TO 80 mA)  
 1V = 200mA (FROM 100mA UP TO maximum mA)

A3000-44



L	NC 09/266	F. Diaz	13/10/09	NAME	DATE	SHEET / OF	A3000-33/34/35/36/43/44/51								
				DRAWING	F. Diaz	04/11/09	3/3	N	M	L	K	J	P	O	← REV
P	NC13/315	R. Hermosilla	30/09/13	REVISED	A. Diaz	04/11/09									
O	NC 12/242	F. Diaz	04/06/12												
N	NC 10/090	F. Diaz	24/02/10												
M	NC 09/300	F. Diaz	04/11/09												
REV	DESCRIPTION	ISSUED BY	DATE			HT CONTROLLER									

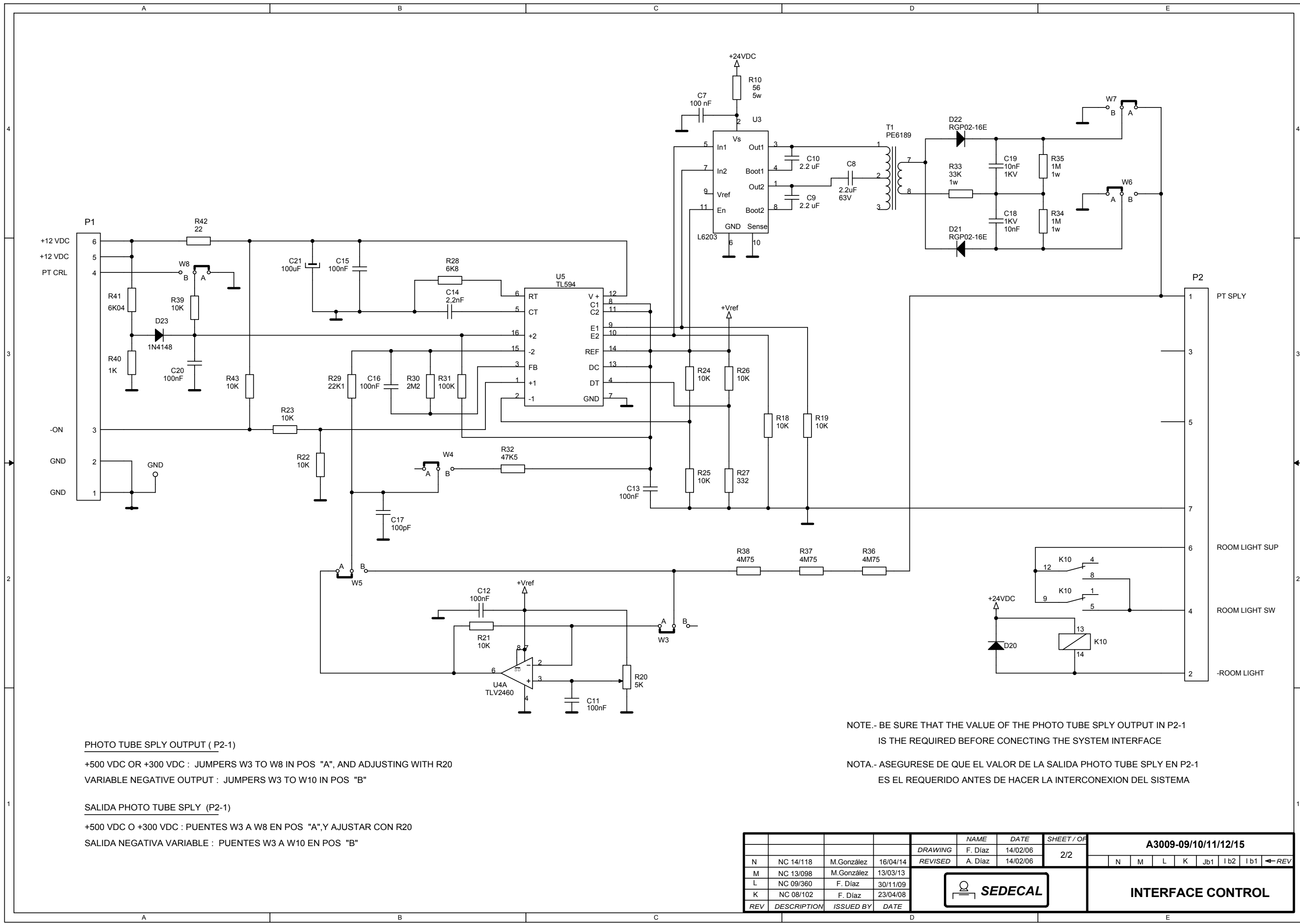


VERSION	USED FOR	COMPONENTS ON SHEET 2	L1, L2, L3, K6
A3009-09	RAD + HV	REQUIRED	NOT REQUIRED
A3009-10	R&F	NOT REQUIRED	REQUIRED
A3009-11	ONLY RAD	NOT REQUIRED	NOT REQUIRED
A3009-12	R&F + HV	REQUIRED	REQUIRED
A3009-15	MAMO	NOT REQUIRED	NOT REQUIRED

NOTES:  
 1.- FILAMENT 1 IS SMALL FOR RAD AND LARGE FOR SF  
 2.- HIGH VOLTAGE SUPPLY ON AEC OR ABS UNITS ONLY  
 3.- L1, L2, L3 AND K6 NOT USED ON RAD SYSTEM  
 4.- K5 AND D11 NOT PRESENT IN A3009-15

NOTAS:  
 1.- FILAMENTO 1 ES FINO PARA RAD Y GRUESO PARA SF  
 2.- LA FUENTE DE ALTA TENSION SOLO PARA UNIDADES CON AEC O ABS  
 3.- L1, L2, L3 Y K6 NO SE USAN EN SISTEMAS RAD  
 4.- K5 Y D11 NO SE MONTAN EN A3009-15

REV	DESCRIPTION	ISSUED BY	DATE	NAME	DATE	SHEET / OF	A3009-09/10/11/12/15							
N	NC 14/118	M. González	16/04/14	DRAWING	F. Díaz	14/02/06	1/2							
M	NC 13/098	M. González	13/03/13	REVISED	A. Díaz	14/02/06	N	M	L	K	Jb1	1b2	1b1	←REV
L	NC 09/360	F. Díaz	30/11/09											
K	NC 08/102	F. Díaz	23/04/08										<b>INTERFACE CONTROL</b>	



**PHOTO TUBE SPLY OUTPUT ( P2-1)**

+500 VDC OR +300 VDC : JUMPERS W3 TO W8 IN POS "A", AND ADJUSTING WITH R20  
 VARIABLE NEGATIVE OUTPUT : JUMPERS W3 TO W10 IN POS "B"

**SALIDA PHOTO TUBE SPLY (P2-1)**

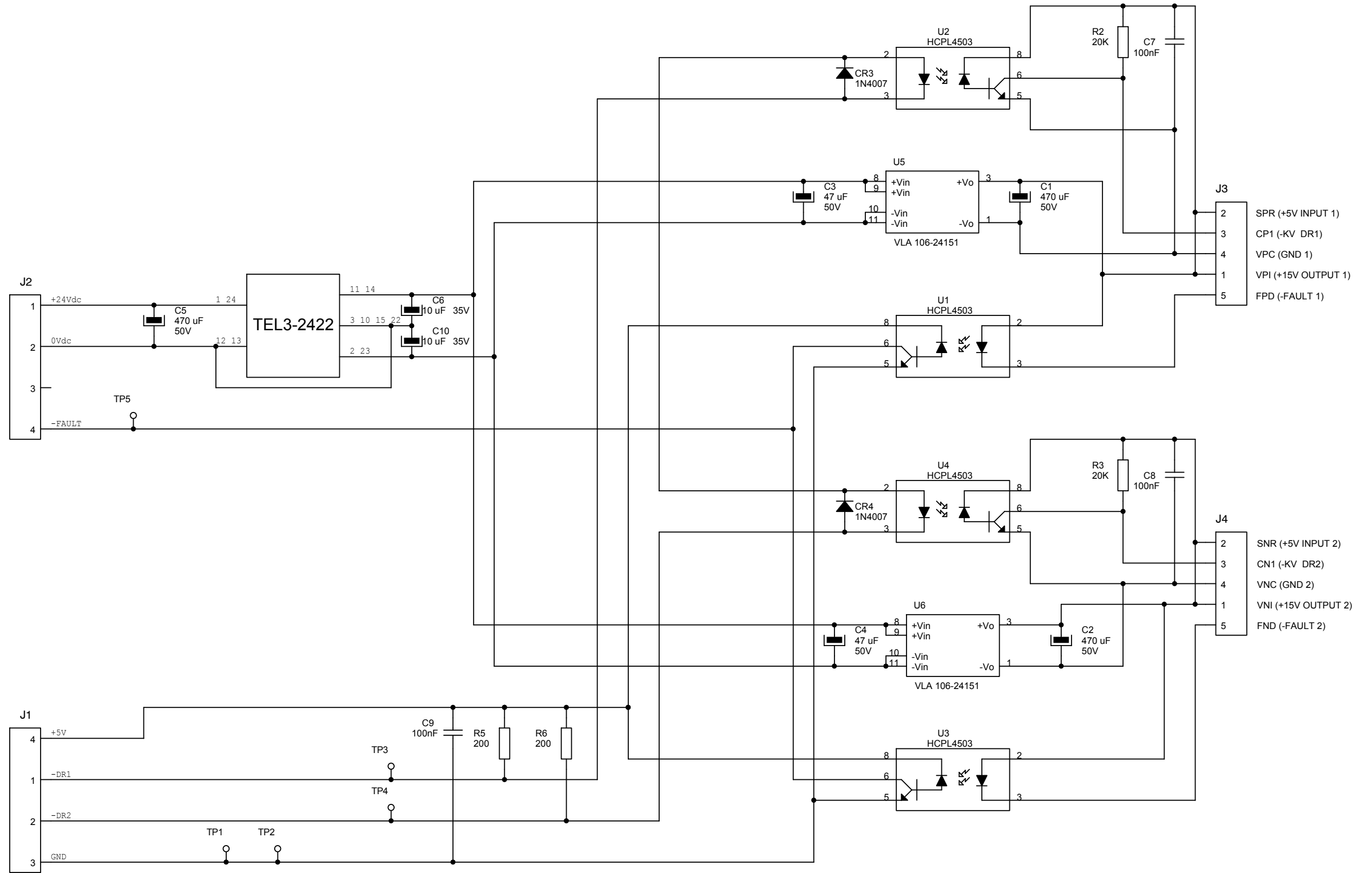
+500 VDC O +300 VDC : PUENTES W3 A W8 EN POS "A",Y AJUSTAR CON R20  
 SALIDA NEGATIVA VARIABLE : PUENTES W3 A W10 EN POS "B"

NOTE.- BE SURE THAT THE VALUE OF THE PHOTO TUBE SPLY OUTPUT IN P2-1 IS THE REQUIRED BEFORE CONECTING THE SYSTEM INTERFACE  
 NOTA.- ASEGURESE DE QUE EL VALOR DE LA SALIDA PHOTO TUBE SPLY EN P2-1 ES EL REQUERIDO ANTES DE HACER LA INTERCONEXION DEL SISTEMA

REV	DESCRIPTION	ISSUED BY	DATE	NAME	DATE	SHEET / OF	A3009-09/10/11/12/15									
				DRAWING	F. Díaz	14/02/06	2/2		N	M	L	K	Jb1	I b2	I b1	←REV
				REVISED	A. Díaz	14/02/06										



**INTERFACE CONTROL**



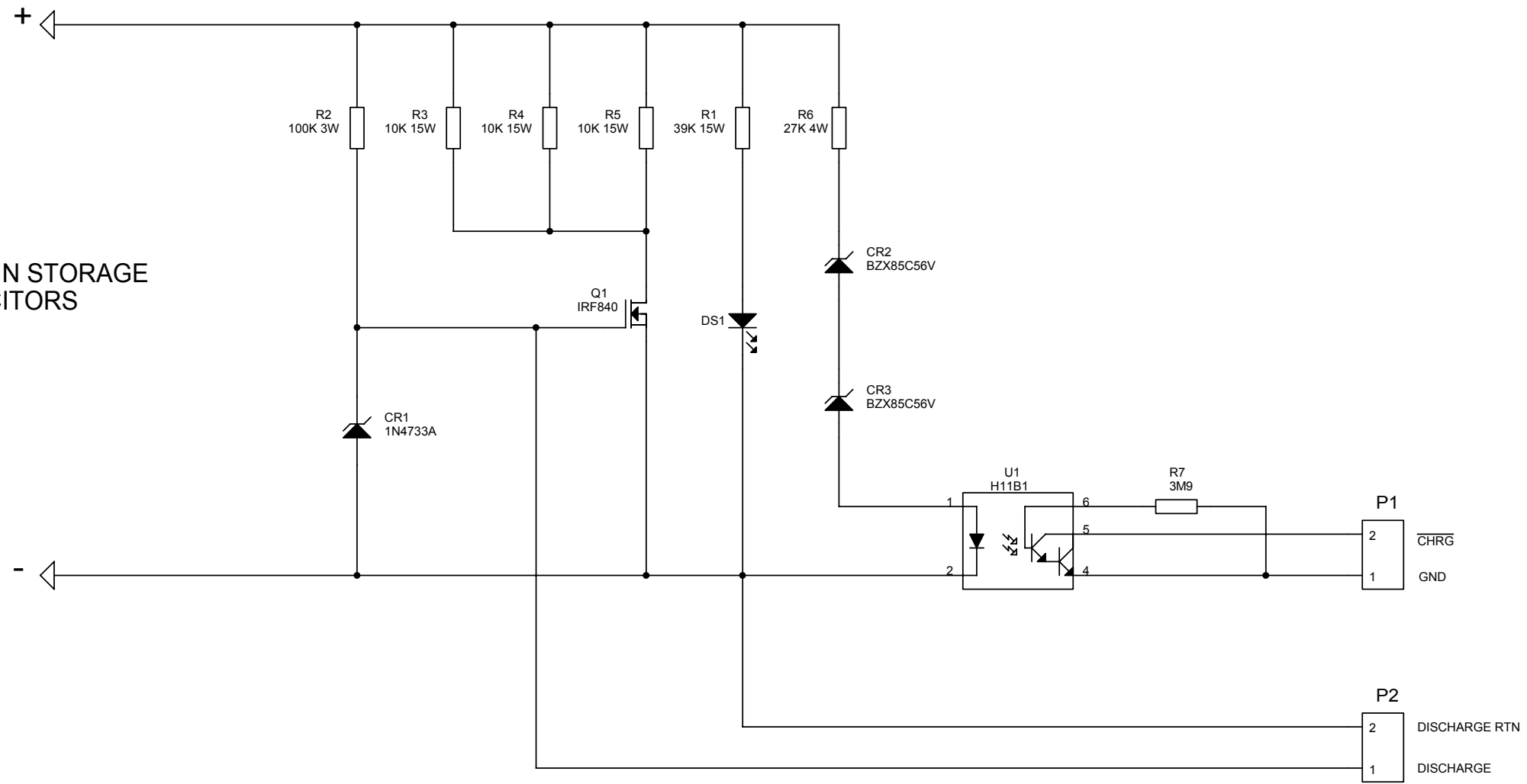
C.I. 90132-06

		NAME		DATE		SHEET / OF		A3063-06			
		DRAWING		F. Diaz		20/06/11		1/1			
		REVISED		A. Diaz		20/06/11					
B		NC 13/001		F. Diaz		04/01/13					
REV		DESCRIPTION		ISSUED BY		DATE					

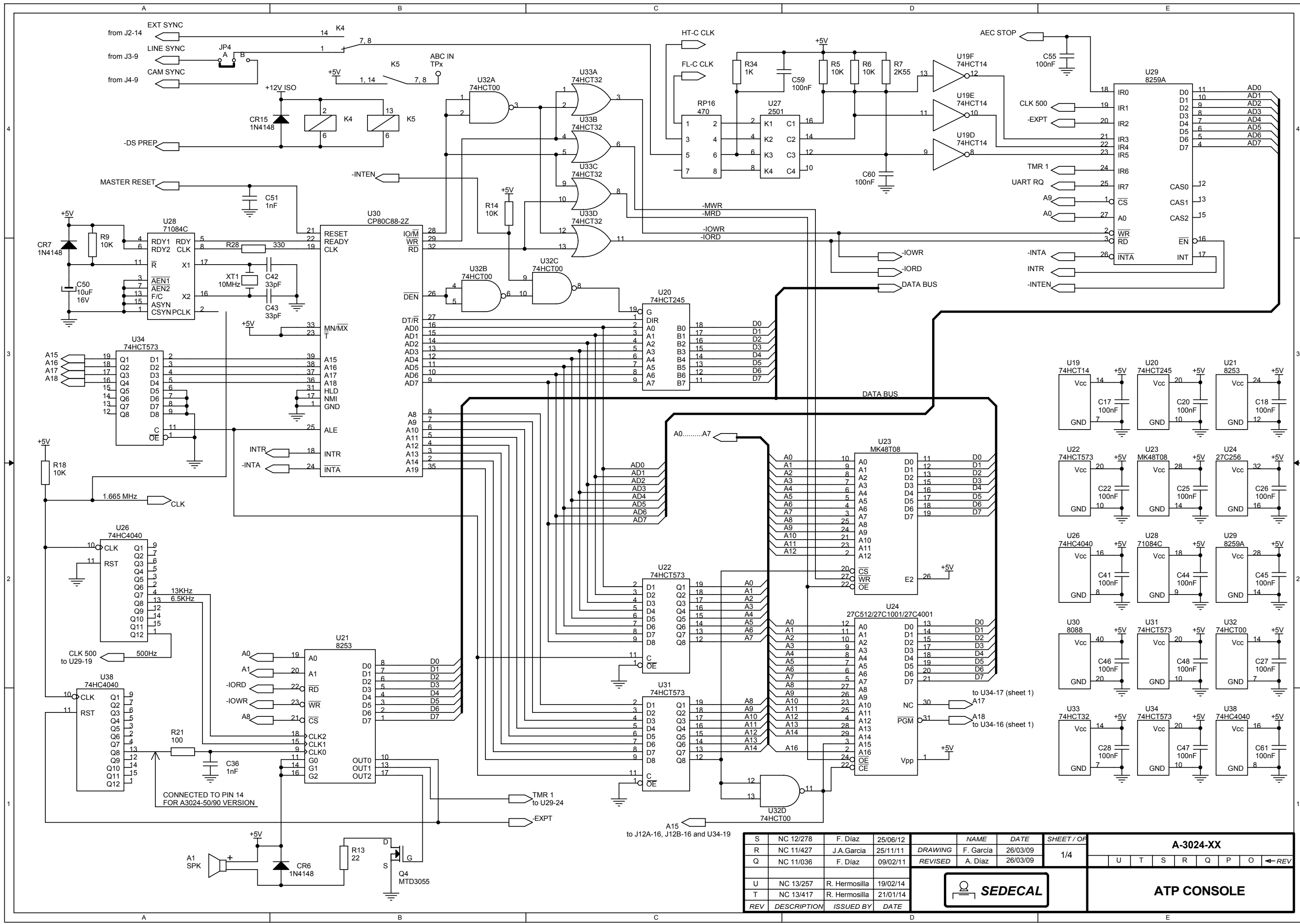


IPM DRIVER

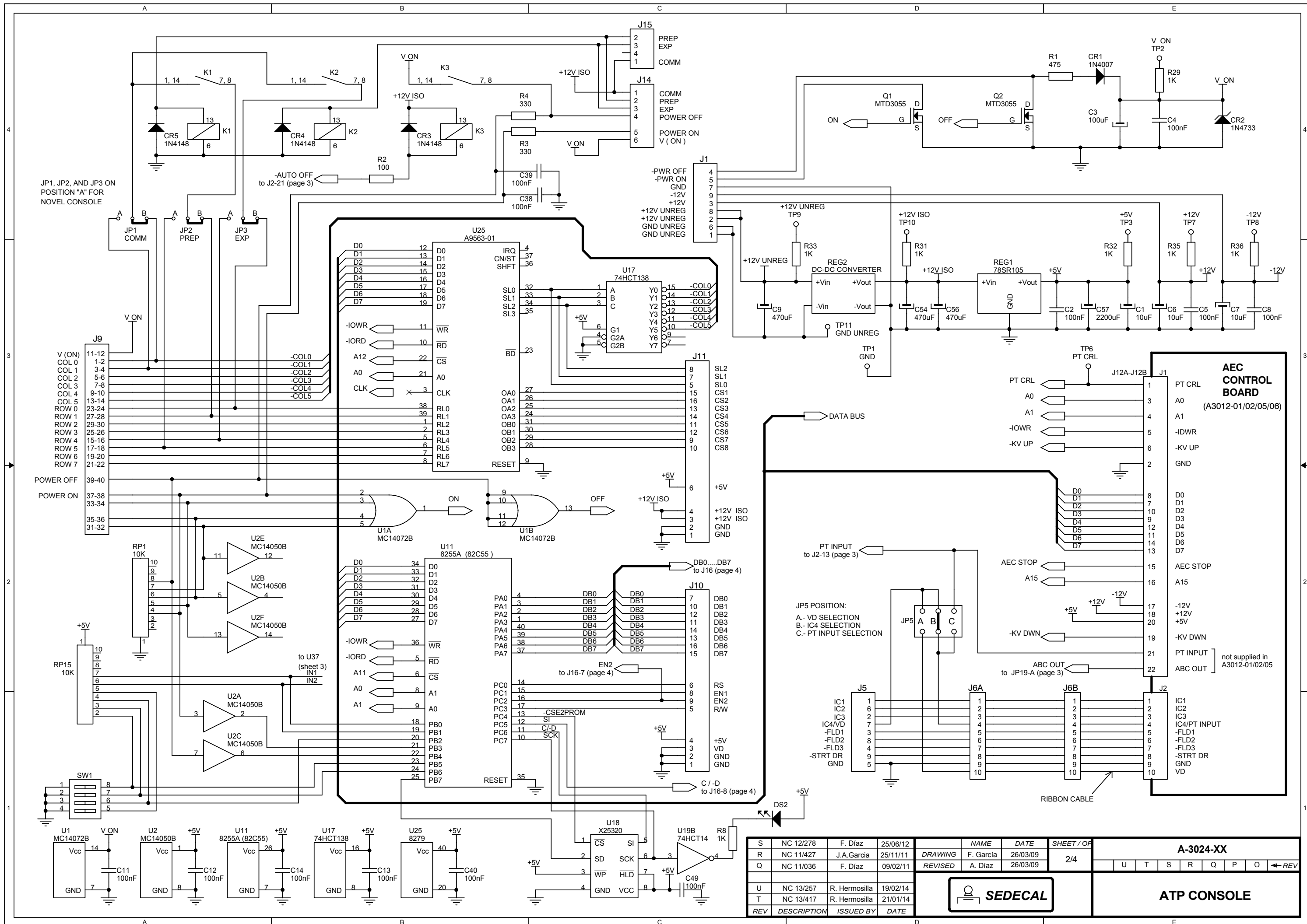
TO MAIN STORAGE CAPACITORS



E	CN 98/114	F.GARCIA	10/10/98	<b>CHARGE/DISCHARGE MONITOR</b>  <b>SEDECAL S.A.</b>	ENG	F. GARCIA
D	CN 98/057	F.GARCIA	29/04/98		CHK	A. DIAZ
C	CN 96/033	F.GARCIA	06/03/96		REV	CN99/80 (22/07/99)
B	CN 95/080	F.GARCIA	10/05/95		DWG	<b>3212-01</b> REV. F
A	CN 95/74	F.GARCIA	25/04/95			REV.
REV	DESCRIPTION	ISSUED BY	DATE			REV.
				DATE		11/01/95



S	NC 12/278	F. Diaz	25/06/12	NAME	DATE	SHEET / OF	A-3024-XX								
R	NC 11/427	J.A.Garcia	25/11/11	DRAWING	F. Garcia	26/03/09	1/4	U	T	S	R	Q	P	O	←REV
Q	NC 11/036	F. Diaz	09/02/11	REVISED	A. Diaz	26/03/09									
U	NC 13/257	R. Hermosilla	19/02/14												
T	NC 13/417	R. Hermosilla	21/01/14												
REV	DESCRIPTION	ISSUED BY	DATE				<b>ATP CONSOLE</b>								



JP1, JP2, AND JP3 ON POSITION "A" FOR NOVEL CONSOLE

-AUTO OFF to J2-21 (page 3)

-PWR OFF  
-PWR ON  
-12V  
+12V  
GND UNREG

DATA BUS

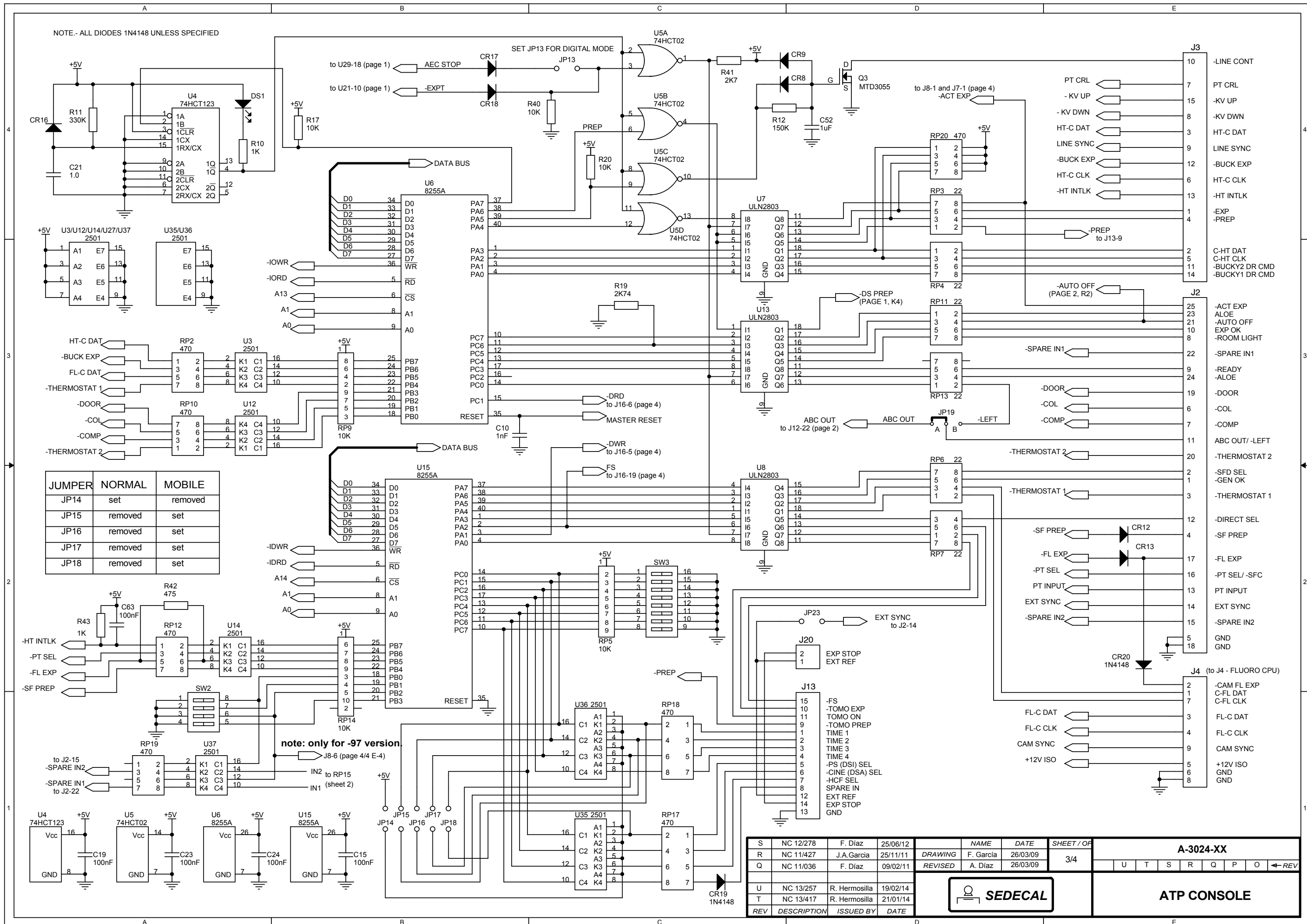
JP5 POSITION:  
A - VD SELECTION  
B - IC4 SELECTION  
C - PT INPUT SELECTION

**AEC CONTROL BOARD**  
(A3012-01/02/05/06)

not supplied in A3012-01/02/05

S	NC 12/278	F. Díaz	25/06/12	NAME	DATE	SHEET / OF	A-3024-XX							
R	NC 11/427	J.A. Garcia	25/11/11	DRAWING	F. García	26/03/09	2/4							
Q	NC 11/036	F. Díaz	09/02/11	REVISED	A. Díaz	26/03/09	U	T	S	R	Q	P	O	← REV
U	NC 13/257	R. Hermosilla	19/02/14											
T	NC 13/417	R. Hermosilla	21/01/14											
REV	DESCRIPTION	ISSUED BY	DATE	<b>ATP CONSOLE</b>										

NOTE - ALL DIODES 1N4148 UNLESS SPECIFIED



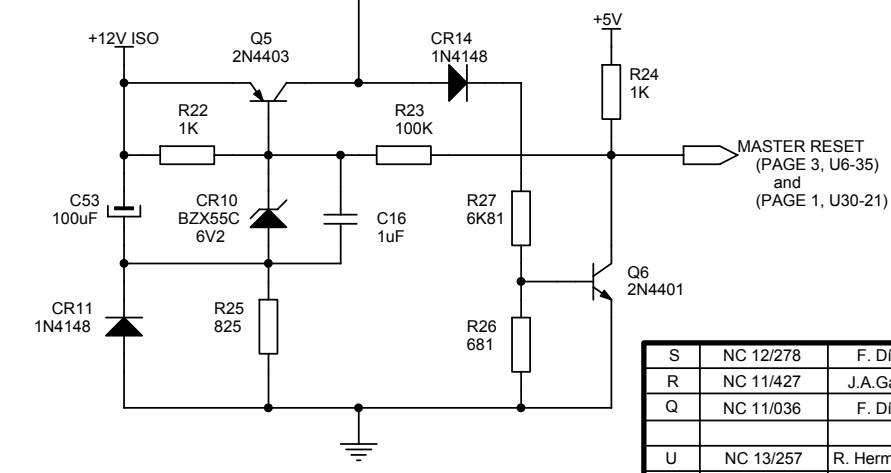
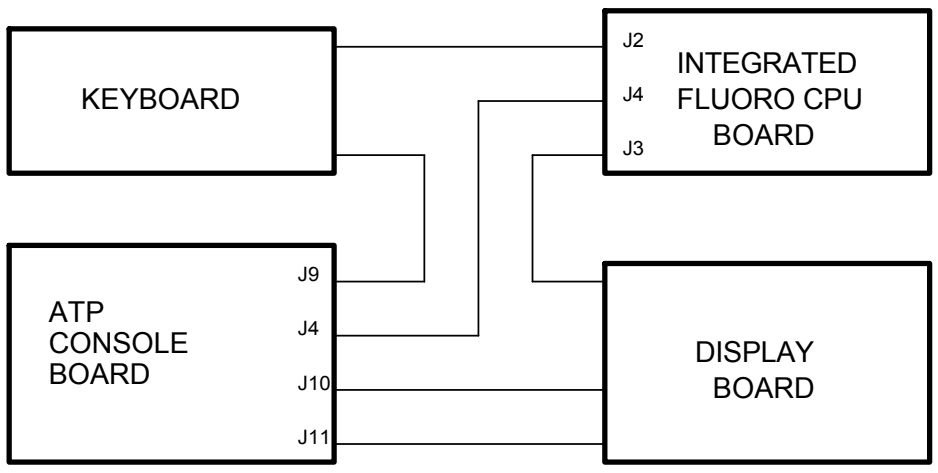
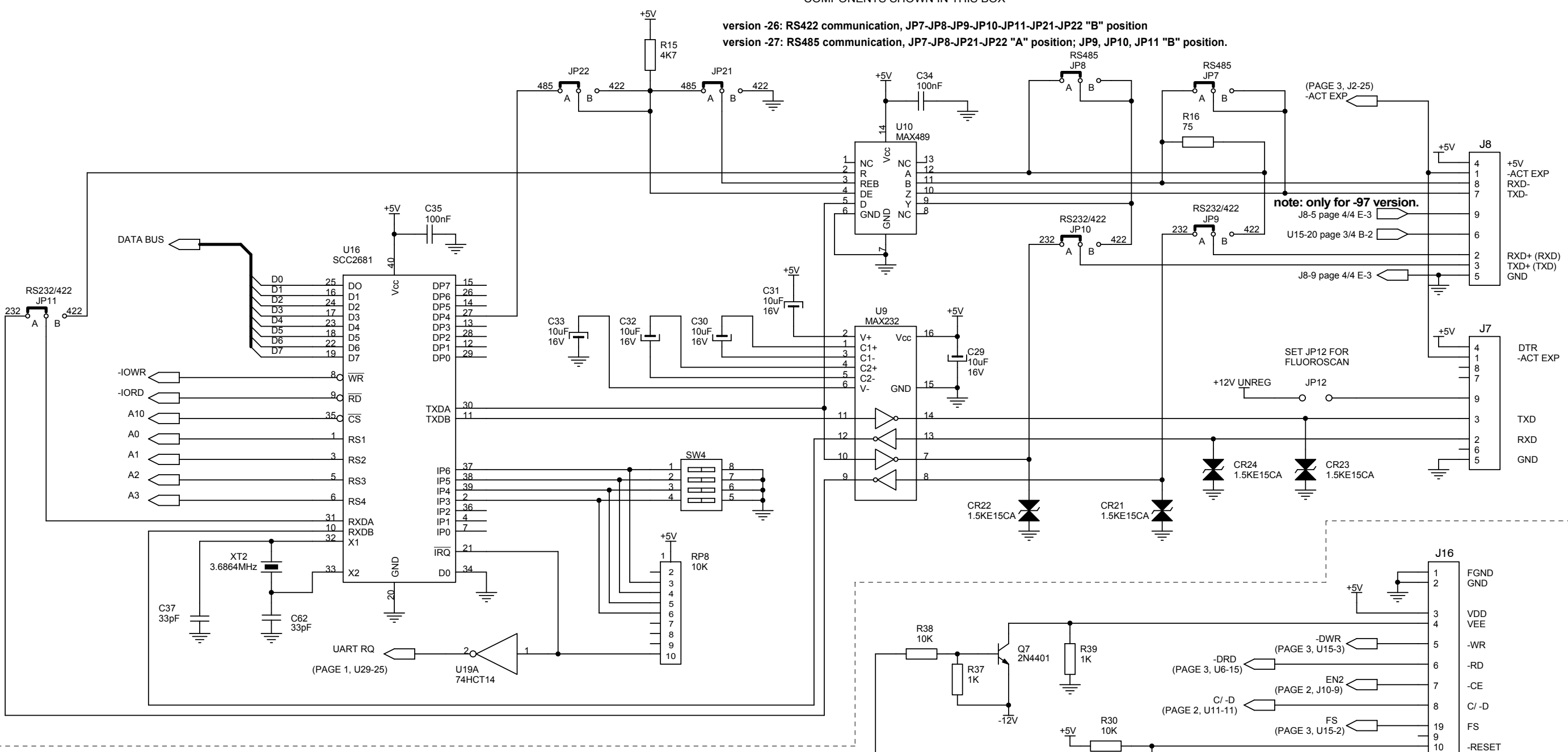
JUMPER	NORMAL	MOBILE
JP14	set	removed
JP15	removed	set
JP16	removed	set
JP17	removed	set
JP18	removed	set

note: only for -97 version

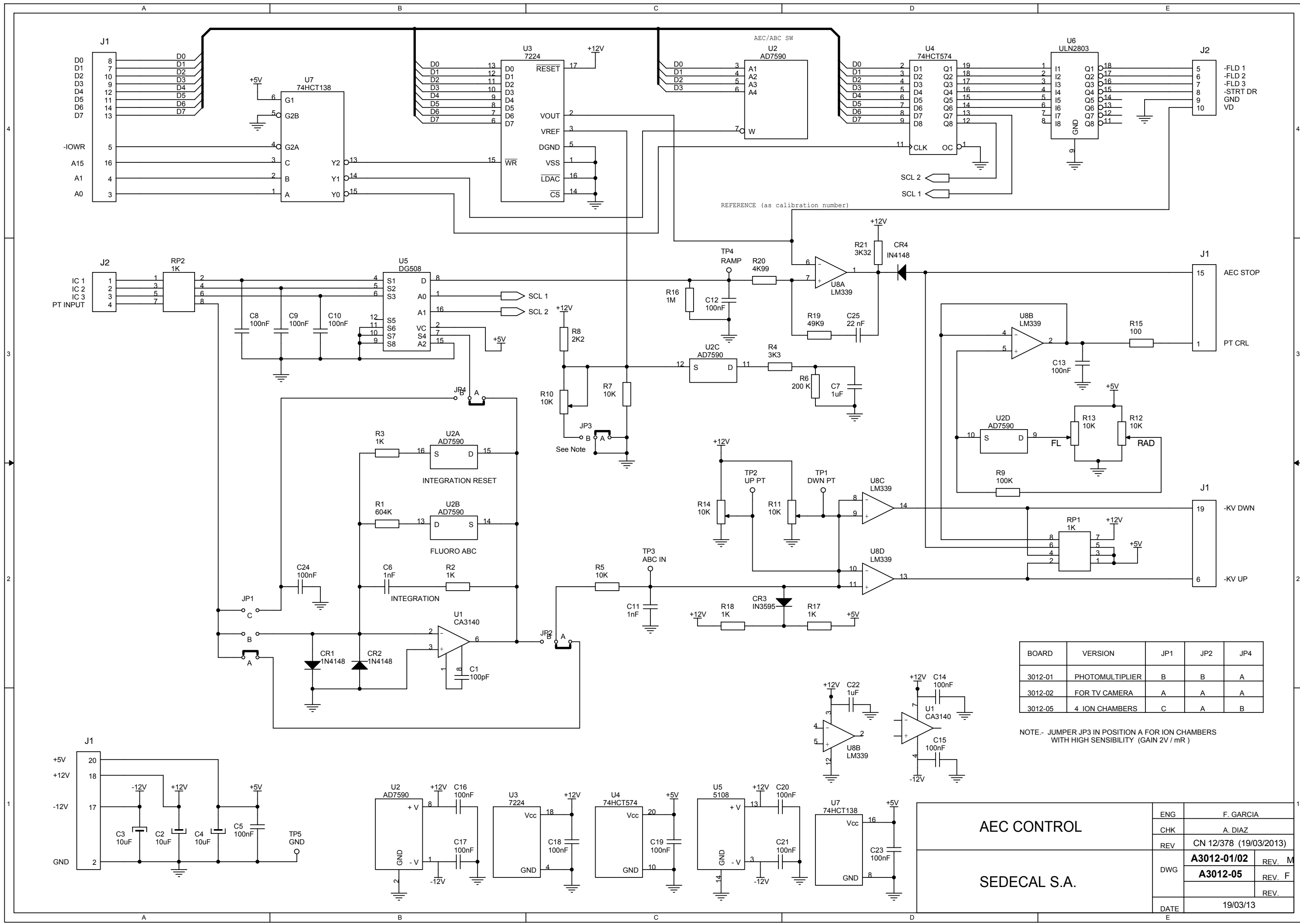
S	NC 12/278	F. Díaz	25/06/12	NAME	DATE	SHEET / OF	<b>A-3024-XX</b> U T S R Q P O ← REV
R	NC 11/427	J.A. Garcia	25/11/11	DRAWING	F. García	26/03/09	
Q	NC 11/036	F. Díaz	09/02/11	REVISED	A. Díaz	26/03/09	
U	NC 13/257	R. Hermosilla	19/02/14			3/4	<b>ATP CONSOLE</b>
T	NC 13/417	R. Hermosilla	21/01/14				
REV	DESCRIPTION	ISSUED BY	DATE				

SERIAL COMMUNICATION REQUIRES THE COMPONENTS SHOWN IN THIS BOX

version -26: RS422 communication, JP7-JP8-JP9-JP10-JP11-JP21-JP22 "B" position  
 version -27: RS485 communication, JP7-JP8-JP21-JP22 "A" position; JP9, JP10, JP11 "B" position.



S	NC 12/278	F. Díaz	25/06/12	NAME	DATE	SHEET / OF	A-3024-XX								
R	NC 11/427	J.A.Garcia	25/11/11	DRAWING	F. Garcia	26/03/09	4/4	U	T	S	R	Q	P	O	← REV
Q	NC 11/036	F. Díaz	09/02/11	REVISED	A. Díaz	26/03/09									
U	NC 13/257	R. Hermosilla	19/02/14												
T	NC 13/417	R. Hermosilla	21/01/14												
REV	DESCRIPTION	ISSUED BY	DATE	SEDECAL			ATP CONSOLE								

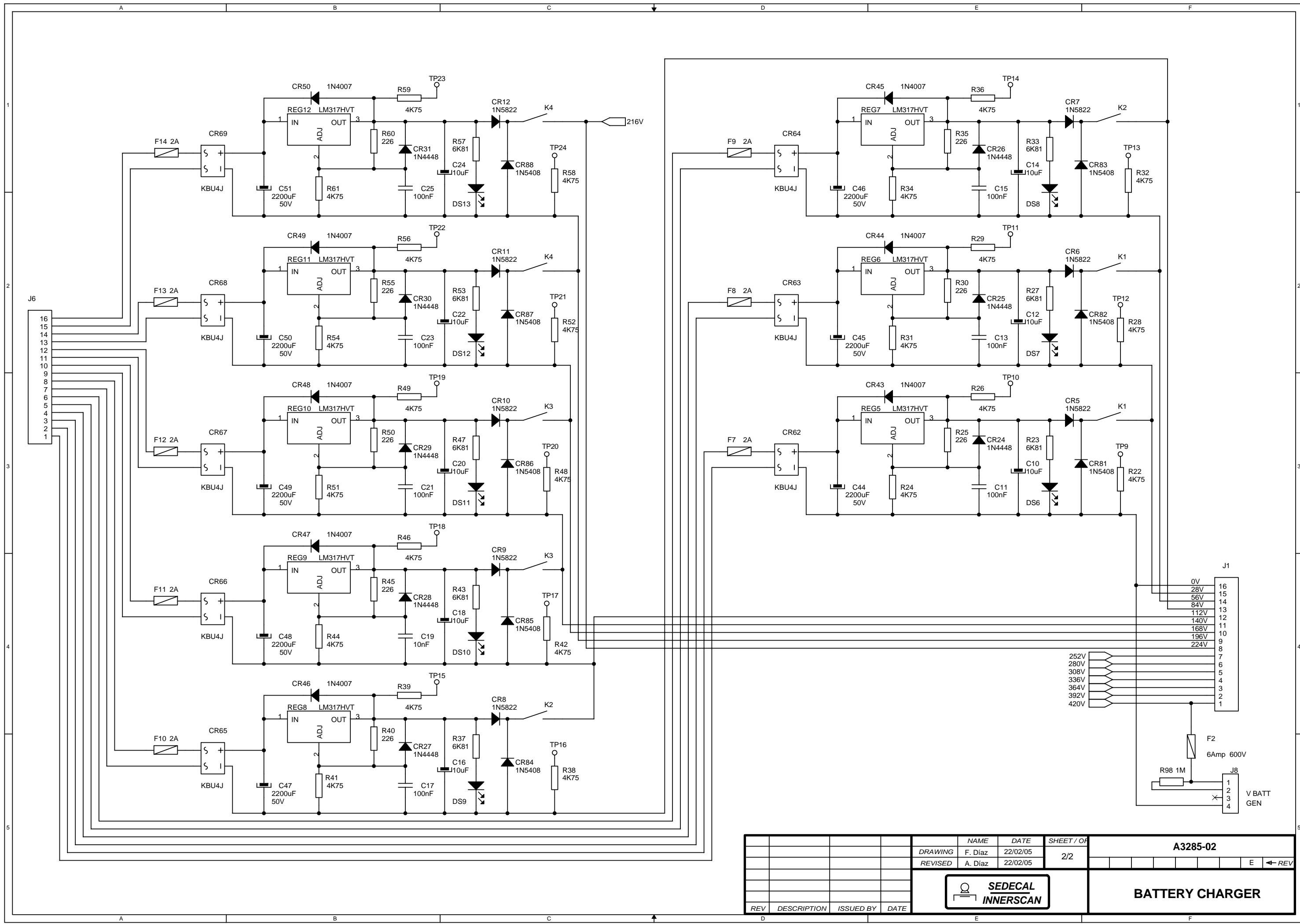


BOARD	VERSION	JP1	JP2	JP4
3012-01	PHOTOMULTIPLIER	B	B	A
3012-02	FOR TV CAMERA	A	A	A
3012-05	4 ION CHAMBERS	C	A	B

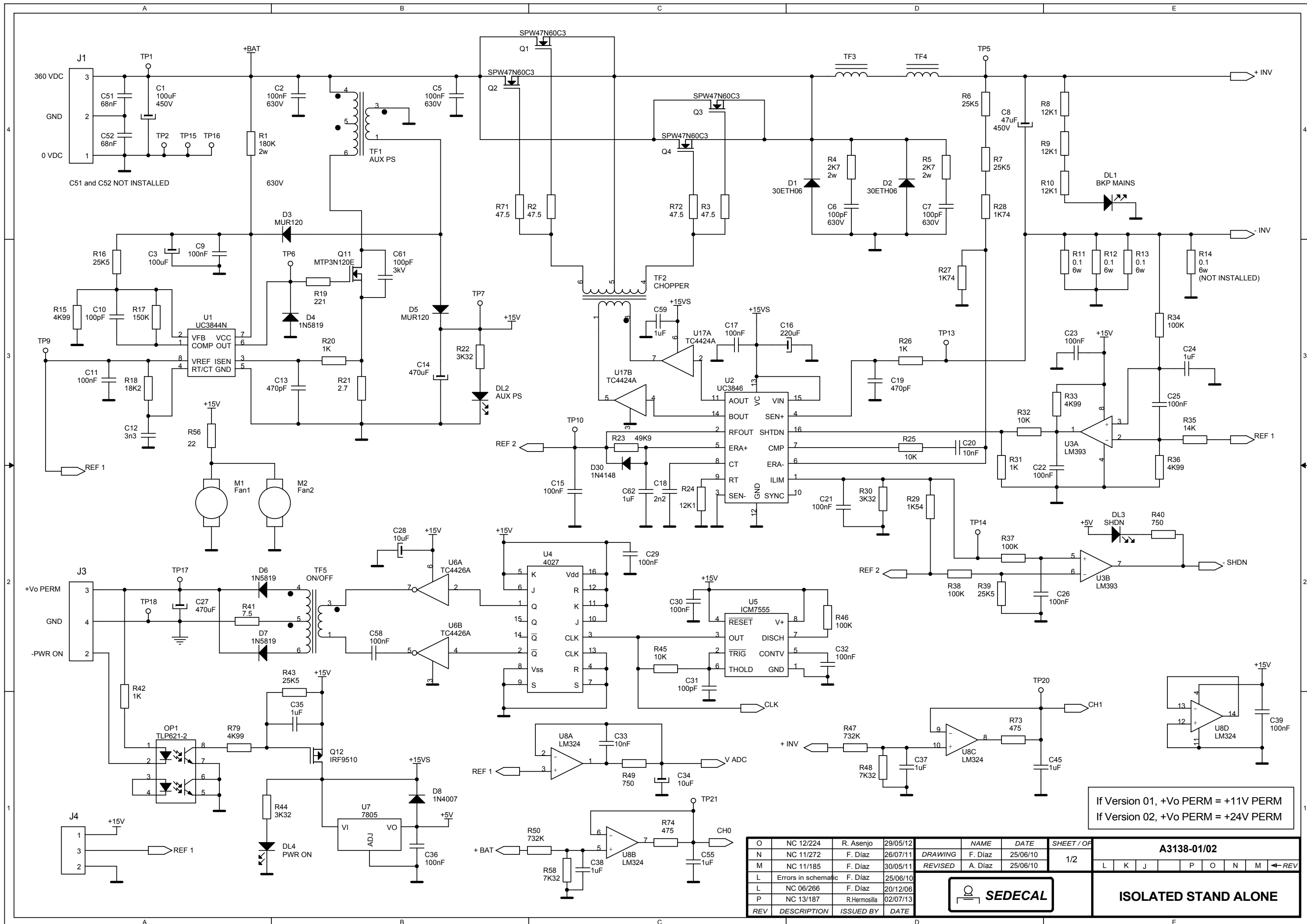
NOTE.- JUMPER JP3 IN POSITION A FOR ION CHAMBERS WITH HIGH SENSIBILITY (GAIN 2V / mR)

<b>AEC CONTROL</b>  <b>SEDECAL S.A.</b>		ENG	F. GARCIA
		CHK	A. DIAZ
		REV	CN 12/378 (19/03/2013)
		DWG	A3012-01/02 REV. M
			A3012-05 REV. F
			REV.
DATE	19/03/13		



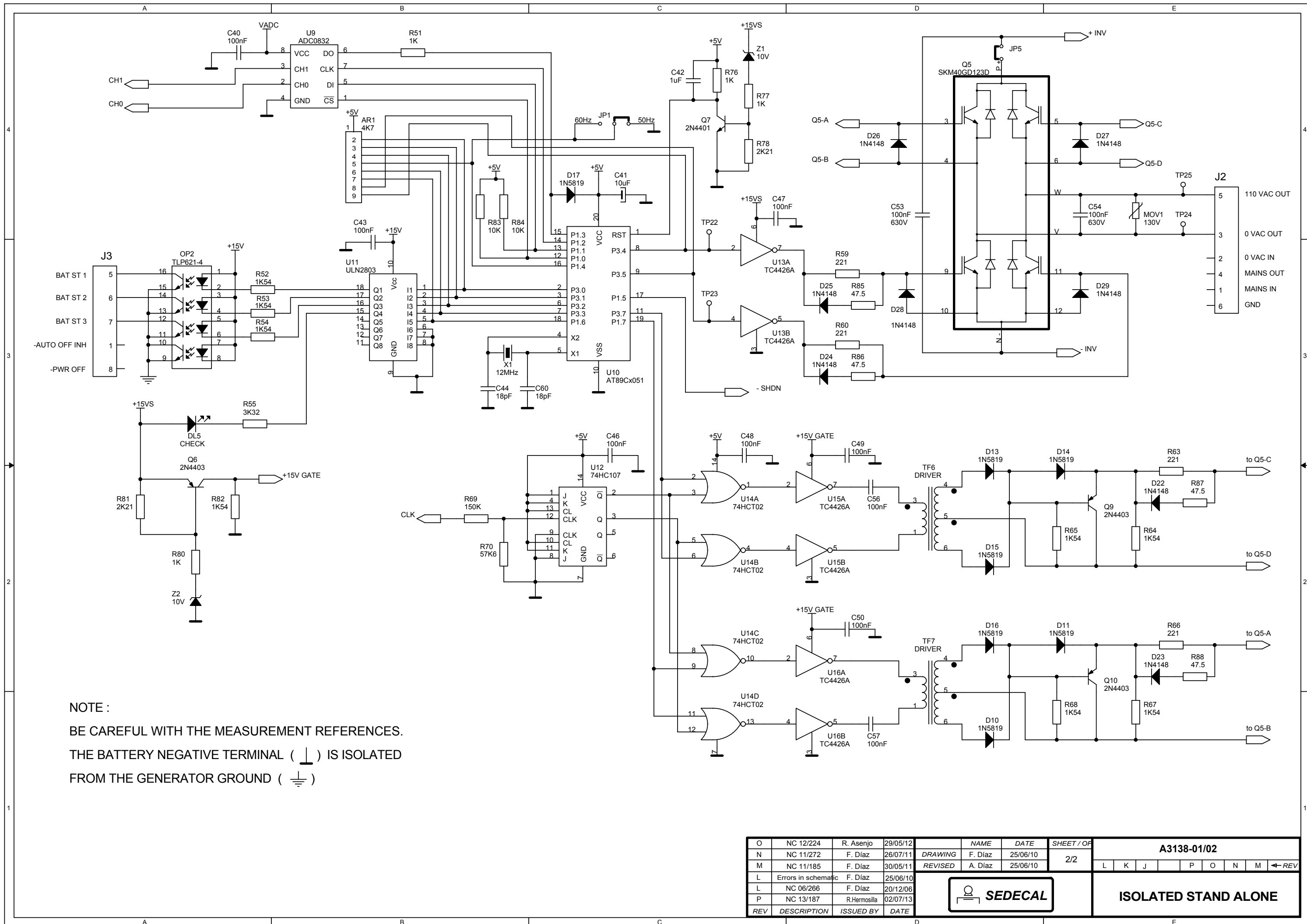


REV		DESCRIPTION	ISSUED BY	DATE	NAME	DATE	SHEET / OF	A3285-02	
					DRAWING	F. Diaz	22/02/05	2/2	
					REVISED	A. Diaz	22/02/05	E ← REV	
					<b>BATTERY CHARGER</b>				



If Version 01, +Vo PERM = +11V PERM  
 If Version 02, +Vo PERM = +24V PERM

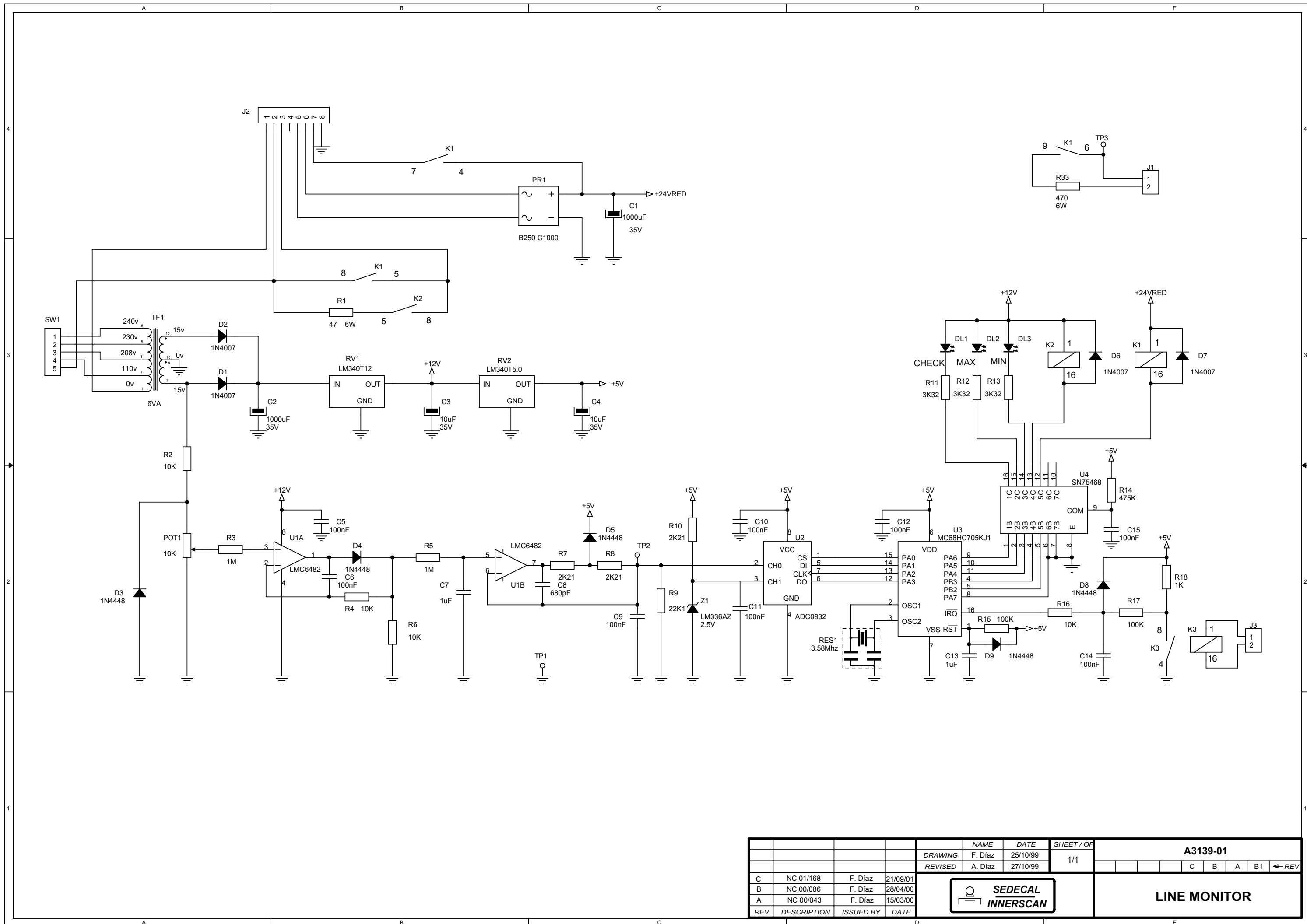
O	NC 12/224	R. Asenjo	29/05/12	NAME	DATE	SHEET / OF	A3138-01/02								
N	NC 11/272	F. Diaz	26/07/11	DRAWING	F. Diaz	25/06/10	1/2	L	K	J	P	O	N	M	← REV
M	NC 11/185	F. Diaz	30/05/11	REVISED	A. Diaz	25/06/10									
L	Errors in schematic	F. Diaz	25/06/10												
L	NC 06/266	F. Diaz	20/12/06												
P	NC 13/187	R.Hermosilla	02/07/13												
REV	DESCRIPTION	ISSUED BY	DATE	SEDECAL		ISOLATED STAND ALONE									



NOTE :  
 BE CAREFUL WITH THE MEASUREMENT REFERENCES.  
 THE BATTERY NEGATIVE TERMINAL (  $\perp$  ) IS ISOLATED  
 FROM THE GENERATOR GROUND (  $\perp$  )

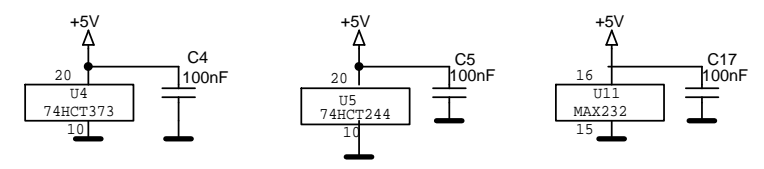
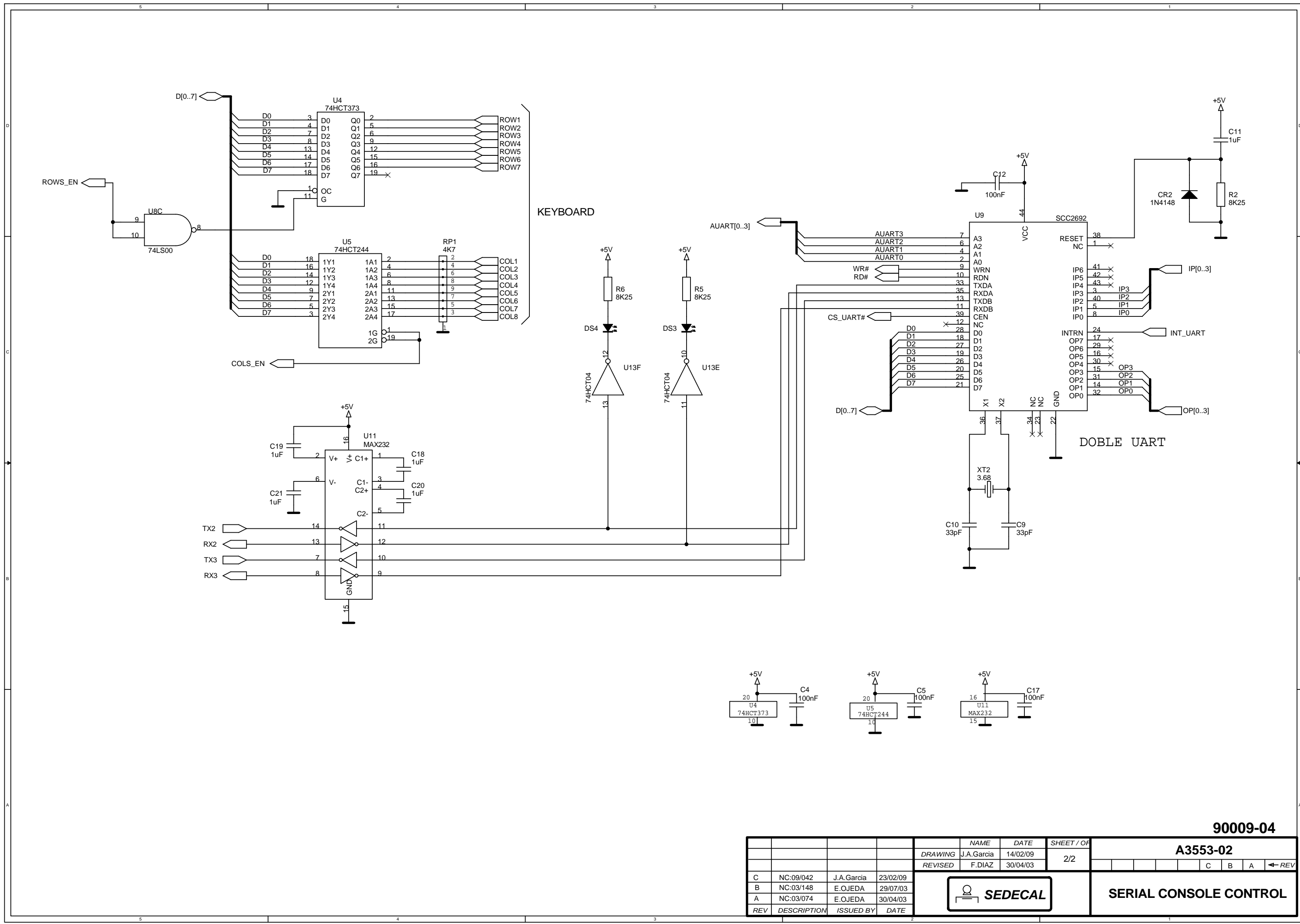
O	NC 12/224	R. Asenjo	29/05/12	NAME	DATE	SHEET / OF	A3138-01/02								
N	NC 11/272	F. Diaz	26/07/11	DRAWING	F. Diaz	25/06/10	2/2	L	K	J	P	O	N	M	← REV
M	NC 11/185	F. Diaz	30/05/11	REVISED	A. Diaz	25/06/10									
L	Errors in schematic	F. Diaz	25/06/10												
L	NC 06/266	F. Diaz	20/12/06												
P	NC 13/187	R.Hermosilla	02/07/13												
REV	DESCRIPTION	ISSUED BY	DATE				<b>ISOLATED STAND ALONE</b>								





REV	DESCRIPTION	ISSUED BY	DATE	NAME	DATE	SHEET / OF	A3139-01				
				DRAWING	F. Diaz	25/10/99	1/1				
				REVISED	A. Diaz	27/10/99					
C	NC 01/168	F. Diaz	21/09/01								
B	NC 00/086	F. Diaz	28/04/00								
A	NC 00/043	F. Diaz	15/03/00								
							<b>LINE MONITOR</b>				
							C	B	A	B1	← REV



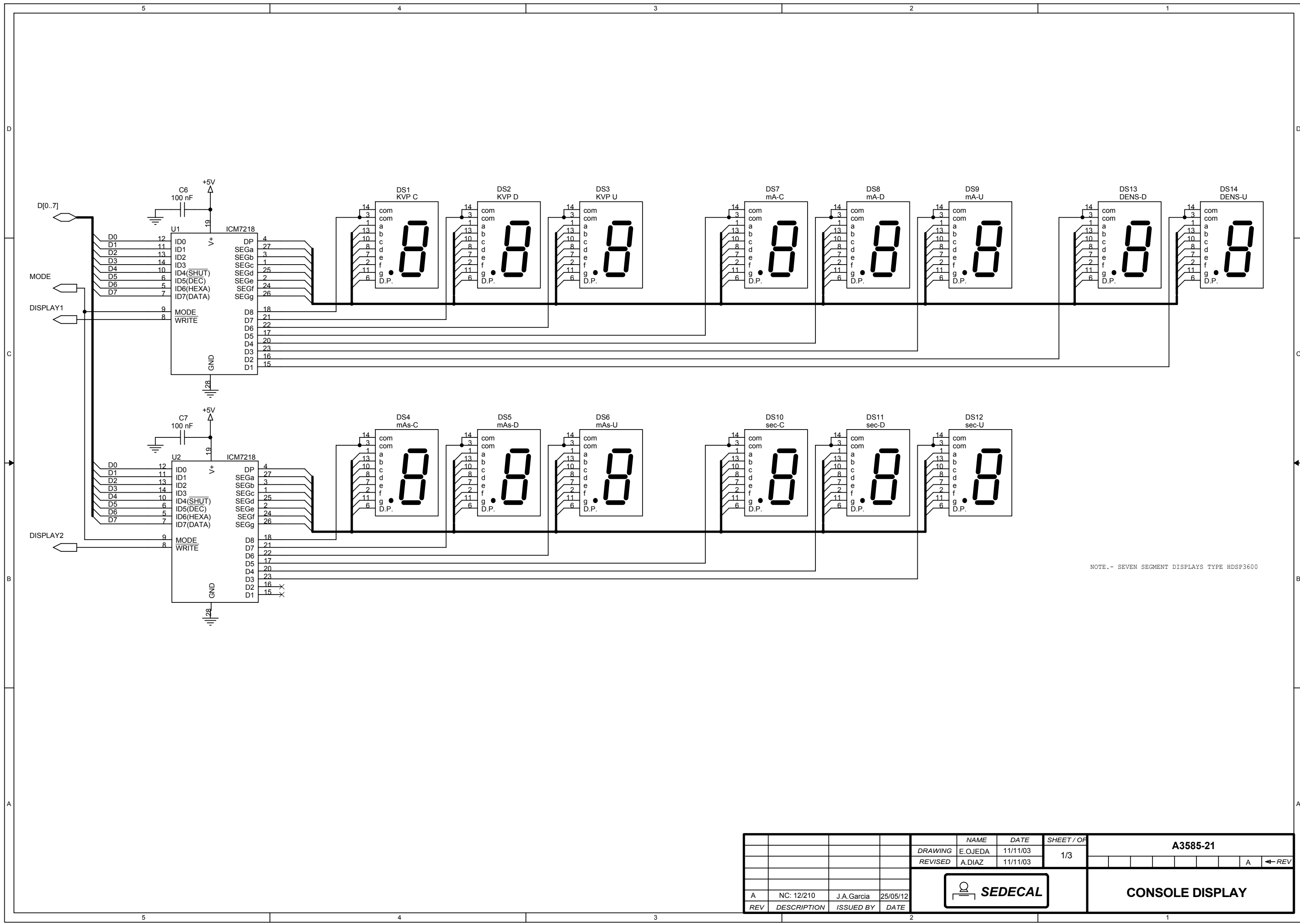


90009-04

				NAME	DATE	SHEET / OF	A3553-02				
				DRAWING	J.A.Garcia	14/02/09					
				REVISED	F.DIAZ	30/04/03	2/2				
C	NC:09/042	J.A.Garcia	23/02/09					C	B	A	← REV
B	NC:03/148	E.OJEDA	29/07/03								
A	NC:03/074	E.OJEDA	30/04/03								
REV	DESCRIPTION	ISSUED BY	DATE								

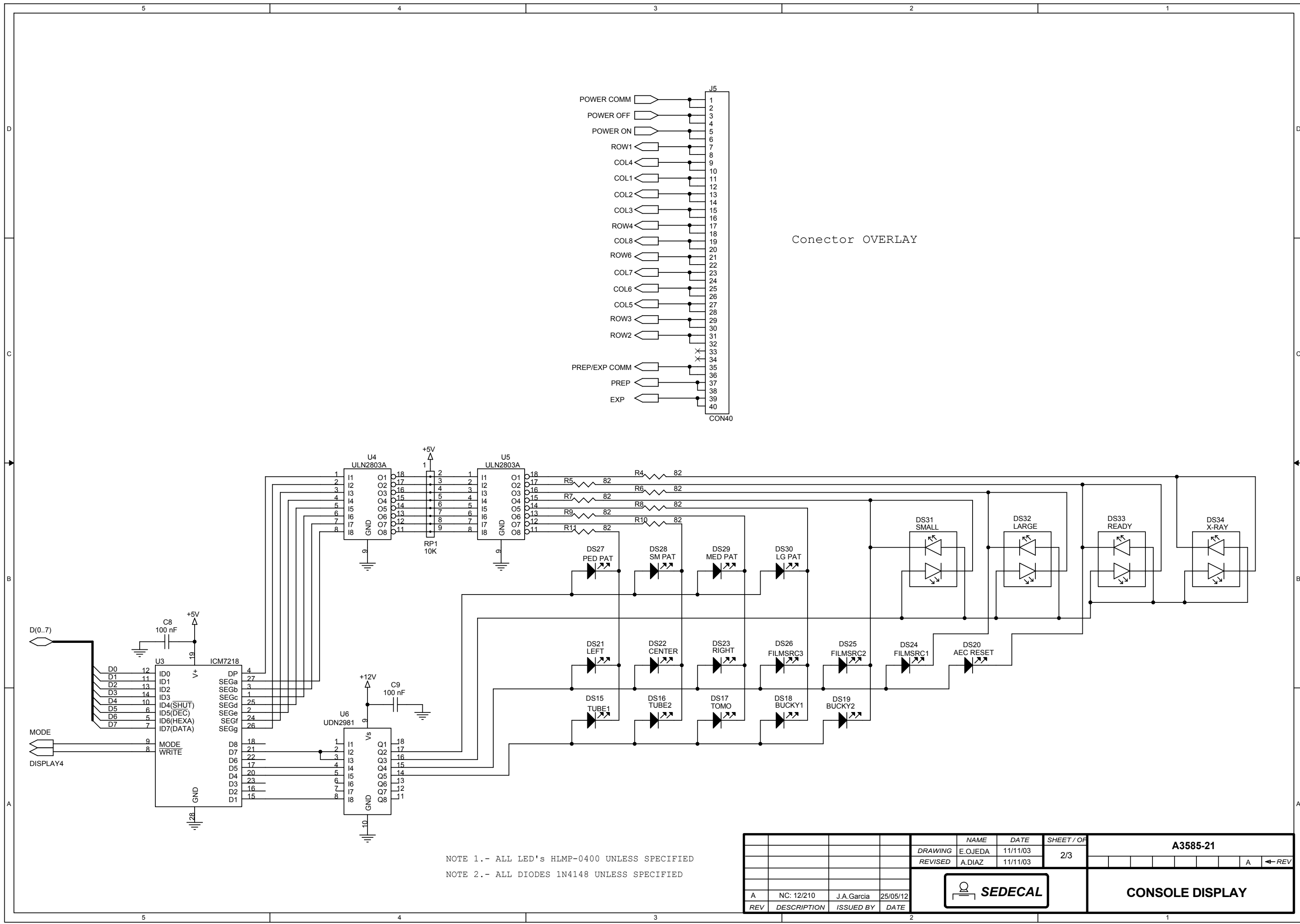


SERIAL CONSOLE CONTROL



NOTE.- SEVEN SEGMENT DISPLAYS TYPE HDSP3600

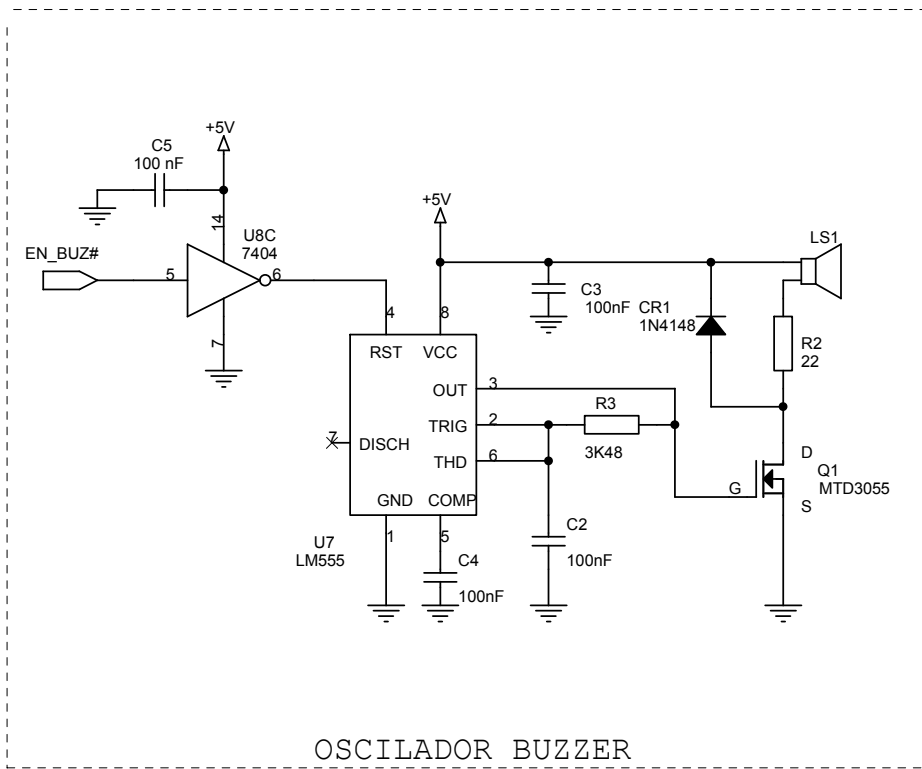
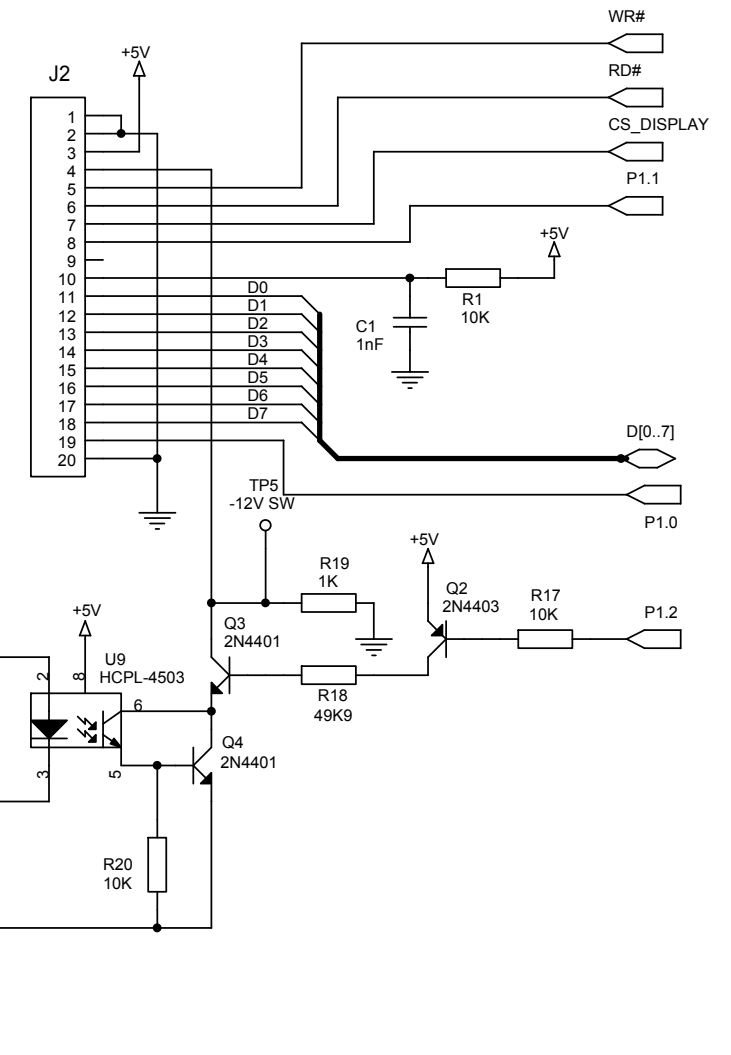
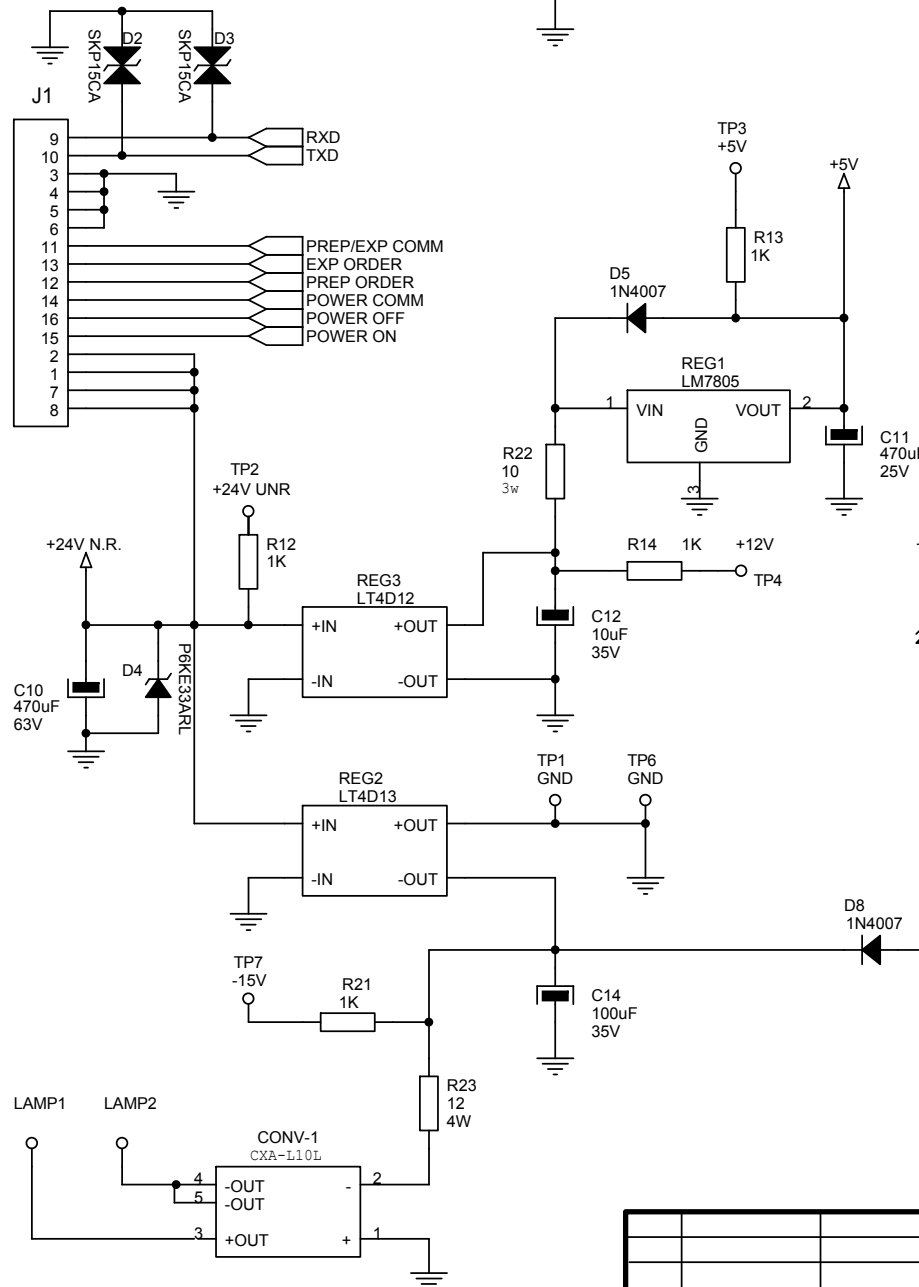
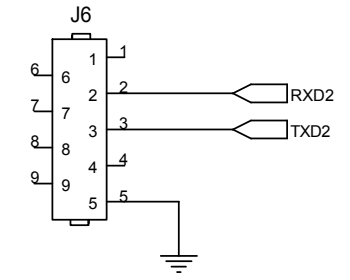
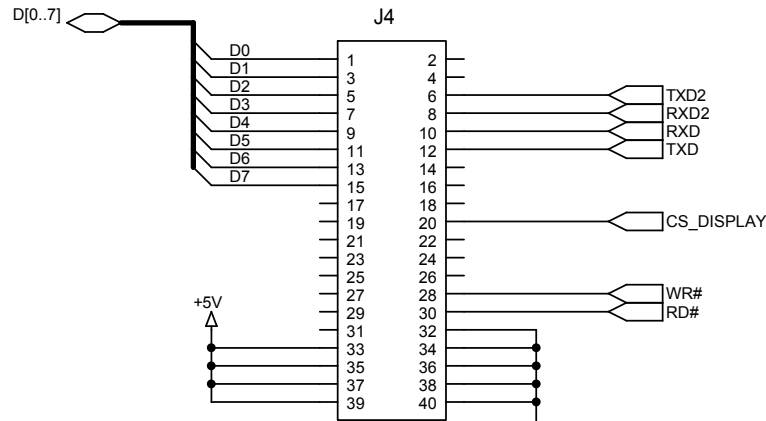
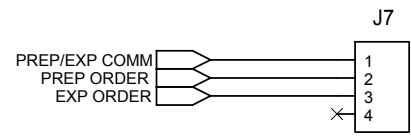
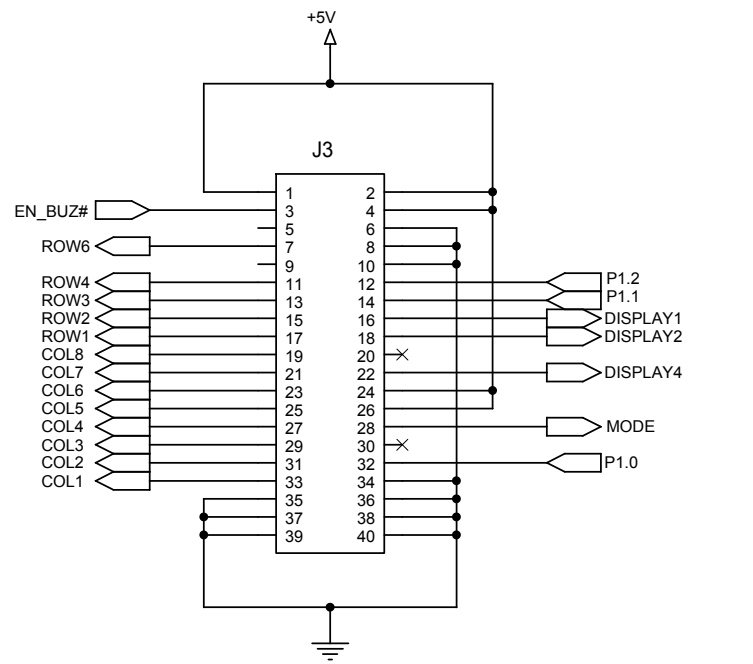
		NAME	DATE	SHEET / OF	A3585-21	
		DRAWING	E.OJEDA	11/11/03	1/3	
		REVISED	A.DIAZ	11/11/03		
A	NC: 12/210	J.A.Garcia	25/05/12			
REV	DESCRIPTION	ISSUED BY	DATE			
						<b>CONSOLE DISPLAY</b>



Conector OVERLAY

NOTE 1.- ALL LED'S HLMP-0400 UNLESS SPECIFIED  
 NOTE 2.- ALL DIODES 1N4148 UNLESS SPECIFIED

		NAME	DATE	SHEET / OF	A3585-21	
		DRAWING	E.OJEDA	11/11/03	2/3	
		REVISED	A.DIAZ	11/11/03	A ← REV	
A		NC: 12/210	J.A.Garcia	25/05/12	<b>SEDECAL</b> <b>CONSOLE DISPLAY</b>	
REV	DESCRIPTION	ISSUED BY	DATE			



OSCILADOR BUZZER

REV	DESCRIPTION	ISSUED BY	DATE	NAME	DATE	SHEET / OF	A3585-21	
				E.OJEDA	11/11/03	3/3		
				A.DIAZ	11/11/03			
A	NC: 12/210	J.A.Garcia	25/05/12	SEDECAL		CONSOLE DISPLAY		
REV	DESCRIPTION	ISSUED BY	DATE					