Technical Publication
DR-1004R13

LV-DRAC

Low Voltage - Digital Rotating Anode Controller

HF Series Generators

REVISION HISTORY

REVISION	DATE	REASON FOR CHANGE
6	MAR 1, 2007	New Tubes in Table-2 (soft V10R2.04)
7	MAY 16, 2007	New Tubes in Table-2 (soft V10R3.1)
8	OCT 16, 2007	New Tubes in Table-2 (soft V10R3.3)
9	JAN 22, 2008	New Tubes in Table-2 (soft V10R3.4)
10	MAY 12, 2008	New Tubes in Table-2 (soft V10R3.5)
11	JUL 01, 2009	New Tubes and schematics (soft V10R3.6)
12	MAR 17, 2011	New Tubes (soft V10R3.7)
13	MAY 14, 2012	New Tubes (soft V10R3.8.1)

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 HEEDED OR AVOIDED WILL CAUSE SERIOUS PERSONAL INJURY OR DEATH.

ADVISE OF CONDITIONS OR SITUATIONS THAT IF NOT HEEDED 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.

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SECTION 1 CONFIGURATION

Note ☞ *This document ONLY applies to High Speed Generators supplied with the LV-DRAC (Low Voltage - Digital Rotating Anode Controller).*

The LV-DRAC is a High Speed Rotor Controller located on the Generator Cabinet. Its configuration is made through dip switches 3243SW1 to 3243SW4 on the Control DRAC Board.

DANGER !

BEFORE MANIPULATING THE LV-DRAC, MAKE SURE THAT THE INPUT LINE IS DISCONNECTED AND THE CAPACITOR BANK IS PROPERLY DISCHARGED. WAIT UNTIL LEDS DL7 AND DL8 ON THE CONTROL DRAC BOARD ARE OFF.

The Function of these switches is the following:

3243SW1-x	FUNCTION
1	MINIMUM TIME FOR READY (DELAY)
2	
3	
4	TUBE TYPE SELECTION FOR TUBE-1 (Also refer to switch position 3243SW3-5)
5	
6	
7	
8	

3243SW2-x	FUNCTION
1	FLUORO HOLD-OVER TIME
2	
3	
4	TUBE TYPE SELECTION FOR TUBE-2 (Also refer to switch position 3243SW4-5)
5	
6	
7	
8	

3243SW3-x	FUNCTION
1	LOW SPEED ROTATION BRAKE
2	NOT USED*
3	SPOT FILM HIGH SPEED START
4	NOT USED*
5	ON = WHEN THE TUBE CONFIGURED AS TUBE-1 IS LISTED ON TUBE TABLE-1
	OFF = WHEN THE TUBE CONFIGURED AS TUBE-1 IS LISTED ON TUBE TABLE-2
6	NOT USED*
7	
8	
** Note: Set switches not used in "ON" position.*	

3243SW4-x	FUNCTION
1	SPOT FILM HOLD TIME
2	
3	
4	
5	ON = WHEN THE TUBE CONFIGURED AS TUBE-2 IS LISTED ON TUBE TABLE-1
	OFF = WHEN THE TUBE CONFIGURED AS TUBE-2 IS LISTED ON TUBE TABLE-2
6	ON = SELF RUNNING ENABLED (Refer to section 1.2)
	OFF = SELF RUNNING DISABLED (Refer to section 1.2)
7	PROTECTIONS - ERRORS
8	DC BRAKE
** Note: Set switches not used in "ON" position.*	

Note ☞ ***Set dip switches in accordance with the following tables for Conventional or Mammographic use.***

TUBE SELECTION - TUBE TABLE-1 for CONVENTIONAL USE

(Switch 3243SW3-5 = ON for Tube-1) (Switch 3243SW4-5 = ON for Tube-2)

Pos	TUBE FAMILY (Stator - ∅ Anode)	3243SW1-x (TUBE-1)					3243SW2-x (TUBE-2)				
		4	5	6	7	8	4	5	6	7	8
0	GE MAXIRAY 75	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON
1	GE MAXIRAY 100	OFF	ON	ON	ON	ON	OFF	ON	ON	ON	ON
2	VARIAN G-1582	ON	OFF	ON	ON	ON	ON	OFF	ON	ON	ON
3	VARIAN RAD-XX or EUREKA RAD-XX (3" Anode, Emerald or Diamond Housing, R Stator, 20/50 ohm, 300 KHU)	OFF	OFF	ON	ON	ON	OFF	OFF	ON	ON	ON
	VARIAN A132 (3" Anode, 300 KHU)										
4	VARIAN RAD-XX or EUREKA RAD-XX (4" Anode, Sapphire Housing, R Stator (16/50 ohm or 20/50 ohm), 400 KHU)	ON	ON	OFF	ON	ON	ON	ON	OFF	ON	ON
	VARIAN RAD-56 (4" Anode, Sapphire Housing, R Stator (20/50 ohm), 400 KHU)										
	VARIAN A256 / A282 / A292 (4" Anode, B130 or B150 Housing, R Stator (16/50 ohm or 20/50 ohm), 400 KHU)										
	TOSHIBA 7254X / 7255X / 7823 (4" Anode, XS-RB Stator (20/38 ohm), 400 KHU)										
5	VARIAN GS-2075 with B220 Housing	OFF	ON	OFF	ON	ON	OFF	ON	OFF	ON	ON
6	SIEMENS 100 L BIANGULIX SIEMENS 100 L OPTILIX	ON	OFF	OFF	ON	ON	ON	OFF	OFF	ON	ON
7	PHILIPS SUPEROTALIX	OFF	OFF	OFF	ON	ON	OFF	OFF	OFF	ON	ON
8	DUNLEE PX-1302	ON	ON	ON	OFF	ON	ON	ON	ON	OFF	ON
9	CGR STATORIX 260 with RSN 742 / MSN 740	OFF	ON	ON	OFF	ON	OFF	ON	ON	OFF	ON
10	CGR STATORIX 550 with RSN 722 / MSN 722	ON	OFF	ON	OFF	ON	ON	OFF	ON	OFF	ON
11	SIEMENS 100 G	OFF	OFF	ON	OFF	ON	OFF	OFF	ON	OFF	ON
12	SIEMENS RH 150/100	ON	ON	OFF	OFF	ON	ON	ON	OFF	OFF	ON
13	COMET DO-10 (4" Anode)	OFF	ON	OFF	OFF	ON	OFF	ON	OFF	OFF	ON
14	COMET DO-9 (4" Anode)	ON	OFF	OFF	OFF	ON	ON	OFF	OFF	OFF	ON
15	CGR STATORIX 240 with MN 620 / M 641	OFF	OFF	OFF	OFF	ON	OFF	OFF	OFF	OFF	ON
16	PICKER PX-307	ON	ON	ON	ON	OFF	ON	ON	ON	ON	OFF
17	HANGZHOU XD-52-30, 50/150	OFF	ON	ON	ON	OFF	OFF	ON	ON	ON	OFF
18	DUNLEE PX-1312	ON	OFF	ON	ON	OFF	ON	OFF	ON	ON	OFF
19	DUNLEE PX-1456 / PX-1436 / PX-1400 (Q Stator)	OFF	OFF	ON	ON	OFF	OFF	OFF	ON	ON	OFF
20	COMET DX-1000	ON	ON	OFF	ON	OFF	ON	ON	OFF	ON	OFF
21	COMET DX-81 / COMET XSTAR-14	OFF	ON	OFF	ON	OFF	OFF	ON	OFF	ON	OFF
22	PHILIPS ROTALIX 350/351	ON	OFF	OFF	ON	OFF	ON	OFF	OFF	ON	OFF
23		OFF	OFF	OFF	ON	OFF	OFF	OFF	OFF	ON	OFF
24		ON	ON	ON	OFF	OFF	ON	ON	ON	OFF	OFF
25	VARIAN with B160 / B165 Housing	OFF	ON	ON	OFF	OFF	OFF	ON	ON	OFF	OFF
26	TOSHIBA E7252X (XS-AL Stator)	ON	OFF	ON	OFF	OFF	ON	OFF	ON	OFF	OFF
27	COMET DX 700 HS	OFF	OFF	ON	OFF	OFF	OFF	OFF	ON	OFF	OFF
28	VARIAN A182 / A192 / A196 / A197 (with B130 Housing)	ON	ON	OFF	OFF	OFF	ON	ON	OFF	OFF	OFF
29	VARIAN G 1592	OFF	ON	OFF	OFF	OFF	OFF	ON	OFF	OFF	OFF
30	PICKER PX400P + PX457P	ON	OFF	OFF	OFF	OFF	ON	OFF	OFF	OFF	OFF
31	JUGORENDGEN RX 150/30 - 50	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF

TUBE SELECTION – TUBE TABLE-2 for CONVENTIONAL USE

(Switch 3243SW3-5 = OFF for Tube-1) (Switch 3243SW4-5 = OFF for Tube-2)

Pos	TUBE FAMILY (Stator - ∅ Anode)	3243SW1-x (TUBE-1)					3243SW2-x (TUBE-2)				
		4	5	6	7	8	4	5	6	7	8
0	VARIAN GS-20711 (B220H Housing, R Stator)	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON
1	SIEMENS 100 L–W	OFF	ON	ON	ON	ON	OFF	ON	ON	ON	ON
2	SIEMENS SV 125/15/82	ON	OFF	ON	ON	ON	ON	OFF	ON	ON	ON
3	IAE RTM90 / IAE RTM92 (C52 / C352 Housing)	OFF	OFF	ON	ON	ON	OFF	OFF	ON	ON	ON
4	IAE RTM101HS / IAE RTM102HS (C100 Housing)	ON	ON	OFF	ON	ON	ON	ON	OFF	ON	ON
5	DUNLEE DA 1036 – DU 404	OFF	ON	OFF	ON	ON	OFF	ON	OFF	ON	ON
6	DUNLEE DA 1094 – DU 694 / DU 692	ON	OFF	OFF	ON	ON	ON	OFF	OFF	ON	ON
7	DUNLEE DR 1817 / 1825 (High Impedance Stator)	OFF	OFF	OFF	ON	ON	OFF	OFF	OFF	ON	ON
8	CGR STATORIX 240 / 260 with MSN 740 / MSN 742	ON	ON	ON	OFF	ON	ON	ON	ON	OFF	ON
9	IAE RTC 700 HS (C52S or C100XT Housing)	OFF	ON	ON	OFF	ON	OFF	ON	ON	OFF	ON
10	VARIAN GS 30711	ON	OFF	ON	OFF	ON	ON	OFF	ON	OFF	ON
11	VARIAN G292 / G294 / G256 / G297 (B130 Housing)	OFF	OFF	ON	OFF	ON	OFF	OFF	ON	OFF	ON
12	IAE RTM101HS / RTM102HS (C52S Housing)	ON	ON	OFF	OFF	ON	ON	ON	OFF	OFF	ON
13	IAE RTC1000HS (C52S Housing)	OFF	ON	OFF	OFF	ON	OFF	ON	OFF	OFF	ON
14	TOSHIBA ROTANODE E7100X (4” Anode, 9/28 ohm, RTM, 300 kHU)	ON	OFF	OFF	OFF	ON	ON	OFF	OFF	OFF	ON
15	DUNLEE DA 1083 / PX 1483 (DU 404 / DA10 Housing, C Stator)	OFF	OFF	OFF	OFF	ON	OFF	OFF	OFF	OFF	ON
16	VARIAN A277 / A278 (B130H and B150H Housing, R Stator)	ON	ON	ON	ON	OFF	ON	ON	ON	ON	OFF
17	VARIAN G1092 (B160 / B165 Housing, R Stator)	OFF	ON	ON	ON	OFF	OFF	ON	ON	ON	OFF
18	DUNLEE PX1473Q – DU 604	ON	OFF	ON	ON	OFF	ON	OFF	ON	ON	OFF
19	TOSHIBA E7260DX	OFF	OFF	ON	ON	OFF	OFF	OFF	ON	ON	OFF
20	VARIAN HE100 (B180 / B185 Housing, R Stator)	ON	ON	OFF	ON	OFF	ON	ON	OFF	ON	OFF
21	IAE RTC 137 (CT 180 Housing)	OFF	ON	OFF	ON	OFF	OFF	ON	OFF	ON	OFF
22	VARIAN A102 (B100 Housing)	ON	OFF	OFF	ON	OFF	ON	OFF	OFF	ON	OFF
23	IAE X40 (C352 Housing (only Low Speed)) IAE RTM78HS (C352 Housing)	OFF	OFF	OFF	ON	OFF	OFF	OFF	OFF	ON	OFF
24	VARIAN RAD-92 / RAD-94 (4” Anode, Sapphire Housing, R Stator, 20/50 ohm, 600 KHU) VARIAN SG296B (B199–R Housing) IAE RTC600 HS (4” Anode, C100 Housing, 20/40 ohm, 600 KHU)	ON	ON	ON	OFF	OFF	ON	ON	ON	OFF	OFF
25	TOSHIBA ROTANODE E7867X / E7869X	OFF	ON	ON	OFF	OFF	OFF	ON	ON	OFF	OFF
26	TOSHIBA ROTANODE E7239X / E7240X / E7242X / E7865X	ON	OFF	ON	OFF	OFF	ON	OFF	ON	OFF	OFF
27	TOSHIBA ROTANODE E7864X (4” Anode, 9/28 ohm, 400 KHU)	OFF	OFF	ON	OFF	OFF	OFF	OFF	ON	OFF	OFF
28	SIEMENS RAY-14_1 (SV150/33/78S Insert)	ON	ON	OFF	OFF	OFF	ON	ON	OFF	OFF	OFF
29	TOSHIBA ROTANODE E7252X (XS-R Stator) TOSHIBA ROTANODE E7886X (27/58 ohm Stator)	OFF	ON	OFF	OFF	OFF	OFF	ON	OFF	OFF	OFF
30	ATX 10WX–692 / 1463 (ATI692) (4” Anode, C Stator, 47/60 ohm, 600 KHU)	ON	OFF	OFF	OFF	OFF	ON	OFF	OFF	OFF	OFF
31	PHILIPS SRM 1551 ROT500	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF

TUBE SELECTION - TUBE TABLE-1 for MAMMOGRAPHIC USE

(Switch 3243SW3-5 = ON for Tube-1) (Switch 3243SW4-5 = ON for Tube-2)

Pos	TUBE FAMILY (Stator - ∅ Anode)	3243SW1-x (TUBE-1)					3243SW2-x (TUBE-2)				
		4	5	6	7	8	4	5	6	7	8
0		ON	ON	ON	ON	ON	ON	ON	ON	ON	ON
1		OFF	ON	ON	ON	ON	OFF	ON	ON	ON	ON
2		ON	OFF	ON	ON	ON	ON	OFF	ON	ON	ON
3	IAE XM1016T (3" Anode, 20/40 ohm, 300 KHU) (MAMMO)	OFF	OFF	ON	ON	ON	OFF	OFF	ON	ON	ON
4		ON	ON	OFF	ON	ON	ON	ON	OFF	ON	ON
5	CGR STATORIX M50 (MAMMO)	OFF	ON	OFF	ON	ON	OFF	ON	OFF	ON	ON
6		ON	OFF	OFF	ON	ON	ON	OFF	OFF	ON	ON
7		OFF	OFF	OFF	ON	ON	OFF	OFF	OFF	ON	ON
8		ON	ON	ON	OFF	ON	ON	ON	ON	OFF	ON
9		OFF	ON	ON	OFF	ON	OFF	ON	ON	OFF	ON
10		ON	OFF	ON	OFF	ON	ON	OFF	ON	OFF	ON
11		OFF	OFF	ON	OFF	ON	OFF	OFF	ON	OFF	ON
12		ON	ON	OFF	OFF	ON	ON	ON	OFF	OFF	ON
13		OFF	ON	OFF	OFF	ON	OFF	ON	OFF	OFF	ON
14		ON	OFF	OFF	OFF	ON	ON	OFF	OFF	OFF	ON
15		OFF	OFF	OFF	OFF	ON	OFF	OFF	OFF	OFF	ON
16		ON	ON	ON	ON	OFF	ON	ON	ON	ON	OFF
17		OFF	ON	ON	ON	OFF	OFF	ON	ON	ON	OFF
18		ON	OFF	ON	ON	OFF	ON	OFF	ON	ON	OFF
19		OFF	OFF	ON	ON	OFF	OFF	OFF	ON	ON	OFF
20		ON	ON	OFF	ON	OFF	ON	ON	OFF	ON	OFF
21		OFF	ON	OFF	ON	OFF	OFF	ON	OFF	ON	OFF
22		ON	OFF	OFF	ON	OFF	ON	OFF	OFF	ON	OFF
23	COMET MOS-50 (MAMMO)	OFF	OFF	OFF	ON	OFF	OFF	OFF	OFF	ON	OFF
24	VARIAN M113 with B115 Housing, R Stator (MAMMO) VARIAN IM113T (MAMMO) VARIAN VRAD 85S with B112 Housing (3", 16/50 ohm, 300 kHU) (MAMMO)	ON	ON	ON	OFF	OFF	ON	ON	ON	OFF	OFF
25		OFF	ON	ON	OFF	OFF	OFF	ON	ON	OFF	OFF
26		ON	OFF	ON	OFF	OFF	ON	OFF	ON	OFF	OFF
27		OFF	OFF	ON	OFF	OFF	OFF	OFF	ON	OFF	OFF
28		ON	ON	OFF	OFF	OFF	ON	ON	OFF	OFF	OFF
29		OFF	ON	OFF	OFF	OFF	OFF	ON	OFF	OFF	OFF
30		ON	OFF	OFF	OFF	OFF	ON	OFF	OFF	OFF	OFF
31		OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF

TUBE SELECTION – TUBE TABLE-2 for MAMMOGRAPHIC USE

(Switch 3243SW3-5 = OFF for Tube-1) (Switch 3243SW4-5 = OFF for Tube-2)

Pos	TUBE FAMILY (Stator - ∅ Anode)	3243SW1-x (TUBE-1)					3243SW2-x (TUBE-2)				
		4	5	6	7	8	4	5	6	7	8
0		ON	ON	ON	ON	ON	ON	ON	ON	ON	ON
1		OFF	ON	ON	ON	ON	OFF	ON	ON	ON	ON
2		ON	OFF	ON	ON	ON	ON	OFF	ON	ON	ON
3		OFF	OFF	ON	ON	ON	OFF	OFF	ON	ON	ON
4		ON	ON	OFF	ON	ON	ON	ON	OFF	ON	ON
5		OFF	ON	OFF	ON	ON	OFF	ON	OFF	ON	ON
6		ON	OFF	OFF	ON	ON	ON	OFF	OFF	ON	ON
7		OFF	OFF	OFF	ON	ON	OFF	OFF	OFF	ON	ON
8		ON	ON	ON	OFF	ON	ON	ON	ON	OFF	ON
9		OFF	ON	ON	OFF	ON	OFF	ON	ON	OFF	ON
10		ON	OFF	ON	OFF	ON	ON	OFF	ON	OFF	ON
11		OFF	OFF	ON	OFF	ON	OFF	OFF	ON	OFF	ON
12		ON	ON	OFF	OFF	ON	ON	ON	OFF	OFF	ON
13		OFF	ON	OFF	OFF	ON	OFF	ON	OFF	OFF	ON
14		ON	OFF	OFF	OFF	ON	ON	OFF	OFF	OFF	ON
15		OFF	OFF	OFF	OFF	ON	OFF	OFF	OFF	OFF	ON
16		ON	ON	ON	ON	OFF	ON	ON	ON	ON	OFF
17		OFF	ON	ON	ON	OFF	OFF	ON	ON	ON	OFF
18		ON	OFF	ON	ON	OFF	ON	OFF	ON	ON	OFF
19		OFF	OFF	ON	ON	OFF	OFF	OFF	ON	ON	OFF
20		ON	ON	OFF	ON	OFF	ON	ON	OFF	ON	OFF
21		OFF	ON	OFF	ON	OFF	OFF	ON	OFF	ON	OFF
22		ON	OFF	OFF	ON	OFF	ON	OFF	OFF	ON	OFF
23		OFF	OFF	OFF	ON	OFF	OFF	OFF	OFF	ON	OFF
24	VARIAN RAD 70 (MAM-RAD 105 H Housing, R Stator) (MAMMO) VARIAN RAD 70B (MAM-RAD 105 H Housing, R Stator) (MAMMO) VARIAN RAD 70SP (MAM-RAD 100 H Housing, R Stator) (MAMMO)	ON	ON	ON	OFF	OFF	ON	ON	ON	OFF	OFF
25		OFF	ON	ON	OFF	OFF	OFF	ON	ON	OFF	OFF
26		ON	OFF	ON	OFF	OFF	ON	OFF	ON	OFF	OFF
27		OFF	OFF	ON	OFF	OFF	OFF	OFF	ON	OFF	OFF
28		ON	ON	OFF	OFF	OFF	ON	ON	OFF	OFF	OFF
29		OFF	ON	OFF	OFF	OFF	OFF	ON	OFF	OFF	OFF
30		ON	OFF	OFF	OFF	OFF	ON	OFF	OFF	OFF	OFF
31		OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF

MINIMUM TIME FOR READY (DELAY)

MINIMUM TIME (SECONDS)	3243SW1-x		
	1	2	3
0 *	ON	ON	ON
0.6	OFF	ON	ON
0.8	ON	OFF	ON
1.0	OFF	OFF	ON
1.2	ON	ON	OFF
1.5	OFF	ON	OFF
2.0	ON	OFF	OFF
3.0	OFF	OFF	OFF
** Note: It is recommended to set these switches at "0 seconds".*			

FLUORO HOLD TIME

FLUORO HOLD TIME (SECONDS)	3243SW2-x		
	1	2	3
0	ON	ON	ON
10	OFF	ON	ON
20	ON	OFF	ON
30	OFF	OFF	ON
40	ON	ON	OFF
60	OFF	ON	OFF
90	ON	OFF	OFF
120	OFF	OFF	OFF

SPOT FILM HOLD TIME

SPOT FILM HOLD TIME		3243SW4-x			
		1	2	3	4
SECONDS	0	ON	ON	ON	ON
	5	OFF	ON	ON	ON
	10	ON	OFF	ON	ON
	15	OFF	OFF	ON	ON
	20	ON	ON	OFF	ON
	30	OFF	ON	OFF	ON
	45	ON	OFF	OFF	ON
	60	OFF	OFF	OFF	ON
MINUTES	2	ON	ON	ON	OFF
	5	OFF	ON	ON	OFF
	10	ON	OFF	ON	OFF
	15	OFF	OFF	ON	OFF
	20	ON	ON	OFF	OFF
	25	OFF	ON	OFF	OFF
	30	ON	OFF	OFF	OFF
	40	OFF	OFF	OFF	OFF

SPOT FILM HIGH SPEED START

SPOT FILM START MODE	3243SW3-3
SPOT FILM ALWAYS STARTS IN HIGH SPEED (10000 RPM)	ON
SPOT FILM STARTS AT REQUIRED SPEED	OFF

LOW SPEED ROTATION BRAKE

LOW SPEED ROTATION BRAKE MODE (3300 RPM TO 0 RPM)	3243SW3-1
INHIBITED	ON
ACTIVATED	OFF

DC BRAKE (FOR LOW AND HIGH SPEED)

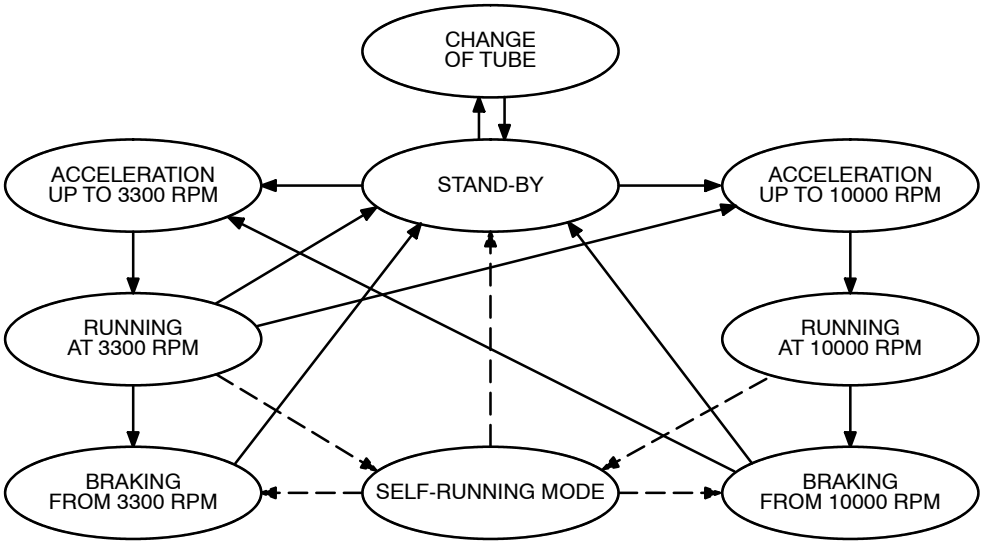
DC BRAKE	3243SW4-8
ACTIVATED	ON
INHIBITED	OFF

PROTECTIONS - ERRORS

PROTECTIONS - ERRORS	3243SW4-7
INHIBITED (LED DL1 on the Control DRAC Board is always illuminated)	ON
ACTIVATED (Normal Operation mode) (LED DL1 on the Control DRAC Board is non-illuminated indicating that the DRAC is working properly).	OFF
Note: The Error Codes are shown on the Console Display preceded by the letter "E" (a.e. E51) (For Error Codes refer to the Troubleshooting document).	

WHEN SWITCH 3243SW4-7 IS IN THE "ON" POSITION, THE ERROR PROTECTIONS OF THE LV-DRAC ARE INHIBITED.

1.1 LV-DRAC STATUS DIAGRAM

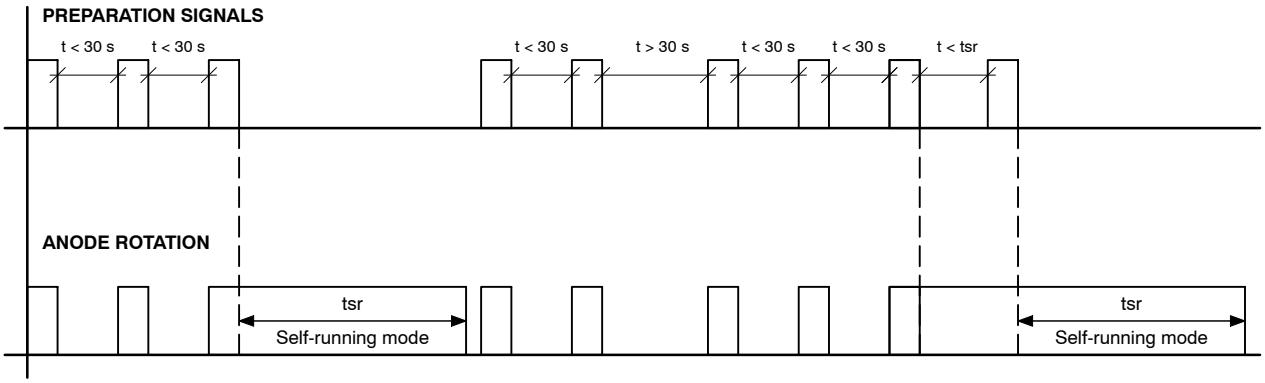


1.2 SELF-RUNNING MODE

The continuous starting and braking of the anode produces an overheating in the X-ray Tube Stator (a.e. during calibration procedure). The “Self-running mode” avoids this overheating.

In the “Self-running mode” (switch 3243SW4-6 in the “ON” position), the anode remains running for approximately 1 minute when rotates at 3300 rpm or 10000 rpm.

The LV-DRAC enters in the “Self-running mode” when “*Preparation*” is selected three consecutive times **only from the Console buttons or Handswitch**, and the time between two of the consecutive accelerations is shorter than 30 seconds (*refer to illustration below*).



tsr (time for self-running mode) = approx. 1 minute at 3300 rpm or 10000 rpm.

SECTION 2 SCHEMATICS

Sch. No.	Scheme
	LV-DRAC MODULE BLOCK DIAGRAM
A3243-04	CONTROL DRAC PCB
A3240-05	INTERFACE DRAC PCB
A3109-01	CLAMPING PCB

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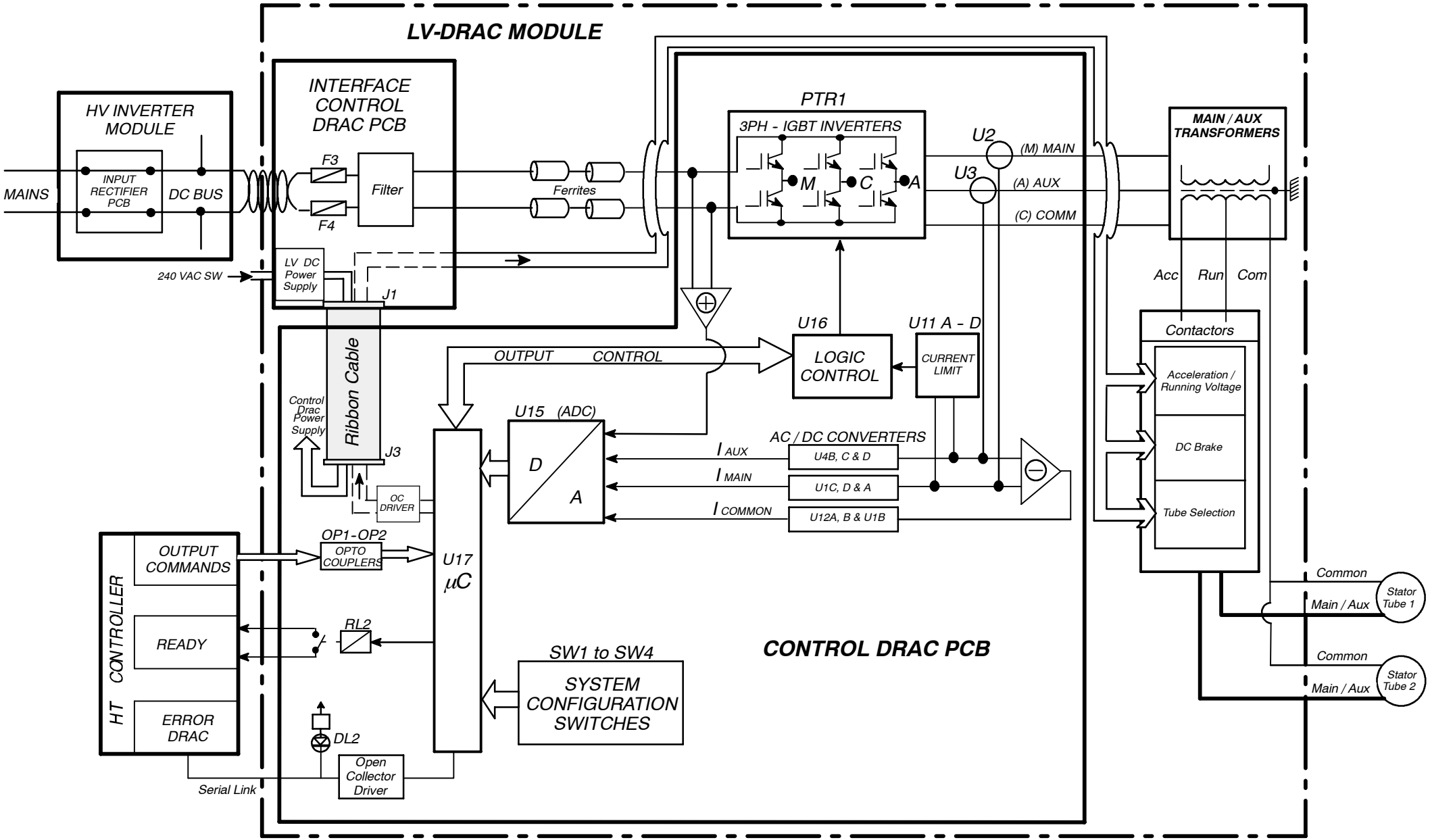
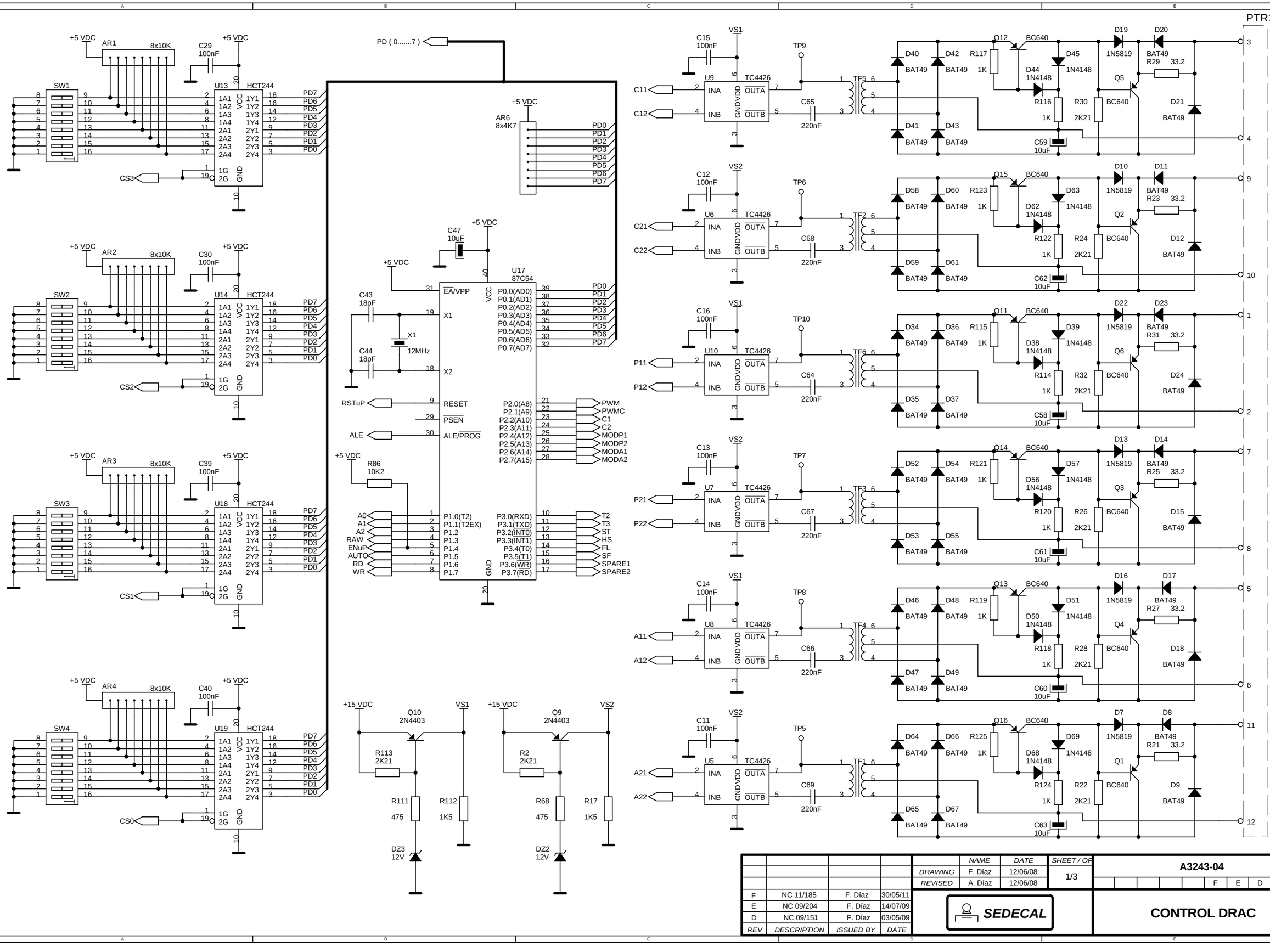


LV-DRAC Module Block Diagram



REV	DESCRIPTION	ISSUED BY	DATE
F	NC 11/185	F. Díaz	30/05/11
E	NC 09/204	F. Díaz	14/07/09
D	NC 09/151	F. Díaz	03/05/09

	NAME	DATE	SHEET / OF
DRAWING	F. Díaz	12/06/08	1/3
REVISED	A. Díaz	12/06/08	

SEDECAL

A3243-04

F E D REV

CONTROL DRAC

PTR1
V-
P+
N-
J1
COM
SHL
3
2
C18
470nF 1000V
R34
1M
R35
1M
R36
1M
R75
1M
R40
1M
R39
1M
R38
1M
R76
1M
R37
150K-2w
R33
150K-2w
J2
V+
V-
2
1
DL7
HLMP1700
DL8
HLMP1700
C19
100uF 450V
C17
100uF 450V
+15 VDC
4x1N4148
D28
D27
D26
D25
-15 VDC
R66
22K1
R65
604K
R64
604K
R72
22K1
U12C
LF347
9
10
8
R67
604K
C31
100nF
U12D
LF347
13
12
14
R63
604K
VBUS (4V<>724 VDC)
TP18
+5 VDC
D29
1N4148
D31
1N4148
R74
1K5
R73
10K2
C36
100nF
PD (0.....7)
+5 VDC
C37
10uF
U15
ADC0844
VCC
20
CH1
CH2
CH3
CH4
VREF
AGND
GND
10
3
4
5
6
8
7
DB0
DB1
DB2
DB3
DB4
DB5
DB6
DB7
17
16
15
14
13
12
11
9
PD0
PD1
PD2
PD3
PD4
PD5
PD6
PD7
CS
RD
WR
INTR
2
1
19
18
CS4
RD
WR
+5 VDC
C27
100nF
PTR1
U
J1
PRIN
1
+15 VDC
C5
100nF
U2
CSNH151
1-7
8-14
V+
V-
OP
C4
100nF
-15 VDC
1V<>8.26A
TP1
R9
100
R8
12K1
R7
12K1
R10
12K1
R4
12K1
U1C
LF347
U1D
LF347
D3
1N4148
D2
1N4148
R6
12K1
R3
221K
C1
1uF
U1A
LF347
R88
221K
D32
1N4148
D1
1N4148
R1
1K5
R5
10K2
C35
100nF
I.PRINC
TP17
TP36
R60
221K
+5 VDC
D73
1N4148
R61
1K5
D72
1N4148
U1B
LF347
R62
10K2
C25
100nF
PTR1
W
J1
AUX
4
U3
CSNH151
8-14
1-7
V+
V-
OP
+15 VDC
C6
100nF
C7
100nF
-15 VDC
TP3
R11
100
R12
12K1
R14
12K1
R15
12K1
R19
12K1
U4D
LF347
U4C
LF347
D5
1N4148
D4
1N4148
R13
12K1
R16
221K
C10
1uF
U4B
LF347
R89
221K
D33
1N4148
D6
1N4148
R18
1K5
R20
10K2
C34
100nF
I.AUX
TP16
R53
12K1
R54
12K1
R55
12K1
R57
12K1
R58
12K1
U12A
LF347
U12B
LF347
D70
1N4148
D71
1N4148
R56
12K1
R59
221K
C24
1uF
I.PRINC LIMIT
I.AUX LIMIT
PTR1
SKM 40GD 123D
P+
N-
U
V
W
1
2
3
4
5
6
7
8
9
10
11
12
C28
100nF
C26
100nF
U12D
LF347
C3
100nF
C2
100nF
U1B
LF347
C8
100nF
C9
100nF
U4A
LF347
+15 VDC
-15 VDC

REV	DESCRIPTION	ISSUED BY	DATE
F	NC 11/185	F. Díaz	30/05/11
E	NC 09/204	F. Díaz	14/07/09
D	NC 09/151	F. Díaz	03/05/09

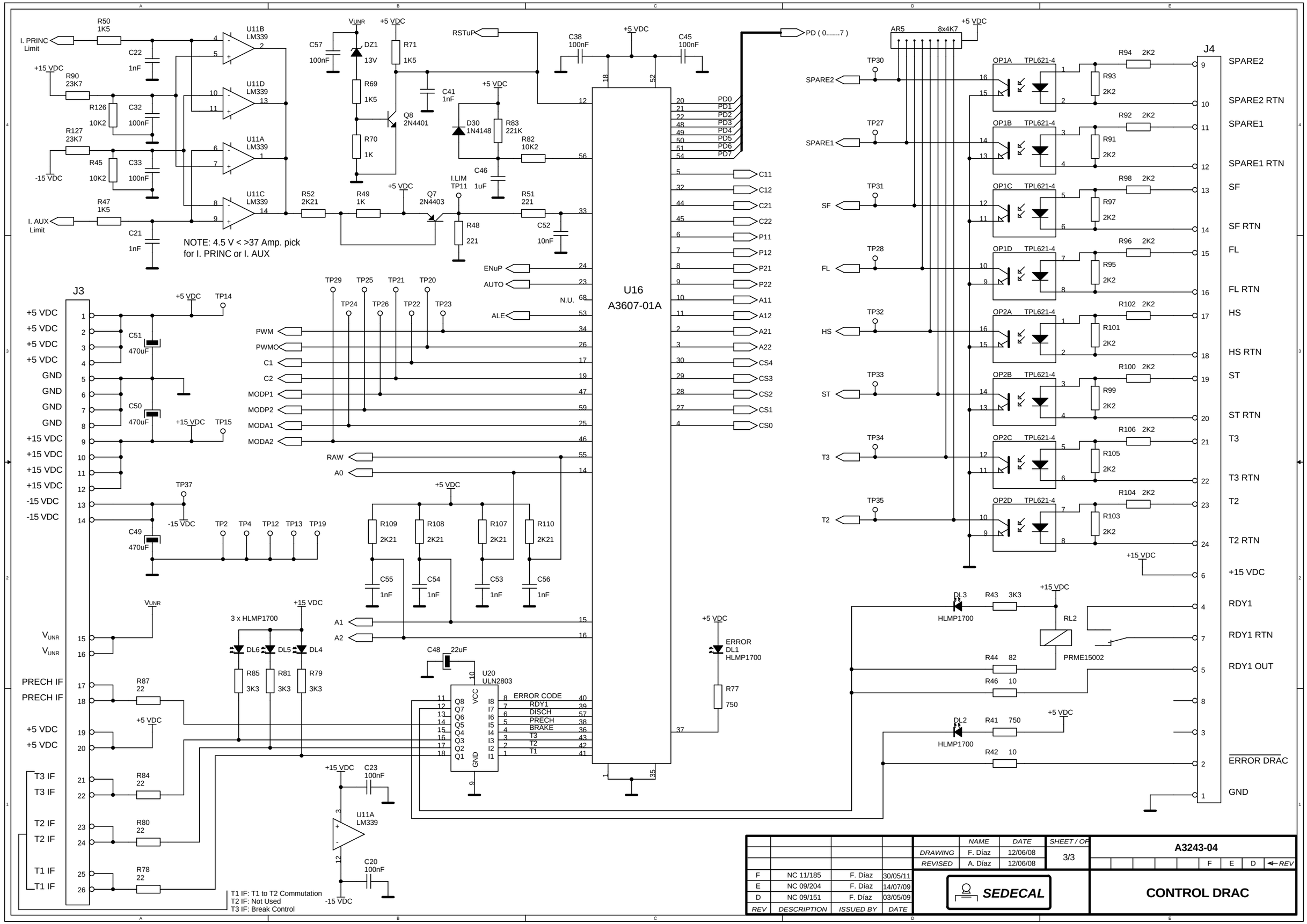
	NAME	DATE	SHEET / OF
DRAWING	F. Díaz	12/06/08	2/3
REVISED	A. Díaz	12/06/08	

SEDECAL

A3243-04

F E D REV

CONTROL DRAC



REV	DESCRIPTION	ISSUED BY	DATE
F	NC 11/185	F. Díaz	30/05/11
E	NC 09/204	F. Díaz	14/07/09
D	NC 09/151	F. Díaz	03/05/09

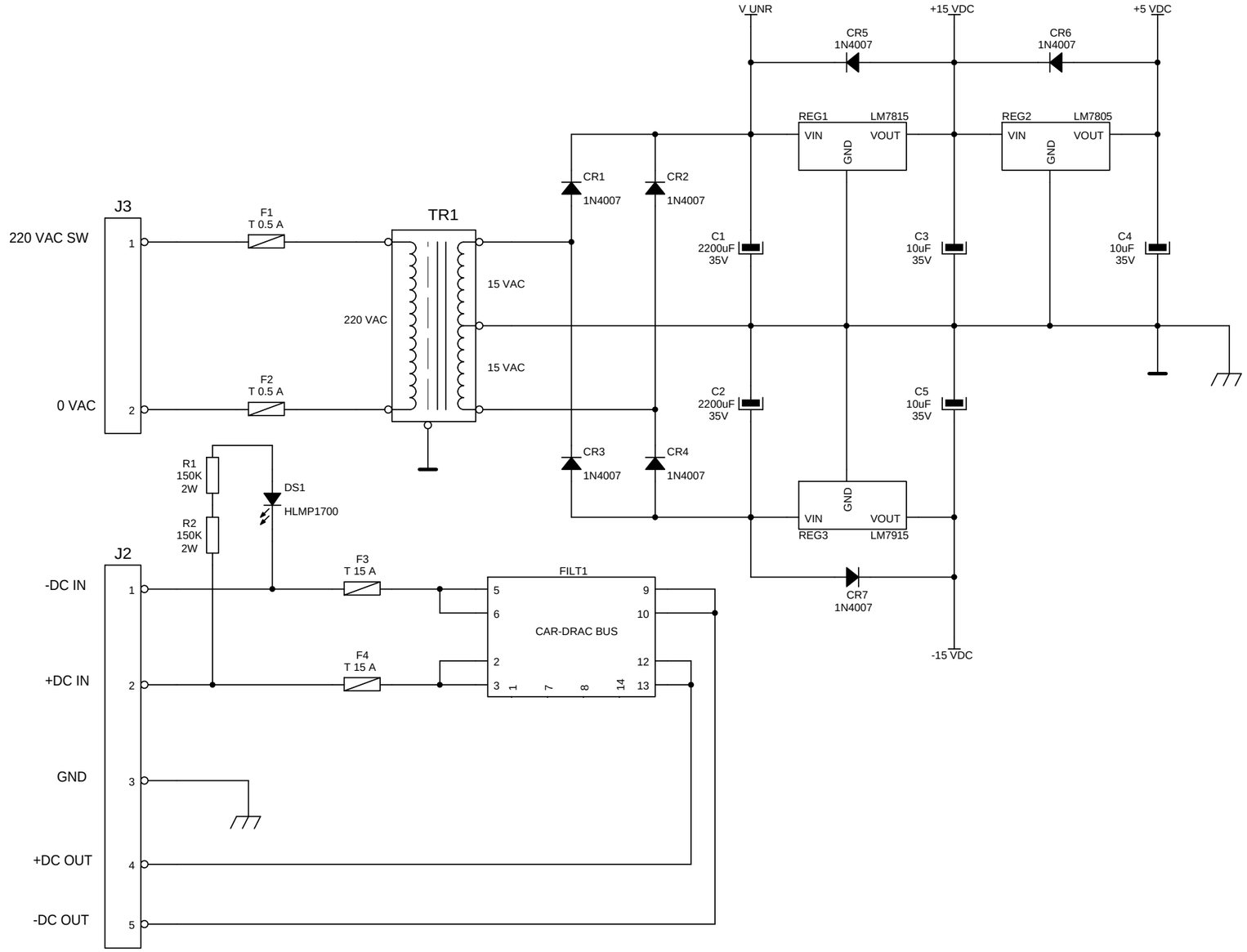
	NAME	DATE	SHEET / OF
DRAWING	F. Díaz	12/06/08	3/3
REVISED	A. Díaz	12/06/08	

SEDECAL

A3243-04

F E D REV

CONTROL DRAC



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REV	DESCRIPTION	ISSUED BY	DATE
G	NC 09/301	F. Díaz	16/11/09
F	NC 09/178	F. Díaz	09/06/09
E	CN 01/075	F. GARCIA	03-05-01
C, D	CN 98/090, 99/94	F. GARCIA	15-02-00
H	NC 10/252	F. Díaz	28/05/10

	NAME	DATE
DRAWING	F. GARCIA	27-09-97
REVISED	A. DIAZ	27-09-97

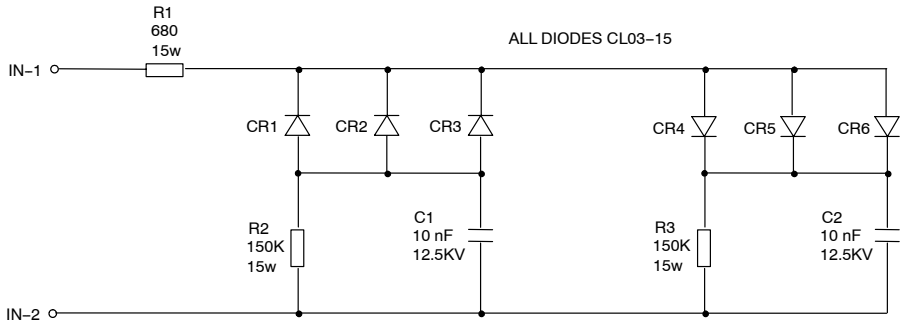
SHEET / OF: 1/1

SEDECAL

A3240-05

H G F E D C B A ◄REV

INTERFACE DRAC-HF



REV	DESCRIPTION	ISSUED BY	DATE

	NAME	DATE	SHEET / OF
DRAWING	F. GARCIA	12/01/99	1 / 1
REVISED	A. DIAZ	16/03/99	

SEDECAL
INNERSCAN

DWG: A3109–01

REV

CLAMPING